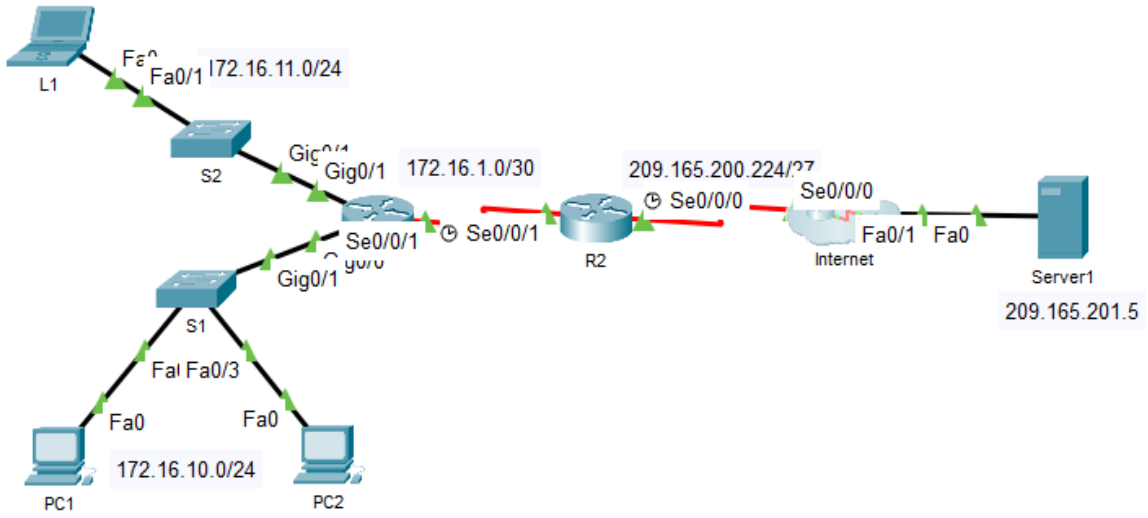
LAB 9.1 DYNAMIC NAT CONFIGURATION

Packet Tracer: Configure Dynamic NAT

This guide helps you set up and verify **Dynamic Network Address Translation (NAT)** on a Cisco router in Packet Tracer. Dynamic NAT allows multiple internal devices to share a smaller pool of public IP addresses when accessing the internet.



Part 1: Configure Dynamic NAT on R2

Follow these steps to configure NAT on Router R2.

Step 1: Permit Traffic with an Access Control List (ACL)

Define which internal network traffic can be translated.

- **Command**: `access-list 1 permit 172.16.0.0 0.0.255.255`
- **Explanation**: Allows all devices in the `172.16.0.0/16` network to be candidates for NAT.

Step 2: Configure a NAT Pool of Public IP Addresses

Create a pool of public IP addresses for translation.

- **Command**: `ip nat pool WLINK_IP 209.165.200.229 209.165.200.230 netmask 255.255.255.252`
- **Explanation**: Defines a pool named `WLINK_IP` with two usable public IPs (`.229` and `.230`).

What happens if more than 2 devices try to access the internet? Additional devices will be denied access until an address in the pool becomes free.

Step 3: Associate the ACL with the NAT Pool

Link the allowed traffic with the public IP pool.

- **Command**: `ip nat inside source list 1 pool WLINK_IP`
- **Explanation**: Tells R2 to translate traffic permitted by ACL 1 using addresses from `WLINK_IP`.

Step 4: Configure NAT Interfaces

Designate which router interfaces are "inside" (private network) and "outside" (public network/internet).

- **Commands**:
  - `interface s0/0/0`
  - `ip nat outside`
  - `interface s0/0/1`
  - `ip nat inside`
- **Explanation**: `s0/0/0` is the internet-facing interface, and `s0/0/1` is the internal network-facing interface.

Part 2: Verify NAT Implementation

Confirm that NAT is working correctly.

Step 1: Access Services Across the Internet

Initiate traffic from an internal device to an external resource.

- **Action**: From **L1, PC1, or PC2**, open the web browser and access **Server1** (e.g., `209.165.200.234`).
- **Expected**: The web page should load, confirming successful translation.

Step 2: View NAT Translations

Check the active NAT translations on R2.

- **Command**: `show ip nat translations`
- **Explanation**: This command shows which private IPs are currently being translated to which public IPs from your pool.

Complete Configuration Script for R2

```
Router>enable
Router#configure terminal
Router(config)#access-list 1 permit 172.16.0.0 0.0.255.255
Router(config)#ip nat pool ANY_POOL_NAME 209.165.200.229
209.165.200.230 netmask 255.255.255.252
Router(config)#ip nat inside source list 1 pool ANY_POOL_NAME
Router(config)#interface s0/0/0
Router(config-if)#ip nat outside
Router(config-if)#exit
Router(config)#interface s0/0/1
Router(config-if)#ip nat inside
Router(config-if)#end
Router#copy running-config startup-config
```