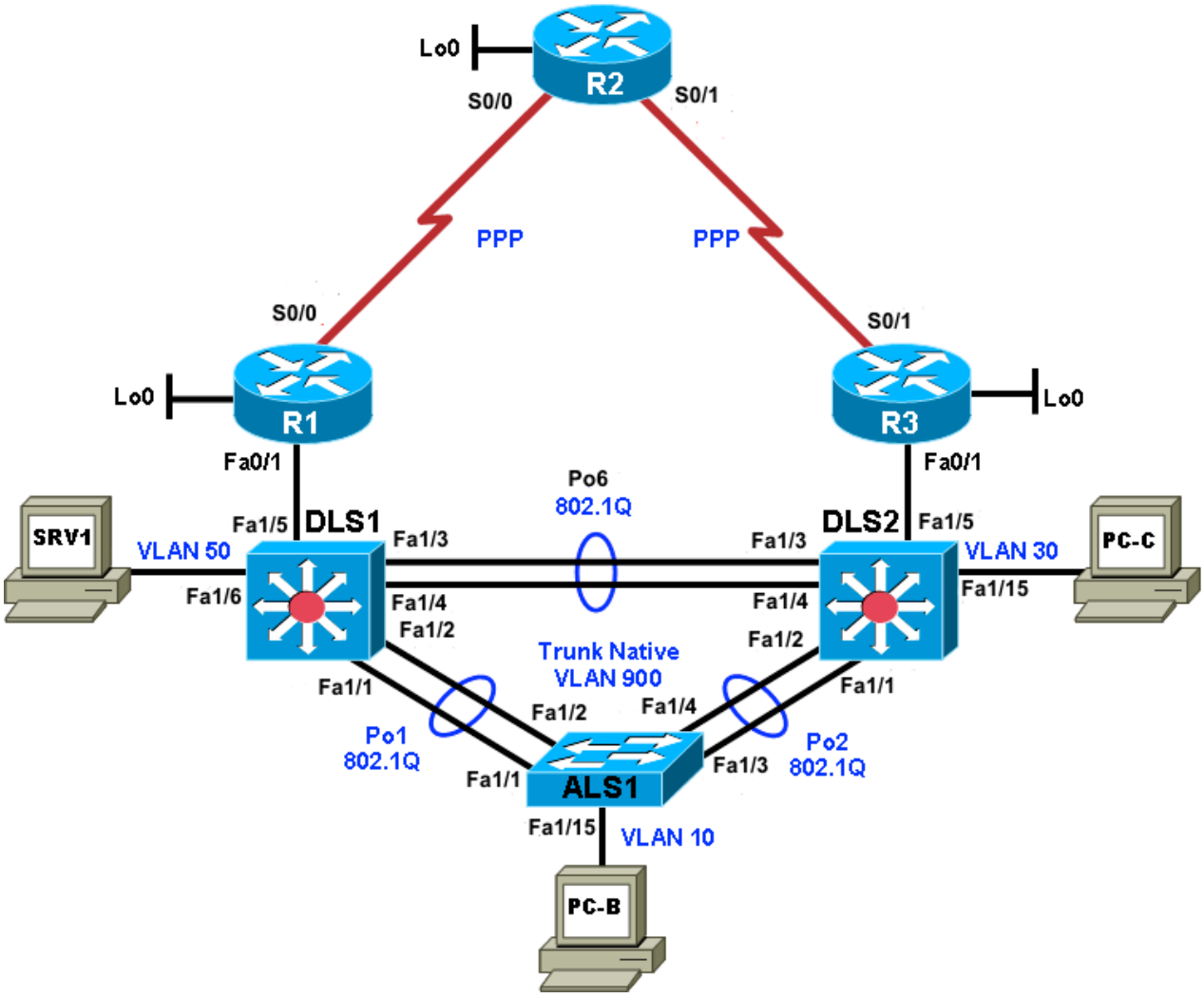
Lab 3-1, Assembling Maintenance and Troubleshooting Tools

Physical Topology



Objectives

- Assign responsibility for a device or set of devices to team members (optional).
- Load the baseline configuration for all devices in the topology.
- Use available tools to document key device configuration parameters, such as the interfaces in use, IP addressing, routing protocols, VLANs, logging mechanisms, and security measures.
- Document the physical topology to support future troubleshooting tasks.
- Document the logical topology to support future troubleshooting tasks.

Background

You have been employed as a network engineering consultant by a company that has made a recent acquisition. The documentation for the acquired company's network is incomplete and outdated, so you need to inventory their network architecture both logically and physically, per company documentation standards. This will help you learn about the design and implementation of their network and ensure that you have access to up-to-date and accurate network documentation to reference during future troubleshooting procedures.

In this lab, you survey the baseline TSHOOT network. No problems are introduced in this lab. This network will evolve over time as changes and enhancements are made. You will analyze and document the current topology and device configuration parameters to develop familiarity with the baseline configurations and network connections. You will review and fill out the provided documentation as you evaluate the network. You will assess and assemble tools that can be used for future maintenance and troubleshooting tasks.

Task 1: Load the Baseline Device Configuration Files

This has already been done for you.

Step 1: Clear mac address table on DSL1 and DSL2

```
DLS1#clear mac

DLS2#clear mac
```

Step 2: Open 0.21 folder

```
Open 'startup' file in Notepad and edit as follows:

1
set pcname PC-B
ip dhcp
2
set pcname PC-C
ip dhcp

Save the file.
```

Step 3: Start VPCS application.

Check PC-B and PC-C obtain DHCP addresses 10.1.10.1 and 10.1.30.1 respectively.

Step 4: Test basic network connectivity between devices.

a. Ping from PC-B to SRV1 at 10.1.50.1.

b. Ping from PC-C to SRV1 at 10.1.50.1.

c. Ping from ALS1 to R2 at loopback 10.1.202.1.

Task 2: Analyze and Document the Physical Lab Topology

Note: At this time, only examine and document the physical connections. Documenting the logical topology, such as subnets, IP addresses, and routing protocols, is addressed in Task 4 of this lab.

Step 1: Review the physical topology diagram on page 1 of the lab.

Step 2: Use Cisco Discovery Protocol and show commands to verify the Layer 1 and Layer 2 connections of the lab topology.

a. Use the **show cdp** command to discover the interfaces associated with the physical connections. Fill in the correct device and interface designators in the following Device Links table and label them on the physical topology diagram on the first page of the lab.

b. Review the configurations of the devices for using Layer 1 and Layer 2 features, such as trunks and EtherChannels. Fill in the information in the Device Links table and add it to the diagram. If a link is accounted for from one device to another, it is not necessary to repeat the entry from the other device. The first entry for ALS1, interface Fa0/1 is filled in as an example.

   Which other commands could you use to identify Layer 1 and Layer 2 characteristics?

Device Links Table

From Device	Interface	To Device	Interface	Layer 1 and 2 Features and Protocols Used
ALS1	Fa1/1	DLS1	Fa1/1	EtherChannel Po1, 802.1Q

c. Verify that all physical links shown in the diagram are operational. Which commands did you use?

Step 3: Map the VLANs used in the lab to the devices in the diagram.

Fill in the VLAN Definition table and label the physical topology diagram with the VLANs used for this topology. Identify all host devices that are members of each VLAN. The first entry for VLAN 10 is filled in as an example.

VLAN Definition Table

VLAN #	Name	Description	VLAN Members
10	OFFICE	Office VLAN	ALS1, DLS1, DLS2, PC-B

Step 4: Analyze spanning tree for the Layer 2 switched domain.

a. Analyze the spanning tree characteristics of the Layer 2 switched portion of the network. Which type of spanning-tree mode is implemented?

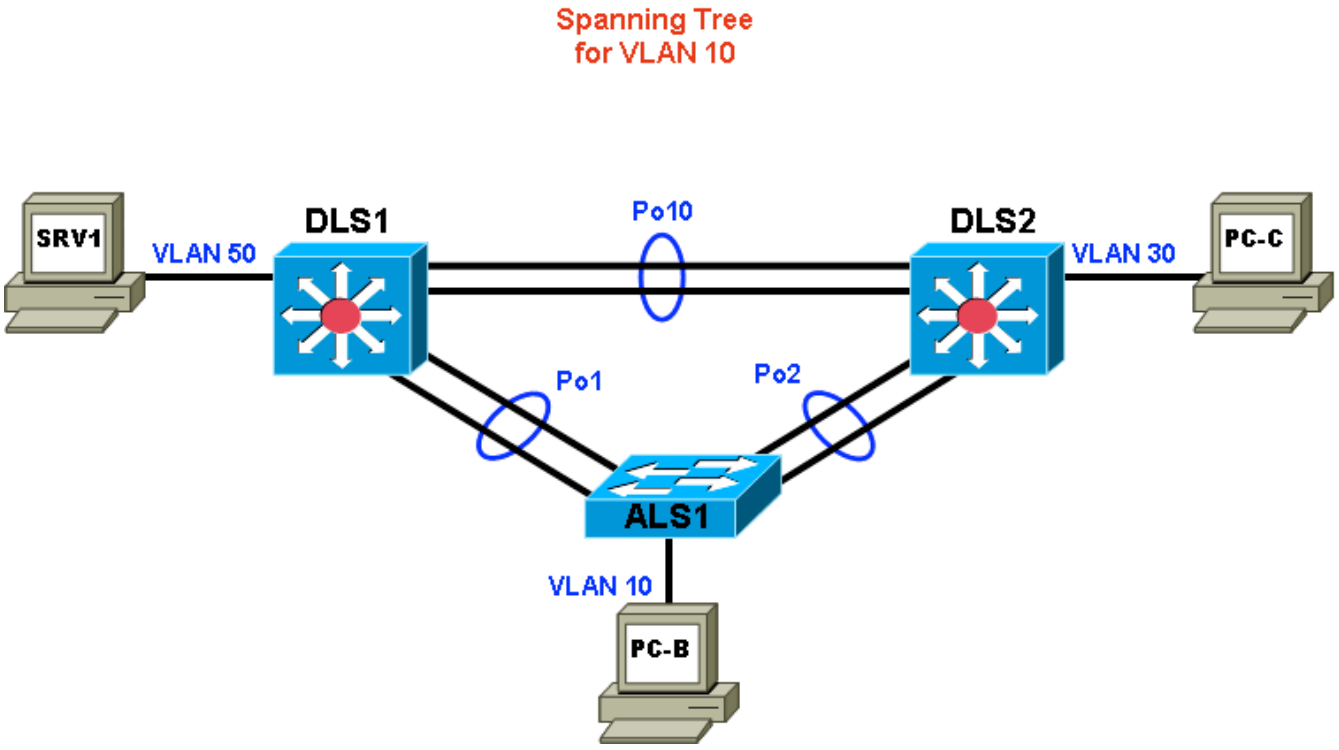
b. Which switch is the root switch for each VLAN, and what are the configured spanning-tree priorities?

c. What is the resulting spanning-tree topology for VLANs that have client devices connected?

d. Which commands did you use to analyze the spanning-tree characteristics?

Step 5: Diagram the spanning tree for VLAN 10.

a. Label the STP role, port status, and direction for each port channel used in the physical topology diagram below.



b. If working as a team, discuss your findings with your teammates to ensure that all team members understand the physical and data link aspects of the network design.

Student Notes

Use this space to make any additional notes regarding the physical configuration and the commands used.

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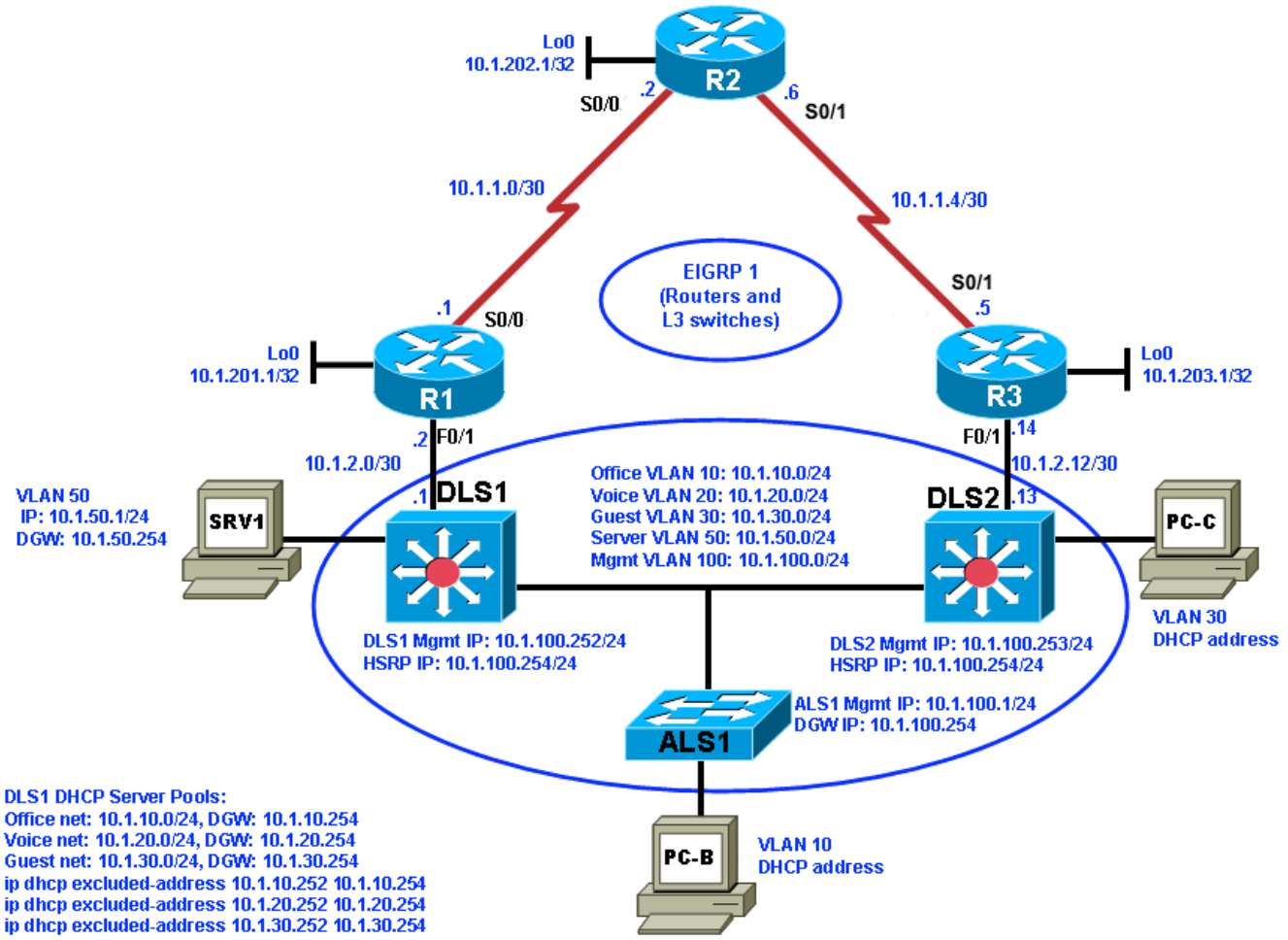
Task 3: Analyze and Document the Logical Lab Topology

Step 1: Review the logical lab diagram and the subnets.

Review the IP subnets in the Subnet table for the VLANs and WAN links that are used in the lab network. Router interface designations from the physical topology diagram are provided.



Subnet Table

Description	Subnet	Prefix	Devices
VLANs			
Office VLAN 10	10.1.10.0	/24	PC-B
Voice VLAN 20	10.1.20.0	/24	N/A
Guest VLAN 30	10.1.30.0	/24	PC-C
Servers VLAN 50	10.1.50.0	/24	SRV1
Management VLAN	10.1.100.0	/24	ALS1, DLS1, DLS2
WAN Links			
DLS1 – R1	10.1.2.0	/30	DLS1 and R1 FE link
DLS2 – R3	10.1.2.12	/30	DLS2 and R3 FE link
R1 – R2	10.1.1.0	/30	R1 and R2 serial link
R2 – R3	10.1.1.4	/30	R2 and R3 serial link

Step 2: Map the subnet scheme to the logical diagram.

In the previous step, the subnets were documented in the Subnet table. Now document the host portion of the addresses. To document the host part, research the routing tables and interface IP addresses of all the devices. Document the management VLAN and interface addresses in the IP Address table and on the logical topology diagram. Use only the number of the last octet for IP addresses in the diagram. The device names and interfaces are listed to help identify the IP addresses. The entry for ALS1 VLAN 100 is shown as an example. If an interface is not in use, indicate this in the Additional Information column. Account for all interfaces on the routers.

IP Address Table

Device Name Abbreviation	Interface	Network Address and Prefix	Additional Information
ALS1	Vlan 100	10.1.100.1/24	SVI
DLS1	Vlan 100		
DLS1	Fa1/5		
DLS2	Vlan 100		
DLS2	Fa1/5		
R1	Fa0/0		
R1	Fa0/1		
R1	S0/0/0		
R1	S0/0/1		
R1	Loopback 0		
R2	Fa0/0		
R2	Fa0/1		
R2	S/0/0		
R2	S/0/1		
R2	Loopback 0		

R3	Fa0/0		
R3	Fa0/1		
R3	S0/0		
R3	S0/1		
R3	Loopback 0		
SRV1	NIC		
PC-B	NIC		
PC-C	NIC		

Step 3: Analyze and document control plane logical configuration features.

Analyze the configurations of the devices for control plane features such as routing protocols, First Hop Redundancy Protocols (FHRPs), dynamic host configuration protocol (DHCP), and network address translation (NAT). Review, document, and discuss the following aspects of the logical network configuration.

a. Is dynamic or static routing being used? _____ If dynamic, which routing protocol? _____

b. Are FHRPs in use, such as the Hot Standby Router Protocol (HSRP), Virtual Router Redundancy Protocol (VRRP), or Gateway Load Balancing Protocol (GLBP)? _____ If yes, which one? _____

c. What is the active router for all relevant VLANs?

d. From the PC-B command prompt, issue the **tracert** command to router R2 loopback 0 at 10.1.202.1. What path did the packets take?

e. Are any access lists used to filter traffic on the network? _____ If yes, describe their function.

f. Is DHCP in use? ____ If yes, which DHCP server is used and for which VLANs present in the logical topology diagram? _____

g. If working as a team, discuss your findings with your teammates to ensure that all team members understand the high-level design of the network.

Lab Debrief Notes

Use this space to make notes of the key learning points that you picked up during the lab debrief discussions with your instructor. This can include alternate solutions, methods, and processes, procedure and communication improvements, as well as key commands and tools.

Note: This is your primary opportunity to document a baseline of the lab network before starting the troubleshooting exercises. During the debrief session, ask your instructor for clarification of any aspects of the network design and configurations that are unclear to you.

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Device Configurations

Switch ALS1

```
!Lab 3-1 Switch ALS1 Baseline Config
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname ALS1_31
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
memory-size iomem 5
no ip routing
no ip cef
!
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
ip host DLS2 10.1.100.253 10.1.2.13
!
multilink bundle-name authenticated
!
!
vlan 10
 name OFFICE
!
vlan 20
 name VOICE
!
vlan 30
 name GUEST
!
vlan 100
 name MGMT
!
vlan 900
 name NATIVE
```

```
!
interface Port-channel1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
!
interface Port-channel2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
!
!
interface FastEthernet0/1
 no ip address
 no ip route-cache
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet1/1
 description Channel to DLS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 1 mode on
 no shut
!
interface FastEthernet1/2
 description Channel to DLS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 1 mode on
 no shut
!
interface FastEthernet1/3
 description Channel to DLS2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 2 mode on
 no shut
!
interface FastEthernet1/4
 description Channel to DLS2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 2 mode on
 no shut
!
interface FastEthernet1/5
!
```



```
interface FastEthernet1/6
!
interface FastEthernet1/7
!
interface FastEthernet1/8
!
interface FastEthernet1/9
!
interface FastEthernet1/10
!
interface FastEthernet1/11
!
interface FastEthernet1/12
!
interface FastEthernet1/13
!
interface FastEthernet1/14
!
interface FastEthernet1/15
 description To PC-B
 switchport access vlan 10
 spanning-tree portfast
 no shut
!
interface Vlan1
 no ip address
 no ip route-cache
 shutdown
!
interface Vlan100
 ip address 10.1.100.1 255.255.255.0
 no ip route-cache
!
ip default-gateway 10.1.100.254
!
!
no ip http server
no ip http secure-server
!
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/ALS1/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/ALS1/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/ALS1/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/ALS1/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/ALS1/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/ALS1/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/ALS1/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/ALS1/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/ALS1/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/ALS1/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/ALS1/Lab51-C.txt startup-config
alias exec 51-D copy flash:/flash/ALS1/Lab51-D.txt startup-config
```



```
alias exec 42-A copy flash:/flash/ALS1/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/ALS1/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/ALS1/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/ALS1/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/ALS1/Lab31.txt startup-config!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password cisco
 login
 transport input telnet ssh
!
end
```

Switch DLS1

```
!Lab 3-1 Switch DLS1 Baseline Config
!
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname DLS1_31
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
memory-size iomem 5
ip cef
!
!
no ip dhcp use vrf connected
ip dhcp excluded-address 10.1.10.252 10.1.10.254
ip dhcp excluded-address 10.1.20.252 10.1.20.254
ip dhcp excluded-address 10.1.30.252 10.1.30.254
!
ip dhcp pool OFFICE
   network 10.1.10.0 255.255.255.0
   default-router 10.1.10.254
   domain-name tshoot.net
!
ip dhcp pool VOICE
```

```
   network 10.1.20.0 255.255.255.0
   default-router 10.1.20.254
   domain-name tshoot.net
!
ip dhcp pool GUEST
   network 10.1.30.0 255.255.255.0
   default-router 10.1.30.254
   domain-name tshoot.net
!
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
ip host DLS2 10.1.100.253 10.1.2.13
!
multilink bundle-name authenticated
!
spanning-tree vlan 10 priority 24576
spanning-tree vlan 20 priority 28672
spanning-tree vlan 30 priority 24576
spanning-tree vlan 50 priority 28672
spanning-tree vlan 100 priority 24576
vtp domain TSHOOT
vtp mode transparent
!
vlan 10
 name OFFICE
!
vlan 20
 name VOICE
!
vlan 30
 name GUEST
!
vlan 50
 name SERVERS
!
vlan 100
 name MGMT
!
vlan 900
 name NATIVE
!
ip telnet source-interface Vlan100
!
!
interface Port-channel1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
```



```
 switchport mode trunk
!
interface Port-channel6
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet1/1
 description Channel to ALS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 1 mode on
 no shut
!
interface FastEthernet1/2
 description Channel to ALS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 1 mode on
 no shut
!
interface FastEthernet1/3
 description Channel to DLS2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
 channel-group 6 mode on
 no shut
!
interface FastEthernet1/4
 description Channel to DLS2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
 channel-group 6 mode on
 no shut
!
interface FastEthernet1/5
 description FE to R1
```



```
 no switchport
 ip address 10.1.2.1 255.255.255.252
 duplex full
 speed 100
 no shut
!
interface FastEthernet1/6
 description FE to SRV1
 switchport access vlan 50
 spanning-tree portfast
 no shut
!
interface FastEthernet1/7
!
interface FastEthernet1/8
!
interface FastEthernet1/9
!
interface FastEthernet1/10
!
interface FastEthernet1/11
!
interface FastEthernet1/12
!
interface FastEthernet1/13
!
interface FastEthernet1/14
!
interface FastEthernet1/15
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan10
 ip address 10.1.10.252 255.255.255.0
 standby 10 ip 10.1.10.254
 standby 10 priority 110
 standby 10 preempt
!
interface Vlan20
 ip address 10.1.20.252 255.255.255.0
 standby 20 ip 10.1.20.254
 standby 20 preempt
!
interface Vlan30
 ip address 10.1.30.252 255.255.255.0
 standby 30 ip 10.1.30.254
 standby 30 priority 110
 standby 30 preempt
!
interface Vlan50
 ip address 10.1.50.252 255.255.255.0
```



```
 standby 50 ip 10.1.50.254
 standby 50 preempt
!
interface Vlan100
 ip address 10.1.100.252 255.255.255.0
 standby 100 ip 10.1.100.254
 standby 100 priority 110
 standby 100 preempt
!
router eigrp 1
 passive-interface default
 no passive-interface FastEthernet1/5
 network 10.1.0.0 0.0.255.255
 no auto-summary
!
!
ip http server
no ip http secure-server
!
logging source-interface Vlan100
logging 10.1.50.1
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/DLS1/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/DLS1/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/DLS1/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/DLS1/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/DLS1/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/DLS1/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/DLS1/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/DLS1/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/DLS1/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/DLS1/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/DLS1/Lab51-C.txt startup-config
alias exec 51-D copy flash:/flash/DLS1/Lab51-D.txt startup-config
alias exec 42-A copy flash:/flash/DLS1/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/DLS1/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/DLS1/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/DLS1/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/DLS1/Lab31.txt startup-config
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password cisco
 login
```



```
 transport input telnet ssh
!
end
```

Switch DLS2

```
!Lab 3-1 Switch DLS2 Baseline Config
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname DLS2_31
!
boot-start-marker
boot-end-marker
!
!
no aaa new-model
memory-size iomem 5
ip cef
!
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
ip host DLS2 10.1.100.253 10.1.2.13
!
multilink bundle-name authenticated
!
!
spanning-tree vlan 10 priority 28672
spanning-tree vlan 20 priority 24576
spanning-tree vlan 30 priority 28672
spanning-tree vlan 50 priority 24576
spanning-tree vlan 100 priority 28672
vtp domain TSHOOT
vtp mode transparent
!
vlan internal allocation policy ascending
!
vlan 10
 name OFFICE
!
vlan 20
 name VOICE
!
```



```
vlan 30
 name GUEST
!
vlan 50
 name SERVERS
!
vlan 100
 name MGMT
!
vlan 900
 name NATIVE
!
ip telnet source-interface Vlan100
!
!
interface Port-channel2
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
!
interface Port-channel6
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet0/1
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface FastEthernet1/1
 description Channel to ALS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 2 mode on
 no shut
!
interface FastEthernet1/2
 description Channel to ALS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,100,1002-1005
 switchport mode trunk
 channel-group 2 mode on
 no shut
!
```

```
interface FastEthernet1/3
 description Channel to DLS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
 channel-group 6 mode on
 no shut
!
interface FastEthernet1/4
 description Channel to DLS1
 switchport trunk native vlan 900
 switchport trunk allowed vlan 1,2,10,20,30,50,100,1002-1005
 switchport mode trunk
 channel-group 6 mode on
 no shut
!
interface FastEthernet1/5
 description FE to R3
 no switchport
 ip address 10.1.2.13 255.255.255.252
 duplex full
 speed 100
 no shut
!
interface FastEthernet1/6
!
interface FastEthernet1/7
!
interface FastEthernet1/8
!
interface FastEthernet1/9
!
interface FastEthernet1/10
!
interface FastEthernet1/11
!
interface FastEthernet1/12
!
interface FastEthernet1/13
!
interface FastEthernet1/14
!
interface FastEthernet1/15
 description FE to PC-C
 switchport access vlan 30
 spanning-tree portfast
 no shut
!
interface Vlan1
 no ip address
 shutdown
!
interface Vlan10
```



```
 ip address 10.1.10.253 255.255.255.0
 standby 10 ip 10.1.10.254
 standby 10 preempt
!
interface Vlan20
 ip address 10.1.20.253 255.255.255.0
 standby 20 ip 10.1.20.254
 standby 20 priority 110
 standby 20 preempt
!
interface Vlan30
 ip address 10.1.30.253 255.255.255.0
 standby 30 ip 10.1.30.254
 standby 30 preempt
!
interface Vlan50
 ip address 10.1.50.253 255.255.255.0
 standby 50 ip 10.1.50.254
 standby 50 priority 110
 standby 50 preempt
!
interface Vlan100
 ip address 10.1.100.253 255.255.255.0
 standby 100 ip 10.1.100.254
 standby 100 preempt
!
router eigrp 1
 passive-interface default
 no passive-interface FastEthernet1/5
 network 10.1.0.0 0.0.255.255
 no auto-summary
!
!
!
ip http server
no ip http secure-server
!
logging source-interface Vlan100
logging 10.1.50.1
!
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/DLS2/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/DLS2/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/DLS2/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/DLS2/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/DLS2/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/DLS2/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/DLS2/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/DLS2/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/DLS2/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/DLS2/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/DLS2/Lab51-C.txt startup-config
```



```
alias exec 51-D copy flash:/flash/DLS2/Lab51-D.txt startup-config
alias exec 42-A copy flash:/flash/DLS2/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/DLS2/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/DLS2/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/DLS2/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/DLS2/Lab31.txt startup-config
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password cisco
 login
 transport input telnet ssh
!
end
```

Router R1

```
!Lab 3-1 Router R1 Baseline Config
!
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname R1_31
!
boot-start-marker
boot-end-marker
!
logging buffered 16384 debugging
!
no aaa new-model
memory-size iomem 5
ip cef
!
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
```



```
ip host DLS2 10.1.100.253 10.1.2.13
!
!
ip telnet source-interface Loopback0
!
!
interface Loopback0
 ip address 10.1.201.1 255.255.255.255
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0
 description WAN link to R2 - 128k leased line
 ip address 10.1.1.1 255.255.255.252
 ip flow ingress
 encapsulation ppp
 clock rate 128000
 no shut
!
interface FastEthernet0/1
 description FE to DLS1
 ip address 10.1.2.2 255.255.255.252
 ip flow ingress
 speed 100
 full-duplex
 no shut
!
interface Serial0/1
 no ip address
 shutdown
 clock rate 2000000
!
router eigrp 1
 passive-interface default
 no passive-interface Serial0/0
 no passive-interface FastEthernet0/1
 network 10.1.1.0 0.0.0.3
 network 10.1.2.0 0.0.0.3
 network 10.1.201.1 0.0.0.0
 no auto-summary
!
ip forward-protocol nd
!
ip flow-export source Loopback0
ip flow-export version 5
ip flow-export destination 10.1.50.1 9996
!
ip http server
no ip http secure-server
```



```
!
logging source-interface Loopback0
logging 10.1.50.1
snmp-server community cisco RO
snmp-server community san-fran RW
snmp-server trap-source Loopback0
snmp-server location TSHOOT Lab Facility
snmp-server contact support@tshoot.net
snmp-server enable traps eigrp
snmp-server enable traps flash insertion removal
snmp-server enable traps config
snmp-server enable traps cpu threshold
snmp-server host 10.1.50.1 version 2c cisco
!
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/R1/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/R1/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/R1/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/R1/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/R1/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/R1/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/R1/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/R1/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/R1/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/R1/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/R1/Lab51-C.txt startup-config
alias exec 51-D copy flash:/flash/R1/Lab51-D.txt startup-config
alias exec 42-A copy flash:/flash/R1/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/R1/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/R1/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/R1/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/R1/Lab31.txt startup-config
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password 7 070C285F4D06
 login
 transport input telnet ssh
!
!
end
```

Router R2

```
!Lab 3-1 Router R2 Baseline Config
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname R2_31
!
boot-start-marker
boot-end-marker
!
logging buffered 16384 debugging
!
no aaa new-model
memory-size iomem 5
ip cef
!
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
ip host DLS2 10.1.100.253 10.1.2.13
ip auth-proxy max-nodata-conns 3
ip admission max-nodata-conns 3
!
!
ip telnet source-interface Loopback0
!
interface Loopback0
 ip address 10.1.202.1 255.255.255.255
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0
 description WAN link to R1 - 128k leased line
 ip address 10.1.1.2 255.255.255.252
 encapsulation ppp
 clock rate 2000000
 no shut
!
interface FastEthernet0/1
 no ip address
```

```
 shutdown
 duplex auto
 speed auto
!
interface Serial0/1
 description WAN link to R3 - 128k leased line
 ip address 10.1.1.6 255.255.255.252
 encapsulation ppp
 clock rate 128000
 no shut
!
router eigrp 1
 passive-interface default
 no passive-interface Serial0/0
 no passive-interface Serial0/1
 network 10.1.1.0 0.0.0.3
 network 10.1.1.4 0.0.0.3
 network 10.1.202.1 0.0.0.0
 no auto-summary
!
ip forward-protocol nd
!
!
ip http server
no ip http secure-server
!
logging source-interface Loopback0
logging 10.1.50.1
snmp-server community cisco RO
snmp-server community san-fran RW
snmp-server trap-source Loopback0
snmp-server location TSHOOT Lab Facility
snmp-server contact support@tshoot.net
snmp-server enable traps eigrp
snmp-server enable traps flash insertion removal
snmp-server enable traps config
snmp-server enable traps cpu threshold
snmp-server host 10.1.50.1 version 2c cisco
!
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/R2/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/R2/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/R2/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/R2/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/R2/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/R2/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/R2/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/R2/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/R2/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/R2/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/R2/Lab51-C.txt startup-config
alias exec 51-D copy flash:/flash/R2/Lab51-D.txt startup-config
```



```
alias exec 42-A copy flash:/flash/R2/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/R2/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/R2/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/R2/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/R2/Lab31.txt startup-config
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password 7 02050D480809
 login
 transport input telnet ssh
!
!
end
```

Router R3

```
!Lab 3-1 Router R3 Baseline Config
!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
service password-encryption
!
hostname R3_31
!
boot-start-marker
boot-end-marker
!
logging buffered 16384 debugging
!
no aaa new-model
memory-size iomem 5
ip cef
!
no ip domain lookup
ip domain name tshoot.net
ip host R1 10.1.2.2 10.1.1.1 10.1.201.1
ip host R2 10.1.1.2 10.1.1.6 10.1.202.1
ip host R3 10.1.1.5 10.1.2.14 10.1.203.1
ip host ALS1 10.1.100.1
ip host DLS1 10.1.100.252 10.1.2.1
ip host DLS2 10.1.100.253 10.1.2.13
ip auth-proxy max-nodata-conns 3
```

```
ip admission max-nodata-conns 3
!
!
ip telnet source-interface Loopback0
!
interface Loopback0
 ip address 10.1.203.1 255.255.255.255
!
interface FastEthernet0/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
interface Serial0/0
 no ip address
 shutdown
 clock rate 2000000
!
interface FastEthernet0/1
 description FE to DLS2
 ip address 10.1.2.14 255.255.255.252
 ip flow ingress
 speed 100
 full-duplex
 no shut
!
interface Serial0/1
 description WAN link to R2 - 128k leased line
 ip address 10.1.1.5 255.255.255.252
 ip flow ingress
 encapsulation ppp
 clock rate 2000000
 no shut
!
router eigrp 1
 passive-interface default
 no passive-interface FastEthernet0/1
 no passive-interface Serial0/1
 network 10.1.1.4 0.0.0.3
 network 10.1.2.12 0.0.0.3
 network 10.1.203.1 0.0.0.0
 no auto-summary
!
ip forward-protocol nd
!
ip flow-export source Loopback0
ip flow-export version 5
ip flow-export destination 10.1.50.1 9996
!
ip http server
no ip http secure-server
!
```



```
logging source-interface Loopback0
logging 10.1.50.1
snmp-server community cisco RO
snmp-server community san-fran RW
snmp-server trap-source Loopback0
snmp-server location TSHOOT Lab Facility
snmp-server contact support@tshoot.net
snmp-server enable traps eigrp
snmp-server enable traps flash insertion removal
snmp-server enable traps config
snmp-server enable traps cpu threshold
snmp-server host 10.1.50.1 version 2c cisco
!
alias exec sib show ip interface brief
alias exec 101-A copy flash:/flash/R3/Lab101-A.txt startup-config
alias exec 101-B copy flash:/flash/R3/Lab101-B.txt startup-config
alias exec 101-C copy flash:/flash/R3/Lab101-C.txt startup-config
alias exec 53-A copy flash:/flash/R3/Lab53-A.txt startup-config
alias exec 53-B copy flash:/flash/R3/Lab53-B.txt startup-config
alias exec 52-A copy flash:/flash/R3/Lab52-A.txt startup-config
alias exec 52-B copy flash:/flash/R3/Lab52-B.txt startup-config
alias exec 52-C copy flash:/flash/R3/Lab52-C.txt startup-config
alias exec 51-A copy flash:/flash/R3/Lab51-A.txt startup-config
alias exec 51-B copy flash:/flash/R3/Lab51-B.txt startup-config
alias exec 51-C copy flash:/flash/R3/Lab51-C.txt startup-config
alias exec 51-D copy flash:/flash/R3/Lab51-D.txt startup-config
alias exec 42-A copy flash:/flash/R3/Lab42-A.txt startup-config
alias exec 42-B copy flash:/flash/R3/Lab42-B.txt startup-config
alias exec 41-A copy flash:/flash/R3/Lab41-A.txt startup-config
alias exec 41-B copy flash:/flash/R3/Lab41-B.txt startup-config
alias exec 31 copy flash:/flash/R3/Lab31.txt startup-config
!
line con 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line aux 0
 exec-timeout 0 0
 privilege level 15
 logging synchronous
line vty 0 4
 exec-timeout 0 0
 password 7 121A0C041104
 login
 transport input telnet ssh
end
```

