



# سييسكو في 6 ساعات

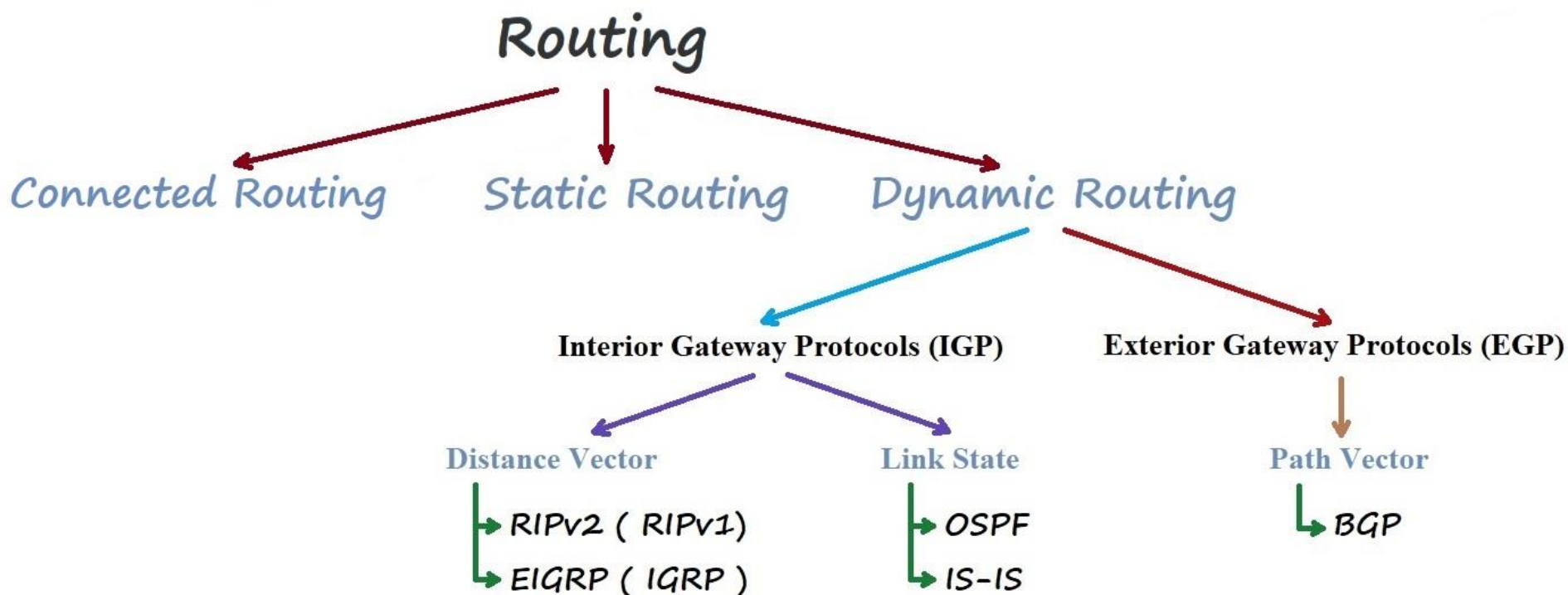


الكورس

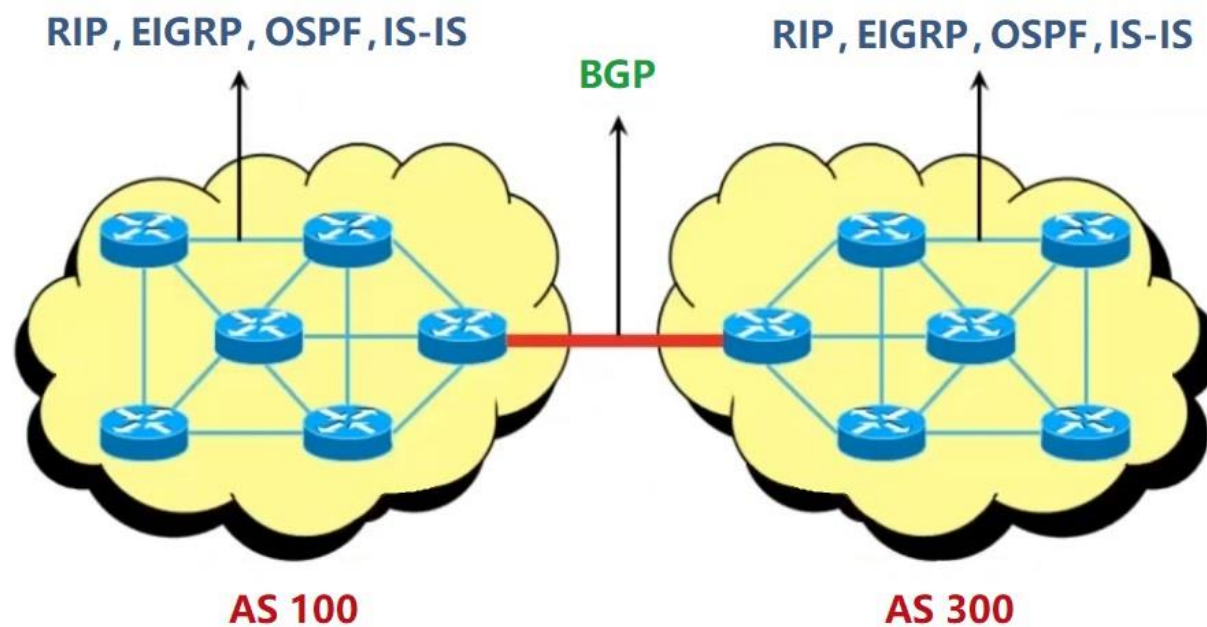
يختصر أكثر من مائة ساعة  
يركز على احتياجات المهندسين  
في سوق العمل

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Second Edition  
حقوق النشر والترجمة محفوظة

## - Routing Protocols

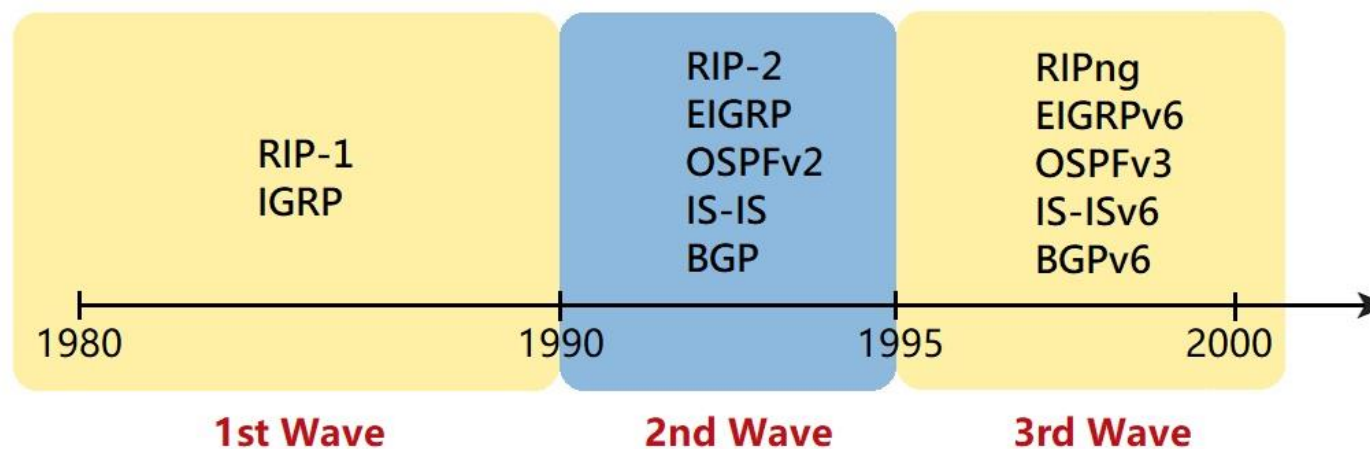


## - Routing Protocols

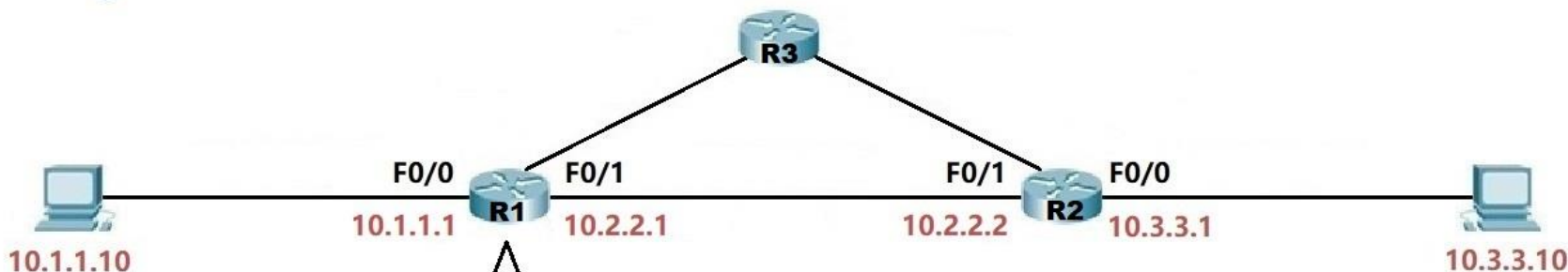


## - Routing Protocols

### Routing Protocols Timeline



# - Routing Protocols



Routing Protocol	Codes	Administrative Distance (AD)
Directly connected	C	0
Static route	S	0,1
External BGP	B	20
Internal EIGRP	D	90
OSPF	O	110
IS-IS	i	115
RIP	R	120

```

R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP, M - mobile, B - BGP
       D - EIGRP, EX - EIGRP external, O - OSPF, IA - OSPF inter area

Gateway of last resort is not set

C 10.1.1.0/24 is directly connected, FastEthernet 0/0
C 10.2.2.0/24 is directly connected, FastEthernet 0/1
R 10.3.3.0/24 [120/1] via 10.2.2.2, 00:00:03, FastEthernet0/1
    
```

Routing Protocol	Metric
Static route	fixed
BGP	AS path
EIGRP	BW+Delay
OSPF	Cost BW
IS-IS	Cost BW
Rip	Hop count

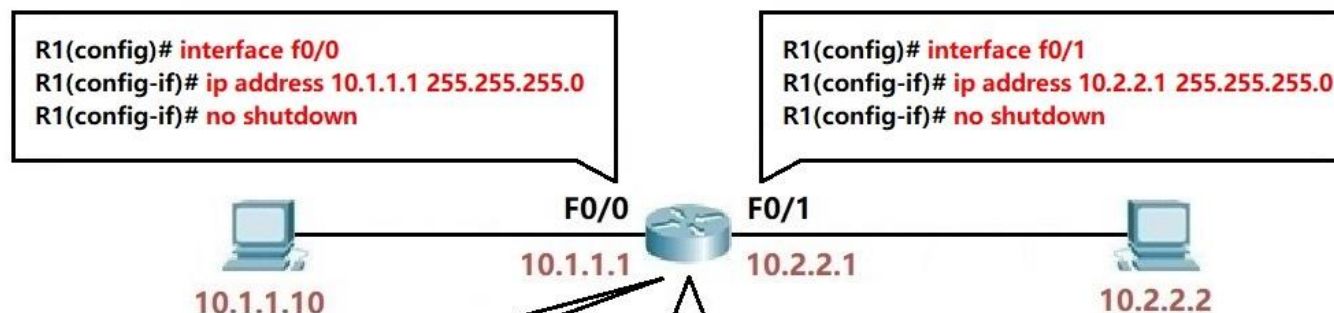
Lowest

Lowest

## - Connected Routing

Connected Routing are added to Routing table if The interface :

- has an IP address
- in the up state



R1# **show ip interface brief**

Interface	IP-Address	OK?	Method	Status	Protocol
FastEthernet0/0	10.1.1.1	YES	manual	up	up
FastEthernet0/1	10.2.2.1	YES	manual	up	up
Serial 0/1	unassigned	YES	unset	down	down
Vlan1	unassigned	YES	unset	admin down	down

R1# **show ip route**

Codes: C - connected, S - static, I - IGRP, R - RIP  
 D - EIGRP, EX - EIGRP external, O - OSPF

Gateway of last resort is not set

C 10.1.1.0/24 is directly connected, FastEthernet 0/0  
 C 10.2.2.0/24 is directly connected, FastEthernet 0/1

## - Static Routing

### - Advantages

- No load on the CPU
- No bandwidth usage

### - Disadvantages

- Updated manually - by hand
- Not suitable for large networks

### - Command

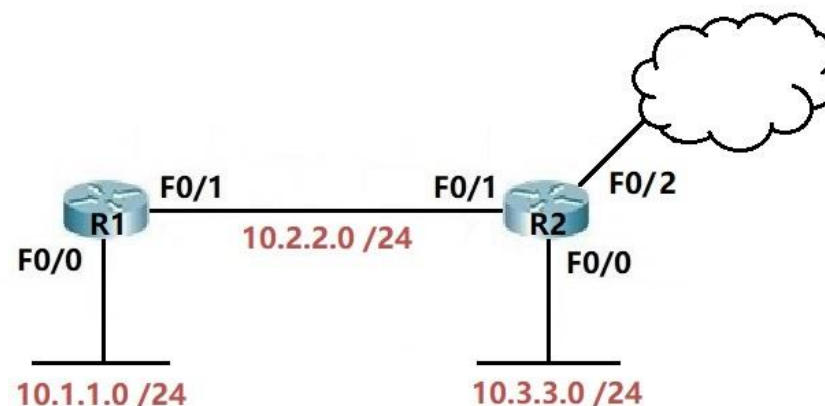
```
R1(config)# IP route 10.3.3.0 255.255.255.0 F0/1 ( interface )
```

Or

```
R1(config)# IP route 10.3.3.0 255.255.255.0 10.2.2.2 ( Gateway )
```

```
R2(config)# IP route 0.0.0.0 0.0.0.0 F0/2 ( internet )
```

```
R2(config)# NO IP route 0.0.0.0 0.0.0.0 F0/2 ( Delete )
```



## - Static Routing



```
Command Prompt
C:\>ping 10.3.3.10
Pinging 10.3.3.10 with 32 bytes :
Request timed out.
```

```
Command Prompt
C:\>ping 10.2.2.2
Pinging 10.2.2.2 with 32 bytes :
Request timed out.
```

```
R1# show ip route
Codes: C - connected, S - static, I - IGRP, R - RIP
       D - EIGRP, EX - EIGRP external, O - OSPF

Gateway of last resort is not set

C 10.1.1.0/24 is directly connected, FastEthernet 0/0
C 10.2.2.0/24 is directly connected, FastEthernet 0/1
```



## - Static Routing

