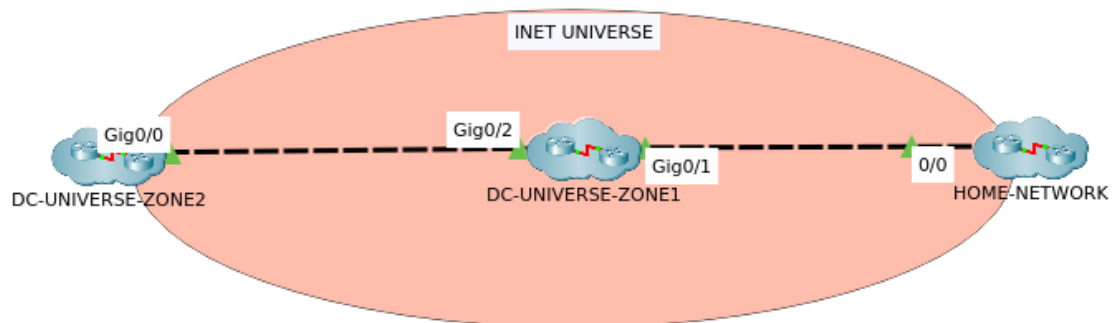


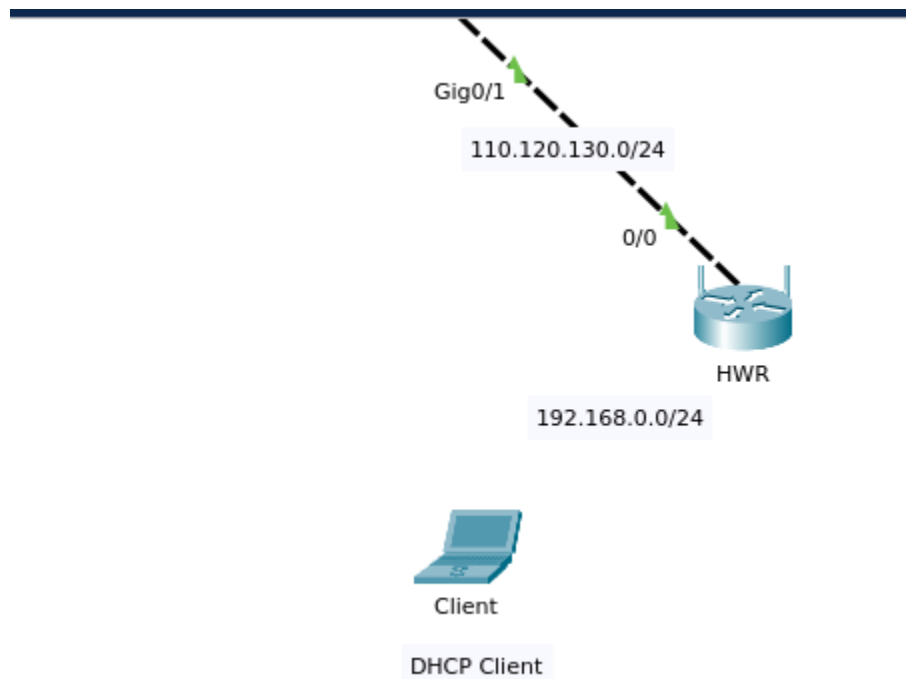
Introduction

Welcome to this simulation challenge. During this time, you will face the challenges of working on connections like wireless, routing, tunnel, switching, logging, and security. We hope that you are not only focusing on the score but also on understanding the flow and testing every connection.

Preconfigured topology



HOME-NETWORK



The diagram illustrates a network topology with three main zones:

- DMZ ZONE (Orange):** Contains a DMZ-SRV (192.168.10.10) connected to a FIREWALL-SRP (192.168.0.0/24) via Fa0. The FIREWALL-SRP is connected to the SRP via Gig1/2.
- INTERNAL ZONE (Green):** Contains an INTERNAL-SERVER-SRP (172.16.10.10) connected to the SRP via Fa0. The SRP is connected to the SWITCH via Fa0/24.
- Public Server Simulation Zone (Red):** Contains a WEB-SERVICE (8.8.8.10) and a PUBLIC-SERVICE (8.8.8.8) connected to the SWITCH via Gig0. The SWITCH is connected to the SRP via Gig0/1.

Network connections and configurations include:

- SRP (Server Router):** Connected to the DMZ ZONE via Gig1/1, to the INTERNAL ZONE via Gig0/0, and to the SWITCH via Gig0/2.
- SWITCH:** Connected to the SRP via Gig0/1, to the DMZ ZONE via Fa0/10, and to the PUBLIC-SERVICE via Gig0/2.
- VLANs:** VLAN 100 (1.1.1.0/28) is configured on the SRP. VLAN 88 (8.8.8.0/28) is configured on the SWITCH.
- External Connections:** Gig0/2 to EDGR and Gig0/1 to HWR are shown as dashed lines.

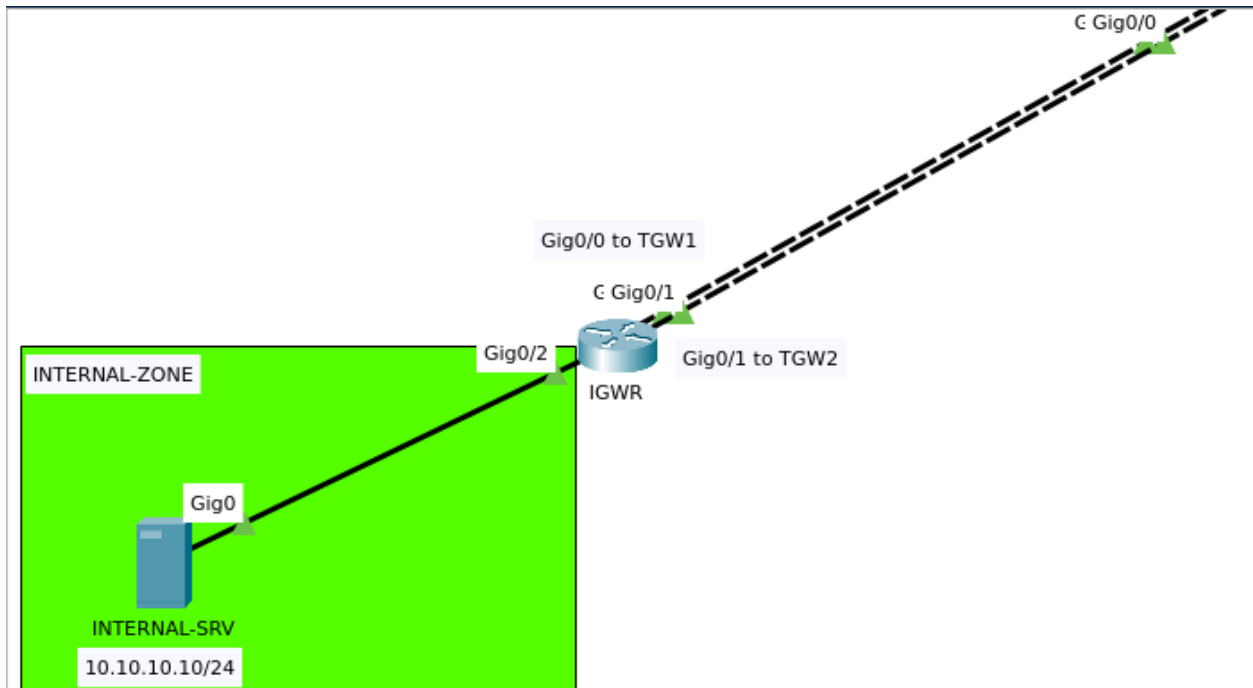
The diagram illustrates a network topology where an internal zone is connected to three external providers (T, EDGR, TGW2) via a central cloud. The internal zone has two interfaces, Gig0/0 and Gig0/1. The external providers have multiple interfaces connected to the cloud. The diagram shows various IP addresses and network ranges for each connection.

- INTERNAL-ZONE:**
 - Gig0/0: ..15.1
 - Gig0/1: ..15.5
- Provider T:**
 - Gig0/0: ..15.2
 - Gig0/1: ..25.1
- Provider EDGR:**
 - Gig0/0: ..25.2
 - Gig0/2: ..27.1
 - Gig0/1: ..25.6
- Provider TGW2:**
 - Gig0/0: ..15.6
 - Gig0/1: ..25.5

The connections between the internal zone and the providers are labeled with network ranges:

- INTERNAL-ZONE to T: 20.16.15.0/30
- INTERNAL-ZONE to TGW2: 20.16.15.4/30
- T to EDGR: 20.20.25.0/30
- TGW2 to EDGR: 20.20.25.4/30
- EDGR to External: 20.30.27.0/30

INTERNAL-ZONE in the DC-UNIVERSE-2



Test Project objectives

No need to configure the hostname & static Ip address, you can verify its configurations for all network devices are preconfigured according to the topology diagrams.

FYI in this simulation, there is no password login to network devices.

Please configure the following requirements:



Home Network Configuration

To join the INET Universe we need to do some tasks so that our home becomes a part of that.

- 2.4G Wireless network with SSID named WFH-WIFI and then secure it with WPA2-PSK, for the passphrase: W1thS3cureP4\$\$
- For the internet-facing interface of HWR, make it receive a dynamic IP address from the DHCP server pool PUBLIC-SERVICE server in the DC-UNIVERSE-ZONE1. Of course, you need to relay it on the SRP router.
- Configure PUBLIC-SERVICE server in the DC-UNIVERSE-ZONE1 as DHCP Server, 8.8.8.8 as DNS, SRP as the default gateway, pool name HOMECLIENTS, then for IP range started 110.120.130.20 and the maximum number of users is 20.
- Configure HWR as DHCP Server for client laptop, 8.8.8.8 as DNS, For IP range started from 192.168.0.100 and the maximum number of users is 50.



DC-Universe-Zone1 Network segmentation

This simulation will use VLAN technology as the network segmentation on this Zone:

Vlan ID	Name	Ports
10	INTERNAL-SERVER-SRP	Fa0/24
88	INET-SERVICE-SIMULATION	Gig0/1, Gig0/2
100	DMZ-ZONE	Fa0/10
999	BLACKHOLE-ZONE	Fa0/2-9, Fa0/11-23

Don't forget to also configure the trunking system to work well between the VLANs. Please configure an IP address for inter-VLAN routing using the first usable address of each network. Only the specified VLANs on the above table flow to the outgoing traffic (except BLACKHOLE-ZONE). Pass the unused Port to the Blackhole Zone.



WorldWideWeb ABCompany.com Configuration

To serve the world and to make the website accessible, you need to configure the services in the **DC-Universe-Zone1**. Enable the required service and do the following tasks:

- Register the records of abcompany.com on the **PUBLIC-SERVICE** Server.

Name	Type	Value
www	A	8.8.8.10
dmz	A	1.1.1.10
access	CNAME	dmz.abcompany.com

- The HTTP content of dmz.abcompany.com will be served by **DMZ-SRV**, for this case please configure the **FIREWALL-SRP** as the perimeter
 - Create an object network named DMZ-SRV and configure it for static NAT.
 - Implement an access-list named WWW-PUBLIC-POLICY for access from the internet to the **DMZ-SRV**.
 - For testing purposes, please configure ICMP traffic in the WWW-PUBLIC-POLICY ACL.
- You can use the client laptop in the Home network to access abcompany.com websites.

Routing The INET Universe Public Space

It means making our router devices connected, making the traffic in the public space flow to the correct destination, and we can rely on the most popular routing protocol, it is BGP.

Devices	BGP AS Number	Network Advertisement
IGWR	65000	20.16.15.8/30
TGW1	65001	redistribute connected
TGW2	65002	redistribute connected
EDGR	65003	redistribute connected
SRP	65004	8.8.8.0/28 110.120.130.0/24 1.1.1.0/28

InterConnect Universe Zone configuration

The connection between the Server in the internal server for each DC Universe Zone (please examine the topology diagram). It needs to be flown via a private tunnel. The technology that we use is GRE IP. After you understand where it's to be configured, which is the network that needs to be connected. Now it's time to configure the tunnel:

- Use 100 as the tunnel interface number for both routers.
- Here is the IP address for our requirements

Router	Tunnel Address	Tunnel Source	Tunnel Destination
DC-Zone1	10.100.100.2/30	Gig0/2	20.16.15.1
DC-Zone2	10.100.100.1/30	Gig0/0	20.30.27.2

- To know each other use the advanced distance vector protocol that was designed by Cisco. Use 100 as the routing ID for both routes. Stop sending routing updates to any interfaces (except the tunnel and interface facing to the internal server).

Internal Space Translation

Our internal network space can't access the outside network. We need to configure it with the network address translation:

- For Internal Server in the DC Universe Zone 2, configure NAT using POOL named PUBLIC-IP using the usable address in the network 20.16.15.8/30 with access list number 177 to cover the internal server network.
- For DMZ Server in the DC Universe Zone 1, create object network DMZ and translate using the dynamic interface.

Logging

An activity like debugging, and logging the console needs to be conducted so please configure logging in the DC-Universe-Zone1:

- Configure logging server at INTERNAL-SERVER-SRP.
- Configure timestamp logging until msec on the SRP router.
- Make sure that the SRP router can send its log to the server.

Good Luck