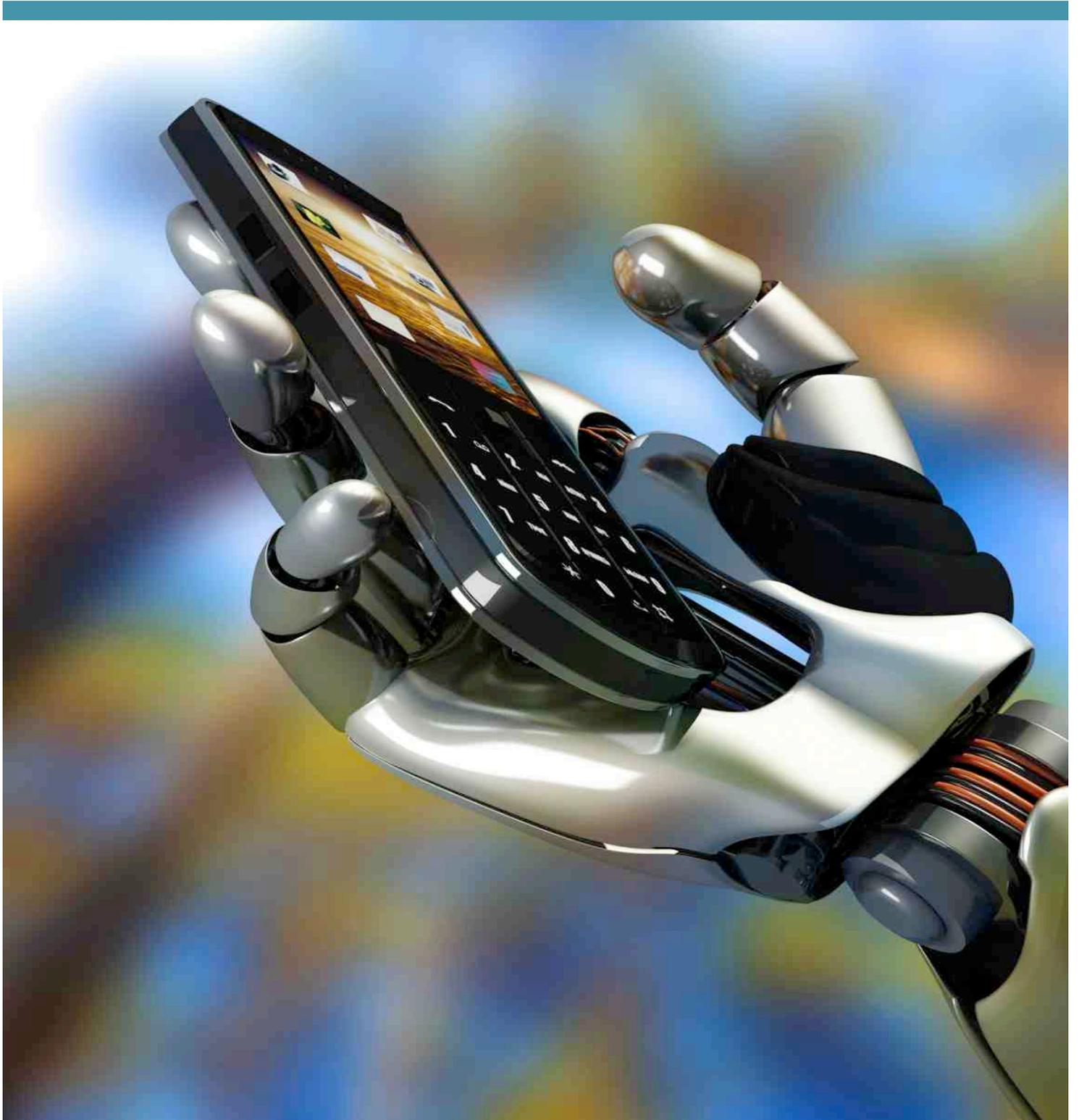



iTest





iTest –The most comprehensive test platform available.

iTest is a testing and performance monitoring platform designed specifically for the 21st Century Telecoms market. With an unparalleled set of features, iTest can perform any of your current test requirements in a fraction of the time. All of this is available through a easy-to-use portal with visual and audible results meaning in-depth testing is no longer restricted to technical staff. It has enabled many customers to reduce the cost and time of testing new routes and helped to streamline the ongoing support of existing customers and suppliers. iTest allows you to see and hear the quality on your network within minutes of initiating the test and share these results with your colleagues and partners.

Using industry standard measurements you can immediately detect issues such as FAS, no RBT, Dead Air, One Way Audio and CLI delivery and deal with them promptly.

iTest has been developed to deal with a broad range of telecommunications companies needs. It is therefore possible to use our cloud solution for a single entity, become a reseller of the cloud solution and control multiple customers' users and access. It is also possible to have a dedicated solution that can be installed within your network for your own use or to be used to resell the solution to other customers. You can also embed iTest within your own portal or management Exchange platform using our API to give a seamless end user experience.

iTest Key Features and Benefits

Easy To Use Graphical Interface: The simple but effective interface shows all information necessary to perform automated tests and gather information on the quality of the routes tested. The interface is compatible with all major internet browsers and also works with smartphones and tablets allowing testing to be completed and results to be seen and shared from anywhere. The interface only requires the input of basic information allowing any non-technical users to perform tests and check results.

The screenshot displays the iTest web interface. The top navigation bar includes 'Tests', 'Settings', 'NDS', 'Scheduler', 'Your Account', 'FAQ', 'Reports', and 'LogOff'. The main area is titled 'Test Configuration - Number Administration' and contains several sections:

- Profile:** A dropdown menu set to 'Switch'. Below it, fields for Name, Gateway, Originating Number, and Ringtime/Calltime are visible.
- Supplier:** A dropdown menu set to 'Vendor W'.
- Test Settings:** Radio buttons for 'Standard', 'CLI (73)', and 'Interconnect'. A 'Select Country' dropdown is set to 'PHILIPPINES'. 'Select Breakout' is set to 'SMART'. 'Select Number of Test Calls' has buttons for 5, 10, and 20.
- Test Name and Numbers:** A text input field for 'Test Name' and a large empty box for 'Numbers'.
- Codec:** A dropdown menu set to 'G.729'.
- Redirect test to phone:** An unchecked checkbox.
- Test:** A button to initiate the test.

Below the configuration section is the 'Company Wide Tests' table. It includes a search bar, 'Lines: 20', and 'Page: 1'. The table has columns for 'Time Initiated', 'Supplier Name', 'Test Name', 'Source Number', 'Test Results' (with sub-columns T, C, S, N, F), 'PDD', 'Share', and 'Action'. A summary row shows 10 T, 10 C, 2 S, 5 N, and 3 F. Below this is a detailed table of test results:

Time Initiated	Destination Number	State	PDD	Ring Duration	Call Duration	RTP Stats	Disconnect Initiator	Final SIP Code	Result	Audio RBT	Log
22:25:25	63907697	Complete	1.27 (2.15)	31.5	NA	1505 / 1565 0/0/-0.25	Originator	500 Server Internal Error	No answer	NA	
22:25:27	63947854	Complete	2.49 (2.90)	14.1	NA	697 / 699 0/0/-0.00	Originator	480 Temporarily Unavailable	No answer	NA	
22:25:28	63920632	Complete	1.27 (N/A)	21.9	NA	1029 / 1091 0/0/-0.00	Terminator	500 Server Internal Error	Failure	NA	
22:25:29	63907269	Complete	6.16 (6.99)	16.5	19.8	1812 / 1808 0/1/-0.63	Terminator	200 OK	Success		
22:25:30	63947437	Complete	1.21 (1.77)	30.0	NA	1493 / 1492 0/0/+0.44	Originator	487 Request Terminated	No answer	NA	

Automated Simultaneous Test Calls: Once a test has been initiated, multiple calls are placed simultaneously and once complete all call statistics are displayed. This includes PDD, ring time, call duration, number of packets, jitter and packet loss and an audio recording of the early media (ring back tone) and call. This allows testing to be completed in a fraction of the time of manual testing and gives you all the necessary tools to analyse the results. It also allows for routes to be checked under more load than by manual testing. The full sip details of the call are also logged and can be downloaded for more in-depth analysis. G.711 and G.729 codecs are supported for test calls and can be set at a vendor or test level.

Scheduled Test Calls: As well as manual tests being initiated, it is also possible to set up test schedules allowing calls to be initiated automatically and the results emailed once complete. These tests can recur on a daily, weekly, monthly schedule or even for as often as every 5 minutes until the desired number of tests has been run or the schedule end time occurs.

Test Scheduler | Tests | Settings | NDB | Scheduler | Your Account | FAQ | Reports | LogOff

New Schedule

Profile: Switch
 Name: Switch
 Gateway: 5559 - :5060
 Originating Number: 12344
 Ringtime / Calltime: 30 / 20

Supplier: Vendor W
 Name: Vendor W
 Codec: G.729
 Prefix: 148#

Standard | CLI (73) | Interconnect

Number Selection Method: Use Number Data Base

Select Country: GHANA

Select Breakout: MTN | Select # of Test Calls: 5

Test Name: Ghana Test | Codec: G.729

Start Date: December 2013
 M T W T F S S
 25 26 27 28 29 30 1
 2 3 4 5 6 7 8
 9 10 11 12 13 14 15
 16 17 18 19 20 21 22
 23 24 25 26 27 28 29
 30 31 1 2 3 4 5

Start Time: 22 : 45

Repeat Frequency: 1 Day
Repeat Quantity: Until

End Date: December 2013
 M T W T F S S
 25 26 27 28 29 30 1
 2 3 4 5 6 7 8
 9 10 11 12 13 14 15
 16 17 18 19 20 21 22
 23 24 25 26 27 28 29
 30 31 1 2 3 4 5

End Time: 23 : 45

Email Alert Settings:
 Send alerts:
 Alert on FAS:
 Alert on No RBT:
 Alert on Dead Air:
 Alert on Calls Fail: greater than 0 %
 Alert on Average PDD: greater than 0
 Alert on CLI Failure:

Schedule run information:
 First run: Dec 3, 22:45:00
 Run until: Dec 4, 23:45:00

Add Schedule

Email Alerts: Scheduled tests can also be set to alert if there are any issues on a route. Thresholds such as % of calls failed, high PDD, FAS detection, dead air and CLI failure can be set per schedule. This allows you to pro-actively monitor the whole of your network and act on any issues that are found.

iTest Schedule Alert, FAS: 1

Sent: Wednesday, 28 August 2013 09:02
 To:

The scheduled job: Turkey Turkcell 7 has completed
 Supplier:

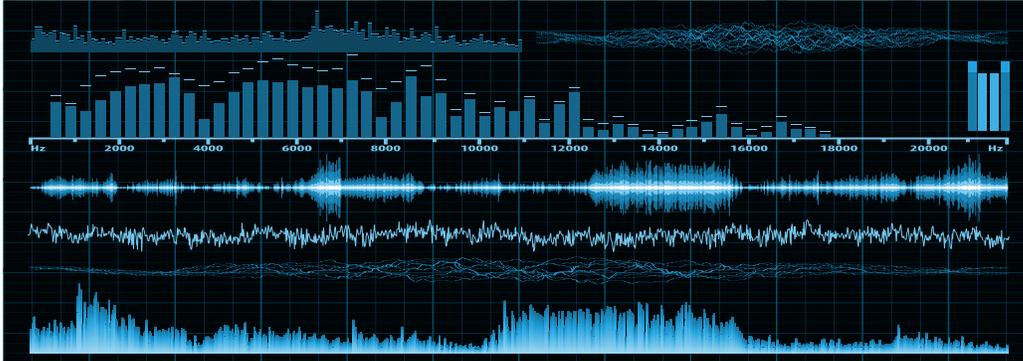
1 call has been marked as possible FAS

T	S	N A	F
10	4	4	2

Link to test shared test results:
[iTest Shared results](#)
 iTest Portal Logon:
[itest1-view.co.uk](#)

T = Total
 S = Successful
 N A = Not Answered
 F = Failed

Advanced FAS Detection: iTest can detect FAS in two different ways. Where an iTest node is dialed, the call will be monitored and measured from end to end to ensure that no form of FAS is detected. Where customer designated numbers are called, iTest not only records the call but it also processes the audio stream and runs complex analytics to automatically determine if FAS has been detected. The call is then marked as having FAS so that you can listen to the audio and confirm the results.



Test Number Database: To assist non-technical staff in utilising the system, iTest has the provision for a company number database that can be populated with countries, breakouts, dial codes and test numbers by an administrator via a csv upload. Users within the company can then use these numbers to make test calls.

Share Test Results : iTest gives you the ability to share test results with partners via web links that can be emailed to the appropriate person. The results show the call quality statistics and you can choose whether to display the full destination numbers of the calls or not. The shared results do have access to the vendor information or full SIP log of the call. The results can also be exported into Excel. Within a company it is also possible to see other users test results or filter the tests to your specific user, it is also possible to use the search function to filter the results further.

(All times are GMT)

Report for Test: PHILIPPINES SMART

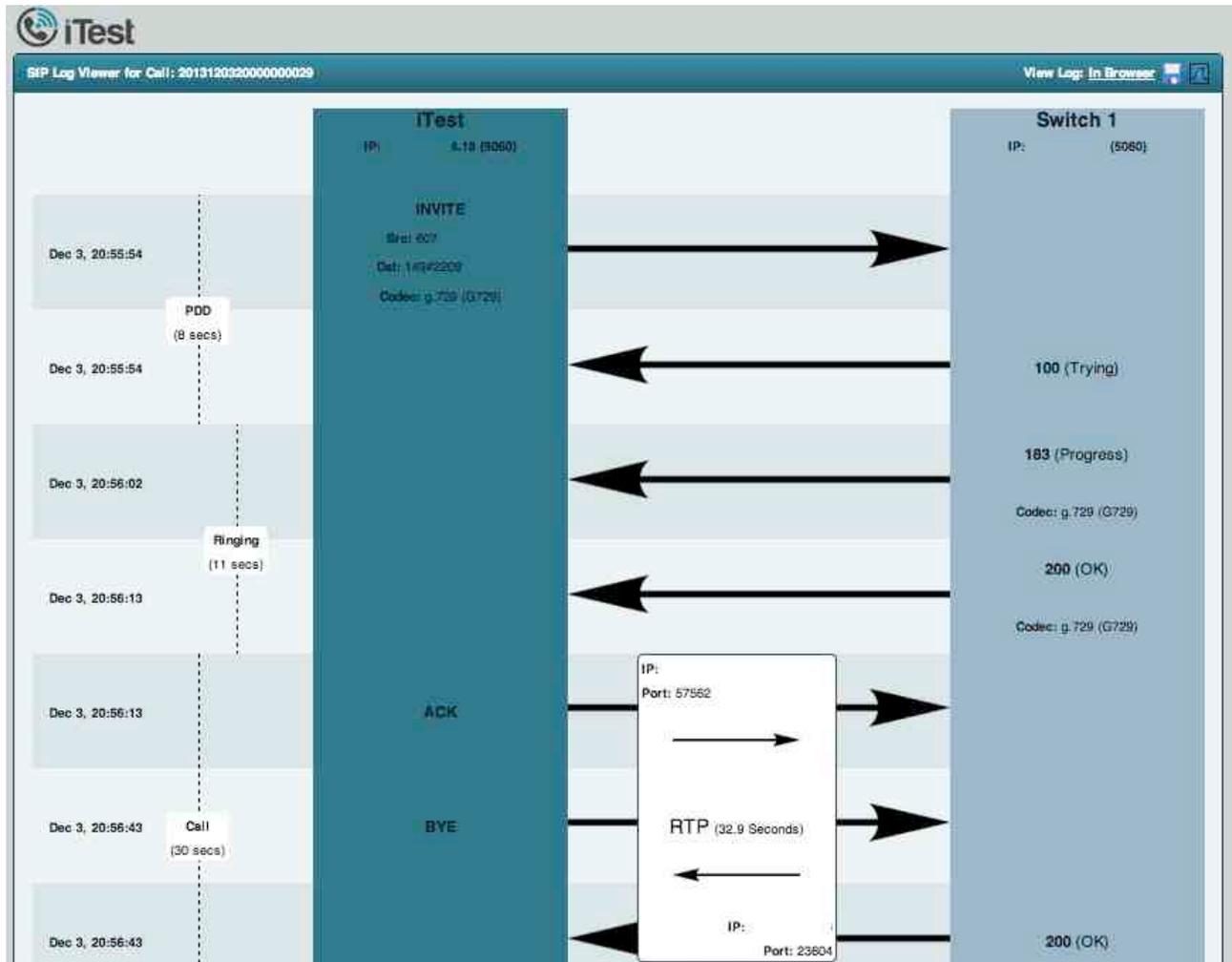
Download as:

Initiation Date: 3rd Dec 2013, 22:25:17

Time Initiated	Destination Number	State	PDD	Ring Duration	Call Duration	Packets	Final SIP Code	Result	Audio RBT	Call
3rd Dec 22:25:25	6390XXXXXXXX	Complete	NA (2.15)	31.5	NA	1505 / 1565	500 Server Internal Error	No answer		NA
3rd Dec 22:25:27	6394XXXXXXXX	Complete	2.49 (5.63)	14.1	NA	697 / 699	480 Temporarily Unavailable	No answer		NA
3rd Dec 22:25:28	6392XXXXXXXX	Complete	NA (NA)	21.9	NA	1029 / 1091	500 Server Internal Error	Failure		NA
3rd Dec 22:25:29	6390XXXXXXXX	Complete	6.16 (6.26)	16.5	19.8	1812 / 1808	200 OK	Success		
3rd Dec 22:25:30	6394XXXXXXXX	Complete	NA (1.77)	30.0	NA	1493 / 1492	487 Request Terminated	No answer		NA
3rd Dec 22:25:31	6392XXXXXXXX	Complete	5.72 (5.81)	10.0	9.5	964 / 970	200 Closing	Success		
3rd Dec 22:25:32	6390XXXXXXXX	Complete	2.52 (6.08)	30.4	NA	1518 / 1515	487 Request Terminated	No answer		NA
3rd Dec 22:25:33	6394XXXXXXXX	Complete	NA (NA)	29.9	NA	1026 / 1525	487 Request Terminated	No answer		NA
3rd Dec 22:25:34	6392XXXXXXXX	Complete	NA (7.83)	29.5	NA	1465 / 1466	500 Server Internal Error	Failure		NA
3rd Dec 22:25:35	6390XXXXXXXX	Complete	NA (NA)	0.3	NA	0 / 44	500 Server Internal Error	Failure	NA	NA

Automated calls and report generated by iTest
Visit www.i-test.net for more details

Full SIP Log: To help diagnose any issues with routes, iTest has the full SIP log of every call with all messages sent between the iTest infrastructure and the customers switch. This is displayed in an easy to use graphical display as well as a downloadable PCAP or text file.



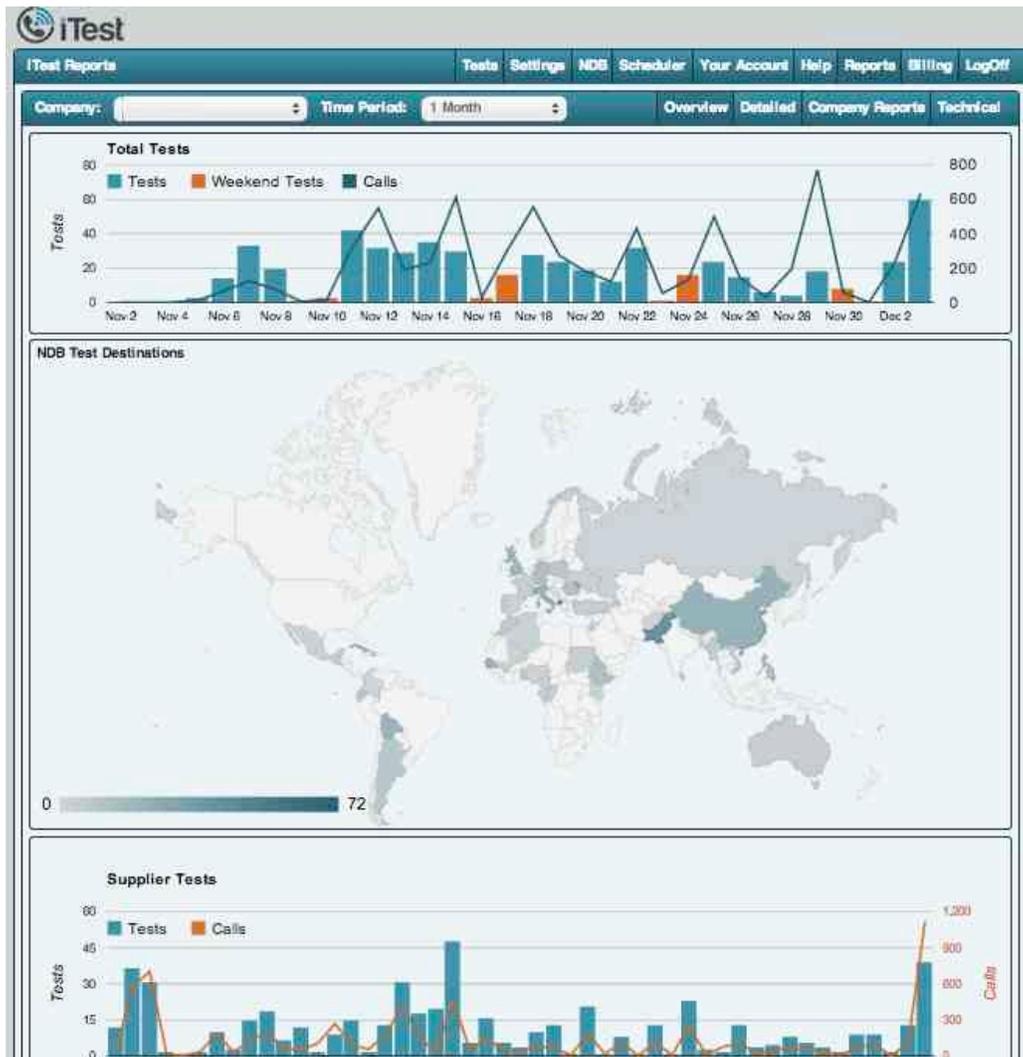
CLI Verification : iTest enables you to verify that the CLI on your routes is delivered to the terminating network which is essential for maintaining first class quality. Multiple networks around the globe are currently on the iTest CLI network and with an extensive rollout continuing in 2013/14, CLI tests are increasingly available throughout the world.

SIP Registration : iTest allows you to register a SIP hard or soft phone to the platform and make test calls through that phone giving you a complete testing solution. You can select the route you wish your test call to take from the portal and dial directly from your phone, or if initiating an automated test from the portal you can divert one of the live test calls to the phone. As with all other tests, the audio and statistics for the call are recorded and presented to you in the portal.

Interconnection Testing - Outbound: iTest allows you to design and group your own specific interconnect test schedule, choosing only the call test you wish to use such as Originating or Terminating party call disconnects, long duration calls, CLI verification, DTMF and correct disconnect code responses. These are combined into your own personal interconnect test which is automated by

Interconnection Testing - Inbound: Using iTest you can terminate inbound tests calls from your customers with specific predefined responses programmed in. This allows you to set inbound test schedules with guaranteed responses such as specific disconnect codes, DTMF delivery etc. The numbers for these specific tests can then be passed to your customer so that they can quickly test and sign off the interconnect.

Reporting : iTest contains multiple management reports giving you all the information you may need to track and manage your network testing. Overview reports on all tests are available as well as detailed reports on issues for each supplier.



Simbox Detection: iTest enables network carriers to detect the use of illegal Sim Gateways that are allowing fraudulent carriers to terminate calls on their network and bypassing legitimate routes. Using iTest and our global carrier partners we are able to initiate calls to nodes within the customers network and instantly report on any call that did not pass the correct CLI allowing the customer to disable any sim that has been used to pass these calls.

Scalable Deployment Scenarios: Whether access is required for a small telco or large Tier 1, iTest can be supplied on a per user basis from 1 – 1000 users from our cloud platform or we can deploy an onsite private solution within your network.

Multi Level Access: iTest’s different security levels allow you to give multiple users access only to the features they require, such as supplier and test number administration, CLI checking and standard tests. It also allows you to create guest access which enables you to offer your customers a locked down login to iTest so they can test the quality of the routes you offer them.

Security: iTest takes the security of your information and network seriously. Therefore all user transactions with iTest use HTTPS and 512 bit SSH connections are used between all servers within the iTest hosted infrastructure. IP address restrictions ensure that an ip address can only be associated to a single company's switch profile within iTest and so not utilised by anyone else. No inbound sip gateways operate within the iTest hosted infrastructure which ensures it cannot be used as a transient switch to any customer equipment. All calls originate from the iTest hosted infrastructure only.

iTest and IPT networks are independent of any telecommunications companies and are bound by UK and EU data protection laws. We cannot and will not share any of your data with any other parties.



For more information please contact
info@i-test.net

Part of the IPT Networks Managed Service portfolio:

iView - Network and Switch Monitoring and Management

iTest - Route Quality and Performance Testing

iTest -Load - SIP and IVR Load Testing