

A black and white photograph of a curved concrete structure, possibly a tunnel or a large pipe, with the text "Virtual Lab Setup" overlaid in white. The structure is composed of several curved segments separated by vertical concrete pillars. The lighting is dramatic, with deep shadows and bright highlights on the concrete surface.

Virtual Lab Setup

Step 1: Install Virtualization Software

Ensure VirtualBox is installed. If not, use the following command:

```
sudo pacman -S virtualbox
```

Step 2: Create a New Virtual Machine

- Open VirtualBox and click "New."
- Name the VM, select "Linux" for type, and "Ubuntu (64-bit)" for version.
- Allocate appropriate memory and create a virtual hard disk.

Step 3: Install Ubuntu

- Attach the 'boonter.iso' to the VM's virtual CD/DVD drive.
- Start the VM and follow the installation prompts to install Ubuntu.

Step 4: Configure Network Settings

- **NAT:** For internet access.
- **Internal Network:** For VM to VM communications within the isolated lab environment.

Step 5: Install Necessary Tools

Install tools for network testing and attacks and the attacking machine:

```
sudo apt update  
sudo apt install tcpdump ettercap-text-only
```

Step 6: Basic Network Testing

- Perform network tests like pinging and capturing packets with tcpdump.
- Analyze the traffic using Wireshark to ensure proper setup.

Step 7: Security Practices

- Keep the VMs updated and secure.
- Enable only necessary network interfaces and services.
- Regularly snapshot the VMs for easy restoration.

Network Setup for TCP Session Hijacking Lab

Choosing an IP Scheme and Assigning IPs

- Use the private IP range `10.0.2.x` with a subnet mask of `255.255.255.0`.
- Assign static IPs:
 - Attacker VM: `10.0.2.10`
 - Victim VM: `10.0.2.20`
 - Server VM: `10.0.2.30`

Setting Up the Network in VirtualBox

- For each VM in VirtualBox:
 - Go to 'Settings' -> 'Network'
 - Enable a network adapter and set it to 'Internal Network'.
 - Use 'LabNet' for the network name to ensure all VMs can communicate.

Configuring Static IP Addresses on Ubuntu VMs Without Gateway

- Edit the Netplan configuration file `/etc/netplan/01-netcfg.yaml` (or similar):

```
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: no
      addresses:
        - 10.0.2.10/24 # Use the appropriate IP for each VM
```

- Adjust the IP for each VM accordingly.
- Apply changes with `sudo netplan apply`.

Configuring Static IP Addresses on Ubuntu VMs With Gateway

- Edit the Netplan configuration file `/etc/netplan/01-netcfg.yaml` (or similar):

```
network:
  version: 2
  renderer: networkd
  ethernets:
    enp0s3:
      dhcp4: no
      addresses: [10.0.2.10/24]
      gateway4: 10.0.2.1
      nameservers:
        addresses: [8.8.8.8]
```

- Adjust the IP for each VM accordingly.
- Apply changes with `sudo netplan apply`.

Testing Connectivity

- Test network connectivity using `ping` from each VM:

```
ping 10.0.2.20 # From VM with IP 10.0.2.10
```