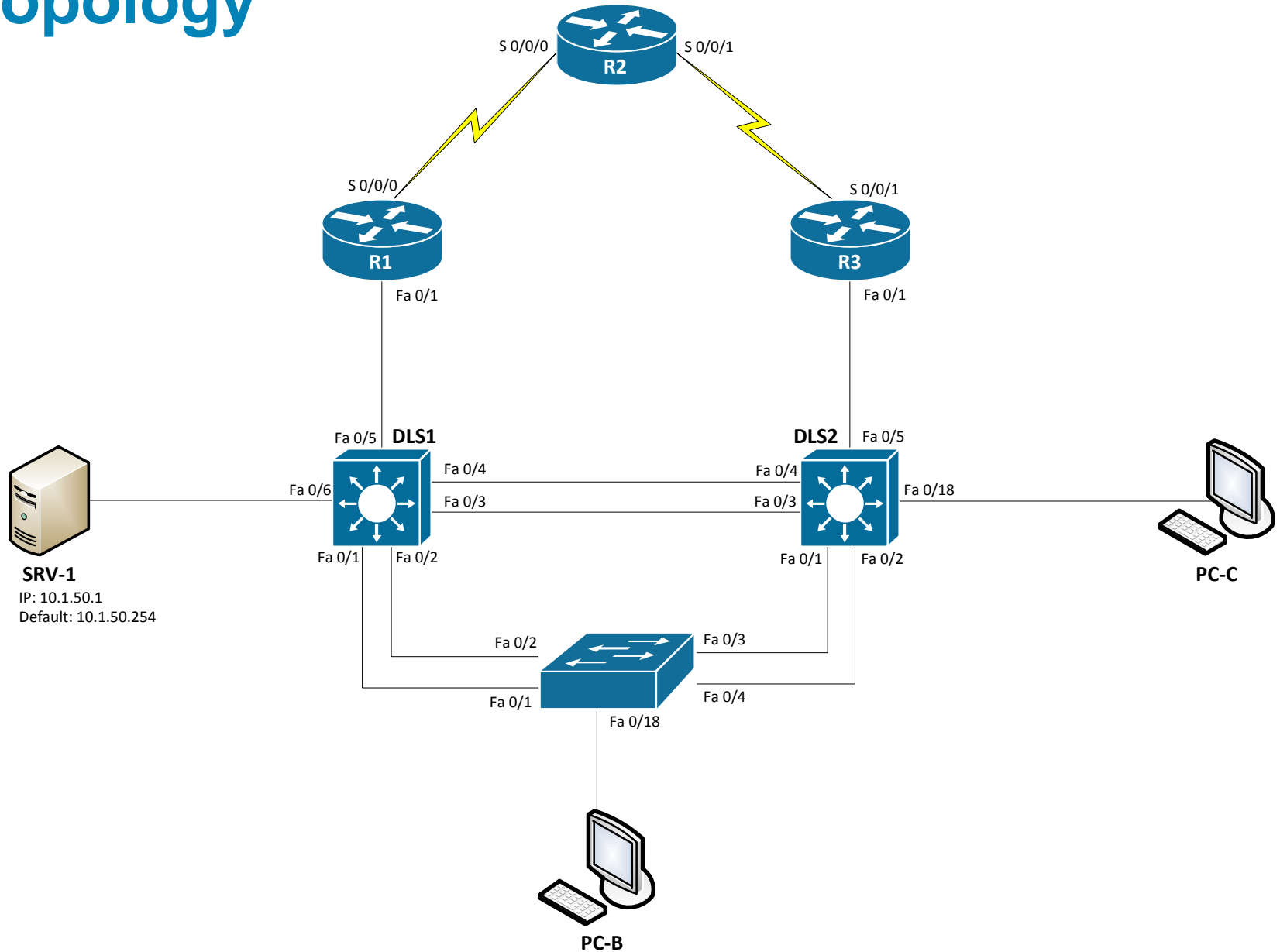




LAB: Module 5



Topology



Tasks

- **Prepare topology**
- **Start TFTP server on SRV-1 with config files**
- **Troubleshoot L3 problems**

Trouble ticket Lab 5-1 TT-A

- Load appropriate config files: Lab51-%H-51-TT-A-Cfg
 - %H: hostname e.g. R1
- Your company is interested in implementing an IP-based closed circuit television (CCTV) solution. Currently, different solutions and vendors are being evaluated. One of the vendors has offered to implement a pilot to show the capabilities of their solution. To keep the traffic associated with the CCTV solution separate from the regular network traffic, it will be implemented using a new VLAN (VLAN 70 corresponding to subnet 10.1.70.0/24). There must be communication between the test server (PC-C) and the office users on the LAN. In addition, branch workers on the R2 LAN (simulated by Lo0) must be able to access the internal CCTV server. The vendor will come in tomorrow to install the client and server software. The network team has been asked to make sure that the new VLAN has been implemented and that there is IP connectivity between the local test client (PC-B) and the CCTV test server (PC-C) in the CCTV VLAN. You must also verify that there is connectivity between the remote test client (Lo0 on R2) and the CCTV test server. The test server requires a static IP address. One of your colleagues implemented the static address yesterday afternoon, but did not have time to test the implementation.
- You have the following tasks:
 - Configure the CCTV test server (PC-C).
 - Verify the CCTV VLAN device configurations for the pilot.
 - Ensure that the local and remote test clients can communicate with the CCTV test server before the vendor arrives to implement the CCTV pilot.
 - Verify Hot Standby Router Protocol (HSRP) redundancy for CCTV VLAN 70.

Trouble ticket Lab 5-1 TT-B

- Load appropriate config files: Lab51-%H-51-TT-B-Cfg
 - %H: hostname e.g. R1
- You receive an emergency call and are told that a short circuit caused a small fire in the server room. Routers R1 and R3, which were mounted in the same rack, were damaged. Luckily, you had two comparable spare routers in storage. When you arrive at the office, two of your colleagues have already installed the replacement routers, cabled them, and tried to restore the routers by cutting and pasting the configurations from the console. However, the routers are not operational when you come in. You receive a call from the network administrator at the branch office (LAN simulated by R2 Lo0) asking about the loss of the WAN. His users cannot access server SRV1 at the central site. He has started to troubleshoot. You tell him what happened and ask him not to do anything until you have resolved the problem at the central site.
- Your task is to check the configuration of routers R1 and R3 and restore the configurations as necessary to regain connectivity between the branch office and the central site across the WAN.

Trouble ticket Lab 5-1 TT-C

- Load appropriate config files: Lab51-%H-51-TT-C-Cfg
 - %H: hostname e.g. R1
- A user on VLAN 10 (PC-B) called the help desk this morning because she does not have Internet access. When she tried to open a website (simulated by another Loopback Lo1 on R2 with address 209.165.200.225/30), she received an error message from her browser saying that it cannot display the web page. She can reach the internal server SRV1 without any problems. One of your colleagues was working with the ISP to make some changes to the routing model used to access the ISP and the Internet. The ISP does not run EIGRP on its router. The colleague has called in sick today, but made some notes in the log about the ISP not running EIGRP on its router and not wanting R2 to attempt to establish an EIGRP neighbor relationship.
- Your task is to diagnose and solve this problem and make sure that the user regains connectivity to the Internet.

Trouble ticket Lab 5-1 TT-D

- Load appropriate config files: Lab51-`%H`-51-TT-D-Cfg
 - `%H`: hostname e.g. R1
- A contract worker called the help desk to report that he could not access the ISP email server (simulated by Lo0 on R2). He was working at a SRV-1 that is attached to a port in the SERVER VLAN 50. You checked with the ISP and discovered that they had an unplanned outage, and the WAN link from R2 to R3 had gone down temporarily. Users in the OFFICE VLAN did not experience any loss of connectivity to the email server during the WAN link outage. Your expectation, if one of the WAN links went down, was that users in the SERVER VLAN would still be able to reach the server because of the redundancy in the network design. Your colleague will replicate this scenario during the maintenance window this evening. You have agreed to help her diagnose the problem and propose a plan that can account for an outage in one of the WAN links to R2 so that guest users do not lose connectivity to the ISP mail server.
- Your plan is to simulate the R3-to-R2 WAN link going down. You do not have administrative control over ISP router R2. You will test connectivity, determine the cause of the problem, and recommend which configuration changes to the devices could correct the issue.

Trouble ticket Lab 5-1 TT-E

- Load appropriate config files: Lab51-%H-51-TT-E-Cfg
 - %H: hostname e.g. R1
- A tech support intern on VLAN 30 (PC-C) called the help desk this Monday morning to report problems accessing certain areas of the network. It appears that the routers, R1, R2, and R3, are either down or unreachable. Your company is in the process of testing various security measures to protect the network. Over the weekend, your IT staff worked on a project to secure EIGRP by implementing MD5 authentication. The staff was instructed to test the configuration over the weekend and reverse the implementation in the event that there were connectivity problems.
- Your task is to ensure that the R1, R2 and R3 routers are online and reachable.



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