

Troubleshooting Converged Networks

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How do you trace the problem?

- Dealing with the soft Demarc
- Is root-cause analysis affordable?
- How quickly can you isolate “your” issue?

Metrics...which one(s)?

- MOS, latency, out-of-order packets, jitter

Side by Side MOS

NBX Tech Tips Visit: <http://nbxgroup.com/mywebsite/id103.html> for details

NBX 100 Installed on LAN - PCs & IMacs / HUBS- Kingston 10MBPS Stackable
 MOS 4.4 / Avg Jitter 1.29 msec / Avg Delay 7.3 msec

NetAlly Report - G.711 Incremented Number of Calls1 (Mar 1, 2003 10:55 AM) - Microsoft Internet Explorer

Web Server: 192.168.2.2, Test Index: 110
 Mar 1, 2003 3:52:55 PM EST

G.711 Incremented Number of Calls1 (Mar 1, 2003 10:55 AM)
 Call View - Single Period (1)

	MOS	Delay	Loss	Jitter	Throughput	R Value
		msec	Percent	msec	Kbit/sec	
Matt-TELECOMW-2MWHHO-4380	4.4	7.09	0.0	1.29	64.0	92.88
Matt-TELECOMW-2MWHHO-4382	4.4	7.27	0.0	1.26	64.0	92.88
Matt-TELECOMW-2MWHHO-4384	4.4	6.51	0.0	1.27	64.0	92.89
Matt-TELECOMW-2MWHHO-4385	4.4	6.75	0.0	1.27	64.0	92.88
Matt-TELECOMW-2MWHHO-4388	4.4	6.98	0.0	1.26	64.0	92.87
Matt-TELECOMW-2MWHHO-4390	4.4	7.2	0.0	1.28	64.0	92.86
Matt-TELECOMW-2MWHHO-4392	4.4	7.42	0.0	1.28	64.0	92.85
Matt-TELECOMW-2MWHHO-4394	4.4	7.64	0.0	1.29	64.0	92.83
Matt-TELECOMW-2MWHHO-4396	4.4	6.96	0.0	1.3	64.0	92.85
Matt-TELECOMW-2MWHHO-4398	4.4	6.97	0.0	1.31	64.0	92.84
Matt-TELECOMW-2MWHHO-4400	4.4	7.3	0.0	1.31	64.0	92.83
Matt-TELECOMW-2MWHHO-4402	4.4	7.55	0.0	1.31	64.0	92.81
Matt-TELECOMW-2MWHHO-4404	4.4	7.8	0.0	1.3	64.0	92.8
Matt-TELECOMW-2MWHHO-4406	4.4	7.99	0.0	1.34	64.0	92.78

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NBX 100 Installed on LAN - PCs & IMacs / Switches- 1100 & 3300
 MOS 4.4 / Avg Jitter 0.49 msec / Avg Delay 2.78 msec

NetAlly Report - G.711 Incremented Number of Calls1 (Feb 28, 2003 4:54 PM) - Microsoft Internet Explorer

G.711 Incremented Number of Calls1 (Feb 28, 2003 4:56 PM)
 Call View - Single Period (1)

	MOS	Delay	Loss	Jitter	Throughput	R Value
		msec	Percent	msec	Kbit/sec	
Matt-TELECOMW-2MWHHO-4016	4.4	2.33	0.0	0.46	64.0	93.88
Matt-TELECOMW-2MWHHO-4018	4.4	2.42	0.0	0.47	64.0	93.87
Matt-TELECOMW-2MWHHO-4020	4.4	2.51	0.0	0.47	64.0	93.87
Matt-TELECOMW-2MWHHO-4022	4.4	2.61	0.0	0.48	64.0	93.87
Matt-TELECOMW-2MWHHO-4024	4.4	2.7	0.0	0.47	64.0	93.87
Matt-TELECOMW-2MWHHO-4026	4.4	2.8	0.0	0.48	64.0	93.86
Matt-TELECOMW-2MWHHO-4028	4.4	2.88	0.0	0.48	64.0	93.86
Matt-TELECOMW-2MWHHO-4030	4.4	1.98	0.0	0.49	64.0	93.89
Matt-TELECOMW-2MWHHO-4032	4.4	2.08	0.0	0.5	64.0	93.88
Matt-TELECOMW-2MWHHO-4034	4.4	3.17	0.0	0.51	64.0	93.85
Matt-TELECOMW-2MWHHO-4036	4.4	3.26	0.0	0.49	64.0	93.85
Matt-TELECOMW-2MWHHO-4038	4.4	3.36	0.0	0.49	64.0	93.84
Matt-TELECOMW-2MWHHO-4040	4.4	3.45	0.0	0.5	64.0	93.84
Matt-TELECOMW-2MWHHO-4042	4.4	2.54	0.0	0.52	64.0	93.87
Matt-TELECOMW-2MWHHO-4044	4.4	3.64	0.0	0.52	64.0	93.83

Side by Side

- HUBS 10 Mbps

- SWITCHES 10 Mbps

- MOS 4.4

- MOS 4.4

- Avg. Delay 7.3 msec

- Avg. Delay 2.78 msec

- Avg. Jitter 1.29 msec

- Avg. Jitter 0.49 msec

- The bottom line is often in the details
- Assessing & Monitoring
- Collecting & using data from 'wares'
- What about Predicting?
- Fix the problem or alleviate symptoms?

Tools to Support Remote Sites

- What tools are available?

Sharing Info Across Teams

- Preventing TMI
- Who gets what info and when?
- How do you share the info?
- Action- who acts on what info and when?