
Version 10.0.0.7

Release Date: Feb 24, 2014

Components

1. LTE Emulators : MME (with internal HSS), SGW and PGW (with internal PCRF)
1. LTE Emulators Console

Resolved Issues

| Issue # | Summary |
|---------|---|
| 9135 | Second PDN Connection of an UE is not successful using single PGW when DHCP servers are used for IP allocation for both the PDNs. |
| 9204 | PGW gets segmentation fault during initial Attach if multiple PDN connections to the same APN is not supported by SGW (MAG) on PMIP-based S5. |
| 9209 | During Handover from GERAN A/Gb mode to E-UTRAN, MME sends incorrect instance value of Bearer Context IE in GTPC Forward Relocation Response message. |
| 9231 | Sometimes MME terminates abnormally during Network-initiated Bearer Creation/Modification procedures for Idle UEs. |
| 9233 | MME gets segmentation fault while attaching an UE using Polaris HSS Simulator if subscription profile for that UE contains more than 5 PDN contexts. |
| 9499 | SGW generates malformed GTPu End Marker message. |
| 9500 | SGW stops working after receiving Error Indication message with extension header. |
| 9520 | MME fails to decode Path Switch Request message if SourceMME-GUMMEI IE is present in the message. |

Version 10.0.0.6

Release Date: Dec 30, 2013

Components

1. LTE Emulators : MME (with internal HSS), SGW and PGW (with internal PCRF)
2. LTE Emulators Console

New in Release 10.0

1. 3GPP Release 10 Compatibility:
3GPP Release 10 enhancements in S1AP, GTP, PMIP and Diameter messages.
2. Local Breakout Roaming using GTP-based S5.
3. Inter-working with GERAN and UTRAN:
Supports access to LTE Core Network via GERAN/UTRAN and both Idle and Connected mode mobility between GERAN/UTRAN and LTE Network.
Requires third-party PCRF as Polaris PCRF simulator supports only E-UTRAN.
4. CS-Fallback to GERAN and UTRAN:
Supports Combined Attach to CS+PS network, SMS over SGs and Mobile Originating and Terminating Voice Calls with Suspension of PS service during CSFB. PS Handover during CSFB is not supported.
Requires third-party PCRF as Polaris PCRF simulator supports only E-UTRAN.
5. CS-Fallback to CDMA2000 1xRTT Network:
Supports Mobile originating and terminating voice call and SMS without PS Handover.
6. Support for dedicated bearers on PMIP-based S5/S8 interface:
Supports Gxc in SGW. Requires third-party PCRF as Polaris PCRF simulator does not support Gxc interface.
7. Complete and Partial Path Failure handling.
8. GTP-U Error Indication handling.
9. Remote packet capture from Emulators Console using Wireshark.
10. Subscriber Monitoring using Emulator Console.
11. PGW selection in MME and Charging Server selection in PGW using DNS.
12. Support for Trace Activation and Deactivation from external HSS using S6a interface.

Resolved Issues

| Issue # | Summary |
|---------|---|
| 8003 | MME cannot handle UE Context Release Request from Source eNodeB while Handover is going on. |
| 8103 | EPC Emulators can not handle data packets bigger than 1400 bytes. |
| 8250 | MME emulator does not support deletion of configured neighbor MME/SGW/PGW |
| 8278 | SGW does not buffer DL data packets for Idle UEs. |
| 8406 | MME cannot handle Service Request message if it comes after Combined TAU procedure. |
| 8443 | PGW terminates abnormally if same IP address is assigned to an UE for multiple PDNs. |
| 8468 | MME rejects S1 Handover procedure if UE has more than 6 bearers. |
| 8512 | SGW terminates abnormally if multiple bearer operations performed for more than 16 UEs. |
| 8763 | MME retransmits Paging message that contains IMSI even after UE responds with Attach Request. |
| 8849 | MME rejects attach procedure with cause "ILLEGAL UE" when an already registered UE comes back with GUTI of another MME. |
| 8921 | MME does not discard Handover Required message even if negative protocol policy is set in the MME to drop the message. |
| 8979 | During S1-HO, MME sends same indirect forwarding tunnel identifier for all bearers to the source eNodeB. |
| 9053 | MME can not send large warning message (> 512 bytes) in Write-Replace Warning Request message. |
| 9060 | During S1-HO, SGW does not forward buffered data packets to the Target EnodeB. |

Known Issues

| Issue # | Summary |
|---------|---|
| 7375 | MME cannot handle TAU request if it comes during another ongoing procedure. |
| 8031 | MME does not honor the paging DRX value sent by the UE in Attach Request message. |
| 9031 | Packet filter details of a dedicated bearer are not correctly displayed for a Subscriber. |
| 9052 | Write-Replace Warning request message does not contain user-provided cell-id if that cell-id does not belong to connected eNodeB. |
| 9135 | Second PDN Connection of an UE is not successful using single PGW when DHCP servers are used for IP allocation for both the PDNs. |
| 9190 | Modification of Emulator configuration does not work when loading configuration in Emulator Console. |
| 9204 | PGW gets segmentation fault during initial Attach if multiple PDN connections to the same APN is not supported by SGW (MAG) on PMIP-based S5. |
| 9209 | During Handover from GERAN A/Gb mode to E-UTRAN, MME sends incorrect instance value of Bearer Context IE in GTPC Forward Relocation Response message. |
| 9231 | Sometimes MME terminates abnormally during Network-initiated Bearer Creation/Modification procedures for Idle UEs. |
| 9233 | MME gets segmentation fault while attaching an UE using Polaris HSS Simulator if subscription profile for that UE contains more than 5 PDN contexts. |
| 9254 | HSS Initiated QoS Modification procedure does not work using PMIP-based S5. |
| 9258 | MME cannot handle Network-initiated bearer deletion request for an Idle UE. |
| 9307 | UE Attach fails with external HSS. |

Version 9.2.0.9

Release Date: Dec 4, 2013

Component Versions

1. LTE Emulators : 9.2.0.9
2. LTE Emulators Console: 9.2.0.9

Resolved Issues

| Issue # | Summary |
|---------|---|
| 8700 | UE Attach is not successful if UE requests for IPv6 PDN connection. |

Version 9.2.0.8

Release Date: Oct 21, 2013

Component Versions

1. LTE Emulators : 9.2.0.8
2. LTE Emulators Console: 9.2.0.8

Resolved Issues

| Issue # | Summary |
|---------|--|
| 6536 | MMEUpdateConfigure Tci API should be enhanced to support addition of MME Code, Group ID list without specifying the primary GUMMEI. |
| 8151 | MME terminates abnormally if MMEConfigureAlert API function is used with Tracking Area list and without MCC and MNC. |
| 8170 | Inclusion of Warning area list IE in Kill request message needs to be configurable from Emulators Console. |
| 8183 | SGW does not respond to Create Session Request with TEID 0 from a new MME if an active PDN connection exists for the same UE with a different MME. |
| 8196 | Inclusion of Warning type IE in Write-Replace Warning Request message needs to be configurable. |
| 8247 | SGW does not forward data packet to target eNB received over indirect forwarding tunnels during S1 based HO. |
| 8585 | MME terminates abnormally if UE sends malformed Attach Request message. |
| 8599 | MME cannot send Write-Replace Warning Request when eNB Id value is greater than 255. |

Known Issues

| Issue # | Summary |
|---------|---|
| 8003 | MME cannot handle UE Context Release Request from Source eNodeB while Handover is going on. |
| 8103 | EPC Emulators can not handle data packets bigger than 1400 bytes. |
| 8278 | SGW does not buffer DL data packets for Idle UEs. |
| 8443 | PGW terminates abnormally if same IP address is assigned to an UE for multiple PDNs. |
| 8468 | MME rejects S1 Handover procedure if UE has more than 6 bearers. |
| 8512 | SGW terminates abnormally if multiple bearer operations performed for more than 16 UEs. |

Version 9.2.0.7

Release Date: July 23, 2013

Component Versions

1. LTE Emulators : 9.2.0.7
2. LTE Emulators Console: 9.2.0.7

Resolved Issues

| Issue # | Summary |
|---------|--|
| 7947 | "Broadcasts Request Count" and "Repetition Period" cannot be set to 0 when sending a CMAS Alert from MME. |
| 7284 | MME cannot handle Path Switch Request if it receives unsolicited Location Report Indication before Path Switch Request message from Target eNodeB. |
| 7873 | MME fails to show detail information of an UE while the UE's Attach procedure is ongoing. |
| 7948 | MME sets incorrect cell-id value in Write-Replace Warning Request for Home eNodeB. |
| 7964 | PGW terminates abnormally after receiving GTPU Error Indication from SGW followed by DL traffic for the same UE. |
| 8087 | For repeated "Network-initiated bearer modification without TFT change" operation on a dedicated bearer, PGW includes TFT parameters in Update Bearer Request second time onwards. |
| 8148 | In S1-Handover with MME relocation, Source MME sends malformed S1AP Handover Command message to source eNodeB. |
| 8029 | Full-Duplex TCP Traffic over both Default & Dedicated Bearer causes around 40% TCP Retransmission when attach procedure is ongoing for 10000 UEs. |

Known Issues

| Issue # | Summary |
|---------|--|
| 8196 | Inclusion of Warning type IE in Write-Replace Warning Request message needs to be configurable. |
| 8183 | SGW does not respond to Create Session Request with TEID 0 from a new MME if an active PDN connection exists for the same UE with a different MME. |
| 8170 | Inclusion of Warning area list IE in Kill request message needs to be configurable from Emulators Console. |
| 8151 | MME terminates abnormally if MMEConfigureAlert API function is used with Tracking Area list and without MCC and MNC. |
| 8103 | EPC Emulators can not handle data packets bigger than 1400 bytes. |
| 8003 | MME cannot handle UE Context Release Request from Source eNodeB while Handover is going on. |

Version 9.2.0.6

Release Date: June 27, 2013

Component Versions

1. LTE Emulators : 9.2.0.6
2. LTE Emulators Console: 9.2.0.6

Resolved Issues

| Issue # | Summary |
|---------|--|
| 7571 | When a PCC Rule is created in the PCRF, the Port Range option cannot be used to specify the TFT. |
| 7655 | Occasionally PGW terminates abnormally during node creation in 64 bit systems. |
| 7659 | Downlink UDP traffic cannot be sent over GBR bearer. |
| 7660 | MME crashed while performing paging procedure repeatedly on a single UE. |
| 7738 | MME does not send Create Bearer Response to SGW/PGW if NAS bearer activation message comes before S1AP ERAB Setup Response during dedicated bearer activation. |
| 7741 | Modification of PDN Context in HSS throws Tcl error. |
| 7761 | PGW can not process Create Session Request that contains both APN-NI and APN-OI parts inside an APN IE. |
| 7830 | Attach procedure fails with Samsung Galaxy S3 handset. |
| 7836 | PGW crashed while running overnight test with TCP and UDP UL + DL data traffic on few UEs. |
| 7838 | Service Request procedure fails when UE has more than two bearers. |
| 7964 | In Ubuntu 11.10 32 bit system, PGW Emulator may terminate abnormally during detach procedure after running UDP DL traffic on few UEs. |

Known Issues

| Issue # | Summary |
|---------|---|
| 7729 | Sometimes Emulator console shows incomplete 'Create PGW' dialog box when Console is running on Ubuntu 12.10 32 bit system |
| 7858 | Setting up and Closing total 10000 S1 connections from 100 eNodeBs to 100 MMEs causes instability in MME Emulator. |
| 7859 | On Windows 7, Console window cannot be restored if a child window is opened followed by a "Show Desktop" operation. |
| 7868 | Network-Initiated operations such as Paging, MME-initiated Detach procedures cannot be triggered for more than 5000 UEs in single operation. |
| 7930 | Resetting an Emulator and changing the Emulator Type does not always work. For example, an MME Emulator cannot be reset and used as a PGW Emulator. |
| 7935 | Emergency UE Attach with IMEI fails when PMIP is used on S5. |
| 7947 | "Broadcasts Request Count" and "Repetition Period" cannot be set to 0 when sending a CMAS Alert from MME. |

Version 9.2.0.4

Release Date: May 14, 2013

Component Versions

1. LTE Emulators : 9.2.0.4
2. LTE Emulators Console: 9.2.0.4

New in Release 9.2

1. Emergency Session
2. CMAS - SBc interface between MME and Cell Broadcast Centre (CBC) and simulation of Alerts from MME
3. PMIP-based S5/S8 interface, with support for Default Bearer establishment only
4. Bearer Release initiated by eNB and MME
5. UE requested DHCP-based IPv4 address assignment
6. HSS Initiated APN-AMBR, QCI, ARP Modification
7. PCRF-initiated Location Reporting using the Emulators' Tcl scripting API
8. Support for IPv6 user plane traffic on dedicated bearer

Resolved Issues

| Issue # | Summary |
|---------|---|
| 6598 | MME Emulator console should support all S1AP messages. |
| 6629 | MME does not release E-RAB after receiving "Activate Dedicate EPS bearer context reject " from UE |
| 6896 | EPC Emulator does not trigger bearer update procedure when QoS is modified for non-GBR bearer. |
| 6989 | MME does not release UE-associated logical connection towards eNodeB if MME receives Initial Context Setup Failure after receiving Attach Complete from UE during Attach procedure. |
| 6992 | MME does not respond to Service Request message when MME receives Initial Context Setup Failure from eNB after Attach Complete message. |
| 6997 | Tcl error 'can't read "resultArray(0,sgw_ip)": no such element in array' occurs while performing Attach-Detach from script in a large loop. |
| 7322 | EPC Emulator does not support "bidirection" packet filter. |
| 7327 | Need to support for S1AP "Warning Message Transmission Messages". |
| 7375 | MME does not respond to TAU Request message if the packet contains IMSI as UE Identifier. |
| 7412 | MME does not release previous UE-associated logical connection towards eNodeB if UE sends a fresh Attach Request and that UE is already attached to the network. |
| 7480 | Attach Reject cause should be set to "PLMN Not Allowed" when UE tries to attach with different PLMN and roaming is not supported in the network. |
| 7485 | MME terminates abnormally when eNodeB does not respond properly during multiple GBR bearer creation/deletion procedure. |
| 7617 | Initial Context Setup Request triggered by UE initiated Service Request procedure contains only default bearer even when dedicated bearer exists. |
| 7641 | MME sends MME configuration transfer message to source eNodeB instead of target eNodeB after receiving configuration transfer message from source eNodeB. |
| 7652 | EPC Emulator rejects bearer modification if UE wants to delete last packet filter of a dedicated bearer using opcode "Delete Packet Filters from existing TFT". |

Known Issues

| Issue # | Summary |
|---------|---|
| 7571 | Port range option is disabled while configuring TFT |
| 7655 | Occasionally PGW terminates abnormally during creation in 64 bit systems. |
| 7741 | Modification of PDN Context in HSS throws Tcl error. |

Version 9.1.0.10

Release Date: April 23, 2013

Component Versions

1. LTE Emulators : 9.1.0.10
2. LTE Emulators Console: 9.1.0.10

Resolved Issues

| Issue # | Summary |
|---------|--|
| 7475 | Uplink data transfer does not work at PGW if PGW is configured with NF_QUEUE for packet filtering. |
| 7627 | SGW crashes if it receives GTP-U ERROR Indication packet from peer node. |

Version 9.1.0.9

Release Date: March 06, 2013

Component Versions

1. LTE Emulators : 9.1.0.9
2. LTE Emulators Console: 9.1.0.9

New in this Release

1. Support for "Network Access Mode" configuration in EPC.

Resolved Issues

| Issue # | Summary |
|---------|--|
| 7369 | Occasionally MME does not send S1 Setup Failure message in response to S1 Setup request message from eNodeB after configuring S1-Setup policy. |
| 7379 | MME always sends S1 Setup Failure with "TimeToWait" IE value set to "v1s" even though configured other values. |

Known Issues

| Issue # | Summary |
|---------|---|
| 6989 | MME does not release UE-associated logical connection towards eNodeB if MME receives Initial Context Setup Failure after receiving Attach Complete from UE during Attach procedure. |
| 7375 | MME does not respond to TAU Request message if the packet contains IMSI as UE Identifier. |
| 7412 | MME does not release previous UE-associated logical connection towards eNodeB if UE sends a fresh Attach Request and that UE is already attached to the network. |
| 7475 | Uplink data transfer does not work at PGW if PGW is configured with NF_QUEUE for packet filtering. |
| 7485 | MME terminates abnormally when eNodeB does not respond properly during multiple GBR bearer creation/deletion procedure. |

Version 9.1.0.8

Release Date: February 22, 2013

Component Versions

1. LTE Emulators : 9.1.0.8
2. LTE Emulators Console: 9.1.0.8

Resolved Issues

| Issue # | Summary |
|---------|--|
| 6957 | UE-Initiated bearer modification procedure fails if same bearer is modified multiple times. |
| 7253 | Occasionally PGW Emulator terminates during Piggyback dedicated bearer creation with 1000 or more UEs. |
| 7284 | Polaris MME can not handle PathSwitchRequest message with unexpected IE. |
| 7299 | HSS-initiated UE Detach procedure fails for more than 5-10 UEs. |
| 7336 | MME shows incorrect packet count for "Service Request" message |
| 7337 | Emulator Console 9.x does not support eNB Emulator 4.2 |
| 7302 | EPC nodes terminates abnormally after 12-14 hours while running overnight test-cases. |

Version 9.1.0.7 Beta

Release Date: February 8, 2013

Component Versions

1. LTE Emulators : 9.1.0.7 Beta
2. LTE Emulators Console: 9.1.0.7 Beta

Resolved Issues

| Issue # | Summary |
|---------|--|
| 7211 | Packet loss is more than 50% when Downlink data traffic exceeds 100 Mbps. |
| 7224 | PGW Emulator terminates abnormally if it is reset after simulating various operations with 1000 or more UEs. |
| 7228 | Security Capability IE in Handover Request S1AP message contains incorrect information. |
| 7301 | MME crashes during Attach if the APN provided by the UE is not allowed by subscription. |

Version 9.1.0.6 Beta

Release Date: February 1, 2013

Component Versions

1. LTE Emulators : 9.1.0.6 Beta
2. LTE Emulators Console: 9.1.0.6 Beta

New in Release 9.1

1. S6a interface in MME to communicate with external HSS
2. S13 interface in MME to communicate with external EIR
3. IPv6 user plane traffic – only on default bearer
4. Trace in SGW and PGW
5. Roaming – Home-Routed

Resolved Issues

| Issue # | Summary |
|---------|---|
| 6536 | Support for MME Configuration Update |
| 6896 | Parameter "UE Aggregate Maximum Bit Rate" needs to be configurable from MME. |
| 6989 | MME does not send UE Context Release command after receiving Initial Context Setup Failure from eNB. |
| 6992 | Sometimes MME does not send response to Service Request message. |
| 6997 | Script error while performing Attach-Detach regression test. |
| 7007 | Throughput drops if eNB makes UE idle frequently with ongoing DL data. |
| 7008 | Request for DNS configuration during Attach procedure |
| 7021 | MME Crash during S1 Handover |
| 7027 | Attach fails when UE requests to attach with a non-default APN. |
| 7045 | MME assigns same MME-UE-S1AP-ID to more than one active UE |
| 7164 | Crash observed at SGW while performing UL TCP and DL UDP with single GBR bearer created for 16 UEs |
| 7171 | MME sends Error Indication message after receiving MME Configuration Update Ack message. |
| 7172 | MME does not send MME Configuration Update message to all connected eNBs |
| 7220 | While performing ERAB setup and delete iteration we see misbehavior at PGW, SGW and MME |
| 7227 | MME throwing "None of the specified UEs are registered with this MME" error while performing Attach-Detach after 120 iterations |
| 7234 | During Handover Preparation phase, MME sends malformed target-to-source-transparent-container in "Handover Command" S1AP message. |

Known Issues

| Issue # | Summary |
|---------|--|
| 7096 | PGW Emulator does not support Downlink IPv6 traffic on Dedicated Bearers |
| 7211 | Packet loss is more than 50% when Downlink data traffic exceeds 100 Mbps. |
| 7224 | PGW Emulator terminates abnormally if it is reset after simulating various operations with 1000 or more UEs. |
| 7253 | Occasionally PGW Emulator terminates during Piggyback dedicated bearer creation with 1000 or more UEs. |

Version 9.0.0.10

Release Date: November 27, 2012

Component Versions

1. MME, SGW and PGW Emulators : 9.0.0.10
2. LTE Emulators Console: 9.0.0.10

Supported Signalling Procedures (compliant to 3GPP Release 9 standards)

1. S1 Setup, S1 Close, S1 Flex
2. S1 Reset: eNB Initiated and MME Initiated
3. SCTP Multi-homing on S1-MME
4. UE Attach: Initial Attach with IMSI / old GUTI
5. UE Detach: UE Initiated and Network Initiated
6. UE Context Release
7. Service Request
8. Tracking Area Update
9. Downlink Data Notification / Paging
10. Dedicated Bearer Activation: UE and Network Initiated
11. Bearer Modification: UE and Network Initiated
12. Bearer Deactivation: UE and Network Initiated
13. S1-Based Handover - with or without MME and SGW relocation
14. X2-Based Handover - with or without SGW relocation
15. Multiple PDN Connection and Disconnection
16. Trace support in MME
17. Overload
18. Location Reporting on S1-MME
19. SGW selection in MME based on Tracking Area
20. UE IPv4 address allocation by PGW using DHCP based
21. Closed Subscriber Groups and Open, Closed and Hybrid Access control to support Home eNB

Other Features

1. End-to-end IPv4 traffic on default and dedicated bearers
2. ICMP and UDP traffic generation using internal traffic generator
3. Simulation of abnormal and failure scenarios for negative testing
4. Procedure and Packet statistics for each protocol
5. Protocol timer configuration
6. Separate IP Address for each 3GPP interface