TRƯỜNG ĐẠI HỌC CÔNG NGHỆ THÔNG TIN - ĐHQG-HCM
KHOA MẠNG MÁY TÍNH VÀ TRUYỀN THÔNG

DISTANCE VECTOR ROUTING PROTCOL

RIP

QUẢN TRỊ MẠNG VÀ HỆ THỐNG

Networks and Systems Administration

MSc. Trần Thị Dung

CONTENT

- Overview
- Distance-vector algorithm
- RIP operations
- RIP configuration

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- **Overview**
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OVERVIEW

- Routers share updates between neighbors
- Not aware of the network topology
- They send periodic updates to broadcast IP 255.255.255.255 or multicast IP even if topology has not changed
- Protocol: RIP, IGRP, RIPv2, EIGRP

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Distance-vector algorithm

- RIP uses the Bellman-Ford algorithm as its routing algorithm.
  - Sending and receiving routing information
  - Calculating the best paths and installing routes in the routing table
  - Detecting and reacting to topology changes
- Routing updates broadcasted every 30 seconds, using UDP port 520.

RIPv1 VS RIPv2

	RIPv1	RIPv2
Metric	Hop count	
Updates forwarded to address	255.255.255.255	224.0.0.9
Supports VLSM & CIDR	No	Yes
Support Authentication	No	Yes

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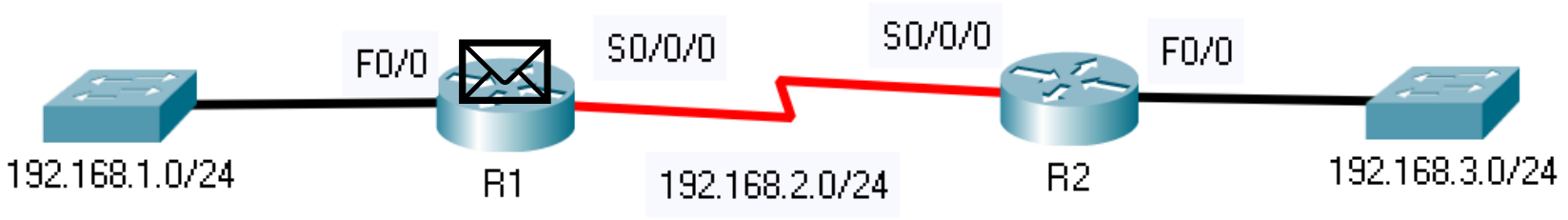
RIP operation - 1

192.168.1.0/24	F0/0	1

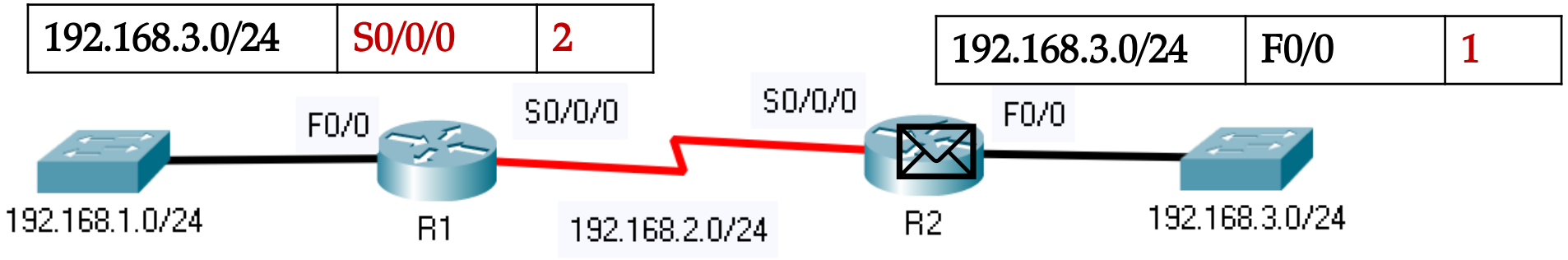
192.168.1.0/24	S0/0/0	2



Network	Interface	Hop
192.168.1.0/24	F0/0	0
192.168.2.0/24	S0/0/0	0

Network	Interface	Hop
192.168.2.0/24	S0/0/0	0
192.168.3.0/24	F0/0	0

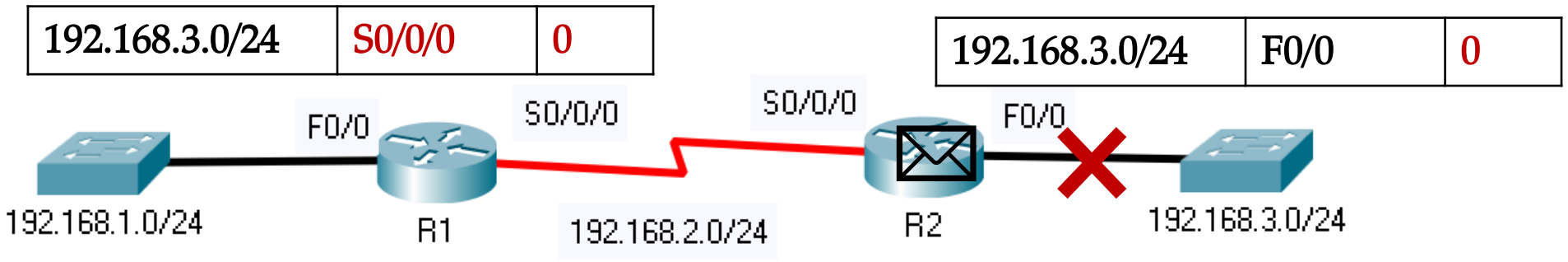
RIP operation - 2



Network	Interface	Hop
192.168.1.0/24	**F0/0**	**0**
192.168.2.0/24	S0/0/0	0

Network	Interface	Hop
192.168.2.0/24	S0/0/0	0
192.168.3.0/24	F0/0	0
192.168.1.0/24	S0/0/0	**2**

RIP operation - 3



Network	Interface	Hop
192.168.1.0/24	F0/0	0
192.168.2.0/24	S0/0/0	0
~~192.168.3.0/24~~	~~S0/0/0~~	~~2~~

Network	Interface	Hop
192.168.2.0/24	S0/0/0	0
~~192.168.3.0/24~~	~~F0/0~~	~~0~~
192.168.1.0/24	S0/0/0	2

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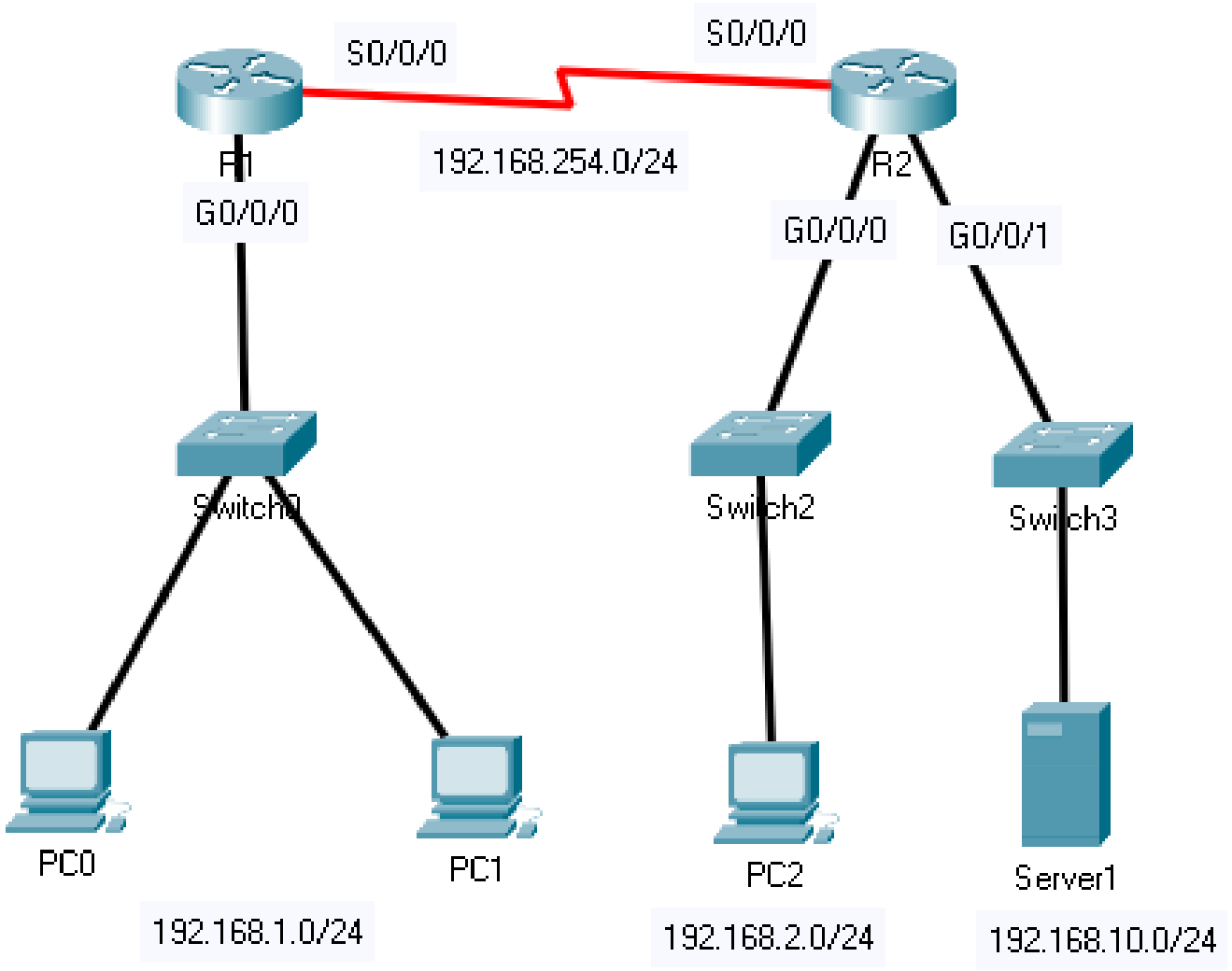
- **RIP configuration**

RIP Configuration



RIP configuration command

- R1(config)#router rip
- R1(config-router)#version 2
- R1(config-router)#network 192.168.1.0
- R1(config-router)#network 192.168.254.0
- R1(config-router)#passive-interface g0/0/0
- R1(config-router)#default-information originate

Enter router configuration mode

Using RIP version 2

Enables RIP on interfaces
Advertises the specified network

Prevent sending out unneeded updates on a

Propagating the default route