

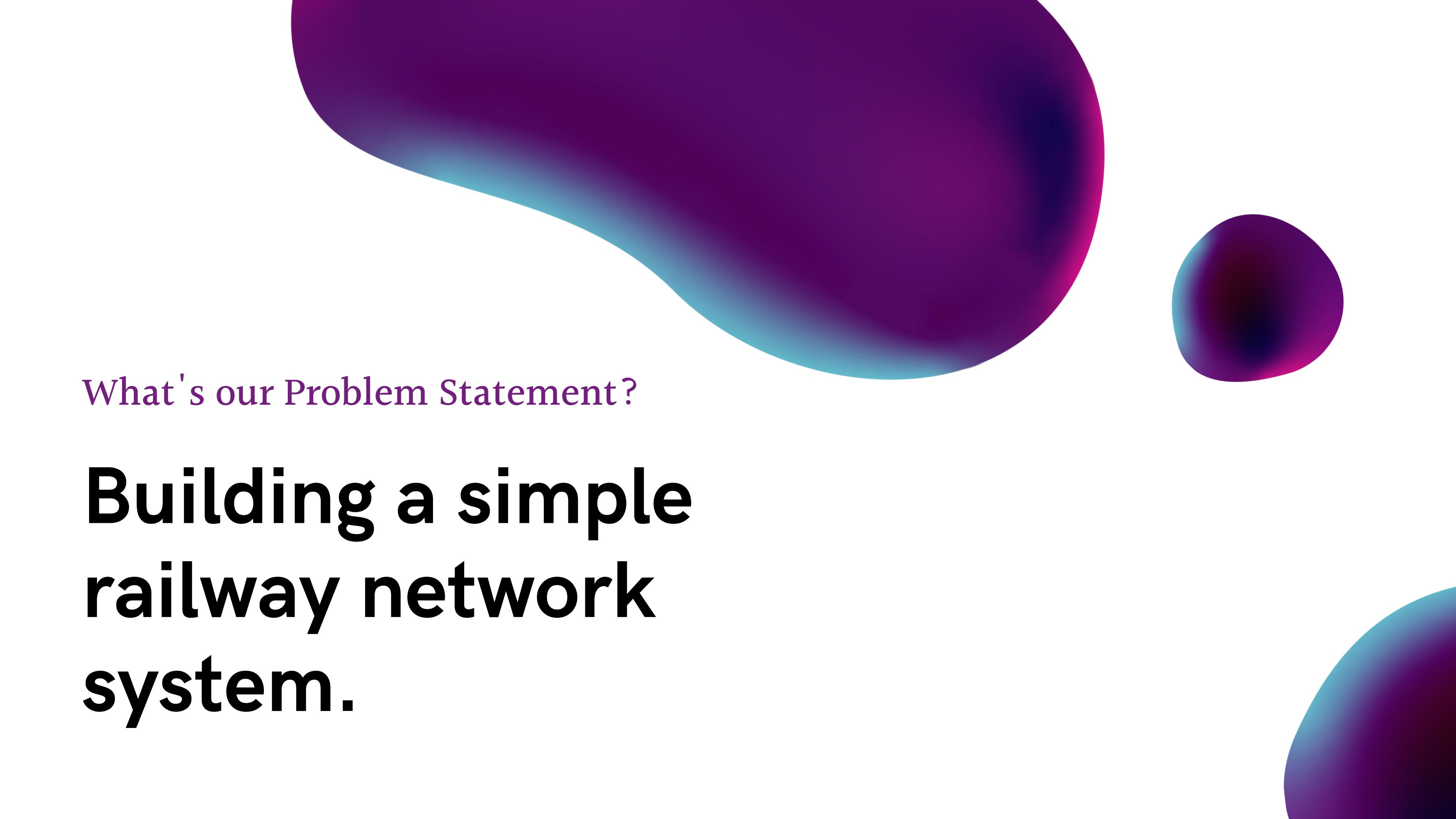
Case Study

Railway Network System

01

Cisco Packet Tracer

Cisco Packet Tracer as the name suggests, is a tool built by Cisco. This tool provides a network simulation to practice simple and complex networks.

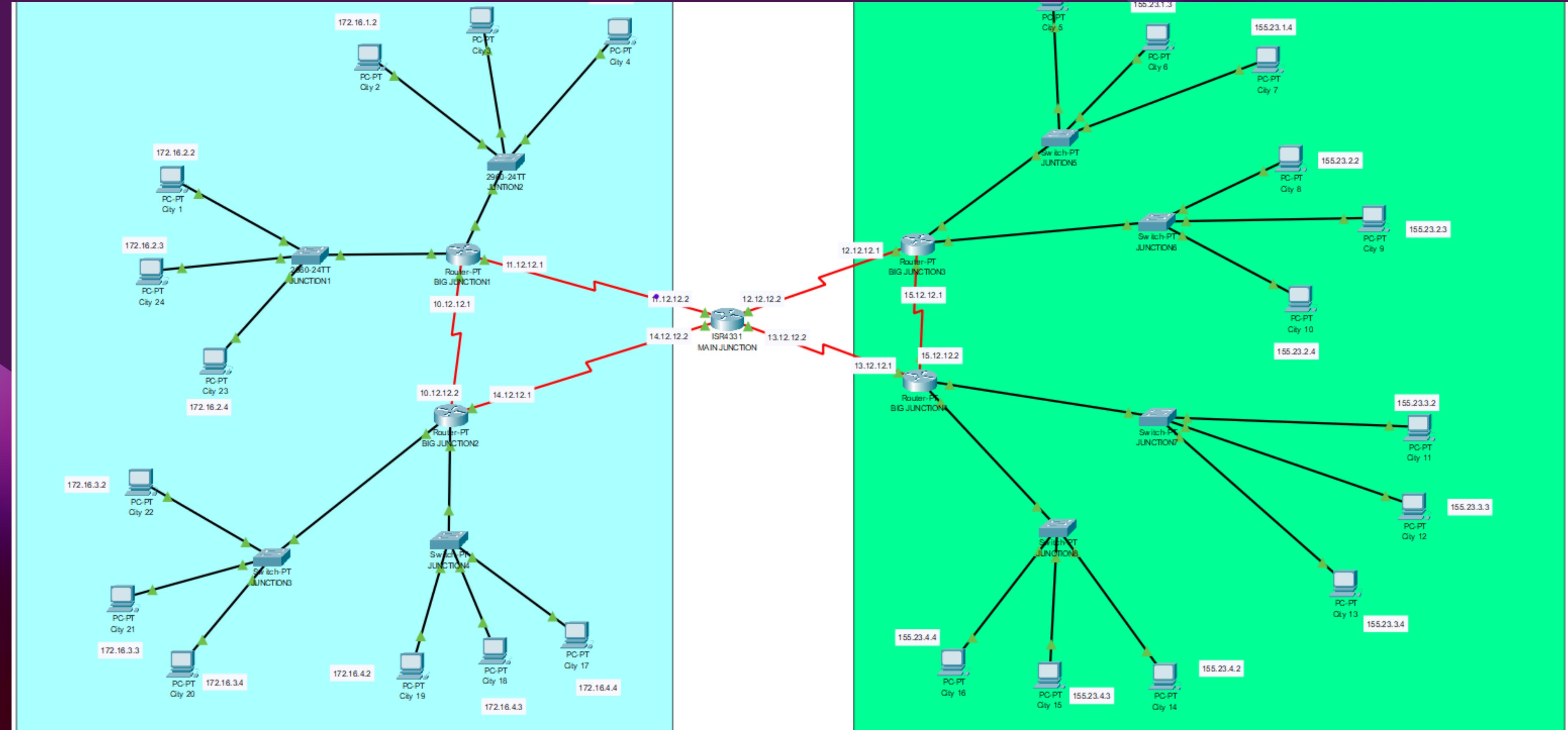


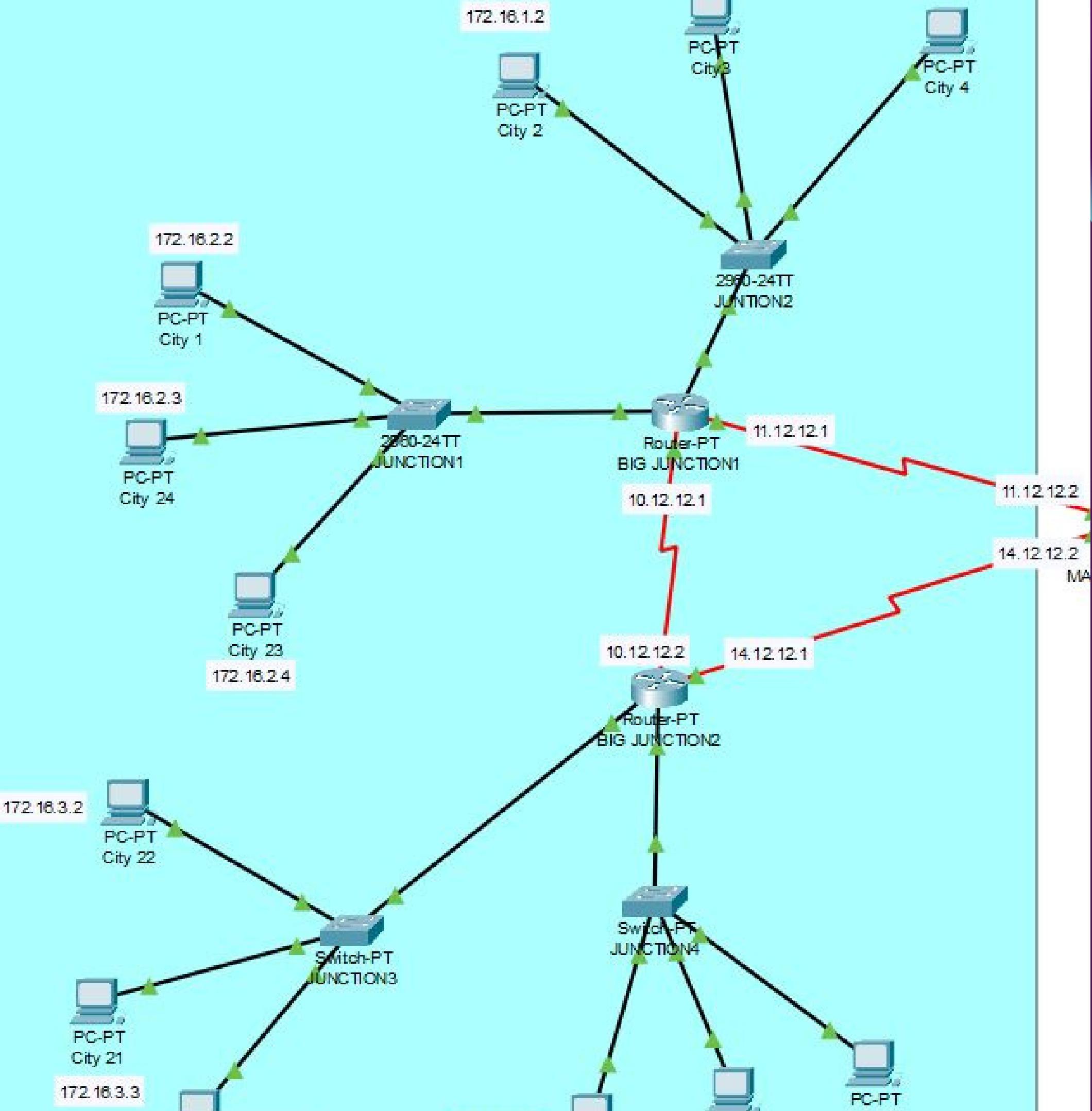
What's our Problem Statement?

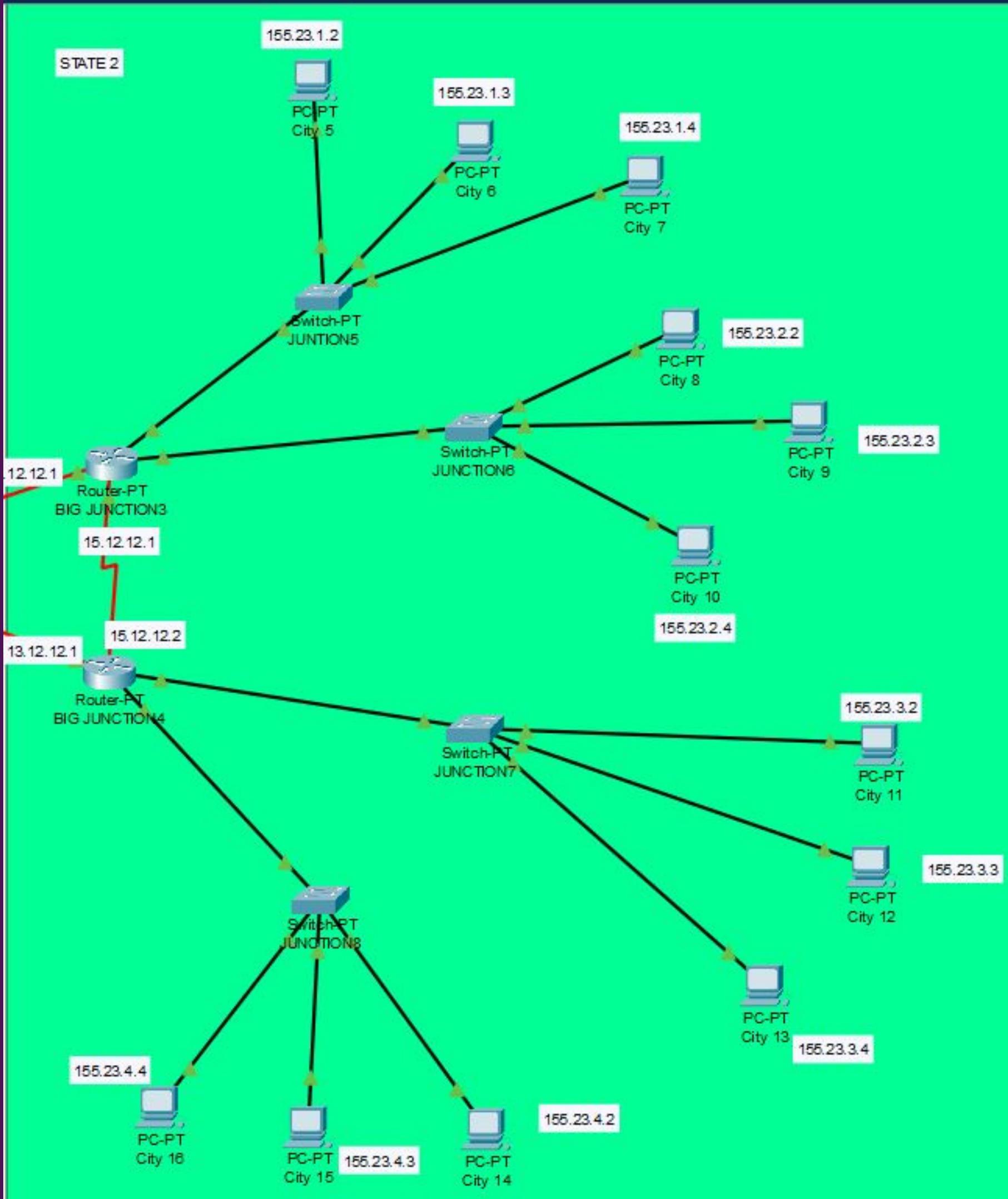
**Building a simple
railway network
system.**

02

Our Approach









Physical Config CLI Attributes

GLOBAL	
Settings	
Algorithm Settings	
ROUTING	
Static	
RIP	
INTERFACE	
FastEthernet0/0	
FastEthernet1/0	
Serial2/0	
Serial3/0	
FastEthernet4/0	
FastEthernet5/0	

Static Routes

Network:

Mask:

Next Hop:

Network Address
172.16.1.0/24 via 11.12.12.2
172.16.2.0/24 via 11.12.12.2
172.16.2.0/24 via 10.12.12.2

Equivalent IOS Commands

```
Router#  
Router#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#  
Router(config)#ip route 155.23.2.0 255.255.255.0 11.12.12.2  
Router(config)#  
Router(config)#  
Router(config)#[
```

 BIG JUNCTION2

Physical Config CLI Attributes

GLOBAL

Settings
Algorithm Settings

ROUTING

Static **RIP**

INTERFACE

FastEthernet0/0
FastEthernet1/0
Serial2/0
Serial3/0
FastEthernet4/0
FastEthernet5/0

Static Routes

Network:
Mask:
Next Hop:

Add

Network Address

172.16.3.0/24 via 10.12.12.1
172.16.4.0/24 via 10.12.12.1
172.16.4.0/24 via 14.12.12.2

Remove

Equivalent IOS Commands

```
Router(config)#  
Router(config)#ip route 172.16.2.0 255.255.255.0 10.12.12.1  
Router(config)#  
Router(config)#  
Router(config)#ip route 155.23.1.0 255.255.255.0 14.12.12.2  
Router(config)#  
Router(config)#  
Router(config)#
```

Top

Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

SWITCHING

VLAN Database

INTERFACE

GigabitEthernet0/0/0

GigabitEthernet0/0/1

GigabitEthernet0/0/2

Serial0/1/0

Serial0/1/1

Serial0/2/0

Serial0/2/1

Static Routes

Network

Mask

Next Hop

Network Address

155.23.3.0/24 via 13.12.12.1

172.16.1.0/24 via 11.12.12.1

155.23.1.0/24 via 12.12.12.1

Equivalent IOS Commands

```
Router(config)#
Router(config)#ip route 155.23.2.0 255.255.255.0 12.12.12.1
Router(config)#
Router(config)#
Router(config)#ip route 172.16.2.0 255.255.255.0 11.12.12.1
Router(config)#
Router(config)#
Router(config)#
```



Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Static Routes

Network

Mask

Next Hop

Network Address

172.16.4.0/24 via 12.12.12.2

172.16.2.0/24 via 12.12.12.2

Equivalent IOS Commands

```
Router(config)#no ip route 172.16.4.0 255.255.255.0 12.12.12.1
Router(config)#ip route 172.16.4.0 255.255.255.0 12.12.12.2
Router(config)#
Router(config)#
Router(config)#ip route 172.16.2.0 255.255.255.0 12.12.12.2
Router(config)#
Router(config)#
Router(config)#
Router(config)#
```

 Top



Physical Config CLI Attributes

GLOBAL

Settings

Algorithm Settings

ROUTING

Static

RIP

INTERFACE

FastEthernet0/0

FastEthernet1/0

Serial2/0

Serial3/0

FastEthernet4/0

FastEthernet5/0

Static Routes

Network

Mask

Next Hop

Add**Network Address**

172.16.1.0/24 via 13.12.12.2

Remove**Equivalent IOS Commands**

```
Router>enable  
Router#  
Router#configure terminal  
Enter configuration commands, one per line. End with CNTL/Z.  
Router(config)#  
Router(config)#[
```

Setup

Endsystems

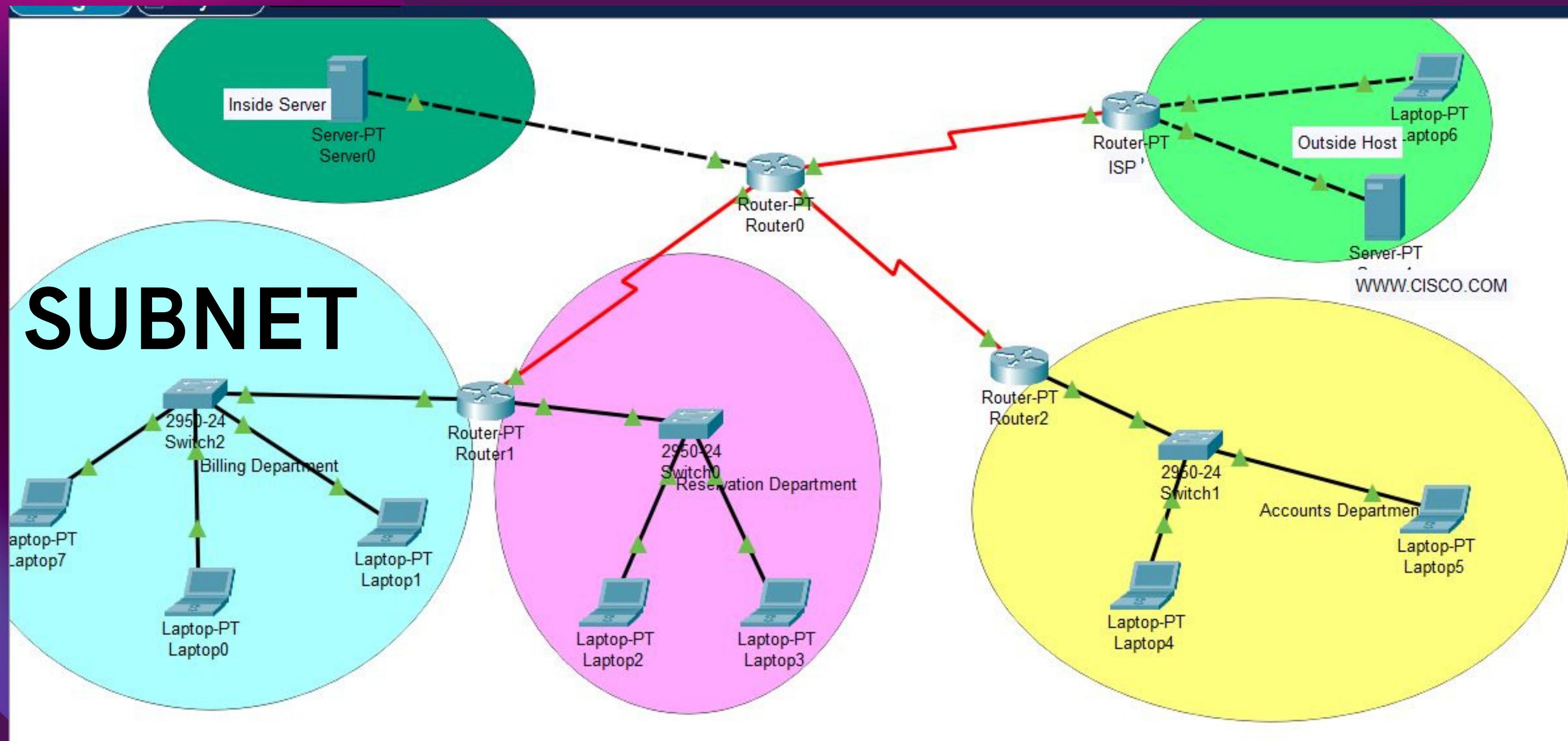
Every endsystem as shown in the packet tracer file, represents a city and have a separate subnet within itself for different departments

Junctions

They connect different cities together, here we use switched to indicate the various junctions and crucial stations for the railways.

Main Junction

The main junction can be considered as a major railway station of a major city like Mumbai, Bangalore, Delhi etc where many lines from various junctions come and intersect and can diverge to different paths.



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