

It is assumed that the PacketScan™ Analyzer Software and License installations (PKV100, PKV107, PKV110) are already performed referring to the Software Quick Installation Guide (Packetscan-SIP-RTP-Quick-Install-Guide.pdf). Now proceed with the verification steps below for capturing and analyzing Diameter protocol.

- **PKV107** license is required for S6a interface.
- **PKV110** license is required for S6d, Cx, Dx, Zn, Zh, Wx, Gq, Gy, Sh, Dh, Gx, Rf, Ro, Wg, Wm, Pr, Wa, Wd, Rx Diameter interfaces.



Note:

- Verify that Windows® Firewall is disabled before proceeding with the instructions given below. You should **Turn off Windows Firewall** on Windows® and on any 3rd party Anti-Virus software that may be installed on the PC to make sure that Firewall is not blocking any packets or frames.
- PacketScan™ Diameter protocol does not support Call Detail Records and Packet Data Analysis.

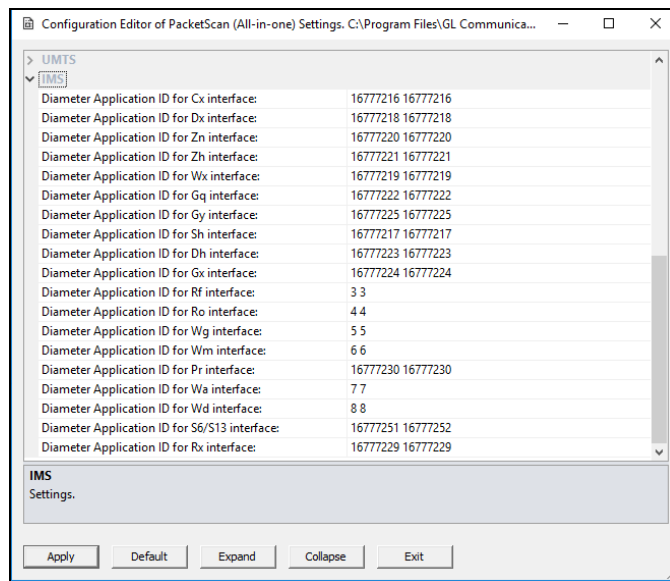
Verification



- Double click on the PacketScan™ shortcut icon created on the desktop to launch the application. The application should invoke without any errors.



Follow the steps below for functional verification of **PacketScan™ Real-time** analysis feature.

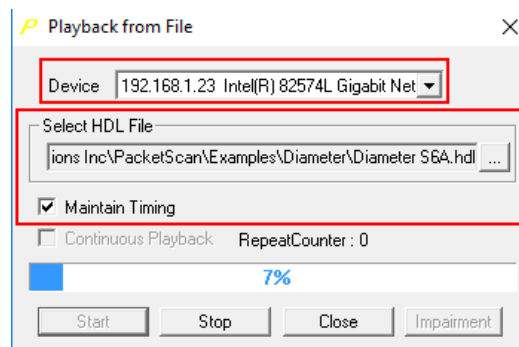
- From the **PacketScan™** main menu, select **Configure → Settings**. This will invoke **Configure Editor of PacketScan Settings window**.
- Expand **IMS** option, verify the **Application ID** values are configured as per test requirements for Diameter interface. Click on **Apply** and **Exit**. Refer to the below screenshot.



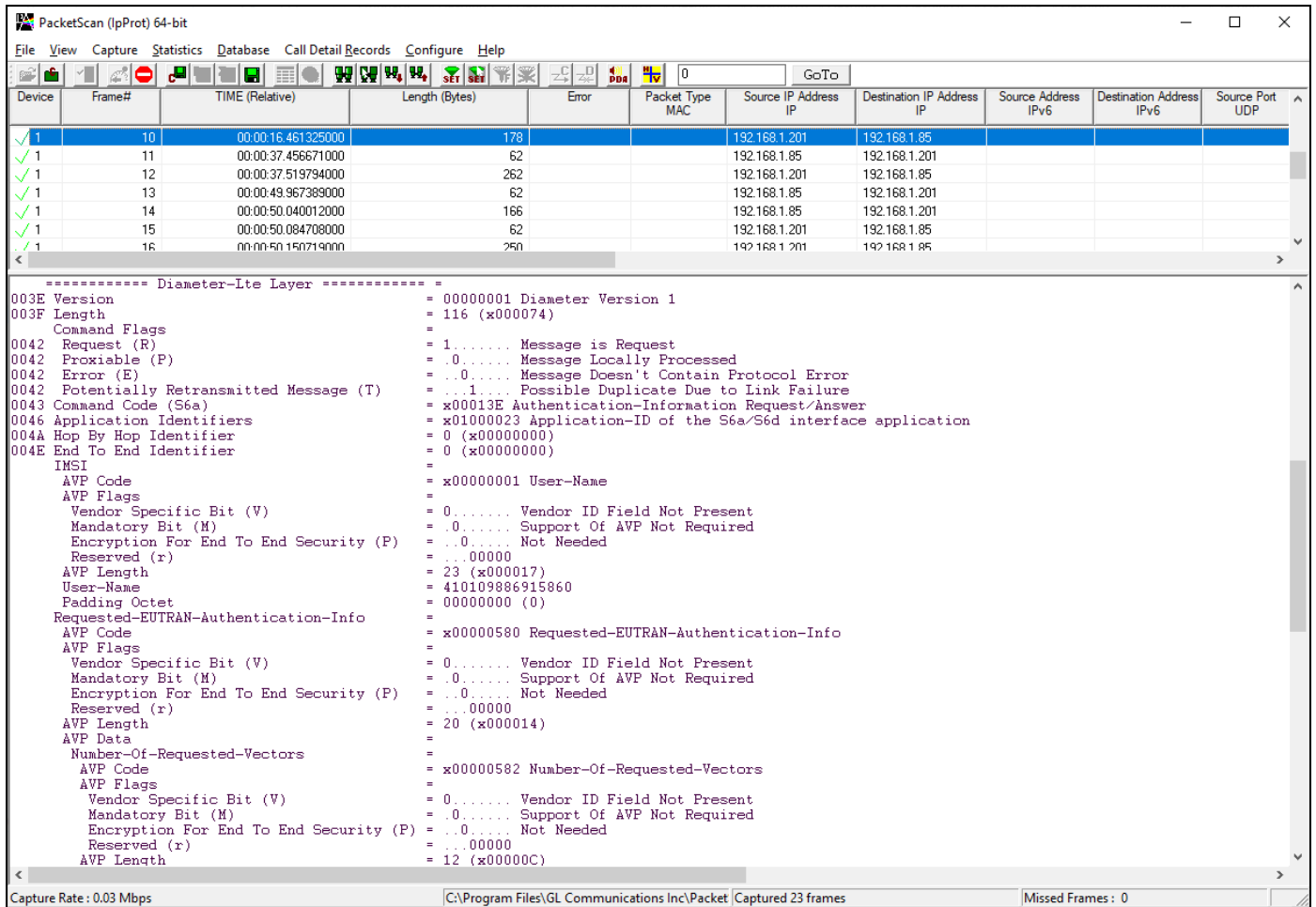
Note:

- By default, the Application IDs are configured in the ini file. User can change the Application IDs as required.
- In this example, user doesn't need to change Application ID values.
- A warning message will appear to restart the PacketScan Analyzer. Click on **OK**.

- Close the **PacketScan™** application and invoke again to apply the changes as per configuration settings.
- Select **Capture → Stream/Interface Selection** and enable the Ethernet card on which packet needs to be captured.
- On the left pane, select **Capture File Options** and verify that **Circular Capture Buffer** is checked.
- Now, on the left pane, select **Capture Filter** option, click **SCTP** in the Filter Selection and check **Filter all SCTP data**. Do not activate any other filters in the **Capture Filter**. After Filter configuration, close the window.
- From the **PacketScan™** main menu, select **File → Start Real-time** or click **Start Real-time**  icon from the toolbar.
- If the **Temp.hdl** file already exists in the PacketScan installation directory, a warning message will appear to replace Temp.hdl file, click **Yes** to overwrite the file.
- Generate traffic by playing HDL file using **PacketScanUtilities** application. From the PacketScan installation directory (C:\Program Files\GL Communications Inc\PacketScan) double-click on  **PacketScanUtilities** application. This will invoke PacketScan Utility application.
 - Select **Utilities → HDL Playback** from the menu.
 - In the **Device** option select NIC card on which PacketScan™ Real-time capture is configured. **Note:** Ensure that selected NIC card is enabled in PacketScan™ under **Capture → Stream/Interface Selection**.
 - In the **Select HDL File** option click on browse button to browse and select **C:\Program Files\GL Communications Inc\PacketScan\Examples\Diameter\Diameter S6A.hdl** file from the PacketScan installation directory
 - Enable **Maintain Timing** option and click **Start**



- Observe the **Diameter** decodes displayed in PacketScan™ analyzer summary and detail views.



The screenshot shows the PacketScan interface with a list of captured frames and a detailed view of a Diameter-Lte Layer packet.

Device	Frame#	TIME (Relative)	Length (Bytes)	Error	Packet Type MAC	Source IP Address IP	Destination IP Address IP	Source Address IPv6	Destination Address IPv6	Source Port UDP
✓	1	00:00:16.461325000	178			192.168.1.201	192.168.1.85			
✓	1	00:00:37.456671000	62			192.168.1.85	192.168.1.201			
✓	1	00:00:37.519794000	262			192.168.1.201	192.168.1.85			
✓	1	00:00:49.967389000	62			192.168.1.85	192.168.1.201			
✓	1	00:00:50.040012000	166			192.168.1.85	192.168.1.201			
✓	1	00:00:50.084708000	62			192.168.1.201	192.168.1.85			
✓	1	00:00:50.150719000	250			192.168.1.201	192.168.1.85			


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===== Diameter-Lte Layer =====
003E Version = 00000001 Diameter Version 1
003F Length = 116 (x000074)
Command Flags =
0042 Request (R) = 1..... Message is Request
0042 Proxiable (P) = .0..... Message Locally Processed
0042 Error (E) = ..0.... Message Doesn't Contain Protocol Error
0042 Potentially Retransmitted Message (T) = ..1.... Possible Duplicate Due to Link Failure
0043 Command Code (S6a) = x00013E Authentication-Information Request/Answer
0046 Application Identifiers = x01000023 Application-ID of the S6a/S6d interface application
004A Hop By Hop Identifier = 0 (x00000000)
004E End To End Identifier = 0 (x00000000)
IMSI =
AVP Code = x00000001 User-Name
AVP Flags =
Vendor Specific Bit (V) = 0..... Vendor ID Field Not Present
Mandatory Bit (M) = .0..... Support Of AVP Not Required
Encryption For End To End Security (P) = ..0.... Not Needed
Reserved (r) = ...00000
AVP Length = 23 (x000017)
User-Name = 410109886915860
Padding Octet = 00000000 (0)
Requested-EUTRAN-Authentication-Info
AVP Code = x00000580 Requested-EUTRAN-Authentication-Info
AVP Flags =
Vendor Specific Bit (V) = 0..... Vendor ID Field Not Present
Mandatory Bit (M) = .0..... Support Of AVP Not Required
Encryption For End To End Security (P) = ..0.... Not Needed
Reserved (r) = ...00000
AVP Length = 20 (x000014)
AVP Data =
Number-Of-Requested-Vectors
AVP Code = x00000582 Number-Of-Requested-Vectors
AVP Flags =
Vendor Specific Bit (V) = 0..... Vendor ID Field Not Present
Mandatory Bit (M) = .0..... Support Of AVP Not Required
Encryption For End To End Security (P) = ..0.... Not Needed
Reserved (r) = ...00000
AVP Length = 12 (x00000C)
  
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Capture Rate: 0.03 Mbps | C:\Program Files\GL Communications Inc\Packet | Captured 23 frames | Missed Frames: 0