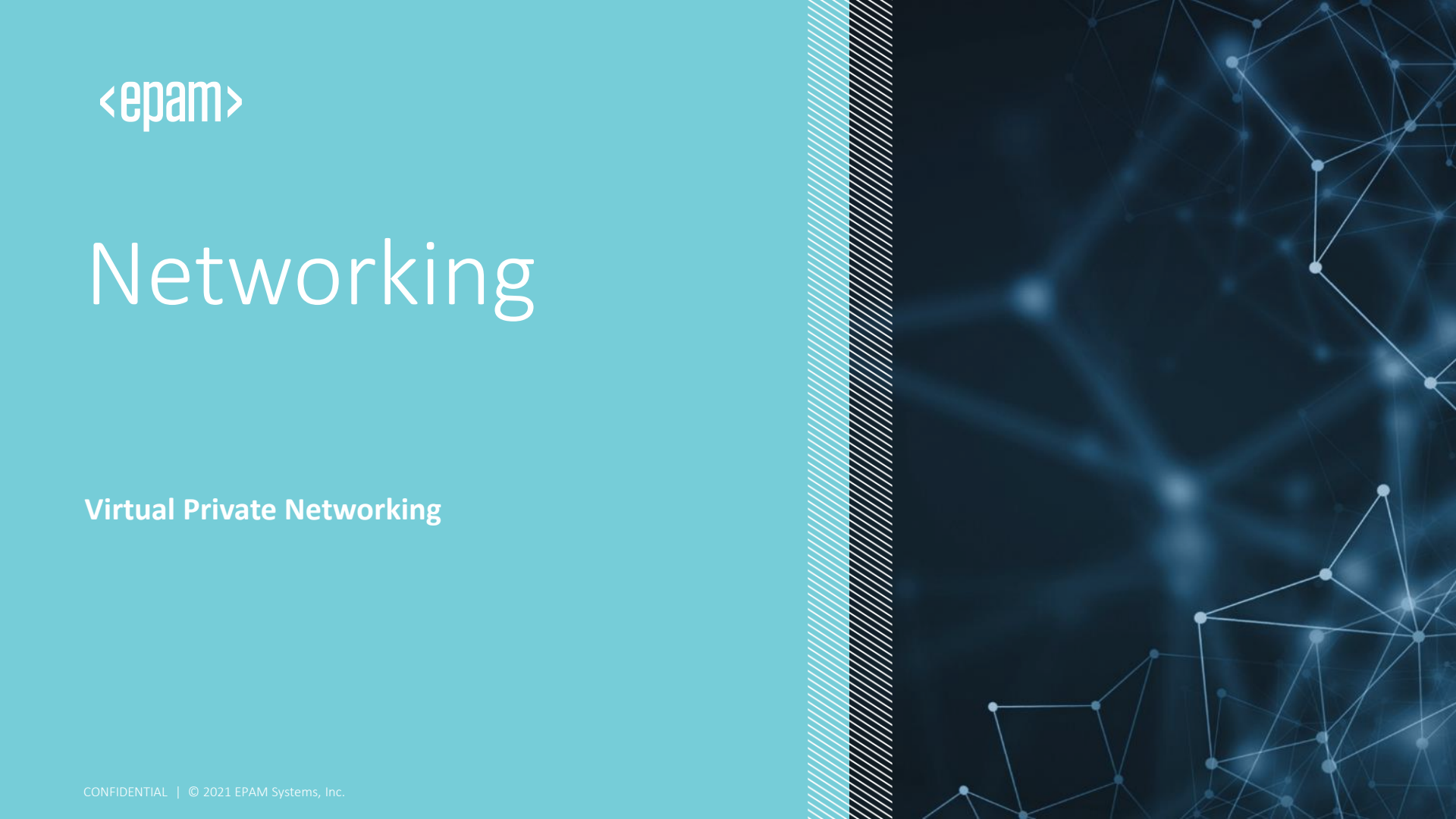


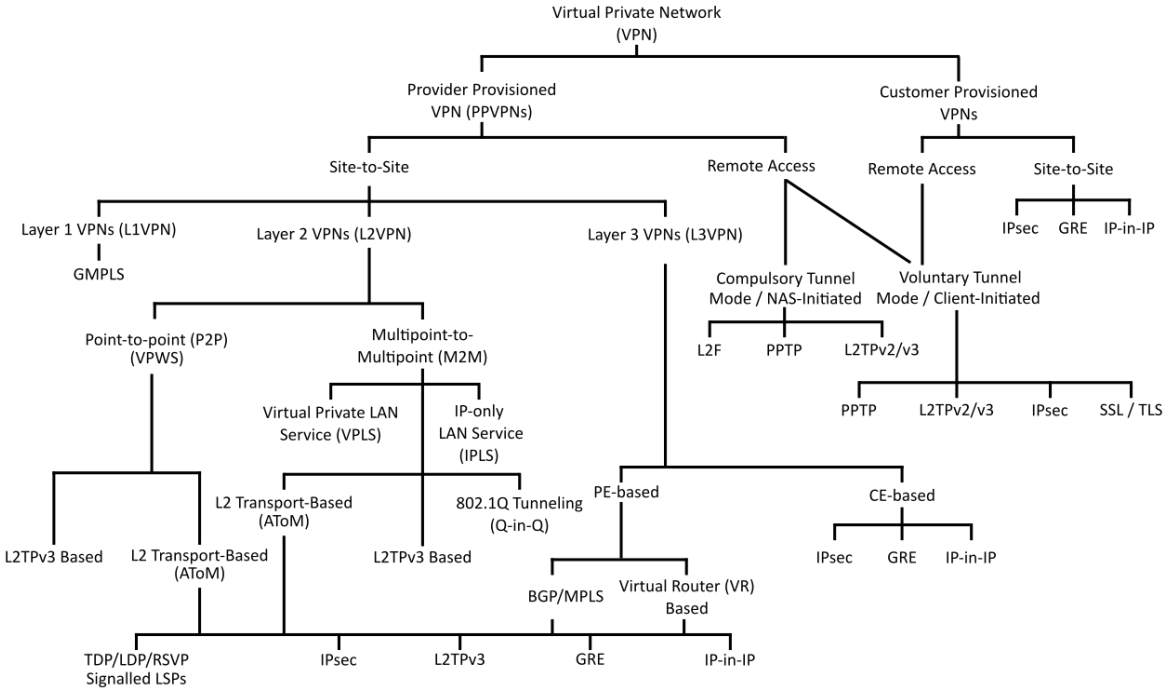
Networking

Virtual Private Networking

What is VPN

A **virtual private network** (**VPN**) extends a private network across a public network and enables users to send and receive data across shared or public networks as if their computing devices were directly connected to the private network. Applications running across a VPN may benefit from the functionality, security, and management of the private network. It provides access to resources inaccessible on the public network and is typically used for telecommuting workers. Encryption is common, although not an inherent part of a VPN connection.

VPN Classification



Types of VPN

Major types:

- Remote access
- Site-to-site
- Extranet-based site-to-site

Security mechanisms type:

- Internet Protocol Security (Ipsec)
- Transport Layer Security (TLS)
- Datagram Transport Layer Security (DTLS)
- Microsoft Point-to-Point Encryption (MPPE)
- Microsoft Secure Socket Tunneling Protocol (SSTP)
- Multi Path Virtual Private Network (MPVPN)
- Secure Shell (SSH) VPN
- WireGuard
- IKEv2

Wikipedia ©

Use case: Install and config PPTP VPN server in CentOS 7

```
$ yum install -y ppp pptp pptpd pptp-setup
$ chkconfig pptpd on
```

Disable or config firewall's

```
$ cat >/etc/ppp/chap-secrets<<EOF
  user pptpd pass *
  EOF

$ chmod 600 /etc/ppp/chap-secrets
```

Edit file `/etc/sysctl.conf` add `'net.ipv4.ip_forward = 1'`

```
$ sysctl -p
```

tests:

```
$ ps ax | grep pptpd
$ netstat -an | grep -i listen
$ systemctl status pptpd
```

Try

Edit config files:

```
$ cat >/etc/pptpd.conf<<EOF
 option /etc/ppp/options.pptpd
 logwtmp
 localip 172.16.0.1
 remoteip 172.16.0.10-254
 EOF

$ cat >/etc/ppp/options.pptpd<<EOF
 name pptpd
 refuse-pap
 refuse-chap
 refuse-mschap
 require-mschap-v2
 require-mppe-128
 proxyarp
 lock
 nobsdcomp
 novj
 novjccomp
 nologfd
 ms-dns 8.8.8.8
 ms-dns 8.8.4.4
 EOF
```

Self study

GOAL:

Repat use case with pptp configuration from this presentation on you own virtual environment.

What to do:

- install packages
- Config firewall
- Config PPTP service

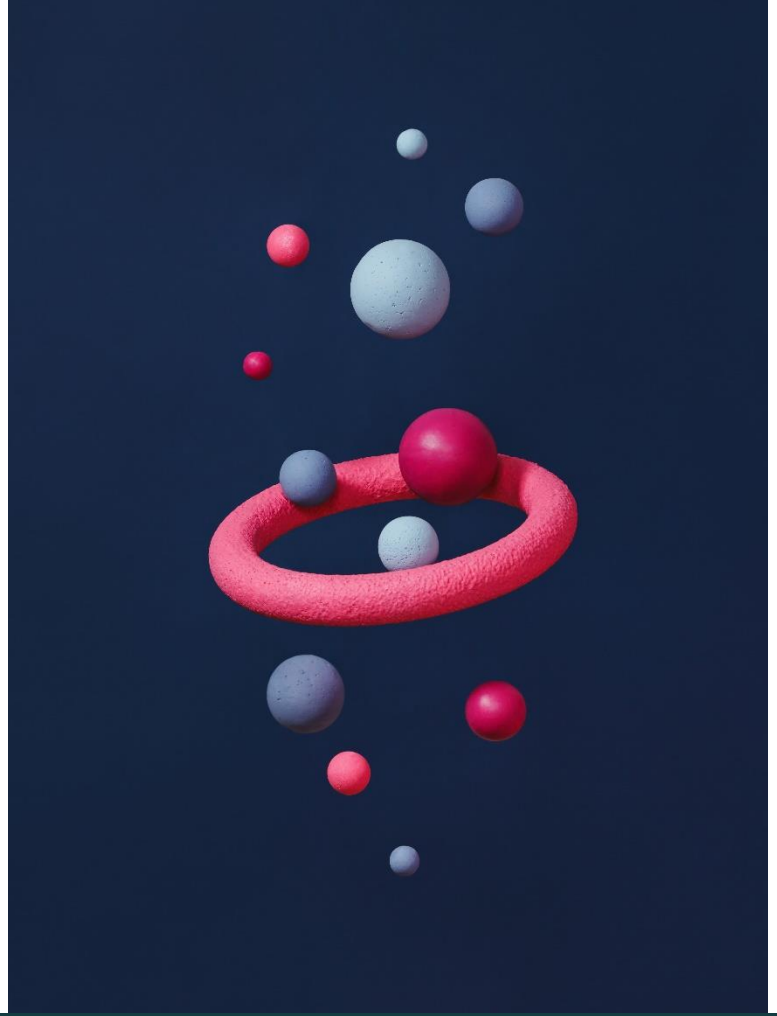
Environment:

2 Virtual Machines (VM) with ethernet adapters in same network.

Suggest use VirtualBox and CentOS 7 image.

How to check:

list adapters on Client VM and see on pptp adapter the address from pptp server scope.



THANK YOU