

Network Traffic Analysis

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Networld+Interop

Performance Conference

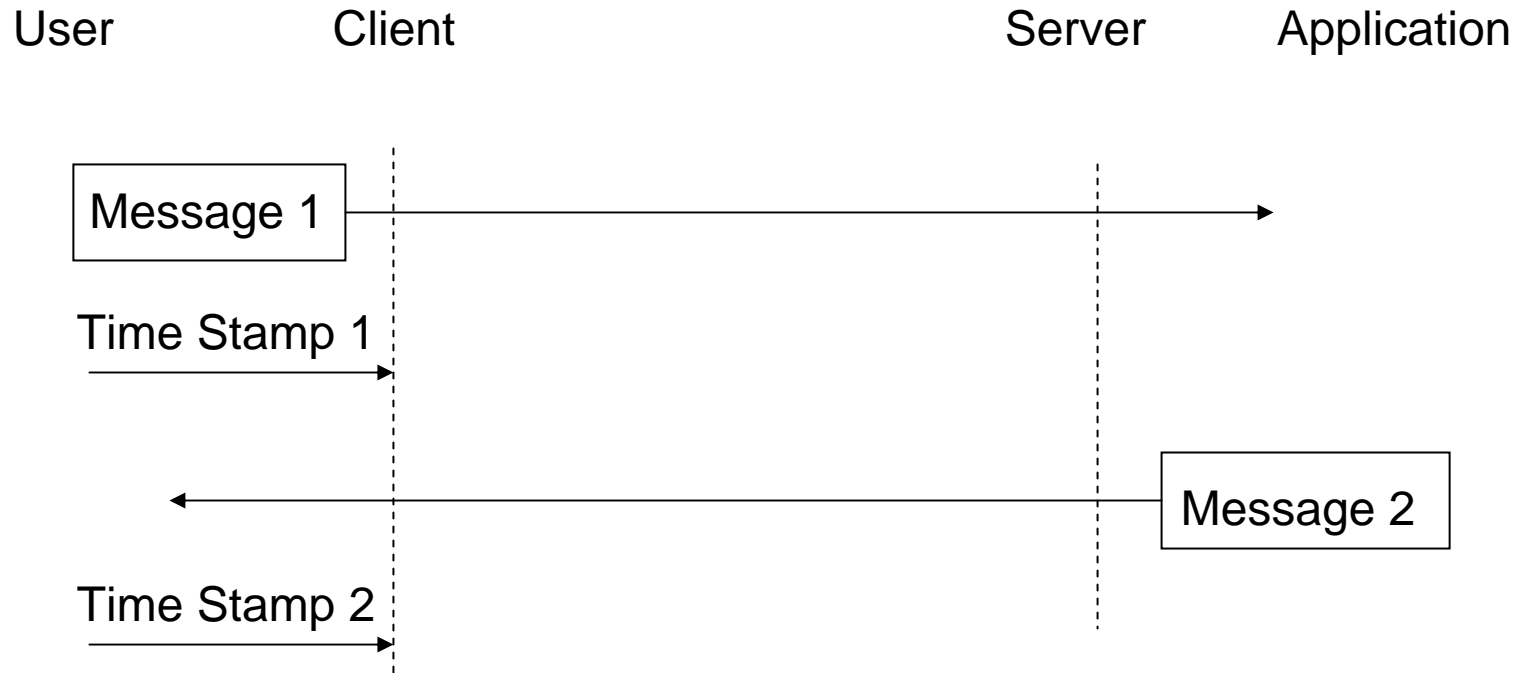
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Performance Metrics

- Bits or Bytes per second
- Packets or Messages per second
- Transactions or Tasks per second or minute
- Application Profiles
- Response Time
- Round Trip Time
- Latency

Media Capacity vs End User Task Time Perception

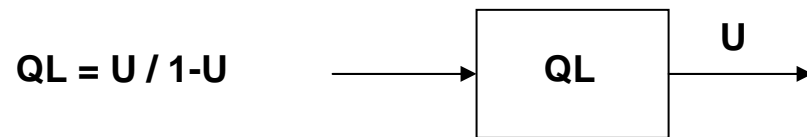
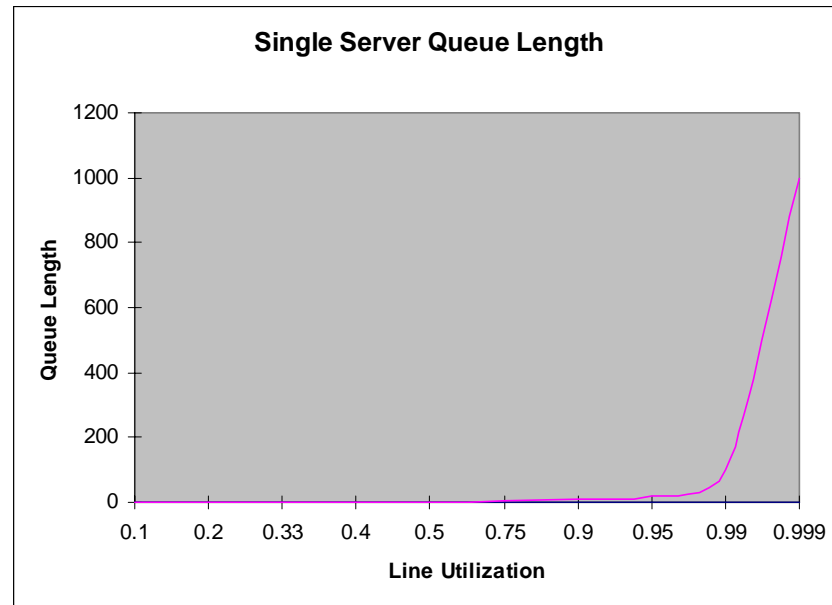
Response Time RT



RT = Time2-Time1, First Byte of Message 1 to Last Byte of Message 2.

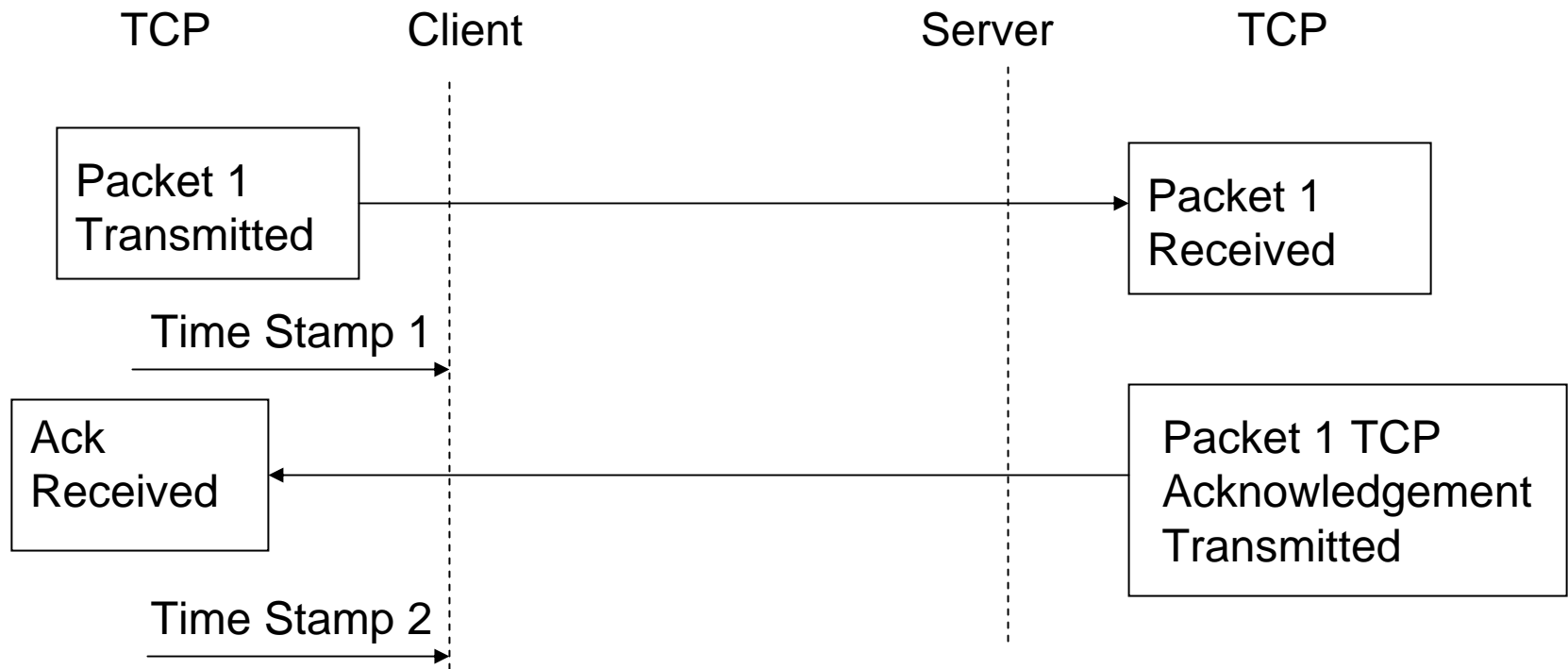
Queuing Time

U	QL
0.1	0.11
0.2	0.25
0.33	0.5
0.4	0.66
0.5	1
0.75	3
0.9	9
0.95	19
0.99	99
0.999	999



Where QL= Queue Length and U= Link Utilization

Round Trip Time



RTT = Time2-Time1, An acknowledgement for transmitted packet received.

Traffic Analysis via Traces

- Trace Captures – Hardware and Software
Normally captures millions of packets
- Trace Analysis – Software Tools
Lots of Tools to choose from
- Network Performance Consultants
Help by the hour as needed

Problem Report

LIST OF TCP ROUTES WITH POSSIBLE PROBLEMS

20 of 290 TCP CIRCUITS HAVE POTENTIAL PROBLEMS

DATE	FILE	START	STOP	INTERVAL(in sec)
2004-12-17	nta-scdata-file-copy-2004-12-17	16:01:26	16:12:25	1

Stat Report

	Ntwk	End Station	Perf	IP Source Addr:port# --> IP Destination Addr:port#	Dgrms	User Bytes	Long RTT	Long Resp	ReXmit	Dupl Rcds	Frag Dgrms	Re-Seq	Zero Window	Slow Rcvr	Reset Flag
				009.042.167.248:00080-->009.042.166.193:58445	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.248:00080-->009.042.166.193:58446	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00007-->009.044.212.016:43716	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00007-->009.044.212.016:43755	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00007-->009.044.212.016:43797	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00007-->009.044.212.016:43837	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00007-->009.044.212.016:43880	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00080-->009.042.166.193:58445	1	0	0	0	0	0	0	0	0	0	1
				009.042.167.253:00139-->009.044.194.128:03169	55446	75701723	657	412	3387	0	0	161	0	0	0
				009.042.167.253:00139-->009.044.194.128:04553	65	70395	0	0	2	0	0	0	0	0	0
				009.042.167.253:00139-->009.044.195.136:03280	2	8	2	0	0	0	0	0	0	0	0
				009.042.167.253:00139-->009.044.211.150:04028	2	8	1	0	0	0	0	0	0	0	0
				009.042.167.253:00445-->009.044.194.128:04552	1	0	0	0	0	0	0	0	0	0	1
				009.044.194.128:03169-->009.042.167.253:00139	31701	91443	0	1	2	0	0	0	0	0	0



Technique Summary

- Find Tools that help in your network environment.
- Establish a relationship with Network Performance Consultant beforehand.
- Be proactive where possible. Start taking traces before the next crisis, establish baseline measurements for your network.

Information on using the NTA tools is available on the Internet and via a Learning Services course .

NTA Website – Logon with userid of “demo” for a test drive:

<http://www.ibm.com/services/tsm/nta>

NCP Today Article:

Analyzing Traffic Problems with the NTA TCP/IP Analysis Tool

<http://www.networking.ibm.com/375/summer2001/article8.html>

IBM Learning Services 5 Day Lecture / Lab Course:

TCP/IP Performance Analysis and Tuning – Course Number CB500

<http://www-3.ibm.com/services/learning/us/catalog>

Technical Reference White Paper:

Solving Complex Performance Problems in TCP/IP & SNA Environments

<http://www.ibm.com/services/its/us/source/cwp-perftcpip.pdf>