

Unified UPF selection

The unified UPF selection is a converged-core enhancement that advertises GTPU addresses to identify the UPF during handover.

Feature name	Release information	Description
Unified UPF selection	2026.04.0	This feature allows the UPF to include a new proprietary IE “Userplane IP address Information” in the N4/Sx Association Setup request message. **Commands enhanced:** **peer-node-id ipv4-address** *ipv4_addr* **interface** *interface* **advertise-gtpu-addr** **Default settings:** Disabled-Configuration required to Enable

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How UPF selection process works

Summary

This process explains how UPF selection process works.

Workflow

These are the stages involved in the process of unified UPF selection.

1. **PFCP Association process:** In the Sx Association Setup Request, We publish the GTPU IP address in the Userplane IP address Information IE.

   During the PFCP Association process, the UPF sends the IE “Userplane IP address Information” in the Sx Association Setup Request message. This IE contains PGW-U IP and SGW-U IP (IPv4 or IPv6) addresses associated with the UPF.

These addresses are sourced from the gtpu-service where the interface type is 'upf-ingress' or 'sgw-egress', regardless of the peer node type. The sgw-egress is mapped to SGW-U IPs, and upf-ingress is mapped to PGW-U IPs.

2. **Population of IP addresses:** The SMF and EPC GW store stores the advertised S5-U bind addresses.

   The mapping associates each UPF with its PGW-U and SGW-U address information. The result is a local lookup source for later handover selection.

3. **MSUP selection:** For a converged call, the initial attach or 5G to 4G handover within MSG, same MSUP selection is preferred.

   - **Initial attach:** For a subscriber in 4G RAT connecting to SMF via SGW, it should select the same MSUP. During the initial attach at SGW, an MSUP is selected. The SGW sends Create Session Request to SMF.

     The SMF receives Create Session Request with SGW GTPU IP in SGW F-TEID. SMF extacts this SGW GTPU IP.

     The SMF gets the MSUP from the mapping table based on this SGW GTPU IP and selects the same MSUP that SGW selects.

   - **5G to 4G handover:** For a subscriber anchored on SMF moving to 4G RAT, SGW should select the same MSUP selected by SMF.

     During 5G to 4G handover, PGW GTPU IP received in "S5/S8-U PGW FTEID" is extracted. SGW gets the MSUP from mapping table based on this PGW GTPU IP and selects the same MSUP selected by SMF.

Configure UPF address advertisement for unified selection

This configuration gives flexibility to selectively advertise the GTPU addresses to the selected control-plane peer.

If configured, UPF includes the addresses from upf-ingress and sgw-egress GTP-U services associated with the specified user-plane-service, to which a control-plane-group is linked in the PFCP Association Setup Request message.

These are the steps included in the configuration:

Procedure

Step 1 Enter the control-plane group configuration.

```
config
   control-plane-group cpgroup_name
```

Step 2 Enable GTP-U address advertisement for an N4 peer.

[no]peer-node-id ipv4-address *ipv4_address* **interface** *interface_name* **advertise-gtpu-addr**

Example:

```
[local]UPlane# config
[local]UPlane(config)# control-plane-group cp1
[local]UPlane(config-control-plane-group)# peer-node-id ipv4-address 192.12.11.201 interface n4
advertise-gtpu-addr
[local]UPlane(config-control-plane-group)# peer-node-id ipv4-address 192.12.11.202 advertise-gtpu-addr
```



Note Changing the properties of an established PFCP association in place is not supported.

To modify the association properties, the existing association must first be released using the **no peer-node-id ipv4-address** *addr* command.