



Asia Pacific, Japan & Greater China
Student Technology Forum
10th December 2010



Brought to you by

Technical Advocacy Team



Cisco | Networking Academy®
Mind Wide Open™



Australia



New Zealand



Fiji



Tonga



Samoa



India



Sri Lanka



Maldives



Bangladesh



Papua New Guinea



Bhutan



Nepal



China



Hong Kong



Taiwan



Macau



Mongolia



Korea



Singapore



Cambodia



Malaysia



Indonesia



Thailand



Laos



Vietnam



Philippines



Japan

WELCOME!!!



Agenda

- Who are we?
- PT: Branch, HQ, ISP & home office networks, how do we put them together?
- It's OK to use wrong cable!
- Super cool macros in IOS
- “Open sesame” - you can catch more than 40 thieves
- Recording for previous Student Technology Forum
- Feedback & Evaluation



Asia Pacific, Japan & Greater China TA Team



Gary Coman
Director, Technical Advocacy
World Wide



John Lim
CCIE #2977
Senior Manager, Technical Advocacy
Asia Pacific, Japan & Greater China



Eric Kwok
Technical Manager
Hong Kong



Liu Kang
CCIE #17564
Technical Manager
China



Ananth B. S.
Technical Manager
India





PT: Branch, HQ, ISP &
Home office networks,
how do we put them
together?



John Lim

CCIE #2977

**Senior Manager, Technical Advocacy
Asia Pacific, Japan & Greater China**

Cisco | Networking Academy®
Mind Wide Open™



Agenda

- What is new in PT5.3?
- Master Topology
- Tip of the day
- Demo
 1. Explore the various networks
 2. Voice calls
 3. FTP
 4. Email





Packet Tracer 5.3 Protocol Support



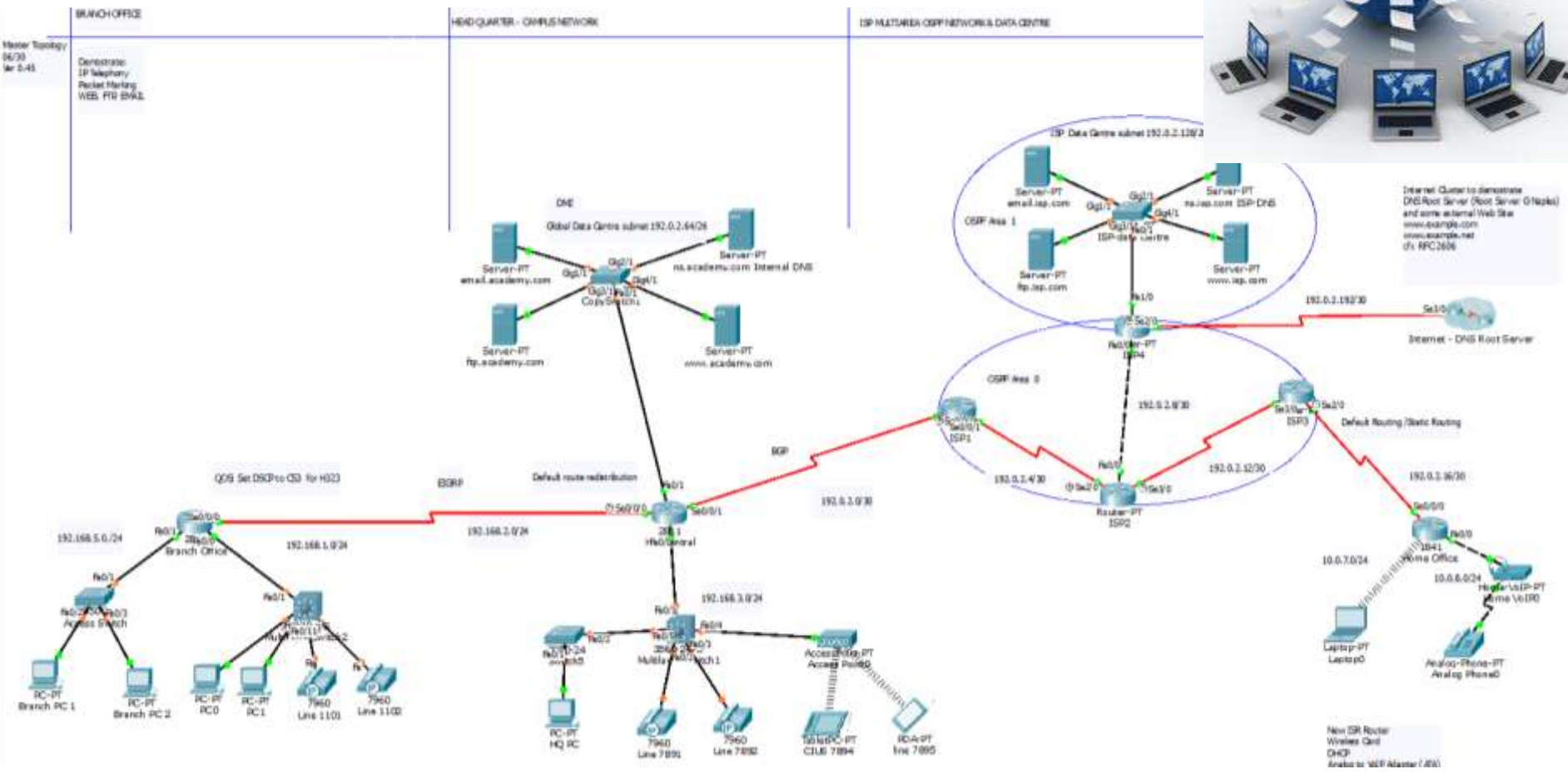
- Application
FTP, SMTP, POP3, HTTP, TFTP, Telnet, SSH, DNS, DHCP, NTP, SNMP, AAA, ISR VOIP, SCCP config and calls ISR command support, Call Manager Express
- Transport
TCP and UDP, TCP Nagle Algorithm & IP Fragmentation, RTP
- Network
BGP, IPv4, ICMP, ARP, IPv6, ICMPv6, IPsec, RIPv1/v2/ng, Multi-Area OSPF, EIGRP, Static Routing, Route Redistribution, Multilayer Switching, L3 QoS, NAT, CBAL, Zone-based policy firewall and Intrusion Protection System on the ISR, GRE VPN, IPsec VPN
- Network Access/Interface
Ethernet (802.3), 802.11, HDLC, Frame Relay, PPP, PPPoE, STP, RSTP, VTP, DTP, CDP, 802.1q, PAgP, L2 QoS, SLARP, Simple WEP, WPA, EAP

*New in PT 5.3

*Enhanced in PT 5.3



Master Topology

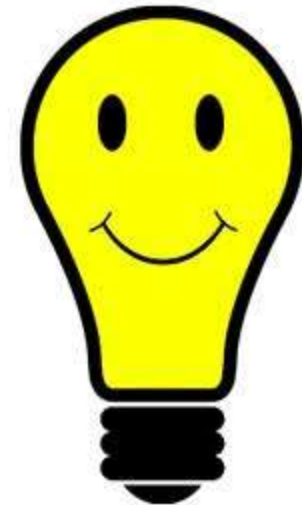




Tip of the day!



by default
in
Packet Tracer!





Summary

- What is new in PT5.3?
- Master Topology
- Tip of the day
- Demo
 1. Explore the various networks
 2. Voice calls
 3. FTP
 4. Email



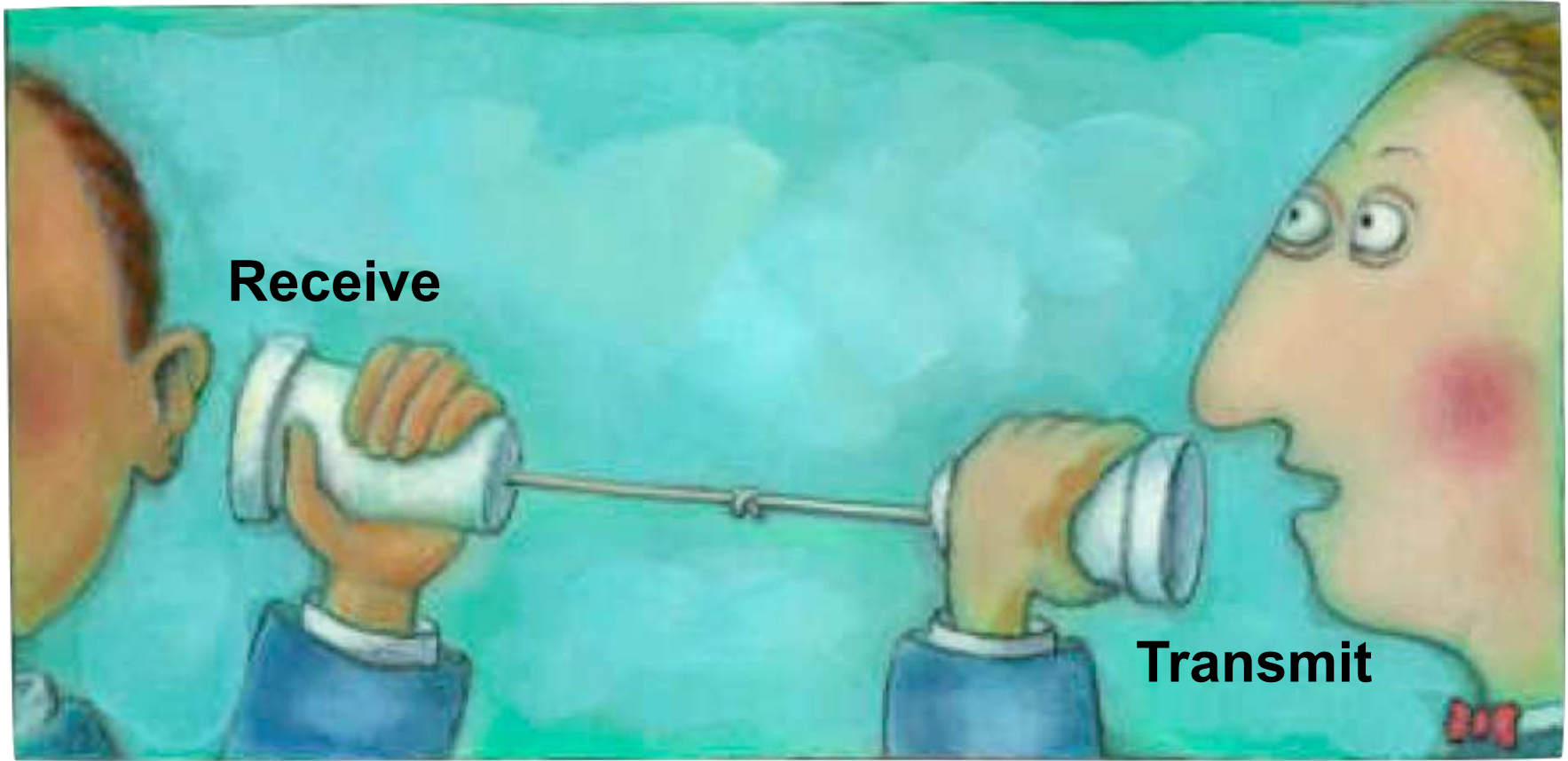


It's OK to use wrong cable!



Eric Kwok
Technical Manager, Technical Advocacy
Hong Kong

Cisco | Networking Academy®
Mind Wide Open™







MDI - Media Dependent Interface

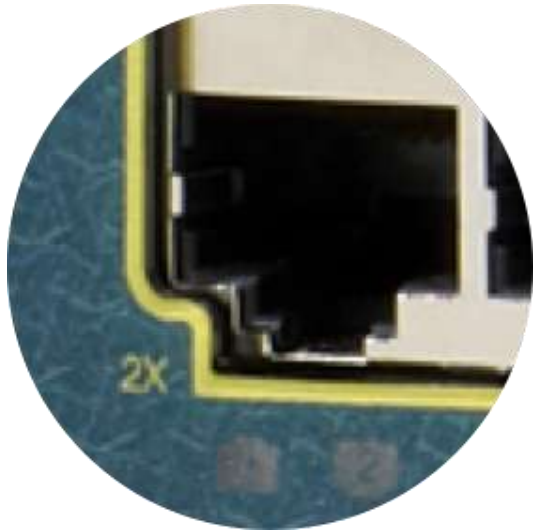


MDI

MDI



Crossover Cable



MDIX - Media Dependent Interface with Crossover

X = Internal Crossover

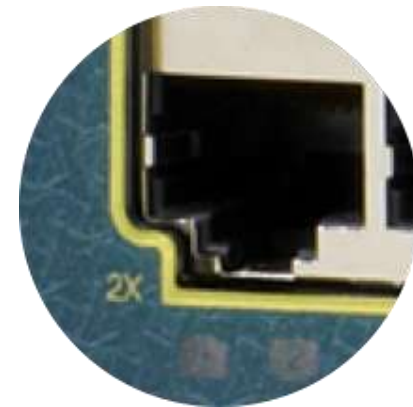
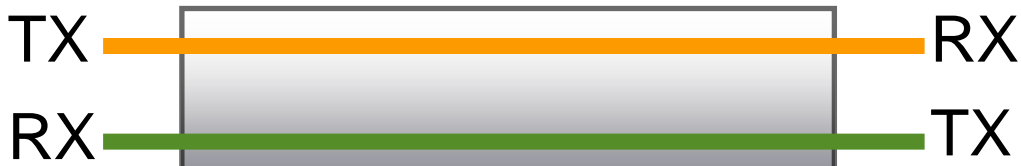




MDI

Straight Through Cable

MDIX

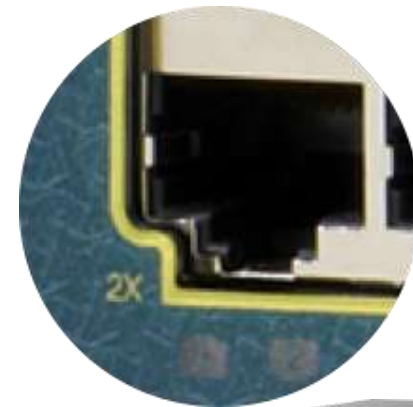
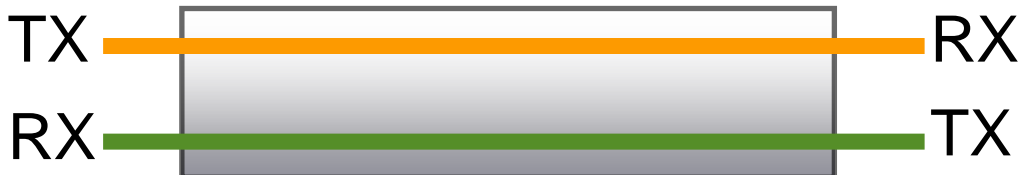




MDI

Straight Through Cable

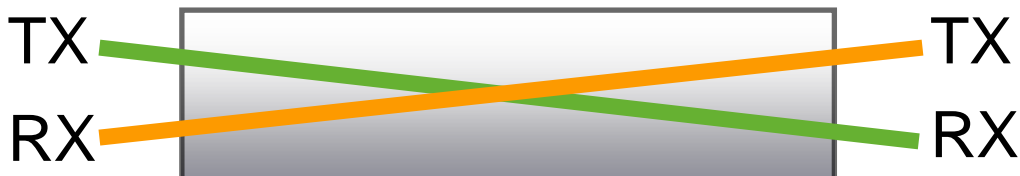
MDIX



MDI

Crossover Cable

MDI





MDI



MDI



MDIX

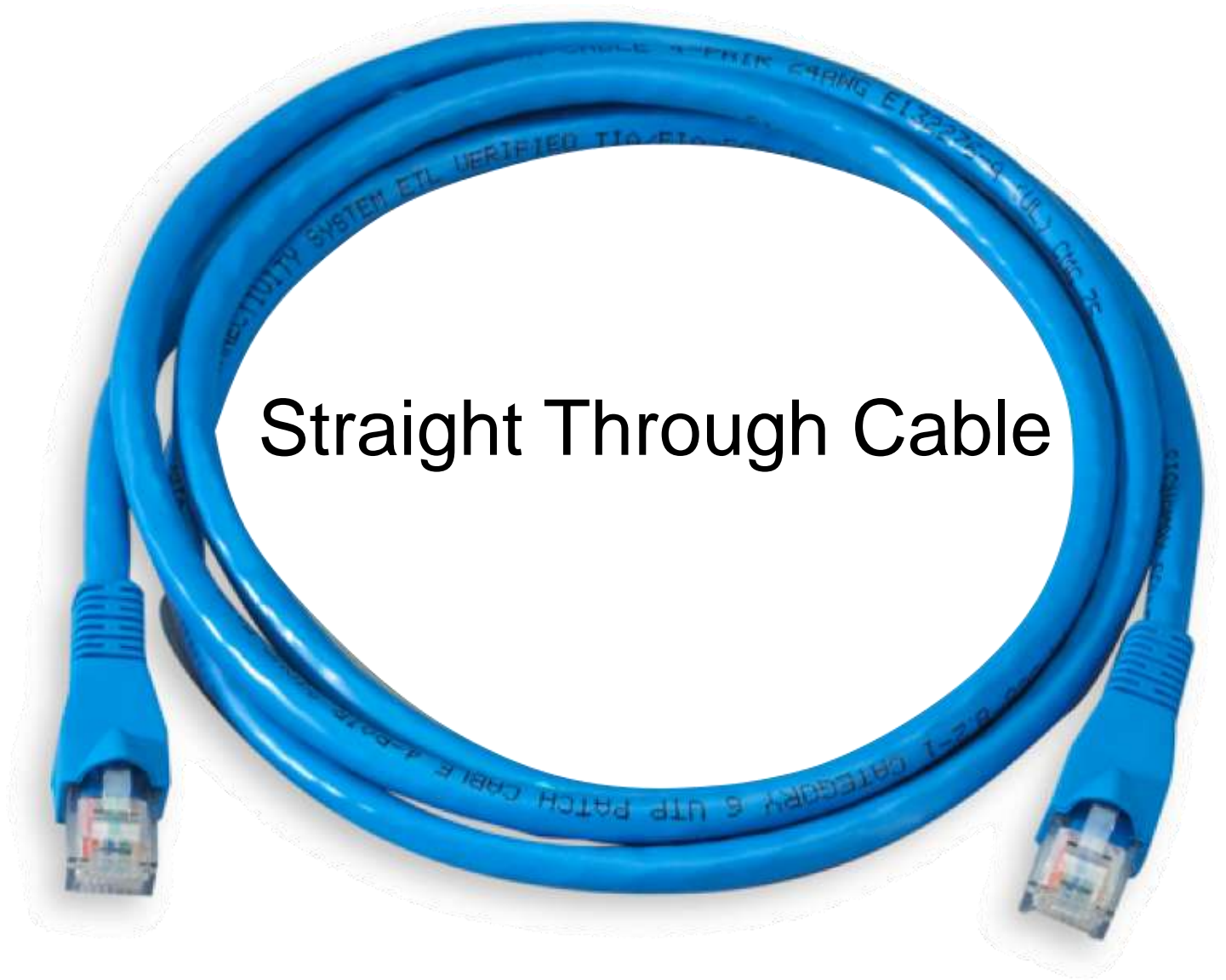




What IF?

No right cable?

Non technical person?



Straight Through Cable



Can I connect 2 PCs with
a straight through cable?



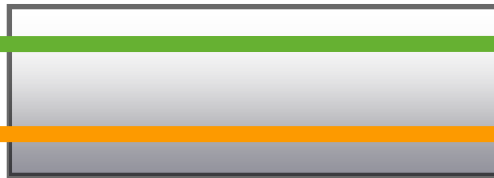


Auto-MDIX

MDI



TX
RX



TX
RX



TX
RX

MDI > MDIX





Automatic Media-Dependent Interface Crossover (MDIX) automatically adjusts transmit and receive pairs if an incorrect cable type (crossover or straight-through) is installed.



Command

- Switch# configure terminal
- Switch(config)# interface gigabiteth 1/0/1
- Switch(config-if)# speed auto
- Switch(config-if)# duplex auto
- Switch(config-if)# mdix auto
- Switch(config-if)# end

- Switch#show controllers ethernet-controller gigabitEthernet 1/0/1 phy | i MDIX
- Auto-MDIX : On



Demo



Super cool macros in IOS



Ananth B.S

**Technical Manager, Technical Advocacy
India**

Cisco | Networking Academy®
Mind Wide Open™



Macros

- Macros are like templates
- Macros are set of CLI commands
- When you apply a macro on an interface ,all those commands are executed



Uses of Macro

- Imagine you have 100 access layer switches
- 80% of the configuration is the same

2 ways to configure

- 1) Go to each switch and run the same command on all the interfaces
- 2) Go to each switch and run a macro



Types of Macros

- System macros –

Show parser macro

Custom macros

Step 1

Go to global config mode

Step 2

Create a macro

macro name <name of the macro>

For example macro name createvlan



Types of Macro

- Step 3

Enter the commands

Please note – No help is available
and be careful of typos

Step 4

End the macro using @ symbol

Step 5

Go to the interface and execute the macro
macro apply <name of the macro>



Parameter passing

- You want to pass a parameter at the time of applying the macro on to the interface
- You have to use parameter passing
- Example – Say you want a macro for creating Vlan

Step 1: Macro name createvlan

You enter the macro config mode

Step 2: In the macro config mode enter the commands to create vlan

Switchport mode access

Switchport access \$vlannumber



Parameter Passing Continued

- Step 3 - Go to interface where you want to apply the macro
- Step 4

Apply the macro and pass the parameter
macro apply createvlan \$vlannumber 100



Some important points

- Modifying a macro is NOT possible
- Creating another macro with same name will overwrite the previous macro
- Use Sh run or Sh parser macro with filters to see the macro
- Change in macro will not alter the interface automatically ; You have to reapply



Commands

- macro name <name of the macro>
- @ -End of the macro
- default int fa 1/0 – to bring the interface to factory settings
- macro apply <name of the macro>
- macro apply <name of the macro> <name of the variable> value
- Sh run
- Sh parser macro



“Open sesame”
- you can catch more than 40 thieves



Liu Kang

**Technical Manager, Technical Advocacy
Beijing, China**

Cisco | Networking Academy®
Mind Wide Open™

ACL

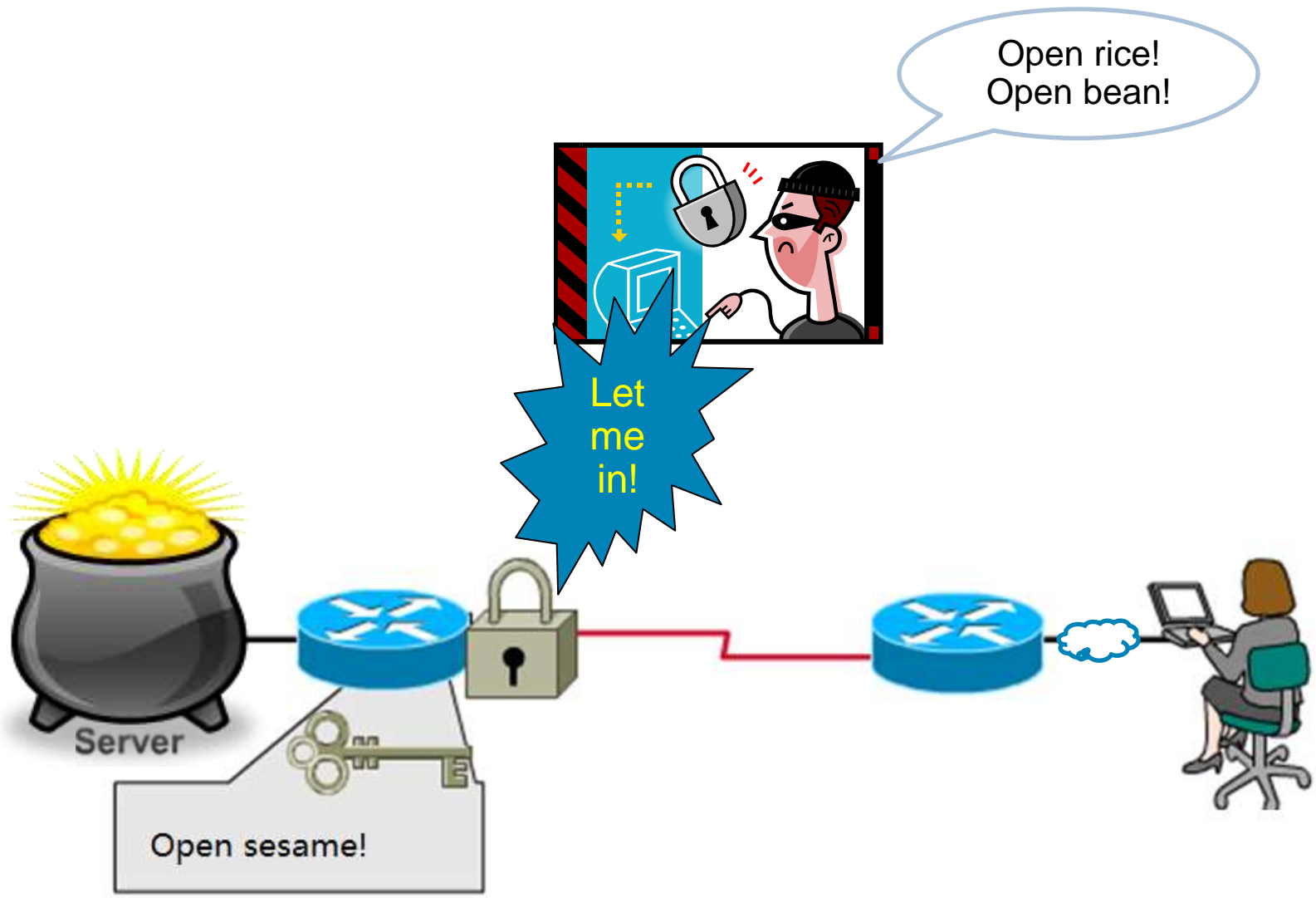


With two interfaces and three protocols running, this router could have a total of 12 separate ACLs applied.

The three Ps for using ACLs

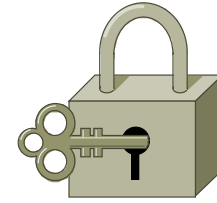
You can only have one ACL per protocol, per interface, and per direction:

- One ACL per protocol (e.g., IP or IPX)
- One ACL per interface (e.g., FastEthernet0/0)
- One ACL per direction (i.e., IN or OUT)

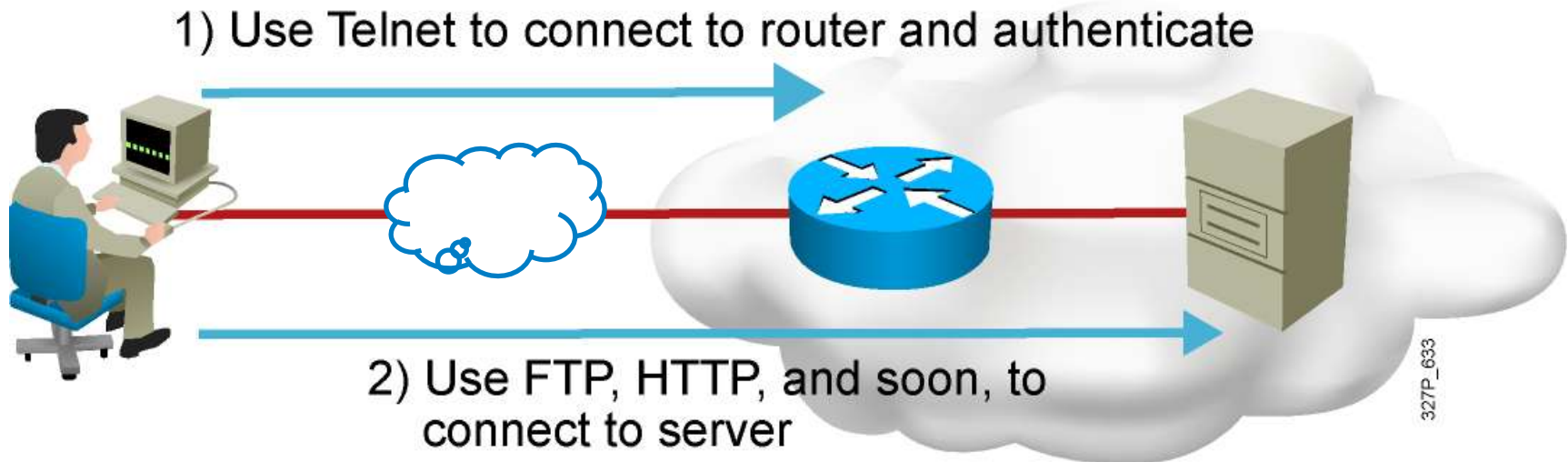


ACL: Manage IP traffic by filtering packets

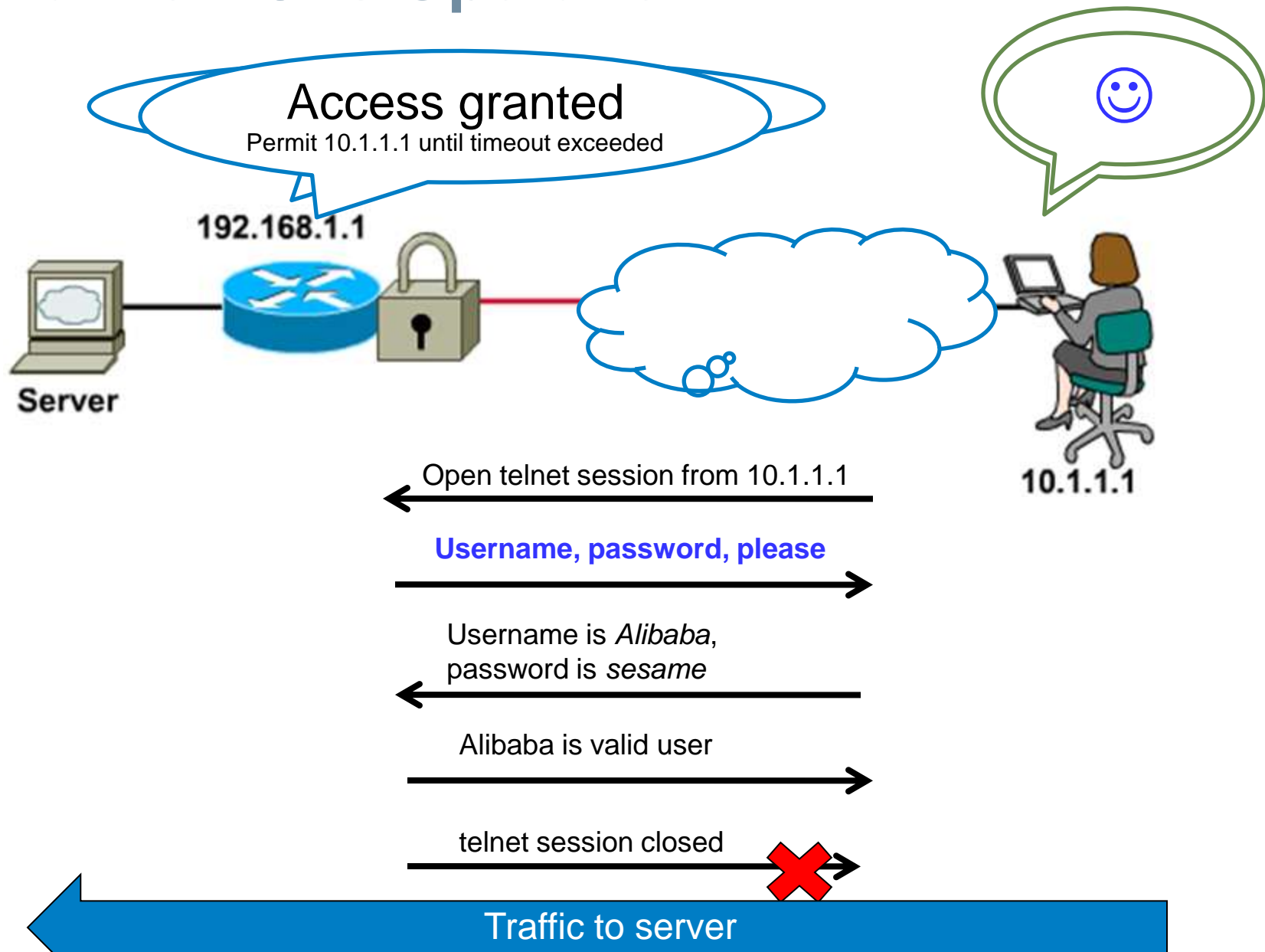
Dynamic ACLs: Lock-and-Key



- Lock-and-key is a Cisco IOS feature that enables users to temporarily open a hole in a firewall without compromising other configured security restrictions.



Dynamic ACLs Operation



Configuring Dynamic ACLs

- Configure the extended ACL to allow telnet
- Configure a dynamic ACL statement after the telnet statement

```
Router(config)# access-list dynamic name [ timeout minutes ]  
deny | permit protocol s-address s-wildcard d-address d-wildcard
```

–If timeout is not configure, “door” will open until manually deleted

- Apply the ACL to interface

NOTE:

- 1. Order of ACL statements**
- 2. Only for extended ACL**
- 3. Only one dynamic entry can be configured per ACL**

Configuring Dynamic ACLs

- Local authentication

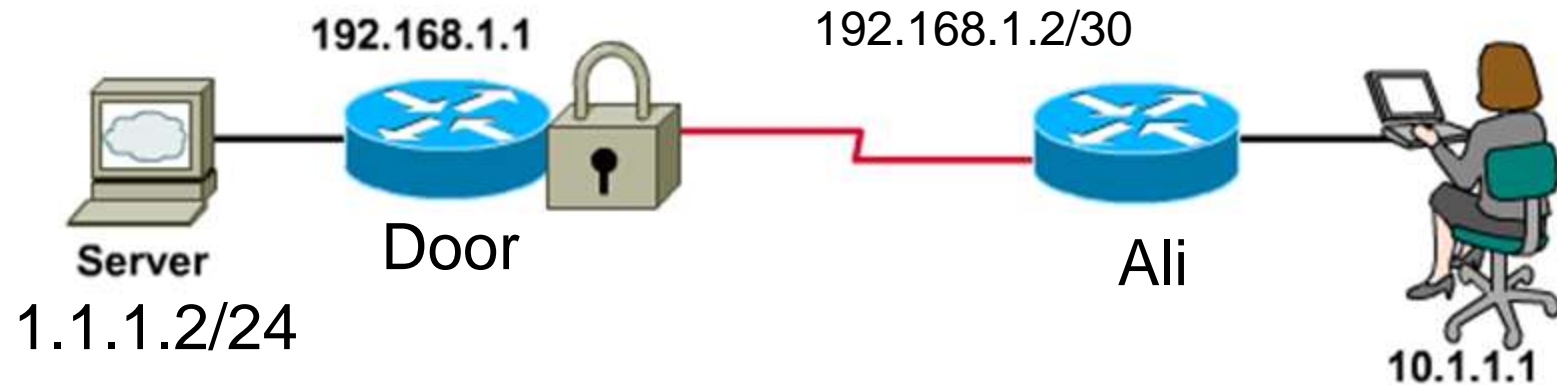
```
Router(config)# username name password password  
Router(config)# line vty 0 4  
Router(config-line)# login local
```

- Enable the router to create a temporary access list entry in a dynamic access list

```
Router#access-enable [host] [timeout minutes]  
or  
Router(config-line)# autocommand access-enable [host]  
[timeout minutes]
```

- If you do not specify **host**, the "hole" will be created for the entire network or subnet
- The **timeout** is the idle time and cannot be greater than absolute timeout configured in the dynamic ACL

Dynamic ACLs Configuration Demo



- Make sure connective is OK, before applying ACL

Dynamic ACLs Configuration Example

```
username alibaba password sesame
```

```
access-list 100 permit tcp any host 192.168.1.1 eq telnet  
access-list 100 permit eigrp any any  
access-list 100 dynamic KEY permit ip any host 1.1.1.2
```

```
interface x
```

```
ip access-group 100 in
```

```
line vty 0 4
```

```
login local
```

```
autocommand access-enable host timeout 10
```

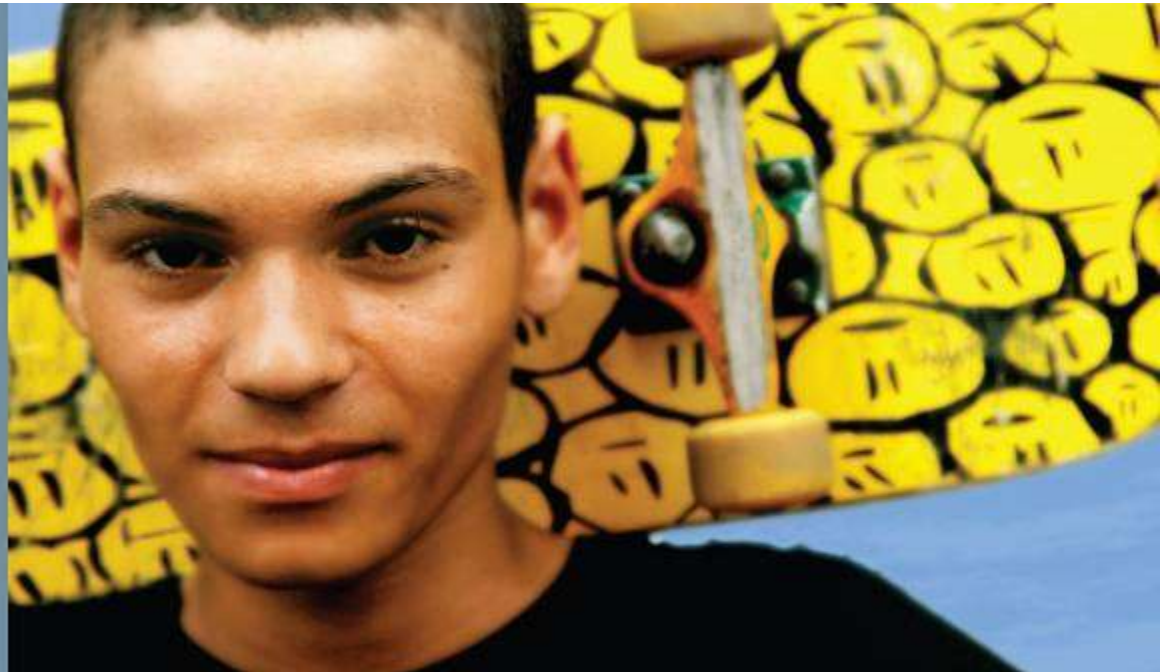
References

- [Configuring Lock-and-Key Security \(Dynamic Access Lists\)](#)

Curriculum reference

- CCNA exploration 4
 - Chapter 5: 5.4.2 Dynamic ACLs

Recording for APJ
Student Technology
Forum is available!



John Lim

CCIE #2977

**Senior Manager, Technical Advocacy
Asia Pacific & Japan**



Recording for previous Student Technology Forum

Alumni advantage



- The Cisco Learning Network
- The interview
- UNESCO work for yourself
- technical skill
- business skills

Skills | Student Webinars |

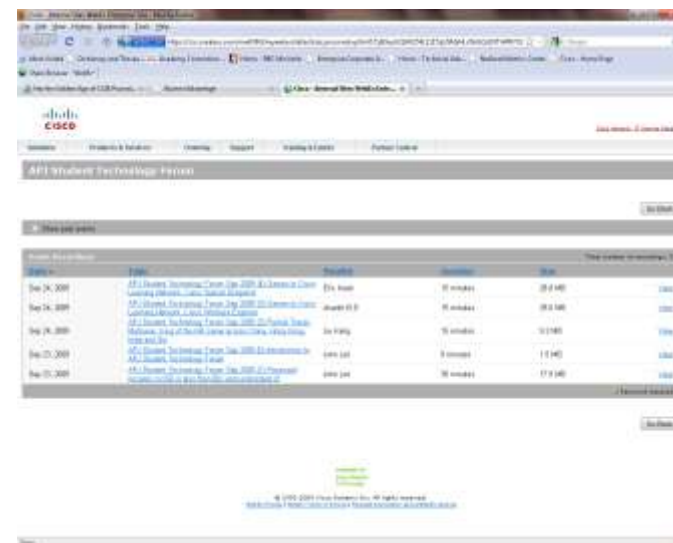
Listen to the experts - Student Webinars

Topic & Description

Asia Pacific & Japan Student Technology Forum (Sep 09)

Password recovery in ISR in less than 60 sec & understand it!
 PT: Multiuser, King of the Hill Game across China, Hong Kong, India and Singapore
 NetSpace game
 Games In Cisco Learning Network
 CCNA Quiz winner

Presenters: The Cisco Networking Academy Technical Team



- ❖ http://www.alumni-advantage.com/skills/technical/Student_Webinars.html
- ❖ 1000+ students from 27 different countries joined previous online session!