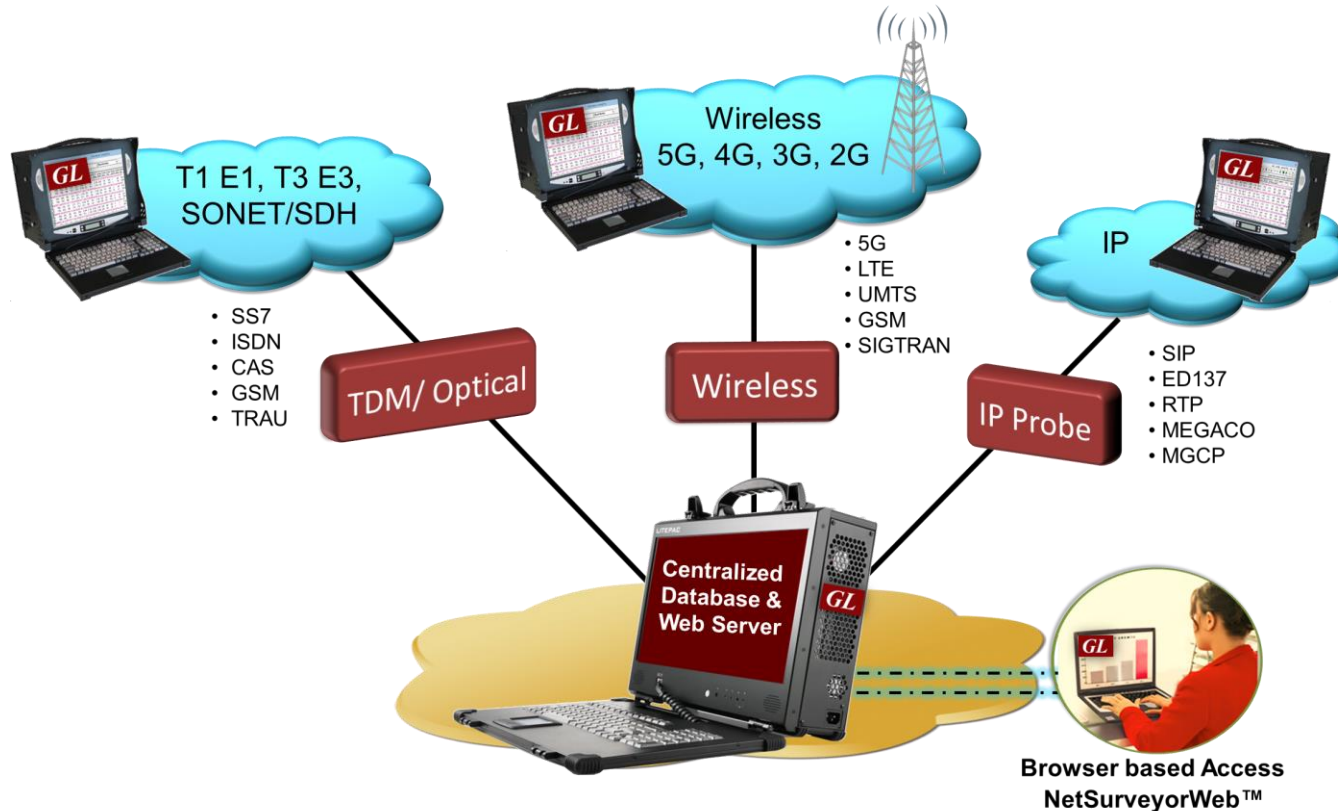

Network Surveillance System



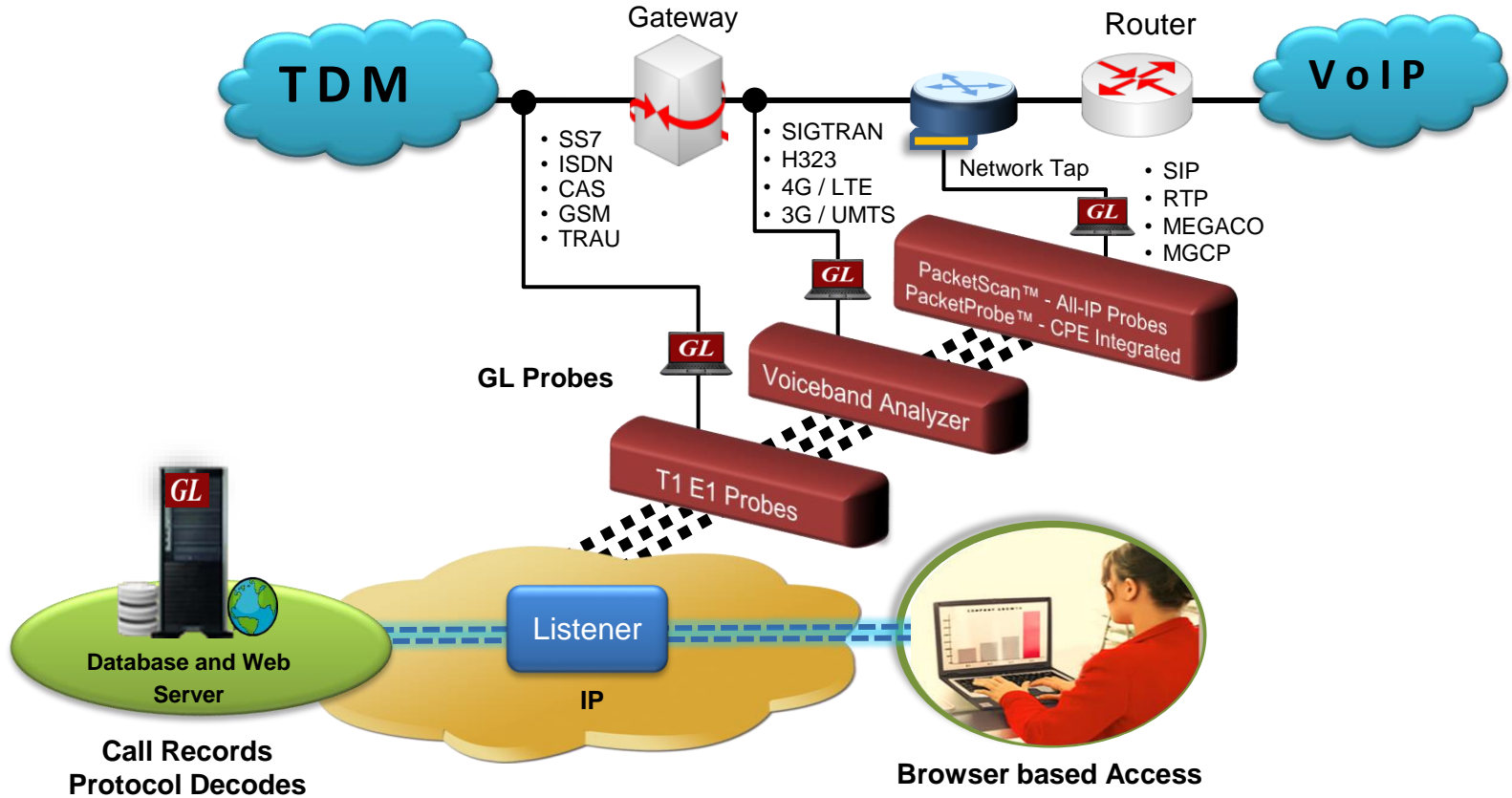
818 West Diamond Avenue - Third Floor, Gaithersburg, MD 20878
Phone: (301) 670-4784 Fax: (301) 670-9187 Email: info@gl.com
Website: <https://www.gl.com>

NetSurveyorWeb™ Network Surveillance System



Browser based Access
NetSurveyorWeb™

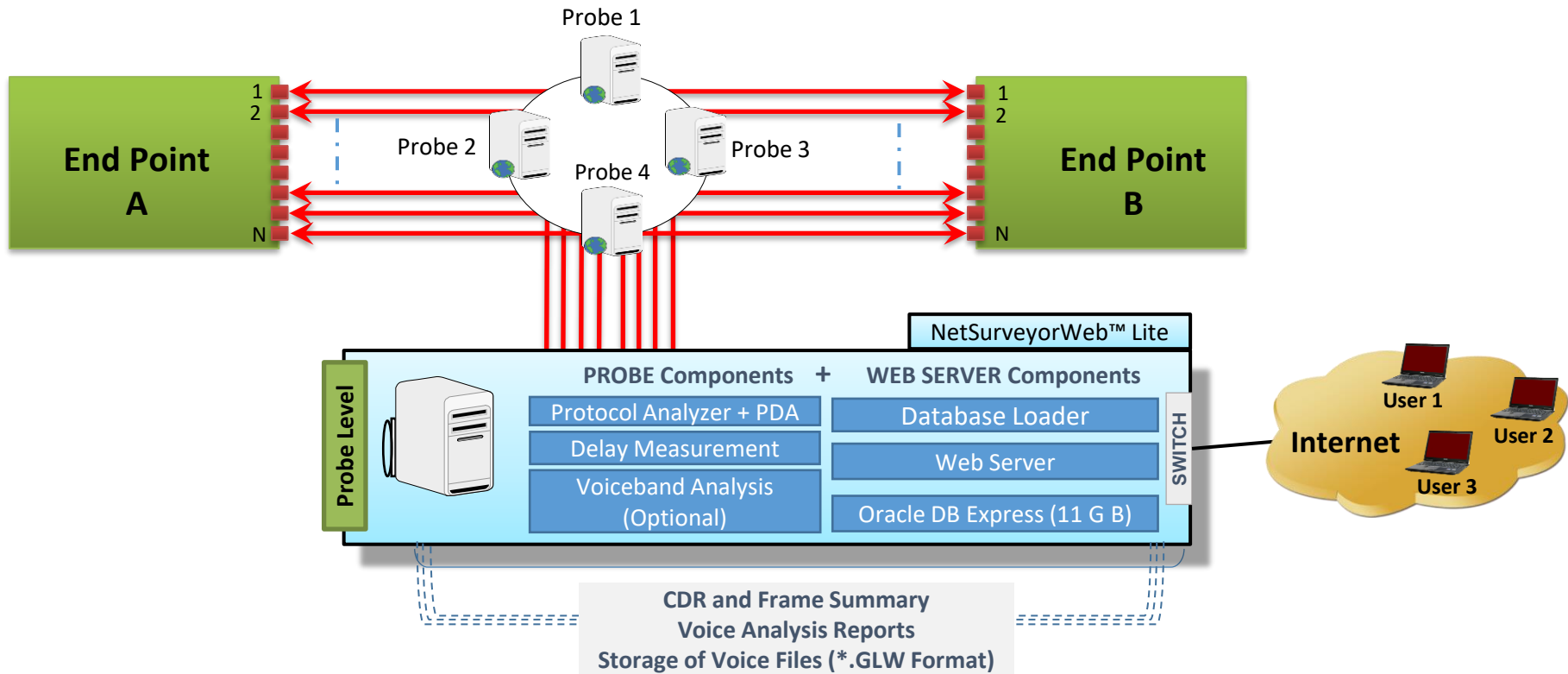
Network Overview



NetSurveyorWeb™

- Scalable and Flexible Architecture
- Multiple Probes (T1 E1/IP) non-intrusively monitor at remote locations
- Probes Feed Data to Centralized Database (Oracle, My SQL)
- Real-time and/or historical data
- Multi-user support, and user-friendly interface
- Accessible via browser based clients (locally or remotely)
- Provides database query methods to query captured results, and gather status, statistics, and events
- Results are displayed both in tabular and graphical formats
- Provides protocol signaling, traffic, and call detail records (CDRs)
- Perform filter and/or search for specific information

NetSurveyorWeb™ Lite Network Architecture



NetSurveyorWeb™ Lite Features

- Flexible report generation
- Ability to identify and analyze CDR using Key Performance Indicators (KPI's)
- Ability to listen to the Voice calls
- Set alarm conditions and generate alerts of different types like email alert, visual alert, audible alert, or even log into tables for future analysis
- Reports are displayed both in tabular and graphical formats; customize reports and graphs based on SQL queries
- Graphs provided for Call Completion Ratio, Answer Call, Listening MOS, Conversational MOS, Failure Cause, and Call Duration
- Real-time data displays information such as called number, calling number, source & destination IP address, RTP packet details, call flow graph, frame decodes and more
- Apply single or multiple filters for data analysis; use logical operators between filters
- Historical data retention up to 9 GB
- Ability to export both graphical and tabular reports view as PDF
- Ability to export the call detail records displayed based on time filter or record index as PDF and CSV

Comparison of NetSurveyorWeb™ and NetSurveyorWeb™ Lite

Requirements	NetSurveyorWeb™	NetSurveyorWeb™ Lite
Use Case	<ul style="list-style-type: none">• Centralized reporting, analysis and surveillance system for geographically distributed networks• Works with multiple protocol analyzer probes• Unlimited Users/Nodes and data storage• Suitable for network wide monitoring and very high volumes of calls	<ul style="list-style-type: none">• A simple cost-effective reporting and analysis add-on to individual protocol analyzers• PKV169 add-on to individual protocol analyzers enhances capability to handle larger volume of data, filter for specific calls, build custom statistics and KPIs, automate and graphical analysis features to analyze the call detail records (CDRs) in depth• Adds features which are not available in protocol Analyzers• Limited historical data retention up to 9 GB

Comparison of NetSurveyorWeb™ and NetSurveyorWeb™ Lite (Contd.)

Requirements	NetSurveyorWeb™	NetSurveyorWeb™ Lite
Capacity	<p>Supports high speed data captures from multiple VoIP, TDM, and Optical probes.</p> <p>Modular system configuration permits:</p> <ul style="list-style-type: none"> • STM-4 capacities for T1 - up to 16,128 voice calls <ul style="list-style-type: none"> ➢ (STM-4 > 336 T1's x 24 x 2 = 16,128 DS0s) • STM-4 capacities for E1 - up to 30,240 voice calls <ul style="list-style-type: none"> ➢ (STM-4 > 252 E1's x 30 x 4 = 30,240 DS0s) • T3 E3 TDM capacities per 2U 19" rack for 8,064 voice calls • IP capacities over 10 GigE - up to 100,000 voice calls 	<ul style="list-style-type: none"> • Limited by data retention capacity
Additional Features	Build customized KPIs, define complex filters, perform quick search for calls of interest, and set alerts based on user defined criteria.	Build customized KPIs, define complex filters, perform quick search for calls of interest, and set alerts based on user defined criteria.
PC	Includes Standard Server-Grade Computing Platform Includes Oracle 11g Standard	To be deployed on Probe PC itself. Includes Oracle 11g Express Edition Note: PC not included with this item.

Applications / Value

- Remote Protocol Analysis and Troubleshooting
- Traffic Optimization Engineering
- Call Detail Records, Statistics
- Revenue and Billing Verification
- Alarm Monitoring and Logging
- Quality of Service Measurements

The screenshot displays a network protocol analyzer interface. The top navigation bar includes 'Graph view', 'Details view', 'Debug Summary(Export as CSV)', and 'Decode Type: SS7 ITU SS7 ANSI [Back](#)'. The main window is split into two panes. The left pane shows a sequence of messages between IP addresses 5.33.205(23) and 215.5.6(23):

- Initial Address: 5.33.205->215.5.6
- Address Complete: 215.5.6-<5.33.205
- Call Progress: 215.5.6-<5.33.205
- Answer: 215.5.6-<5.33.205
- Release: 215.5.6-<5.33.205
- Release Complete: 5.33.205->215.5.6

The right pane shows the decoded protocol details for the selected message:

```
Card2 TimeSlot=23 Frame=0 at OK 10:31:20.962625 Len=65
HDLC Frame Data + FCS
===== MTP2 Layer =====
BSN = .1000000 (64)
BITB = 1..... (1)
FSN = 1.010111 (87)
FTB = 1..... (1)
LI = ..111100 MSU Format
===== MTP3 Layer =====
Service Indicator = ...0101 ISDN User Part
Priority Code = ..00... Priority Code 0
Sub-service field = 10..... National Network
DFC = 215.5.6(00000110 00000101 110
OPC = 5.33.205(11001101 00100001 00
Signalling Link Selection = 01110100 (116)
===== ISUP Layer =====
Circuit Ident Code (CIC) = 11000110 ..000001 (454)
Message Type = 00000001 Initial Address
Mandatory Fixed Parameters
Nature Of Connection Ind. Parameter
Satellite indicator = .....00 No satellite circuit
Continuity check indicator = ...00.. Continuity check not
Echo control dev.ind(NatureofCon.Ind) = ..1.... Outgoing half echo c
Forward Call Indicators Parameter
Incoming international call Indicator = .....0 Not an incoming inte
End-to-end method indicator = .....00. No end-to-end method
Interworking Indicator = ...0... No interworking enco
IAM segment.ind(ForwardCallInd) = ...0... No indication
ISDN User Part Indicators = ..1..... ISDN User Part used
ISDN User Part Preferences Indicators = 00..... ISDN User Part prefe
ISDN User Part Access Indicators = .....0 Originating Access n
SCCP Method Indicator = .....00. No Indication
```

Few References

- US Postal Service - TDM & Packet Monitoring Solution
 - 600 T1 lines monitored
 - Over 100 LANs monitored
- US Air Force - SS7 & ISDN Monitoring Solution
 - 52 T1 E1 ISDN & SS7 with Voiceband Traffic
- FairPoint Communications - SS7 Monitoring Solution
 - 56 T1 SS7 - still growing
- TDM & Packet Solutions
 - Hundreds to thousands sold every year
 - Almost every major equipment manufacturer and carrier in the worlds

Platforms



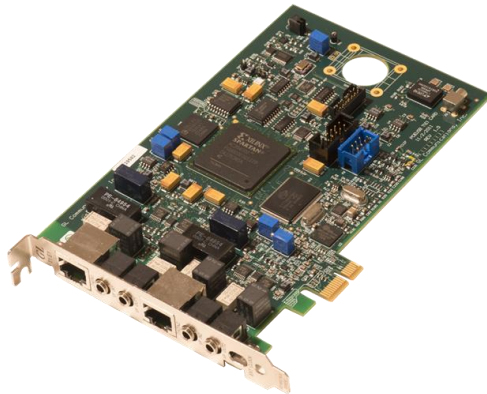
Front Panel

Back Panel

**tProbe™ - Portable USB based T1 E1 VF
FXO FXS and Serial Datacom Analyzer**

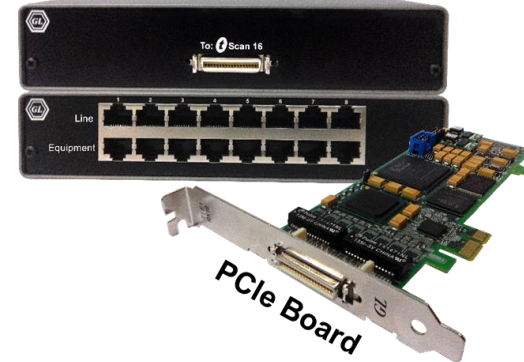


Quad / Octal T1 E1 PCIe Card



Dual T1 E1 Express (PCIe) Board

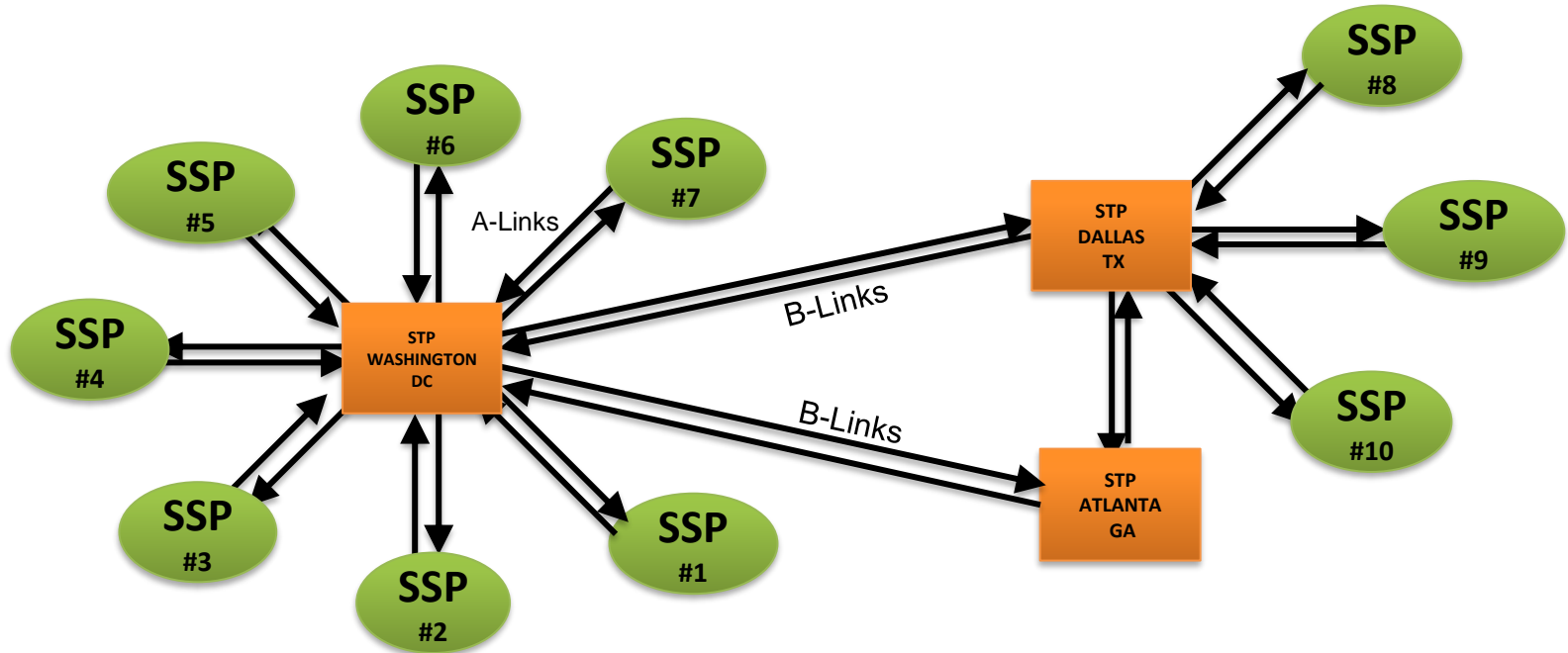
**tScan16™ with
16-port T1 E1 Breakout Box**



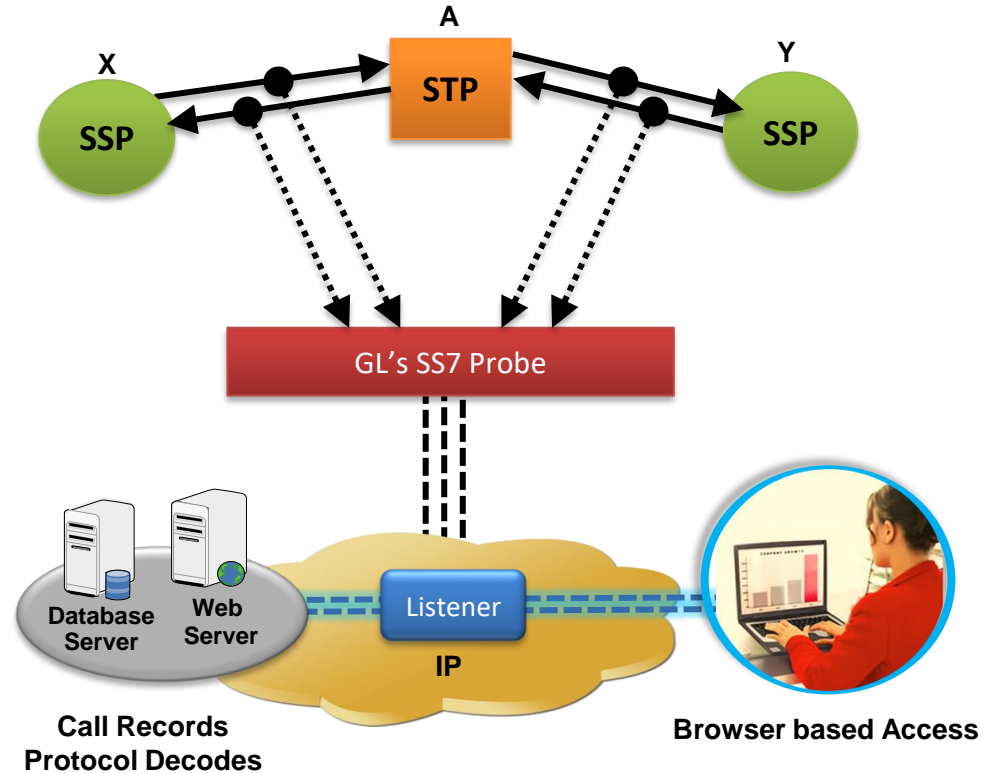
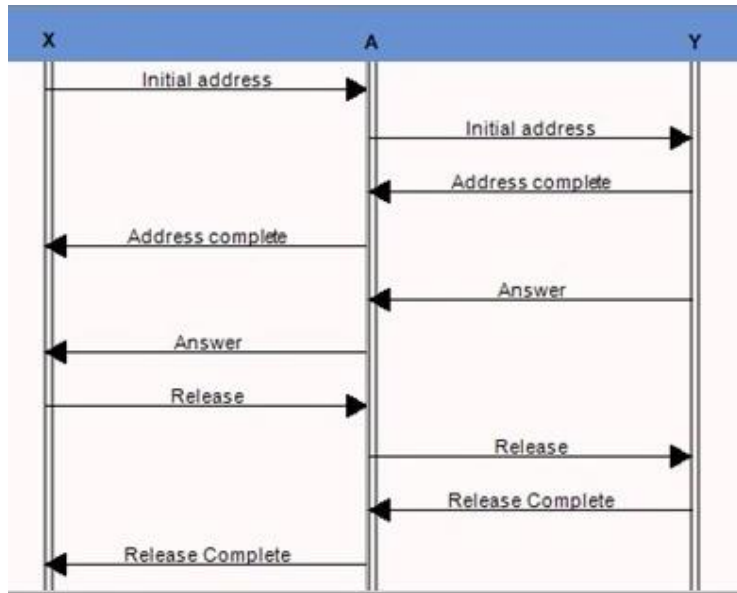
PCIe Board

Complex SS7 Networks

Actual Customer Example



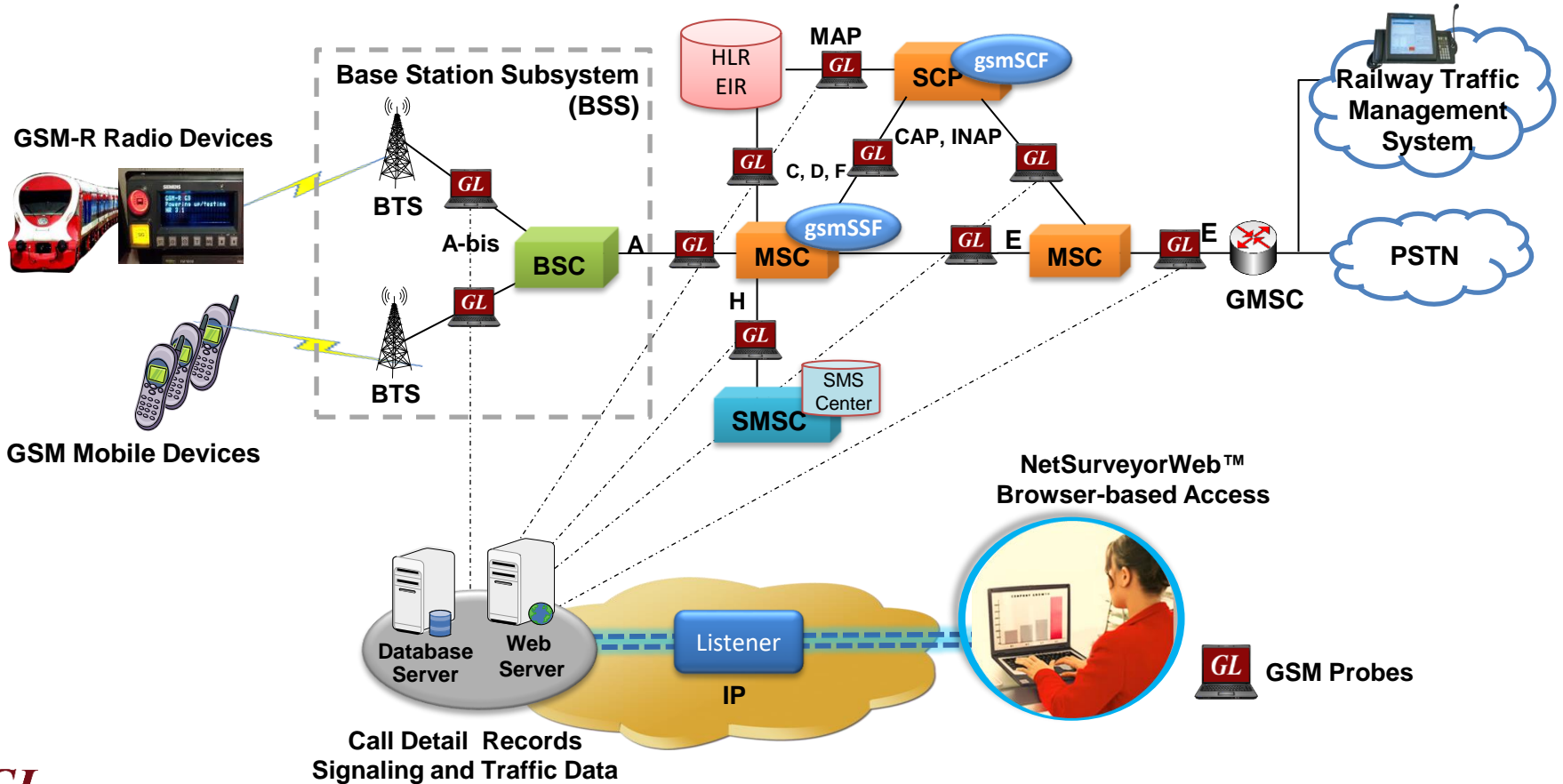
SS7 End-to-End Call Flow



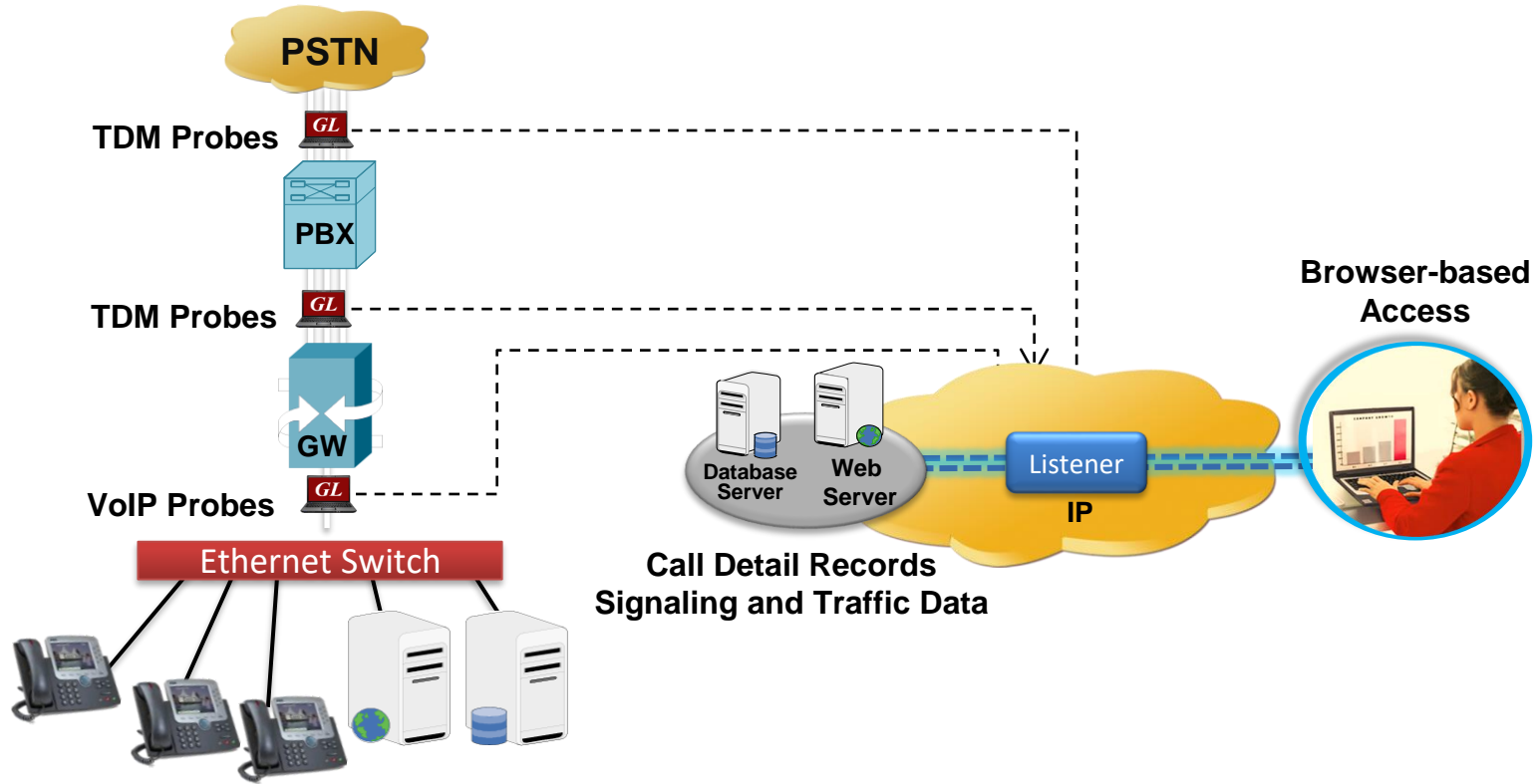
SS7 Probe Characteristics

- Scalability can be achieved with Multiple T1 E1 Cards per PC
- Multiple Link Sets Per T1 E1 (through Digital Cross Connect Grooming) – multiple 64 kbps signaling channels per T1 E1 can be monitored simultaneously by grooming through a digital cross-connect
- T1 E1 Cards can also be connected non-intrusively in Monitor or Bridge Modes, or alternatively the data can be looped through the cards
- 50 to 100 SS7 signaling links per 4U rack PC probe
- SS7 Redundancy supported

Wireless Network Surveillance GSM TRAU

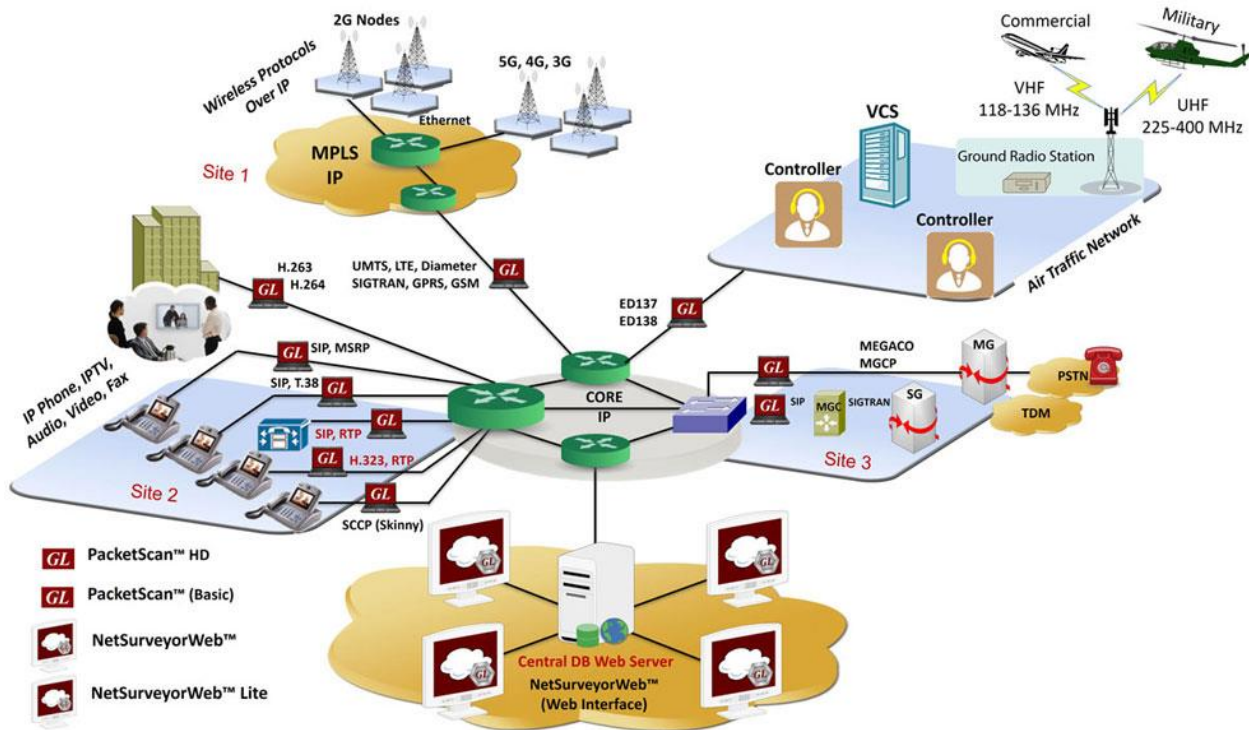


Hybrid Network Surveillance SIP-TDM (ISDN/SS7)



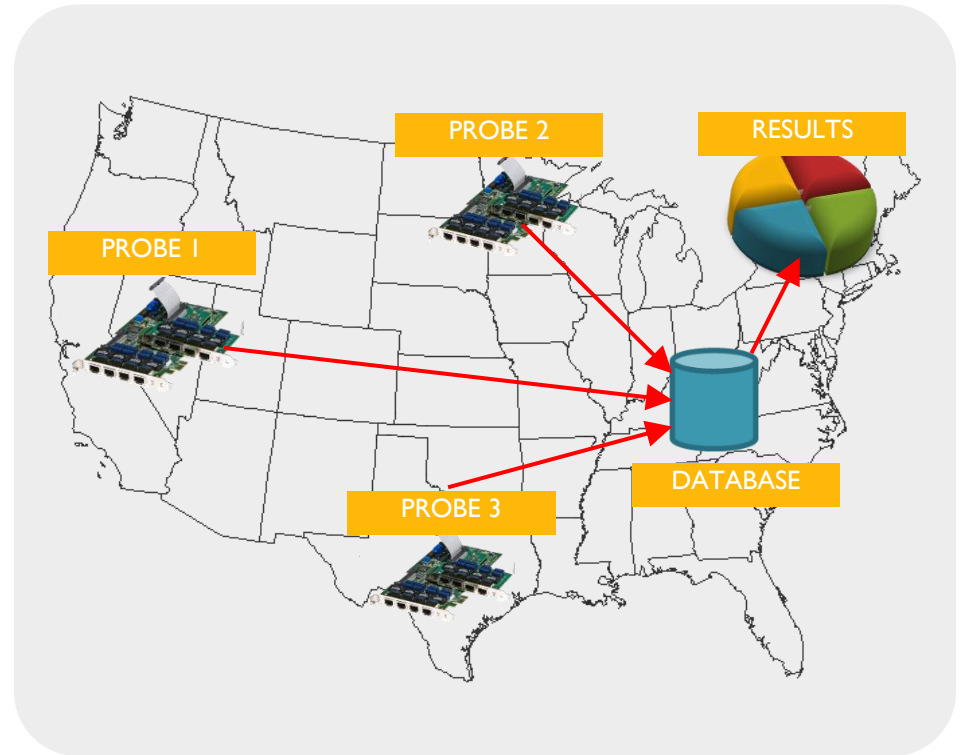
PacketScan™

VoIP Traffic Analysis 5G/ SIP / H323 / MEGACO / MGCP / RTP / RTCP Analysis

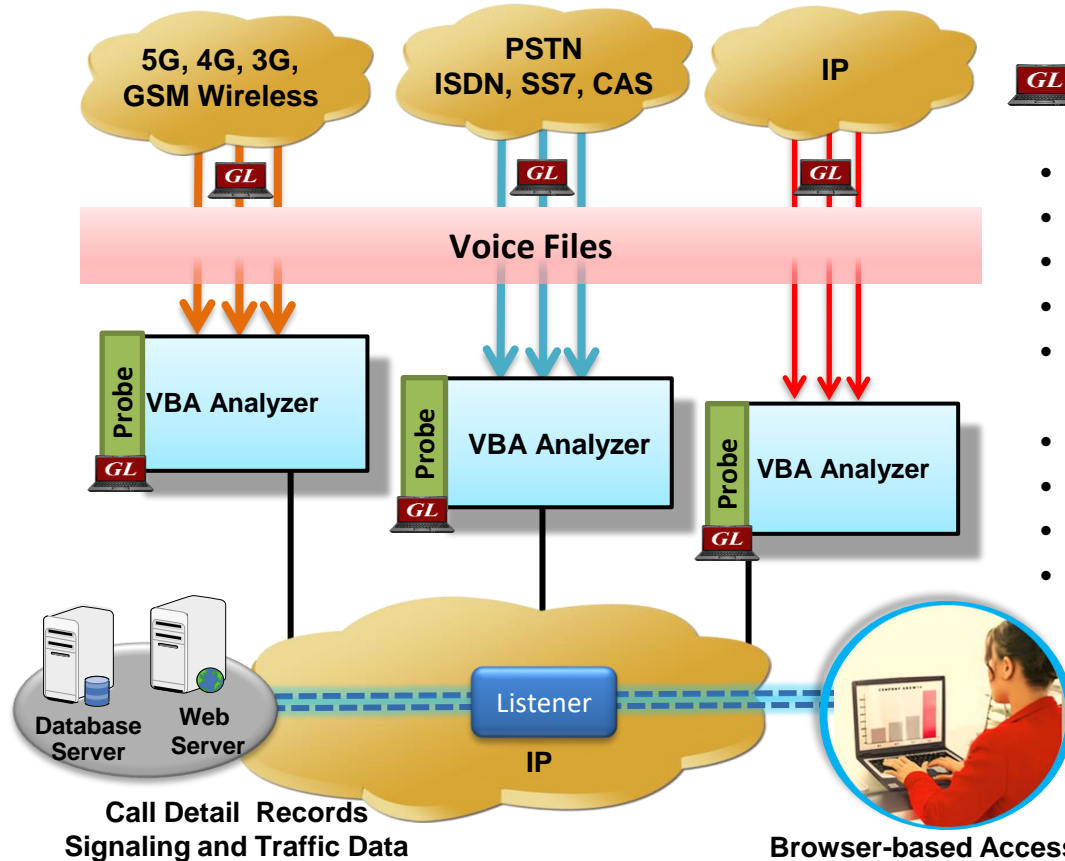


T1 E1 Physical Layer Monitoring

- Retrieve and display physical link
- Status using the probes deployed world-wide
- Sync Loss
- Carrier Loss
- Blue Alarm
- Yellow Alarm
- AIS Alarms



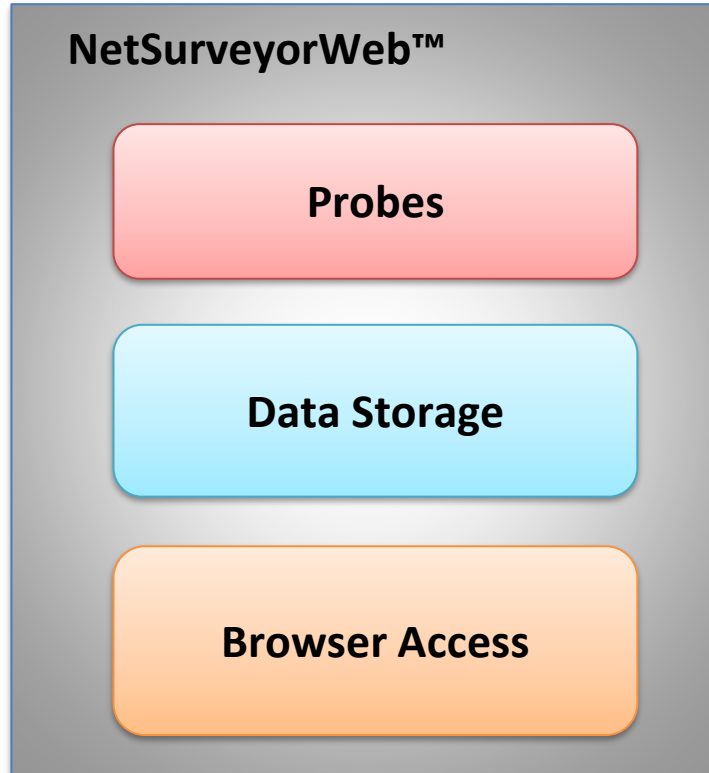
Network Wide Voice Quality



GL Probes

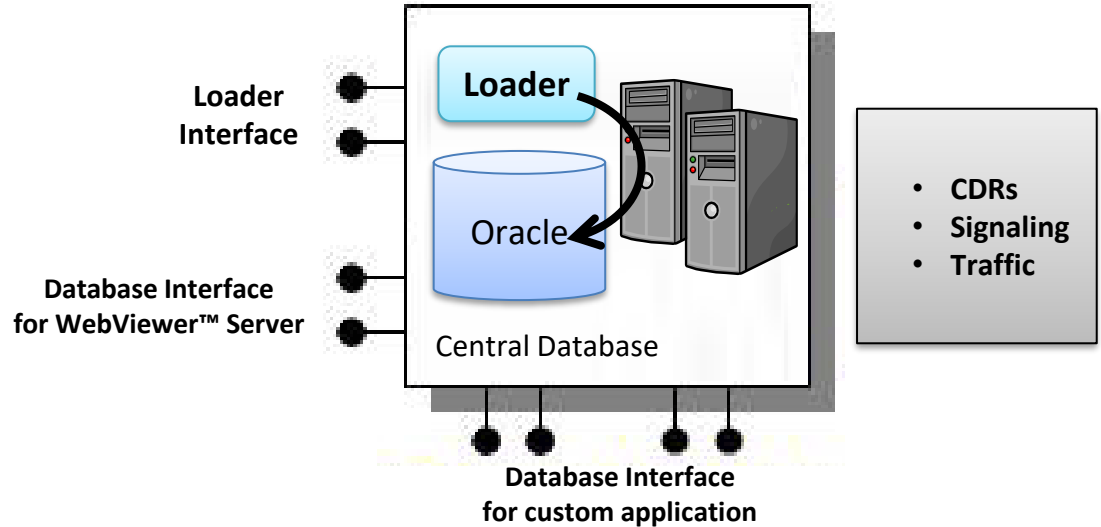
- Active Speech Level
- Active Factor
- RMS Factor
- Noise Level
- Max, Min & Absolute Sample values
- DC Level
- Echo Return Loss
- Echo Delay
- Echo Dispersion

Three Tier Architecture

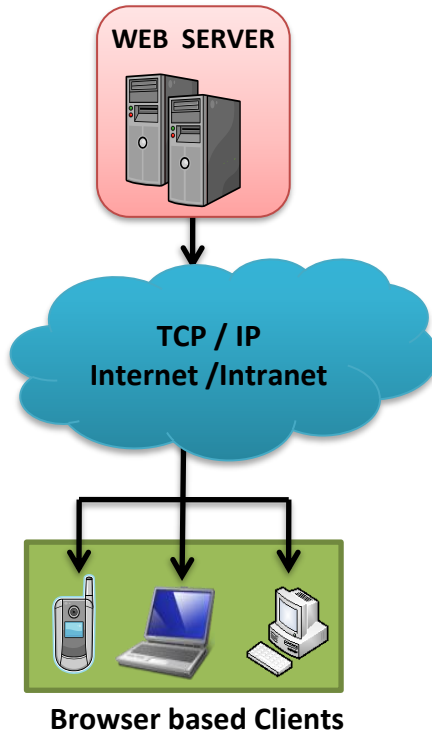


Data Storage

- A listener application is co-hosted with the database server running on the Data Layer, collecting data posted by the probes
- Supports MySQL and Oracle Database
- Stores the CDRs and Signaling Summary data



Browser Based Access



The screenshot shows a web browser window with a blue header bar containing the word "Login". Below the header, there are two input fields: "User Name" with the text "gl" and "Password" with two black dots. To the right of the password field is a blue button labeled "Login" and a blue underlined link labeled "Forgot Password?". Below these fields is another blue button labeled "Login as guest".

- Access captured data over the web using an application such as GL's NetSurveyorWeb™

NetSurveyorWeb™

GL NetSurveyorWeb



Protocol Type VOIP (SIP & H323)

My Account



GI GI

Data

Reports

Alarms

Users

System Status at 2020-07-06 12:35:46



Quick CDR

All Calls

Failed Calls

Passed Calls

Poor LMOS

Good LMOS

Longer Duration Calls

Voice Calls

Custom CDR

CDR

MOS Score

Good LMOS

TestKPI

AnswerCalls

Default KPIs

Basic KPIs

MailBox

Config

Admin

Utilization

Quick CDR \ Longer Duration Calls

Date: 2020-06-06 2020-07-06 Time: 00:00:00 23:59:59 Ok

Today Yesterday Last 7 Days Last 30 Days All

Selection of customized Date and Time range.
View data for last 7 days, last 30 days, yesterday, or
"All" option to view all the available data

End to End Callflow Actions Query Execution Time : 0.63960 Seconds

Quick Search: Trafficsumid 60



Page Size: 20 Sort Order: STARTTIME DESC

	SINo	Calling Number	Called Number	Starttime	Duration	Listening Mos1	Listening Mos2	Payload1	Total Packet #1	Total Packet #2		
<input type="checkbox"/>	+	Call Flow	1	13016704784@px11.nexvortex.com	7039272626@px11.nexvortex.com	2020-07-02 11:51:36.641	00:44:46.297	0	0	PCMU/8000	0	0
<input type="checkbox"/>	-	Call Flow	2	163@192.168.20.45	97039272626@192.168.20.45;user=phone	2020-07-02 11:51:35.827	00:44:46.264	3.91	3.91	G722/16000	134932	134925
	SSRC#	Payload	Total Packet Count	Missing Packet Count/(%)	Dupl. Packet Count/(%)	Re-ordered Packet Count/(%)	Packets Discarded/(%)	Conversational MOS/R	List			
	1960515141	G722/16000	134932	1/0	0/0	0/0	0/0	3.91/96				
	1921963389	G722/16000	134925	0/0	0/0	0/0	0/0	3.91/96				
<input type="checkbox"/>	+	Call Flow	3	13016704784@px11.nexvortex.com	8323607004@px11.nexvortex.com	2020-07-02 11:51:02.433	00:45:12.418	0	0	PCMU/8000	0	0
<input type="checkbox"/>	+	Call Flow	4	163@192.168.20.45	98323607004@192.168.20.45;user=phone	2020-07-02 11:51:01.604	00:45:12.304	3.91	3.91	G722/16000	135807	135815
<input type="checkbox"/>	+	Call Flow	5	13016704784@px11.nexvortex.com	8668994679@px11.nexvortex.com	2020-07-02 09:01:14.828	01:28:08.250	0	0	PCMU/8000	0	0
<input type="checkbox"/>	+	Call Flow	6	318@192.168.20.45	98668994679@192.168.20.45	2020-07-02 09:01:14.003	01:28:08.115	0	3.91	G722/16000	0	8
<input type="checkbox"/>	+	Call Flow	7	13013461514@67.231.1.112	13016704784@104.219.163.74	2020-07-01 15:39:53.612	00:33:12.660	0	0	PCMU/8000	0	0
<input type="checkbox"/>	+	Call Flow	8	13472284118@67.231.1.112	13016704784@104.219.163.74	2020-07-01 15:32:16.631	00:40:51.941	0	0	PCMU/8000	0	0
<input type="checkbox"/>	+	Call Flow	9	12405514111@67.231.5.112	13016704784@104.219.163.74	2020-07-01 15:31:15.552	00:41:52.072	0	0	PCMU/8000	0	0
<input type="checkbox"/>	+	Call Flow	10	13016704784@px11.nexvortex.com	18668994679@px11.nexvortex.com	2020-07-01 11:15:51.127	00:34:34.363	0	0	PCMU/8000	0	0

Custom Column Views


Custom Column Views

 Enable Alarms

My Profiles

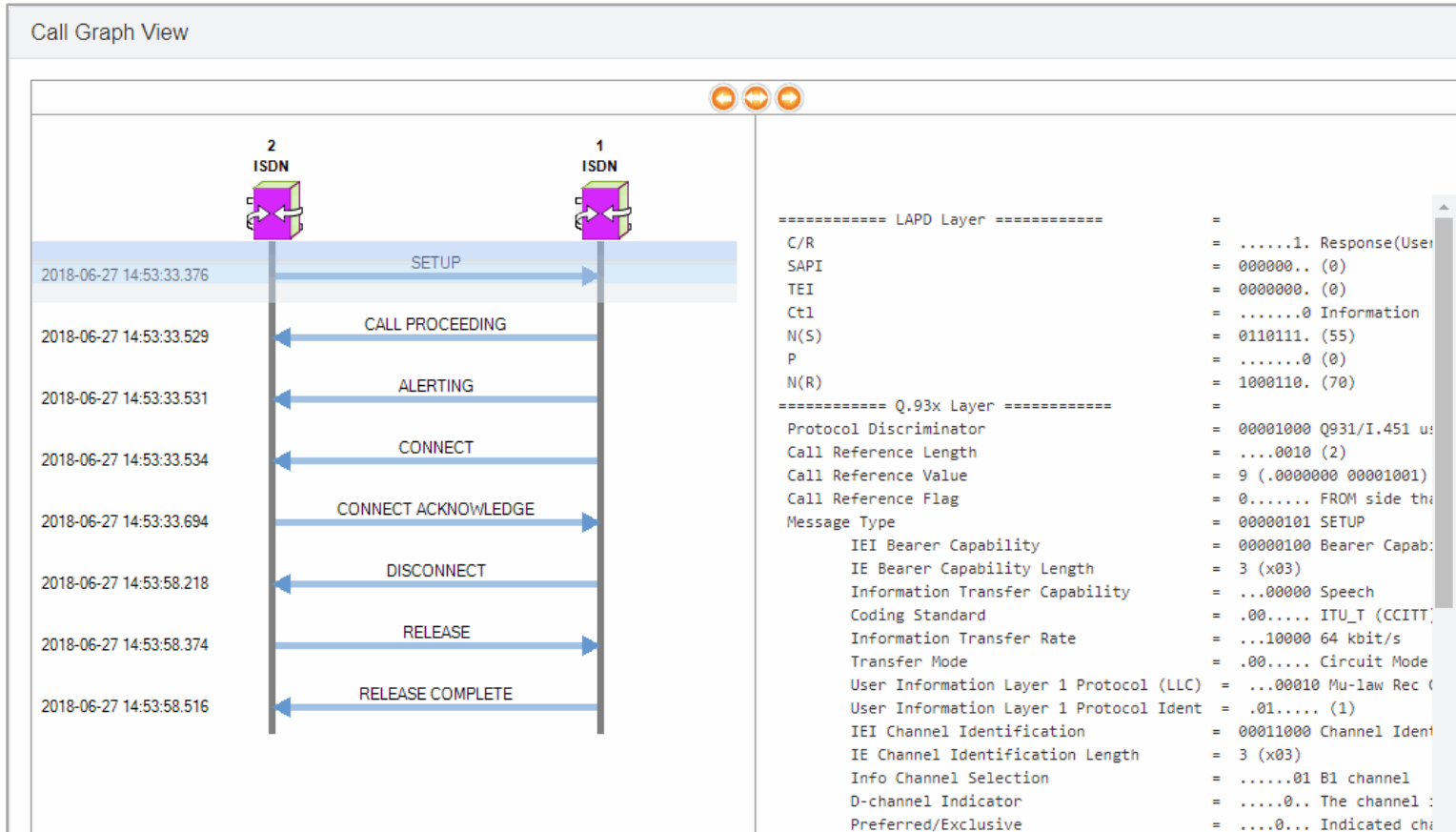
New Profile Name

Available Columns		Default / Selected Columns	
Probename		Trafficsumid	
Called Number	↑	Calling Number	
Call Success		Starttime	
Failure Cause		Duration	
Post Dial Delay(ms)		Call ID	
Session Disconnetc Delay(ms)		Filename	
Rtp Origination Ippaddress			<input type="button" value="Move Up"/>
Rtp Destination Ippaddress			<input type="button" value="Move Down"/>
Sip Origination Ippaddress			
Sip Destination Ippaddress			
Error Code			
Protocol Type			
Ssrc #1			
Ssrc #2	↓		
Payload1			

 **GL**
Communications

24

Ladder Diagram and Decode View



Custom Filter

Filters

New Profile Name

Basic Expression

[Add Filter](#) [Clear All](#) [Show Expression](#)

Filter1 **AND** ✕

<input type="text" value="Listening Mos1"/>	EqualTo	<input type="text" value="3.95"/>	And	<input type="button" value="Add Condition"/>	✕
Ex: 4.18 (or) 2.12					
<input type="text" value="Listening Mos2"/>	EqualTo	<input type="text" value="3.95"/>	And	<input type="button" value="Add Condition"/>	✕
Ex: 4.18 (or) 2.10					

Custom Filter Result

GL NetSurveyorWeb Refresh Protocol Type VOIP (SIP & H323) My Account

GI System Status at 2018-07-05 16:02:55

Custom CDR \ CDR

Date: 2018-07-03 to 2018-07-05 Time: 00:00:00 to 23:59:59 All Page Config Default

Today Yesterday Last 7 Days Last 30 Days All L MOS

Actions Query Execution Time : 0.07798 Seconds

Quick Search: Trafficsumid GO Page Size: 20 Sort Order : STARTTIME DESC

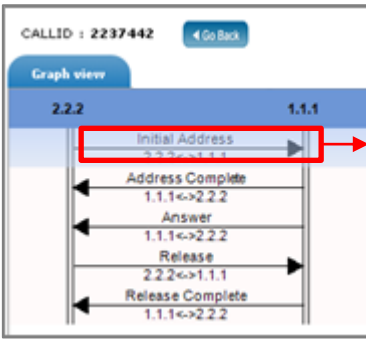
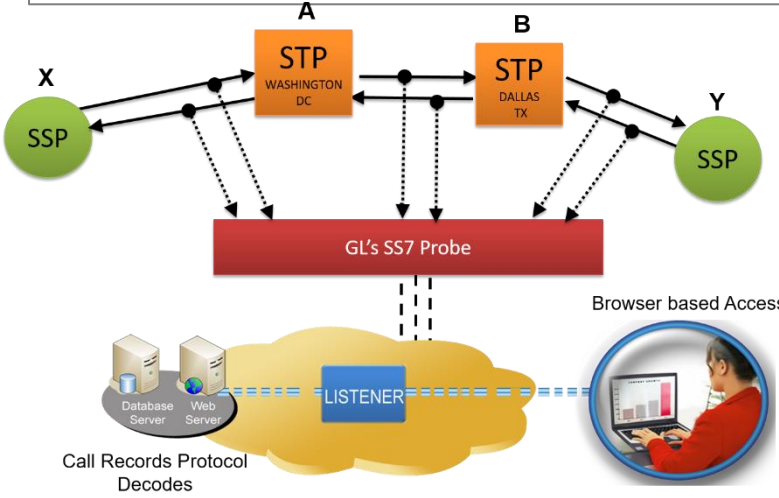
	SlNo	Calling Number	Called Number	Starttime	Duration	Call Success	Failure Cause	Listening Mos1	Listening Mos2	Payload1	Pa
<input type="checkbox"/>	1	0116@192.168.12.163	0116@192.168.12.164	2018-07-05 12:21:50.191	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	2	0115@192.168.12.163	0115@192.168.12.164	2018-07-05 12:21:50.171	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	3	0113@192.168.12.163	0113@192.168.12.164	2018-07-05 12:21:50.161	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	4	0111@192.168.12.163	0111@192.168.12.164	2018-07-05 12:21:50.131	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	5	0110@192.168.12.163	0110@192.168.12.164	2018-07-05 12:21:50.111	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	6	0108@192.168.12.163	0108@192.168.12.164	2018-07-05 12:21:50.091	00:01:00.029	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	7	0106@192.168.12.163	0106@192.168.12.164	2018-07-05 12:21:50.071	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	8	0105@192.168.12.163	0105@192.168.12.164	2018-07-05 12:21:50.071	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	9	0103@192.168.12.163	0103@192.168.12.164	2018-07-05 12:21:50.051	00:01:00.029	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	10	0101@192.168.12.163	0101@192.168.12.164	2018-07-05 12:21:50.031	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	11	0100@192.168.12.163	0100@192.168.12.164	2018-07-05 12:21:50.012	00:01:00.019	1	0	3.95	3.95	EVRC/8000	15
<input type="checkbox"/>	12	0098@192.168.12.163	0098@192.168.12.164	2018-07-05 12:21:49.991	00:01:00.019	1	0	3.95	3.95	EVRC/8000	20

SS7 Call Flow

CALLID : 2237442 Go Back

Graph view **Details view** Merge view Decode Type : ITU ANSI [Debug Summary \(Export as CSV\)](#)

FRAMENO	Timestamp	Probename	Card	Linkname	Linkname Directional	TS1	TS2	CIC	SLS	OPC	DPC
15439877	2015-07-01 03:10:55.570857	SS7	1	1.1.1>2.2.2	2.2.2>1.1.1	0	0	21	26	2.2.2	1.1.1
15439878	2015-07-01 03:10:55.720285	SS7	1	1.1.1>2.2.2	1.1.1>2.2.2	0	0	21	26	1.1.1	2.2.2
15439879	2015-07-01 03:10:55.865857	SS7	1	1.1.1>2.2.2	1.1.1>2.2.2	0	0	21	26	1.1.1	2.2.2
15439983	2015-07-01 03:11:10.920285	SS7	1	1.1.1>2.2.2	2.2.2>1.1.1	0	0	21	26	2.2.2	1.1.1
15439984	2015-07-01 03:11:11.066142	SS7	1	1.1.1>2.2.2	1.1.1>2.2.2	0	0	21	26	1.1.1	2.2.2

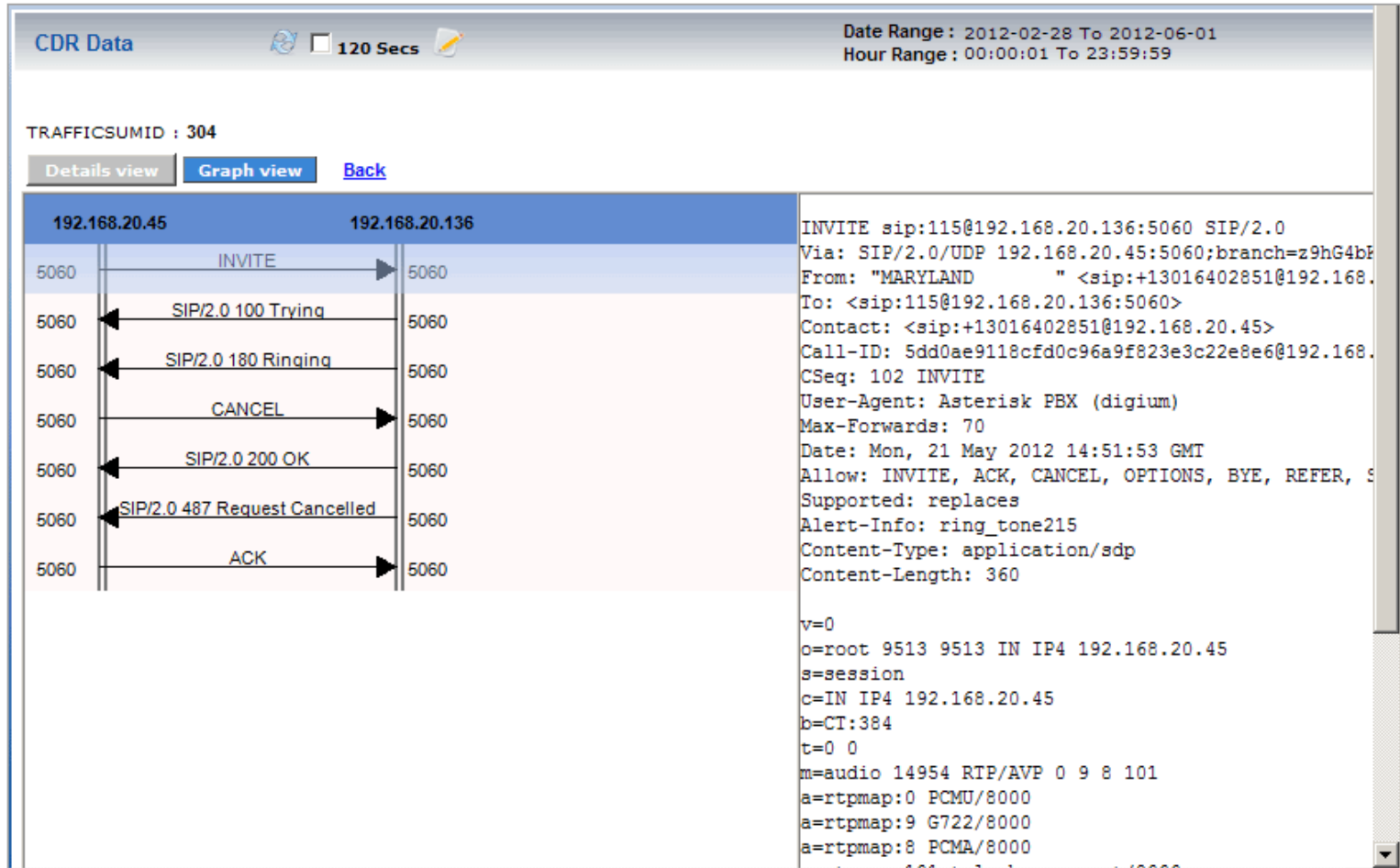


Debug Summary (Export as CSV)

```

Device1 Frame=0 at 03:10:55.570857 OK Len=46
Ethernet Frame Data
----- MTP2 Layer -----
BSN = .1010100 (84)
BIB = 1..... (1)
FSN = .0010011 (19)
FIB = 1..... (1)
LI = ..101001 MSU Format
----- MTP3 Layer -----
Service Indicator = ...0101 ISDN User Part
Priority Code = ..00.... Priority Code 0
Sub-service field = 10..... National Network
DPC = 1.1.1(00000001 00000001 00000001)
OPC = 2.2.2(00000010 00000010 00000010)
Signalling Link Selection = 00011010 (26)
----- ISUP Layer -----
Circuit Ident Code (CIC) = 00010101 ..000000 (21)
Message Type = 00000001 Initial Address
Mandatory Fixed Parameters
Nature Of Connection Ind. Parameter
Satellite indicator = .....00 No satellite circuit in the connecti
Continuity check indicator = ....00.. Continuity check not required (defau
Echo control dev.ind(NatureOfCon.Ind) = ...0.... Outgoing half echo control device no
Forward call Indicators Parameter
Incoming International call Indicator = .....0 No an incoming international call
End-to-end method indicator = ....00. No end-to-end method available
Interworking Indicator = ...0... No interworking encountered
ISDN User Part Indicators = ..0.... No indication
ISDN User Part Preferences Indicators = ..1.... ISDN User Part used all the way
ISDN User Part Preferences Indicators = 00..... ISDN User Part preferred all the way
    
```

SIP Call Flow



NetSurveyorWeb™ Playing Voice Calls

GL NetSurveyorWeb Refresh Protocol Type **TRAU** My Account

GI Data Reports Alarms Users System Status at 2018-07-05 15:34:12

Latest CDR \ All Calls

Date: 2018-06-11 to 2018-07-05 Time: 00:00:00 to 23:59:59 Ok


Today Yesterday Last 7 Days Last 30 Days All

Actions Query Execution Time : 0.15609 Seconds

Quick Search: Trafficsumid GO Page Size: 20 Sort Order: STARTTIME DESC

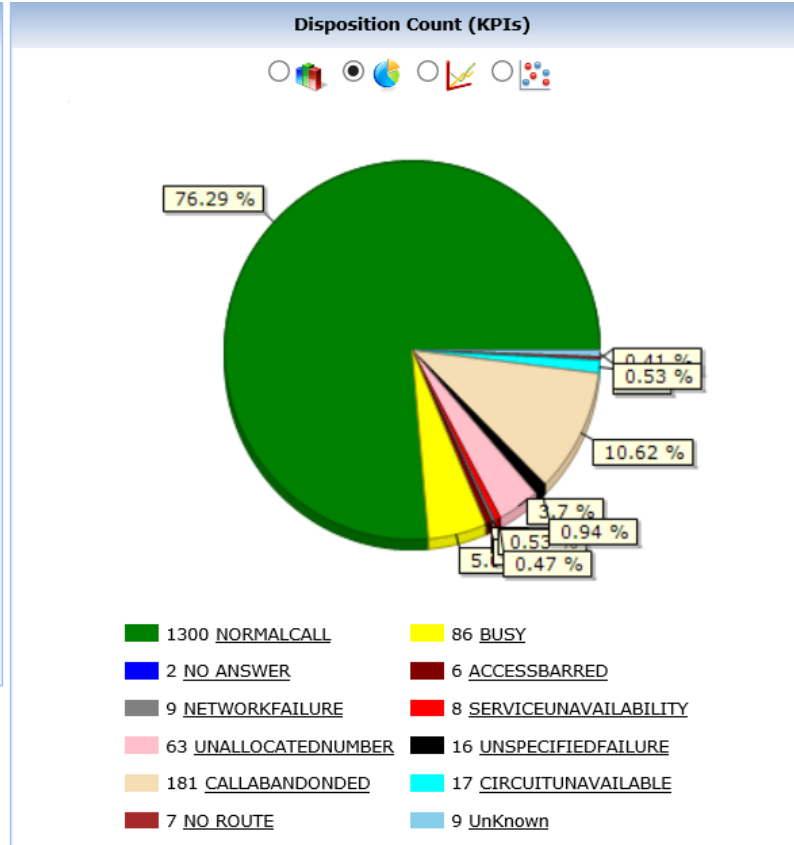
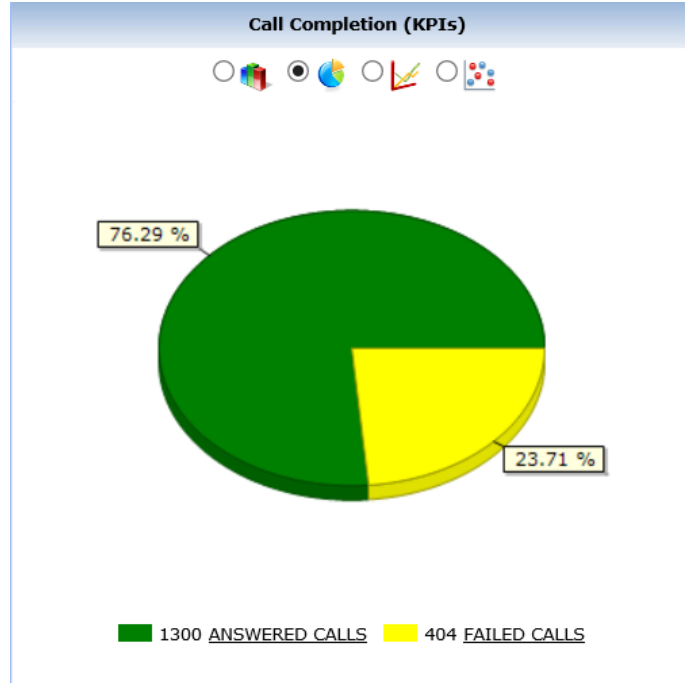
SI	Trafficsumid	Probename	Starttime	Duration	Dev Number #1	Channel Number #1	Start SubChannel #1	End SubChannel #1	TotalPackets #1	CodecType
16	4204	p1	2018-06-15 18:44:31.558	00:00:50.000302	1	24	1	2	2504	GSM610
17	4210	p1	2018-06-15 18:44:08.140	00:02:38.000200	1	20	5	6	7883	AMR
18	4202	p1	2018-06-15 18:43:43.582	00:00:56.000140	1	20	3	4	2781	EFR
19	4207	p1	2018-06-15 18:43:26.602	00:02:41.000720	1	20	1	2	8060	GSM610
20	4203	p1	2018-06-15 18:42:42.680	00:02:27.000818	1	14	5	6	7379	AMR

WaveSurfer [Download wav file : 4202.wav](#)

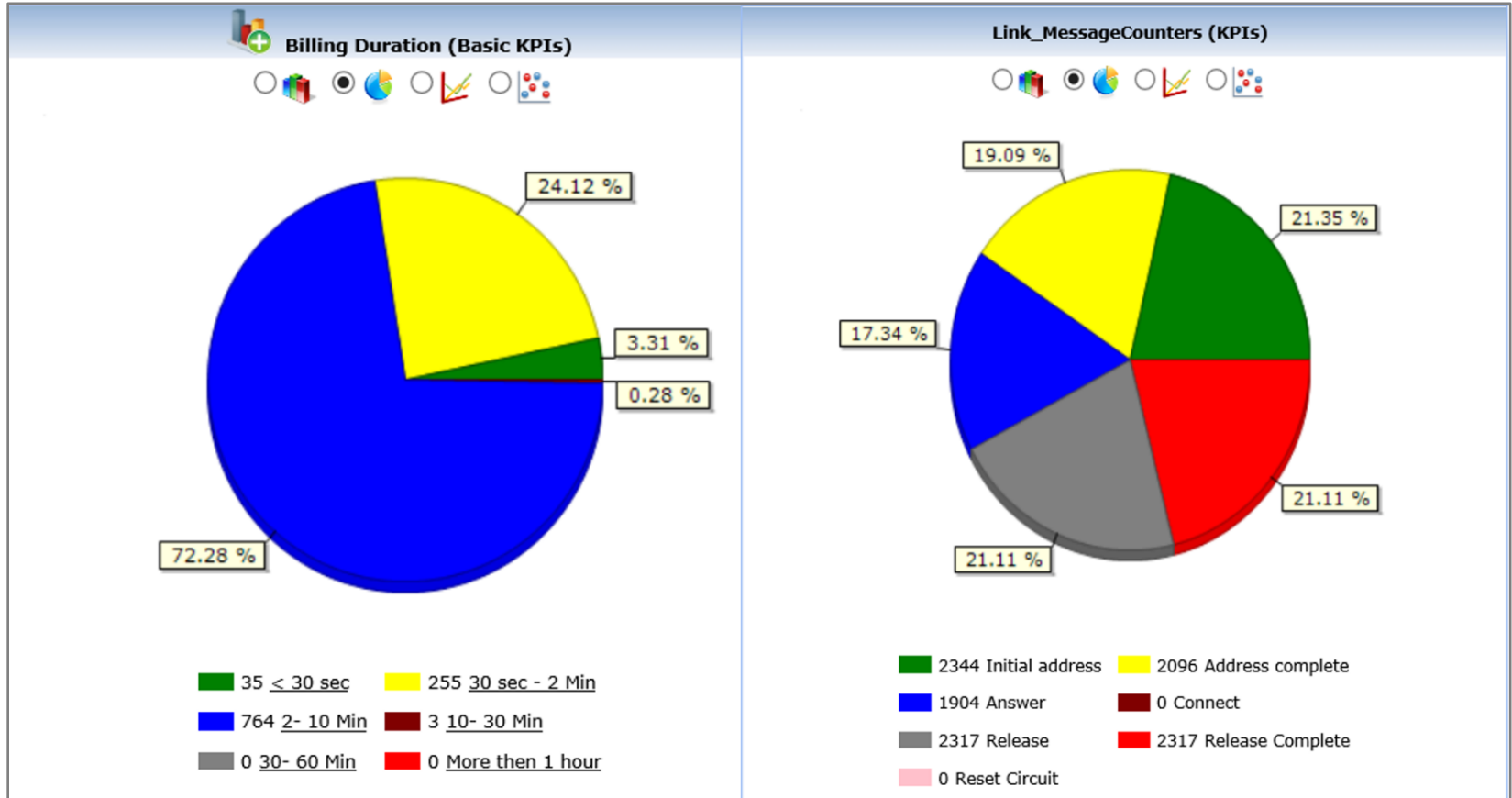


⏪ Backward ▶ Play / ⏸ Pause ⏩ Forward 🔇 Toggle Mute

SS7 Key Performance Indicators (KPI)

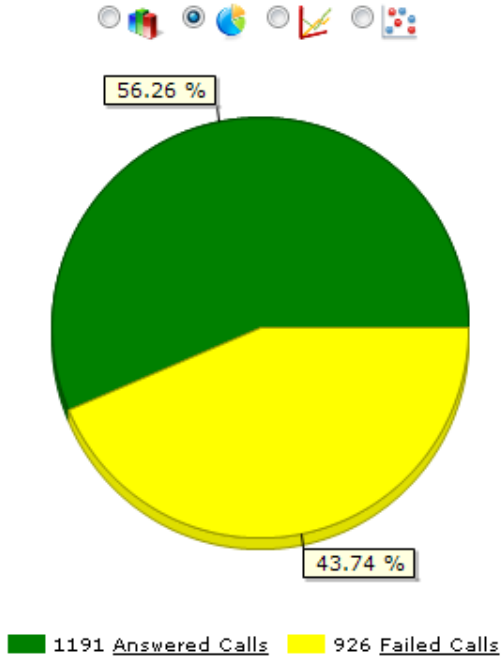


SS7 KPI – Billing Duration and Link Message Counters

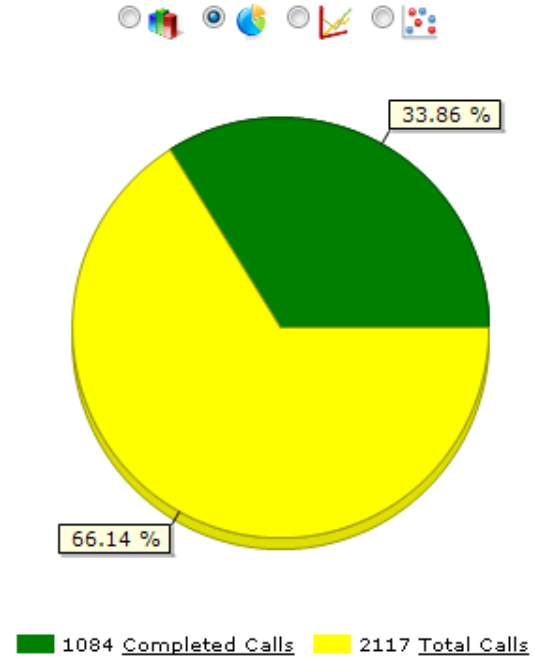


SS7 KPI - Answer Seizure and Call Completion Ratio

Answer Seizure Ratio (SS7 KPIs)

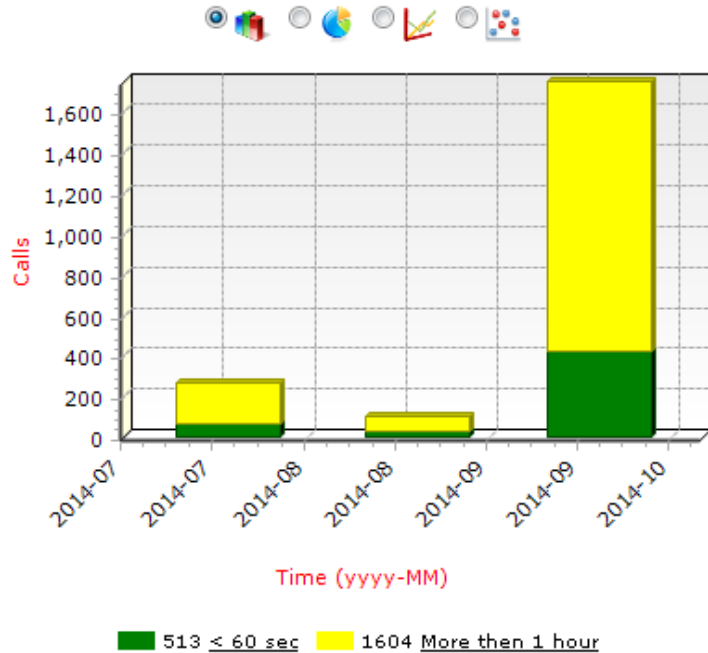


Call Completion Ratio (SS7 KPIs)

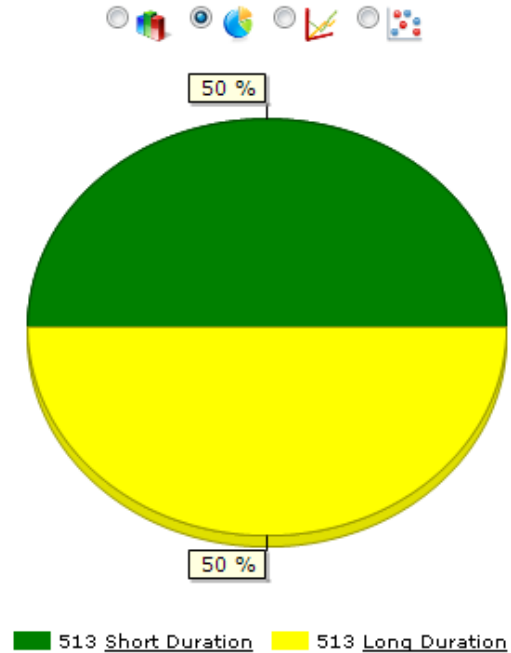


SS7 KPI – Call Duration

Call Duration (SS7 KPIs)

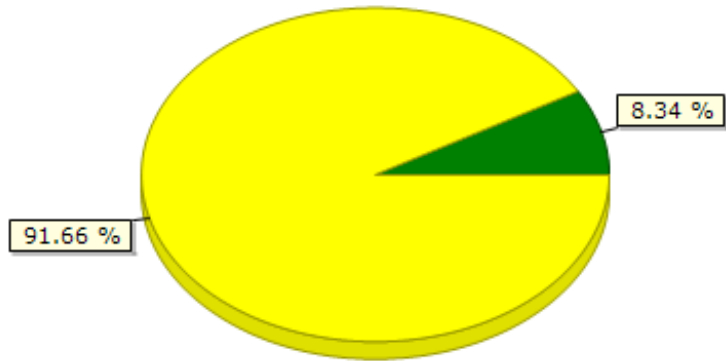


Short & Long Duration Calls (SS7 KPIs)



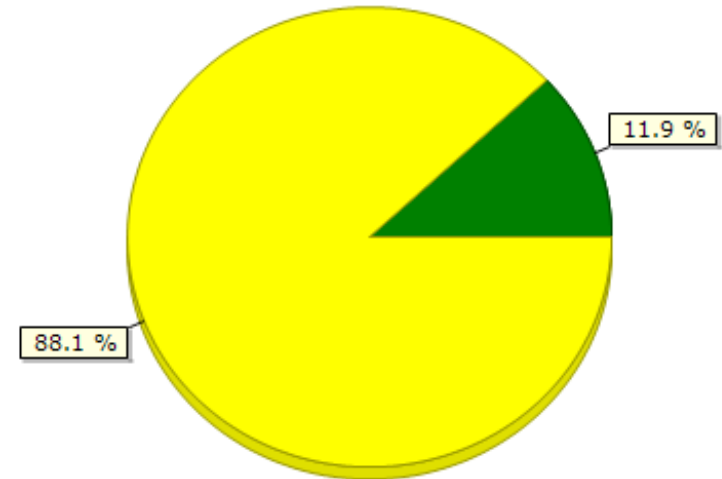
GSM KPI – Location Update and Mobile Originated SMS

Location Update Success Rate (GSM KPIs)



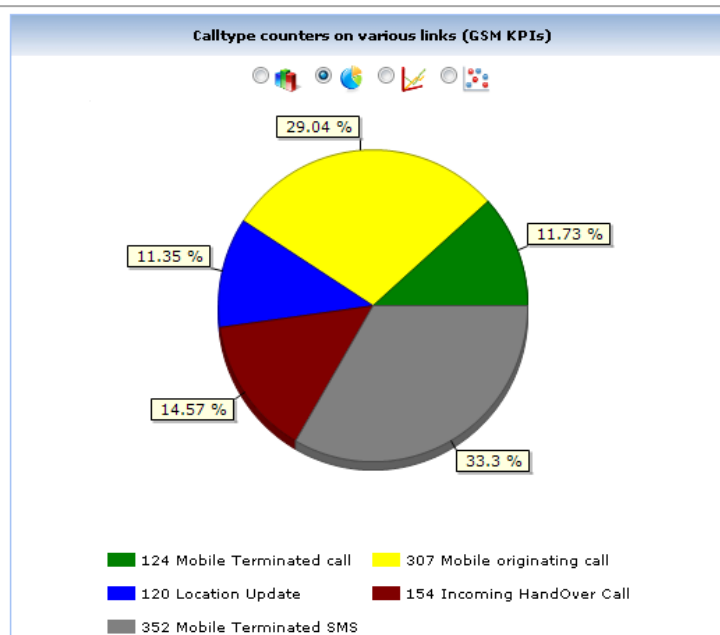
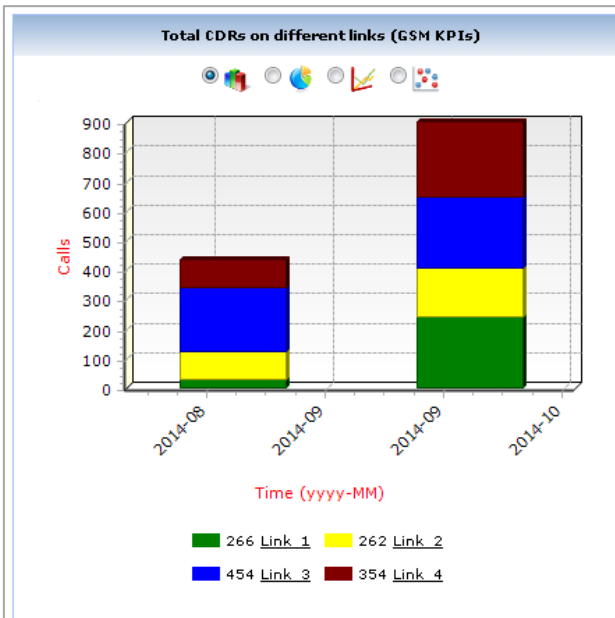
159 Location Update 1748 Non Location Update

Mobile Originated SMS (GSM KPIs)



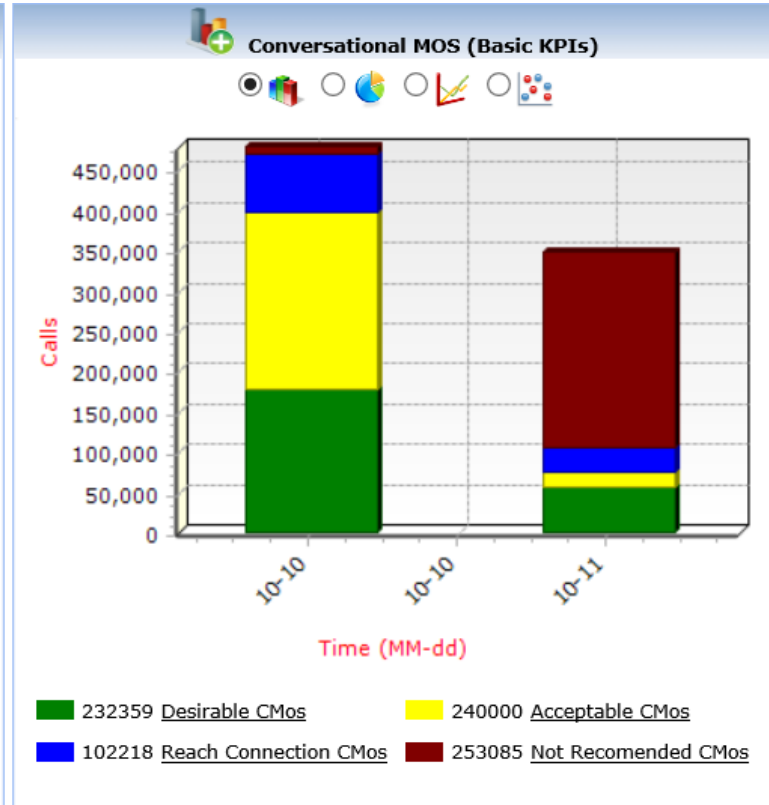
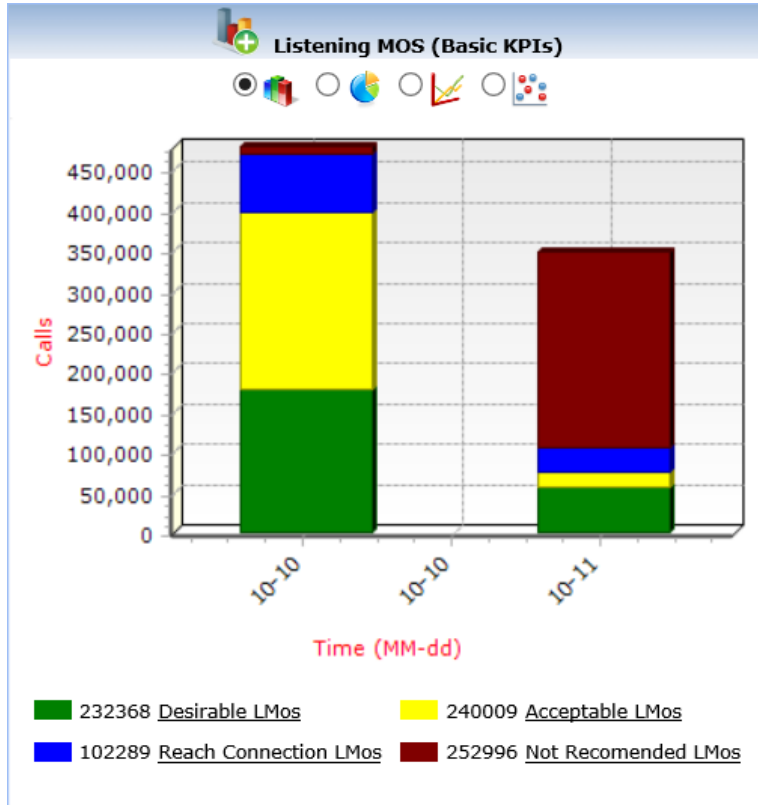
227 Mobile Originated SMS 1680 Non Mobile Originated SMS

GSM KPI – Total CDRs and Call type Counters on Different Links

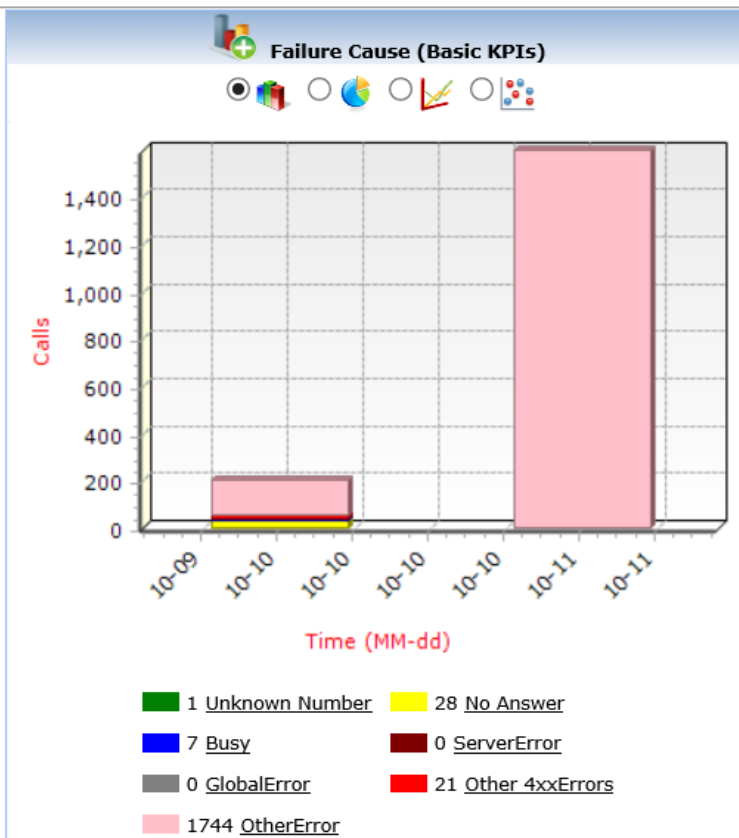
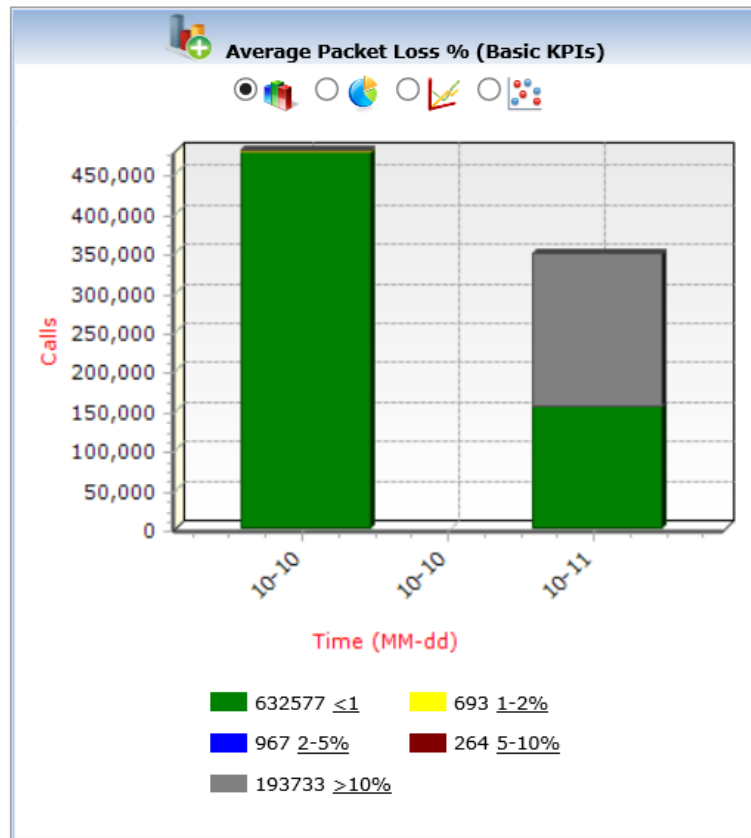


LINKNAME	Mobile Terminated call	Mobile originating call	Location Update	Incon
Link_3	27	69	37	29
Link_2	24	81	35	51
Link_4	40	118	23	46
Link_1	33	39	25	28

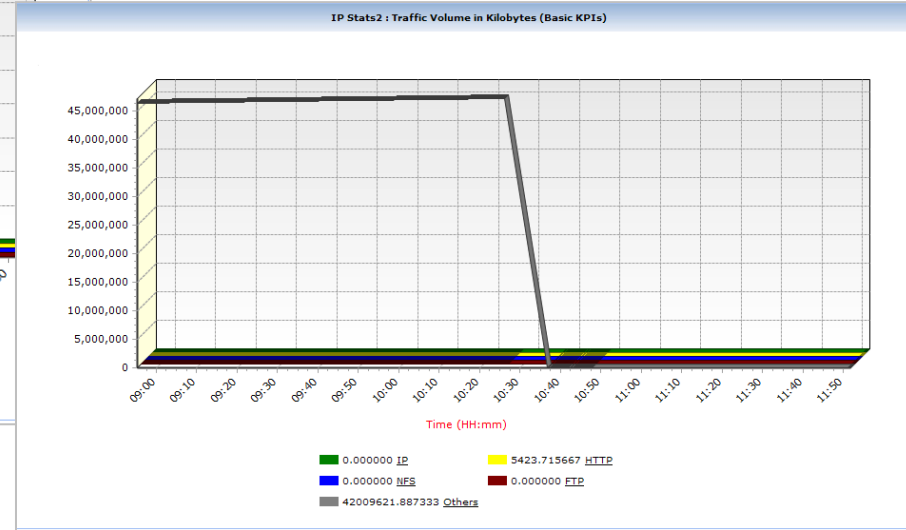
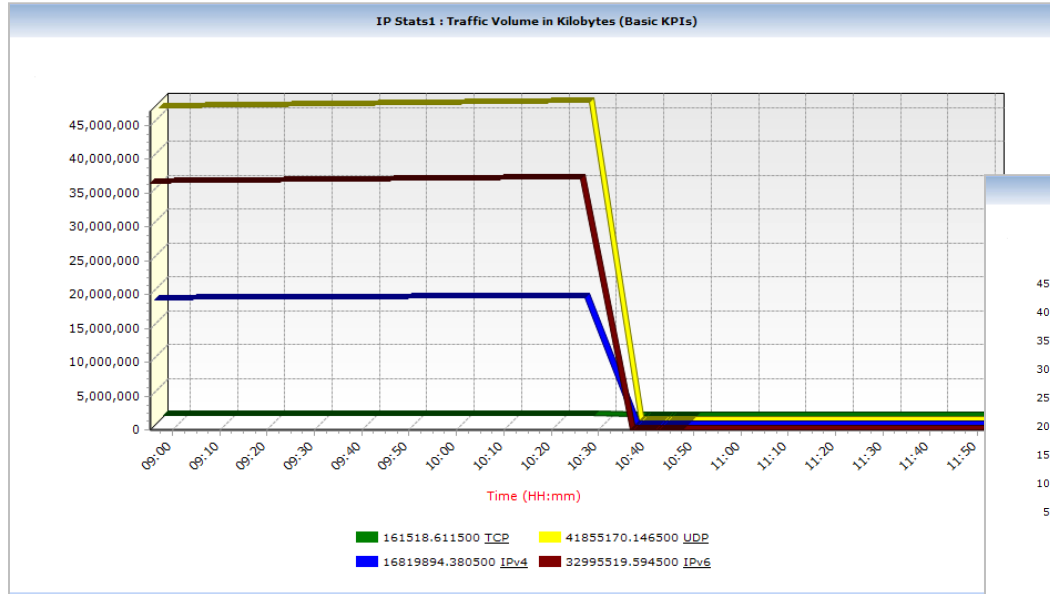
VoIP KPI



VoIP KPI – Average Packet Loss and Failure Cause



IP Stats - Traffic Volume in Kilobytes



- Depicts total instantaneous traffic captured in Kilobytes for TCP, UDP, IPV4, IPV6 packets

Report Configuration

Profiles

[View Other Profiles](#) [Reset Basic KPIs](#)

Sl No.	Profile Name	
1	KpiTest	Reset Group ✕
2	Test	Reset Group ✕
3	test	Reset Group ✕

Configuration

New KPI Group Name [Save](#) [Clear All](#)

Report KPI

KPI Name :

Dimension : 2D 3D Total : Yes No

Chart Type :

X_Axis Label :

Legend Count : Yes No

Chart Size : Half Full

Y_Axis Label :

Query Procedure

[Add KPI](#)

Clear Previous

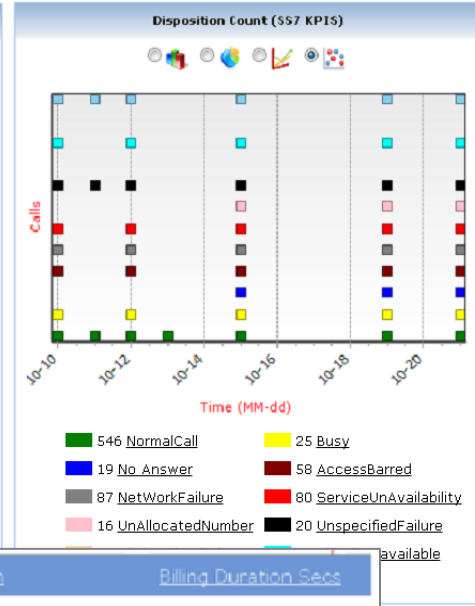
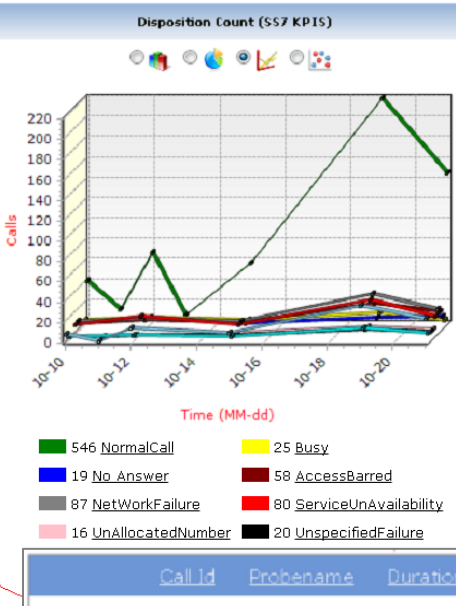
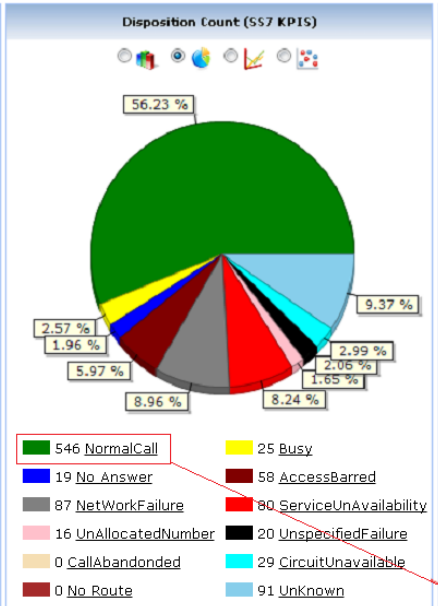
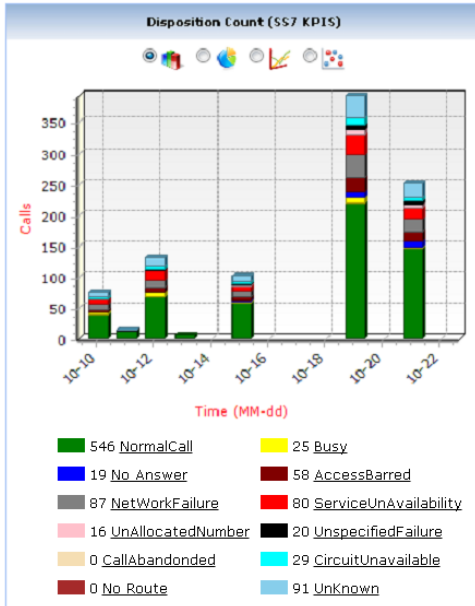
<input checked="" type="checkbox"/>	Move UP	Move Down	Chart Type	Chart Size	Condition Type	Dimension	X-Axis Label	Y-Axis Label	Legend Count	Total	Edit	Delete	Reset KPI
<input checked="" type="checkbox"/>				Half	Query	3D	Time	Calls	1	1	Edit	Delete	Reset KPI

KPI Group :
KPI Name :

Query : `SELECT count(case when callsuccess=1 then callsuccess end) as "Success Calls", count(case when callsuccess=0 then callsuccess end) as "Failed Calls" from GLT_PROT_TRAFFIC_SUM_VOIP where TimeFilter_PlaceHolder GROUP BY TIME`

- In addition to the default KPIs displayed in reports view, NetSurveyorWeb™ allows users to add new KPIs and customize the reports using Report Configuration feature

Report Generation



	Call Id	Probenam	Duration	Billing Duration Secs
Call Flow	8704	SS7-Probe	00:00:00.062750	0.014625
Call Flow	8703	SS7-Probe	00:00:00.062875	0.014625
Call Flow	8702	SS7-Probe	00:00:00.062750	0.014625
Call Flow	8701	SS7-Probe	00:00:00.062750	0.014625
Call Flow	8700	SS7-Probe	00:00:00.062875	0.014625
Call Flow	8699	SS7-Probe	00:61:00.048250	0.014625
Call Flow	8698	SS7-Probe	00:00:00.048250	0.014625

Notifications / Alarm Alerts

Alerts

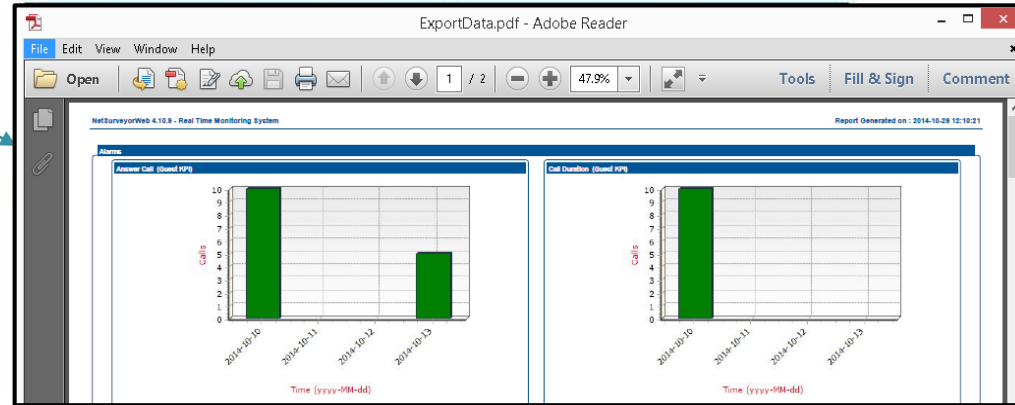
EMAIL



CDR View

Report View

GL Communications Inc. Telecommunication Products and Consulting						
NetSurveyorWeb 4.10.9 - Real Time Monitoring System					Report Generated on : 2014-10-29 12:15:34	
TRAFFICSUMID	CALLINGNUMBER	STARTTIME	DURATION	CALLID	FILENAME	
15	008@192.168.1.142	2014-10-13 16:35:51.799	00:00:00.947	GLPG-10762604165937		
14	008@192.168.1.142	2014-10-13 16:20:51.799	00:00:00.947	GLPG-10762604165937		
13	008@192.168.1.142	2014-10-13 14:35:51.799	00:00:00.947	GLPG-10762604165937		
12	008@192.168.1.142	2014-10-13 14:10:51.799	00:00:00.947	GLPG-10762604165937		
11	008@192.168.1.142	2014-10-13 09:53:51.799	00:00:00.947	GLPG-10762604165937		



Alert Types

- Email Alerts
- Visual Alarm
- Audible Alarm
- Set Alarm Severity
- Log to File

- Define real-time network conditions to generate alarms
- Define different actions based on the generated alarms

Alarm Configuration

Alarms Filter Configuration

Filter Name : Duration x Save Filter

Basic Expression

Add Filter Clear All Filters Show Expression

Filter1 AND X

Duration	EqualTo	00:00:52.000134
		Ex: 00:10:58.009333
Duration	EqualTo	00:00:40
		Ex: 00:10:58.009333

Send E-Mail Alert

Attachment ColumnView gl_call

Email To: kpkulkarni@gl.com; shilpa@gl.com

Subject: SS7 Alarms

Message: This is SS7 alarm based on CIC value.

- Alarm Condition provides the options to set the filter conditions for the alarm
- Alarm Action provides options to set the actions to be taken when an alarm is detected such as the visual alarm type, audible alarm type, exporting data, set alarm severity, log to file, and generate email alerts





Alarm Status

Alarms

Alarm Details

Alarm Status Alarm Log

Add Save

Alarm Name	Alarm Type	Action	Alarm Count	Time Filter	Status	Expected Time
 DailyReport			3	Consolidated - Daily Time Filter		06-07-2018 00:00:00

- Each alarm profile can be set against Date-Time, and Sampling Rate condition during which the selected Alarm Condition is said to be active
- For example, if the user selects 5 minutes as the sampling rate, NetSurveyorWeb™ will check for the alarm conditions every 5 minutes and triggers the actions such as a visible alert or sending an email alert as set in the alarm configuration

Alarm Log

Alarms

Alarm Details

Alarm Status

Alarm Log

Page 1 of 1






View Records per page: 20

Total : 3

[Clear Log](#)

	Serial No	Alarm Name	Alarm Severity	Timestamp	Email_Message	SMS_Message	StartTime	EndTime	KPI_CDR_StartTime	KPI
View KPIS	32	DailyReport	Minor	2018-07-05 00:00:27	Daily report for failed calls				2018-07-04 00:00:00.000000	2018-07-
View KPIS	31	DailyReport	Minor	2018-07-04 00:09:11	Daily report for failed calls				2018-07-03 00:00:00.000000	2018-07-
View KPIS	1	DailyReport	Minor	2018-07-03 00:00:16	Daily report for failed calls				2018-07-02 00:00:00.000000	2018-07-

User Management (Security)

User Details							
Create New User	Search By : A B C D E F G H I J K L M N O P Q R S T U V W X Y Z All						
Display Name	Login Name	Email ID	Phone No	Last Login	Is Admin	User Status	
gl	gl	glcomm.in@gmail.com		2014-10-16 12:29:23.258313	Yes	✓	
Guest User	GuestUser	glcomm.in@gmail.com		2014-09-23 18:55:38.589140	No	✓	
Saketha Yadala	Saketha	syadala@gl.com	15789554	2014-10-16 12:35:56.022778	Yes	✓	
Andrea Henderson	Andrea	Andrea@sakomer.org	23232		Yes	✗	
Robin Hayes	Robin	Robin.Hayes@in.com	457898		No	✓	

Probe / Loader Status

120 Secs

Probe Status

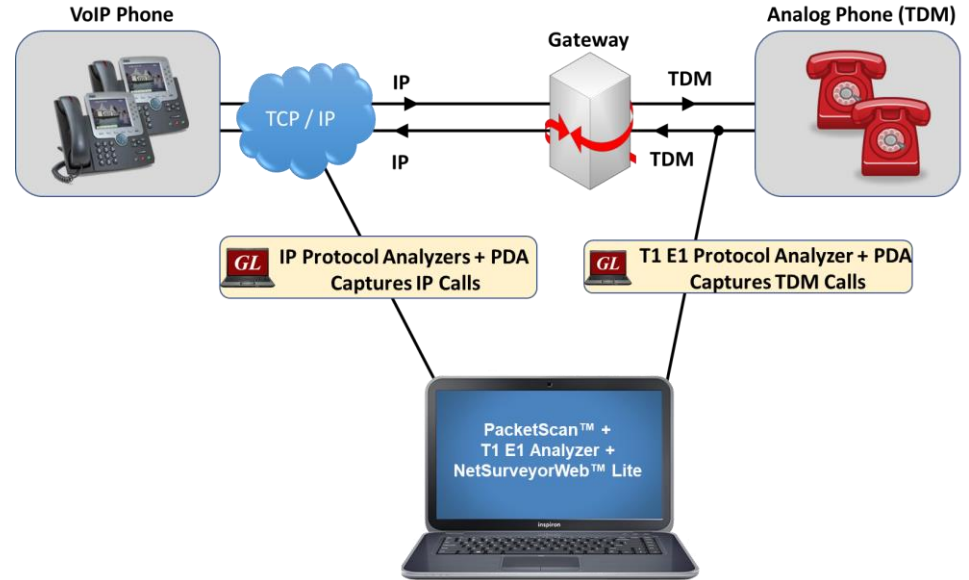
Probe Name	Probe Status	Last Data Received Timestamp	Delete	
✚ VOIP-SIP	OFFLINE	2014-10-15 12:24:59	Delete Probe	
✚ VOIP-SIP	OFFLINE	2014-10-15 08:04:52	Delete Probe	
✚ VOIP-PORTA	OFFLINE	2014-10-15 12:38:44	Delete Probe	
▣ VOIP-PORTA	ONLINE	2014-10-15 12:50:45		
Probe Name	Probe IP Address	Probe Type	Last Online Confirmation	First Online Confirmation
VOIP-PORTA	10.2.12.22	CDR	2014-10-15 12:50:47	2014-10-10 13:58:03
✚ SS7-Probe	ONLINE		2014-10-15 12:50:44	
✚ SS7-Probe	ONLINE		2014-10-15 12:50:44	
✚ SS7_Probe6	ONLINE		2014-10-15 12:50:45	
✚ SS7_Probe6	OFFLINE		2014-10-14 14:56:31	
✚ SS7_Probe4	ONLINE		2014-10-15 12:50:45	
✚ SS7_Probe4	OFFLINE		2014-10-15 03:21:29	

LOADER STATUS : **ONLINE**

Name : GLWEB
Computer Name : GLWEB
Connection to Database : **Connected**
Log Enabled : **Yes**
Total Probes Connected : 4
Unique Probes Connected : 2
Summary Records Loaded : 1253355
CDR Records Loaded : 162157
VBA Records Loaded : 0
Summary DB Insert errors : 0
CDR DB Insert errors : 0
VBA DB Insert errors : 0
Current records per second : 76
Average records per second : 71
Maximum records per second : 14065
Occurance of Overrun : 0
Total Overruns : 0
Total number of messages : 30

Measuring Delay (VoIP and TDM)

- Works with Delay Measurement tools to analyse captured voice traffic and provide precise one-way delay metrics
- For a given call which traverse through Gateway, traffic is sampled at both TDM and IP analyzer at the same point of time running in the same server. These captured segments of SIP and ISDN calls will be saved in *.pcm formats. These samples will be given to delay measurement module which compares the samples based on the timestamp and provides the delay metrics



Delay Metrics

GL NetSurveyorWeb

Protocol Type: ISDN (PDA)

System Status at 2018-10-18 17:25:35

Quick CDR \ All Calls

Date: 2018-10-11 to 2018-10-18 Time: 00:00:00 to 23:59:59

Query Execution Time: 16.06561 Seconds

Quick Search: CALL ID

Page Size: 20 Sort Order: MinDelay_OUT ASC

SINo	CALL ID	PROBE NAME	START TIME	CALLER	CALLEE	MinDelay_OUT	AvgDelay_OUT	MaxDelay_OUT	MinDelay_IN	AvgDelay_IN
1	22	Test	2018-10-12 15:04:43.331	1023	00230	1	22	23	12	32
2	1016	Test	2018-10-12 15:45:13.275	1023	00230	1	20	25	16	24
3	1021	Test	2018-10-12 15:45:13.210	1012	00120	1	22	26	17	24
4	1022	Test	2018-10-12 15:45:13.234	1016	00160	1	22	23	10	25
5	1029	Test	2018-10-12 17:45:38.460	1005	00050	1	23	25	16	23
6	1032	Test	2018-10-12 17:45:39.264	1009	00090	1	22	25	14	22
7	1047	Test	2018-10-12 17:46:44.490	1002	00020	1	21	24	14	22
8	1065	Test	2018-10-12 17:45:39.066	1008	00080	1	21	24	4	23
9	1069	Test	2018-10-12 17:47:51.566	1003	00030	1	23	30	16	25

- The NetSurveyorWeb™ application along with Delay Measurement application helps to monitor the delays such as Minimum Delay, Maximum Delay, and Average Delay for each call

Voiceband Metrics

GL NetSurveyorWeb

Protocol Type: ISDN (PDA)

System Status at 2018-10-18 17:12:16

Quick CDR \ All Calls

Date: 2018-10-18 2018-10-18 Time: 00:00:00 23:59:59

Today Yesterday Last 7 Days Last 30 Days All

Actions Query Execution Time : 0.06701 Seconds

Quick Search: CALL ID

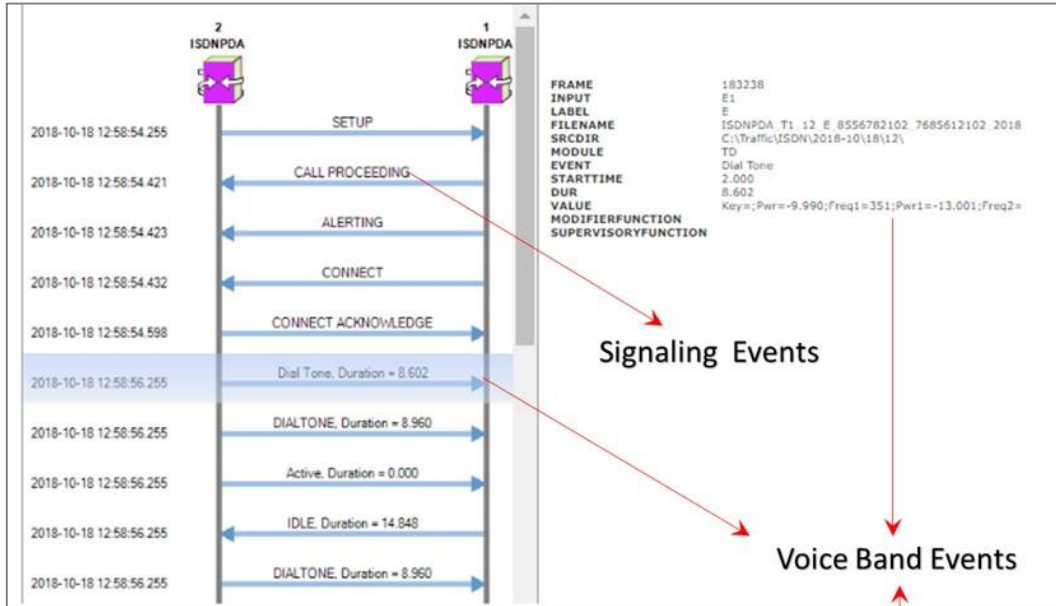
Page Size: 20 Sort Order: STARTTIME DESC

Voice Analysis Metrics from VBA

	SINo	CALL ID	PROBE NAME	START TIME																																																
+VBS	1	84011	Test	2018-10-18 12:58:54.255																																																
-VBS	2	84009	Test	2018-10-18 12:58:44.572																																																
<table border="1"><thead><tr><th>INPUT LABEL</th><th>STARTTIME</th><th>ELAPSED</th><th>ASL(dBm)</th><th>AF%</th><th>RMS(dBm)</th><th>NOISE(dBm)</th><th>NOISEPSOM</th><th>NOISECMMSG</th><th>CLIP</th><th>MAXP</th><th>MAXN</th><th>DC</th><th>MREVENT</th><th>FAX%</th><th>VOI</th></tr></thead><tbody><tr><td>E1</td><td>10/18/2018 12:58:44</td><td>14.2710</td><td>-12.992572</td><td>13.036356</td><td>-21.841010</td><td>-100</td><td>-100</td><td>-100</td><td>0</td><td>-4.981695</td><td>-100</td><td>-56.539193</td><td>DTMF-0</td><td>0</td><td></td></tr><tr><td>W1</td><td>10/18/2018 12:58:44</td><td>14.2680</td><td>-100</td><td>0</td><td>-100</td><td>-100</td><td>-100</td><td>-100</td><td>0</td><td>-100</td><td>-100</td><td>-100</td><td></td><td>0</td><td></td></tr></tbody></table>					INPUT LABEL	STARTTIME	ELAPSED	ASL(dBm)	AF%	RMS(dBm)	NOISE(dBm)	NOISEPSOM	NOISECMMSG	CLIP	MAXP	MAXN	DC	MREVENT	FAX%	VOI	E1	10/18/2018 12:58:44	14.2710	-12.992572	13.036356	-21.841010	-100	-100	-100	0	-4.981695	-100	-56.539193	DTMF-0	0		W1	10/18/2018 12:58:44	14.2680	-100	0	-100	-100	-100	-100	0	-100	-100	-100		0	
INPUT LABEL	STARTTIME	ELAPSED	ASL(dBm)	AF%	RMS(dBm)	NOISE(dBm)	NOISEPSOM	NOISECMMSG	CLIP	MAXP	MAXN	DC	MREVENT	FAX%	VOI																																					
E1	10/18/2018 12:58:44	14.2710	-12.992572	13.036356	-21.841010	-100	-100	-100	0	-4.981695	-100	-56.539193	DTMF-0	0																																						
W1	10/18/2018 12:58:44	14.2680	-100	0	-100	-100	-100	-100	0	-100	-100	-100		0																																						
+VBS	3	84010	Test	2018-10-18 12:58:34.677																																																
+VBS	4	84008	Test	2018-10-18 12:58:32.577																																																
+VBS	5	84007	Test	2018-10-18 12:58:14.613																																																

- NetSurveyorWeb™ Lite application works with Voice Band Analyzer (VBA) application to analyse captured voice/fax traffic and provide useful metrics that are of interest to service providers

Voiceband Event Summary and Message Sequence



Event Summary View

PROTOCOLTYPE	PROBENAME	CARD	FRAMENO	TIMESTAMP	PROTOCOLSPECIFIC
ISDNPDA	Test	1	744083	2018-10-18 12:58:54.255375	CRV: 12, CRF: FROM side that originated callref, Channel No: 3, MessageType: SETUP
ISDNPDA	Test	2	744084	2018-10-18 12:58:54.421125	CRV: 12, CRF: TO side that originated callref, Channel No: 3, MessageType: CALL PRO
ISDNPDA	Test	2	744085	2018-10-18 12:58:54.423250	CRV: 12, CRF: TO side that originated callref, Channel No: , MessageType: ALERTING
ISDNPDA	Test	2	744086	2018-10-18 12:58:54.432250	CRV: 12, CRF: TO side that originated callref, Channel No: , MessageType: CONNECT
ISDNPDA	Test	1	744087	2018-10-18 12:58:54.598250	CRV: 12, CRF: FROM side that originated callref, Channel No: , MessageType: CONNECT
VBE			183238	2018-10-18 12:58:56.255000000	Input: E1, Value: Key=:Pwr=-9.990;Freq1=351;Pwr1=-13.001;Freq2=440;Pwr2=-11
VBE			183237	2018-10-18 12:58:56.255000000	Input: E1, Value: ,MessageType: DIALTONE
VBE			183240	2018-10-18 12:58:56.255000000	Input: E1, Value: ,MessageType: Active
VBE			182903	2018-10-18 12:58:56.255000000	Input: W1, Value: ,MessageType: IDLE
VBE			182897	2018-10-18 12:58:56.255000000	Input: E1, Value: ,MessageType: DIALTONE

Related Products

Voice Quality Testing:

- Provides Intrusive method of voice, video, data quality testing and monitoring for any networks.
- Real-time voice, video, and data quality measurements across a diverse set of networks
- Supports international standard voice quality test methods, including, PESQ, POLQA, MOS (Mean Opinion Score), Round Trip Delay (RTD), Jitter, Clipping, Voice band quality metrics, etc.

WebViewer™ (Web Based Client for Voice and Data Quality Testing):

- The WebViewer™ uses a simple web browser with facilities to query the results either manually or automatically as well as output the results/statistics

Thank you