

Computer Network Protocols

Network Layer (Part 1)

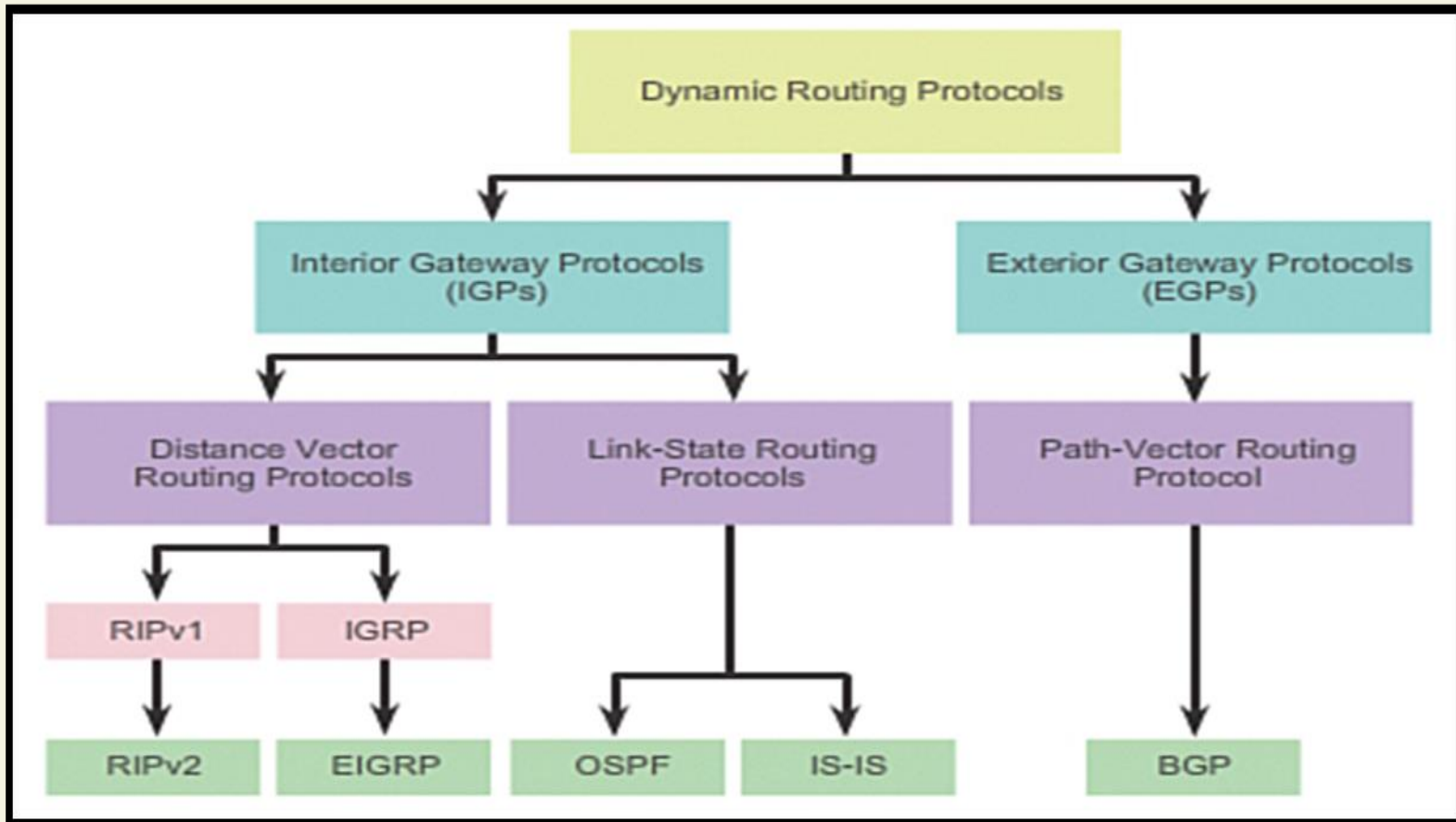
Lesson 7

كلية المستقبل الجامعة
قسم هندسة تقنيات الحاسوب
المرحلة الرابعة

By

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Routing Protocols

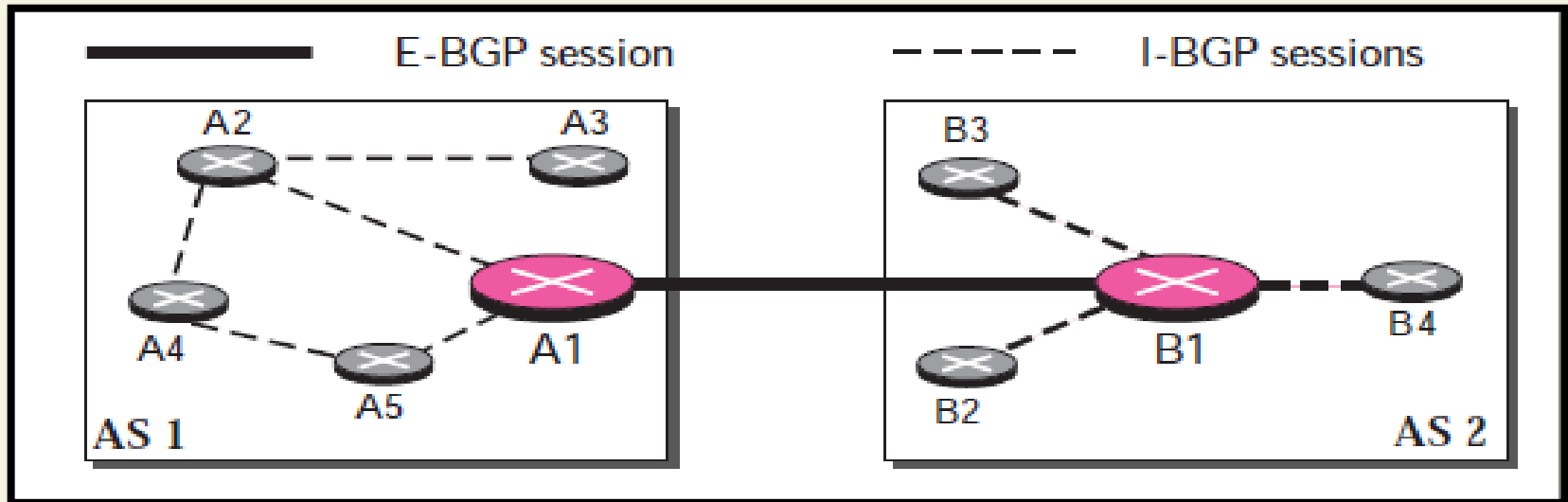


Border Gateway Protocol (BGP)

- ***Inter-domain routing protocol for routing between autonomous systems*** (holds the Internet together)
- ***BGP is neither a link state, nor a distance vector protocol.*** Routing messages in BGP contain complete routes.
- ***Network administrators can specify routing policies*** (BGP supports flexibility -- paths could be chosen by a provider based on a policy).
- BGP's goal is to ***find any path*** (not an optimal one).

BGP Sessions

iBGP	eBGP
<ul style="list-style-type: none"> used to connect different routers have same AS(same company) Propagate reachability information to all AS-internal routers. 	<ul style="list-style-type: none"> used to connect different routers have different AS(different company) Obtain subnet reachability information from neighboring ASs.



BGP Route Selection

Router may learn about more than 1 route to destination AS, selects route based on:

- 1. Local preference value attribute: policy decision***
- 2. Shortest AS-PATH***
- 3. Closest NEXT-HOP router.***
- 4. Additional criteria***

BGP Messages

*BGP messages exchanged between peers over **TCP** connection, BGP has four types of messages*

- 1. **OPEN**: Establish a connection with a BGP peer*
- 2. **UPDATE** : advertise or withdraw routes to a destination*
- 3. **KEEPALIVE**: Inform a peer that the sender is still alive but has no information to send.*
- 4. **NOTIFICATION**: Notify that errors are detected, also used to close connection.*

End Of Lesson 7

Thanks For Listening