

# Multiple IP Versions Support

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## Feature Summary and Revision History

### Summary Data

| | |
|---|---|
| Applicable Product(s) or Functional Area | • P-GW<br>• S-GW<br>• SAEGW |
| Applicable Platform(s) | • ASR 5500<br>• VPC - DI<br>• VPC - SI |
| Feature Default | Disabled - Configuration Required |
| Related Changes in This Release | Not applicable |
| Related Documentation | • *Command Line Interface Reference*<br>• *P-GW Administration Guide*<br>• *S-GW Administration Guide*<br>• *SAEGW Administration Guide* |

### Revision History

**Important** Revision history details are not provided for features introduced before release 21.2 and N5.1.

| Revision Details | Release |
|---|---|
| This feature enables P-GW, S-GW, and SAEGW nodes to support the control messages received on all the transport addresses exchanged during the session setup. | 21.8 |
| First introduced. | Pre 21.2 |

# Feature Description

This feature enables P-GW, S-GW, and SAEGW nodes to support the control messages received on all the transport addresses exchanged during the session setup.

A new CLI command has been introduced at the egtp-service level to control the behavior of the BRCmd, MBCmd, and DBCmd messages.

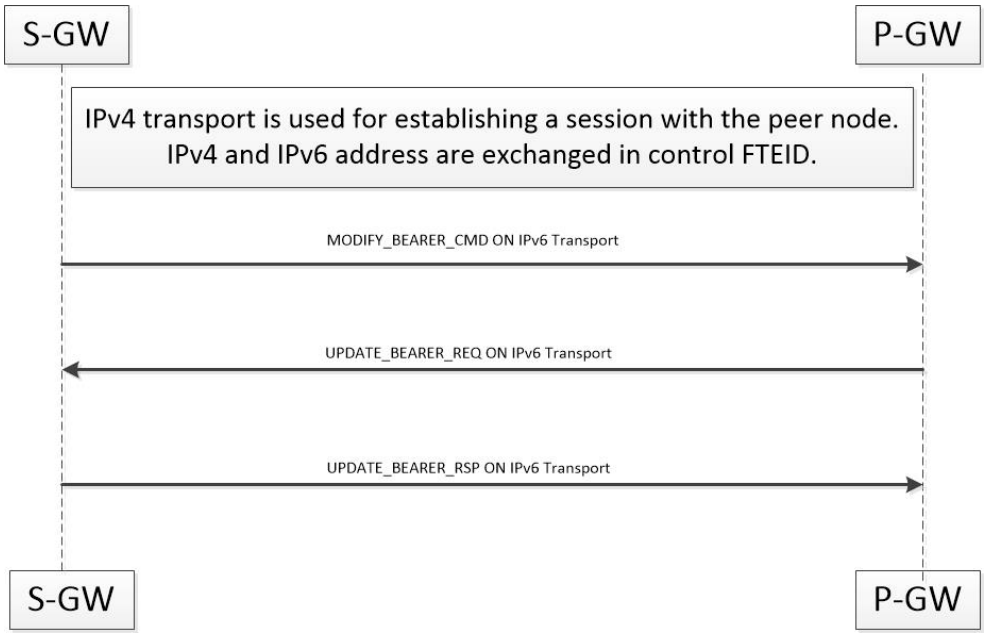
# How it Works

This section describes the working of this feature. Following is the sample call flow for MBCmd.

The following figure illustrates call flow when the feature is disabled:




The following figure illustrates the call flow when feature is enabled:




When a session is being established, P-GW, S-GW, and SAEGW node uses the IPv6 address as transport. This transport is used for establishing tunnel with peer node. If IPv4 and IPv6 addresses are exchanged in control FTEID then the node should handle MBCmd, BRCmd, and DBCmd messages on IPv4 transport by the nodes.

When a session is being established, if IPv4 address is used as a transport and is being used for establishing tunnel with peer node, and if IPv4 and IPv6 addresses are exchanged in control FTEID, then the MBCmd, BRCmd, and DBCmd messages are also handled on the IPv6 transport by the nodes.

When a session is being established, if IPv4 and IPv6 addresses are exchanged in data F-TEID by both peers, then the GTP-U data packets get handled on both IPv6 and IPv4 transport.

When a session is being established, if IPv4 address is used as a transport, however, C-TEID does not contain IPv4 address, then that message is rejected by the node. The nodes exhibit similar behavior for IPv6 addresses.

When a session is being established, if IPv4 and IPv6 addresses are exchanged in data F-TEID by both peers, then GTP-U data packets get handled on IPv6 and IPV4 transport both.

The following table displays the message handling behavior in different session establishment scenarios:

***Table 1: Message Handling Behavior in Different Session Establishment Scenarios***

| Messages | Transport Used for Session Establishment | C-FTEID Sent During Session Establishment | Message Sent on Transport |
|---|---|---|---|
| MBR/DSR | IPv6 | IPv4/IPv6 | IPv4 |
| MBC/DBC/BRC | IPv6 | IPv4/IPv6 | IPv4 |
| Change Notification | IPv6 | IPv4/IPv6 | IPv4 |
| Suspend/Resume | IPv6 | IPv4/IPv6 | IPv4 |
| MBR/DSR | IPv4 | IPv4/IPv6 | IPv6 |
| MBC/DBC/BRC | IPv4 | IPv4/IPv6 | IPv6 |
| Change Notification | IPv4 | IPv4/IPv6 | IPv6 |
| Suspend/Resume | IPv4 | IPv4/IPv6 | IPv6 |
| MBR/DSR | IPv6 | IPv6 | IPv4 |
| MBC/DBC/BRC | IPv6 | IPv6 | IPv4 |
| Change Notification | IPv6 | IPv6 | IPv4 |
| Suspend/Resume | IPv6 | IPv6 | IPv4 |
| MBR/DSR | IPv4 | IPv4 | IPv6 |
| MBC/DBC/BRC | IPv4 | IPv4 | IPv6 |
| Change Notification | IPv4 | IPv4 | IPv6 |
| Suspend/Resume | IPv4 | IPv4 | IPv6 |

# Configuring Multiple IP Version Support

This section provides information on CLI commands available in support of this feature.

By default, this feature is enabled.

```
configure
  context context_name
    egtp-service service_name
      [no] gtpc command-messages dual-ip-stack-support
      end
```

**NOTES**:

- **no**: Disables the feature.
- **command-messages**: Configures MBC or DBC or BRC messages on S-GW and P-GW.
- **dual-ip-stack-support**: Enables P-GW, S-GW, SAEGW nodes to handle command messages on both IPv4/IPv6 transport, if supported.

# Monitoring and Troubleshooting

This section provides information on how to monitor and troubleshoot the Override Control Enhancement feature.

## Show Commands and Outputs

This section provides information on show commands and their corresponding outputs for the Override Control Enhancement feature.

### show configuration

The following new fields are added to the output of this command:

- gtpc command-messages dual-ip-stack-support - Specifies the command messages on both IPv4/IPv6 transport if supported.

### show egtp-service all

The following new fields are added to the output of this command:

- GTPC Command Messages Dual IP Support - Specifies the command messages on both IPv4/IPv6 transport if supported.