

# Distribute SRv6 Locator by DHCP

draft-cheng-dhc-distribute-srv6-locator-by-dhcp-02

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IETF-115

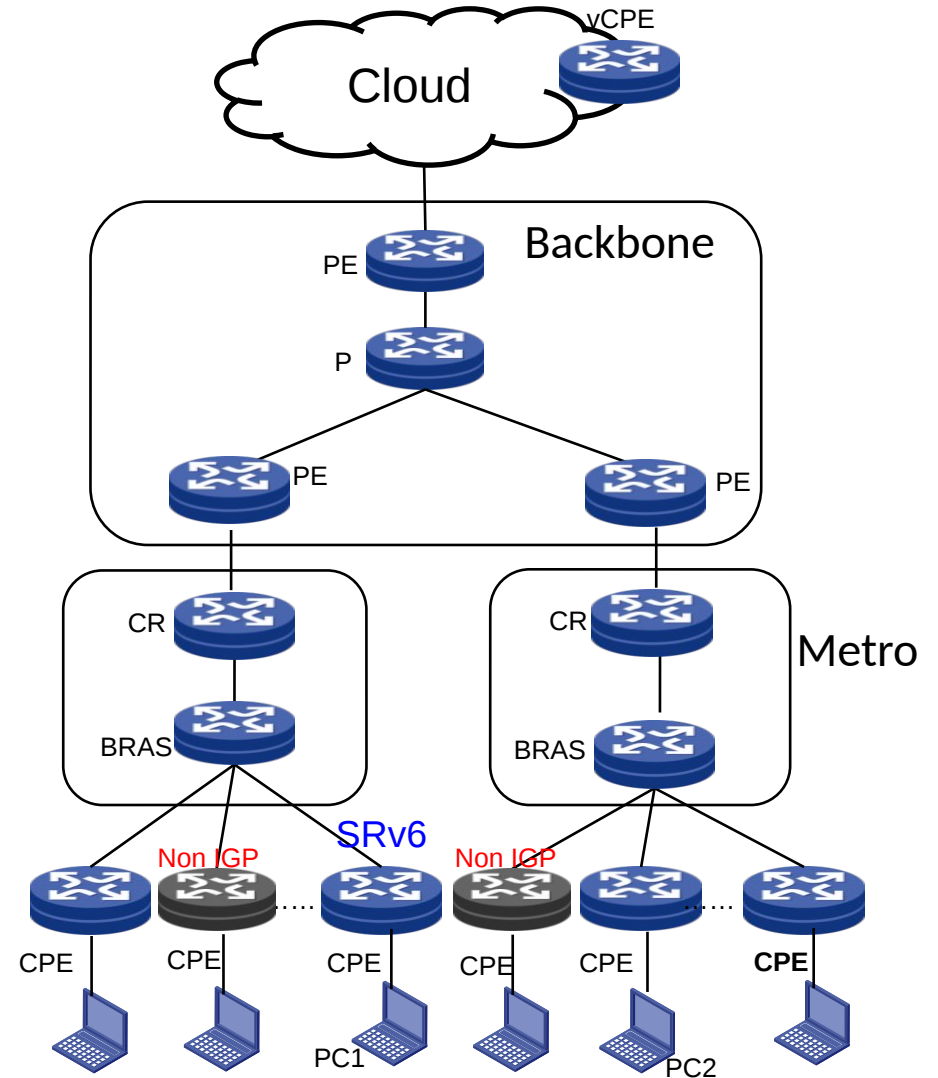
# Background & Goals

## □ CPEs in Telecom IP Network

- Deploy SRv6
- Large scale [ 50K+ ]
- Wide geographical distribution
- High mobility
- Normally CPEs do not deploy IGP

## □ Goals

- Simplify configuration
- Dynamically learn SRv6 locator subnet routes



# Proposal

Treat SRv6 locator as the prefix in prefix pool.

1. DHCPv6 server allocates SRv6 locator as the prefix.
2. Follow DHCPv6 Prefix Delegation(PD) process.
3. After the locator prefix assigned successfully, BRAS dynamically issues the locator subnet route locally and distributes the locator subnet route.
4. When releasing the locator prefix, BRAS deletes the locator subnet route.

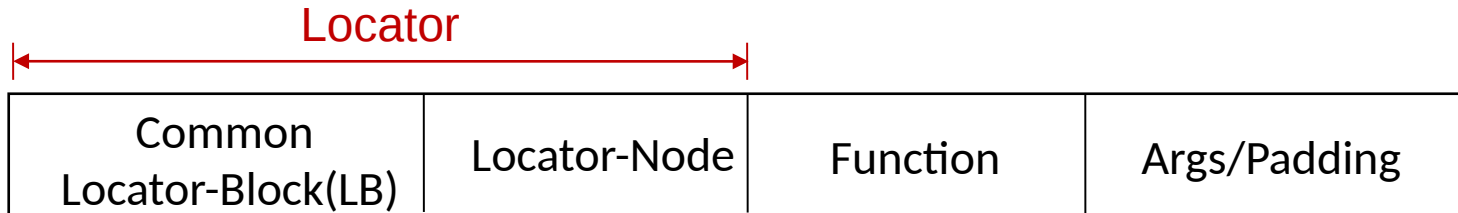
BRAS need to enable DHCPv6 PD server or DHCPv6 relay agent service.

# SRv6 SID Format

SRv6 SID defined in [RFC8986]:



Compressed SRv6 SID defined in [draft-ietf-spring-srv6-srh-compression]:

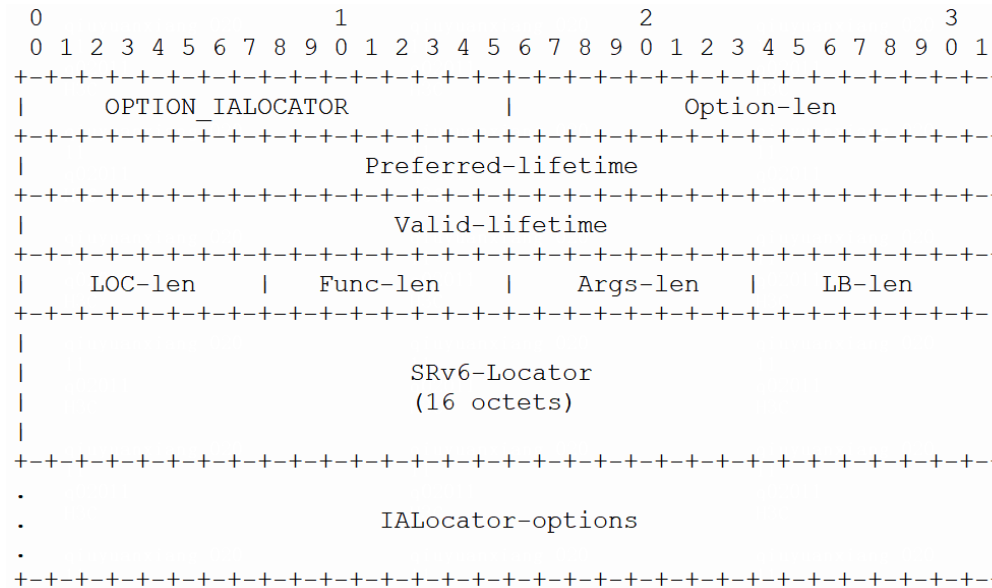




# DHCPv6 Option Extension

Define IA SRv6 Locator option :

- Encapsulated in the IA\_SRv6\_LOCATOR-options field of an IA\_SRv6\_LOCATOR option .
- Used to specify a SRv6 locator associated with an IA\_SRv6\_LOCATOR.



- **LOC-len:** The locator (LOC) length of SRv6 SID in bits.
- **Func-len:** The function (FUNCT) length of SRv6 SID in bits.
- **Args-len:** The arguments (ARG) length of SRv6 SID in bits.
- **LB-len:** The Locator Block length of SRv6 SID in bits.
- **SRv6-locator:** A SRv6 locator prefix.
- **IALocator-options:** Options associated with this SRv6 locator.

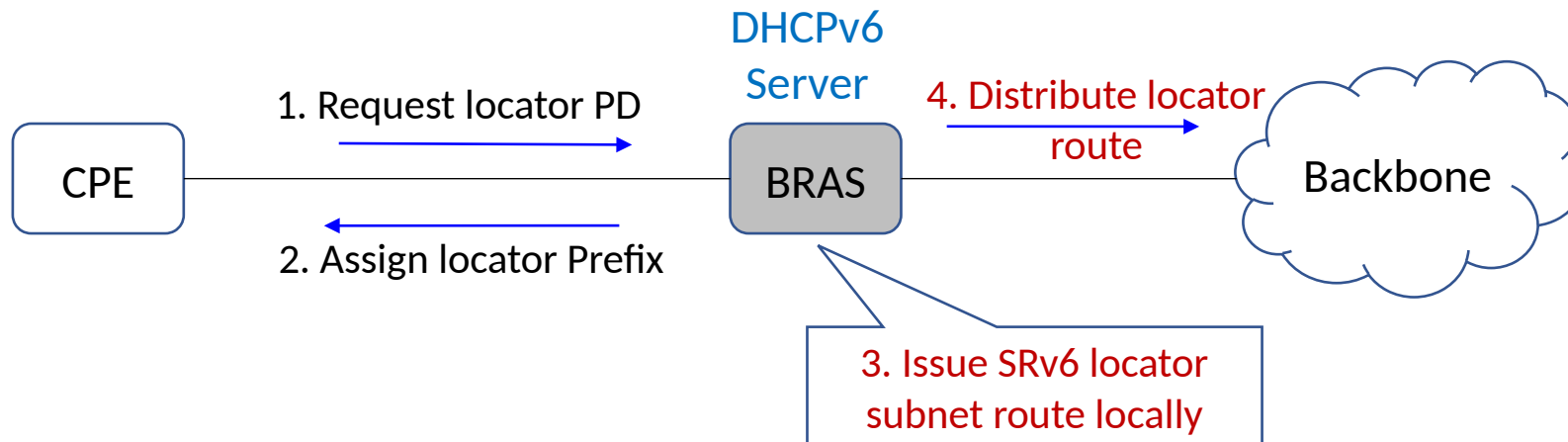
For compressible SID, the length of Locator Node is LOC-len minus LB-len.



# Scenario 1: BRAS as DHCPv6 PD Server

DHCPv6 Server behavior:

1. Allocate locator subnet prefix from prefix pool.
2. Generate the locator subnet route locally.
3. Distribute the locator subnet route to other IPv6 node.



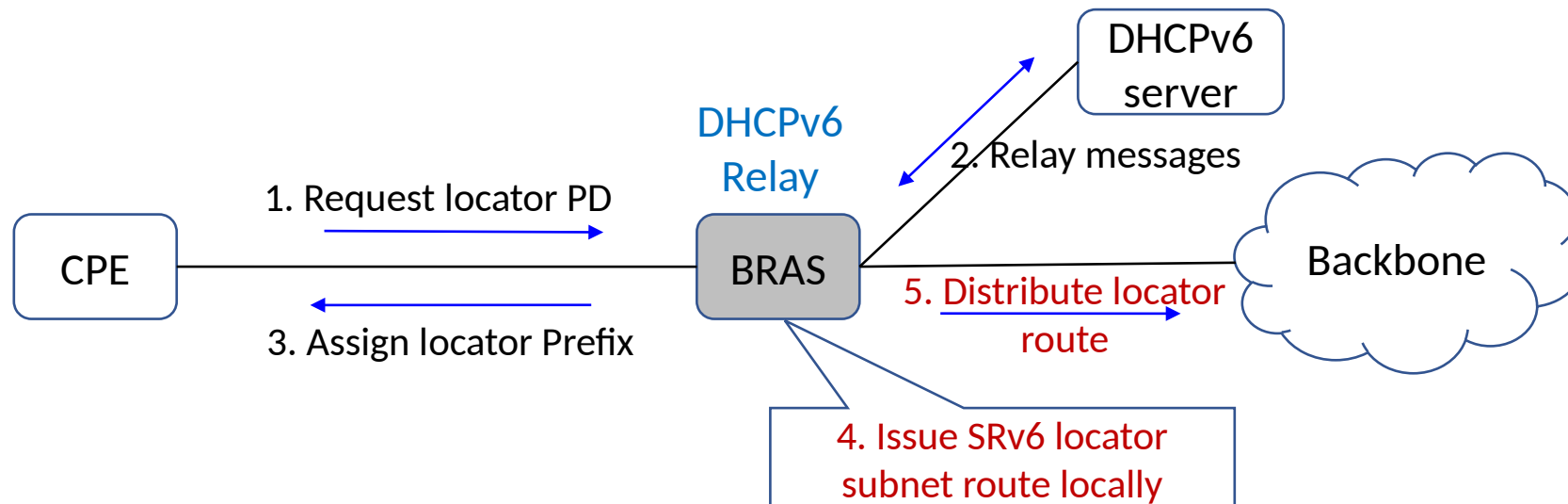


# Scenario 2: BRAS as DHCPv6 Relay Agent

First hop DHCPv6 relay agent behavior:

1. Relay DHCPv6 PD allocation messages.
2. Generate the locator subnet route locally.
3. Distribute the locator prefix routes to other IPv6 node.

The non first hop DHCPv6 relay normally processes DHCPv6 PD messages according to RFC8415.



# Updates to Version 02 of the draft

According to the comments of IETF-114, it is updated as follows:

- Define a new IA\_SRv6\_LOCATOR option instead of the option in the IA prefix option.
- Define IA SRv6 Locator option to specify a SRv6 Locator associated with an IA\_SRv6\_LOCATOR.

# Next Steps

- Seeking for feedback in DHC & SPRING
- Any questions or comments are Welcomed