Sansbound / Koti Concepts: Palo Alto Firewall Syllabus

A. Switching concepts on Palo Alto firewall

1. Configuration of Layer 2 Ethernet interfaces
2. Configuration of Layer 2 Ethernet sub interfaces
3. Configuration of Layer 3 Ethernet interfaces
4. Configuration of Layer 3 Ethernet sub interfaces
5. Configuration of VLans and VLan interfaces
6. Configuration of Inter-VLan routing using VLan interfaces
7. Configuration of Inter-VLan routing using Ethernet Layer 3 sub interfaces
8. Verify the Mac address table on Palo Alto firewall
9. Configuration of Layer 2 and Layer3 security zones
10. Security policies between Layer 2 and Layer 3 security zones

B. Routing concepts on Palo Alto firewall

1. Working with Virtual routers on the Palo Alto firewall
2. Configuration of Static routing
3. Configuration of static routing between the virtual routers on the firewall
4. Configuration of Dynamic routing with Routing Information Protocol (RIP)
5. Configuration of Dynamic routing with Open Shortest Path First (OSPF)
6. Configuration of Dynamic routing with Border Gateway Protocol (BGP)
7. Configuration of Loopback interfaces
8. Configuration of Internal BGP between the Virtual routers on the Palo Alto
9. Configuration of Redistribution Profiles
10. Configuration of Redistribution of routes between the Routing protocols
11. Configuration of GRE tunnels
12. Configuration of Static routes with Path monitoring
13. Configuration of Multiple ISP redundancy
14. Configuration of Policy based forwarding (PBF)
15. Configuration of Multiple ISP redundancy with GRE tunnels

C. Network AddressTranslation

1. Configuration of Dynamic NAT with the source IP getting translated to an Interface IP address
2. Configuration of Dynamic NAT with the source IP getting translated to a pool of IP addresses
3. Configuration of Static NAT
4. Configuration of Destination NAT
5. Configuration of NAT with session distribution
6. Configuration of U-Turn NAT
7. Configuration of NAT with Forward DNS rewrite
8. Configuration of NAT with Reverse DNS rewrite
9. Configuration of Proper Security policies

D. Authentication (User-ID)

1. Authentication against the Local Database
2. Configuration of Captive Portal
3. Authentication against Active directory

E. Site to Site VPN IPSec VPN

1. Understanding the basics of Cryptography
2. IPSec Protocols

- Encapsulating security Payload
- Authentication Header

3. Role of IKE in IPSec
4. Configuration of Site-to-Site VPN between two different Palo Alto firewalls

F. Site to Client VPN or Remote access VPN

1. Global Protect Portal Configuration
2. Global Protect Gateway configuration

G. High Availability

1. Configuration of Active and passive High availability

H. Miscellaneous Topics

1. Configuration of the management interface
2. DHCP concepts on Palo Alto Firewall
3. Service Route Configuration
4. APP ID
5. Content ID Explanation

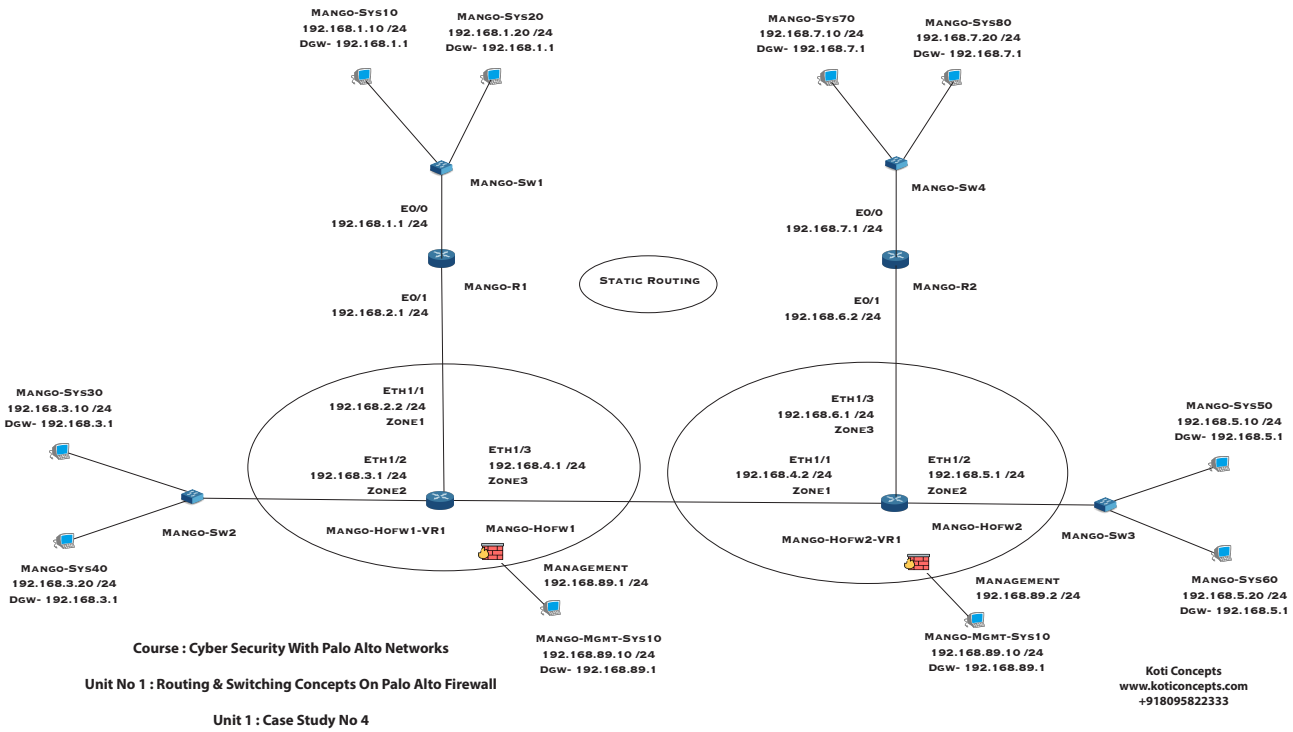
Training Methodology

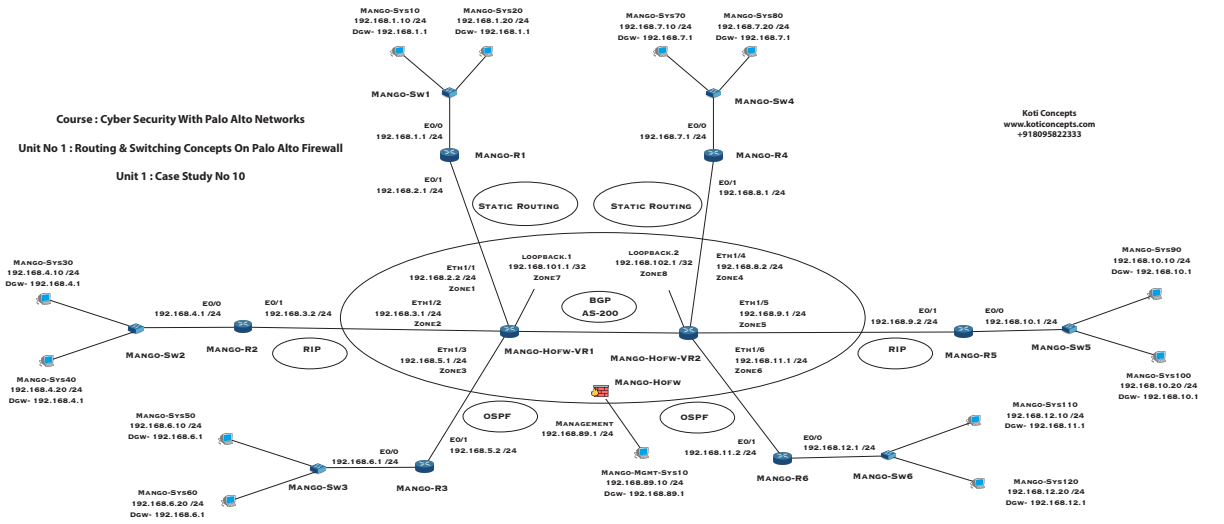
The entire training is practical oriented. The concepts are explained and demonstrated on real life case studies.

Trainer

The course is designed and conducted by Koti, trainer at Koti

Sample Case Study diagrams




Course : Cyber Security With Palo Alto Networks
Unit No 1 : Routing & Switching Concepts On Palo Alto Firewall
Unit 1 : Case Study No 10
Koti Concepts
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+918095822333
Mango-Sys10
192.168.1.10 /24
Dgw- 192.168.1.1
Mango-Sys20
192.168.1.20 /24
Dgw- 192.168.1.1
Mango-Sw1
Mango-Sys70
192.168.7.10 /24
Dgw- 192.168.7.1
Mango-Sys80
192.168.7.20 /24
Dgw- 192.168.7.1
Mango-Sw4
E0/0
192.168.1.1 /24
Mango-R1
E0/0
192.168.7.1 /24
Mango-R4
E0/1
192.168.2.1 /24
E0/1
192.168.8.1 /24
Static Routing
Static Routing
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Dgw- 192.168.4.1
Mango-Sw2
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Dgw- 192.168.4.1
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E0/1
192.168.3.2 /24
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Zone1
Loopback.1
192.168.101.1 /32
Zone7
Loopback.2
192.168.102.1 /32
Zone8
Eth1/4
192.168.8.2 /24
Zone4
BGP
AS-200
Eth1/2
192.168.3.1 /24
Zone2
Eth1/3
192.168.5.1 /24
Zone3
Mango-Hofw-VR1
Mango-Hofw-VR2
Eth1/5
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Zone5
Eth1/6
192.168.11.1 /24
Zone6
Mango-Hofw
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E0/0
192.168.10.1 /24
RIP
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Dgw- 192.168.10.1
Mango-Sw5
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Mango-Sw3
Mango-Sys60
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E0/1
192.168.5.2 /24
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OSPF
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192.168.89.10 /24
Dgw- 192.168.89.1
E0/1
192.168.11.2 /24
E0/0
192.168.12.1 /24
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Mango-Sw6
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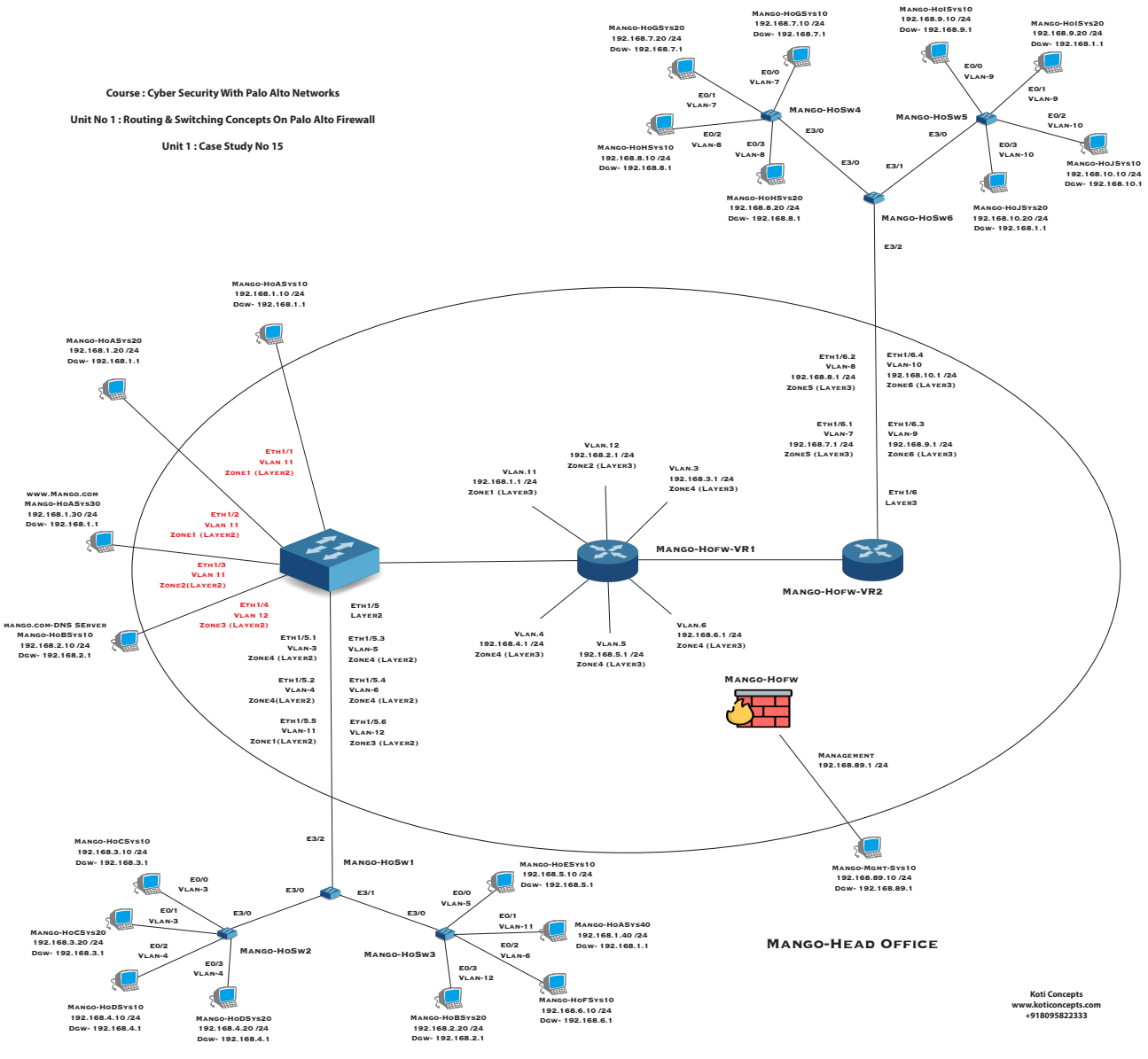
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Unit 1 : Case Study No 15
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E0/1
Vlan-7
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E0/3
Vlan-8
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Dgw- 192.168.9.1
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192.168.9.20 /24
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E0/1
Vlan-9
Mango-HoSw5
E0/2
Vlan-10
E0/3
Vlan-10
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192.168.10.20 /24
Dgw- 192.168.1.1
E3/0
E3/1
Mango-HoSw6
E3/2
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Dgw- 192.168.1.1
Mango-HoASys20
192.168.1.20 /24
Dgw- 192.168.1.1
www.Mango.com
Mango-HoASys30
192.168.1.30 /24
Dgw- 192.168.1.1
mango.com-DNS Server
Mango-HoBSys10
192.168.2.10 /24
Dgw- 192.168.2.1
Eth1/1
Vlan 11
Zone1 (Layer2)
Eth1/2
Vlan 11
Zone1 (Layer2)
Eth1/3
Vlan 11
Zone2(Layer2)
Eth1/4
Vlan 12
Zone3 (Layer2)
Eth1/5
Layer2
Eth1/5.1
Vlan-3
Zone4 (Layer2)
Eth1/5.2
Vlan-4
Zone4(Layer2)
Eth1/5.3
Vlan-5
Zone4 (Layer2)
Eth1/5.4
Vlan-6
Zone4 (Layer2)
Eth1/5.5
Vlan-11
Zone1(Layer2)
Eth1/5.6
Vlan-12
Zone3 (Layer2)
Vlan.11
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Zone1 (Layer3)
Vlan.12
192.168.2.1 /24
Zone2 (Layer3)
Vlan.3
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Zone4 (Layer3)
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Vlan.4
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Zone4 (Layer3)
Vlan.5
192.168.5.1 /24
Zone4 (Layer3)
Vlan.6
192.168.6.1 /24
Zone4 (Layer3)
Eth1/6.2
Vlan-8
192.168.8.1 /24
Zone5 (Layer3)
Eth1/6.4
Vlan-10
192.168.10.1 /24
Zone6 (Layer3)
Eth1/6.1
Vlan-7
192.168.7.1 /24
Zone5 (Layer3)
Eth1/6.3
Vlan-9
192.168.9.1 /24
Zone6 (Layer3)
Eth1/6
Layer3
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Mango-Hofw
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Mango-Mgmt-Sys10
192.168.89.10 /24
Dgw- 192.168.89.1
E3/2
Mango-HoSw1
E3/0
E3/1
E3/0
E3/0
Mango-HoCSys10
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E0/1
Vlan-3
Mango-HoCSys20
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E0/2
Vlan-4
E0/3
Vlan-4
Mango-HoSw2
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Dgw- 192.168.4.1
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E0/1
Vlan-11
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E0/2
Vlan-6
E0/3
Vlan-12
Mango-HoSw3
Mango-HoBSys20
192.168.2.20 /24
Dgw- 192.168.2.1
Mango-HoFSys10
192.168.6.10 /24
Dgw- 192.168.6.1
Mango-Head Office
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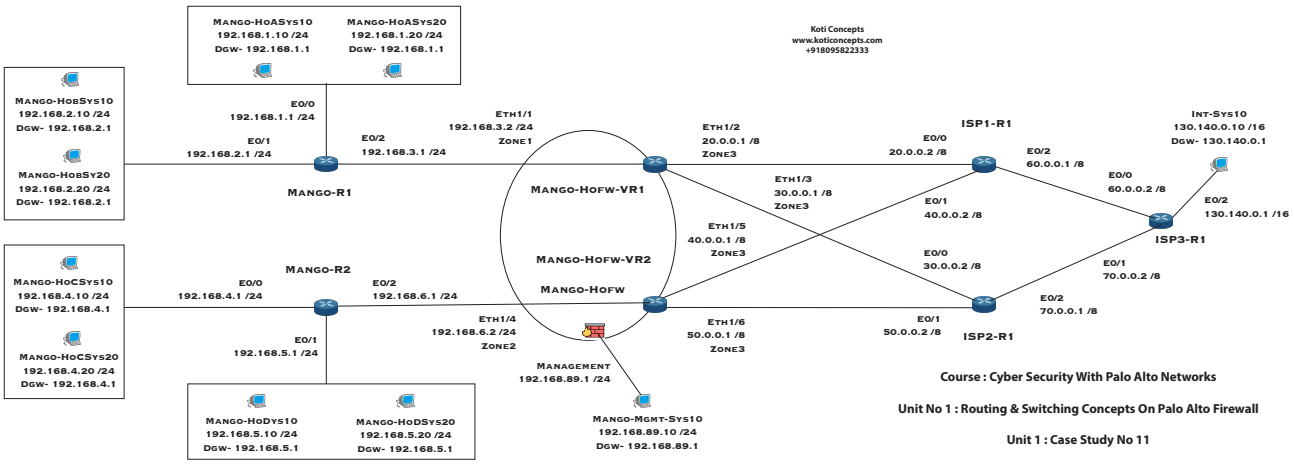
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Dgw- 192.168.1.1
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192.168.2.10 /24
Dgw- 192.168.2.1
Mango-HoBSy20
192.168.2.20 /24
Dgw- 192.168.2.1
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E0/1
192.168.2.1 /24
E0/2
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Eth1/1
192.168.3.2 /24
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Mango-Hofw-VR1
Mango-Hofw-VR2
Mango-Hofw
Eth1/2
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Zone3
Eth1/3
30.0.0.1 /8
Zone3
Eth1/5
40.0.0.1 /8
Zone3
Eth1/4
192.168.6.2 /24
Zone2
Eth1/6
50.0.0.1 /8
Zone3
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192.168.89.10 /24
Dgw- 192.168.89.1
ISP1-R1
E0/0
20.0.0.2 /8
E0/1
40.0.0.2 /8
E0/2
60.0.0.1 /8
ISP2-R1
E0/0
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70.0.0.1 /8
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E0/2
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Int-Sys10
130.140.0.10 /16
Dgw- 130.140.0.1
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192.168.4.10 /24
Dgw- 192.168.4.1
Mango-HoCSys20
192.168.4.20 /24
Dgw- 192.168.4.1
Mango-R2
E0/0
192.168.4.1 /24
E0/1
192.168.5.1 /24
E0/2
192.168.6.1 /24
Mango-HoDSys10
192.168.5.10 /24
Dgw- 192.168.5.1
Mango-HoDSys20
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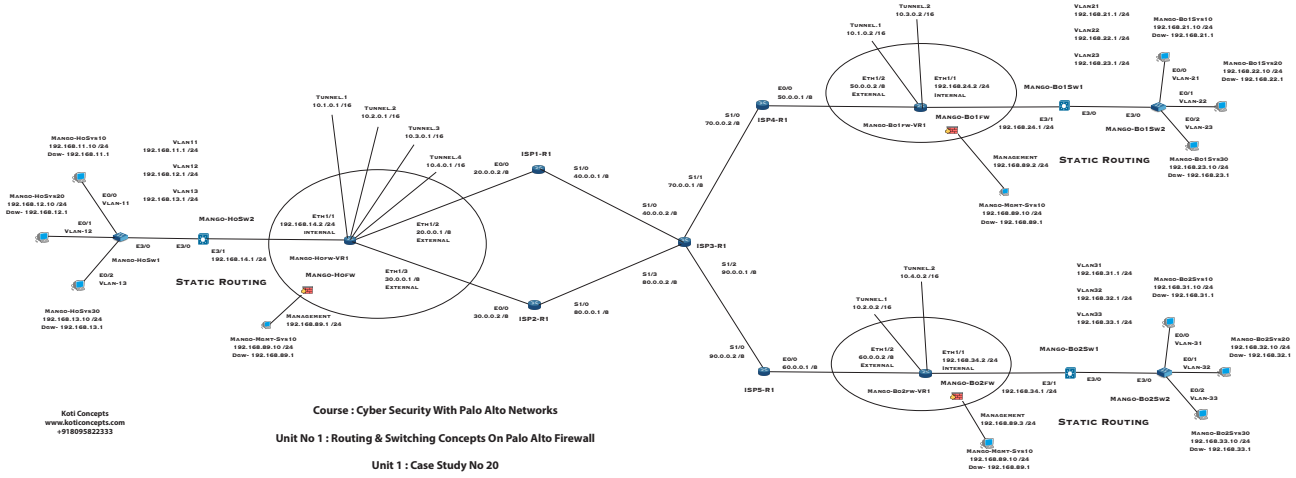
Course : Cyber Security With Palo Alto Networks
Unit No 1 : Routing & Switching Concepts On Palo Alto Firewall
Unit 1 : Case Study No 11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192.168.12.10 /24
Dgw- 192.168.12.1
Mango-HoSys30
192.168.13.10 /24
Dgw- 192.168.13.1
Vlan11
192.168.11.1 /24
Vlan12
192.168.12.1 /24
Vlan13
192.168.13.1 /24
E0/0
Vlan-11
E0/1
Vlan-12
E0/2
Vlan-13
Mango-HoSw1
Mango-HoSw2
E3/0
E3/1
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Tunnel.2
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Tunnel.3
10.3.0.1 /16
Tunnel.4
10.4.0.1 /16
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External
Eth1/3
30.0.0.1 /8
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Mango-Hofw
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Mango-Mgmt-Sys10
192.168.89.10 /24
Dgw- 192.168.89.1
ISP1-R1
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20.0.0.2 /8
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ISP2-R1
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S1/0
80.0.0.1 /8
ISP3-R1
S1/0
40.0.0.2 /8
S1/1
70.0.0.1 /8
S1/2
90.0.0.1 /8
S1/3
80.0.0.2 /8
ISP4-R1
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50.0.0.1 /8
S1/0
70.0.0.2 /8
ISP5-R1
E0/0
60.0.0.1 /8
S1/0
90.0.0.2 /8
Tunnel.1
10.1.0.2 /16
Tunnel.2
10.3.0.2 /16
Eth1/2
50.0.0.2 /8
External
Eth1/1
192.168.24.2 /24
Internal
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Mango-Bo1fw
Mango-Bo1Sw1
E3/0
E3/1
192.168.24.1 /24
Management
192.168.89.2 /24
Mango-Mgmt-Sys10
192.168.89.10 /24
Dgw- 192.168.89.1
Vlan21
192.168.21.1 /24
Vlan22
192.168.22.1 /24
Vlan23
192.168.23.1 /24
Mango-Bo1Sys10
192.168.21.10 /24
Dgw- 192.168.21.1
Mango-Bo1Sys20
192.168.22.10 /24
Dgw- 192.168.22.1
Mango-Bo1Sys30
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Dgw- 192.168.23.1
E0/0
Vlan-21
E0/1
Vlan-22
E0/2
Vlan-23
Mango-Bo1Sw2
Static Routing
Tunnel.1
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Tunnel.2
10.4.0.2 /16
Eth1/2
60.0.0.2 /8
External
Eth1/1
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Mango-Bo2fw
Mango-Bo2Sw1
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E3/1
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192.168.89.3 /24
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192.168.89.10 /24
Dgw- 192.168.89.1
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Vlan33
192.168.33.1 /24
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Dgw- 192.168.31.1
Mango-Bo2Sys20
192.168.32.10 /24
Dgw- 192.168.32.1
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Dgw- 192.168.33.1
E0/0
Vlan-31
E0/1
Vlan-32
E0/2
Vlan-33
Mango-Bo2Sw2
Static Routing
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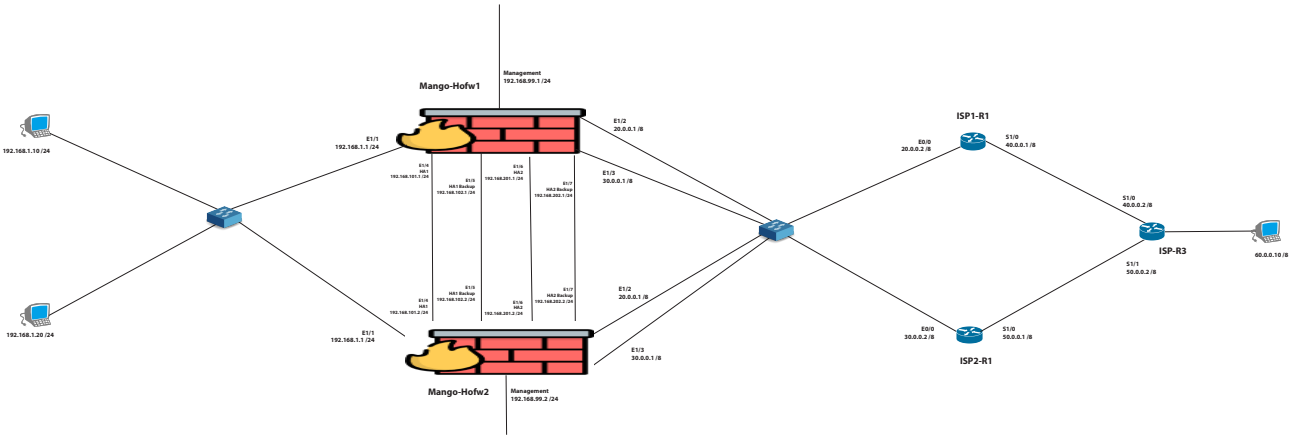
Unit No 1 : Routing & Switching Concepts On Palo Alto Firewall
Unit 1 : Case Study No 20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E1/3
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192.168.1.10 /24
192.168.1.20 /24
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Management
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S1/0
40.0.0.1 /8
S1/0
40.0.0.2 /8
ISP-R3
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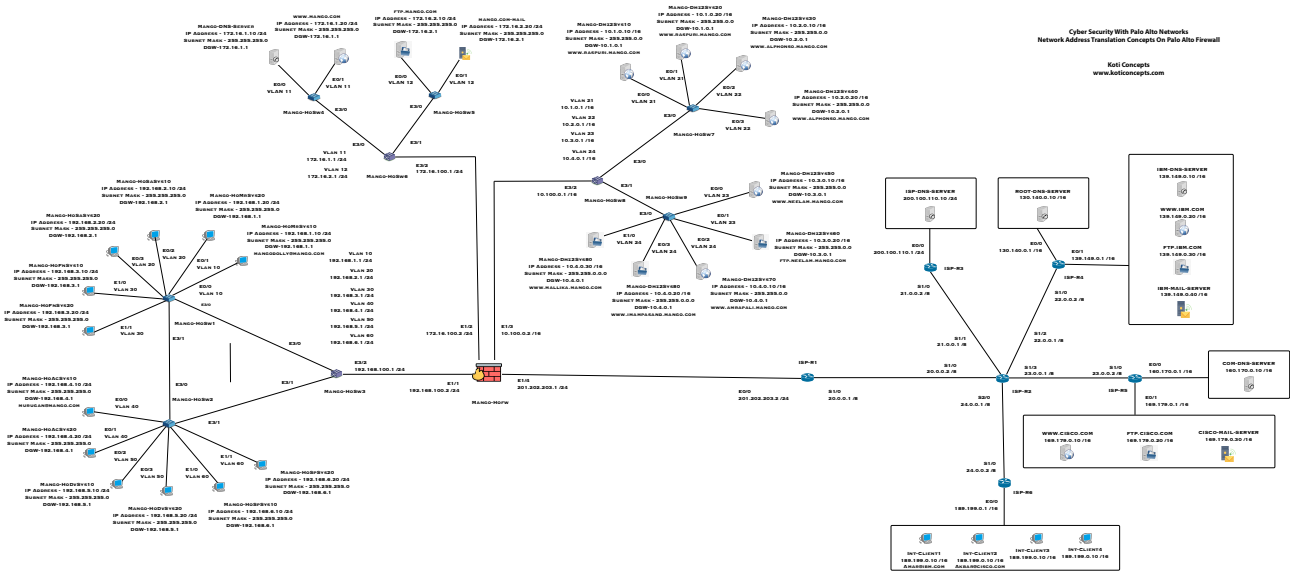


Profile of the Trainer

Koti started teaching computer networking courses from 1998. He started an organization called “Sans Bound Solutions Private Limited”, at Chennai, India in 1999. He was a very popular trainer for CCNA and Network Security courses in Chennai. His classes attracted around 130 students in each batch. Sans Bound had a very large lab setup with around 700 routers, 800 systems and other equipment for students to practice on the lab case studies.

While he was teaching at Sansbound, he used to also conduct very high-end workshops on Routing, Switching, Network Security. His two-day workshops conducted at various places in India and abroad used to attract more than 200 students. When Koti conducted a workshop on Network security at Chennai trade center around 2000 students participated!

He started another organization by name “Koti Concepts” around 8 years back at Bangalore, to teach high-end courses in networking.

The courses he taught include,

CCNA, CCNP, CCIE
Network security with firewalls

Checkpoint firewall

Palo Alto Firewall

ASA Firewall
Juniper firewall
F5 Load Balancer
TCP/IP Protocols
BGP/MPLS

Koti also conducts corporate training to various organisations

Koti Website

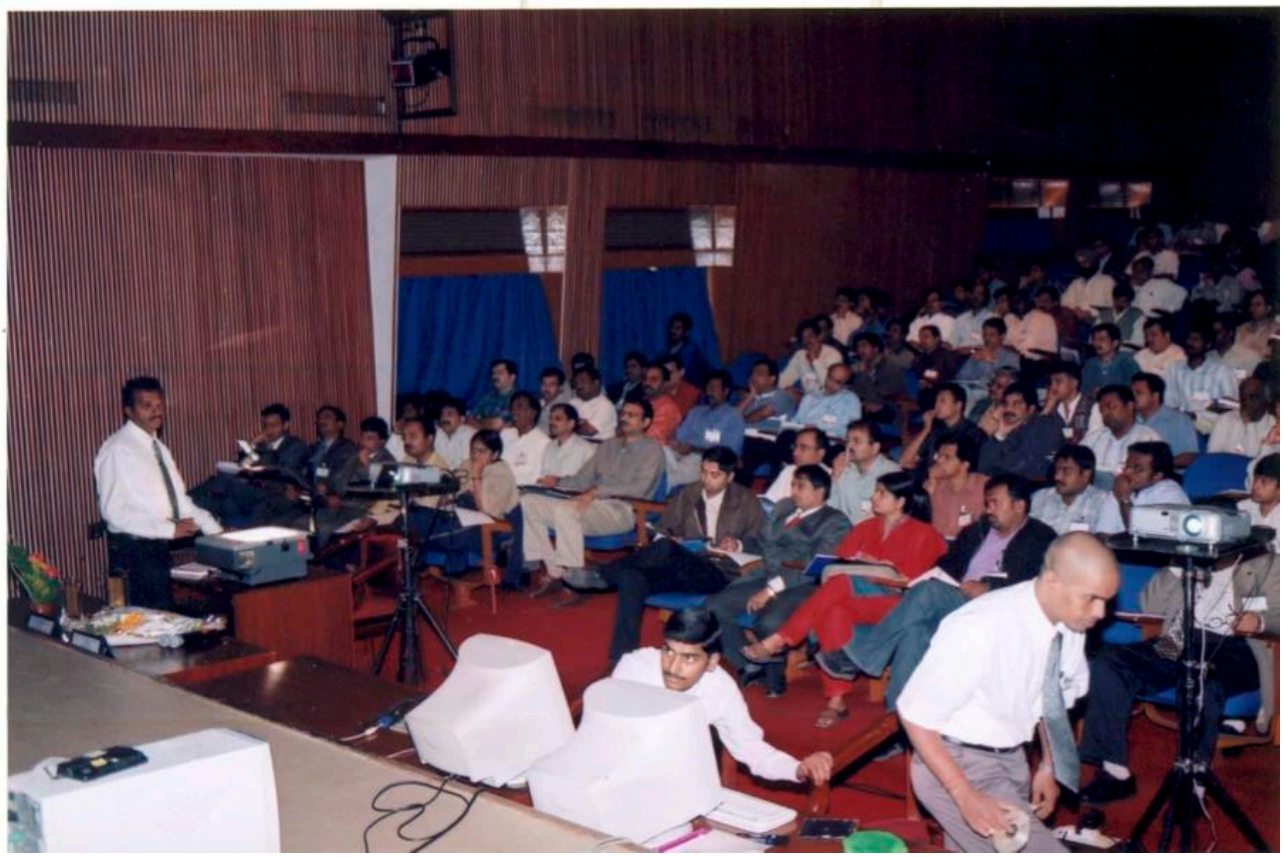
The classroom recordings of these classes are made available for access to the students on the website, www.koticoncepts.com

Photo Gallery

Network Security Workshop Conducted at Chennai

Network Security Workshop Conducted at Bangalore


WORKSHOP ON NETWORK SECURITY
BY Mr. KOTI REDDY
Canon




Media Partner
Network
Computing

Network Security workshop conducted for Railway Officials at Chennai

Network Security Workshop Conducted at Chartered Accountants Institute, Chennai


INDIA

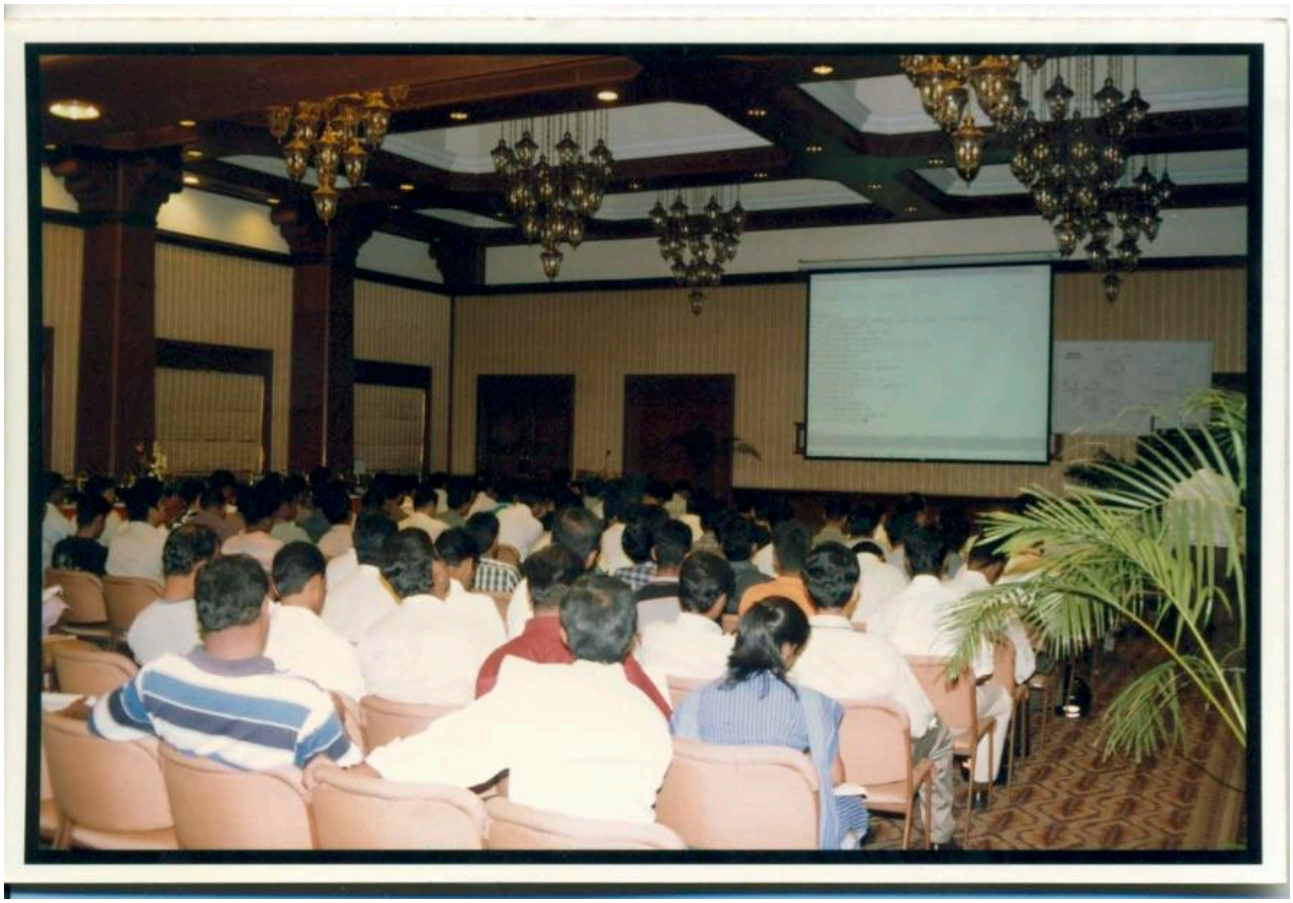

THE INSTITUTE OF CHARTERED ACCOUNTANTS OF INDIA

Workshop on Cyber Security conducted at Chennai Trade Center

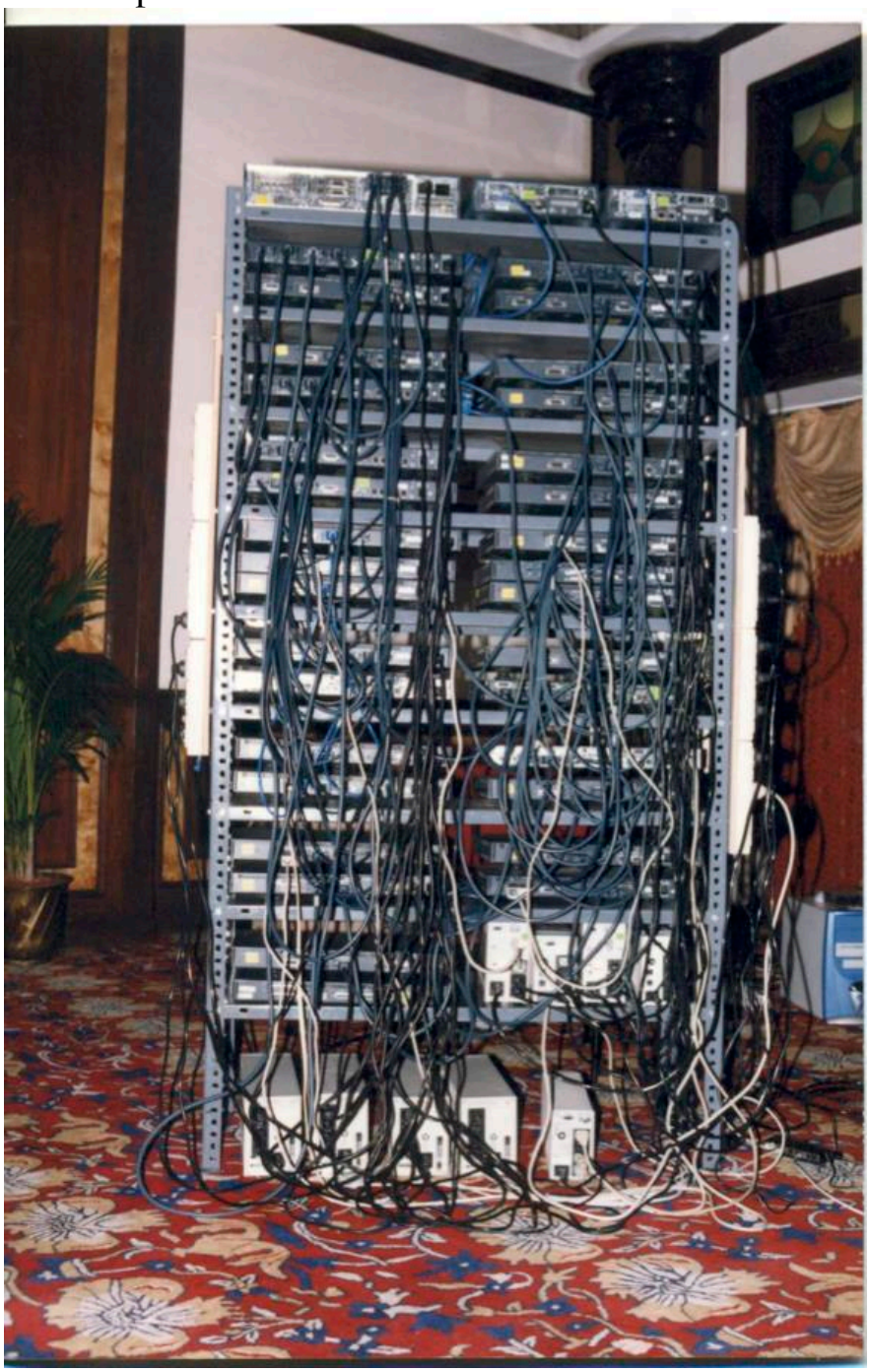

DIGITAL CLASS

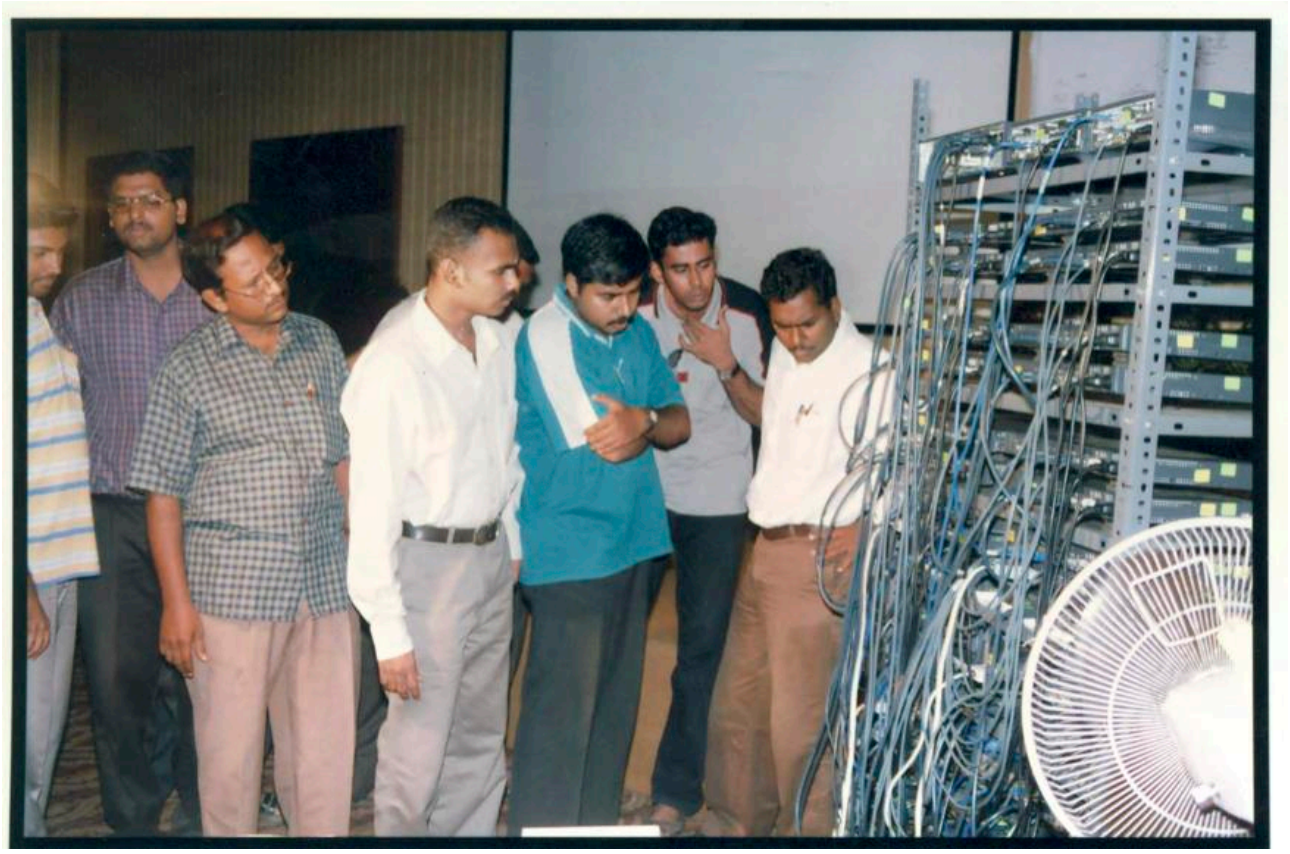
Workshop on Ethical Hacking conducted at Chennai

Workshop on Routing Protocols conducted at Chennai

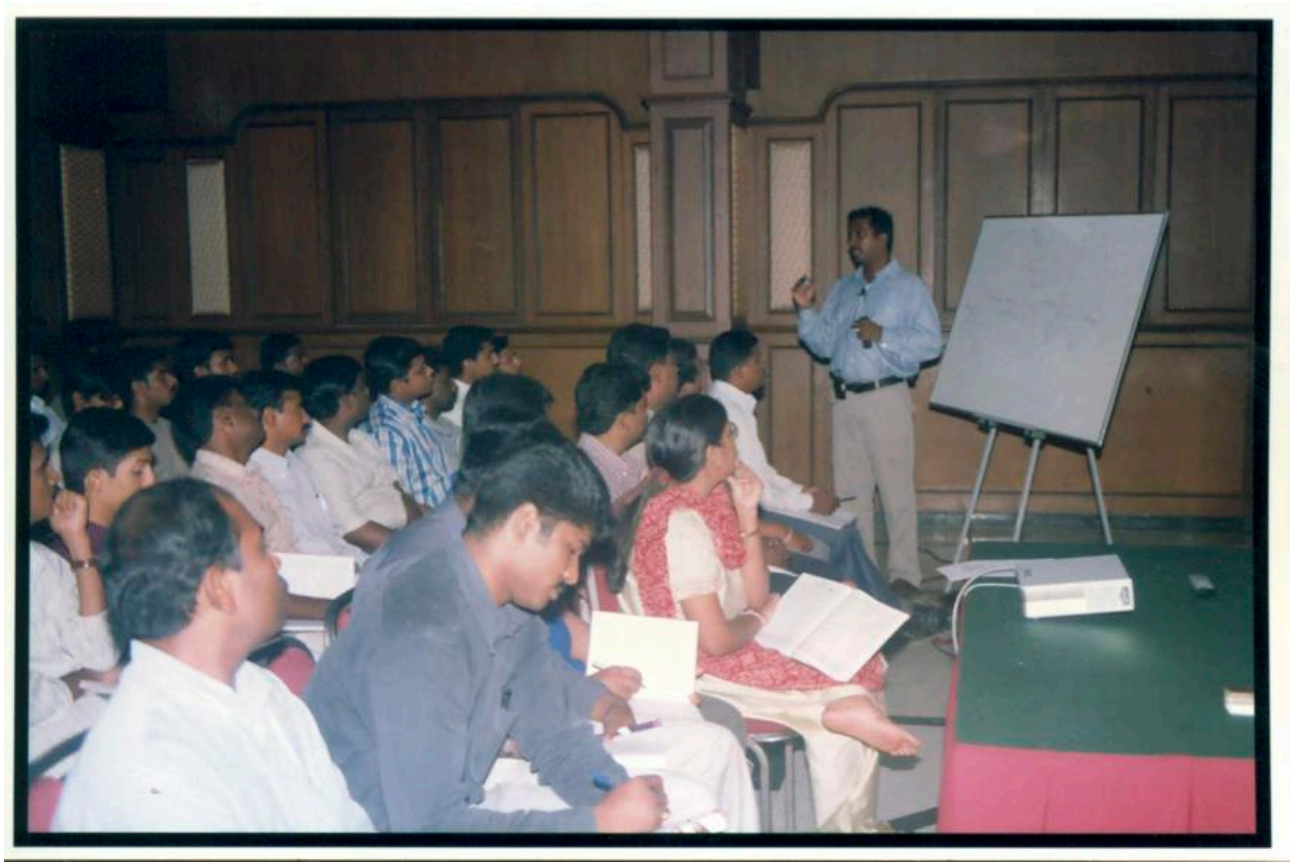


Lab setup with routers on the Venue



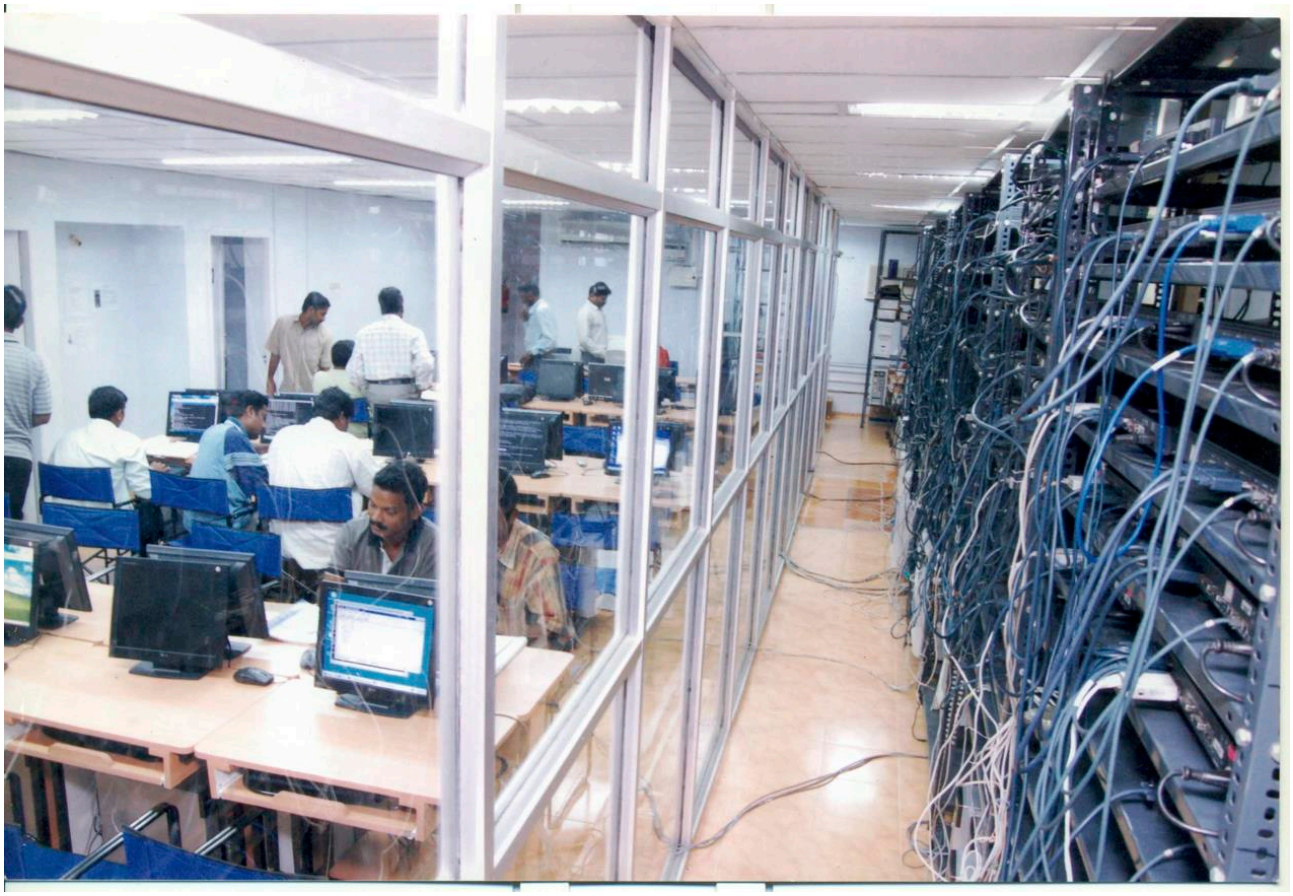


Workshop on Name Resolution conducted at Chennai



Workshop on Network security Conducted at Chennai

Routing and Switching Lab




ECURITY CONTROLS FOR COUNT
Sniffers
tools


Cell Phones in Silent Mode

Radia Perlman was invited as chief guest at “International Security Conference” at SRM University, Chennai, where Koti conducted a two-day workshop on Network Security.

He always go back to the old memories whenever he teaches STP protocol, designed by her.

With Radia Perlman and others at SRM University, Chennai