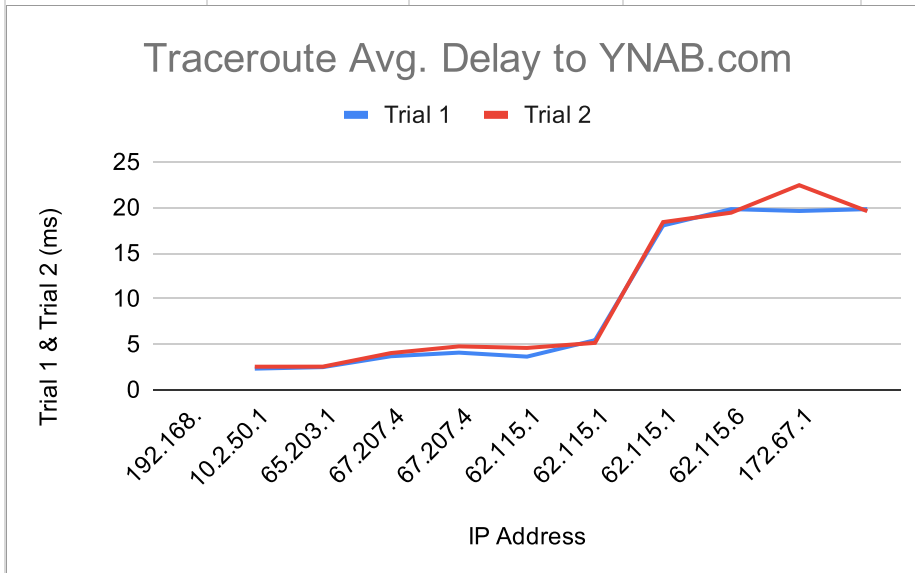


Question 1							
	500 bytes	No Queue Delay			1000 bytes	No Queue Delay	
	10	2.4	7.6		11	2.8	8.2
	2.8	2.4	0.4		10	2.8	7.2
	2.4	2.4	0		2.8	2.8	0
	4	2.4	1.6		3	2.8	0.2
	5.5	2.4	3.1		5.5	2.8	2.7
			Average: 2.54				Average 3.66
Question 1:	The average queuing delay by the 1000 byte packets are 3.66 ms						
	Because we assume a no queue delay at around 2.4 ms for a 500 bytes, a reasonable estimate of transmission and propagation delay combined, for a packet of 600 bytes would be about 2 ms, as that would account for the remainder of the delay, with a little room for the processing delay.						
Question 2					Trial 1	Trial 2	
Hop	Delay 1	Delay 2	Delay 3	IP Address	Trial 1 Avg	Trial 2 Avg	
1	2.787	2.121	2.032	192.168.8.1	2.313333333	2.526333333	
2	2.799	2.114	2.526	10.2.50.1	2.479666667	2.532333333	
3	3.197	4.038	3.789	65.203.17.249	3.674666667	4.023	
4	4.378	4.2	3.631	67.207.46.8	4.069666667	4.756333333	
5	3.974	3.855	3.065	67.207.46.6	3.631333333	4.586333333	
6	3.463	3.984	8.87	62.115.190.186	5.439	5.143	
7	18.302	17.942	17.851	62.115.140.52	18.03166667	18.40066667	
8	20.284	19.234	19.952	62.115.115.217	19.82333333	19.43266667	
9	19.918	19.918	19.021	62.115.61.151	19.619	22.45233333	
10	19.088	19.761	20.615	172.67.170.83	19.82133333	19.60166667	
Trial 2							
Hop	Delay 1	Delay 2	Delay 3	IP Address	Average		
1	3.289	2.304	1.986	192.168.8.1	2.526333333		
2	2.224	3.191	2.182	10.2.50.1	2.532333333		
3	3.444	4.666	3.959	65.203.17.249	4.023		

4	7.784	3.352	3.133	67.207.46.8	4.756333333		
5	3.67	3.167	6.922	67.207.46.6	4.586333333		
6	3.782	7.696	3.951	62.115.190.186	5.143		
7	18.931	18.388	17.883	62.115.140.52	18.40066667		
8	19.27	20.922	18.106	62.115.115.217	19.43266667		
9	21.096	24.114	22.147	62.115.61.151	22.45233333		
10	19.743	19.598	19.464	172.67.170.83	19.60166667		

Question 3b If one of the delay values between the source and a given router hop are unusually high this would likely be due to higher traffic on the network (queuing delay). It could also be due to a propogation delay (such as interference from a storm for satelite or radio waves)

Question 3a	Delay	Min Delay (ms)	Queing Delay (ms)	Avg Queuing Delay (ms)		
netmeter.eu	147.02	146.59	0.43	5.63		
77.78.109.83	153.847		7.26			
	153.329	Avg Delay (ms)	6.74			



	151.359		4.77			
	147.591		1.00			

	147.193		0.61				
	151.941		5.35				
	146.6		0.01				
	151.309		4.72				
	147.145		0.56				
	150.776		4.19				
	150.252		3.67				
	147.217		0.63				
	153.384		6.80				
	146.807		0.22				
	146.971		0.38				
	150.598		4.01				
	146.865		0.28				
	150.549		3.96				
	150.599		4.01				
	146.989		0.40				
	146.851		0.26				
	147.034		0.45				
	146.909		0.32				
	153.563		6.98				
	153.532		6.95				
	150.631		4.04				
	150.36		3.77				
	146.825		0.24				
	151.655		5.07				
	237.539		90.95				
	199.025		52.44				
	231.944		85.36				
	153.228		6.64				
	153.311		6.72				
	153.276		6.69				

	147.011		0.42				
	153.636		7.05				
	154.282		7.70				
	153.462		6.88				
	153.432		6.85				
	151.916		5.33				
	147.751		1.16				
	154.463		7.88				
	159.111		12.52				
	147.099		0.51				
	152.765		6.18				
	154.166		7.58				
	155.596		9.01				
	153.432		6.85				
	153.168		6.58				
	152.823		6.24				
	154.252		7.67				
	146.777		0.19				
	153.46		6.87				
	146.824		0.24				
	153.429		6.84				
	153.333		6.75				
	151.061		4.47				
	146.986		0.40				
	153.202		6.62				
	153.418		6.83				
	146.985		0.40				
	153.427		6.84				
	153.478		6.89				
	149.937		3.35				
	153.453		6.87				

	151.449		4.86				
	153.35		6.76				
	154.054		7.47				
	150.408		3.82				
	147.186		0.60				
	153.349		6.76				
	147.532		0.95				
	146.957		0.37				
	146.976		0.39				
	153.94		7.35				
	153.16		6.57				
	153.563		6.98				
	151.688		5.10				
	150.53		3.94				
	153.236		6.65				
	153.101		6.51				
	146.963		0.38				
	153.184		6.60				
	153.627		7.04				
	153.377		6.79				
	153.441		6.85				
	153.383		6.80				
	149.006		2.42				
	147.53		0.94				
	148.549		1.96				
	151.023		4.44				
	150.801		4.21				
	146.603		0.02				
	150.959		4.37				
	152.989		6.40				
	153.296		6.71				

	153.261		6.67				
	146.896		0.31				
	153.457		6.87				
	153.409		6.82				
	154.065		7.48				
	153.292		6.71				
	148.156		1.57				
	153.183		6.60				
	153.813		7.23				
	146.806		0.22				
	155.595		9.01				
	151.368		4.78				
	151.2		4.61				
	146.748		0.16				
	153.311		6.72				
	146.785		0.20				
	151.733		5.15				
	154.583		8.00				
	153.278		6.69				
	153.438		6.85				
	153.323		6.74				
	153.553		6.97				
	153.187		6.60				
	153.709		7.12				
	153.346		6.76				
	153.516		6.93				
	153.449		6.86				
	153.468		6.88				
	153.377		6.79				
	146.92		0.33				
	148.409		1.82				

	153.242		6.66				
	153.306		6.72				
	146.952		0.37				
	153.235		6.65				
	153.357		6.77				
	153.488		6.90				
	153.372		6.79				
	153.357		6.77				
	153.305		6.72				
	153.345		6.76				
	146.813		0.23				
	154.129		7.54				
	153.482		6.90				
	146.986		0.40				
	153.55		6.96				
	153.403		6.82				
	153.324		6.74				
	147.011		0.42				
	147.905		1.32				
	153.321		6.73				
	146.828		0.24				
	153.659		7.07				
	147.782		1.20				
	152.837		6.25				
	153.792		7.21				
	153.483		6.90				
	153.405		6.82				
	153.361		6.77				
	152.937		6.35				
	154.309		7.72				
	154.337		7.75				

	153.384		6.80				
	153.393		6.81				
	153.39		6.80				
	153.316		6.73				
	153.387		6.80				
	148.018		1.43				
	149.989		3.40				
	146.99		0.40				
	153.333		6.75				
	153.521		6.93				
	153.046		6.46				
	147.055		0.47				
	153.385		6.80				
	153.265		6.68				
	153.492		6.91				
	147.099		0.51				
	153.729		7.14				
	153.468		6.88				
	153.381		6.79				
	153.699		7.11				
	153.577		6.99				
	154.738		8.15				
	153.474		6.89				
	153.245		6.66				
	154.059		7.47				
	146.954		0.37				
	153.416		6.83				
	146.92		0.33				
	153.861		7.27				
	154.075		7.49				
	150.654		4.07				



	146.829		0.24				
	158.266		11.68				
	153.419		6.83				
	153.904		7.32				
	146.984		0.40				
	153.521		6.93				
	147.611		1.02				
	150.586		4.00				
	150.728		4.14				
	147.376		0.79				
	151.72		5.13				
	151.303		4.72				
	149.94		3.35				
	147.025		0.44				
	146.985		0.40				
	147.393		0.81				
	153.51		6.92				
	153.52		6.93				
	153.436		6.85				
	154.002		7.42				
	154.327		7.74				
	146.98		0.39				
	147.08		0.49				
	153.575		6.99				
	146.776		0.19				
	153.315		6.73				
	150.503		3.92				
	150.241		3.65				
	147.486		0.90				
	150.997		4.41				
	147.295		0.71				

	153.407		6.82				
	153.415		6.83				
	153.499		6.91				
	146.925		0.34				
	150.595		4.01				
	150.829		4.24				
	152.393		5.81				
	150.84		4.25				
	150.786		4.20				
	146.82		0.23				
	152.81		6.22				
	151.672		5.09				
	150.523		3.94				
	146.929		0.34				
	153.53		6.94				
	153.459		6.87				
	152.99		6.40				
	153.306		6.72				
	153.472		6.89				
	147.792		1.21				
	153.454		6.87				
	153.475		6.89				
	154.607		8.02				
	150.308		3.72				
	153.642		7.06				
	153.487		6.90				
	153.303		6.72				
	153.342		6.76				
	153.317		6.73				
	153.318		6.73				
	149.816		3.23				

	150.62		4.03				
	150.522		3.94				
	146.725		0.14				
	151.133		4.55				
	149.241		2.65				
	151.798		5.21				
	151.963		5.38				
	146.882		0.30				
	151.01		4.42				
	221.201		74.61				
	146.756		0.17				
	150.705		4.12				
	147.15		0.56				
	150.664		4.08				
	153.32		6.73				
	150.743		4.16				
	146.904		0.32				
	150.686		4.10				
	151.313		4.73				
	151.224		4.64				
	151.368		4.78				
	153.576		6.99				
	150.507		3.92				
	147.005		0.42				
	151.672		5.09				
	151.156		4.57				
	153.308		6.72				
	153.49		6.90				
	150.214		3.63				
	150.519		3.93				
	150.666		4.08				

	147.004		0.42				
	148.457		1.87				
	153.327		6.74				
	153.47		6.88				
	153.416		6.83				
	153.418		6.83				
	151.954		5.37				
	153.461		6.87				
	153.432		6.85				
	154.251		7.66				
	153.404		6.82				
	153.466		6.88				
	154.089		7.50				
	153.781		7.19				
	152.818		6.23				
	146.946		0.36				
	153.489		6.90				
	154.448		7.86				
	146.945		0.36				
	153.21		6.62				
	148.405		1.82				
	153.462		6.88				
	153.905		7.32				
	153.328		6.74				
	153.244		6.66				