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BT

BT Report

Assessing the suitability of NetServices 'QoS over IPStream' solution using Cisco technology.

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NetServices' converged service gets unique confirmation from BT

NetServices Plc has secured unique test confirmation on the quality of its range of innovative converged services, as British Telecom acknowledges a technology that is a direct competitor to one of its own key and more costly products.

Developed as part of its commitment to bringing the cost and efficiency benefits of converged communications to a broader range of businesses, the NetServices 'QoS over IPStream' solution enables customers to save up to 83% compared to standard BT IPClear products. What's more, as the solution is delivered via the same standard ADSL technology that services 99.6% of the UK and is used for the majority of broadband services, it allows businesses to converge their voice, data and even video-conferencing services without investing in expensive Ethernet or leased lines.

An independent test carried out by BT's own experts from its leading European Martlesham Laboratories revealed that NetServices 'QoS over IPStream' solution was capable of carrying up to 8 simultaneous voice calls and data traffic at any one time. That compares favourably to more expensive access technology.

As a tier one aggregator, NetServices is now leading the market with its MPLS portfolio and this latest addition allows corporates to extend the power of the MPLS network down to very small sites at a commercially viable level - a first for the UK.

Consequently, BT's tests concluded that NetServices 'QoS over IPStream' solution worked at an appropriate level. Making this unique solution ideal for remote workers, small companies and video-conferencing installations, which are increasingly moving towards IP for delivery.

NetServices' CEO, Mark Vickers, commented: "Earning BT's recognition of our unique capability is a great step forward for us. We developed NetServices 'QoS over IPStream' solution to meet the huge demand we have experienced for a quality converged service geared towards smaller and remote needs.

He concludes: "Its development is not only a huge business opportunity for us, but it also promises to change the way that thousands of businesses deliver their communications services across the UK for the better."

Ends

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NetServices innovative ‘QoS over IPStream’ solution using Cisco technology

The following BT report confirms the suitability and innovation of NetServices ‘QoS over IPStream’ product as a DSL component of an MPLS solution. It competes directly with the BT ‘IPClear’ product set.

Due to the fact that the underlying network used to deliver the services is the BT IPStream network, all UK installations can be completed in 10 to 30 days, on a three month contract, subject to copper being currently installed. The innovation delivers a cost benefit of up to 83% without loss of functionality*.

The SLA’s and SLG’s that NetServices provides, in combination with BT’s capabilities, ensures that the quality and reliability of all ‘QoS over IPStream’ network solutions are equal to the SLA’s and SLG’s associated with the BT ‘IPClear’ product set. The IPStream network is delivered by BT and as a consequence the NetServices ‘QoS over IPStream’ solution is available in the UK with coverage of 99.6%.

NetServices has developed its cost effective ‘managed MPLS network’ with a focus on the remote worker, small business, video conferencing market to satisfy the current market demands. All ‘converged broadband’ solutions are future proofed and fully compatible with the 21CN architecture with full interoperability.

*Further details available in our ‘A competitive comparison of IPClear and MPLS VPN’ whitepaper, available at: www.theknowledgecentre.net

Contents

This information has been extracted directly from the BT ‘Results and Observations for Media Voice Quality of NetServices Combined Voice and Data Offering’ issued by Martin Turner of the BT Martlesham labs on the 28th January 2008.

1. Glossary

Acronym	Meaning
BW	Bandwidth
IP	Internet Protocol
MOS	Mean Opinion Score
PESQ	Perceptual Evaluation of Speech Quality
VoIP	Voice over Internet Protocol
VQM	Voice Quality Monitoring

2. Scope

(1) Test two classes of service, voice and data. Platinum and bronze co-existing.

(2) All sessions running concurrently.

(3) Voice Quality measured using PESQ algorithm from Psytechnics as number of sessions increase from 1 to 8.
Make quality acceptability assessment.

3. Overview of Test Methodology

In order to fulfil the scope, both SIP voice call and IP data generation tools were used. The Call generation equipment also included the VQM capability using the PESQ MOS algorithm.

The Call Generation tool was used to generate 1, 2, 3, 4 and 8 simultaneous calls and configured to perform VQM measurements for each end to end call.

We were able to perform multiple tests using combined IP data and voice call traffic. The tools allowed us to vary the proportions of bandwidth used by the data and voice traffic between tests.

The following combination of calls were made :-

1 concurrent G729 call with VQM measurement
2 concurrent G729 calls with VQM measurement
3 concurrent G729 calls with VQM measurement
4 concurrent G729 calls with VQM measurement
8 concurrent G729 calls with VQM measurement

The above combination was performed against 3 traffic profiles as follows :-

Without Data Traffic

With Single Stream of Simulated Data Traffic

The profile of background load was :-

10 sequential tests of 40 sec intervals, incrementing in 10Kb/sec blocks from 500Kb/sec to 700Kb/sec. The traffic was set with a destination UDP port of 9999, which matched the default traffic class configured on the NetServices network.

With Dual Stream of Simulated Data Traffic

The profile of background load was :-

10 sequential tests, containing 2 streams, of 40 sec intervals, incrementing in 10Kb/sec blocks from 500Kb/sec to total of 700Kb/sec. Stream 1 was set with a destination UDP port of 9999 and stream 2 was set with a destination UDP port of 8888. These 2 streams matched to the 2 test Data Services, configured on the NetServices network.

4. Executive Summary

This section describes observations made during the testing activities and makes recommendations that could be considered by NetServices.

As an indication for MOS using PESQ, the scale is from 1-5, with 4 being compared to PSTN at G711, VoIP on G729 should be around 3.5 and mobile maybe up to 3.5, depending on reception.

The values are commonly shown as 5=excellent, 4=good, 3=fair, 2=poor, 1=bad.

4.1. Observations and Considerations

In this particular environment a small number of individual drops in MOS values were noted with 8 calls. This was seen with or without data traffic.

4.2. Conclusions

During the testing period it was possible to perform a number of test cases covering the agreed scope of Voice Quality Measurement. As noted in the previous section there were individual instances of lower values of MOS, but it should be noted that these conditions were seen, both with and without the presence of data traffic.

Full BT report is available upon request.

5. Appendix A - Details of Test Runs

As an indication for MOS using PESQ, the scale is from 1-5, with 4 being compared to PSTN at G711, VoIP on G729 should be around 3.5 and mobile may be upto 3.5, depending on reception.

The values are commonly shown as 5=excellent, 4=good, 3=fair, 2=poor, 1=bad.

This information can be used to understand the details of the call reports (Appendix B).

Short Duration test cases, with calls but without Background data load

Test	Simultaneous Calls	Overview of VQM Results
1	1	MOS 100% of target
2	2	MOS 100% of target
3	3	MOS 100% of target
4	4	MOS 100% of target
5	8	MOS 97.5% of target

Short Duration test cases, with calls and Single stream of Background load

The profile of background load was :-

10 sequential tests of 40 sec intervals, incrementing in 10Kb/sec blocks from 500Kb/sec to 700Kb/sec. The traffic was set with a destination UDP port of 9999, which matched a test configuration on the NetServices network.

Test	Simultaneous Calls	Overview of VQM Results
6	1	MOS 100% of target
7	2	MOS 100% of target
8	3	MOS 100% of target
9	4	MOS 100% of target
10	8	MOS 94.4% of target

Short Duration test cases, with calls and Dual stream of Background data load

The profile of background load was :-

10 sequential tests, containing 2 streams, of 40 sec intervals, incrementing in 10Kb/sec blocks from 500Kb/sec to total of 700Kb/sec. Stream 1 was set with a destination UDP port of 9999 and stream 2 was set with a destination UDP port of 5555. These 2 streams matched to the 2 test Data Services configured on the NetServices network.

Test	Simultaneous Calls	Overview of VQM Results
11	1	MOS 100% of target
12	2	MOS 100% of target
13	3	MOS 100% of target
14	4	MOS 100% of target
15	8	MOS 99.4% of target

Long Duration test cases, with calls but without Background data load

Test	Simultaneous Calls	Overview of VQM Results
16	8	MOS 99.4% of target