The Story of IPv6 at FPT Telecom

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TABLE OF CONTENTS:

- FPT TELECOM OVERVIEW
- DEPLOY IPv6 IN CORE NETWORK
- DEPLOY IPv6 AT BNG (BROADBAND NETWORK GATEWAY)
- DEPLOY IPv6 AT CPE (CUSTOMER PROVIDED EQUIPMENT)
- RESULTS
- CASES STUDY

FPT TELECOM OVERVIEW

NO.1 STORAGE SERVICES IN VIETNAM

NO.2 ISP IN CAMBODIA

TOP 3 ISP IN VIETNAM

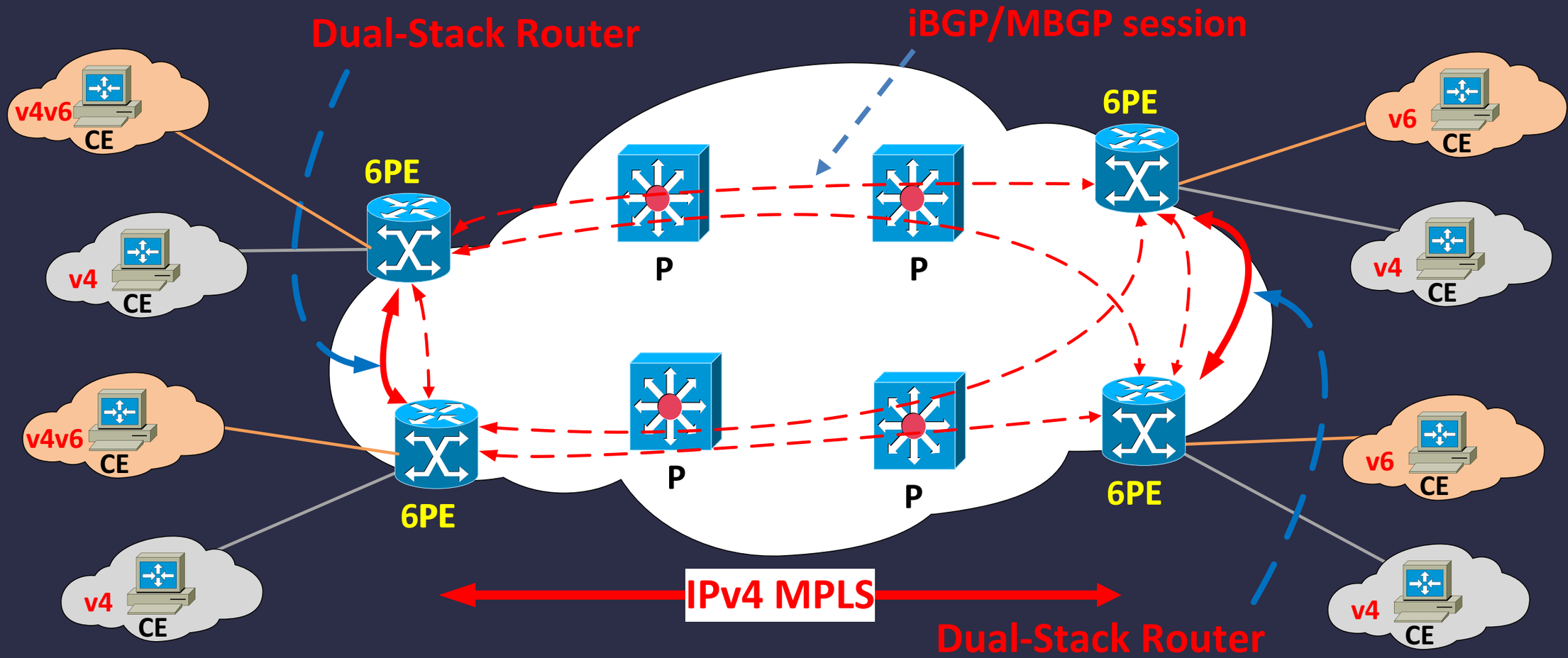
1,6 million broadband subscribers.

Services:

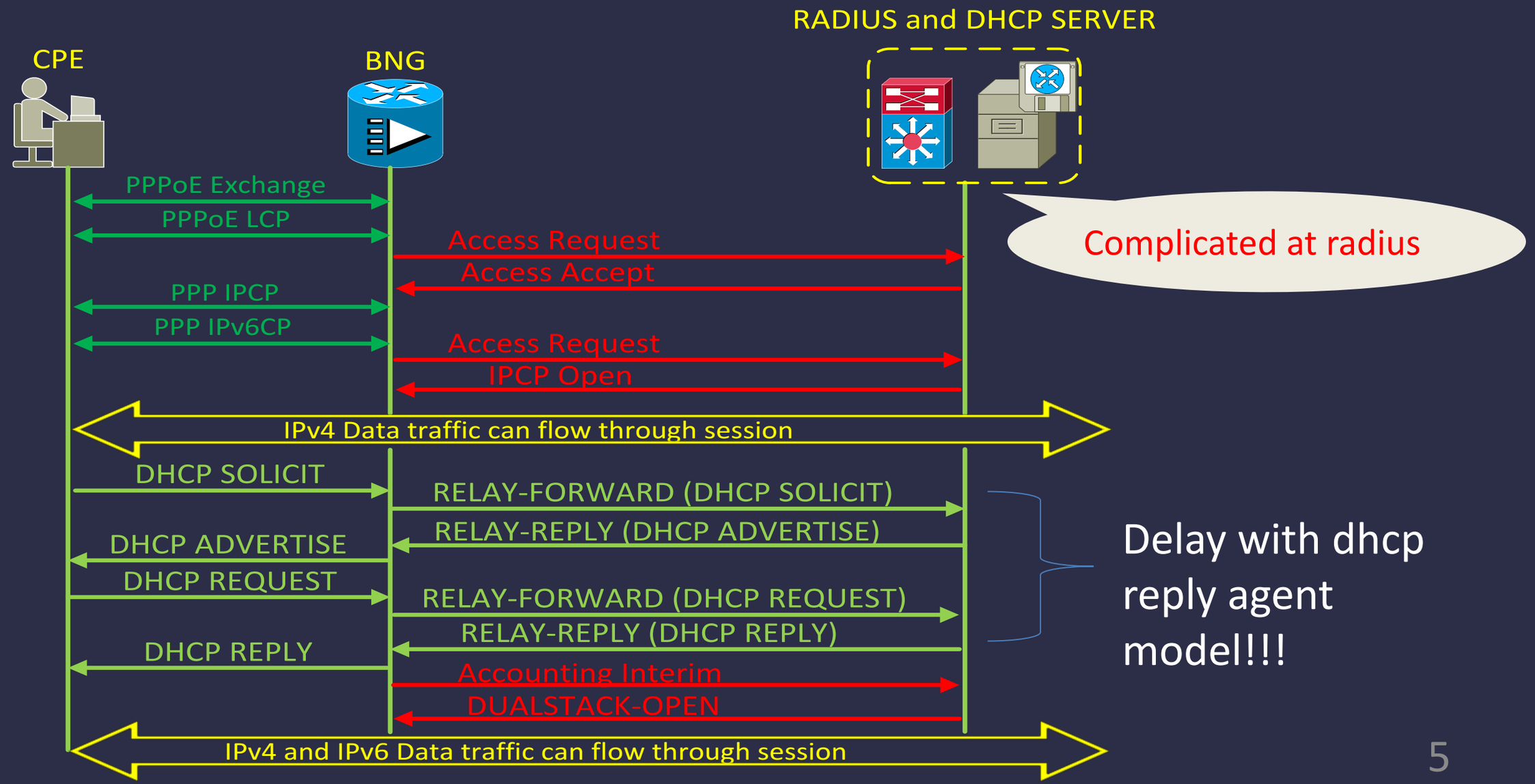
- High-speed Internet access
- IPLC
- VoIP
- IPTV
- Cloud
- OTT Services
- IoT products

Website: www.fpt.vn

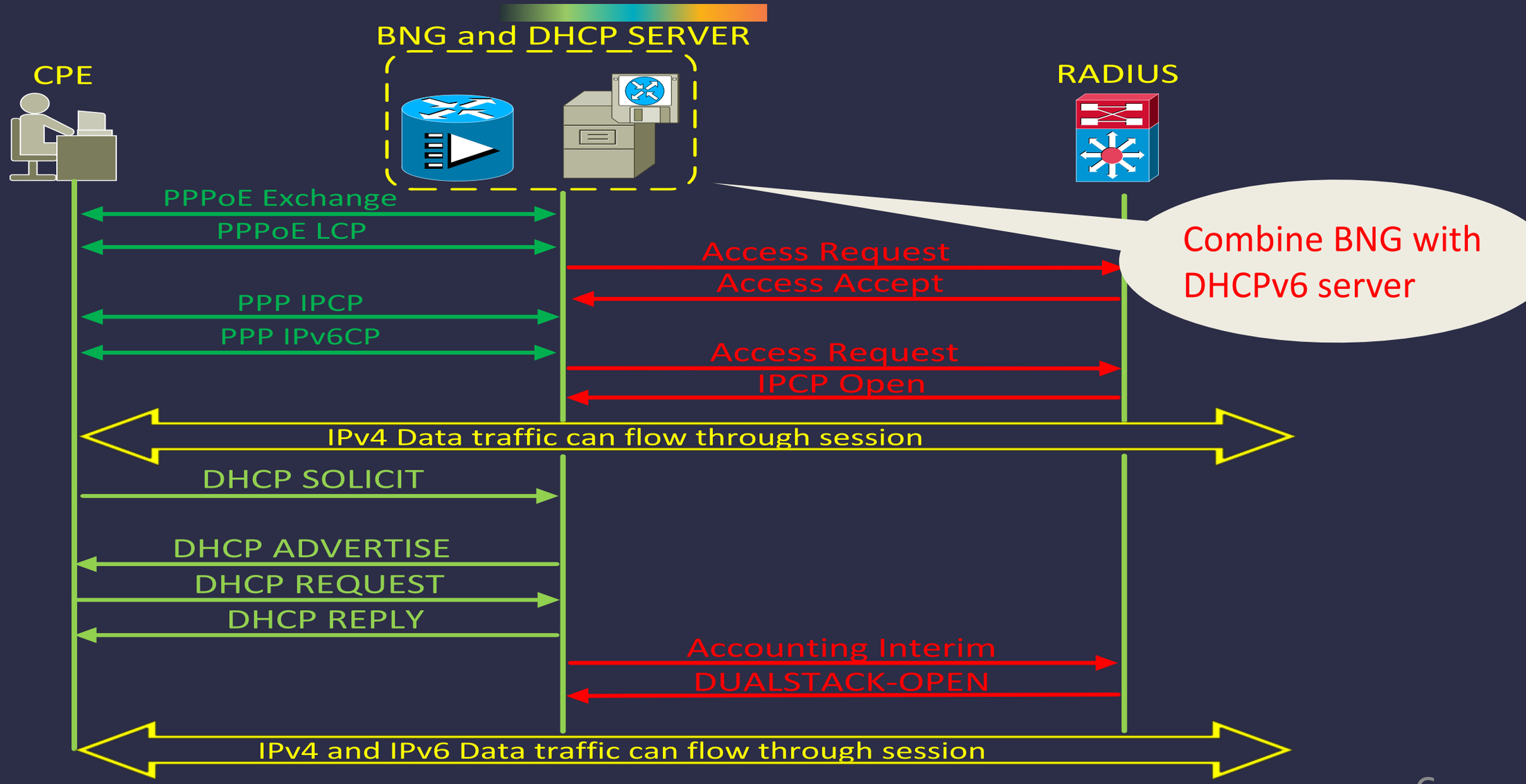
DEPLOY IPv6 IN CORE NETWORK



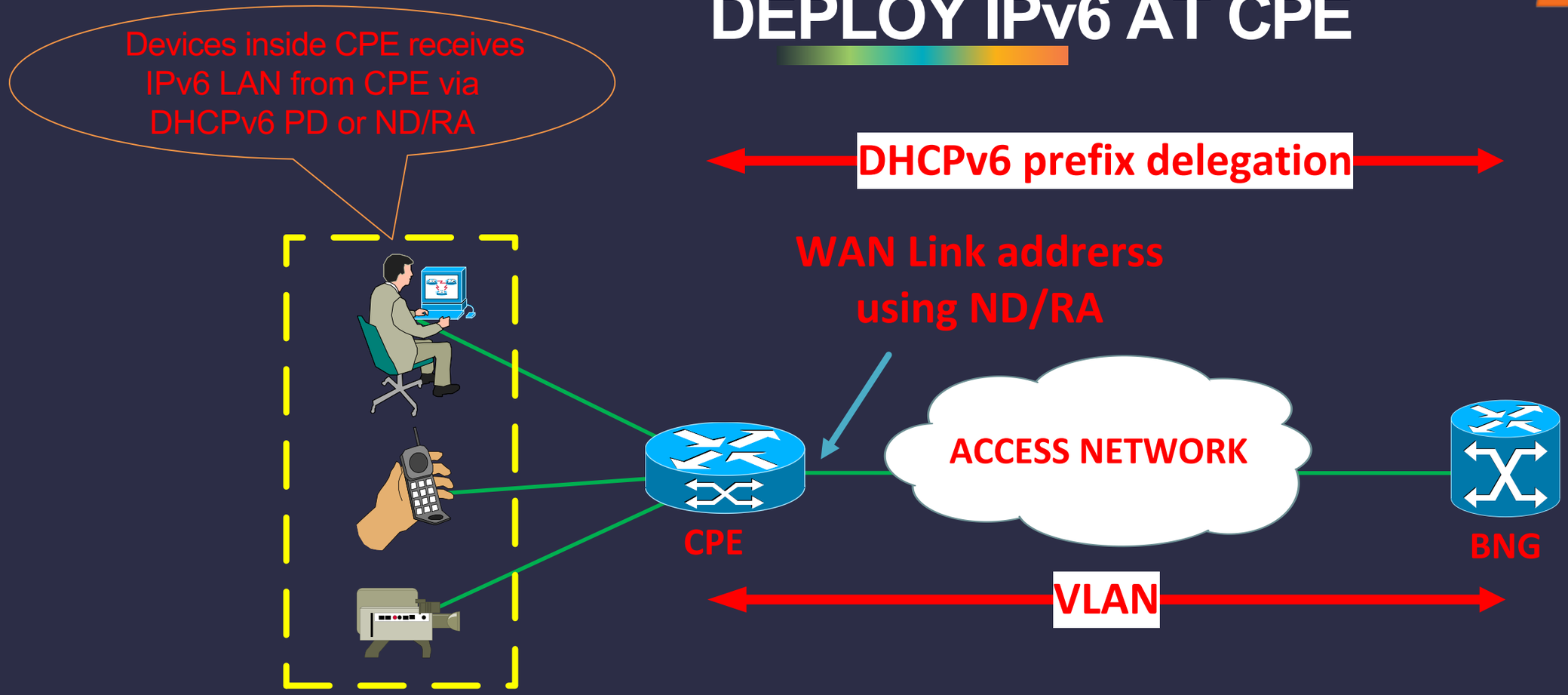
DEPLOY IPv6 IN BNG



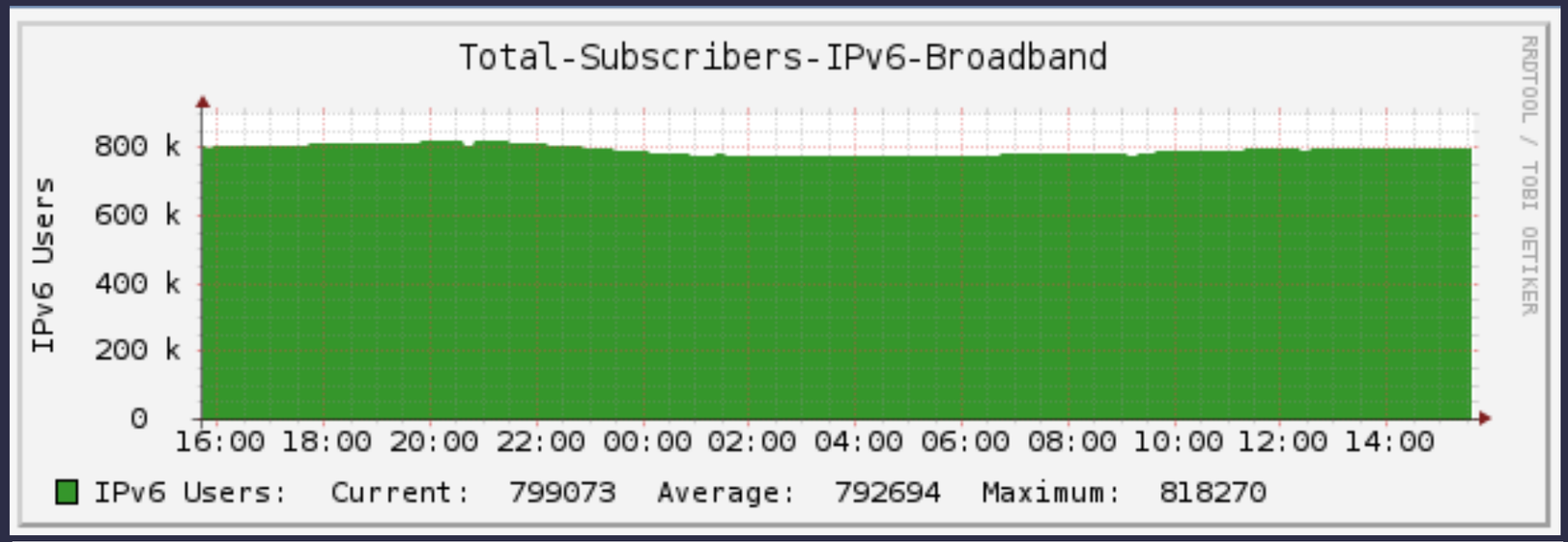
DEPLOY IPv6 IN BNG



DEPLOY IPv6 AT CPE

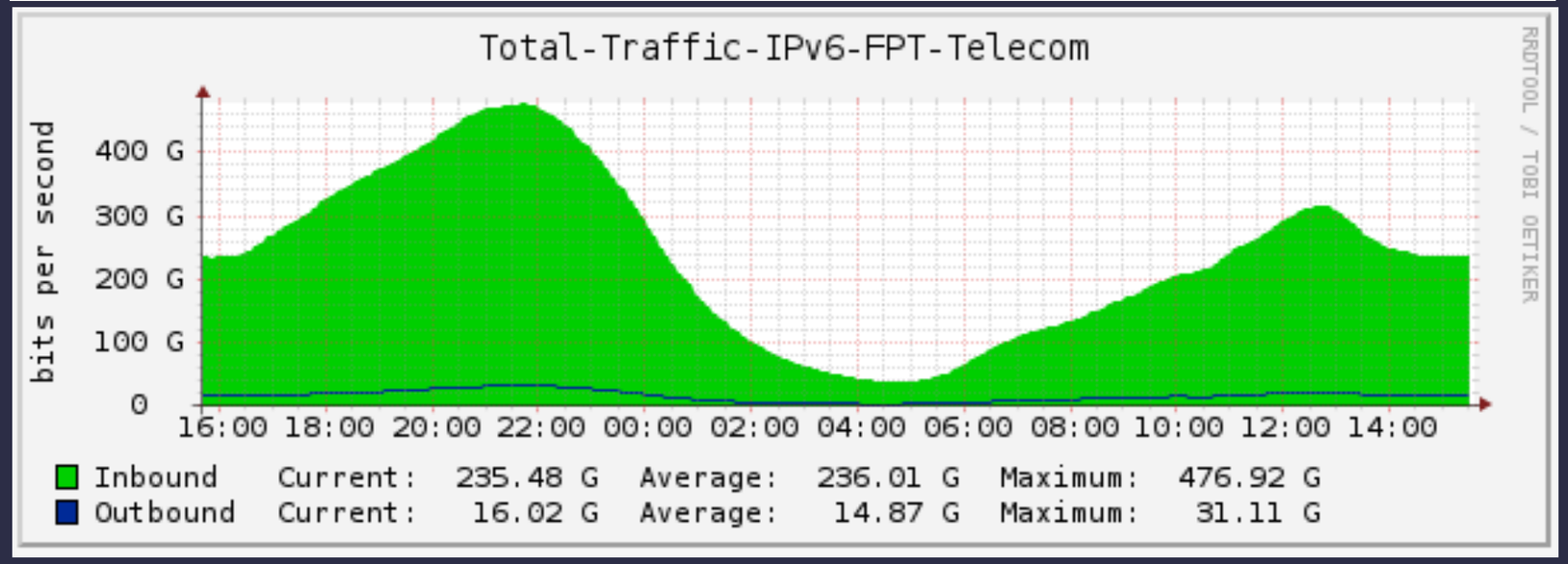


RESULTS



818k

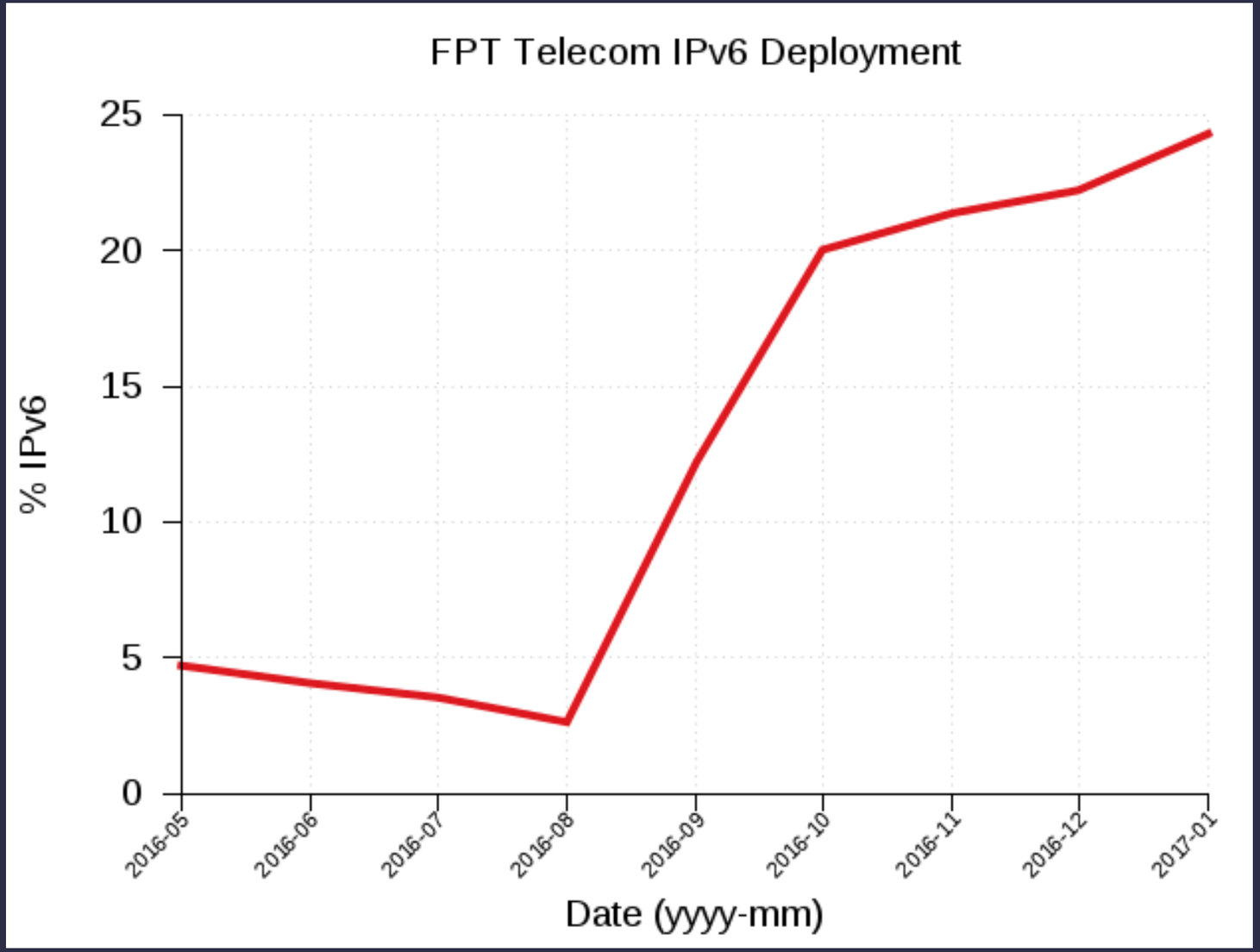
IPv6 subscribers



~477Gbps

RESULTS

IPv6 deployment : 24.30%
(16th/240 entries)



(World IPv6 Launch measurement at 11th Jan 2017)

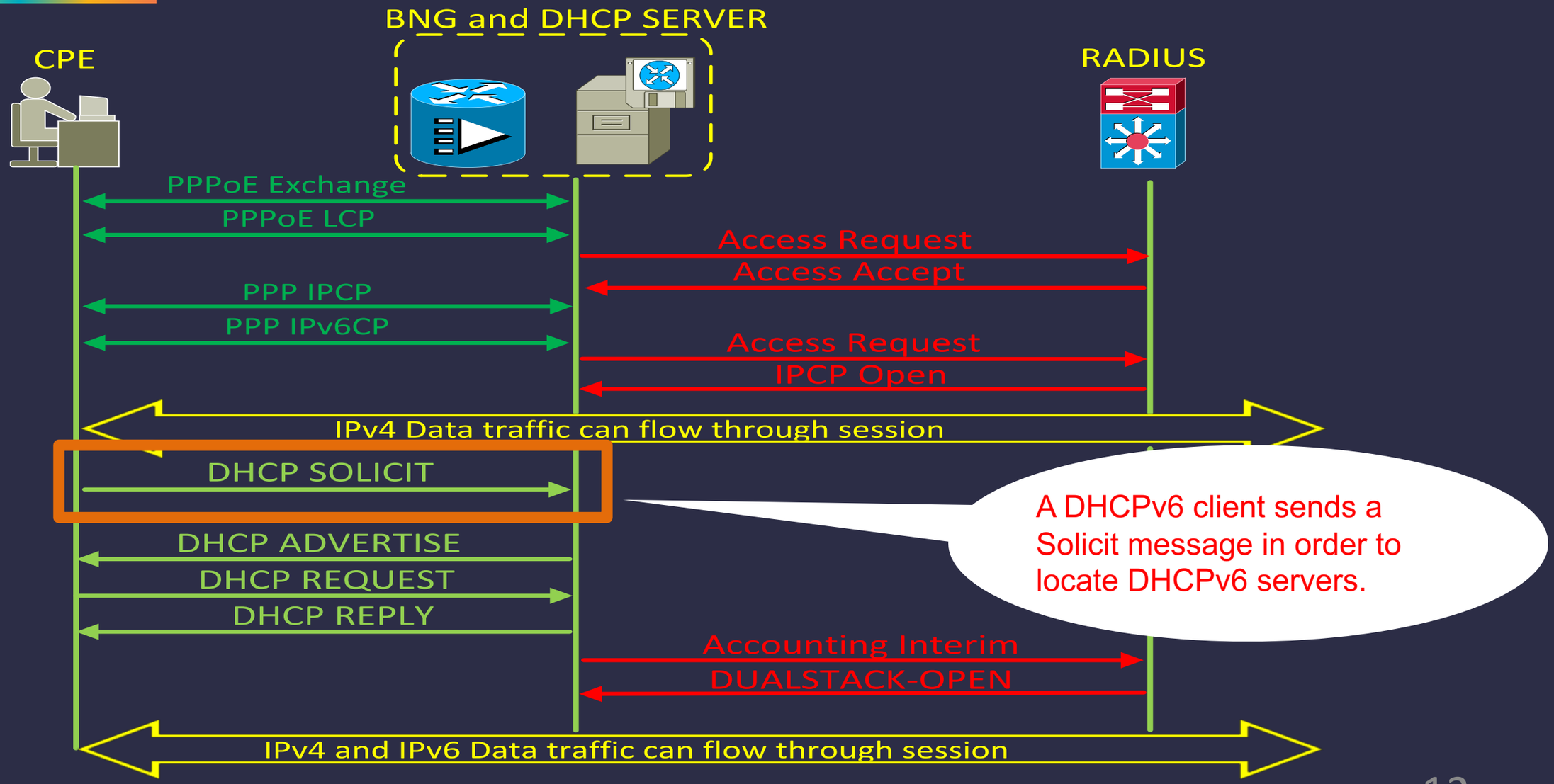
CASE STUDY:

DHCP Unique Indentifier (DUID)

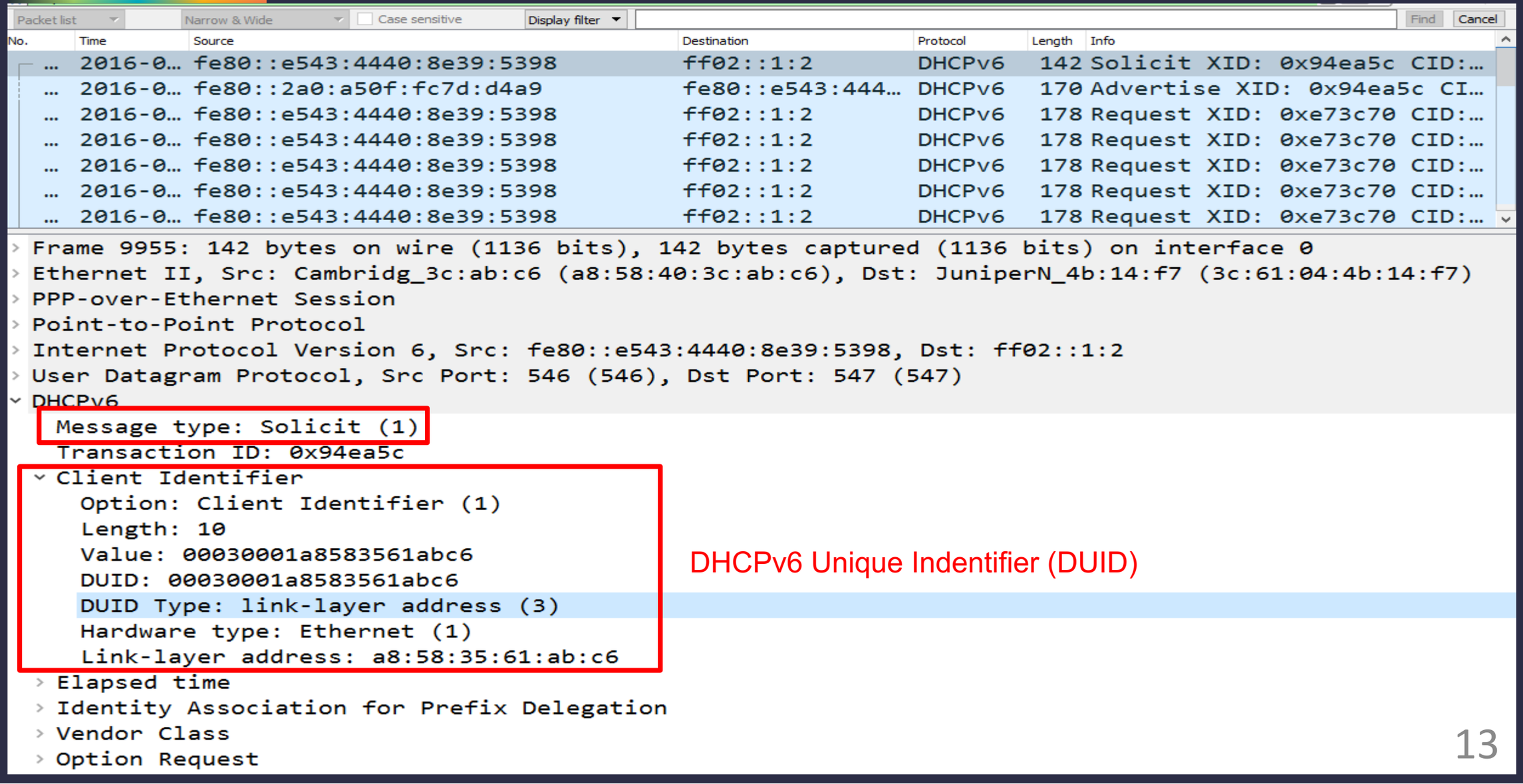
CASE STUDY: DHCPv6 DUID

- Clients use DHCP Unique Indentifier (DUID) in Solicit message to get an IP address from a DHCPv6 server
- Server compares DUID with its database and delivers configuration data (address, lease times, DNS serviers,…) to client
- DUID must be globally unique!!!
- Thress types:
  - LL: Link-layer address
  - LLT: Link-layer address + time
  - EN: Vendor-assigned unique ID based on Enterprise number

CASE STUDY: DHCPv6 DUID

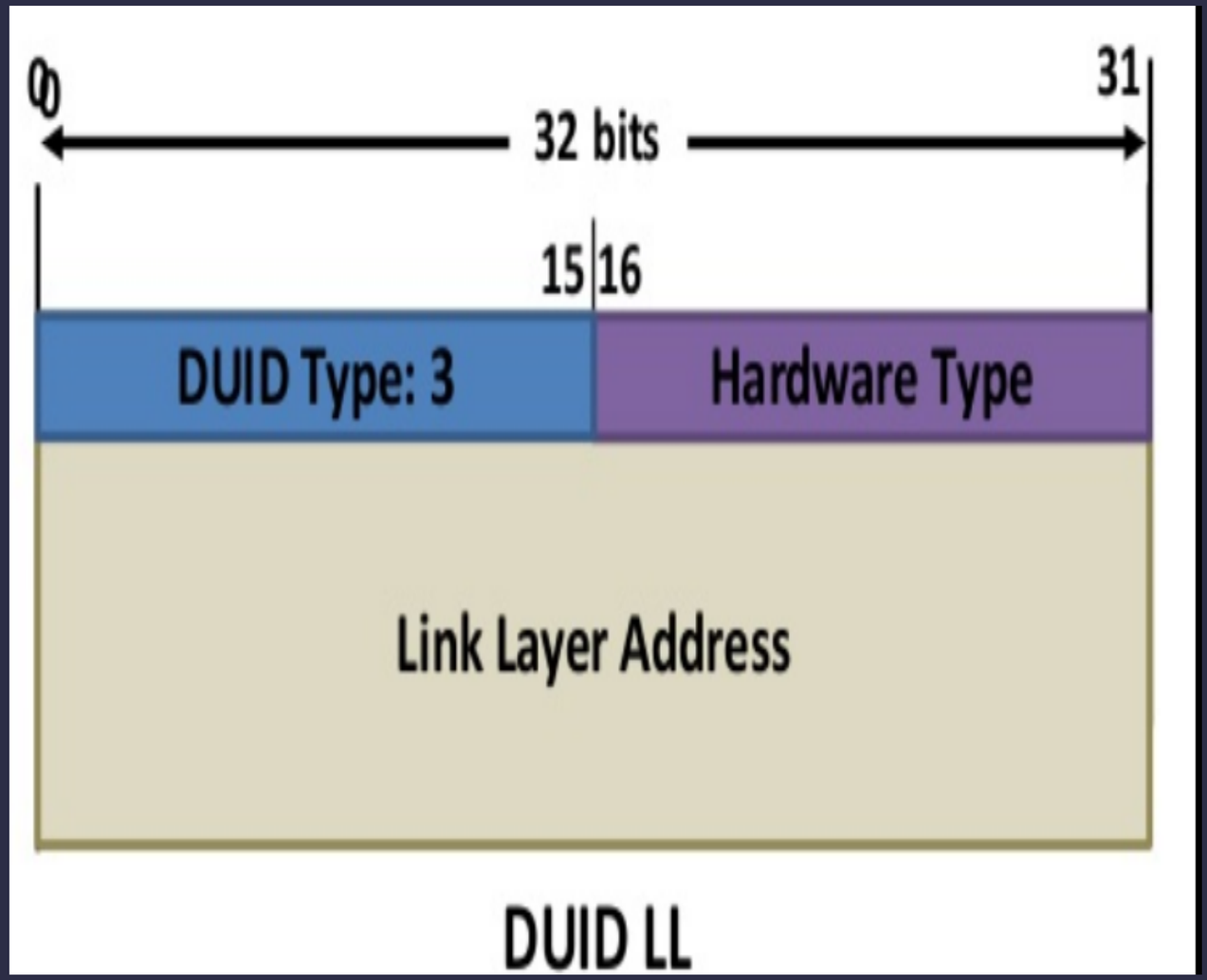


CASE STUDY: DHCPv6 DUID



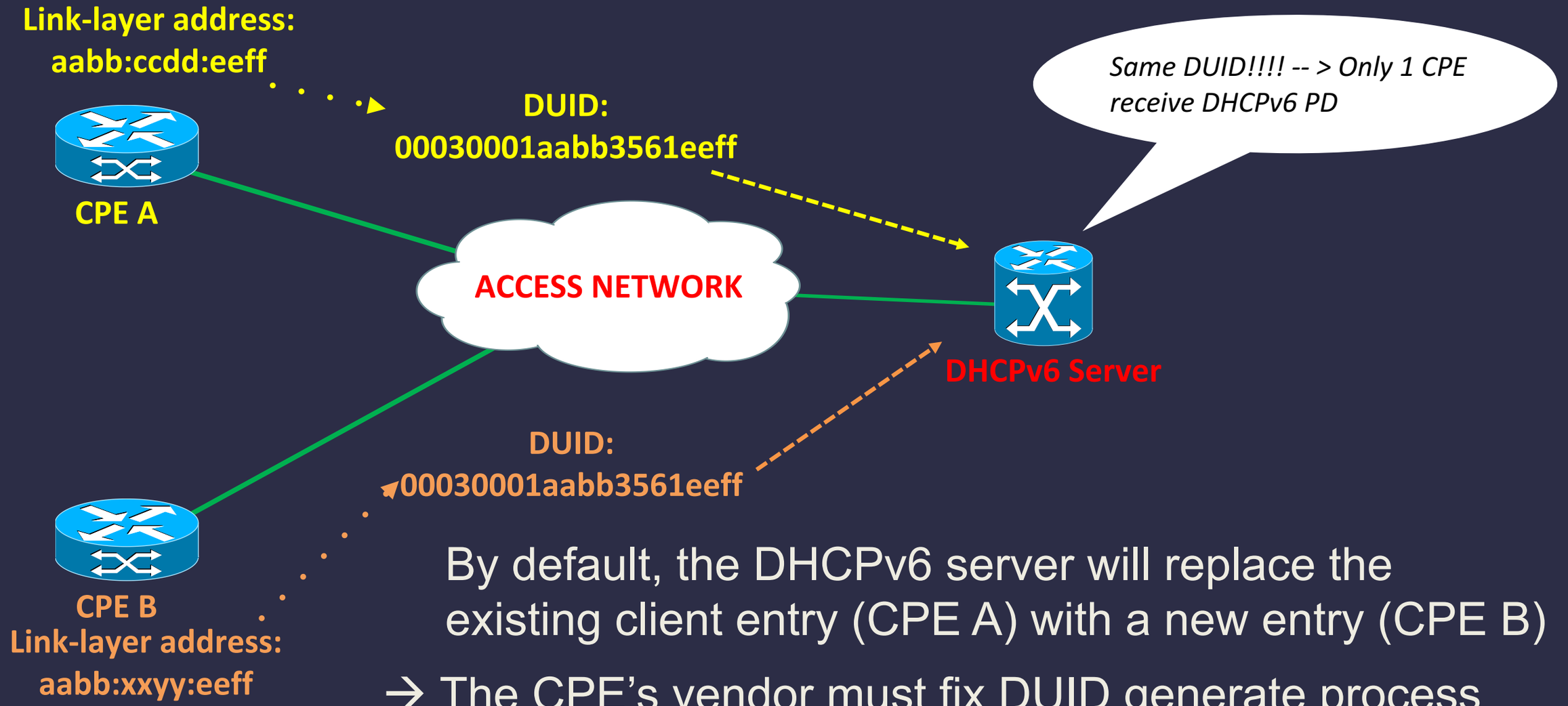
DHCPv6 Unique Indentifier (DUID)

CASE STUDY: DHCPv6 DUID




```
Frame 9955: 142 bytes on wire (1136 bits), 142 bytes capt
Ethernet II, Src: Cambridg_3c:ab:c6 (a8:58:40:3c:ab:c6),
PPP-over-Ethernet Session
Point-to-Point Protocol
Internet Protocol Version 6, Src: fe80::e543:4440:8e39:53
User Datagram Protocol, Src Port: 546 (546), Dst Port: 54
DHCPv6
  Message type: Solicit (1)
  Transaction ID: 0x94ea5c
  Client Identifier
    Option: Client Identifier (1)
    Length: 10
    Value: 00030001a8583561abc6
    DUID: 00030001a8583561abc6
    DUID Type: link-layer address (3)
    Hardware type: Ethernet (1)
    Link-layer address: a8:58:35:61:ab:c6
  Elapsed time
  Identity Association for Prefix Delegation
  Vendor Class
  Option Request
```

CASE STUDY : DHCPv6 DUID



By default, the DHCPv6 server will replace the existing client entry (CPE A) with a new entry (CPE B)

→ The CPE's vendor must fix DUID generate process

CASE STUDY:

Deploy IPv6 for selected CPE

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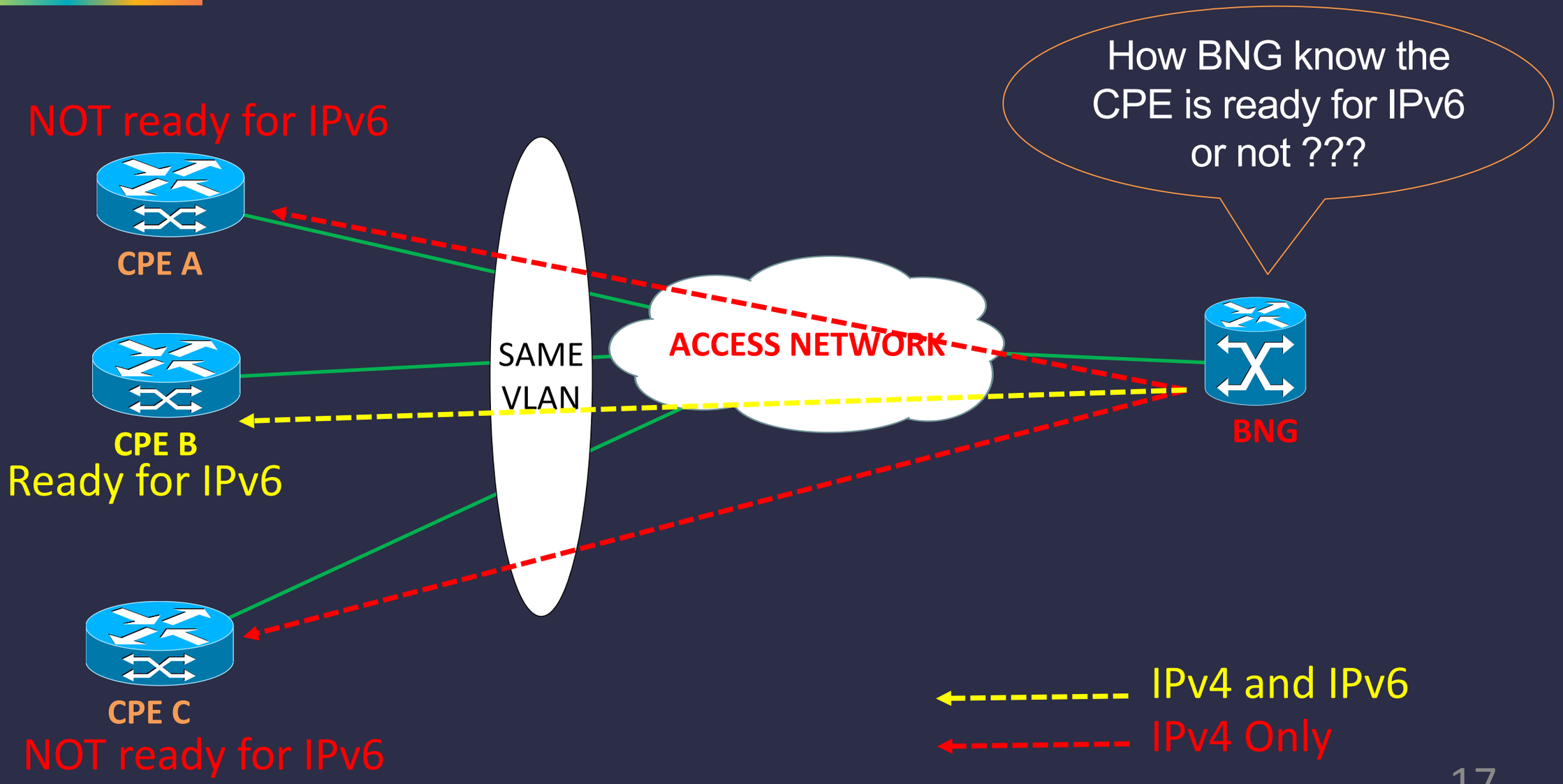
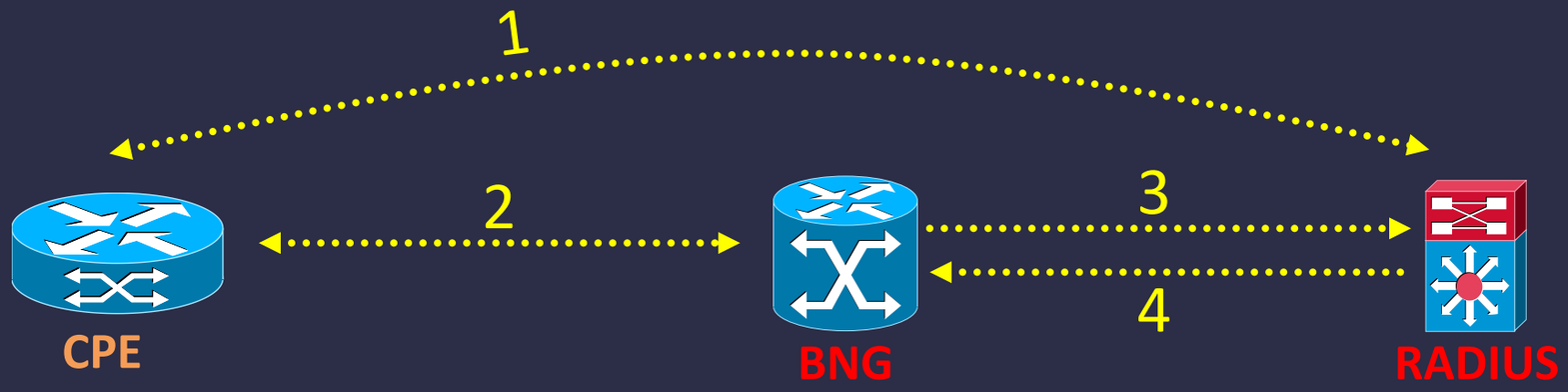


CASE STUDY: Deploy IPv6 for selected CPE



1 - By using TR069, Radius know CPE's model, firmware version, subscriber's username configed on the CPE

2, 3 – After finished PPPoE process (2), BNG send Access Request to Radius (3). Subscriber's username are included.

4 – From the information at the 1st step, Radius send IPv4 or dual IPv4/IPv6 dynamic profile to the BNG

Fpt Telecom
THANKS FOR WATCHING
HAVE A NICE DAY