Timer-based GBR Bearer Deactivation

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Feature Description

The Timer-based GBR Bearer Deactivation, a proprietary feature of StarOS, allows MME to retain dedicated bearers of a User Equipment (UE) when eNodeB sends a S1-AP Context Release to enable the UE to resume a VoLTE call on receiving a new Service Request or RCC Connection. For example, if a subscriber is out of coverage for a short period of time during a VoLTE call, the GBR bearer would be retained and the session is not lost.

MME provides a configurable timer for which the GBR bearers are preserved when a UE Context Release Request message with "Radio Connection With UE Lost" cause code is received from the eNodeB. MME preserves the GBR bearers for the configured time.

A valid license key is required to enable this feature. Contact your Cisco Account or Support representative for information on how to obtain a license. This license was not enforced in earlier releases.

How It Works

When MME receives a UE Context Release Request with "Radio Connection With UE Lost" cause code from the eNodeB to initiate the S1 Release procedure for a UE, the MME is configurable to preserve GBR bearers of the UE for a time ranging from 1 - 600 seconds. The configurable range of time avoids time consumption during bearer reestablishment if the UE reconnects within the given time.

Based on operator policy, in case of eNodeB failure, the MME either preserves all the bearers or initiate the Dedicated Bearer Deactivation procedure for GBR bearers. This functionality is provisioned in the Call Control Profile.

Limitations

Negligible amount of memory is affected because the GBR bearers are preserved for the configured amount of time instead of being released.

Configuring Timer-based GBR Bearer Deactivation

This section documents configuration of Timer-based GBR Bearer Deactivation and its related functionality.

Configuring Timer-based GBR Bearer Deactivation

The Timer-based GBR Bearer Deactivation is configured in the Call Control Profile configuration mode.

The following CLI command allows the user to configure the timer, which defines the time allowed for the GBR bearers to be preserved when the UE Context Release Request message with the "Radio Connection With UE Lost" cause code is received from eNodeB.

gbr-bearer-preservation-timer

The Timer-based GBR Bearer Deactivation is configured in the Call Control Profile Configuration Mode. The **gbr-bearer-preservation-timer** command allows the user to configure the timer, which defines the time allowed for the GBR bearers to be preserved when the UE Context Release Request message with the "Radio Connection With UE Lost" cause code is received from eNodeB.

```
configure
  call-control-profile profile_name
    gbr-bearer-preservation-timer timer_value
      [ remove ] gbr-bearer-preservation-timer
      end
```

Notes:

- The **gbr-bearer-preservation-timer** command allows the operator to set the preservation time for the bearer on receiving the UE Context Release with the "Radio Connection With UE Lost" cause code.
- The *timer_value* specifies the duration for preserving the bearers in seconds. It is an integer value ranging from 1 to 600.
- **remove** disables the timer configuration.

Verifying the Timer-based GBR Bearer Deactivation Configuration

The following section describes command available to verify Timer-based GBR Bearer Deactivation configuration on the MME.

```
show call-control-profile full name test
```

On running the above show command the full configuration for the call control profile is displayed. The following fields relate to this feature:

```
GMM-T3346 Timer
Min Value : Not Configured
Max Value : Not Configured
TCP Maximim Segment Size : Not Configured
GBR Bearer Preservation Timer : 10s
```

Monitoring and Troubleshooting the Timer-based GBR Bearer Deactivation

The following sections describe commands available to monitor or troubleshoot Timer-based GBR Bearer Deactivation on the MME.

Troubleshooting Timer-based GBR Bearer Deactivation

To troubleshoot the Timer-based GBR Bearer Deactivation feature, use the following instructions:

- Verify if the feature is enabled or not by executing the following command:

  show call-control-profile full name *test*

  If the **GBR Bearer Preservation Timer** field displays the configured timer value, then the feature is considered to be enabled, else disabled.

- To raise a trouble ticket, collect the output of the following show commands:

  show configuration

  show call-control-profile full all