

Release Note for PacketScan™ HD Version 22.12.13

GL's **PacketScan HD™** is a high-density Ethernet monitoring appliance with specialized network interface cards, large storage capacity and protocol analysis software. PacketScan™ High Density (HD) Network Appliance supports combination of 1, 10, 40, 100GigE (PKV120, PKV122, PKV123).

It captures, segregates, monitors, and collects statistics on all IP calls. Almost all **VoIP** and **Wireless** protocols over IP transport layer, as listed below, can be captured, and decoded for troubleshooting network problems.

Some of the important applications of PacketScan™ HD are:

- Supports decoding of almost all industry standards signaling protocols – See [Protocol List](#) for more details.
 - SIP, SIP-I, SIP-T, H323, MEGACO, MGCP
 - LTE, Diameter
 - SIGTRAN – SS7, ISDN
 - GSM A over IP
 - GPRS Gb over IP
 - UMTS over IP
 - T.38 and Video calls
- Monitoring live IPv4 and IPv6 (version 4 and version 6) networks.
- Segregates, captures, and collects statistics on VoIP and Wireless calls.
- Monitors QoS (quality of service) on voice and video calls.
- Permits analysis of adherence to protocol standards for the system under test or observation.

Reason for Release / Description of Enhancement	Version
Enhancements: <ul style="list-style-type: none">• Added additional SIP statistics in PDA.• Decode support for multi-layer tunneled traffic - GTP, GRE, and VXLAN.• Supports BFD protocol decode.• Enhanced to support export frame summary for tunneled traffic. HardwareFilter: <ul style="list-style-type: none">• Handling IPv6 Next Header filter for fragmented and non-fragmented packets.• HardwareFilter GUI is enhanced for adding fields to filter and updating values of already added fields.• In HardwareFilter based on added fields, user can create their own filters using custom filter option which provides flexibility to the user to check the fields and use the logical conditions more efficiently. Bug Fixes: <ul style="list-style-type: none">• Fixed Criteria based recording configuration issue in PDA.	22.12.13
Enhancements: <ul style="list-style-type: none">• Decode support for multi-layer tunneled traffic - GTP, GRE, and VXLAN• Supports BFD protocol decode• Enhanced to support export frame summary for tunneled traffic• HardwareFilter GUI is enhanced for adding field to filter and updating values of already added fields.• In HardwareFilter based on added fields, user can create their own filters using custom filter option which provides flexibility to the user to check the fields and use the logical conditions more efficiently.	22.10.31

Enhancements: <ul style="list-style-type: none">• PacketScanHD™ application is built with latest SmartNIC library (package _12.8.1(driver version 3.26.2.4)). Bug Fixes: <ul style="list-style-type: none">• In previous SmartNIC library (package _12.7.8(driver version 3.25.7.7)) ports link up issues was there when FEC is disabled and enabled.• Fixed application crash issue due to GRE packets parsing, Sloved the issue by handling optional header parsing.	22.9.16
Enhancements: <ul style="list-style-type: none">• Capture and Call processing is enhanced to handle different Tunnel traffic (VXLAN, GRE and GTP) and multiple tunnelling.• Support for eCPRI decode. TCP Analytics <ul style="list-style-type: none">• Optimized TCP Record Processing• Analysis of TCP Open Connections, Closed Connections, Orphan Connections.• Analytics for TCP Server and TCP Client Connections Summary, TCP Server, and Client "Denial-of-Service" Info. Bug Fixes: <ul style="list-style-type: none">• Fix for WireShark (Pcapng) Linux-cooked format in HDL File-Conversion utility.• To analyze AG Calls with multi-caste traffic session, in which traffic is over other than negotiated. PacketScan™ HD <ul style="list-style-type: none">• Hardware filter enhanced to support eCPRI, different Tunnel types (VXLAN, GRE and GTP) and multiple tunnelling layer up to 2 tunnels.• SIP filters are also enhanced to support different tunnelling types and multiple tunnelling.• Application is supported on 3GA and 4GA cards for the latest smart NIC library (package _12.7.8)	22.8.24
Enhancements: <ul style="list-style-type: none">• Real-Time decryption and decode of SIP traffic over IPSec.• RTCP-XR decode and provide the MOS related statistics in PDA.• On-call Digit/Tone detection in PDA summary (ALAW, ULAW codecs).• PDA find option to support wildcard for calling/called number.• Analyser to support search and filter for ipv4/ipv6 address mask, range.• Indicate as Offline in title bar when analysing offline trace.• Support for loading huge offline trace files.• TCP analytics in analyser. Bug Fixes: <ul style="list-style-type: none">• Issues observed in Gb protocol within PDA.• Bug fix inw MEGACO call flow.• SIP parsing issue if the display name in from/to header contains "SIP:". PacketScan™ HD <ul style="list-style-type: none">• Latest Included the latest Smart-NIC library (package _12.7.8).	22.5.30

<p>Enhancements:</p> <ul style="list-style-type: none"> • Support BGP packet reassembly and decode of additional headers in BGP. <p>PacketScanHD™ Updates:</p> <ul style="list-style-type: none"> • Supports filtering based on Inner UDP, Inner TCP and SCTP fields. • Supports filtering based on IP address list and IP address pair for Inner, Outer and Inner/Outer. • Removed "! =" from ARP-IP and SIP filters under Advanced Filter option. • Provided proper description for IP address filters. • Non SCTP packets are also filtered for SCTP port "! =" filter. • UDP-Payload macro redefinition issue for UDP payload filters. <p>Bug Fixes:</p> <ul style="list-style-type: none"> • TCP flags were decoded as incorrect. • Purged Frame is displayed as Error in Summary view • PacketScan™ and PacketScanHD™ license error message was hidden on invocation. • SIP parsing issue if the display name in from/to header contains "SIP:". • HDL Playback issue if the trace has frames with nanosec precision time. • Inner IPv6 Reassembly length issue. • Some IPv6 packets has Fragmentation header, but fragment offset 0 and also More-Fragment 0, was considered as fragment. • Linux-cooked format was handled only for "pcapng" but not "pcap". 	<p>22.4.23</p>
<p>Enhancements:</p> <ul style="list-style-type: none"> • Support for frame wire-length field display in Analyzer. • In capture filter option, MAC address input can be separated by colon. • View Filter and Search is enhanced to support IPv4/IPv6 range, mask. • White-list configuration with wildcards. • Supports criteria-based voice/trace recording for degraded calls and whitelist. • Supports full stack view in call-flow. • Provides protocol statistics display configuration. <p>PacketScanHD™ Updates:</p> <ul style="list-style-type: none"> • Supports filtering based on Inner UDP, Inner TCP and SCTP fields. • Supports filtering based on IP address list and IP address pair for Inner, outer and Inner/Outer. <p>Bug Fixes:</p> <ul style="list-style-type: none"> • Fixed Fax image extraction. • Analyzer device number display issue (0 index) in-case of multiple NIC's. • Fix Sip registration call-flow issue for Ipv6 address. • Fixed software slicing issue in capture filter. • Fixed issue in loading the *.ACF in PDA for Frame-Summary. • Import of Wireshark trace with Linux cooked format to GL hdl. • Fixed Decode Issue in GTP Extension header, ICMPV6, SCTP header. • Save and Load configuration issue in PacketScan HD (Selected Port and HW filters) • Disabled "Filter Match Frames" and "Filter Match Frames %" under per port statistics and 	<p>22.2.15</p>
<p>Enhancements:</p> <ul style="list-style-type: none"> • Capture Filter support IP mask-based filtering. • PDA Support for IP traffic over MPLS encapsulation. • Enhanced the capture module to handle IPv6/IPv4 and GTP-IPv6/Ipv4 fragments. • Enhanced Decode module to decode all the traffic carried over GTP. 	<p>21.10.19</p>
<p>Bug Fixes:</p> <ul style="list-style-type: none"> • Fix for GTP User plane is decode in analyzer for GSM-UMTS license or for LTE license. 	<p>21.6.9</p>

Bug Fixes: <ul style="list-style-type: none"> • Fix to check warranty license. • Performance optimization in TCPIP Parser module. • Fixes for order mismatch in SIP CDR field. 	21.6.4
Enhancements: <ul style="list-style-type: none"> • Change in the display of network interface in case of PacketScanHD™. • Provided separate ini file for Criteria Based GLW and HDL file save option in PDA. Bug Fixes: <ul style="list-style-type: none"> • Fixed bug in capture module for invalid protocol stamping. • Fixed Decode issue for application protocol over GTP IPV6. 	21.5.24
Enhancements: <ul style="list-style-type: none"> • Supported TCP reassembly for SIP, RTSP, MSRP and HTTP protocols. • Supported MSRP traffic processing with below features: <ul style="list-style-type: none"> ➢ Added MSRP to Capture and View filters. ➢ Decoding MSRP frames in analyzer. ➢ Identifying and associating MSRP traffic to SIP calls. ➢ Processing MSRP traffic associated with the call and provide statistics. ➢ Providing aggregated MSRP statistics for the capture. ➢ Mapping MSRP frames on the SIP call graph. ➢ Generating CDRs for SIP/MSRP calls. ➢ Logging Frame Summary for captured MSRP frames. 	21.5.7
Enhancements: <ul style="list-style-type: none"> • Protocol filtering option is provided in Capture filter. Along with existing protocol list user can add interested protocol in ProtocolFilterSetting.ini present in the installation folder. • PDA is linked to new VqMon(ver5.1) libraries. • Option to slice the packets at software level is provided in capture filter window. • Multiple day cdr/summary csv write to handle csv files when day gets is changed in case of LTE protocol is supported. Bug Fixes: <ul style="list-style-type: none"> • Clean-up thread issue in case of TCPData Reassembly. • Crash in BICC because of timeout calls. • Updating the SipRegistrationReqTime on Initial Registration request. • KeyToAccess is SIPCallID+Local callID for handling two sipcalls with same callID. 	21.03.25
Enhancements: <ul style="list-style-type: none"> • Application is built in VS2019 with c++ standard above c++17. • Addition of GTP IP and GTP UDP Filters in Capture filter. • Option to filter out the calls to export CDR to csv files in PDA (for GSMA,IuCs,SIP,ISUP) , settings are done in CDRCSVFilter.ini file. • Option to filter out interested frames is provided in HDL file conversion. Bug Fixes: <ul style="list-style-type: none"> • ACF are moved to ACF folder in installed folder and are loaded from that path only. • Reading Ipv6 address from the SipCapt.ini issue. • Writing Capture filter enable or disable option to SipCapt.ini issue. • Parsing GTP-U Extension header issue. 	21.1.15

Enhancement: <ul style="list-style-type: none"> • Provided "DISCARD_PORT_FILTR" in IpCapt.ini to filter out packets on specific TCP/UDP ports. • Provided "DISCARD_IP_FRAG" in IpCapt.ini for discard the IP packet if first fragment is missing. • Supported Frame Summary export for Sip Registration. • Added the Start time column for Sip Registration calls. • Get the Sip number from Sip-Url for caller and callee. Bug Fixes: <ul style="list-style-type: none"> • LTE csv files created with less size in few KBs. • GSMA and IuCS Processing Stopped due to infinite loop. • Sip Registration Call flow direction not Proper. • Make Sip Canceled call as failed if ACK is received else waiting for ACK for some duration, if duration is reached make that call as Failed. • Changed Sip Registration filename to SIPREG. • Sip Error code updated wrong values. • HDLFileConversion display format (Wireshark File format, WiresharkPcapNG File format). 	20.9.22
Enhancements: <ul style="list-style-type: none"> • Separated Diameter S6a and Egtp processing from LTE Protprocessor. • Diameter Reassembly in Capture Module provided "DIAMETER_REASSEMBLE" flag in IpCapt.ini to enable/disable reassemble. Also provided option to specify diameter application id "DIAMETER_APPLICATION_ID" in IpCapt.ini which as to undergo reassemble. • Provided "ADVANCE_CAPTURE_FILTER_OPTIONS" in IpCapt.ini for capture Sip messages based on Ip-Port pair. • PDA support for Diameter Cx Interface. • Building tool is upgraded from VS2013 to VS2019(16.5.4). • Supported CDR Export option to SipRegistration calls. Bug Fixes: <ul style="list-style-type: none"> • INAP OPC, DPC parameter showing wrong values. • MAP and Camel DialogueComplete column not giving proper value for different transcations. • INAP, Call Duration not showing proper value for TimedOut calls in call summary. • Fixed ActiveCallCdr export issue using Critical section. • IUCS RTP Traffic association issue due to decode problem. • Displaying video related field values in call summary for Sip protocol 	20.5.8
Enhancements: <ul style="list-style-type: none"> • HD drivers are upgraded to support PacketScanHD on all the HD cards like 1x4G,10x2G,40x2G and 100x2G. Bug Fixes: <ul style="list-style-type: none"> • Applied expression field in Hardware filter windows is cleared once capture is started. • For IPV4 Fragmentation Offset, IPv4 Differentiated Service, IPv4 DS_ECN and IPv4 DS_Codepoint hardware filter is giving error as invalid identifier because of filter macro was missing in FilterMacro.txt. • Junk character in selected filter expression in hardware filters when filter field is updated 	20.2.28
Enhancements: <ul style="list-style-type: none"> • RTP traffic association to BICC Protocol • Reassembly of fragmented SDP part in Application transport Message 	9.12.10
Bug Fixes: <ul style="list-style-type: none"> • Application crash issue for Sip Registration calls. • Application crash because of Auto detect RTP call with unsupported codec try to calculate voice quality. • MAP Message Concatenation issues 	9.10.16

Bug Fixes: <ul style="list-style-type: none"> In PacketScanHD when user navigate to stream/Interface selection window analyser stops capturing. 	9.10.3
Bug Fixes: <ul style="list-style-type: none"> Codec Paramater Setting Issue. 	9.9.5
Bug Fixes: <ul style="list-style-type: none"> Removed PKV100(PacketVission) license dependency in PacketScanHD . 	9.8.29
Bug Fixes: <ul style="list-style-type: none"> Call Type in call summary for AutoDetect RTP calls is showing wrong values. 	9.8.20
Enhancements: <ul style="list-style-type: none"> Providing GUI to change the time-stamp of frames in call flow from Relative timeto absolute time and to show the latest frame added to the call flow. Bug Fixes: <ul style="list-style-type: none"> RTSP Failure Message Handling. Crash in AudioSource for AG Calls. 	9.8.8
Provides graphical presentation of analysis, including ladder diagrams of protocols For more details, please visit www.gl.com/packetscan.html . Enhancement: <ul style="list-style-type: none"> PDA support for RTSP Protocols. Added additional CRD fields for ED137 protocol and sending event based summary to net surveyor. Option for Conversation MOS sampling , "ENABLE_MOS_SAMPLING" flag in "IpProt.ini" to enable and disabling the sampling . 	
Bug Fixes: <ul style="list-style-type: none"> TimeStamp issue fixed in Kerry's Class PPP PDA Crash for auto detect RTP 	9.7.10
Bug Fixes: <ul style="list-style-type: none"> TimeStamp issue fixed in Kerry's Class 	9.7.02
Bug Fixes: <ul style="list-style-type: none"> Fractional part of Jitter had been discarded in Average jitter calculation. Some junk characters are displaying in the call flow for purged frames. Disabled Recording, Send e-mail, CDR and Extract Fax options in trigger option for TDM protocols Enhancements: <ul style="list-style-type: none"> Selection of Point Code format in DataLinkGroup Dialog in PDA. 	9.3.27
Bug Fixes: <ul style="list-style-type: none"> If PCm recording timeout is set to 0, then the PCM Recording should continue till the call end. Mismatch in the ISDN message conter between PDA and Analyser. PCM recording was not working for ISDN NFAS calls PPP PDA CSv export and Traffic recording Configuration was not working. unexpected signalling message in call flow while calls are being purged in ISDN PDA. ISDN Slot Mapping call recording is on invalid TS/BearerChannel PCM Record creation fail in TDM GSM. Export CSV for CDR fail in TDM GSM Showing Junk value in Isup PDA 'Jurisdiction' CDR Field . PCM Recording is restricted to 3000 but in STM(TDM PDA) it can be more than 3000 Crash Issues in 32 bit TDM PDA(ISUP,ISDN,GSM and CAS). 	9.2.22

<ul style="list-style-type: none"> Crash issue in 32bit PPP PDA while opening call detailed view. 	
Enhancements: <ul style="list-style-type: none"> Record GUI option is provided in PDA. PDA GUI option for DataLinkGroup setting of SS7,CAS,ISDN protocols Bug Fixes: <ul style="list-style-type: none"> To link the boost library now we use GIBOOST library. Crash in RTP Cleanup for missing RTP sessions. Crash for Opus codec in SDP message. Ini option for forcing G729<=>G729B codec. Included new DLL for PreciseTimeStamping in Capturing Module. 	9.1.3
Bug Fixes: <ul style="list-style-type: none"> HDL-FileConversion Crash for huge frame length. Delay in Csv File closing if call frequency is are very few. Memory leak observed in overnight test with signaling and auto detected calls. Crash on De-activating and Activating Export CSV during PDA process. Delay in invoking PDA due to license checking. 	8.12.11
Enhancements: <ul style="list-style-type: none"> Option to Save hdl trace of a call based on the RTP criteria like Listening MOS and Packet loss , Options are provided in IpProt.ini file. In case of Listening Mos as a criteria hdl trace will be saved only if current Mos value comes below the specified Listening Mos Threshold value. Packet Loss is specified in percentage, hdl trace will be saved only if current packet loss percentage is increase above the specified PacketLoss Threshold value. Option to save GLW files (Packetscan PDA) for Sip and PCM files(TDM PDA) for ISDN in terms of segments , options are provided in IpProt.ini file. Enabled UserDefined option in Triggers and actions , if UserDefined is selected then call satisfying the filter will appear in userdefinedcalls. Bug Fixes: <ul style="list-style-type: none"> TMSIRelocationDelay is not updating for other than LU Call. TMSIRelocationRequest column is not updating even TMSI Reloaction Command received. In HO Call ,Isalerting ,IsConnect,IMSI Detached should be update if it contains. In HO Call ,call status should be fail if its connected after alerting. Huge CMServiceEstablishDelay in LUCall. Huge Value updating in Identification Delay . HO Call, Call is not connected,but showing Billing duration. 	8.10.26
Bug Fixes: <ul style="list-style-type: none"> Overwriting of IUCS failure reason. Updating of simultaneous GLW record count. LTE crash in PDA in remove entry from s1s6 association map. 	8.9.12

<ul style="list-style-type: none"> • Displaying wrong source and destination port value for ISUP protocol. • Creating user specified folder in export csv automatically. 	
<p>Enhancements:</p> <ul style="list-style-type: none"> • CCA License checking for PCM file recording in TDM PDA • Secured Mail Transfer (SSL) through Trigger Option. • Option to configure ActiveCall timeout through INI <p>Bug Fixes:</p> <ul style="list-style-type: none"> • PDA invoking through startup option issue. • PDA crash in IuCS and GSMA due to SMS calls. • PDA crash with RTP multi-thread. • Current Glw Files count hitting max and not allowing further glw creation. • PDA crash due to SipRegistrations over GTP calls. • PDA stopped Processing if multiple PDA instances are open and stopped the capture in any one of the analyzer in TDM. • Time out calls are not getting cleared from Active Call Map in CAS Analyzer. • Trigger Saving Call in PCAP is not working properly for TDM protocols. • Crash due to closing and re-invoking PDA in TDM Analyzers. • Handling Forceclose scenario in ISDN (TDM) and ISUP(IP and TDM) • Application crash while invoking SS7 PDA Analyzer if we ADD empty lines to ISUP_CICMapping.csv file . • Proper Ringing and Billing Duration calculation for ISDA Analyzer. 	<p>8.8.3</p>
<p>Bug Fixes:</p> <ul style="list-style-type: none"> • PPP PDA invoke issue observed in new framework. • Trigger Save Call option not working properly for TDM protocols. • Timed-Out and Failed calls are not clearing properly • ISDN,CAS,ISUP statistics not displayed properly 	<p>8.7.11</p>
<p>Enhancements:</p> <ul style="list-style-type: none"> • PDA support for TDM protocols SS7 (ISUP, MAP, CAMEL, INAP), ISDN, CAS, and GSMA. • PCM file recording option for TDM protocols - ISUP, ISDN, CAS, and GSMA in PDA (Ini Configuration) • Support for multiple RTP thread in IuCS and GSMA protocols for handling high volume of calls. • Support for multiple PDA instance in TDM Analyzer. • Export Displayed Summary feature in PDA for new call summary view is supported. • Option to create GLW files and CDR files based on call type in IuCS and GSMA protocol through INI. • Support for SIP calls over GTP in PDA. • Support for new LDK Licensing. • Help support for all the dialogs given to GLDialog in GLGUI Library. 	<p>8.6.26</p>

- Removed **GLGuiUtils** dependencies.
- Support of Export Displayed Summary in PDA for new CDR summary view.
- Supported Goto and Link type in save call option in PDA.
- Supported Link type in "save call option" in PDA trigger and Actions.

Bug Fixes:

- Fixed for writing silence to GLW voice files.
- Fixed for application crash for **IuCS** and **GSMA** with single **RTP thread**.
- Fixed for wave file created for AMR codec with **IUUP header** through **Triggers and Actions**.

Enhancements:

- Supports a number of wireless protocols over IP using new frame work - ISUP, BICC, MAP, CAMEL, IuPS, LTE, Gb, GTP protocols in PDA.
- EVS and OPUS codec support.
- New CDR View
 - Enhanced with new single line CDR view where in user can select the fields to be displayed.
 - CDR fields configuration option allows for sending records to central database.
 - New CDR view has summary view which displays values in a single string with comma separation.
 - Option to switch between older and new CDR display option provided in PDA.
- Ability to export CDR and Frame summary as CSV files for the selected protocols. User can configure the fields and re-order fields. Records can also be dumped to central database using CSV loader mechanism.
- A new counter tab is included to display general statistics for all protocols in PDA.
- Option to change the color to indicate different Call States Color has been provided.
- PacketScanPort.dll and PacketScanProt.ini are renamed with IpProt.dll and IpProt.ini
- To handle capture and decode of higher volume of calls, processing can be distributed by enabling multiple RTP thread option through INI.
- ED137: For Air-to-Ground calls voice quality statistics are calculated freshly for every PTT or Squelch transaction. The statistics for latest PTT or Squelch transaction are also displayed in PDA Summary View. PDA Detail View provides the aggregated voice quality for the entire SIP call. By default, this feature is enabled for Air-to-Ground calls. Optionally this feature can be disabled by making changes to below variable in 'IPProt.ini' file provided in PacketScan installation directory.
;To calculate voice quality stats freshly for every PTT or Squelch transactions and display only the latest PTT or Squelch in PDA

; 1 for enable and 0 for disable. Default value is 1.

[#PROCESS_AG_CALLS]

CALCULATE_MOS_PER_PTT_SQUELCH=1.

8.1.11

<p>Bug Fixes:</p> <ul style="list-style-type: none"> • Fix for showing discarded packets count in RTP packets graph. • Fix for play to speaker when PDA performance option is enabled. • Cosmetic bug fixes for, audio and video parameter display strings under Call Summary. • GUI Bug fix for scrolling horizontally in message decodes of PDA call graph window. • Fix for application crash when tried to save the trace without any packets in realtime capture. • TableName added as header field for Export CSV feature. • Fix for GLW voice files recording to achieve better performance and to support all codecs. 	
<p>Enhancements:</p> <ul style="list-style-type: none"> • Configure frame summary option added in settings to send selected summary fieldsto central database by loading pre-defined configuration (ACF) files. • PDA performance option added in settings to optimize usage of memory and CPU utilization when there is high volume of calls. • Added new column Frame number in call graph window which shows frame number of that frame in analyzer. • Added TCP reassembly. When there is SIP over TCP fragmented packets, then we reassemble such packets. • Removed dependency of RTP_ODDPORT configuration from IPCAPT.INI for live capture. • Supports auto detected ED137 RTP sessions. • Supports decoding below feature specific RTP header extensions as per ED137-1B. <ul style="list-style-type: none"> ➤ Climax time delay (CLD) ➤ Signal quality index (SQI) ➤ Radio Remote Control (RRC) • Supports decoding multiple RTP header extensions serialized in single RTP packet as per ED137-1B. • Supports "MESSAGE" method in SIP. Message method is an extension to the SIP that allows the transfer of Instant Messages. <p>Bug Fixes:</p> <ul style="list-style-type: none"> • Memory leak in SCTP reassembly. • Associating sip messages to call after it is failed or terminated. • T38 call graph for version 0 and 3. • Multiple boundary decode issue in SIP-I. • Stamping of non-SIP packets as SIP. • Memory leak in update active call graph due to improper time stamp. 	<p>7.1.13</p>

Bug Fixes: <ul style="list-style-type: none">Crystal Reports was not being installed properly because the Visual Studio 2005 redistributable was not being included.	6.1.14
Bug Fixes: <ul style="list-style-type: none">Latest g726 and g726-vad ACMs are not includedPacketScanHDHWFilter.dll is missing in installation directory.PacketscanProt.ini and other config files were not updated in installation directory	5.12.11
Enhancements: <ul style="list-style-type: none">PDA Call graph enhanced to indicate PTT and SQUELCH events for the ED137 calls.SCTP reassembly in Capture module and Support SIP calls over SCTP protocol in PDA.SGs AP (SGs Application Protocol - 3GPP TS 29.118 V12.2.0 (2013-09) is supported in PacketScan. Bug Fixes: <ul style="list-style-type: none">In HDLFileConversion Discard Duplicate Packet option is not working.Deactivate selected Filter is not working in Capture Filter of Analyzer.Fax-Call Graph crash for v34 traces in PDA.SIP-I Message Decode Issue in Analyzer	5.12.10
Enhancements: <ul style="list-style-type: none">PacketScan Integrated with latest fax-library to support T.38 v34 version. Bug Fixes: <ul style="list-style-type: none">PostPickUp delay is not updating properly in PDADisplay Error message when no interface is selected in Analyser.Help is not working for PDA traffic summary view	5.10.15
Bug Fixes: <ul style="list-style-type: none">For g726-VAD license checking is not required.Call State was not updating properly in PDA.Installation request for downloading .NetFramework and also crystalreport redistributable is not getting installed.	5.10.1
Enhancements: <ul style="list-style-type: none">PacketScan Enhanced to send Frame Summary and Octets of SIP Frames in PDA instead of Analyzer.Added Auto-Detected RTP session counters in PDA Statistics.PacketScan enhanced to Handle to SIP-Redirect messages and associate them to the call	5.9.30

Bug Fixes: <ul style="list-style-type: none">• Non RTP packets are wrongly stamped as RTP.• RTP Session Counters in PDA were not updating properly.• Setting Capture limit as Frame Number was not working properly in Capture Module.• Decode Error for few UDP frames due to port number setting in PacketScanProt.ini.• For Iucs & GSMA Calls, there were mismatch with Caller & Callee info in• MO Voice and SMS Call, MT Voice and SMS Call.	
Enhancements: <ul style="list-style-type: none">• Application is built in VS-2013.• PacketScan™ is enhanced to support audio processing in 64-bit operating system by porting supported codecs to 64-bit.• PacketScan Analyzer is enhanced to decode GSM-R Information elements (IEs) in GSM-CC layer.• PDA is enhanced to display Post PickUp delay counter in Call Summary. And Total Audio Sessions, Total Fax Sessions and Total Video session are added in RTP statistics.• PDA is enhanced to support the Decoding of Auto-detected RTP sessions with IuUP Header.• In AFCU, included Speex options like VAD, VBR and PEN. Bug Fixes: <ul style="list-style-type: none">• Fixed the bigger file size issue for HDL file conversion utility.• Fixed the issue for playing frames with length greater than 1514 in HDL Play Back utility.• Fixed crash for GSMA failed calls.• Fix provided for 'Find CDR' dialog not working properly for IuCS and GSMA calls in PDA• GSMA and IuCS SMS call counter was not updating properly• GSMA and IuCS Emergency calls were treated as failed calls• Disabled packet loss concealment to avoid distortion in recorded GLW file.• Fixed crash in creating GLServer socket	5.8.20

Enhancements: <ul style="list-style-type: none">From now onwards we are using Codec Jock for displaying graphs as there are issues with Tee chart in 64 bit application.PDA can now save failed calls also along with completed calls in. Bug Fixes: <ul style="list-style-type: none">CoolEdit wasnot invoking in 64 bit application in Record Audio to file.E-Model graph MOS and R-Factor graphs are not updating correctly.In HDL File conversion if user as not given extension for EthrealFormat and Ethreal PCAPNG file format was not saving with proper extension.Packet Scan was not capturing RTCP packets.Report Generation was failing because of missing Crystal Report Redistributable.In PDA we were not sending SIP Destination IP to data base.IUCS and GSMA Call graph message was not displayed for Identity request, SMS deliver Messages in PDA.	5.6.19
Enhancements: <ul style="list-style-type: none">PDA is enhanced to display Post PickUp delay counter in Call Summary.PDA is Enhanced to display the Total Audio Sessions, Total Fax Sessionsand Total Video session statistics.Protocol license check is as explained below<ul style="list-style-type: none">➤ In case of Online PacketScan, protocol licenses must be online only.➤ In case Offline PacketScan, protocol licenses can be either online or offline. Bug Fixes: <ul style="list-style-type: none">If we enable the Triggers and Actions in PDA Startup Option without providing trigger file, PacketScan PDA Crashes while invoking it. This bug is fixed.PacketScan PDA crashes in detail view for GSMA failed calls. This bug is fixed.PacketScan Crashes when we set Capture filter as all MAC, IP and UDP. This bug is fixed.Voice was not decoding properly for HR and EFR Codecs for GSMA calls. This bug is fixed.In Triggers and Actions, for save call by default selection was not set. This bug is fixed.	5.5.22
Enhancements: <ul style="list-style-type: none">PacketScan™ is migrated to VS2013.PacketScan™ is enhanced to support for Audio processing in 64-bit by porting Supported codecs to 64-bit.Latest 32-bit and 64-bit VS2013 Codecs are integrated to PacketScan™	5.5.11

<p>Bug Fixes:</p> <ul style="list-style-type: none"> Fax Image extraction fails for latest fax library in PDA for PPP Analyzer. 	<p>5.4.24</p>
<p>Analyzer Enhancement:</p> <ul style="list-style-type: none"> In GSM-CC layer User-to-User Information field now we support Gsm-RInformation elements (IEs). User can enable this feature by enabling the GSM_R flag in PacketScanProt.ini. If the value is set to 0 the GSM-R decode part is disabled. Set to 1 to decode GSM-R Ies. [#GSM_R] GSM_R_ENABLED = 0 <p>PDA Enhancements:</p> <ul style="list-style-type: none"> Integrated the Latest Fax Libraries to PacketScan. PDA is Enhanced to support the Decoding of Auto-detected RTP sessions with IUUP Traffic. To decode auto-detected sessions with IUUP Traffic we need to set "ENABLE_IUUP_PROCESSING" flag to 1 . [#IUUP_SETTINGS] ENABLE_IUUP_PROCESSING = 0 By default this flag is set to 0. <p>Bug Fixes:</p> <ul style="list-style-type: none"> While writing data to video file in PDA, audio payload was not setting properly. Detail view in PDA crashes for IUUCS calls (when codec is not detected properly). Comfort noise was adding to RTP events in PDA detail view Calls are not getting timed out for inactivity calls (only when we apply capture filter) 	<p>5.4.10</p>
<p>Bug Fixes:</p> <ul style="list-style-type: none"> PacketScan™ analyzer crashes while invoking application. 	<p>4.12.24</p>
<p>Bug Fixes:</p> <ul style="list-style-type: none"> SIP Calls were getting disappear when we switch between Registration call summary and call summary in PDA. In this condition, the application crashes when continuously switched between display filters in summary view. Messages which are received after 200Ok to BYE were not associating to particular call. 	<p>4.12.22</p>

<p>Date: November 24^h, 2014</p> <p>Enhancements:</p> <ul style="list-style-type: none">Introduced aggregate summary columns that combine one or more native summary columns into virtual columns with one of the following options: value overlay, concatenation, column name/value XML style formatting, name=value styleUser defined virtual (aggregate) column names and aggregate tagsRapid search for native and aggregate column values using wildcards and regular expressionsVertical / horizontal view splits.Hits for functionality like hiding layers in the detail view etc.Export summary column exports to csv file also supports Aggregate Summary Columns <p>Bug Fixes:</p> <ul style="list-style-type: none">PDA was throwing "Invalid Argument was encountered" error when we try to close trace with t.38 analysis graph opened.Payload CRC statistics in PDA were displaying wrong for PduType-1.Call Duration in Traffic Summary was updating wrong while sending to database for Calls which have duration greater than ten minutes.	4.11.24
<p>Date: November 11^h, 2014</p> <p>Enhancements:</p> <ul style="list-style-type: none">Provided PacketScan™ HD 64bit release (variant to basic PacketScan™ to analyze high density IP traffic). Work as a Network Monitoring Appliance w/ 4x1GigE or 2x10GigE network interface card.Application enhanced to check license for PacketScan™ HD (PKV120).Supports simultaneously capturing and processing up to 5000 Calls with duplex traffic at 1 Gbps rate (per appliance). For more capacity, PacketScan™ FB (Near-Realtime File Based Packet Processing Tool) will be offered in near future. <p>Bug Fixes:</p> <ul style="list-style-type: none">Memory leak while recording audio to wave file in PDA.PDA crash for the trace having SIP and MEGACO calls with same media addresses.In PDA, Trigger and actions settings was not working properly for Skinny calls.Provided ToolKitPro dll in the PacketScan™ Installation directory.	4.11.11

<p>Enhancements:</p> <ul style="list-style-type: none">• In PDA, counters added for Timed Out Calls for H.323 and SCCP (Skinny) protocols in packet statistics• Updated Excel Addin utility (renamed Excel-DashBoard-for-IP.xlsm as GLEExcelAddin.xlsm) to create a one-click consolidated Dashboard of various graphs from the Terminated Calls Report. <p>Bug Fixes:</p> <ul style="list-style-type: none">• The H.323 and SCCP (Skinny) calls are now properly cleared after time-out.• Call Status in CDR is now getting updated properly for SIP-I protocol.• CPS counter is now getting updated properly for SCCP (Skinny) calls in PDA.• In PDA, the codec information was not present in file headers for GLW recording option, which in-turn leads to invalid behavior on using these files with FCU. The problem is now fixed.• Analyzer summary view crashes for some of HTTP Packets with packet length more than 4000 length. The problem is now fixed.• Fix provided for duplicate columns generated on defining the fields related to GSM and IUCS protocols.• Fix provided for decode errors in Analyzer summary view for Diameter S6a interface.• Replaced help and example files.	4.10.10
<p>Enhancements:</p> <ul style="list-style-type: none">• A single release is provided for Normal NIC and GL's High Density NIC card. An option is provided in IPCapt.ini to preset the selection between Normal NIC card and GL High Density NIC card, and allow PacketScan™ to listen on the selected card. <p>Set "NETWORK_ADAPTER_TYPE = 0" - value 0 for Normal NIC card, and value 1 for GL's High Density NIC card.</p> <p>Bug Fixes:</p> <ul style="list-style-type: none">• Fix provided for RTP statistics getting updated in PDA even when there were no RTP Packets in analyzer.• Fix provided for Caller value not displaying in PDA for IUCS and GSMA.• Fix provided for statistics errors for SIP and MEGACO protocols.	4.10.1

Enhancements: <ul style="list-style-type: none">• This version onwards PacketScan™ uses Win PCAP ver4.1.3 which supports Windows® 8.• PacketScan™ PDA is enhanced to save the calls in .PCAPNG format. Bug Fixes: <ul style="list-style-type: none">• Fix provided for Triggers and actions - When the "Append Sequence" option is enabled, the *.rtf file was not getting the sequence number appended.• Fix provided for PacketScan™ crash issues while parsing malformed SIP headers.• Fix provided for Megaco Calls not getting timed out even when it was not receiving any packets.• Fix provided for F1 help invoke in PDA and analyzer.• Fix provided for captured frames not displaying in analyzer when we activate and deactivate view filters.• Fix provided for Trace file saving error using save as option that pops up when frames starts purging.	4.8.28
Bug Fixes: <ul style="list-style-type: none">• Audio was not decoding properly for G729 codec in PacketScan™ PDA.• PacketScan™ 64-bit installation now installs Win PCAP.• Removed unnecessary configurations and trace files ("acf" and "hdl").	4.8.1
Enhancements: <ul style="list-style-type: none">• Application built to support for GL's High Density NIC card (64-bit release).	4.7.31
Enhancements: <ul style="list-style-type: none">• PacketScan™ PDA is enhanced to display Calls Per Second statistics for all Protocols• PacketScan™ PDA is enhanced for the following for IuCS calls<ul style="list-style-type: none">- Displays IuUP Header CRC pass and fail counters per session- Displays IuuUP Payload CRC pass and fail counters per session- Total Header and Payload CRC pass/fail counters in IuCS Statistics.• Implemented CDR for Megaco Calls.• Supports AMR_WB codec with IuUP Header.• PacketScan™ allows renegotiated calls with new codec. The PDA is enhanced to update the new codec type which is received in Re-Invite.• Added the license check option for AMR, AMR_WB, EVRC, EVRCB, EVRCC codecs in PacketScan™ PDA to process audio related tasks.• In Triggers and Actions in PDA,<ul style="list-style-type: none">- Provided the "All Calls" filter option for Auto Detect sessions.- Provided the "Header CRC Fail Count" and "Payload CRC Fail Count" filter option under RTP.• Added the Forced Closed Call counter for H323, Megaco, GSMA and IUCS calls.• Added the Timed out Call counter for Megaco, GSMA and IUCS calls.• Provided the Protocol Selection feature in PDA Start UP options.	4.7.29

- Provided the following options in PacketScanProt.INI.
 - "PROCESS_AUTODETECT_RTP_TRAFFIC" - Set this flag to 1 to process Auto Detected sessions in PDA.
 - "PROCESS_OUTOFBANDS_FLAG" - Set this flag to 1 to process Out of Band Events.
 - "PDA_PERFORMANCE" - For better PDA Performance set this flag.
 - "T38_VERSION" - There are two versions in T38, 9 (1998) and 10 (2002). Version 10 is not backward compatible, Hence to support both versions we provided this option. By default this version 9 is enabled.
 - "RECORD_AUDIO_GLW"- Set this flag to 1 to record audio to ".glw" format

Bug Fixes:

- Fixed "Write to File" option in PDA throwing "Invalid argument was encountered" error for the call in which traffic is received only on right session.
- Fixed PacketScan™ crashes in IpCapt.dll on receiving ARP packets.
- Fixed HDL File conversion Utility not converting properly from .PCAP file format to .hdl for IPv6 packets which were not having MAC header.
- For IuCS calls in PDA initial five RTP frames were not associating to call.
- Fixed HDL File Conversion Utility problem not working properly for .PCAP conversions from nano seconds precision to micro seconds precision.
- Fixed CDRs not displaying once the purging starts.
- Fixed wrong values displayed for Average Jitter for IuCS calls in PacketScan™ PDA.
- Fixed PDF Report generation problem of displaying wrong values for Caller and Callee.
- Fixed the memory leak issue in Registration Process.
- Fixed Video Calls getting force closed for Re-Invite message which is having same media port of first negotiated message.
- Fixed PacketScan™ PDA crashes during long run tests.
- Fixed PacketScan™ PDA crashes while closing PDA with SKINNY calls.
- Fixed PacketScan™ crashes when a call becomes purged while analyzing in Detail View. PacketScan™ crashes.
- Fixed the issue of Fax calls not cleared from PDA even though the call has got purged. (After purge it has to get clear).

Enhancements:

- Default Summary and Filter fields are removed from all the protocols in PacketScan™.
- Complete protocol names are replaced with short names.
- Summary fields are supported in Megaco layer.

4.4.4

<p>Enhancements:</p> <ul style="list-style-type: none">• PacketScan™ is enhanced to decode and stamp as RTP even if packet is received on ODD port. To Decode RTP received on ODD port, we need to set "RTP_ODDPORT" in IPCapt.ini.• PDA is enhanced to Support SCCP Calls(Skinny Client Control Protocol)• PDA is enhanced to decode Voice over LTE. To process Voice over LTE calls in PDA, we need to set "PROCESS_VOICE_OVER_LTE_FLAG" in PacketScanProt.ini.• PDA is enhanced to decode AMR Codec with IUUP header.• PacketScan™ analyzer is enhanced to decode IuUP layer. IuUP protocol was integrated over RTP layer. This includes<ul style="list-style-type: none">- PacketScan.h: Branching file with IuUP protocol over RTP.- PacketScanIni.h: Defined an index and flags for Min and Max Payload values for IuUP.- RtpLayer.h: Defined a Payload range for IuUP protocol in the Payload Type field and Reading payloadValIuUPMax and payloadValIuUPMin flag values from .INI file.- Rtpcore.h: Defined a flag for IuUP branching. <p>Bug Fixes</p> <ul style="list-style-type: none">• S1AP.h: Decode correction.• Fixed PDA - RTP Traffic not associating with the calls when that traffic was received on IP:Port pair other than what was negotiated in SDP part of the Call Set up messages.• Fixed timestamp in Call Graph displaying wrong values for calls which is having more than 5 minutes call duration.• Fixed Auto Detected calls in PDA - If telephonic event was received before any inband Traffic then codec type was displaying "Unsupported Format".• Fixed the issues in capture module - If we set SCTP and RTP as a filter, PacketScan™ was not capturing any packets.• Fixed PDA decode issues - RAB Assignment messages in IUCS calls was not decoding in PDA.	<p>4.3.18</p>
<p>Enhancements:</p> <ul style="list-style-type: none">• PacketScan™ is enhanced to support on GL's High Density NIC card.• HDL File Conversion utility is enhanced to support writing to PCAPNG format.• HDL File Conversion utility is enhanced to support Nano-second time Precision for HDL, PCAP and PCAPNG formats.• Added trace files for GSMA and IUCS protocols <p>Bug Fixes:</p> <ul style="list-style-type: none">• Fixed PacketScan™ PDA crash while decoding SIP fragments.• Fixed SIP purged calls not cleared in PDA during live capture.• Fixed Wave Graph in PDA Detail View displaying wrong when it received traffic only on right channel. Fixed• Fixed PDA Detail view crash for invalid RTCP Packets added to sessions.• Fixed analyzer issue where analyzer sometimes used to stop capturing the frames in between.• Fixed HDL Playback application - Fails to send packets, when the selected interface is	<p>4.1.31</p>

changed.	
Enhancements: <ul style="list-style-type: none">PacketScan™ protocol stack is corrected -<ul style="list-style-type: none">Added Diameter Rx protocolAdded BSSAP protocolCorrected BSSGP decodeCorrected LLC decodeCorrected CC decodeCorrected GTPv2 decodeCorrected MAPR4 decodeCorrected SCTP decodeCorrected SUA ANSI decodeCorrected SUA ITU decodeCorrected GSM SMS decodeCorrected H323RAS decodeCorrected H450 decodeCorrected Skinny decodeCorrections to following CDR files. Buffer size is increased in the following CDR files as SIP CDR was crashing because array boundary was exceeding.<ul style="list-style-type: none">H323CallTrace.cppPacketScanSipCallTrace.cppSigtranCnameCallTrace.cppSigtranGsmACallTrace.cppSigtranIsupCallTrace.cppSigtranLteCallTrace.cppSigtranUmtsCallTrace.cpp	4.1.27
Bug Fixes: <ul style="list-style-type: none">Fixed memory leak in audio record to file action.Auto detect RTP sessions were not displayed in PDA for PPP Analyzer. This is fixed now.	3.11.22
Enhancements: <ul style="list-style-type: none">PPP PDA Analyzer ver 7.10.22 Released Bug Fixes: <ul style="list-style-type: none">Fixed spikes seen in decoding G729B traffic.Fixed unknown Link-Layer while converting PCAP trace from tcpdump with PPP	3.10.22

<ul style="list-style-type: none">• H.323 decode errors and media association issues fixed.• In Analyzer Summary column width for Device and Length were not readjusted.	
<p>Enhancements:</p> <ul style="list-style-type: none">• This new version of PacketScan™ handles 2 VLAN fields.<ul style="list-style-type: none">➢ Protspec changes to handle two VLAN layers in frame.➢ NewProtAnUi changes to rename summary column names <p>Bug Fixes:</p> <ul style="list-style-type: none">• Fixed frame decode errors in case of two VLAN layers in the frame.• Fixed initial burst in Missed Frames in analyzer when real time capture is started.• Now width of Summary columns Length & Device can be adjusted and saved to profile. Re-invoking analyzer will reflect the changes in width.	3.10.9
<p>Enhancements:</p> <ul style="list-style-type: none">• Enhanced the PacketScan PDA to support IuCS and GSMA Calls over Ethernet. PacketScanProt.ini -> Defines parameters related to IuCS and GSMA Calls. Below settings need to be done in PacketScanProt.INI to analyze IuCS and GSMA call in PDA.<ul style="list-style-type: none">➢ Set the "IuCS_GSMA_CALLS_PROCESS_FLAG" to process IUCS and GSMA calls in PDA.➢ Set the SCTP Port range to stamp the received packets, if the received packet is within this port range then we will Stamp the received packet as RANAP packet. ("SCTP_SRC_RANAP_MIN", "SCTP_SRC_RANAP_MAX", "SCTP_DST_RANAP_MIN" and SCTP_DST_RANAP_MAX).➢ Set the "IUCS_CODECTYPE" value (values are mentioned in PacketScanProt.INI) <p>Bug Fixes provided for the following issues:</p> <p>Fixes are provided for the following issues:</p> <ul style="list-style-type: none">• Call Duration for Auto Detected sessions was displaying improper value.• Call ID was not displaying for Alert Summary for "ALL Calls" filter selections in Triggers and Actions• Frames received on VLAN were not decoded properly.• In Skinny Reassembly, IP Packet length for reassembled frame was not updated.• In IP Reassembly, for Reassembled frame Fragment Flag was not reset.• HDL File Conversion was crashing for some traces.• Bandwidth for IUCS and GSMA calls was not displaying• In Triggers and Actions, Audio Recording was not working for IUCS calls when we enable CDR option along with Audio Recording.• Fixed crash for Triggers and Actions in long run.	3.10.7

<p>Enhancements:</p> <ul style="list-style-type: none"> • HDLFileConversion.dll has been included in the x64 version. • TeeChart2013.ocx has been included in the x86 version. <p>Bug Fixes:</p> <ul style="list-style-type: none"> • Fixes provided for PDA crashes with old trigger profiles. In Triggers & Actions, it creates specified directory if not present. • Fixed H.323 Setup message decode issue • Analyzer CDR crash for SIP calls with lengthy call-id. • Fixed Decode error in H323 & H450 H323 RAS decode and H450 decodes are corrected. • Fixed Sip CDR crashing • Buffer size is increased in the following CDR files as SIP CDR was crashing because array boundary was exceeding. <ul style="list-style-type: none"> ➤ H323CallTrace.cpp ➤ PacketScanSipCallTrace.cpp ➤ SigtranCnameCallTrace.cpp ➤ SigtranGsmACallTrace.cpp ➤ SigtranIsupCallTrace.cpp ➤ SigtranLteCallTrace.cpp ➤ SigtranUmtsCallTrace.cpp 	<p>3.9.20</p>
<p>Enhancements:</p> <ul style="list-style-type: none"> • Enhanced the UMTS analyzer to support PDA for IuCS calls. PacketScanProt.ini -> Defines parameters related to IuCS calls. Below settings need to be done in PacketScanProt.INI to analyze IuCS call in PDA. <ul style="list-style-type: none"> ➤ Set the "SCTP Port Range" to stamp the received Packet, If the received packet is within this Port Range then we will stamp the received packet as RANAP Packet. ("SCTP_SRC_RANAP_MIN ", "SCTP_SRC_RANAP_MAX ", "SCTP_DST_RANAP_MIN " and SCTP_DST_RANAP_MAX) ➤ Set the "IUICS_CODECTYPE" value(values are mentioned in PacketScanProt.INI) ➤ Set "ATM_HEADER_ERROR_CHECKSUM " if Header Error Checksum field is present in ATM layer ➤ Set "L2_PROTOCOL = 4" for ATM • Sample files updated for IuCS calls trace for PacketScan™, T1E1-UMTS Analyzer,T3-UMTS Analyzer and OC3/OC12 UMTS Analyzer. • View Filter for SIP parameters like SIP Method and SIP sequence has been enhanced to choose and set multiple values from the list of methods. 	<p>3.9.12</p>

Enhancements: <ul style="list-style-type: none">• Application enhanced for 64-bit release.• Drawback of PacketScan 64 bit for monitoring high density networks - Audio Processing functionalities are not supported in 64-bit PacketScan as we don't have 64-bit codec ACM files.	3.8.30
Enhancements: <ul style="list-style-type: none">• Enhanced to generate CDRs (Call Side Record, Call Master Record and Call Events Record) for H.323 calls.• Supports Skinny Client Control Protocol decode.• Supports reassembling Skinny client control protocol frames.• Address Translation in PacketScan™ utilities is enhanced to support new HDL file format. Bug Fixes: <ul style="list-style-type: none">• In PDA, right RTP Session was not creating for H323 calls.• In PDA Triggers and Actions, writing to wav file was not working when it receives traffic only on right session.• In PDA H323 Call-Id was displaying junk values.• In PDA H323 failed calls were not added to failed call List.• PDA crashed for some invalid RTCP packets when we enable T38_FLAG.• Last "Release Complete Message" in H323 was not adding to Call Graph.• In PDA Call Failure Reason Cause was not displaying for H323 Call.• Fixed decode errors for RAS frames.• Handling MAC padding by checking IP total length in PacketScan™.	3.7.24
Enhancements: <ul style="list-style-type: none">• HDL File Conversion (Import Option) utility is enhanced to convert PCAP files with capture time precision of one nanosecond to HDL file.• HDL File Conversion (Import Option) utility is enhanced to read new Ethereal PCAPNG (Next Generation) file format.• HDL Playback utility enhanced to support new HDL file format Bugs: <ul style="list-style-type: none">• PDA doesn't read frames if invoked after purging starts in Analyzer.• In PDA, Foreclosed Auto detected RTP sessions were not cleared even after purging.	3.4.19
Bugs: <ul style="list-style-type: none">• Analyzer continues to capture frames even after reaching capture limit set to 'N' packets.• Analyzer crashes if real time capture is restarted.	3.4.1
Bugs: <ul style="list-style-type: none">• Crystal Report installation was missing in PacketScan installation.	3.3.31

March 26th, 2013 Enhancements: <ul style="list-style-type: none">• Provided option to generate PDF reports for captured Calls Summary in PDA.• Active Calls Graph displayed for Auto detected RTP sessions.(Figure 148: Auto Detected RTP Calls)• Included below statistics in PDA.<ul style="list-style-type: none">➢ Calls per second➢ Signaling frames count for each call➢ Total timed out calls➢ Total force closed calls➢ Total discarded RTP packets➢ Percentage value displayed for discarded, lost, out of order and duplicate packets.➢ Call initiated time➢ Call established time• Provided Microsoft Excel application that reads exported call summary (CSV format) and displays graphs for metrics like MOS, R-Factor, and Lost Frames etc.• In PDA statistics are updated more frequently.• In Analyzer CDR part SIP call states are updated• INI option provided to define session expiry time in seconds. If no RTP/RTCP packet is received in this idle period, session will be terminated.• INI option provided to define clean up routine timer in seconds.• INI option provided to enable or disable SIP registration message processing. Bugs: <ul style="list-style-type: none">• PDA crashes when Call Graph or T38 Analysis is opened in PPPAnalyzer.• Opening an invalid trace file used to crash Analyzer.• In PDA detail view, frame values were read improperly from HDL file.• Capturing on multiple NIC interfaces used to crash.• Call established time was reset when we Re-INVITE is received.• Now we can play traffic even if only one session has received RTP packets.• Call duration was displayed wrongly, proper format is Hour:Minute:Seconds:Mseconds.• Analyzer help file was not invoked.	3.3.26
March 21st, 2013 Decode Changes: <ul style="list-style-type: none">• Corrections to ICMP, CAMEL V3 and CAMEL V6 decodes	3.3.22
March 4th, 2013 Bugs: <ul style="list-style-type: none">• Records read from trace file in detail view were having improper values due to multithreading. Now we use ReadFrame() API that returns copy of record instead of pointer to record.	3.3.4
January 31st, 2013 Enhancements: <ul style="list-style-type: none">• Provided HDL File Conversation utility launching application for all analyzers. Bugs: <ul style="list-style-type: none">• T.38 fax image was not generated for fax calls captured in PPP Analyzer as FAXDD_T38 application requires MAC as layer2 instead of PPP/MLPPP. Now we are replacing PPP/MLPPP header with dummy MAC layer before fetching frames to FaxDD_T38 application	3.1.31

December 21st, 2012 Bugs	
<ul style="list-style-type: none"> Analyzer crashes for RTCP frame decode – Fixed 	2.74.10
December 18th, 2012 Bugs: <ul style="list-style-type: none"> Analyzer crashes when invoked - Fixed 	2.74.9
December 12th, 2012 Enhancements: <ul style="list-style-type: none"> Provided a check box "In Memory" in Capture File Options which when enabled saves trace file on closing and does not touch the disk till closing so it should be fast for high performance all in memory capturing like PacketScan circular buffers. Bugs: <ul style="list-style-type: none"> PDA stops reading frames from HDL file when purging starts. Detail View in Analyzer was not displaying transport layer. Decode Changes: <ul style="list-style-type: none"> Correction to stack to decode Sip-T layer. Correction to stack to decode Ipv6 higher layer. Corrections to PerChoice::ParseStat function. Correction to IP fragment present absent flag setting in IP layer. Modification and corrections to GsmMM layer, SccpItu and SccpAnsi layers. 	2.74.8
December 8th, 2012 Enhancements: <ul style="list-style-type: none"> Transition from VarRecDirAccFileThreadSafe to VarRecDirAccFileInMemThreadSafe class for MemFile implementation. 	2.74.7
December 3rd, 2012 Enhancements: <ul style="list-style-type: none"> Transition from VarRecBuf to VarRecDirAccFileThreadSafe class for MemFile implementation. The new PacketScan All-in-one combines the below analyzers into one. <ul style="list-style-type: none"> ➤ Sigtran Analyzer. ➤ Lte Analyzer. ➤ Sip Analyzer (Normal PacketScan). ➤ Apart from these it also includes protocol stacks for - <ul style="list-style-type: none"> ➤ ISDN over IP. ➤ GsmA over IP. ➤ IuCS/IuPS (UMTS) over IP. ➤ Gprs Gb over IP. ➤ Gprs Gn. <p>(need to mention somewhere that PDA option exists only for SIP, RTP, Megaco, H323 calls, not for other protocols)</p>	2.74.6
August 24th, 2012 Bug Fixes: <ul style="list-style-type: none"> RTCP packets were dropped in IPCapt module. 	2.74.5

<p>July 10th, 2012 Enhancements</p> <ul style="list-style-type: none"> Analyzer is enhanced to detect connection drops to database, reconnect if connection is broken and also send keep alive messages to the database loader periodically PacketScan™ enhanced to send CDR, Frame Summary and Frame Octets for H323 calls to Database In PDA, a new Time-Stamp column is added for Call-Graph and T.38 Analysis. The RTP traffic information (RTP Packet Count, SSRC, Duration, Codec Type) is also displayed in the Call-Graph feature of PDA. PacketScan™ now reports list of outband mid call digits detected in the Call Summary (or Side) Record CSV files <p>Bug Fixes:</p> <ul style="list-style-type: none"> HDL File Conversion (Import option) crashes for traces containing SCTP packets. Memory allocated for reassembled packets was not deleted properly (Fixed). In PDA, we were not able to do Audio tasks for failed calls which contain RTP traffic. Now we changed to handle it based on if any RTP Traffic received instead of Call State. Error code was not updated properly for SIP calls, if the received messages were not in expected order. MOS scores were not proper when SSRC of RTP session changes due to collision or due to transition from early media to actual media after call is established. Now we start calculating MOS freshly for packets with new SSRC. 	<p>2.74.4</p>
<p>May 4th, 2012 Enhancements</p> <ul style="list-style-type: none"> PacketScan™ enhanced to support IP version 6 (IPv6) protocol. IPCapt and PDA analysis enhanced to support calls captured on both IPv4 and Ipv6 protocols. PacketScan™ utilities enhanced to support IPv6 Protocol Added two new Codecs GSM EFR and HR. PDA is enhanced to extract FAX image from Fax calls. In 'Triggers and Actions' of PDA, added the new action for extracting image from Fax call. In Triggers and Actions of PDA, added the new Action for Extracting Image from Fax call. Supporting MOS Scores for AMR_WB codec for all 9 modes. In Telechemy AMR_WB codec is detected as G722.2 Added new field SIP-Error Code for sending CDR to database. In Analyzer provided option to open PCAP files through 'Import' option under 'File' menu. Here we convert PCAP file into HDL and open the HDL file into Analyzer automatically. Now we report mid call outband digits detected on a call along with SIP signaling events in events report CSV file. <p>Bug Fixes:</p> <ul style="list-style-type: none"> In Detail Analysis of PDA, delay for Wide Band codecs was not updating properly Error while loading HDLPlayback.dll in Address Translation feature of PacketScan™ Utilities. Installation issues observed in Ver 2.74 and 2.74.1 were fixed 	<p>2.74.2</p>

Nov 29th, 2011 Bug Fix: <ul style="list-style-type: none">• Signaling call events start time in CSV file is changed to display time differences w.r.t INVITE messages in "sec.usec" format. PacketScan™ now takes '0' as reference time for first INVITE and subsequent messages will have proper time difference w.r.t INVITE. This resolves -ve values reported for call duration in call events CSV files.	2.73.6
Nov 22nd, 2011 Enhancements <ul style="list-style-type: none">• Provided option to generate CSV files for following reports per call.<ul style="list-style-type: none">➢ Call Master Record➢ Call Side Record➢ Call Events Record➢ These options are included under Triggers and Actions dialog so that user can set triggers to generate these reports. These files along with both side wave files will be fetched to VBA and CDR for further processing.• Provided an option to define the startup tasks (ex: Triggers and Actions) to be performed when PDA is launched.• Added a filtering criteria 'All Calls' under SIP protocol to filter all the captured calls and perform the actions defined by user. Bug Fixes: <ul style="list-style-type: none">• 'As Is' and 'Extract' options in "Write to File" and "Play Audio" applications in PDA were using jitter buffer and behaving same as 'Corrected' option. Below is the explanation for expected behavior of these options.<ul style="list-style-type: none">➢ Corrected (uses Jitter Buffer): In this case, a two-stage correction is affected before a packet is played. First is that the packets are passed through a Jitter Buffer that adjusts those packets that arrived out of sequence, in the correct order before playing. The second stage is that, the RTP timestamp present in the RTP frame header is used as the basis for playing the audio (instead of the frame capture time as in the above case), there by eliminating the delay induced by the network and allowing the user to listen to the audio with the same quality at the generator's side. By default, this option will be selected.➢ As Is: The packets are not re-arranged in this case based on their RTP sequence numbers. The packets are just played based on their order of arrival at the point of capture by PacketScan™. In this case, time of capture of the frame will be the basis and the output audio will be reflective of this. Any delay induced by the network etc will be visible (rather audible) here.➢ Extract: This is similar to "As Is, except for the fact that capture time or RTP timestamp is not considered for generating the output. The contents of the RTP payload are extracted in sequence and played to the Sound Card.	2.73.4
July 29th, 2011 Bug Fixes: <ul style="list-style-type: none">• Capture time and date for frames displayed in Analyzer Summary View was not proper.• Even for sessions with no traffic received, E-Model Packets Discarded graph in PDA was displaying 31% of packets discarded.• SIP Register message count was not updated under 'SIP' protocol statistics in PDA.	2.73.1

July 25th, 2011 Enhancements <ul style="list-style-type: none">• In Triggers and Action setting new filters are added - Discarded Packets (%) for RTP and Call Duration (mins) for MEGACO filters.• For RTP statistics in General counters, added the RTCP Bye Packets counter.• Includes Failed Registration list filter in Registration Summary view. Bug Fixes <ul style="list-style-type: none">• Under General Statistics, Purged Calls counter was not updated properly.• Mismatch in MOS scores displayed in PDA Summary View and Detail View. Corrected by processing RTCP BYE Packets in Detailed Analysis.• PacketScan PDA used to crash when failed calls due to time-out are purged on long run.• Analyzer crash on switching between online and offline analysis.• In PDA, Unknown Message type was displaying for all messages in T.38 call graph for fax calls.• PDA crashes when we keep scrolling T.38 calls with "T.38 Analysis" tab enabled in PDA - Summary View.	2.73
June 15th, 2011 Enhancements <ul style="list-style-type: none">• Enhanced VQMon library for MOS and R-Factor calculation is integrated with this release. Bug Fixes: <ul style="list-style-type: none">• Wave graph time scale in Detail View is double than what it should be (i.e call duration) for wideband codecs.• For AMR codec different mode values were not parsed from SDP message.• General Statistics were not updated properly in PDA Summary View.• Proper help files were not invoked.	2.72.1

<p>Feb 10th, 2011</p> <p>Enhancements:</p> <ul style="list-style-type: none">• PDA now associates Left and Right auto Detected RTP sessions to a single call.• New metric "Registration Attempts" is calculated for all Registrations and is displayed in Registration Summary column. If any Re-registration occurs then state changes to Re-registered.• Included G726 series codecs with VAD support.• Now user can enable/disable processing of selected protocols at capture level only using options provided in 'IPCapt.ini'. By default all these options are enabled.• Following options are currently included COTP_ENABLE=1 H323_ENABLE=1 SCTP_ENABLE=1 SIP_ENABLE=1• This version should use new WinPcap ver 4.1.2 <p>Bug Fixes:</p> <ul style="list-style-type: none">• "SIP/2.0 200 Ok" message is not updating in the PDA, when Caller cancels call. This is fixed• Find Dialogue option in PDA is not working properly. Fixed now• Fixed AMR_WB and G722.1 Codec crash for Autodetect calls.• Crash for bulk calls when switched between Call Summary and Detailed view. This is fixed.• Registration Timers will be still active when offline files are opened. This is fixed now• User was not able to enter the values for "Packet Sequence" option under "Find Dialogue" Option in Detail View.• Crash for auto Detect video calls when switched to Detail View. Acn convert was crashing, as the packet size will be more than 1000.• No indication for Video record completion. Fixed now• Crash for T38 Analysis in PDA, fixed.• RTP Sessions generated with IP: Port pair other than the negotiated is not getting updated in the detailed view of the PDA, fixed.	<p>2.0.70</p>
<p>Feb 2nd, 2011</p> <p>Enhancements:</p> <ul style="list-style-type: none">• Supported SCTP packets reassembly. <p>Bug Fixes:</p> <ul style="list-style-type: none">• SigTranAnalyzer.exe was crashing when invoked. This is fixed now.	<p>2.0.69</p>

Dec 6th, 2010 Enhancements: <ul style="list-style-type: none">VoIPPDA is enhanced to support analyzing VoIP call summary over other L2 protocols like PPP, MLPPP, CiscoHDLC and other unsupported layers. Bug Fixes: <ul style="list-style-type: none">Fix for parsing Megaco messages.Included ACK message into SIP call graph in case of call failure.Call authentication messages are included to the same call which is established after authentication.RTP sessions generated with IP:Port pair other than what is negotiated through SDP is associated to proper call.Now we can enable or disable T38 processing through INI settings in SipProt.ini file as shown below. [#T38] T38_FLAG=0 //0:Disable, 1:EnableSIP message parsing is enhanced to determine end of a line in a message based on only 'End of Line' (0x0A) character instead of (0x0D & 0x0A).Fix for G722 decode issue.MDI calculation is enhanced to reflect proper values when offline files are opened.	2.0.68
Oct 7th, 2010 Bug Fixes: <ul style="list-style-type: none">We use to reject packets received with length more than 1516. This was leading to drop other frames (SIP/RTP etc) which are received in the same block of buffer. Now we have removed file size limitation completely and we receive all frames with any size.	2.0.67
Aug 27th, 2010 Enhancements and Bug Fixes <ul style="list-style-type: none">PacketScan™ is capable to listen on multiple NICs, even when capture limit is reached.Analyzer used to stop capturing after 29 frames even if circular buffer is selected. This is fixed now.When Analyzer is connected to database to send Frame Summary and Frame Octets, the connection will not get lost at high capture rates.In early media sessions, SDP is updated to get answer for both 183 and 180 messages. PacketScan™ is capable to handle both 183 and 180 messages.The crash problem related to Detail view for H323 calls is fixed.PDASharedUI contains updates for online help to invoke PDA.CDR can be sent to database for H323 calls.Decode crashes for SMTP, POP3 are fixed and DNS is disabled.	2.0.66
July 28th, 2010 Enhancements and Bug Fixes <ul style="list-style-type: none">Call established time will not get updated for subsequent Re-Invites for the call. Earlier, for calls with Re-Invite, call-established time was getting updated leading to a traffic being recorded from Re-Invite rather than from the start of the call.The process entry (SipAnalyzer.exe) will also closes when a PacketScan™ application is closed.	2.0.64

July 22nd, 2010**Enhancements and Bug Fixes****• Packet Data Analysis Summary View –**

- The Call Summary tab under Summary view has been enhanced to display video parameters for video calls. Following are the video parameters displayed;
 - RTP Channel IP:Port pair
 - Codec Info
 - SSRC
 - Frame Count
 - Packet Count
 - Packets Lost
 - Duplicate Packets
 - Out of order Packets
 - Frame Rate
 - Media Delivery Index (Delay Factor : Media Loss Rate)
 - Average Media Delivery Index

- Bandwidth consumption for VoIP traffic and for SIP, MEGACO, RTP, and H323 protocols are displayed under the Counters pane.

- **Detail View** - In detail view, under RTP Statistics tab, the percentage of packet loss, discarded packets, duplicate, and missing packets are displayed along with the total count for RTP sessions.
- **Registration Summary** – Displays the Registration Request Delay (RRD) for all SIP registrations.
- **PacketScan™** now supports **EVRC-C** codec.

2.0.63**July 7th, 2010****Enhancements and Bug Fixes**

- **PacketScan™ Call Detail Records View** - Search in CDR is added.
- SipTFlagAndOffset class is extended to support new parsing method in Sip-T. It was not branching to ISUP layer after Sip in the received HDL file, now the new changes will properly branch to ISUP layer.
- Few of the end octets are now displayed in the frame.

2.0.62

<p>June 18th, 2010 Enhancements and Bug Fixes</p> <ul style="list-style-type: none">• Packet Data Analyzer has been enhanced to run on TDM network. Now, PDA can be launched from PPP analyzer to analyze VoIP traffic carried over PPP or MLPPP.• PacketScan™ - INI Decode Options: SipProt.ini file has been enhanced to provide an option to set layer 2 protocol. <p>Procedure to configure layer 2 protocol in SipProt.ini</p> <p>[#LAYER_2_PROTOCOL_PPP_HDLC]: This configures layer 2 protocol, which can be either HDLC or PPP link layer.</p> <p>L2_PROTOCOL=0: If this is set to 0, HDLC layer will be set as layer 2 protocol.</p> <p>L2_PROTOCOL=1: If this is set to 1, PPP link layer will be set as layer 2 protocol.</p> <p>MAC Layer Presence</p> <p>Ethernet MAC layer may be present or absent depending on L2 protocol, i.e if L2 protocol is HDLC (i.e. L2_PROTOCOL=0) then MAC layer may be present and if L2 Protocol is PPP (i.e. L2_PROTOCOL=1) then MAC layer will not be present.</p> <p>[#MAC_LAYER_PRESENCE]: Configures the presence or absence of MAC layer.</p> <p>MAC_PRESENT=0: If this value is set to 0, then MAC layer will not be present (When [L2_PROTOCOL=1]).</p> <p>MAC_PRESENT=1: If this value is set to 1, then MAC layer will present (When [L2_PROTOCOL=0]).</p> <p>MLPPP Header Format Choice</p> <p>If L2 protocol is set to PPP, then MLPPP header format needs to be configured, which can either be Short Sequence format or Long Sequence format.</p> <p>[#MLPPP_SEQ_NUM_FORMAT_CHOICE]: This configures the MLPPP header format to either long sequence or short sequence format.</p> <p>SEQ_NUM_FORMAT=0: If this value is set to 0, then MLPPP Short Sequence Header format will be configured.</p> <p>SEQ_NUM_FORMAT=1: If this value is set to 1, then MLPPP Long Sequence Header format will be configured.</p>	2.0.61
<p>May 16th, 2010 Enhancements and Bug Fixes</p> <ul style="list-style-type: none">• Fix has been provided to decode SMTP and DNS packets without crashing the application	2.0.60
<p>Feb 16th, 2010 Enhancements</p> <ul style="list-style-type: none">• The licensing feature has been enhanced to invoke the product remotely.	2.0.59
<p>Nov 17th, 2009 Enhancements</p> <ul style="list-style-type: none">• Traffic Summary sent to central database now includes SIP-Origination IP address, i.e., Callers IP address.• Along with Traffic Summary, Frame Summary and Frame Octets details are also sent to central database.	2.0.58

Oct 22th, 2009**New Features****• Alert Summary View –**

- PacketScan™ Traffic Analyzer is enhanced with a new tab to display summary of alerts set under trigger and actions.
- Each summary contains message, type, value, threshold, caller, callee, and callid.
- Double clicking on a particular alert summary selects the corresponding call in Call Summary View. If call is purged, then the pop-up message is displayed showing message call is purged.

Enhancements and Bug Fixes

- **PDA Summary View** – A new parameter Call Failure Reason has been added under Signaling Parameters in Call summary Tab.
- **Triggers and Action Actions –**
 - New filters have been added under SIP trigger list which includes Incomplete Calls, Failed Calls, Call Duration, Sip Error Code, Session Request Delay, and Session Disconnect Delay.
 - New filters have been added under MEGACO trigger list which includes Incomplete Calls and Failed Calls.
 - Traffic – The Missing Packets and Duplicate Packets under RTP trigger list has been changed from count to specify the percentage range.
 - Triggers and Action Settings have been enhanced with a new action Alert Summary to set alert for filter parameters, which generates alert summary during analysis.
- **VQmon Settings** – Enhanced with an option to select the Japan or North America International standard code and Jitter Buffer Minimum and Maximum default values are changed to 40 and 100 respectively.
- **Play Audio and Write to File** - Set Default button has been added for Jitter buffer in Play and record audio actions and in Write to file features.
- Traffic summary sent to database will now contain Origination IP address, Destination IP Address and session disconnect delay.
- It is possible to run both SipAnalyzer and SigtranAnalyzer at a time in the same system. Multiple instances of same protocol analyzer can be executed simultaneously.

2.0.57

June 29th, 2009**New Features**

- **Megaco protocol in PDA** - The Packet Data Analysis has been enhanced with the support of Megaco protocol. Megaco calls can be viewed in the PDA Summary view and also displays a large number of statistics related to Megaco calls. Megaco call flow is depicted graphically in a ladder diagram.
- **T.38 Re-assembly** - This feature helps in reassembling the fragmented frame and to identify the type of frame. Details of the frame are displayed in T.38 Analysis ladder diagram.

Enhancements and Bug Fixes

- **New - WinPcap 4.0.2 Support** - This is the version used in the current version of PacketScan™ application.
- SIP Parser has been enhanced to handle "multipart/mixed" content type in SIP headers.
- **HDL File Conversion utility**
 - This has been enhanced to identify and eliminate the duplicate frames in the captured file.
 - HDL File Conversion utility identifies few protocols (SIP/RTP/MGCP or Megaco) of the frame based on the port number. Now, user can define his own port numbers used for corresponding protocols, which helps in stamping protocol for the frame that use port numbers other than default port numbers.
- MOS scores displayed in PDA Summary View matches with the MOS score in the PDADetail View.
- A problem with parsing large Authentication (SIP) headers is solved.

2.0.56

May 29th, 2009**New Features****• Registration Summary View:**

- PacketScan™ Traffic Analyzer is enhanced with new tab to view 'Registration Summary'.
- Capable to handle SIP registration and provides summary of each registration.
- Registration Filters - All, Active and Completed Registration filters are provided.
- Registration Active Graph - This Displays a graph for number of active registration over a period of time in real-time.
- Registration Trace - This displays call flow of selected Registration requests, and on selecting each message, displays the corresponding frame detail.

- **PDA Summary View** - PDA Summary view is enhanced with Call Summary – Signaling & Audio Parameters tab. This tab displays the signaling and audio parameters of the selected call for SIP, H323 and RTP calls.

Enhancements and Bug Fixes

- Tones/Digits were being detected with high power on TDM side. The power correction of – 6.18 for MuLaw, -6.15 for Alaw and –6.2 for all other codecs is applied.
- PDA Summary View is enhanced to calculate and display the percentage (along with packets count) of Discarded, Missing, Duplicate and Out of Sequence packets.
- Following additional Sip Performance Metrics are provided in statistics counters for total Sip calls -
 - Session Establishment Ratio (SER)
 - Session Effective Establishment Ratio (SEER)
 - Session Defects
 - Ineffective Session Attempts (ISA)
 - Session Completion Ratio (SCR)
- For each sip call, Session Request Delay and Session Disconnect Delay values are displayed in call summary –signaling & audio parameters tab.
- **Save Call**
 - Save Call in PDA is enhanced to save the selected call in Ethereal format i.e. *.pcap
 - Call summary parameters of the selected call to be saved as *.rtf file is provided. Call Summary file contains all details of the call along with source and destination port and IP pair used for traffic channels. This information is required to give Fax call traces to the GLInsight™ software.
- **Trigger and Action Settings:**
 - Enhanced to filter SIP calls with fax calls as criteria
 - Save call feature allows users to save captured calls in PCAP file format and save Call Summary in *.rtf file format.
 - Earlier the file name mask used to have *.hdl extension, and now this extension is removed. The extension will be automatically appended internally depending upon the file type chosen (Pcap/hdl/rtf).
- **HDL File Conversion Utility**

HDLFileConversion.exe is enhanced to support for Linux cooked file format. This problem has been corrected by adding the pseudo source and destination MAC address and retain the correct IP / (higher layer) information. This helps to correctly convert the files captured using other software that work on "Linux cooked-mode capture" feature & then decode in PacketScan™.

2.0.55

<p>March 6th, 2009</p> <p>New Features</p> <ul style="list-style-type: none">• PDA Detail View is enhanced with more graphs to provide statistics during a call such as R Listening, R Conversational, R-G107, R-Nominal values, MOS CQ, MOS PQ, and MOS Nominal values. Also included are detailed burst metrics, delay metrics and a pie chart to compare different statistics such as Good Quality, Packets discarded, Echo level, Packet loss, and Regency against total Packets for each individual session. <p>Enhancements and Bug Fixes</p> <ul style="list-style-type: none">• Fax call handling<ul style="list-style-type: none">➤ Now PacketScan™ handles media negotiation for T.38 traffic in SIP calls. This helps in identifying the T.38 frames associated with the call.➤ Fax Call filter feature added in PDA Summary View identifies the fax calls, and displays only fax sessions. Fax sessions are marked with symbol 'F'➤ T.38 Fax Ladder diagram updated with better display➤ Save Call feature now saves all the T.38 frames in a fax session to HDL file.• Call graph are now provided for H.323 calls and is updated with better display• Protocol Standard Mask settings enhanced to avoid registry changes.• Handled "Jump out of limit" (in sequence no) case in calculating gap, jitter and delay in Detail View.• Now the 'Inter Arrival Jitter' measurement is displayed in msec instead of RTPtimestamp units.• PacketScan™ is updated to be compatible with new glssplib changes.• In earlier versions, PacketScan™ used to process SID (for G711 app 2) frames with 'Level' and 'Spectral information' (i.e. 11 byte SID frames). Now PacketScan™ is capable of processing SID frames with only 'Level' information also. (i.e. 1 byte SID frames). This was requirement from Ditech.• HDL File Conversion utility is enhanced to convert .pcap file captured on UNIX machine to .hdl format. For ethereal files, byte order is different in files captured in UNIX and Windows.	2.0.54
<p>Oct 24th, 2008</p> <ul style="list-style-type: none">• Enhanced Call Graph and T.38 Ladder diagram display.• Supported decode of SMPP (Short Message Peer to Peer) protocol.	2.0.52
<p>Oct 15th, 2008</p> <ul style="list-style-type: none">• T.38 analysis: Now we decode T.38 frames received over VoIP calls and we provide ladder diagram for T.38 traffic flow.• Call Graph: Now we provide call graph (ladder diagram) for VoIP calls. Currently only signaling frames are displayed.• Dynamic Payload Map Table: Now Payload Map Table contains all supported codecs (both static and dynamic payloads). This helps in setting payload type number for all codecs for auto detected traffic.	2.0.51
<p>Feb 29th, 2008</p> <ul style="list-style-type: none">• Validation of REFER message was added.• Problem with Megaco message decoding was fixed.• EVRCB codec added.• SID packets with comfort noise payload are added to Detail View in PDA.• Appending '*' to codec name in PDA for dynamic codec session bug fixed. It was not appending '*' if RTCP packet is received on the session before any RTP packet.• Works with new acm files.	2.0.50

Feb 29th, 2008	2.0.48
<ul style="list-style-type: none"> • INI Decode Options allows configuring SipProt.ini file to customize according to decoding options. • Calculates RTD for SIP calls and displays the Max/Min RTD value and average RTD value in milliseconds in traffic analyzer summary view. • Supports both RFC 4733 and RFC 2833. • PacketScan™ is now supported on Windows® Vista OS 	
July 26, 2007 <ul style="list-style-type: none"> • Wave graph Supports three options display mode to view the wave graph. <ul style="list-style-type: none"> • Left\Right – left traffic overlaps right • Right\Left – right traffic overlaps left • Separate – left and right traffic are displayed in separate wavegraphs 	2.0.45
June 14, 2007 <ul style="list-style-type: none"> • New audio and video codecs added G722, G722.1, SPEEX_WB, AMR_WB, ISAC and EVRC. ISAC codec requires separate license. 	2.0.40
April 11, 2007 Supports to add more than ten IP address and port for each layer in Capture Filter.	2.0.38
iLBC – Corrects a jitter buffer issue.	2.0.35
<ul style="list-style-type: none"> • R factor supported for more codecs R factor is now supported for more audio and video codecs: Mulaw, Alaw, G726 (40 kbps), G726 (32 kbps), G726 (24 kbps), G726 (16 kbps), GSM610, G729, G729B, AMR, ILBC (20 msec), ILBC (30 msec) and SPEEX. 	2.0.34
<ul style="list-style-type: none"> • EVRC and ILBC Codec support EVRC codec supports both header free and bundled packet format and ILBC supports both 20 msec and 30 msec packet size. 	
October 3rd, 2006 <ul style="list-style-type: none"> • Record audio and video data of a session to a file in QuickTime format PacketScan™ can monitor video calls and display both audio and video RTP streams in summary view. Video calls will be marked with symbol “V” at the left corner. There is a provision to view the video calls using filter Users can record video call to a file in QuickTime format which can be viewed by VLC player (To download VLC Media Player 0.8.4a click here: http://www.download.com/VLC-Media-Player/3000-2200_4-10497763.html). Record video option is available for both Auto Detected RTP Calls and SIP Calls. Supported Video Codecs are : H263+ H263++ CIF 190 kbps H263++ CIF 350 kbps H263++ CIF 512 kbps H263++ QCIF 128 kbps H263++ QCIF 64 kbps H263++ QCIF 80 kbps H.263 is a video codec designed by the ITU-T as a low-bit rate encoding solution for videoconferencing. It was first designed to be utilized in H.324 based systems (PSTN and other circuit-switched network videoconferencing and video telephony), but has since found use in H.323 (RTP/IP-based videoconferencing), H.320 (ISDN-based videoconferencing), RTSP (streaming media) and SIP (Internet conferencing) solutions as well. 	

<p>H.263 was developed as an evolutionary improvement based on experience from H.261, the previous ITU-T standard for video compression, and the MPEG-1 and MPEG-2 standards. Its first version was completed in 1995 and provided a suitable replacement for H.261 at all bitrates. It was further enhanced in projects known as H.263v2 (also known as H.263+ or H.263 1998) and H.263v3 (also known as H.263++ or H.263 2000).</p> <p>QCIF - Quarter <i>Common Intermediate Format</i>, a videoconferencing format that specifies data rates of 30 frames per second (fps), with each frame containing 144 lines and 176 pixels per line. This is one fourth the resolution of Full CIF</p> <p>CIF - A video format used in videoconferencing systems that specifies a data rate of 30 frames per second (fps), with each frame containing 288 lines and 352 pixels per line.</p> <ul style="list-style-type: none"> • New* - WinPcap 3.1 Support - This is the version used in the current version of Ethereal so real-time traffic can be monitored on computers where Ethereal has also been installed. 	
<p>VQMon based R-factor and MOS scoring including graphical and statistical reports of RTP streams has been added. Both an overall summary graph of MOS values and a per call score as part of Call Detail Record reports. This includes a user configurable Jitter Buffer Emulator, that can be set to static or dynamic depending upon the requirements. For both options, users can set Minimum, Nominal, and Maximum buffer size in msec. The MOS of an individual call can be monitored real-time from the PDA screen.</p>	2.0.29
<ul style="list-style-type: none"> • Trigger Actions This feature allows users to enter a trigger, based on user agent and other events such as packet loss or MOS values, that will output an HDL file with call related packets or WAV files with the actual RTP. There are various file mask conventions including time-date formats or even append sequence numbers. This also includes different audio format types such as a stereo file of each side, a separate file for each side, or a combined left right file. 	2.0.29
<p>Trigger actions can also be performed using H.323 when entering the called or calling party.</p>	2.0.29
<ul style="list-style-type: none"> • CDR Capture to central Oracle Database PacketScan™ can be used as a remote monitor probe or as part of a distributed matrix with CDR or summary data for each call sent and stored in an Oracle database. 	2.0.29
<ul style="list-style-type: none"> • Alternate Packing Formats PacketScan™ can be configured to properly decode G.726 RTP or AAL2 packing types and AMR packing formats. 	2.0.29
<ul style="list-style-type: none"> • Dynamic Payload Mapping Dynamic payload assignments can vary according to implementation. This includes various rates of G.726 and AMR coding. The default is assigned by the destination. 	2.0.29
<ul style="list-style-type: none"> • Protocols Supported Supports SIP 3261 and 2543, Megaco (H.248)3015 and 3525, and H.323. 	2.0.29
<ul style="list-style-type: none"> • Periodic Trace Saving Options Used to save the capturing frames in the required format such as trace files with user-defined prefixes, user-specified directory, creating new trace files after a specified limit has reached, restrict or recycle after specified number of captured trace files. 	2.0.29