

廈門大學



信息学院软件工程系

《计算机网络》实验报告

题 目 实验五 CISCO IOS 路由器基本配置

班 级 软件工程 2018 级 1 班

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实验时间 2020 年 4 月 19 日

2020 年 4 月 19 日

1 实验目的

使用 Router eSIM v1.1 模拟器来模拟路由器的配置环境；使用 CCNA Network Visualizer 6.0 配置静态路由、动态路由和交换机端口的 VLAN（虚拟局域网）。







2 实验环境

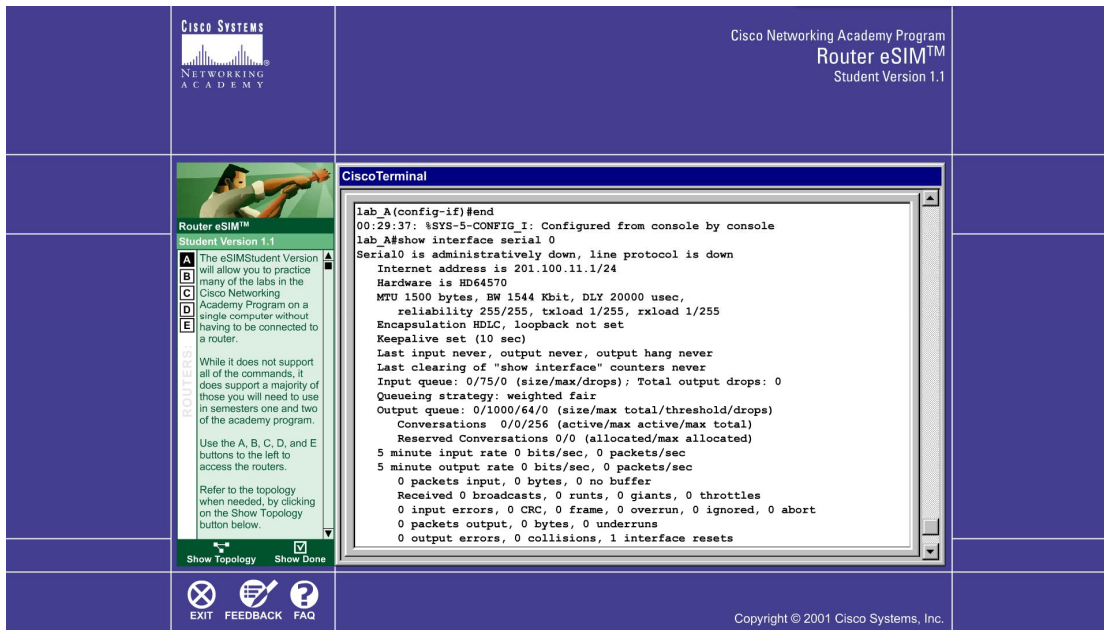
Windows10

Router eSIM v1.1

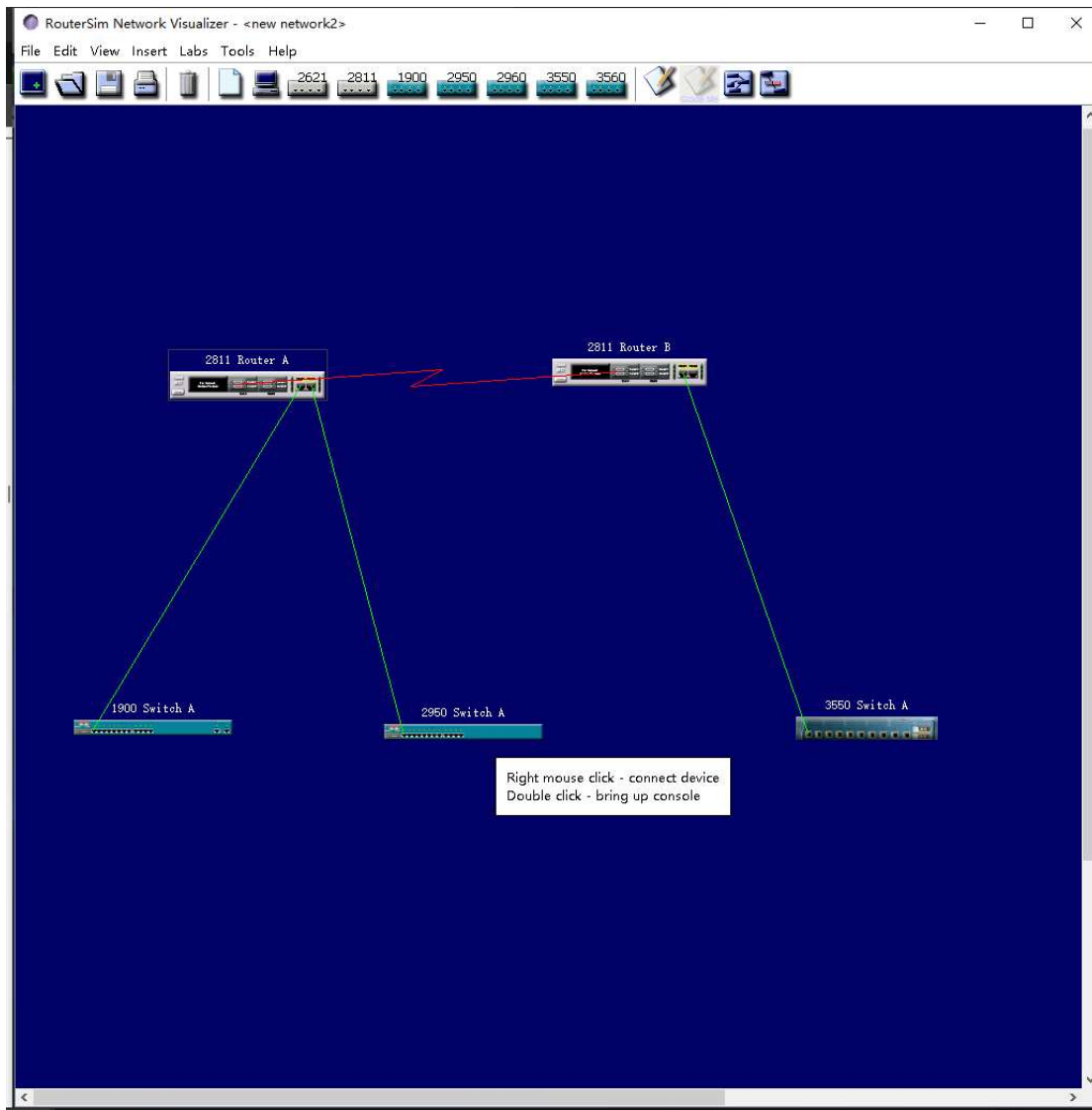
CCNA Network Visualizer 6.0

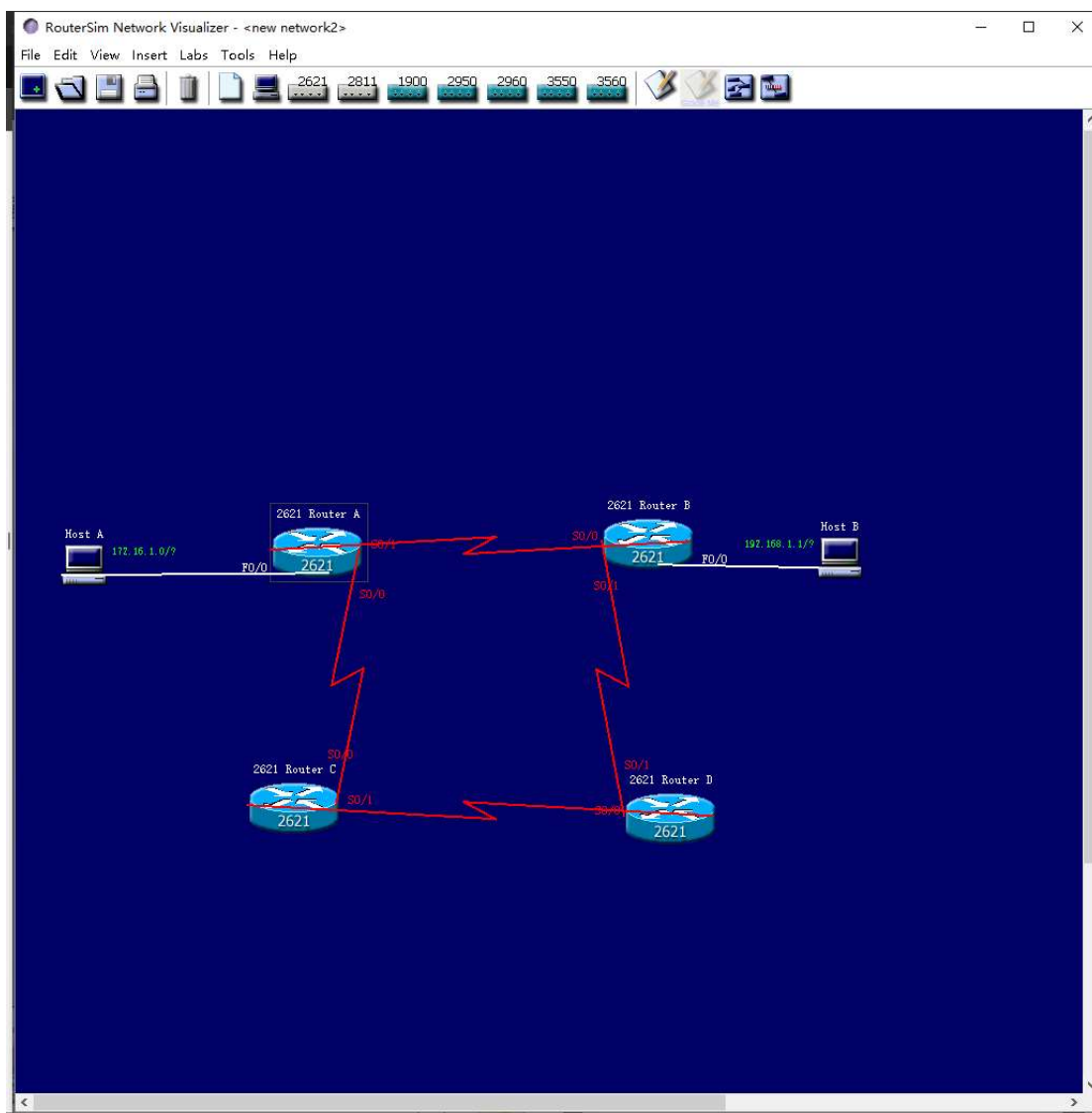
3 实验结果

		Cisco Networking Academy Program Router eSIM™ Student Version 1.1	
 Router eSIM™ Student Version 1.1 <p>A The eSIMStudent Version will allow you to practice many of the labs in the Cisco Networking Academy Program on a single computer without having to be connected to a router.</p> <p>B While it does not support all of the commands, it does support a majority of those you will need to use in semesters one and two of the academy program.</p> <p>C Use the A, B, C, D, and E buttons to the left to access the routers.</p> <p>D Refer to the topology when needed, by clicking on the Show Topology button below.</p> <p>E</p> <p>ROUTERS:</p> <p>Show Topology Show Done</p>		<p>CiscoTerminal</p> <pre>Router(config-if)#end 00:07:37: %SYS-5-CONFIG_I: Configured from console by console Router#show running-config Building configuration... Current configuration: ! version 12.0 service timestamps debug uptime service timestamps log uptime no service password-encryption ! hostname Router ! enable password ! ! ip subnet-zero ! ! ! interface Ethernet0 no ip address shutdown</pre>	
		Copyright © 2001 Cisco Systems, Inc.	
		Cisco Networking Academy Program Router eSIM™ Student Version 1.1	
 Router eSIM™ Student Version 1.1 <p>A The eSIMStudent Version will allow you to practice many of the labs in the Cisco Networking Academy Program on a single computer without having to be connected to a router.</p> <p>B While it does not support all of the commands, it does support a majority of those you will need to use in semesters one and two of the academy program.</p> <p>C Use the A, B, C, D, and E buttons to the left to access the routers.</p> <p>D Refer to the topology when needed, by clicking on the Show Topology button below.</p> <p>E</p> <p>ROUTERS:</p> <p>Show Topology Show Done</p>		<p>CiscoTerminal</p> <pre>Enter configuration commands, one per line. End with END. Router(config)#hostname lab_A lab_A(config)#banner motd % Incomplete command. lab_A(config)#banner motd # Enter TEXT message. End with the character '#'. Accounting Department You have entered a secured system. Authorized access only!# lab_A(config)#ip host lab_A 192.5.5.1 205.7.5.1 201.100.11.1 lab_A(config)#ip host lab_B 219.17.100.1 199.6.13.1 201.100.11.2 lab_A(config)#ip host lab_C 223.8.151.1 204.204.7.1 199.6.13.2 lab_A(config)#ip host lab_D 210.93.105.1 204.204.7.2 lab_A(config)#ip host lab_E 210.93.105.2 lab_A(config)#int eth 0 lab_A(config)#int eth 0 lab_A(config-if)#ip address 192.5.5.1 255.255.255.0 lab_A(config-if)#int eth 1 lab_A(config-if)#ip address 205.7.5.1 255.255.255.0 lab_A(config-if)#int serial 0 lab_A(config-if)#ip address 201.100.11.1 255.255.255.0 lab_A(config-if)#end 00:25:14: %SYS-5-CONFIG_I: Configured from console by console</pre>	
		Copyright © 2001 Cisco Systems, Inc.	

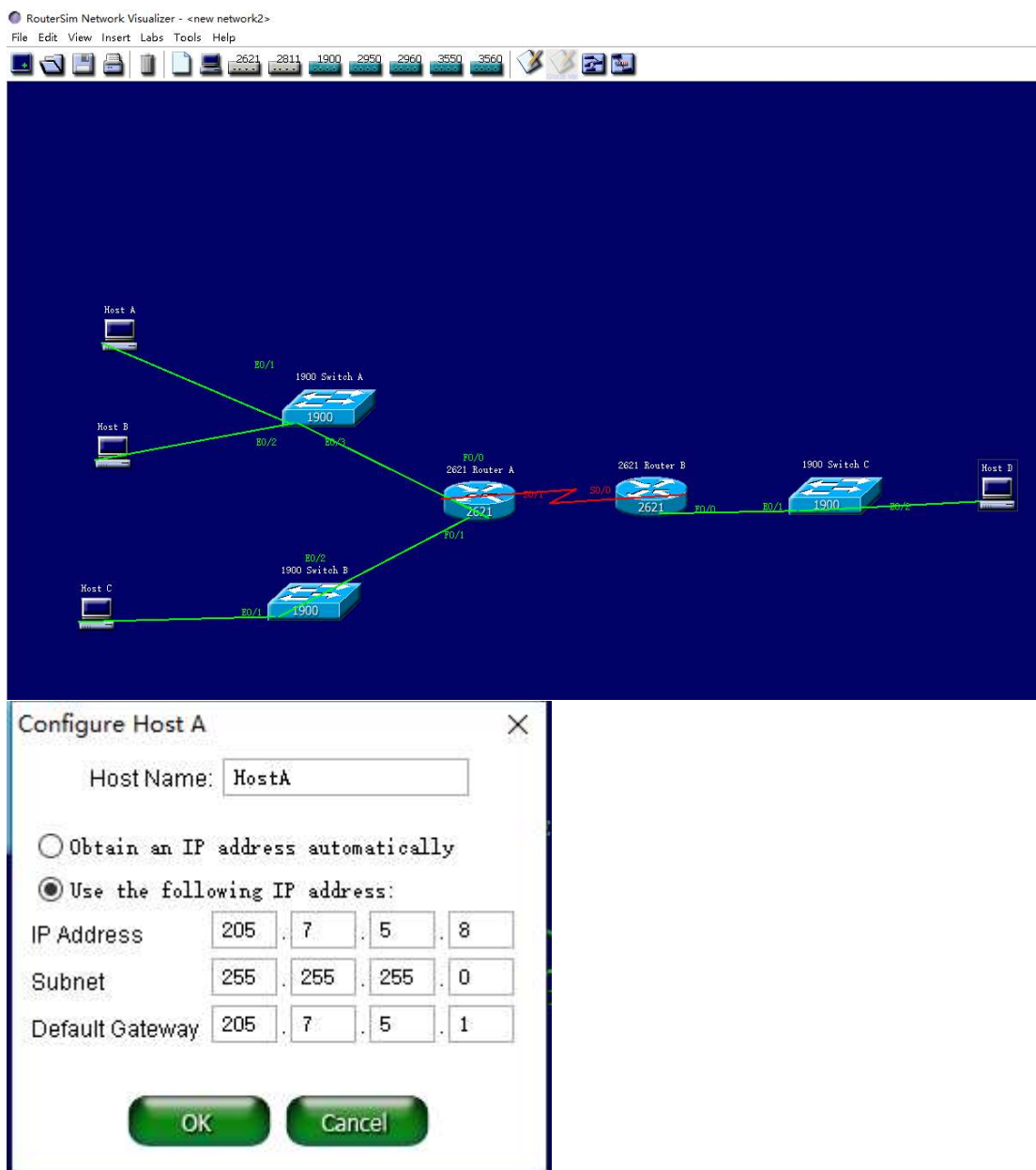


Cisco IOS 的基本操作和路由器的常规配置





静态路由配置与动态路由协议 RIP 的配置



RouterSim Network Visualizer - <new network2>
File Edit View Insert Labs Tools Help

Console for 2621 Router A
File Edit View Tools Help

```

Router Con0 is now available

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CMTL/Z
Router(config)#hostname RouterB
Router(config)#line console 0
^ Invalid input detected at '^' marker.
Router(config)#line console 0
Router(config-line)#password koalaB
Router(config-line)#login
Router(config-line)#exit
Router(config)#line vty 0 4
^ Invalid input detected at '^' marker.
Router(config)#line vty 0 4
^ Invalid input detected at '^' marker.
Router(config)#line vty 0 4
Router(config-line)#password tigerB
Router(config-line)#exit
Router(config)#enable secret ciscoB
Router(config)#int s0/0
Router(config-if)#ip addr 192.168.1.1 255.255.255.0
Router(config-if)#no shutdown
09:57:40 %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
09:57:40 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
Router(config-if)#int f0/1
Router(config-if)#ip addr 2025.7.5.1 255.255.255.0
^ Invalid input detected at '^' marker.
Router(config-if)#ip addr 205.7.5.1 255.255.255.0
Router(config-if)#no shutdown
09:58:14 %LINK-3-UPDOWN: Interface FastEthernet0/1, changed state to up
09:58:14 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/1, changed state to up
Router(config-if)#int s0/0
Router(config-if)#ip addr 201.100.11.1 255.255.255.0
Router(config-if)#clock rate 56000
^Error: This command applies only to DCE interfaces
Router(config-if)#no shutdown
^ Invalid input detected at '^' marker.
Router(config-if)#no shutdown
09:59:00 %LINK-3-UPDOWN: Interface Serial0/0, changed state to up
09:59:00 %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/0, changed state to up
Router(config-if)#

```

Console for 2621 Router B
File Edit View Tools Help

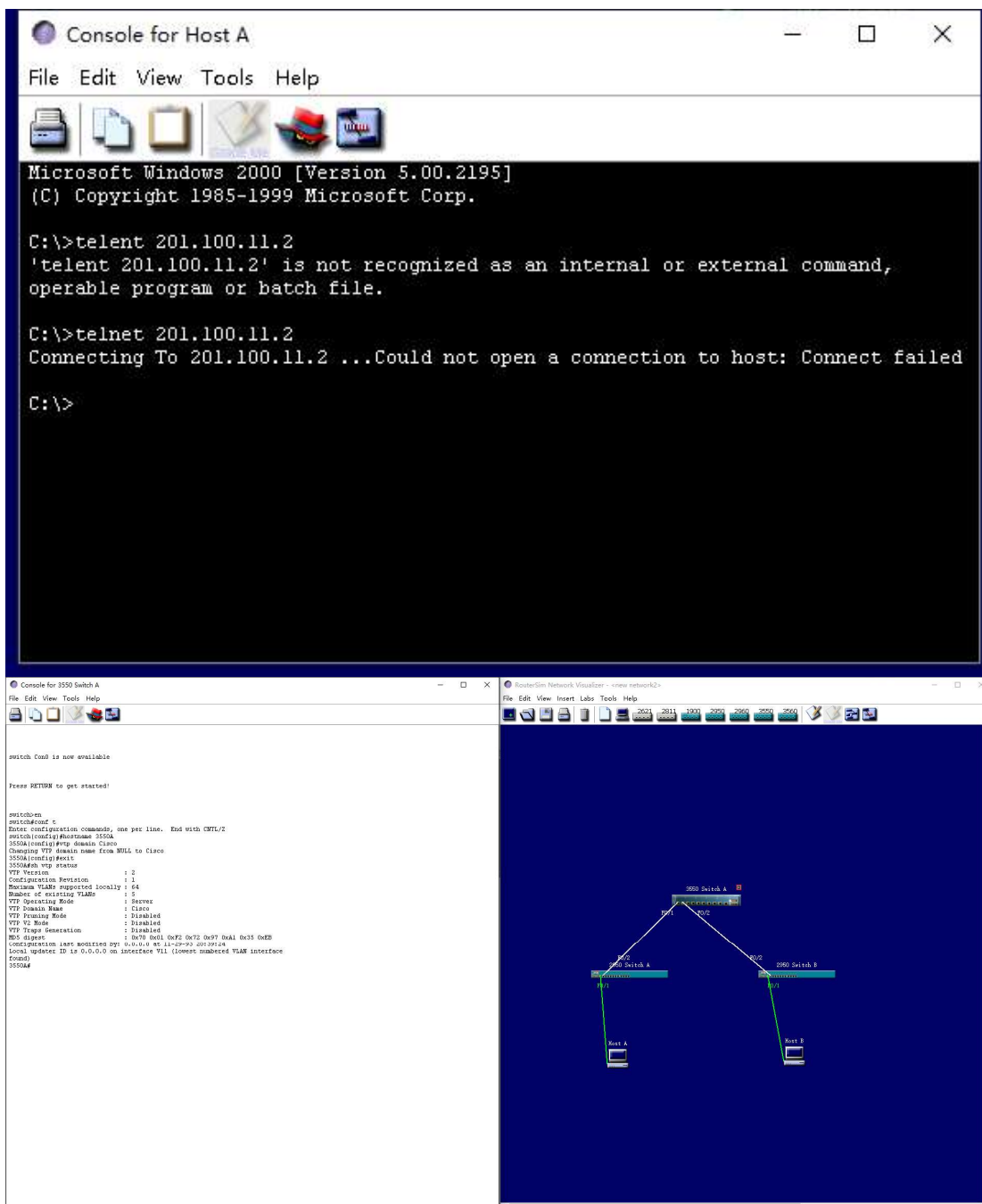
```

Router Con0 is now available

Press RETURN to get started!

Router>en
Router#conf t
Enter configuration commands, one per line. End with CMTL/Z
Router(config)#hostname RouterA
Router(config)#line console 0
RouterA(config-line)#password koalaA
RouterA(config-line)#login
RouterA(config-line)#exit
RouterA(config)#line vty 0 4
RouterA(config-line)#password tigerA
RouterA(config-line)#exit
RouterA(config)#enable secret ciscoA
RouterA(config)#int f0/0
RouterA(config-if)#ip addr 199.6.13.1 255.255.255.0
RouterA(config-if)#no shutdown
10:03:29 %LINK-3-UPDOWN: Interface FastEthernet0/0, changed state to up
10:03:29 %LINEPROTO-5-UPDOWN: Line protocol on Interface FastEthernet0/0, changed state to up
RouterA(config-if)#int s0/1
RouterA(config-if)#ip addr 201.100.11.22 255.255.255.0
RouterA(config-if)#no shutdown
10:03:55 %LINK-3-UPDOWN: Interface Serial0/1, changed state to up
10:03:55 %LINEPROTO-5-UPDOWN: Line protocol on Interface Serial0/1, changed state to up
RouterA(config-if)#_

```

Cisco 路由器访问列表配置与基于交换机端口的 VLAN 配置

4 实验总结

本次实验步骤十分繁杂，经常在配置的时候出现无法成功配置的现象，大致了解了静态与动态路由配置的过程与 vlan 模拟