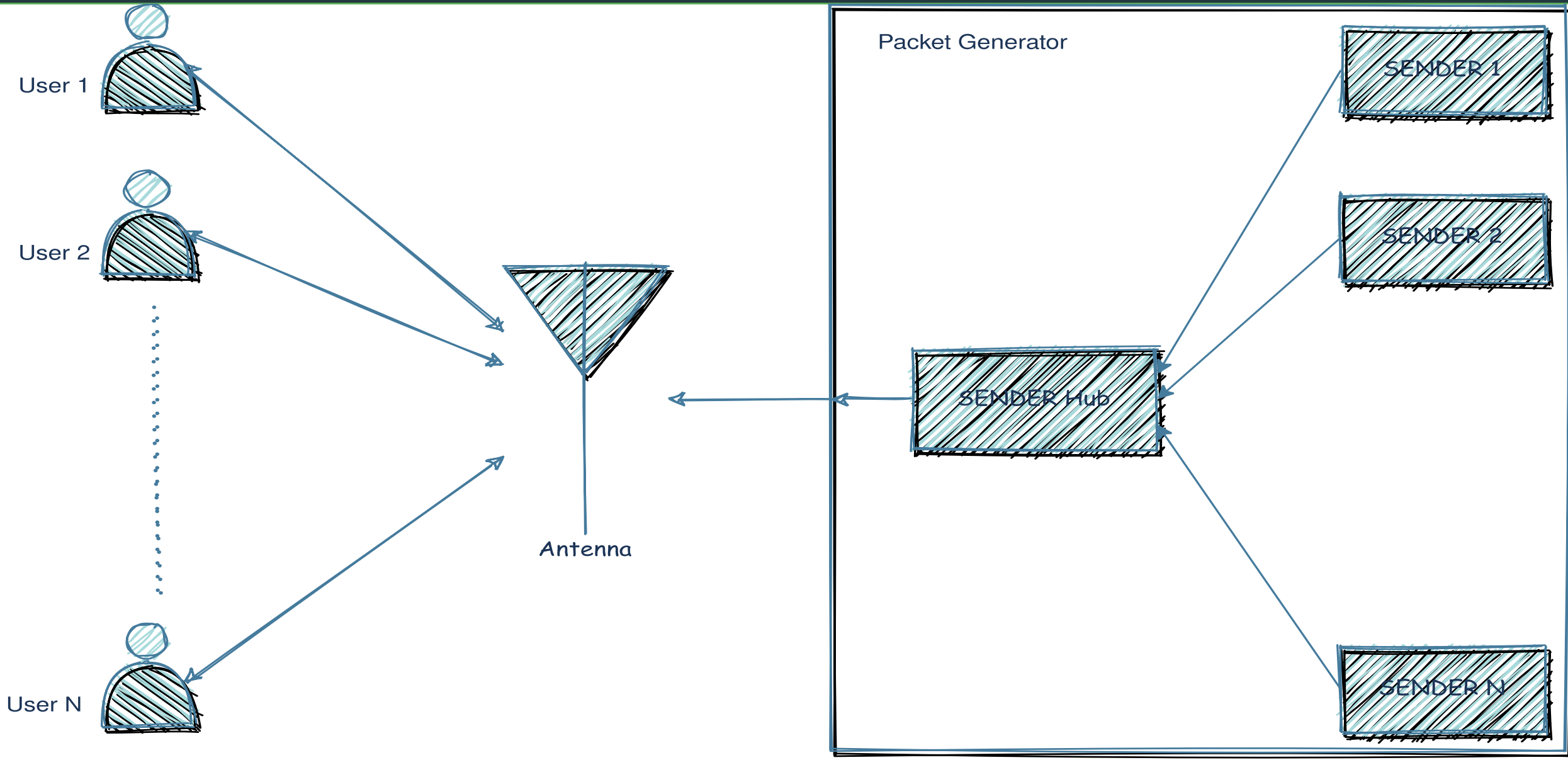


Fair - Network

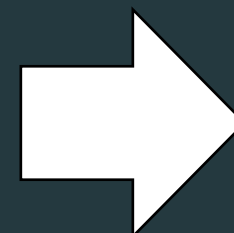
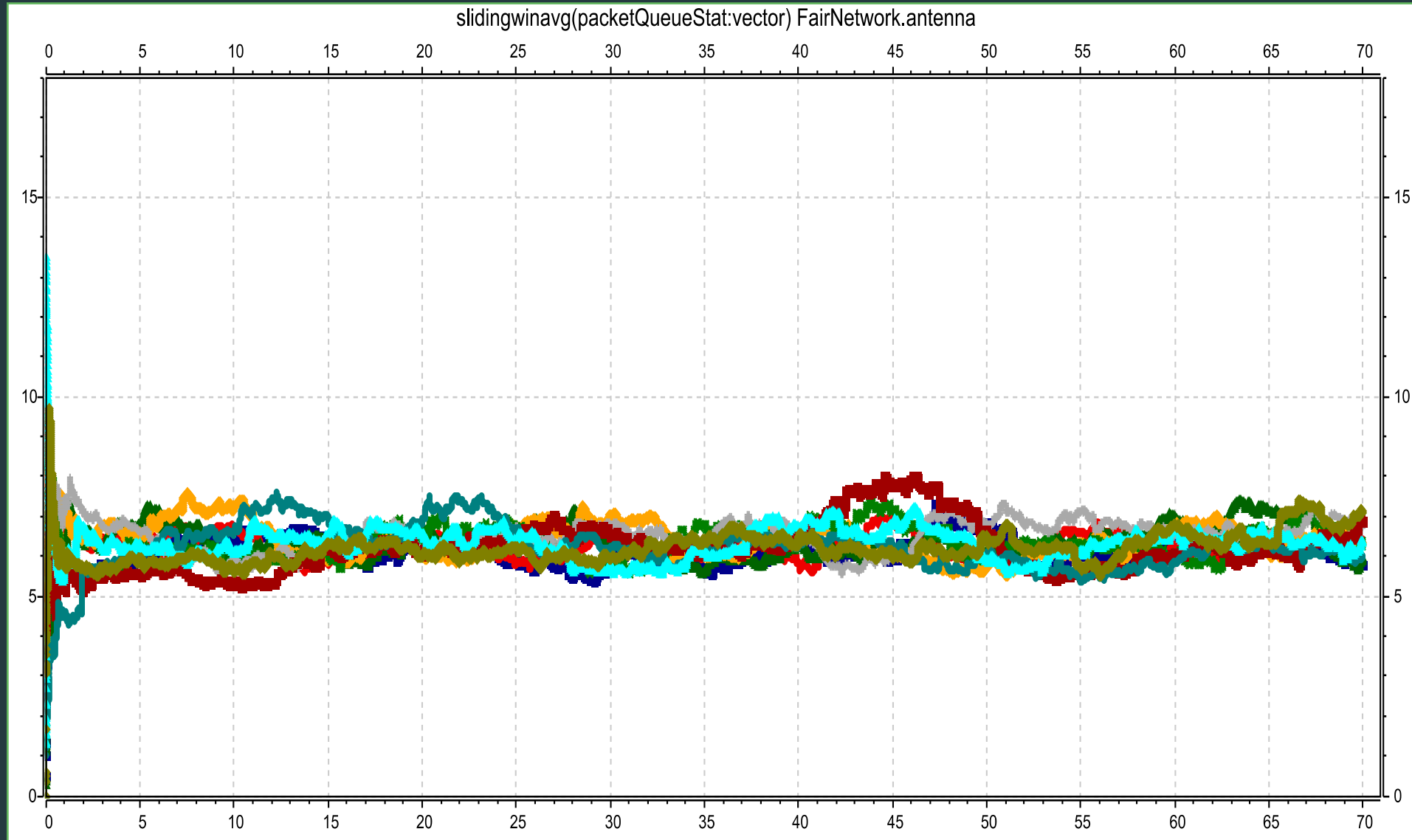
Performance Evaluation of Computer
System and Networks Project




Simulation Layout



Warm-up
Time



Warm-up = 5000ms



Simulation Time

Time (s)	Mean (B)	Std (B)
10	949,73	68,76
20	949,74	50,21
30	947,32	42,21
40	945,90	35,88
50	948,07	32,92
60	947,30	30,17
70	948,94	27,29
80	948,75	25,26
90	948,97	23,35
100	948,37	21,33



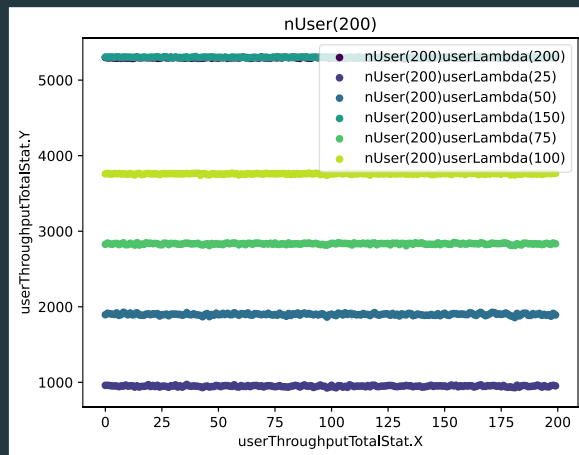
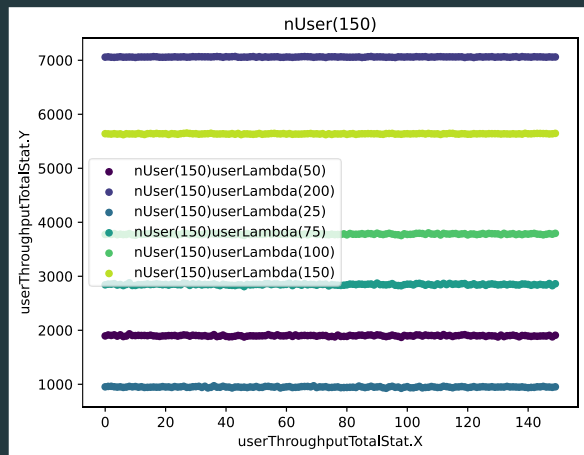
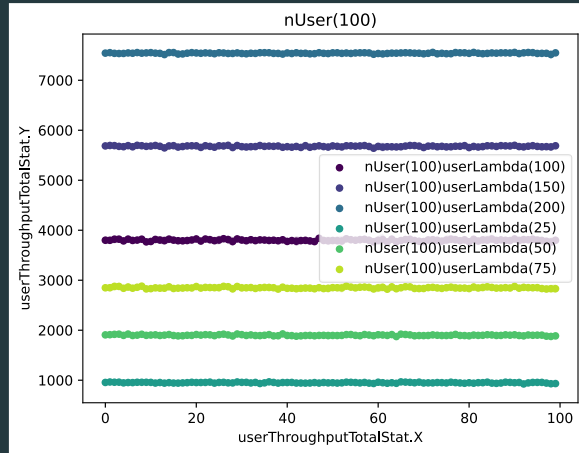
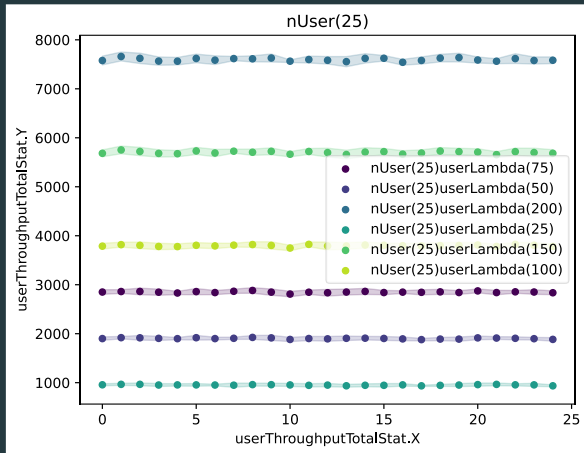
Simulation Time = 70s

UniformCQI system state summary

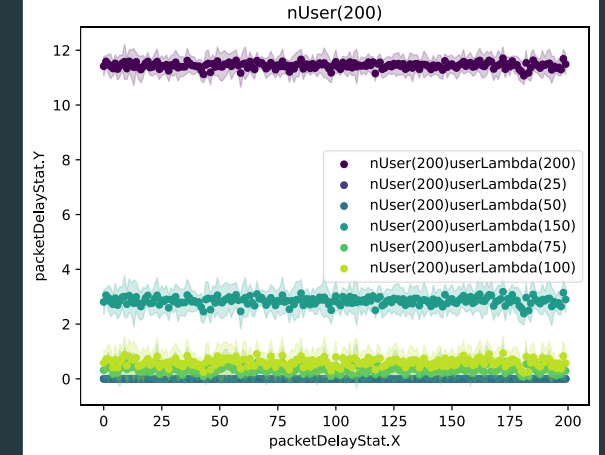
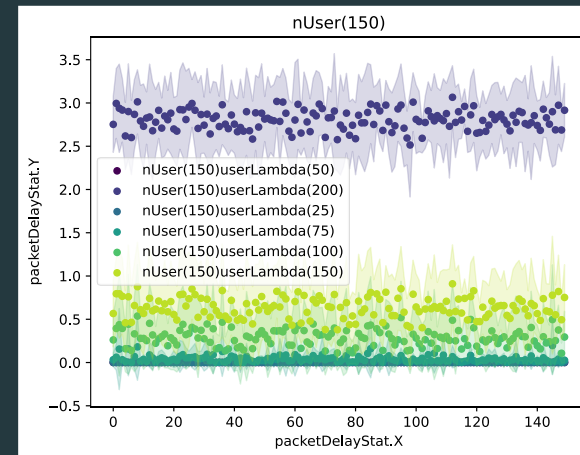
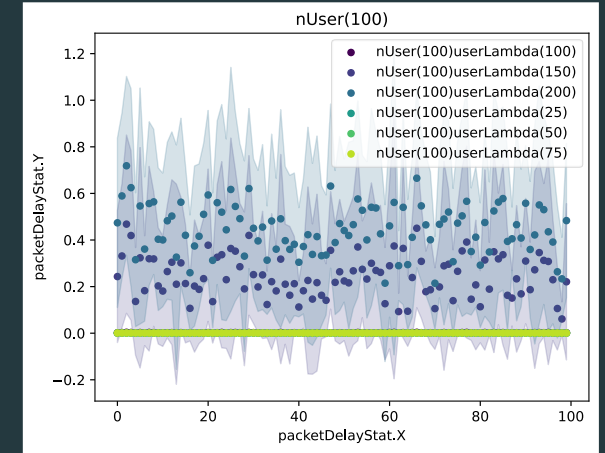
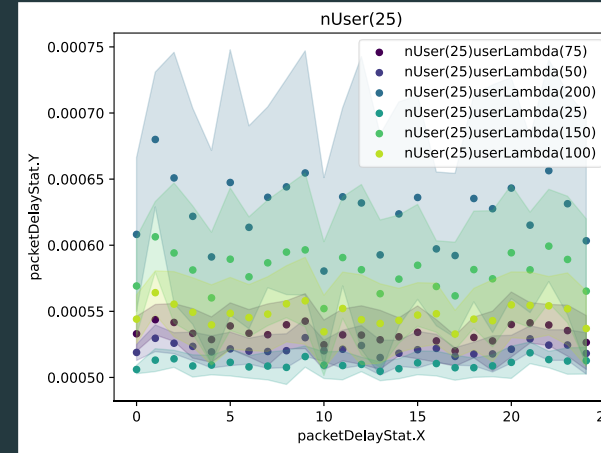
	nUser(25)	nUser(50)	nUser(100)	nUser(150)	nUser(200)
userLambda(25)	UNLOADED	LOW_LOAD	LOW_LOAD	LOW_LOAD	LOW_LOAD
userLambda(50)	LOW_LOAD	LOW_LOAD	LOW_LOAD	NORMAL	HIGH_LOAD
userLambda(75)	LOW_LOAD	LOW_LOAD	NORMAL	HIGH_LOAD	SATURATED
userLambda(100)	LOW_LOAD	LOW_LOAD	HIGH_LOAD	SATURATED	SATURATED
userLambda(150)	LOW_LOAD	NORMAL	SATURATED	SATURATED	SATURATED
userLambda(200)	LOW_LOAD	HIGH_LOAD	SATURATED	SATURATED	SATURATED

UniformCQI Simulation Results

• Throughput



• Delay



UniformCQI Simulation Results



(General) Runs	THROUGHPUT			DELAY		
	Q(0.025)	Q(0.975)	ratio	Q(0.025)	Q(0.975)	ratio
nUser(150)userLambda(75)	2826.841	2870.022	98.50%	0.002	0.156	1.58%
nUser(200)userLambda(50)	1874.411	1922.471	97.50%	0.001	0.005	18.85%
nUser(200)userLambda(75)	2816.585	2846.802	98.94%	0.117	0.588	19.87%
nUser(100)userLambda(150)	5654.117	5697.205	99.24%	0.1	0.42	23.75%
nUser(150)userLambda(100)	3765.932	3796.565	99.19%	0.132	0.491	26.84%
nUser(100)userLambda(100)	3768.349	3827.551	98.45%	0.001	0.003	32.33%
nUser(200)userLambda(100)	3745.391	3768.859	99.38%	0.33	0.85	38.79%
nUser(100)userLambda(200)	7521.796	7556.464	99.54%	0.246	0.628	39.13%
nUser(50)userLambda(200)	7535.526	7658.903	98.39%	0.001	0.002	41.41%
nUser(150)userLambda(150)	5626.001	5646.664	99.63%	0.422	0.837	50.45%
nUser(100)userLambda(75)	2825.164	2877.162	98.19%	0.001	0.001	66.87%
nUser(150)userLambda(50)	1878.121	1919.221	97.86%	0.001	0.001	66.89%
nUser(50)userLambda(150)	5649.154	5743.088	98.36%	0.001	0.001	72.12%
nUser(200)userLambda(150)	5294.771	5309.685	99.72%	2.506	3.081	81.34%
nUser(200)userLambda(25)	932.703	966.63	96.49%	0.001	0.001	84.76%
nUser(100)userLambda(50)	1880.719	1922.527	97.83%	0.001	0.001	85.68%
nUser(150)userLambda(200)	7052.251	7068.373	99.77%	2.591	3.01	86.08%
nUser(50)userLambda(100)	3773.61	3833.032	98.45%	0.001	0.001	86.25%
nUser(25)userLambda(200)	7549.609	7646.843	98.73%	0.001	0.001	88.14%
nUser(150)userLambda(25)	932.425	963.458	96.78%	0.001	0.001	90.98%
nUser(50)userLambda(75)	2822.403	2874.297	98.19%	0.001	0.001	91.09%
nUser(25)userLambda(150)	5657.429	5739.638	98.57%	0.001	0.001	92.49%
nUser(100)userLambda(25)	933.582	964.901	96.75%	0.001	0.001	94.35%
nUser(50)userLambda(50)	1882.084	1920.317	98.01%	0.001	0.001	94.59%
nUser(25)userLambda(100)	3766.618	3824.27	98.49%	0.001	0.001	95.26%
nUser(200)userLambda(200)	5287.04	5302.671	99.71%	11.177	11.628	96.12%
nUser(25)userLambda(75)	2822.286	2877.13	98.09%	0.001	0.001	96.29%
nUser(50)userLambda(25)	937.659	966.351	97.03%	0.001	0.001	97.09%
nUser(25)userLambda(50)	1881.042	1920.981	97.92%	0.001	0.001	97.31%
nUser(25)userLambda(25)	935.619	965.747	96.88%	0.001	0.001	97.78%

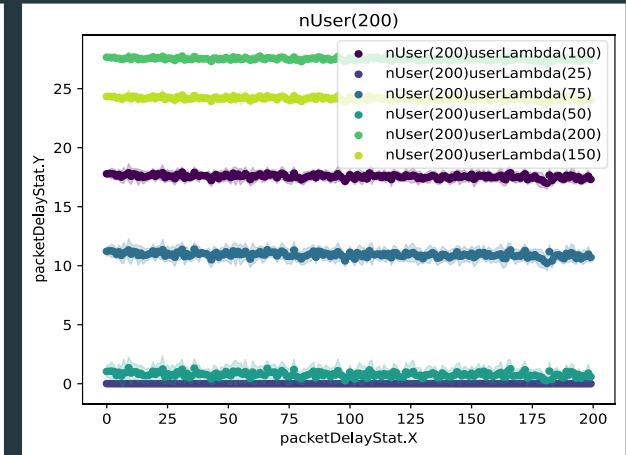
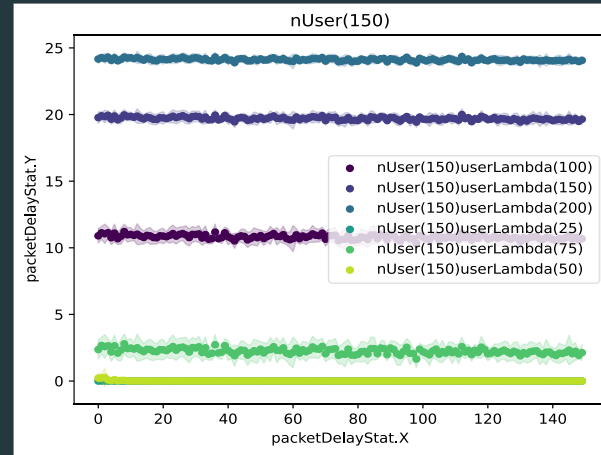
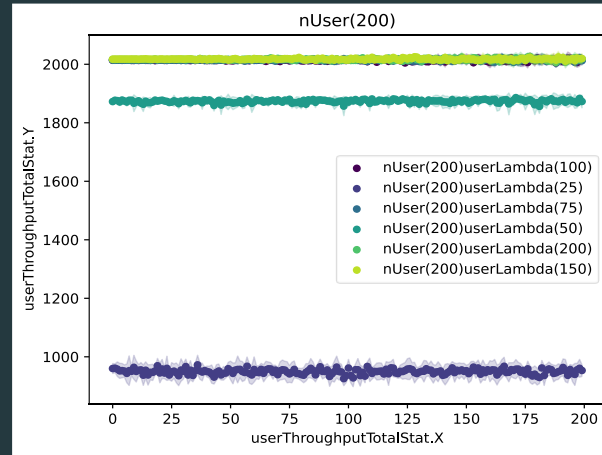
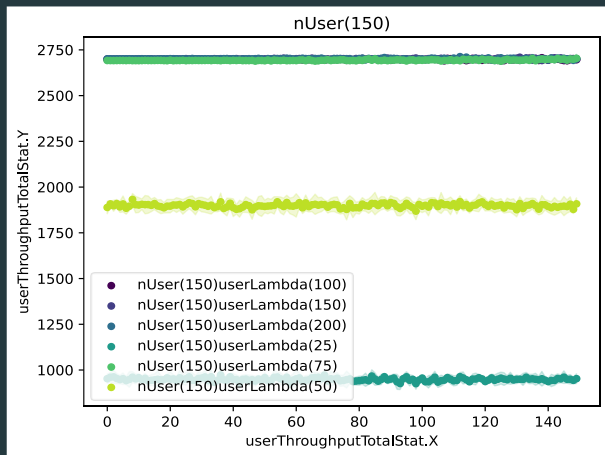
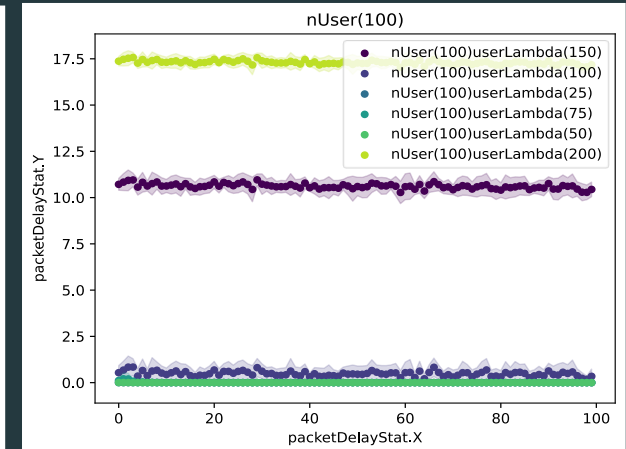
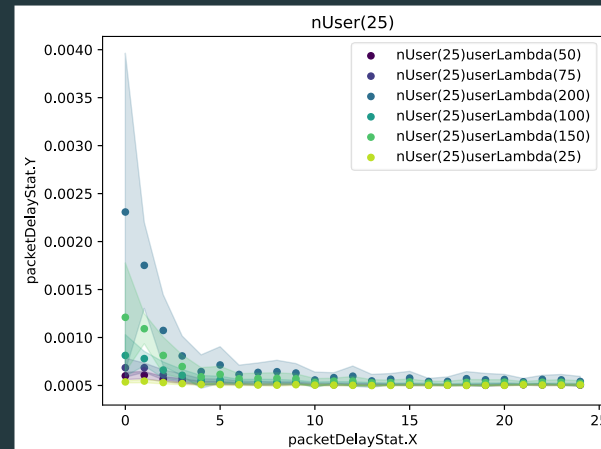
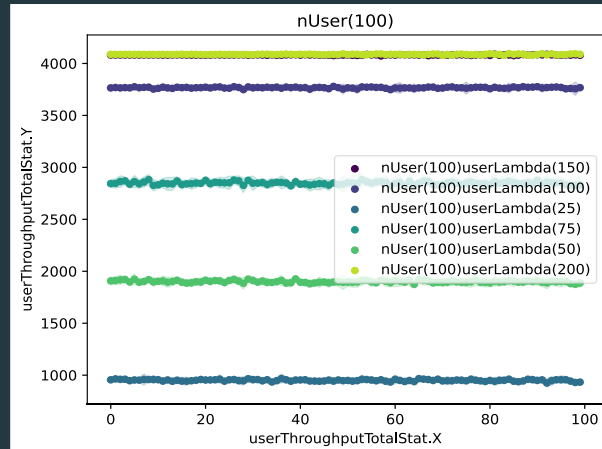
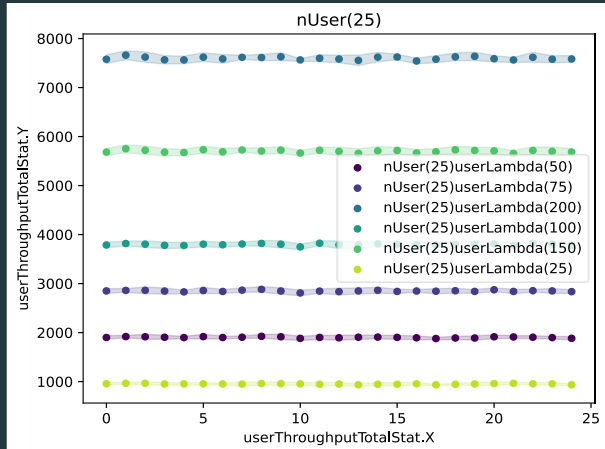
BinomialCQI system state summary

	nUser(25)	nUser(50)	nUser(100)	nUser(150)	nUser(200)
userLambda(25)	UNLOADED	LOW_LOAD	LOW_LOAD	LOW_LOAD	NORMAL
userLambda(50)	LOW_LOAD	LOW_LOAD	NORMAL	HIGH_LOAD	SATURATED
userLambda(75)	LOW_LOAD	LOW_LOAD	HIGH_LOAD	SATURATED	SATURATED
userLambda(100)	LOW_LOAD	NORMAL	SATURATED	SATURATED	SATURATED
userLambda(150)	LOW_LOAD	HIGH_LOAD	SATURATED	SATURATED	SATURATED
userLambda(200)	NORMAL	SATURATED	SATURATED	SATURATED	SATURATED

BinomialCQI Simulation Results

• Throughput

• Delay



BinomialCQI Simulation Results

(Binomial) Runs	THROUGHPUT			DELAY		
	Q(0.025)	Q(0.975)	ratio	Q(0.025)	Q(0.975)	ratio
nUser(100)userLambda(75)	2825.139	2877.123	98.193%	0.001	0.098	0.693%
nUser(150)userLambda(50)	1878.184	1919.198	97.863%	0.001	0.092	0.785%
nUser(50)userLambda(150)	5649.359	5741.573	98.394%	0.001	0.060	1.168%
nUser(100)userLambda(50)	1880.742	1922.434	97.831%	0.001	0.004	14.464%
nUser(50)userLambda(100)	3773.610	3833.063	98.449%	0.001	0.003	17.773%
nUser(200)userLambda(25)	932.735	966.630	96.493%	0.001	0.002	25.400%
nUser(25)userLambda(200)	7549.609	7647.308	98.722%	0.001	0.002	27.383%
nUser(50)userLambda(200)	7533.441	7592.061	99.228%	0.118	0.413	28.678%
nUser(100)userLambda(100)	3753.391	3776.228	99.395%	0.251	0.821	30.530%
nUser(50)userLambda(75)	2822.403	2874.313	98.194%	0.001	0.002	32.121%
nUser(200)userLambda(50)	1863.266	1881.387	99.037%	0.407	1.233	33.021%
nUser(150)userLambda(25)	932.425	963.458	96.779%	0.001	0.001	38.100%
nUser(25)userLambda(150)	5657.384	5739.638	98.567%	0.001	0.001	45.885%
nUser(50)userLambda(50)	1882.174	1920.249	98.017%	0.001	0.001	53.892%
nUser(100)userLambda(25)	933.582	964.901	96.754%	0.001	0.001	56.905%
nUser(25)userLambda(100)	3766.618	3824.270	98.492%	0.001	0.001	64.135%
nUser(150)userLambda(75)	2689.447	2700.643	99.585%	1.922	2.649	72.572%
nUser(25)userLambda(75)	2822.286	2877.151	98.093%	0.001	0.001	73.602%
nUser(50)userLambda(25)	937.659	966.351	97.031%	0.001	0.001	80.775%
nUser(25)userLambda(50)	1881.042	1920.981	97.921%	0.001	0.001	83.339%
nUser(25)userLambda(25)	935.619	965.747	96.880%	0.000	0.001	92.372%
nUser(200)userLambda(75)	2008.356	2019.545	99.446%	10.557	11.335	93.139%
nUser(150)userLambda(100)	2691.259	2703.245	99.557%	10.530	11.124	94.662%
nUser(100)userLambda(150)	4076.012	4086.277	99.749%	10.322	10.899	94.706%
nUser(200)userLambda(100)	2006.468	2020.639	99.299%	17.218	17.858	96.418%
nUser(100)userLambda(200)	4079.817	4093.661	99.662%	17.080	17.515	97.514%
nUser(150)userLambda(150)	2694.939	2705.569	99.607%	19.483	19.926	97.774%
nUser(200)userLambda(150)	2012.832	2023.382	99.479%	23.926	24.392	98.088%
nUser(200)userLambda(200)	2010.934	2022.334	99.436%	27.294	27.720	98.464%
nUser(150)userLambda(200)	2695.310	2706.259	99.595%	23.949	24.309	98.520%