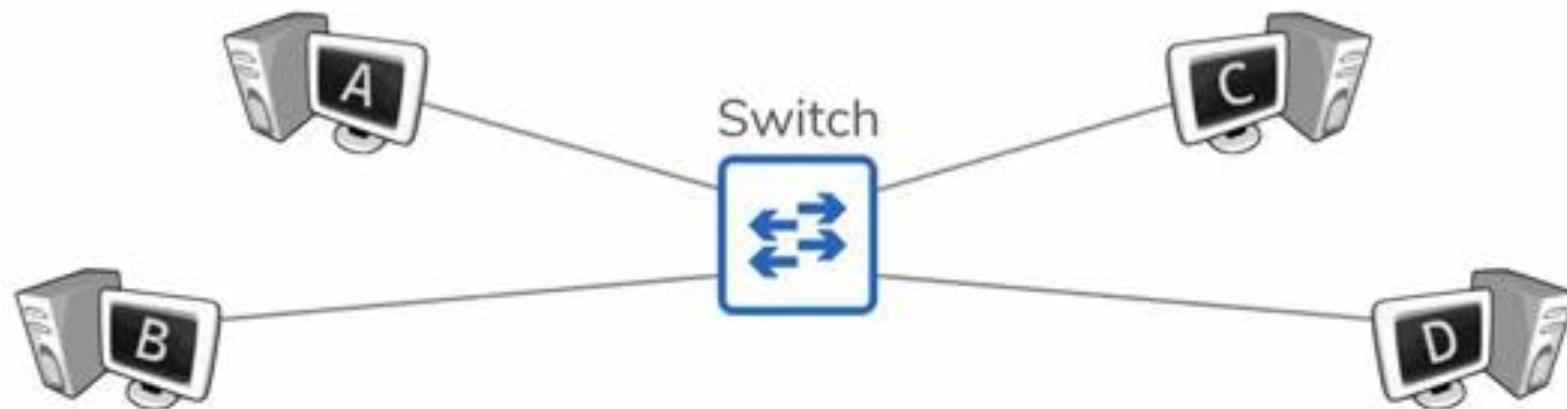


Switches

Darryl J D'Souza
Mob No: 9986382162

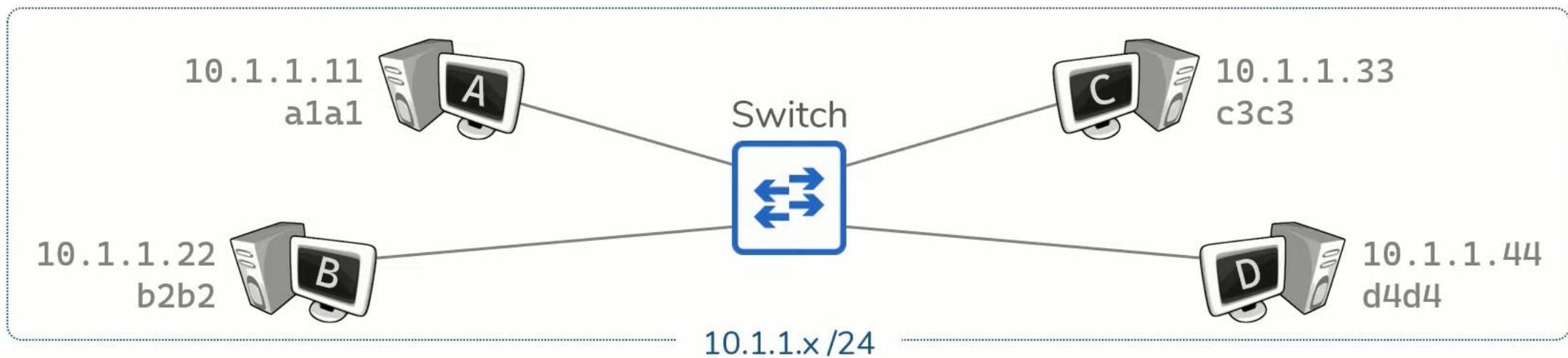
Switches

- Switching is the process of **moving data within networks**
 - **Switches** are devices whose primary purpose is Switching



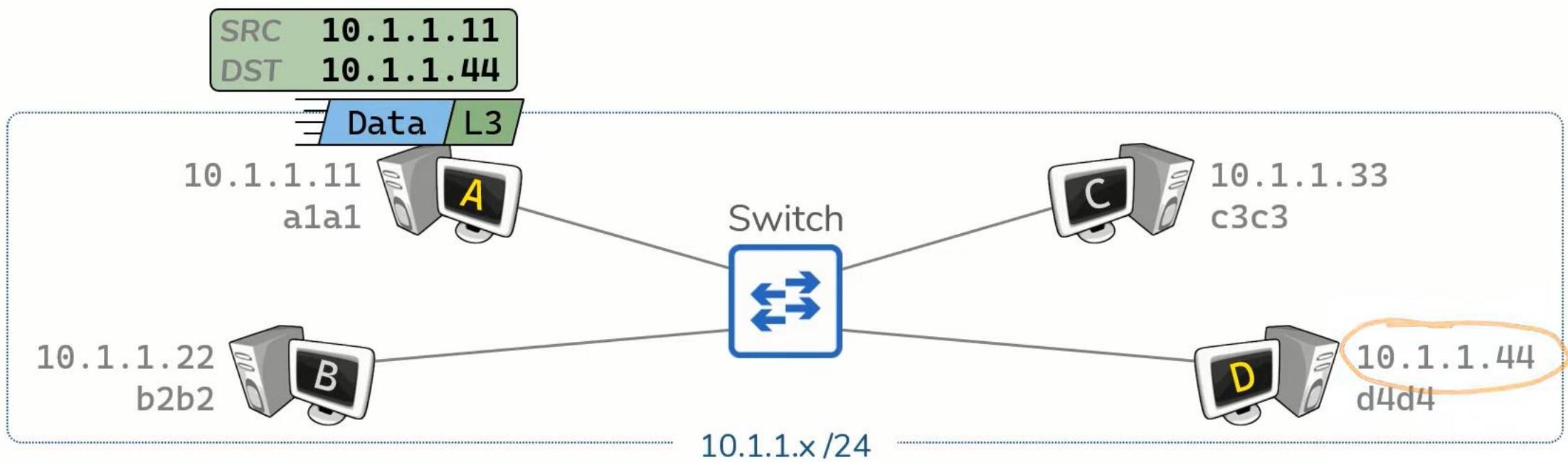
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- **Switching** is the process of **moving data within networks**
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 - Devices communicating through a switch belong to the same IP network



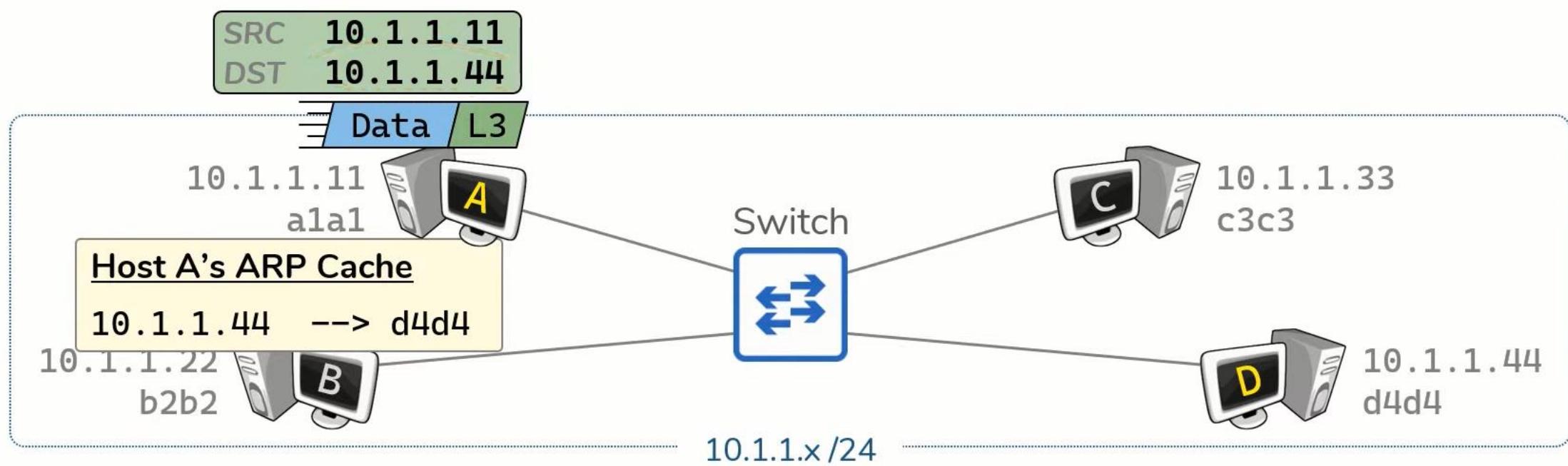
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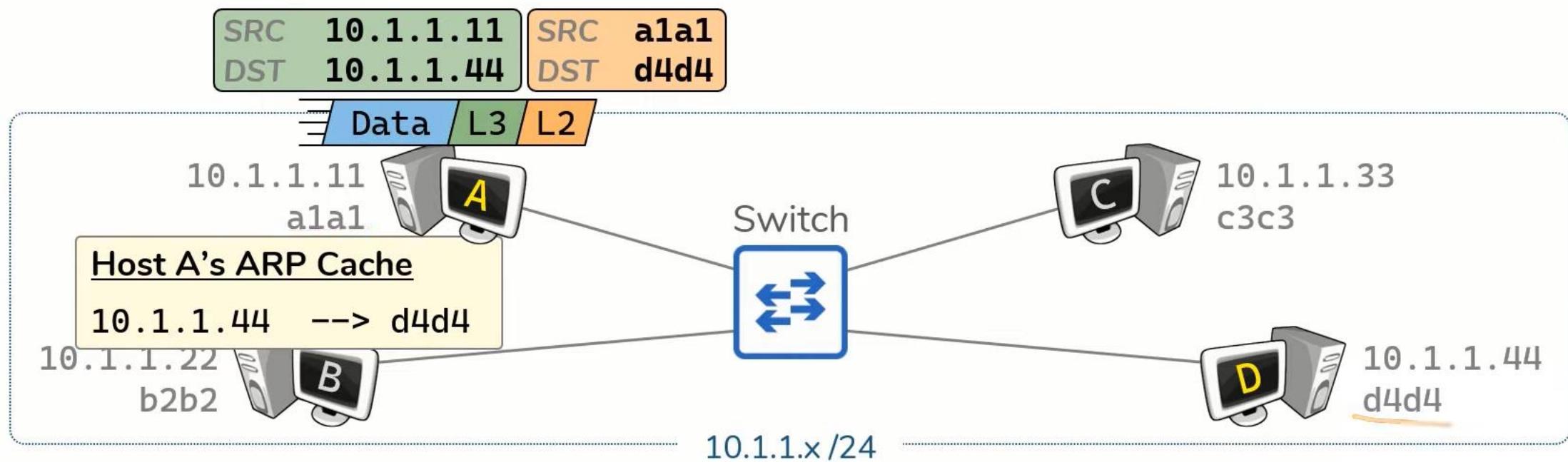
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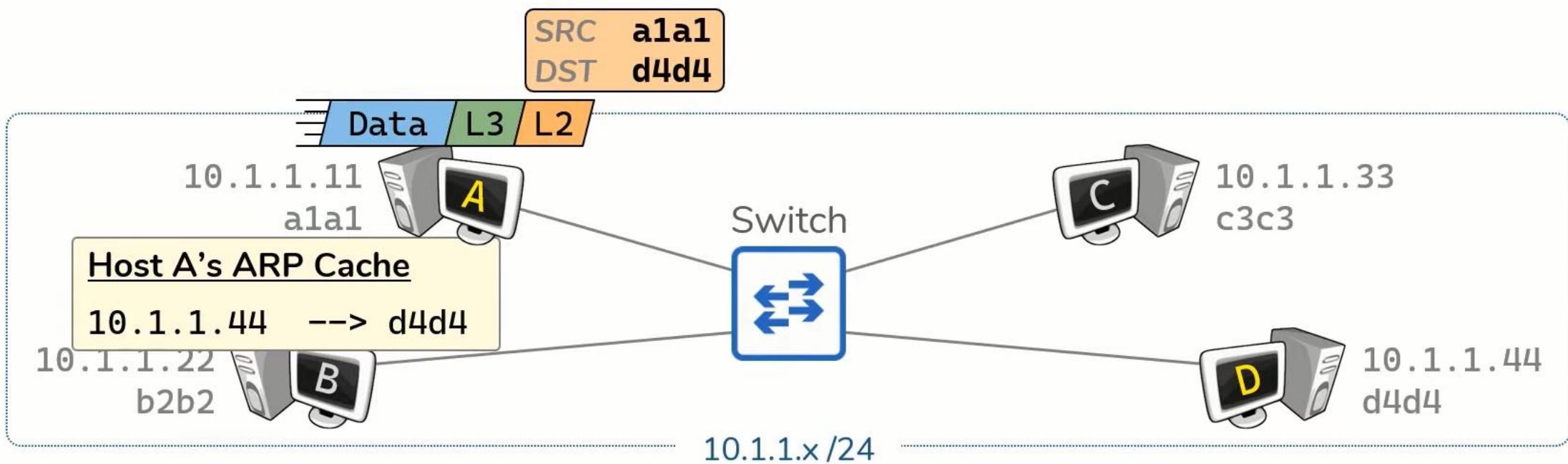
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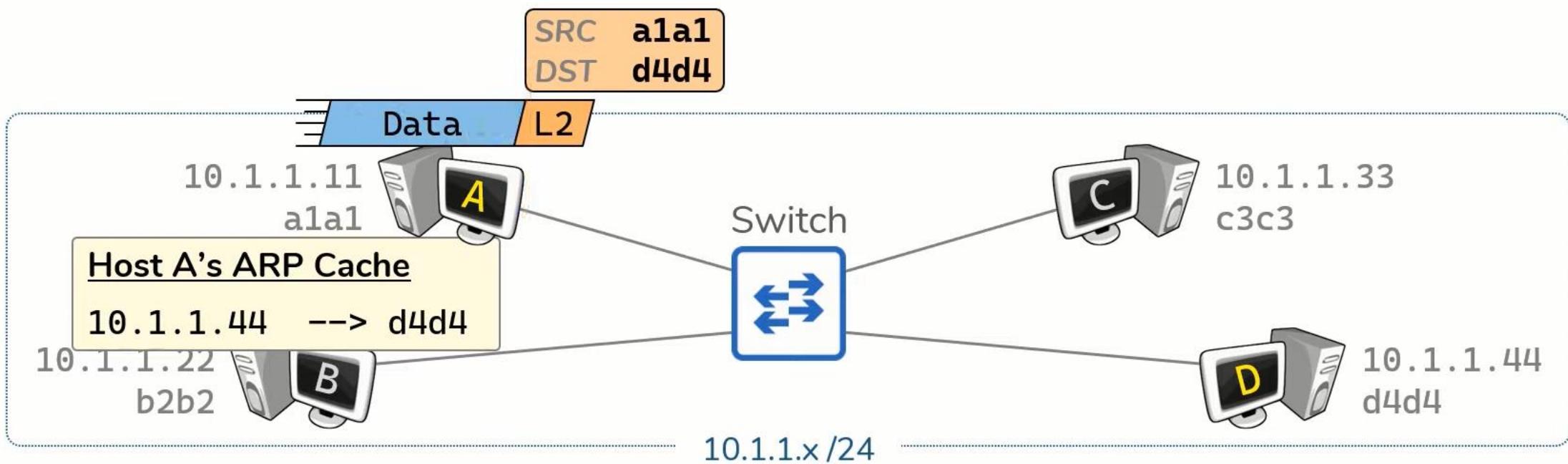
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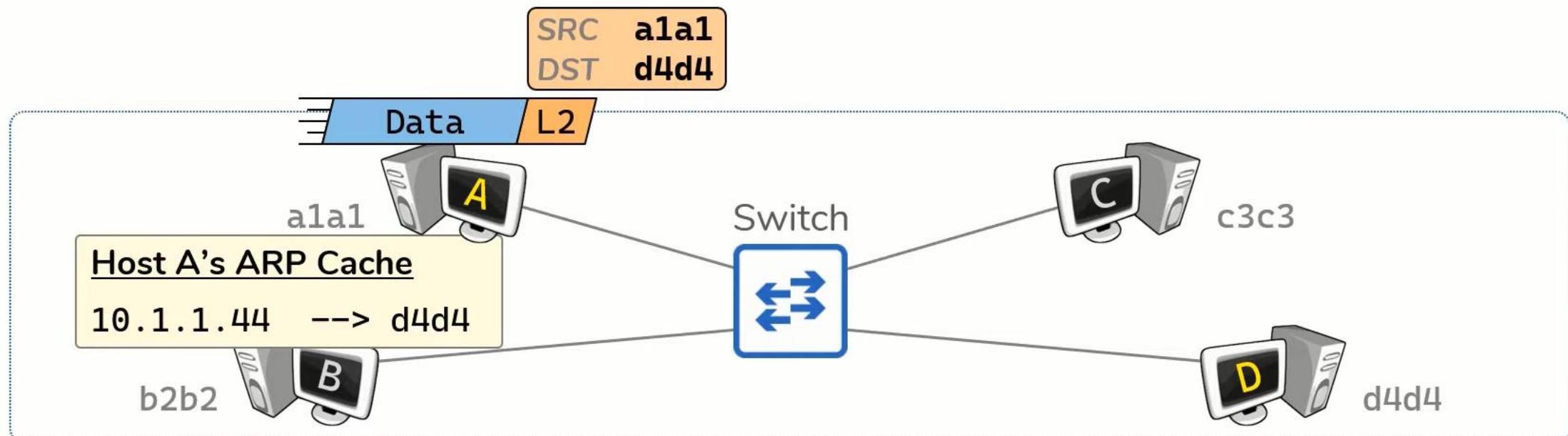
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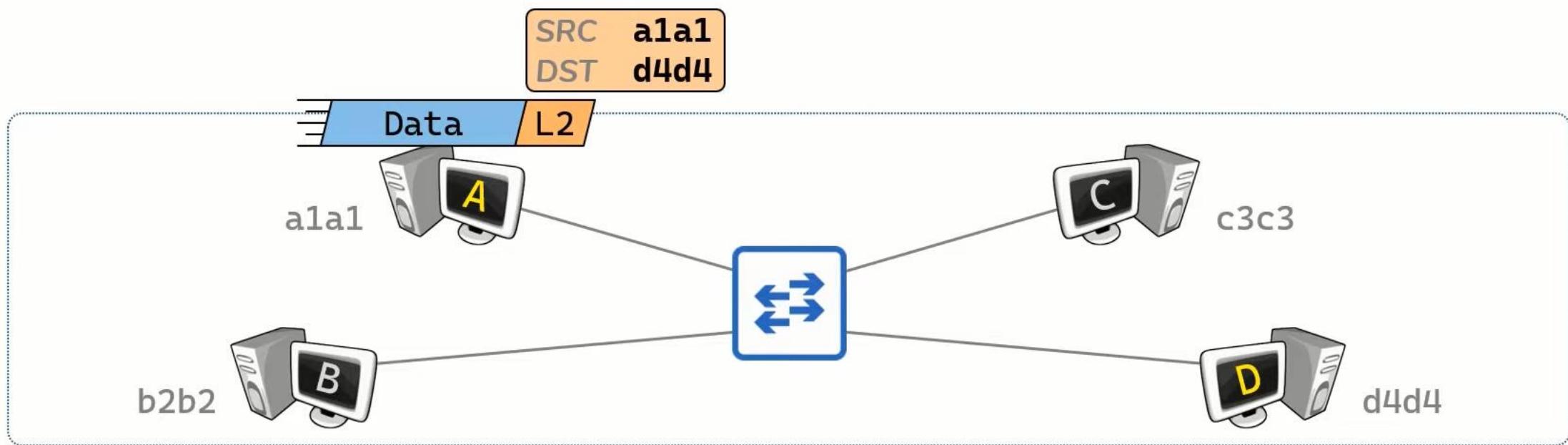


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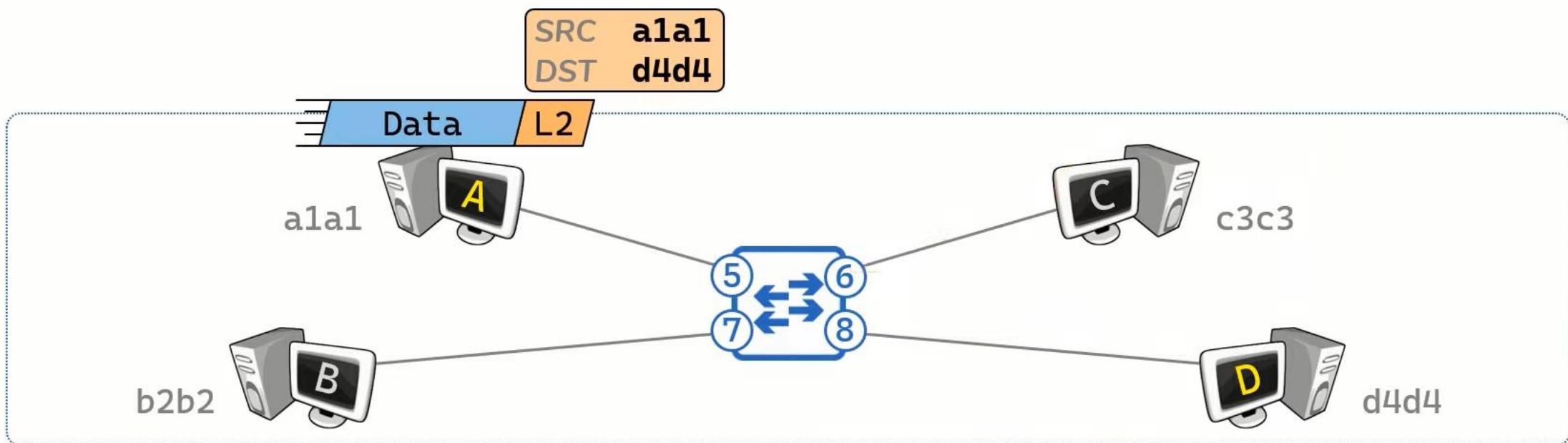


Switches



Switches

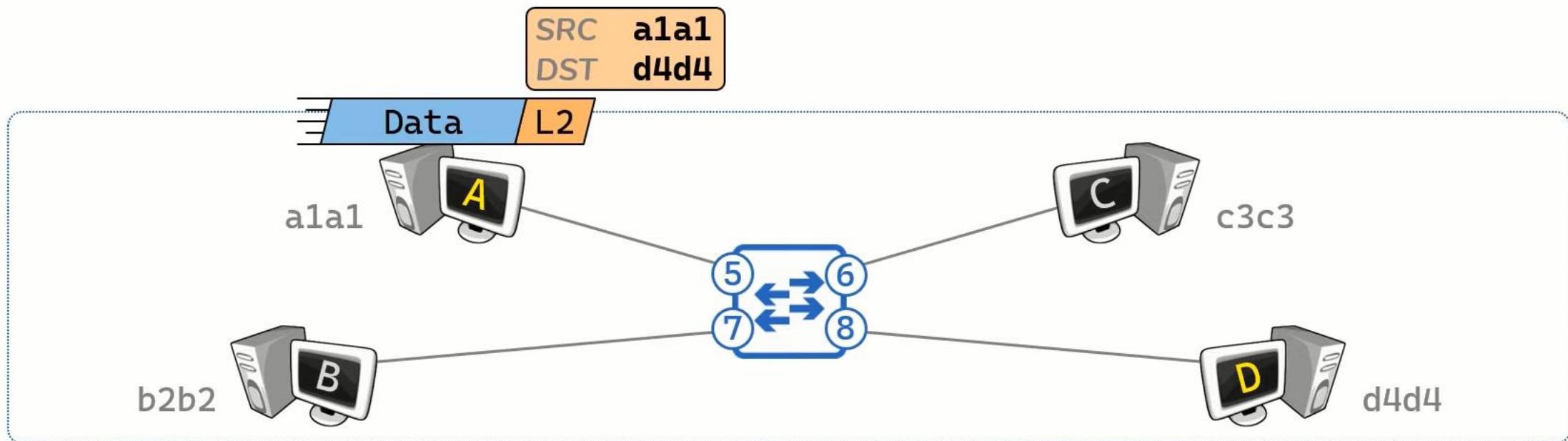
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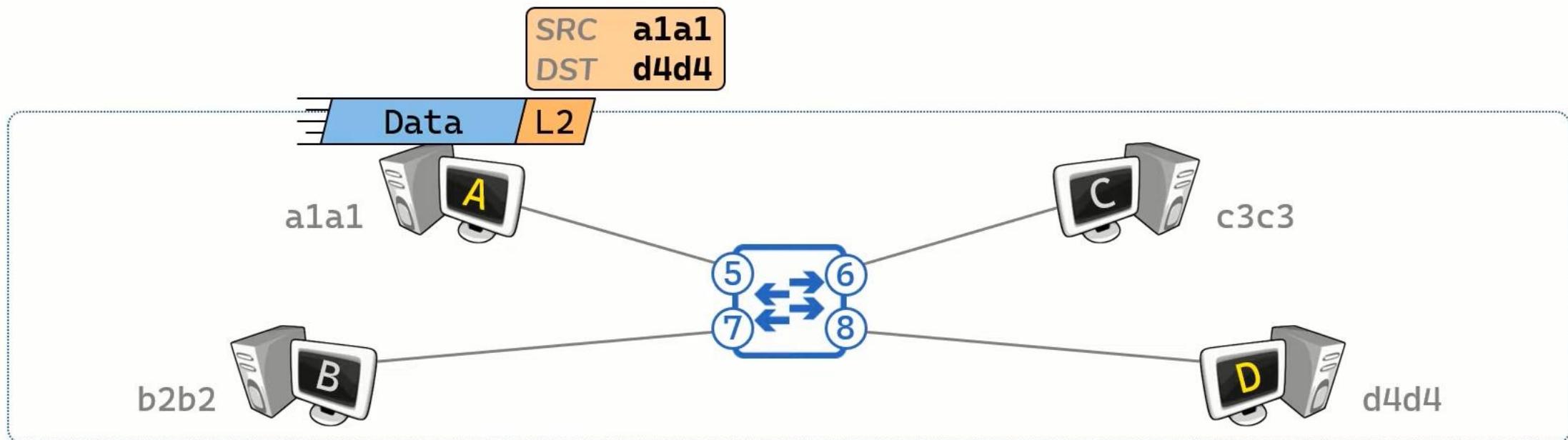
MAC Address Table	
5	→ a1a1
6	→ c3c3
7	→ b2b2
8	→ d4d4



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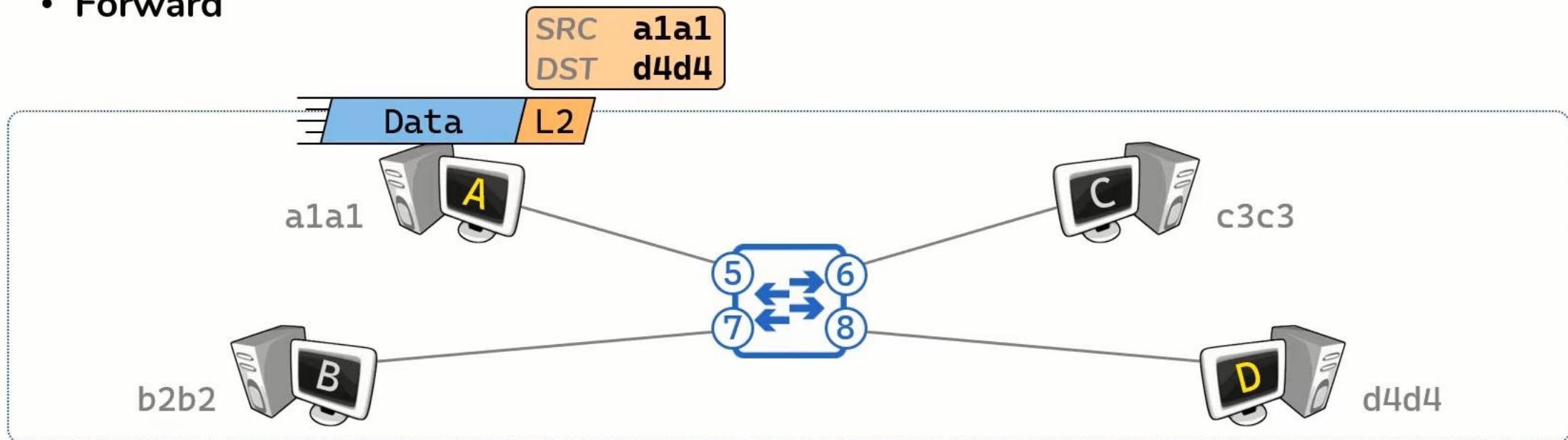
MAC Address Table



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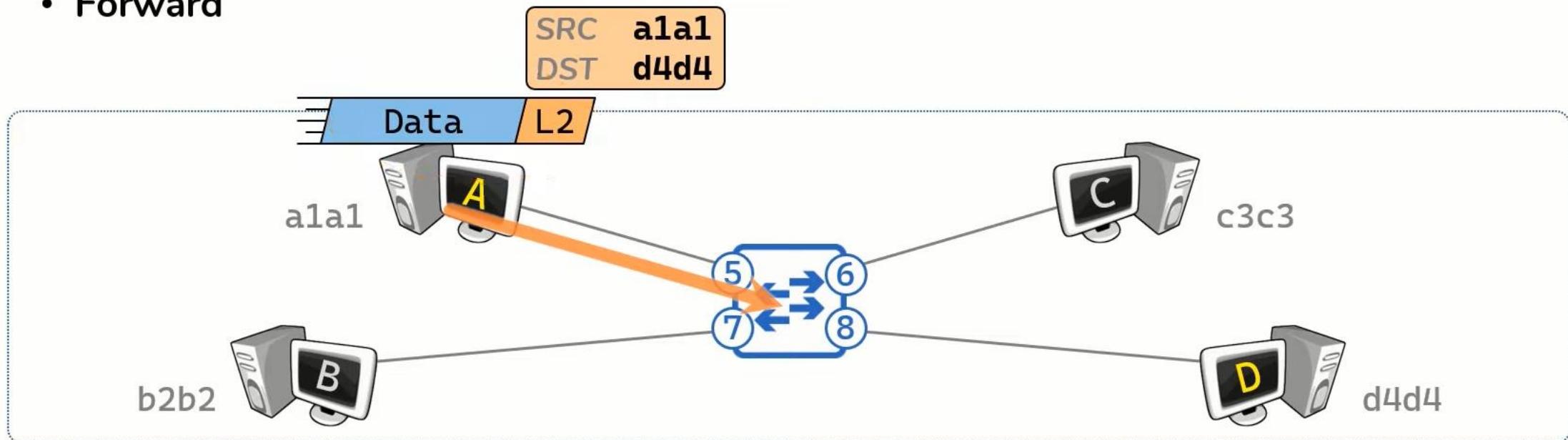
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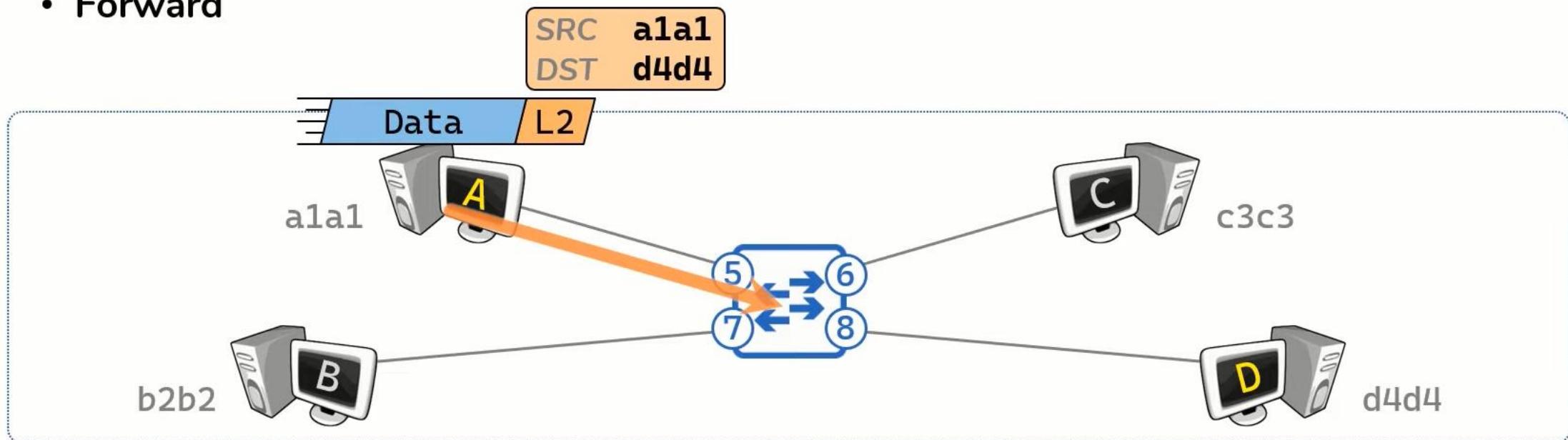
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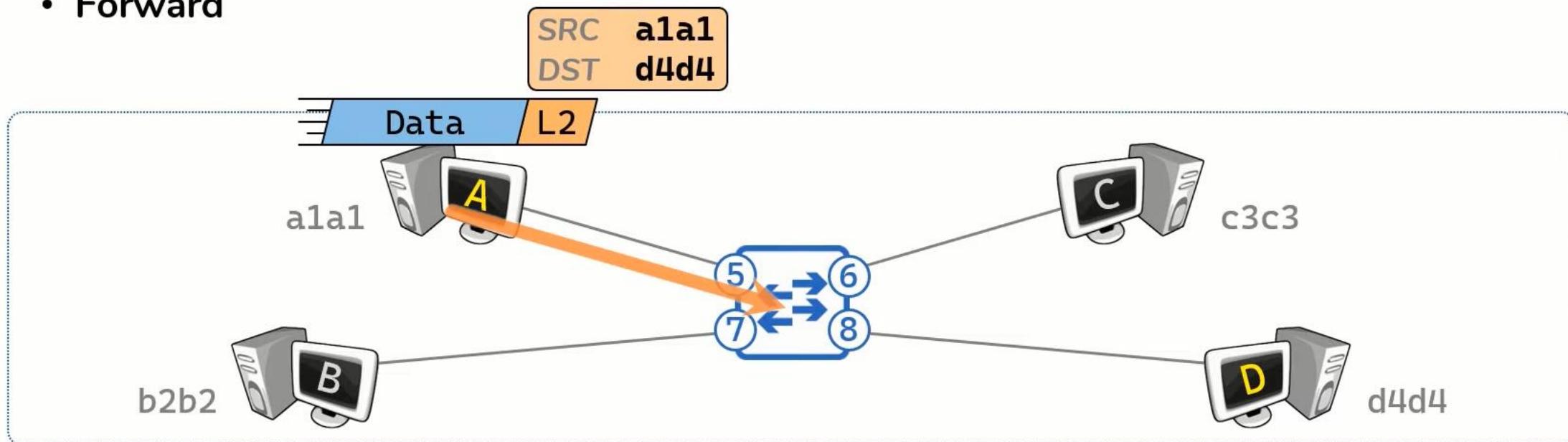
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Switches

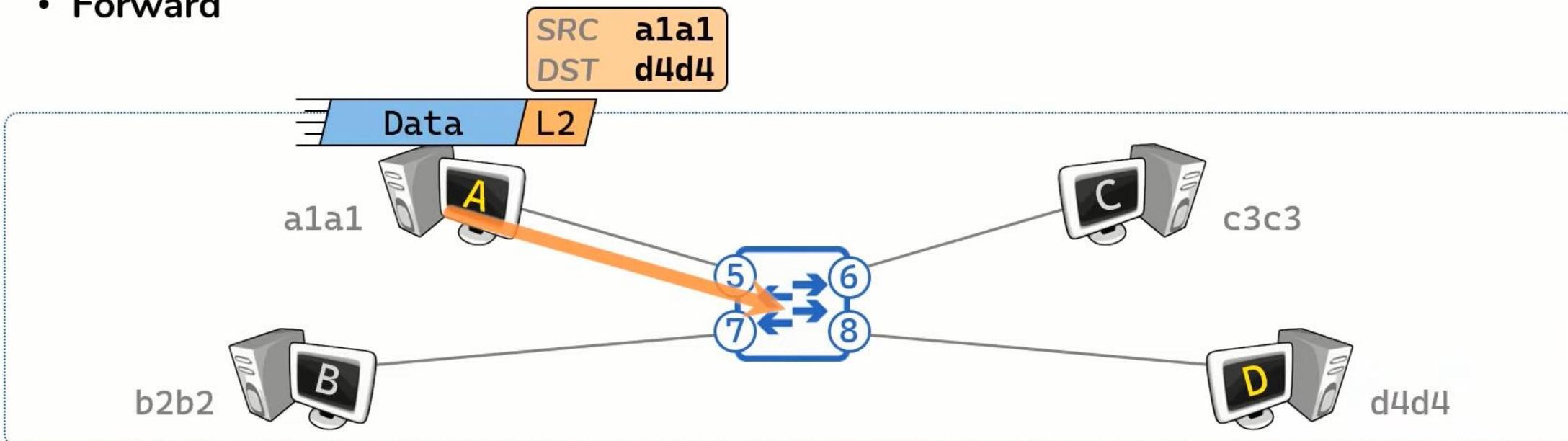
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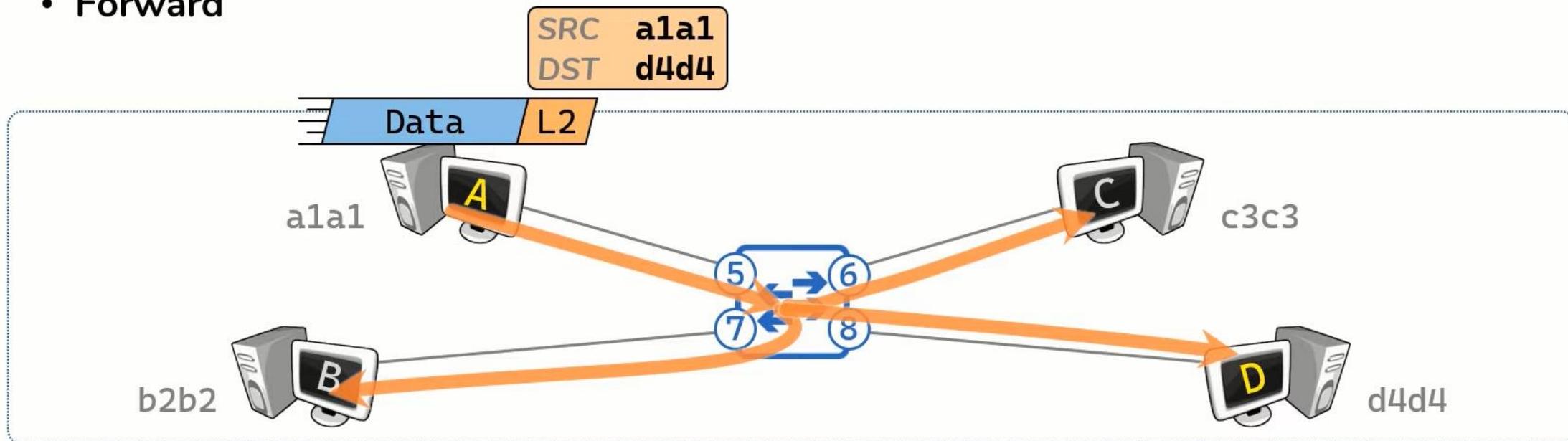
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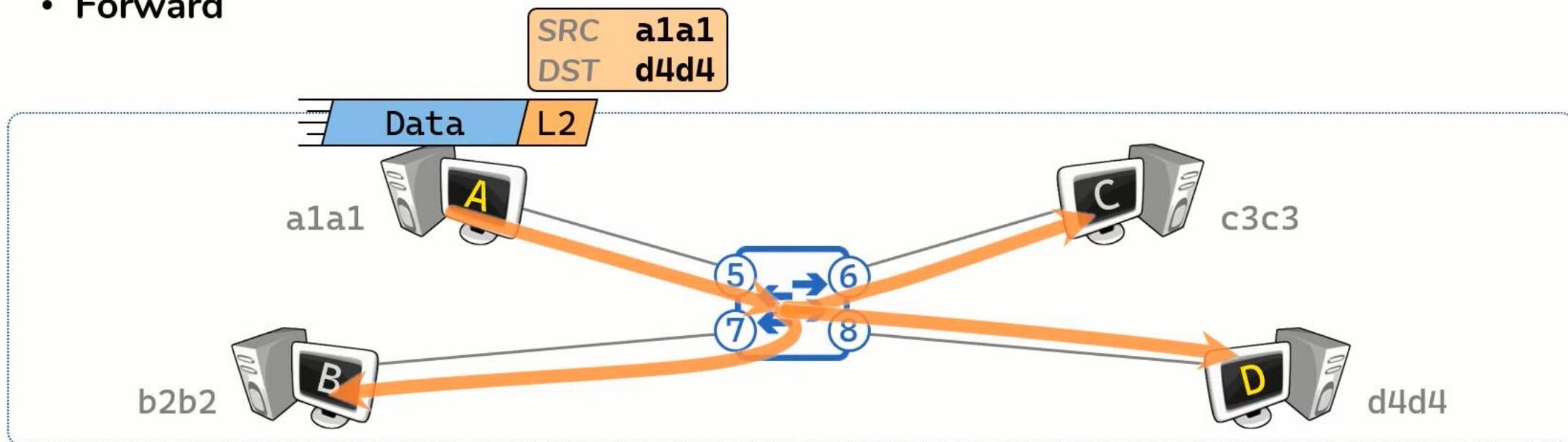
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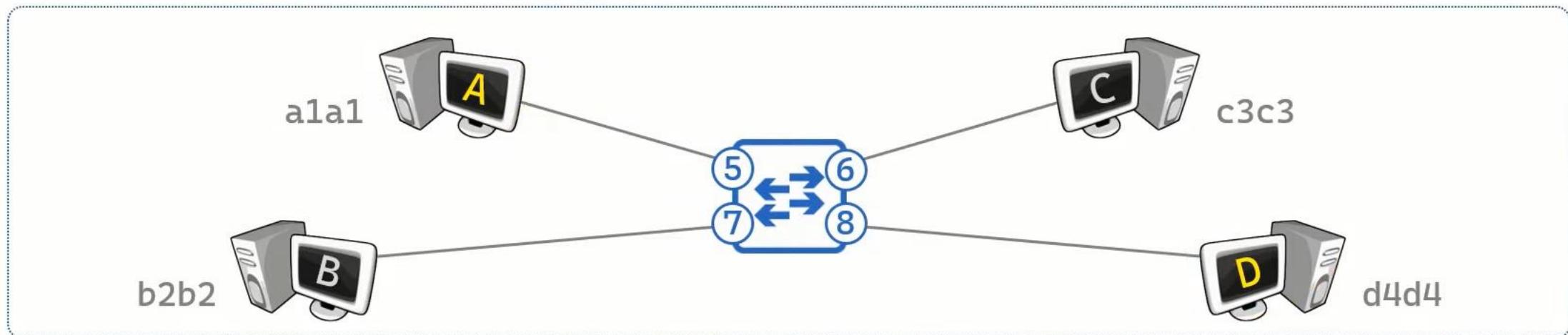


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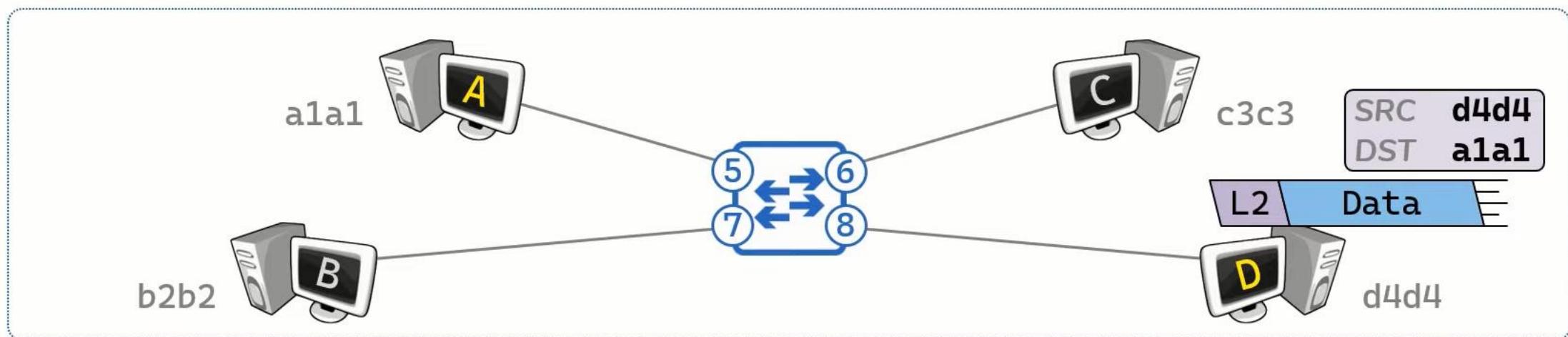
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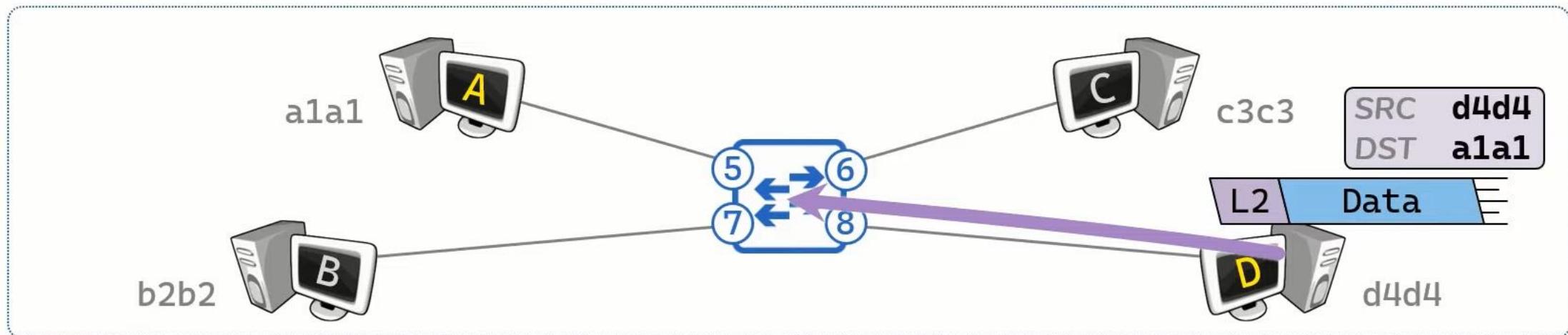


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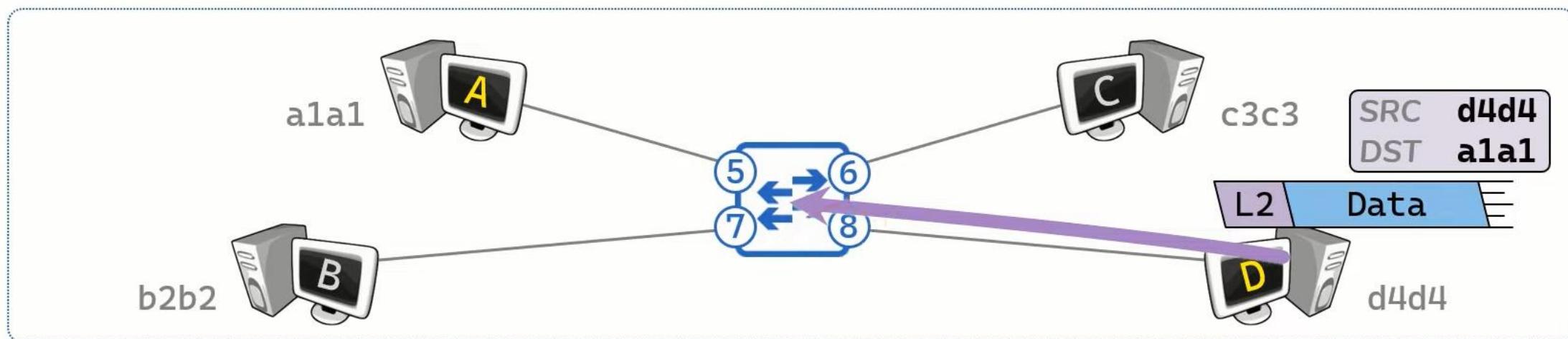
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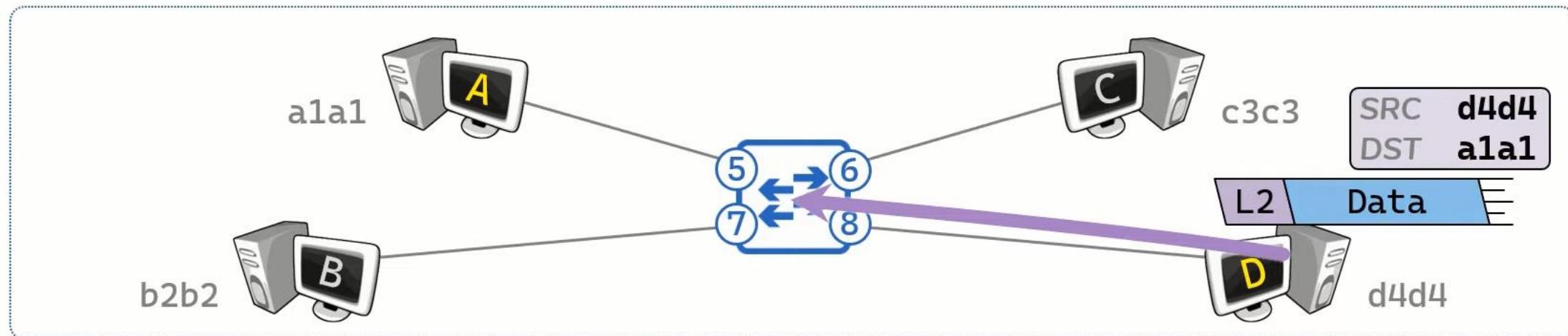
MAC Address Table	
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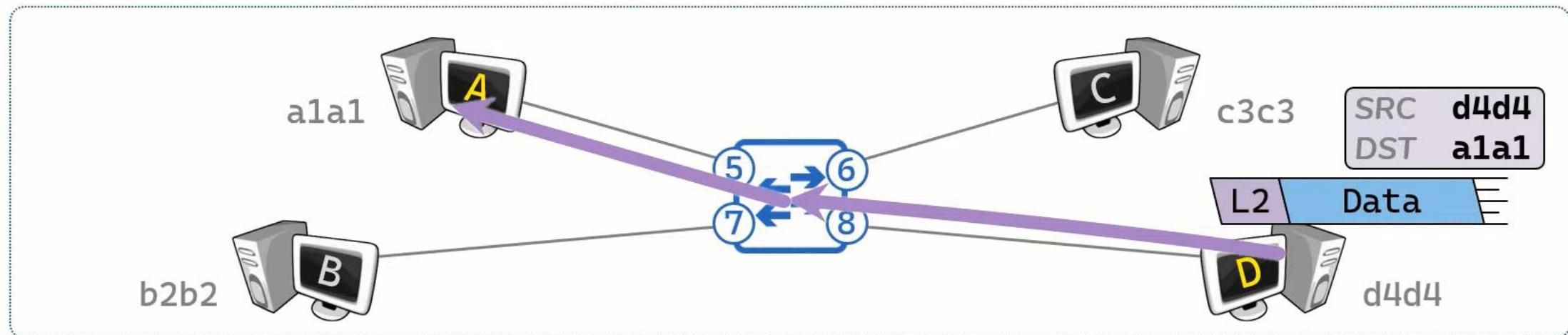
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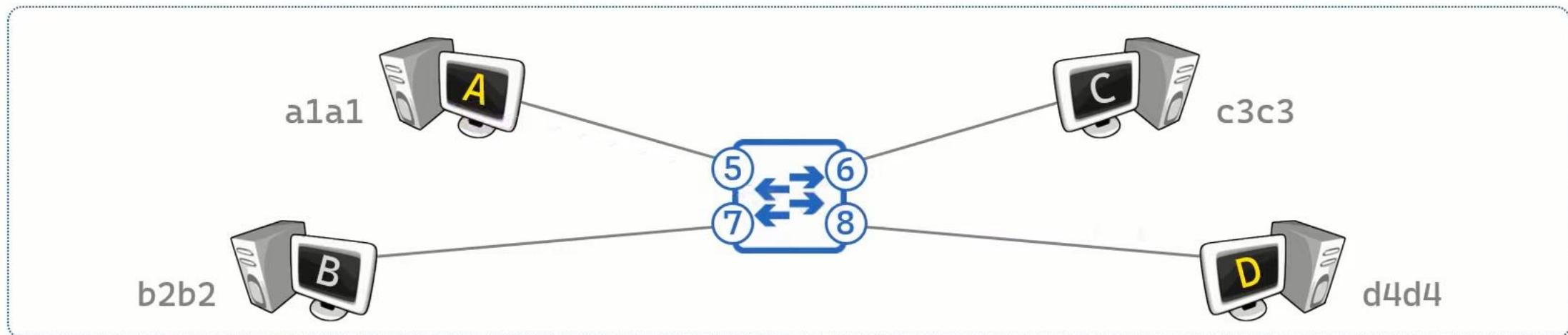
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Switches

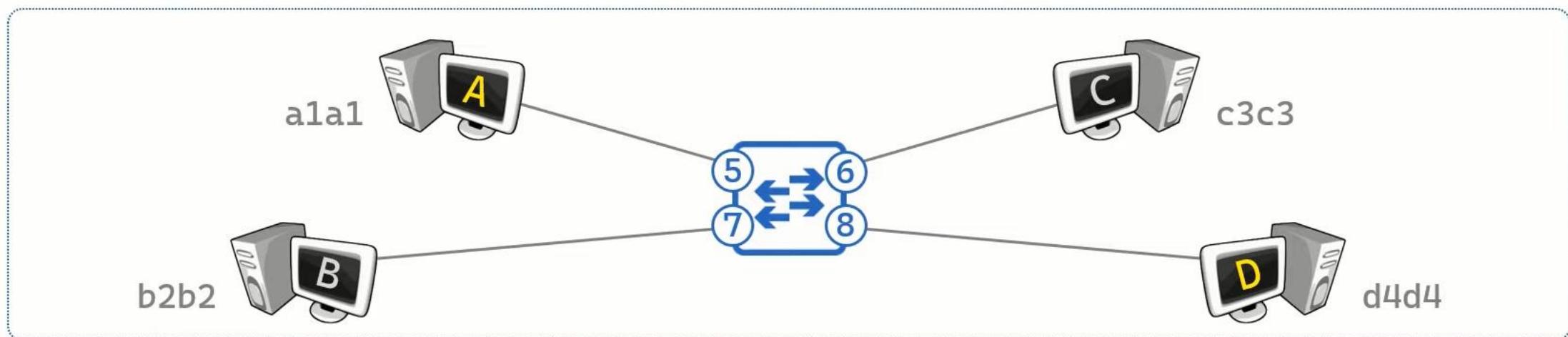
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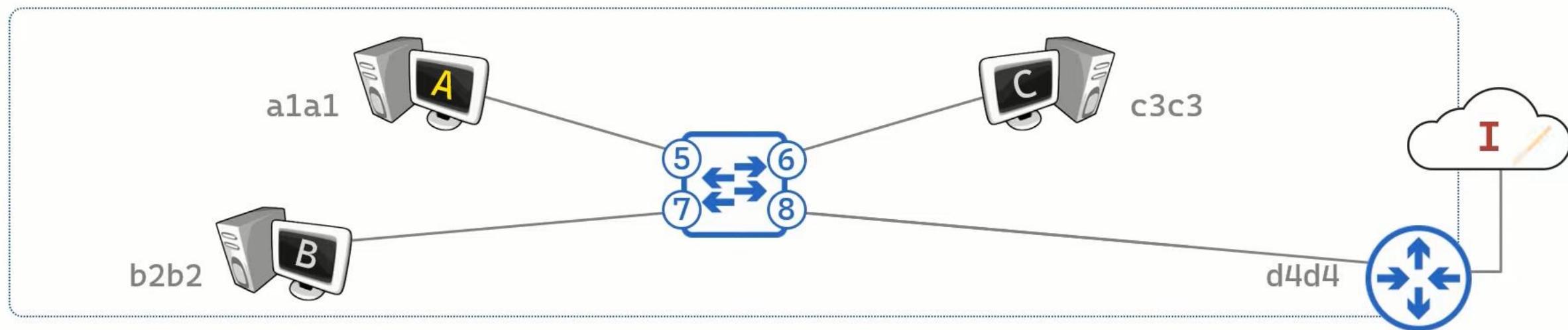
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- Switches perform three actions: **Learn Flood Forward**



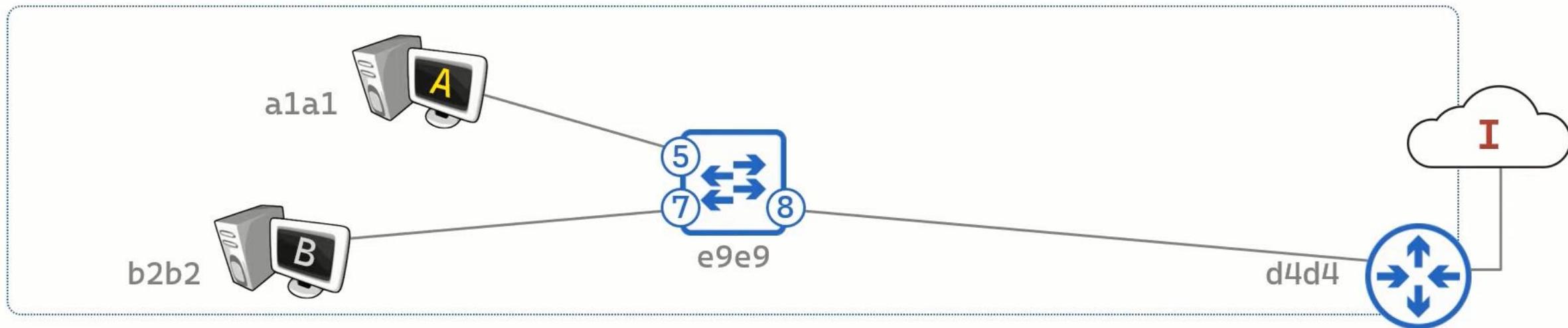
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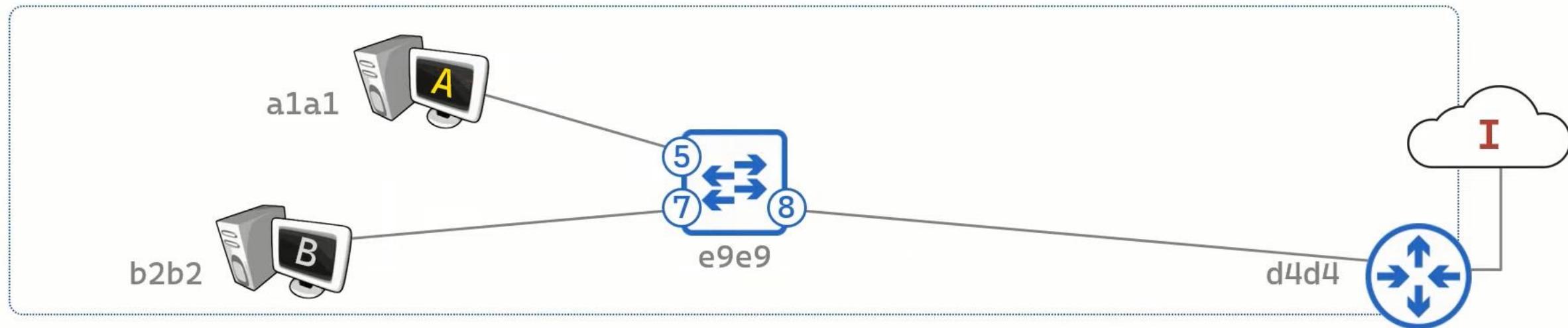
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- Switches use and maintain **MAC Address Table** (Switch Port --> MAC address)
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- Process would be Identical if Host D was a Router connected to the Internet
- Traffic going **THROUGH** the Switch
 - Switch has a MAC address



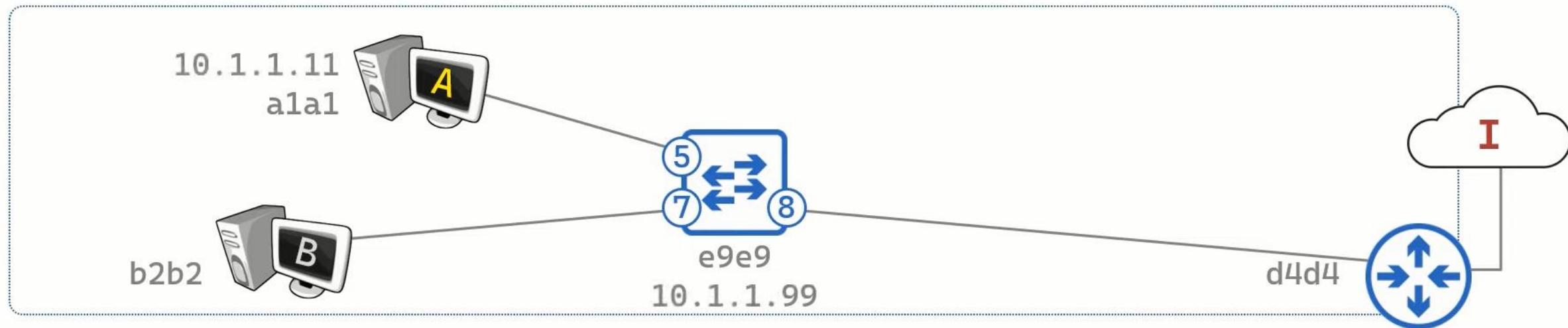
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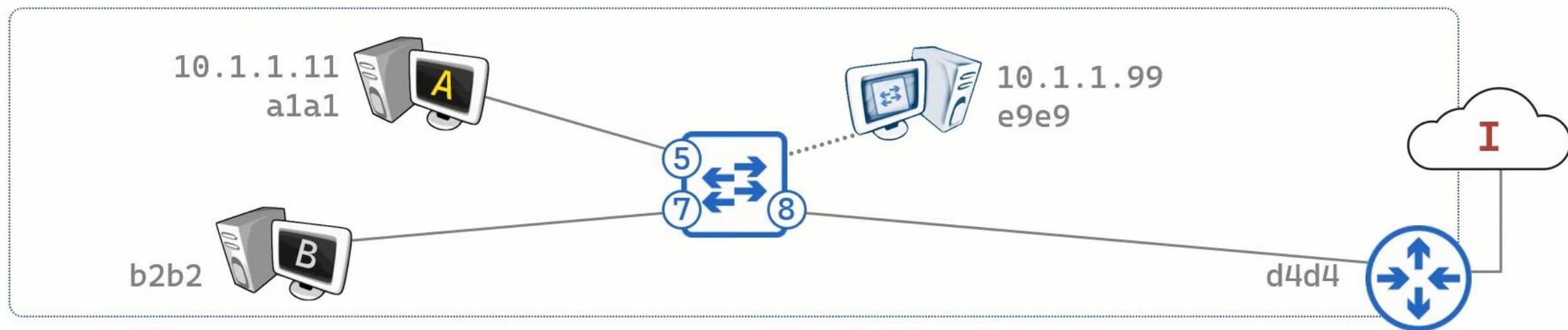
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- Process would be Identical if Host D was a Router connected to the Internet
- Traffic going **THROUGH** the Switch vs Traffic going **TO** the Switch
 - Switch has a MAC address and is configured with an IP address
 - Switch essentially acts as a host in the network (follows all the host communication rules)

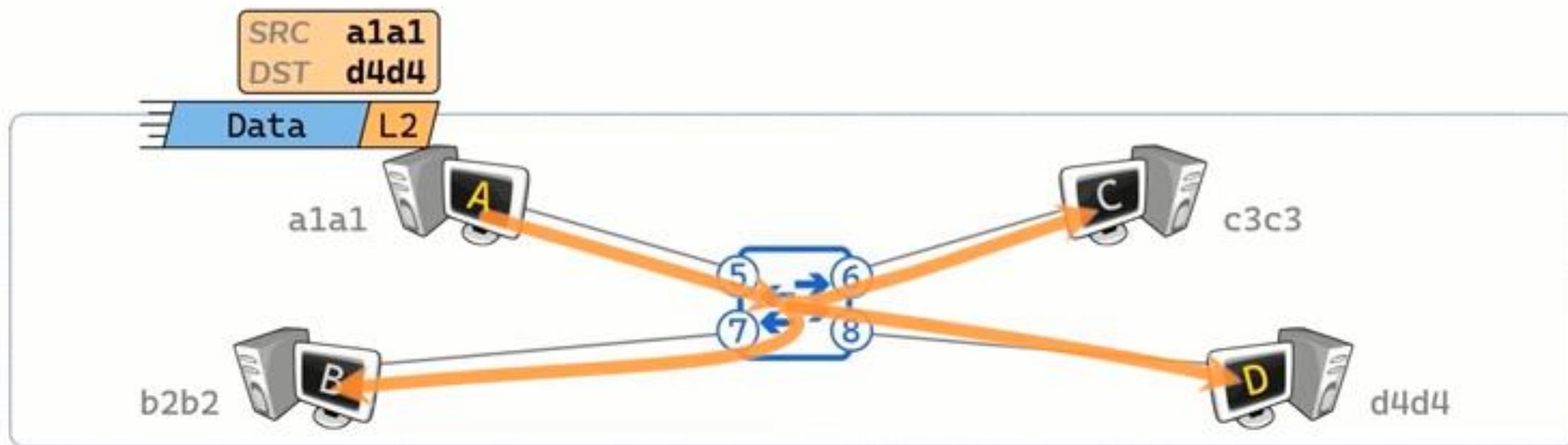


Switches

- Switches use and maintain **MAC Address Table**
- Switches perform three actions: **Learn Flood Forward**
 - Unicast Frame – destination MAC is another host

MAC Address Table

5 → a1a1

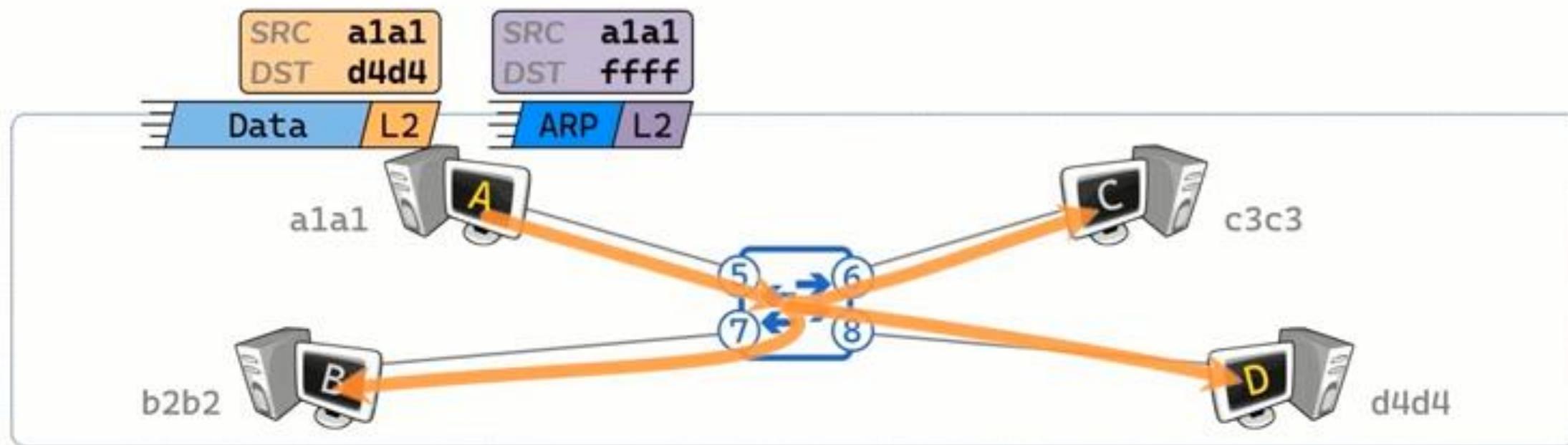


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MAC Address Table

⑤ → a1a1

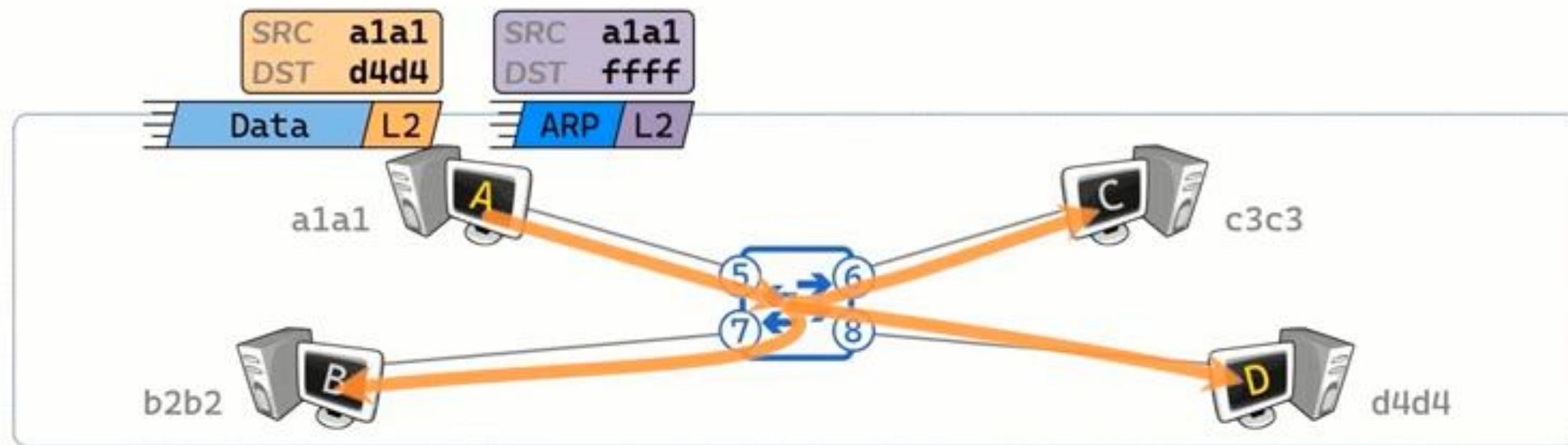


Switches

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 - Broadcast Frame – destination MAC address of **FFFF.FFFF.FFFF**

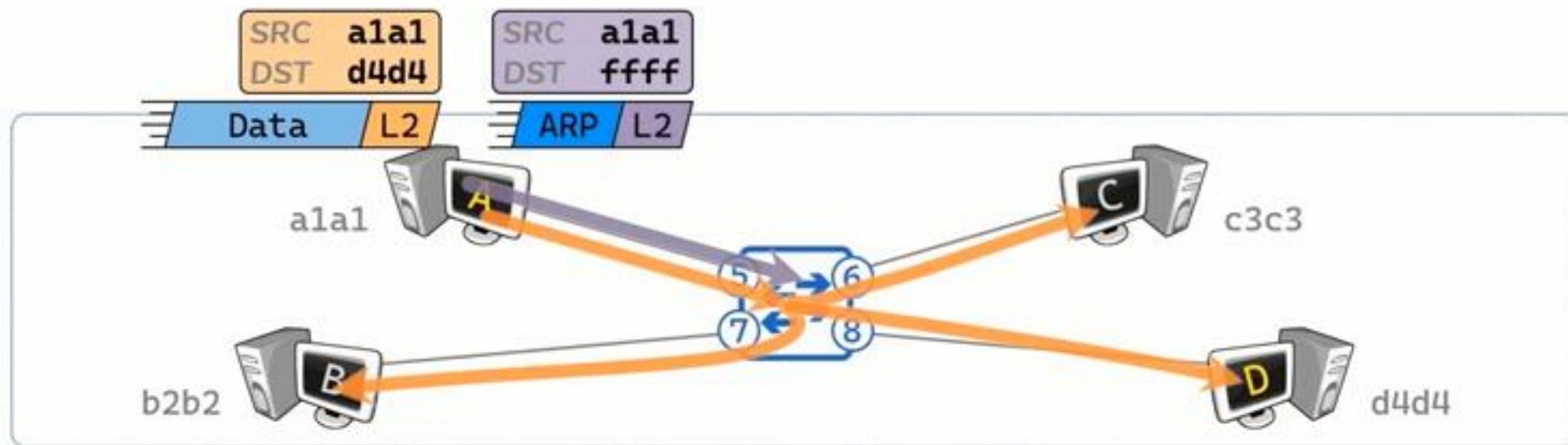
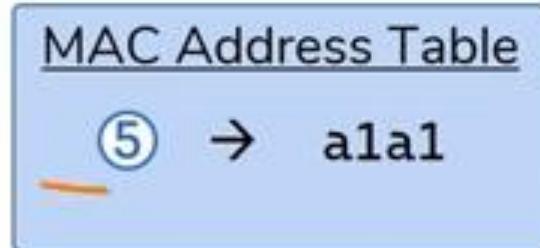
MAC Address Table

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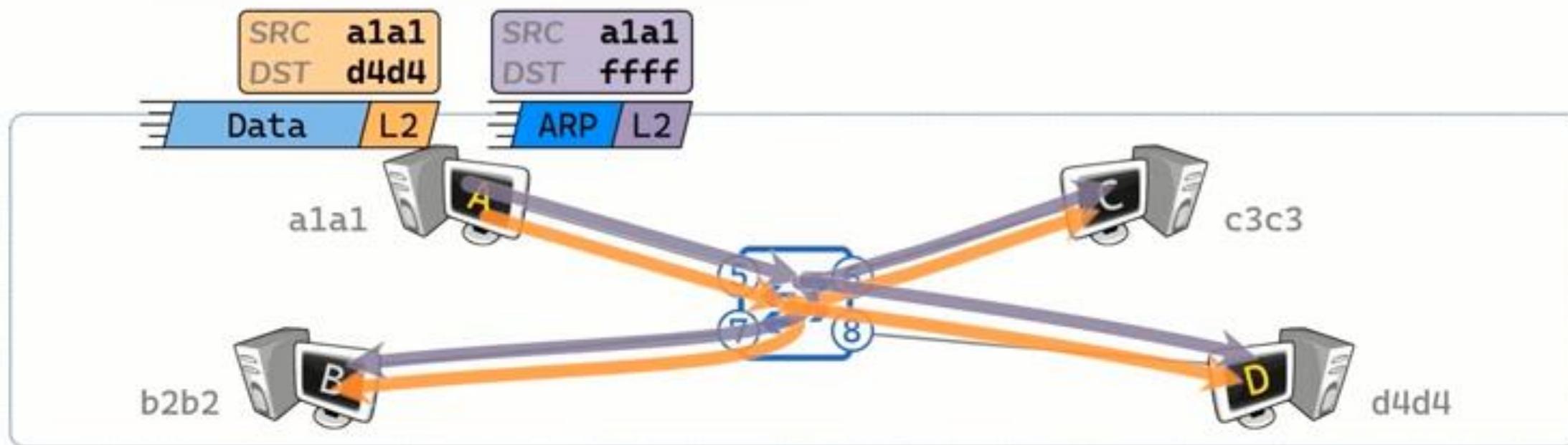


Switches

- Switches use and maintain **MAC Address Table**
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 - Unicast Frame – destination MAC is another host
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 - Broadcast frames are always Flooded

MAC Address Table

5 → a1a1

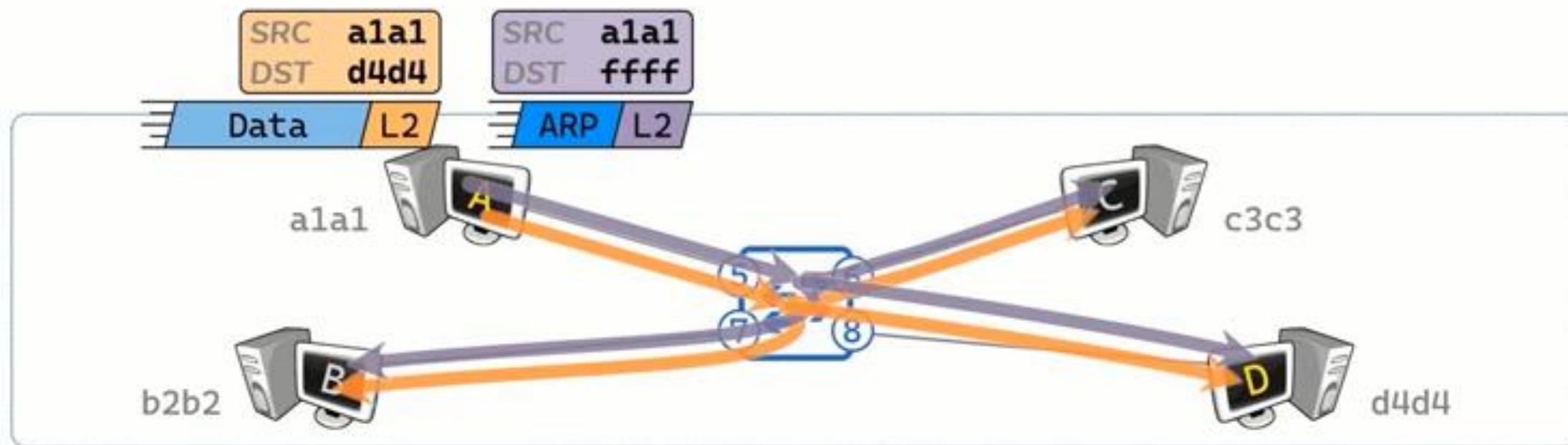


Switches

- Switches use and maintain **MAC Address Table**
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 - Switch will flood only if MAC address is not in MAC address table
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MAC Address Table

⑤ → a1a1



Switches

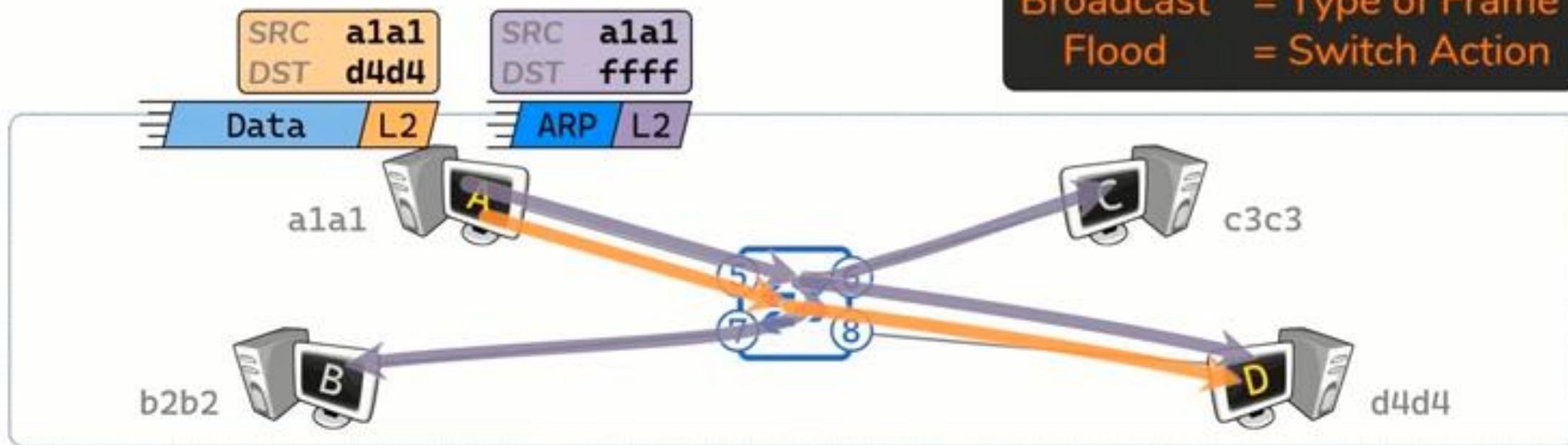
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MAC Address Table

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Broadcast = Type of Frame
Flood = Switch Action

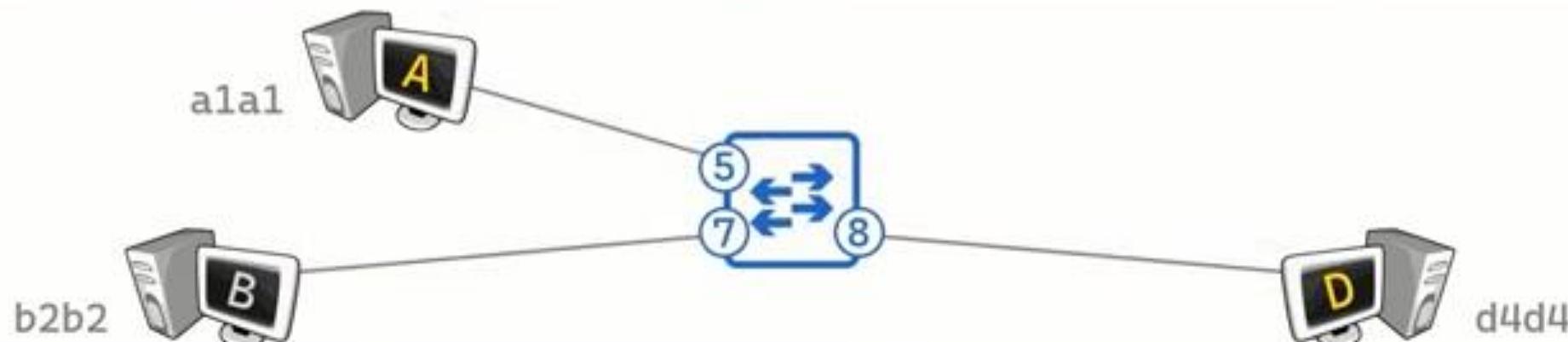


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 - Broadcast Frame – destination MAC address of FFFF.FFFF.FFFF
 - Broadcast frames are always Flooded
 - Switches will only send Broadcasts if traffic is going TO or FROM the Switch

MAC Address Table

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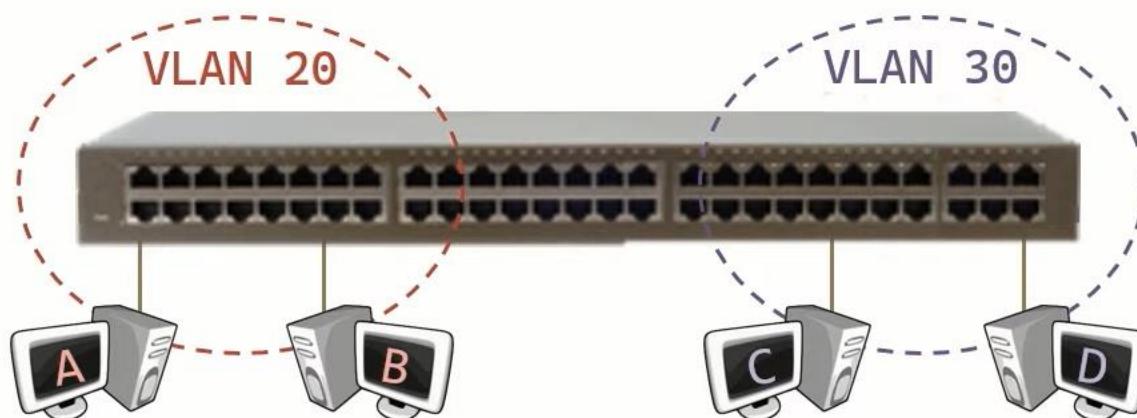


Switches

- Switches use and maintain **MAC Address Table**
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- **VLANs – Virtual Local Area Networks**

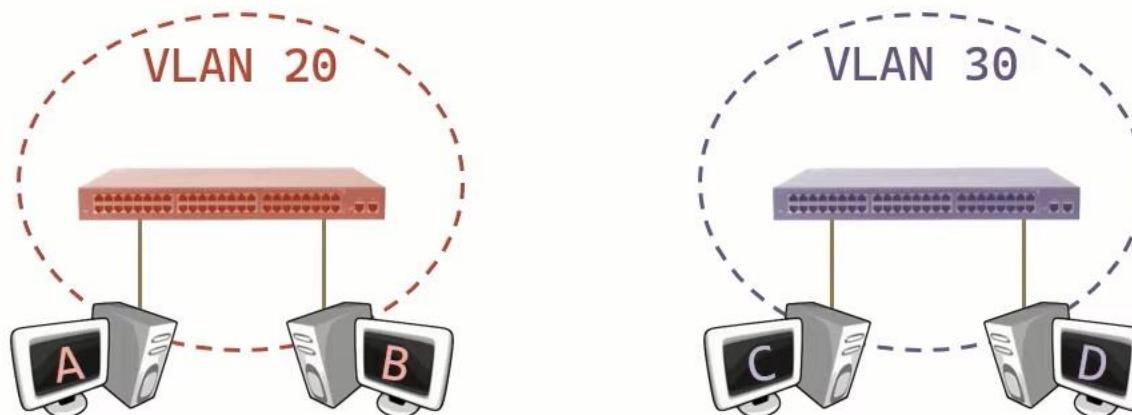
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 - Divides Switch Ports into isolated groups



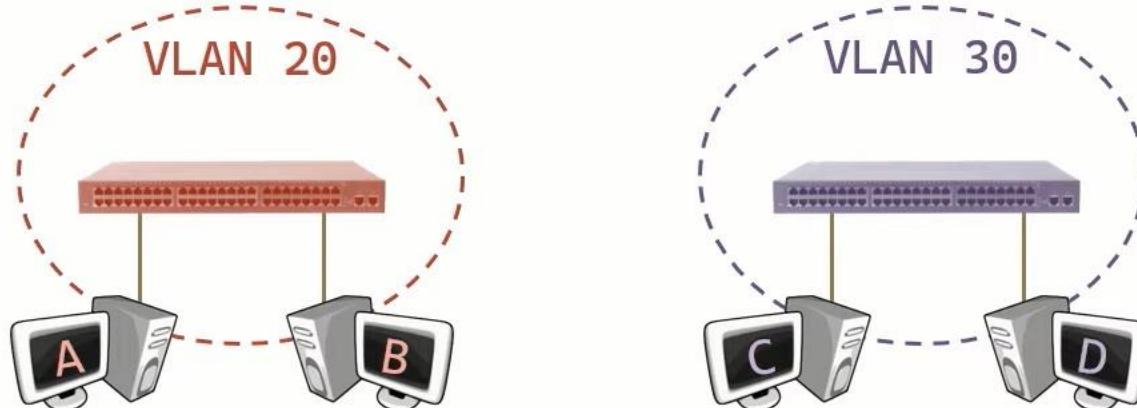
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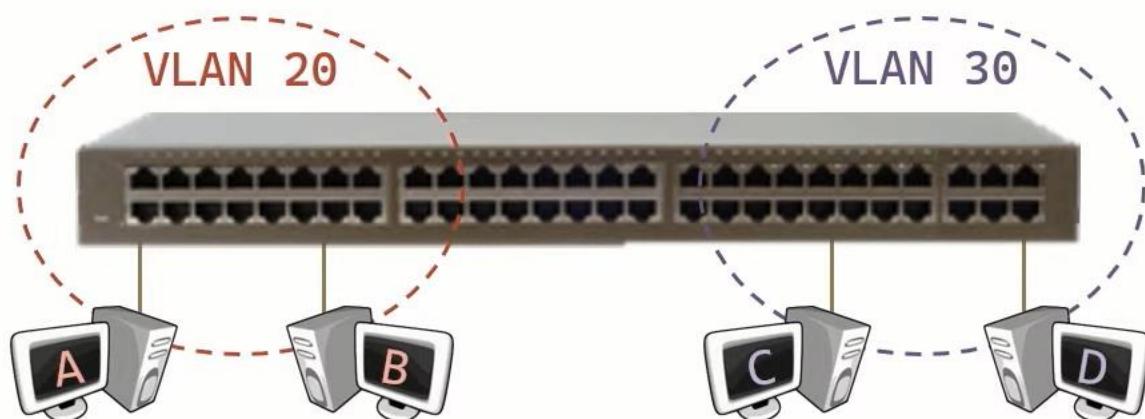
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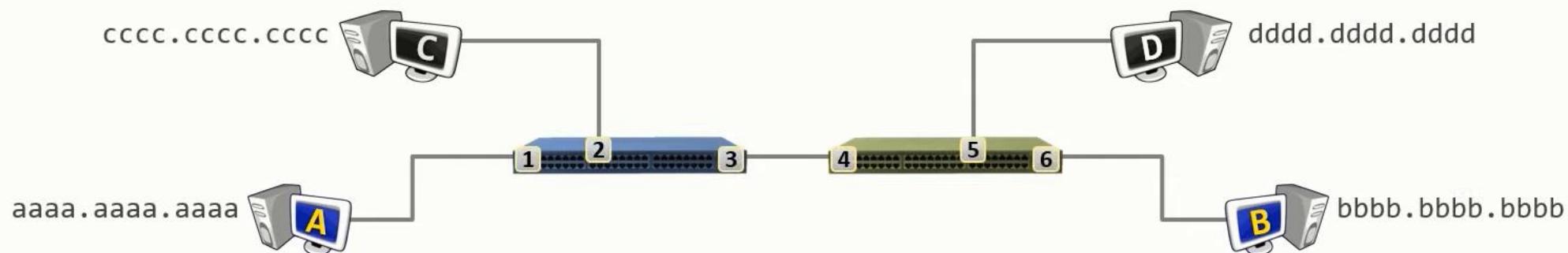
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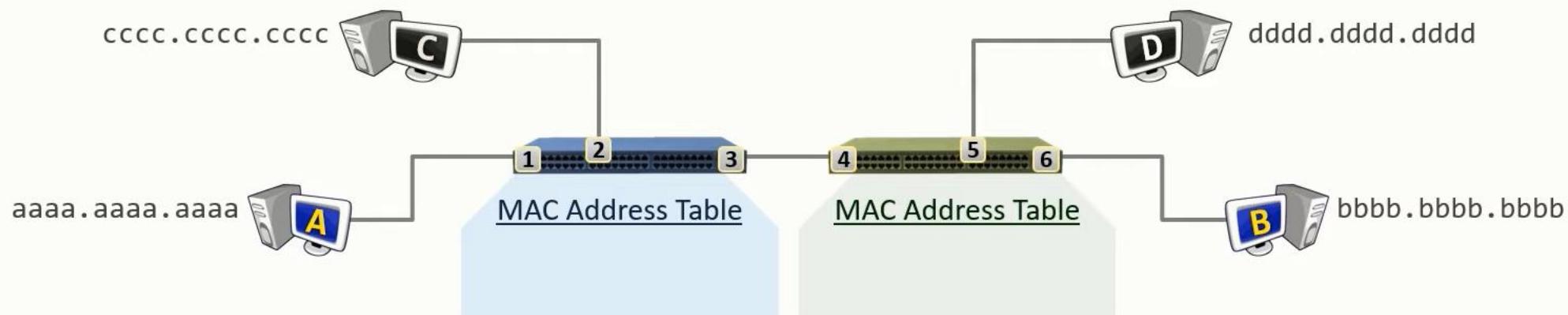
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- Multiple Switches



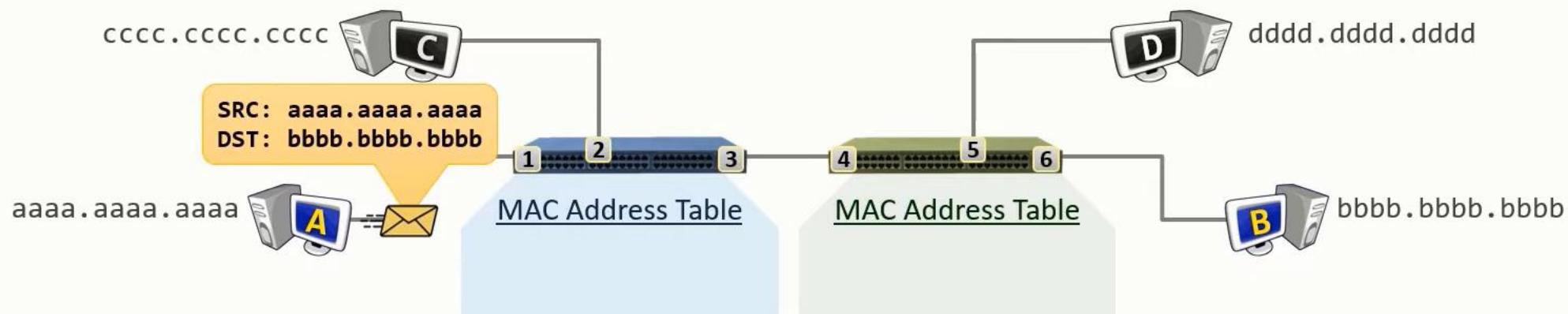
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 - Switches maintain independent MAC address Tables
 - Switches perform switch actions independently



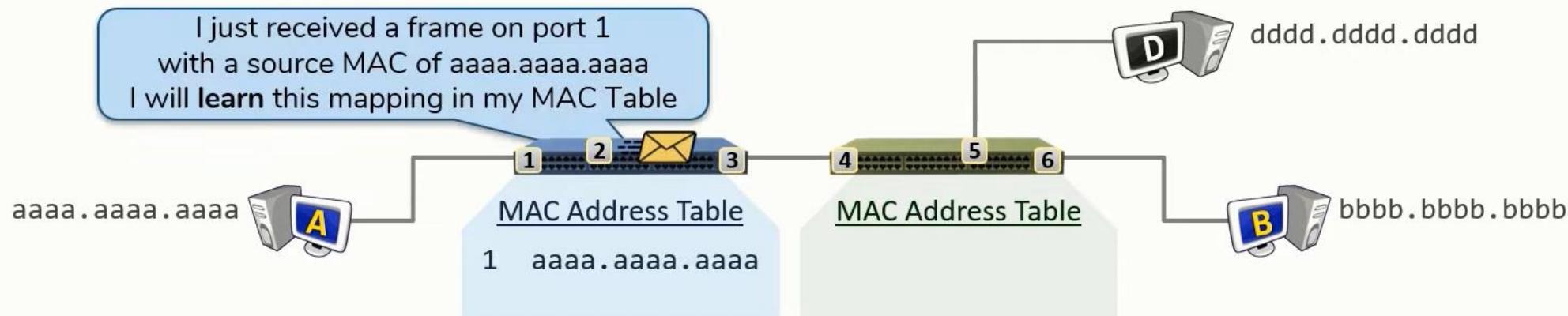
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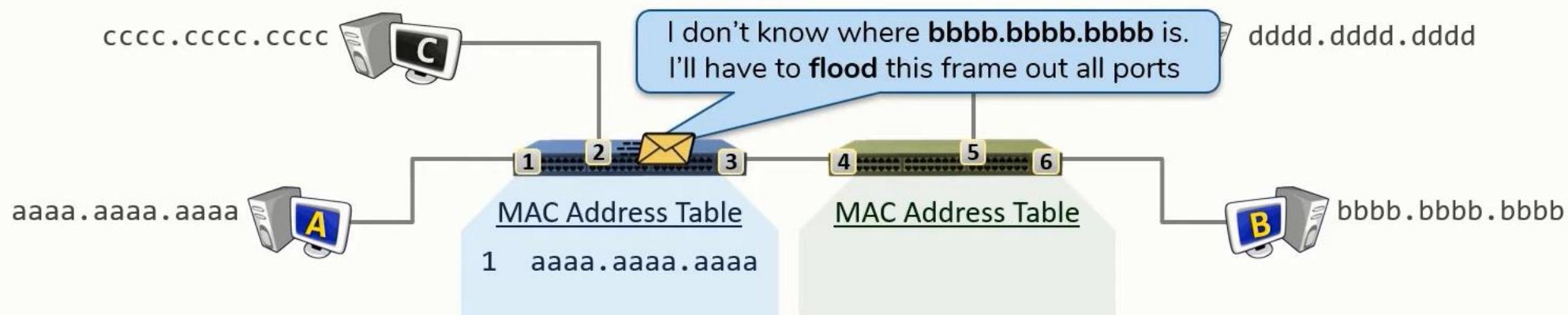
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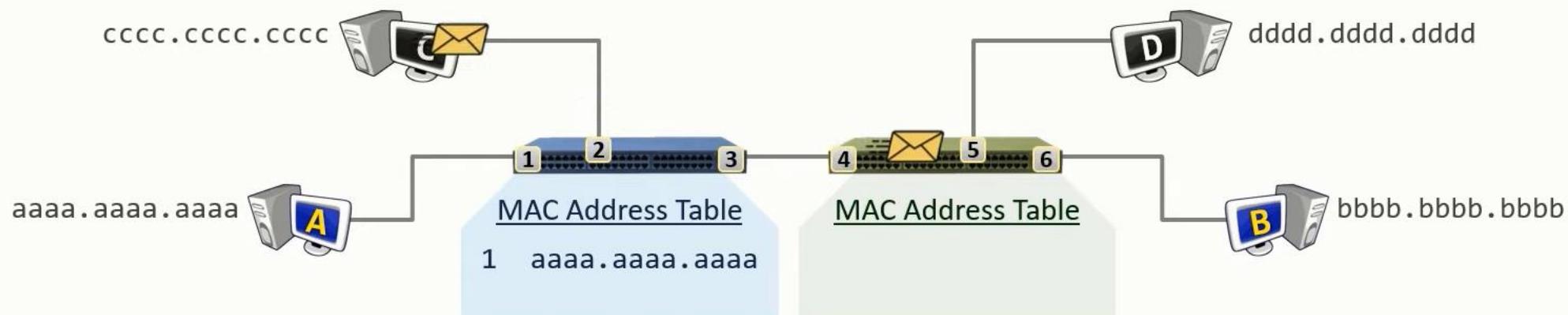
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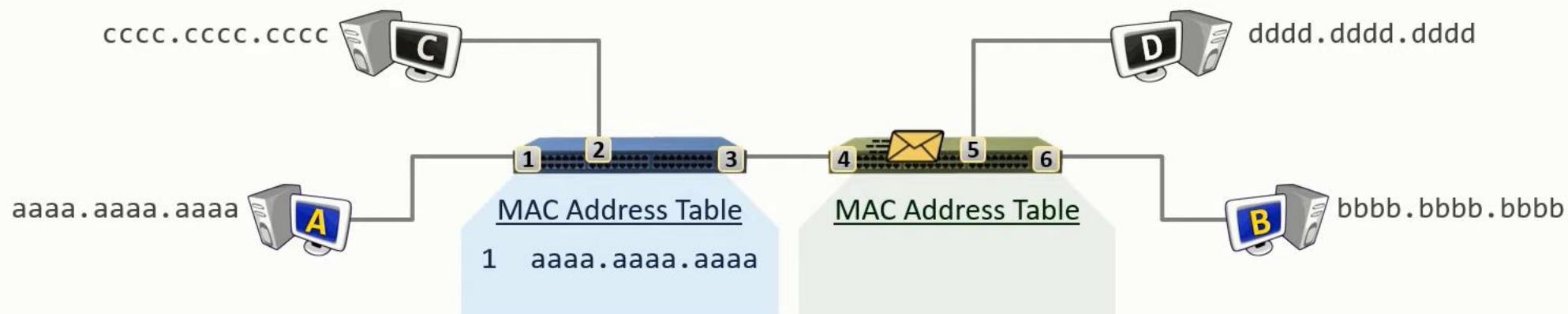
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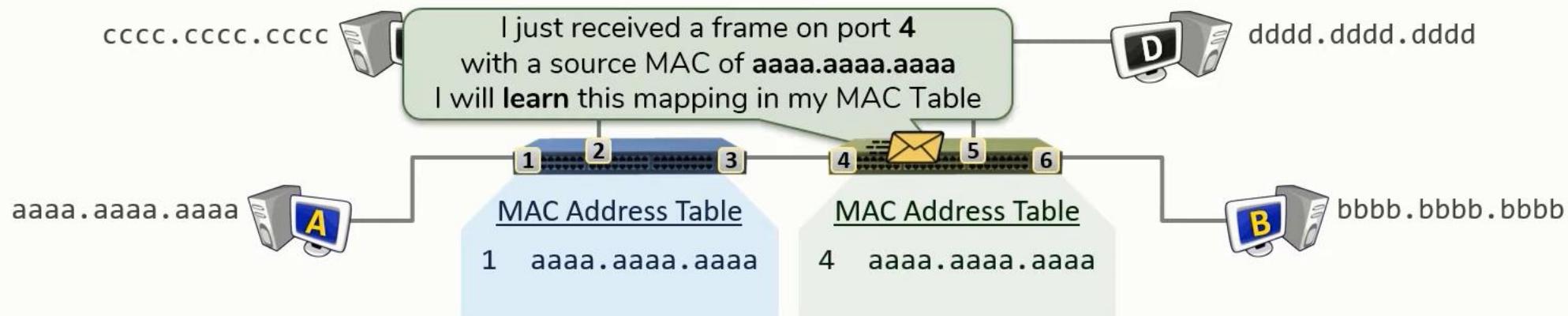
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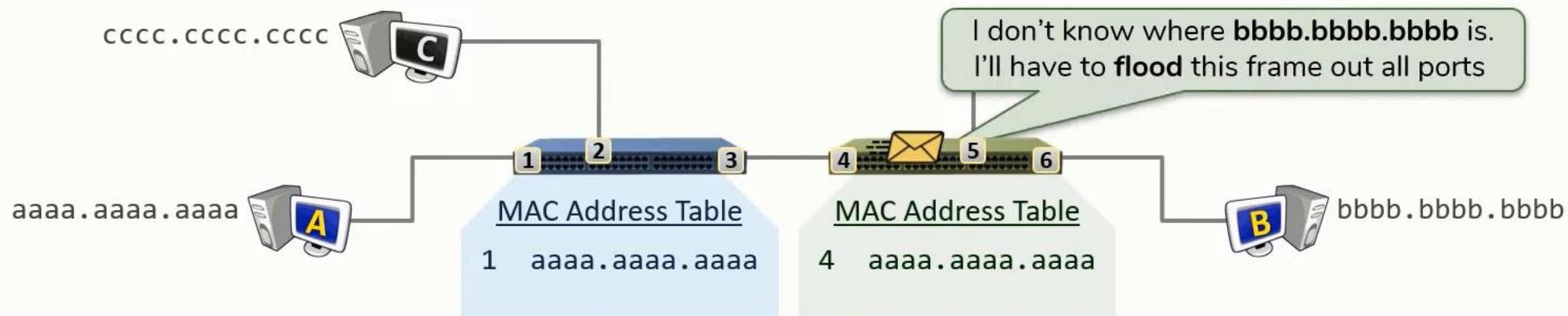
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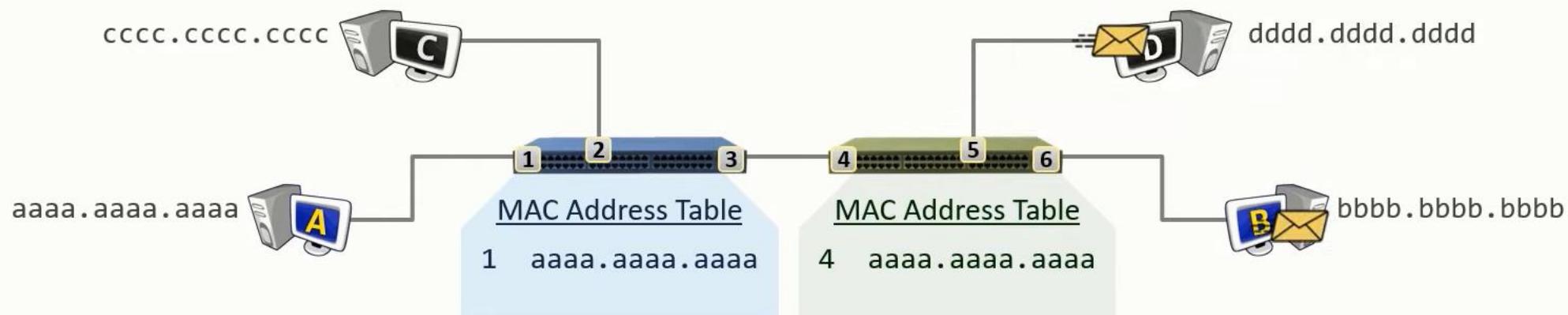
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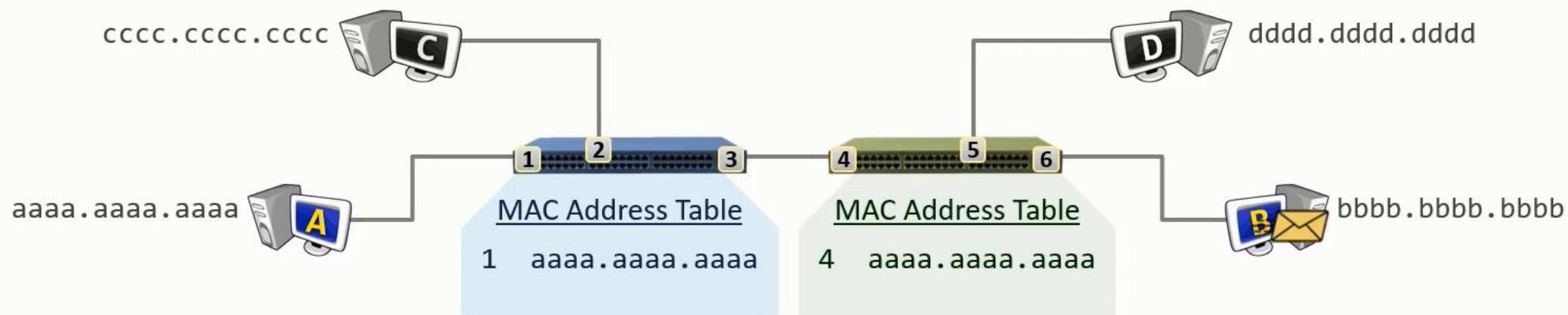
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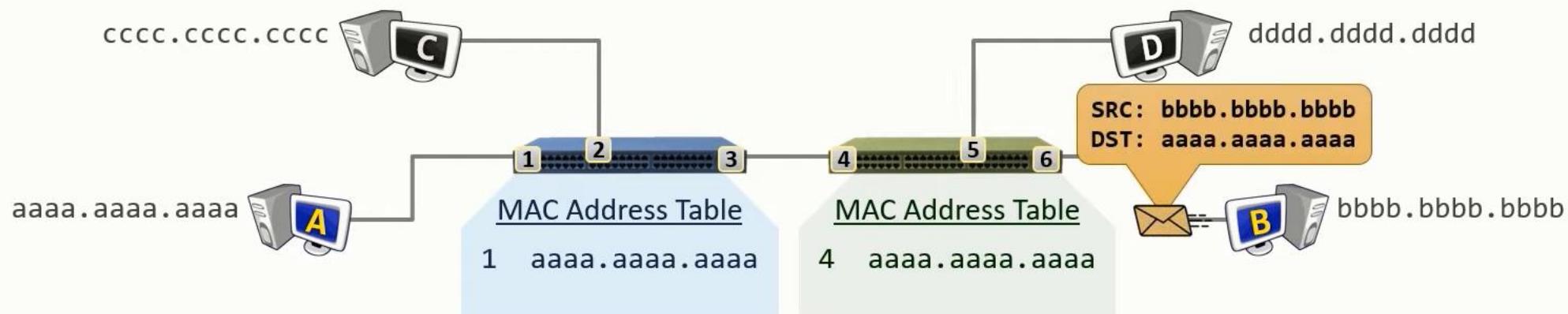
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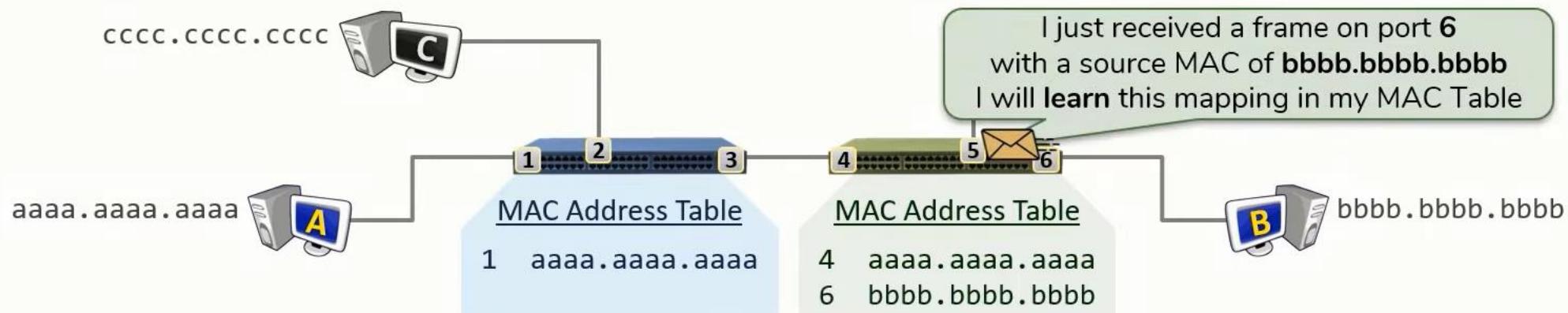
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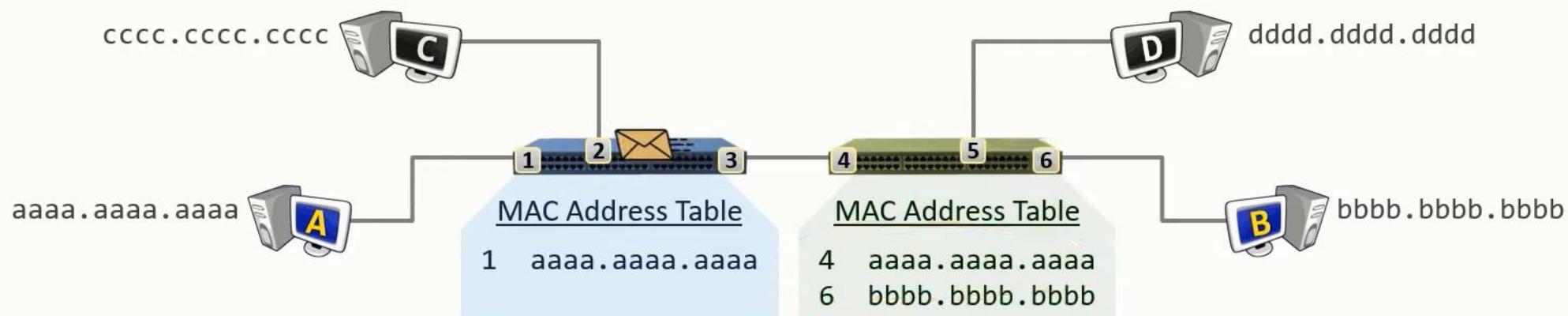
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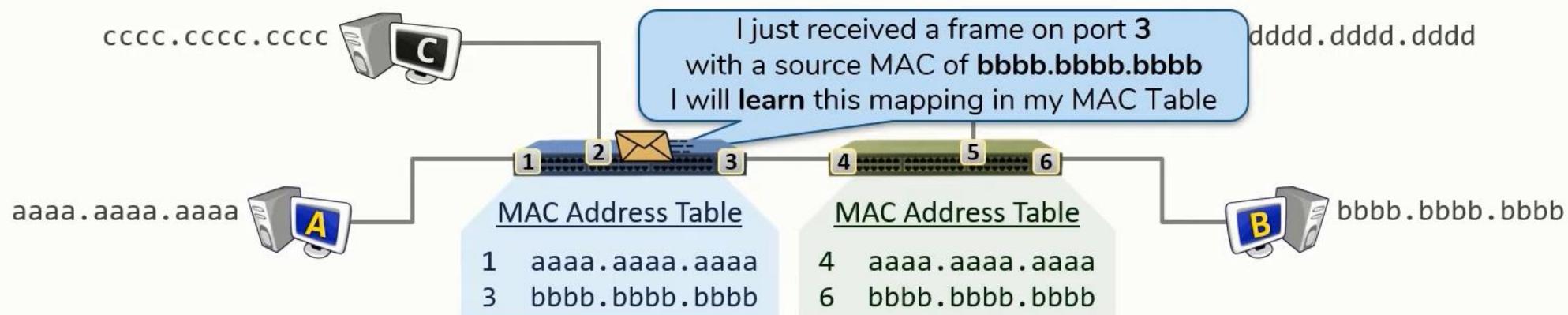
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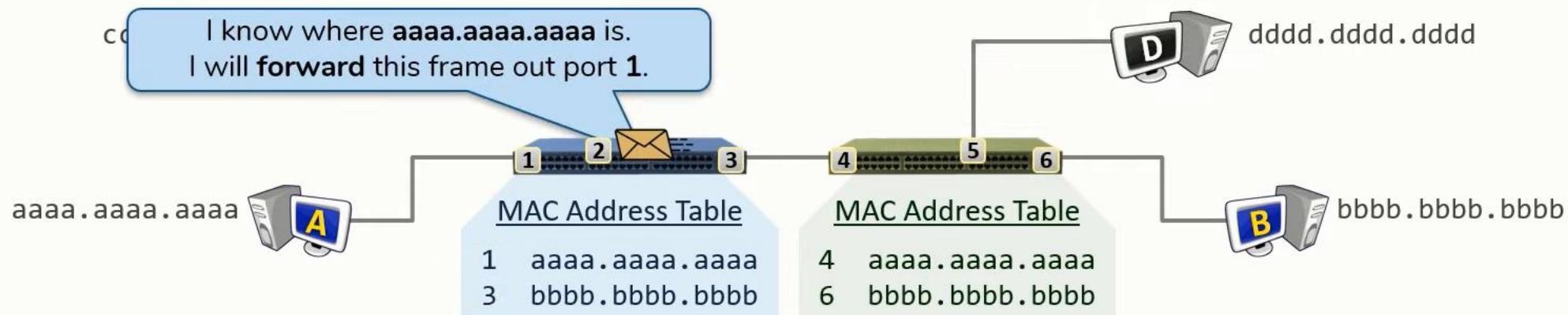
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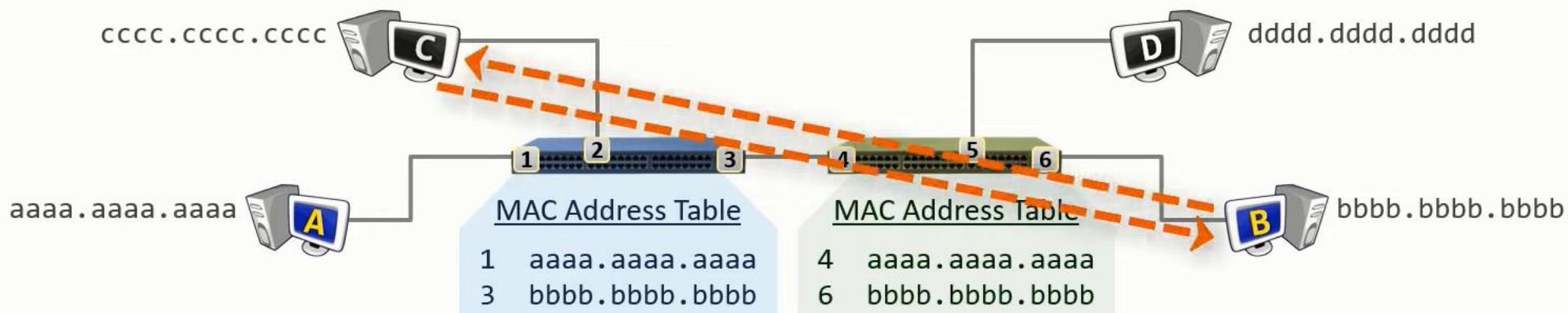


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Map out the sequence for:

Host C → Host B
Host C → Host D

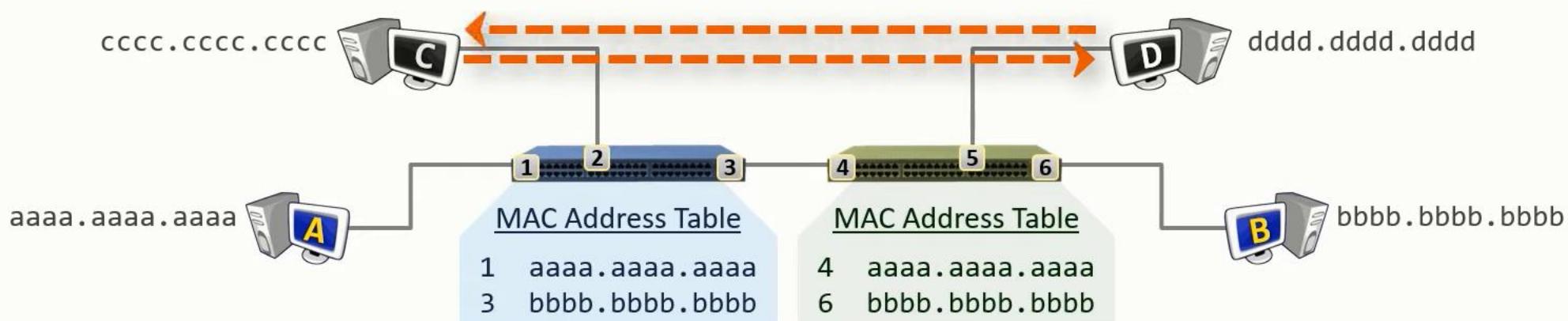


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Host C → Host B
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