ServerWithRegegesAssembly

Analyst: **Don Brutzman**

Analysis date: **3/24/25, 11:29 AM**

Executive Summary | Scenario Location | Simulation Configuration | Entity Parameters | Behavior Descriptions | Statistical Results | Conclusions and Recommendations

---

Executive Summary

Assessment Overview
ENTER EXECUTIVE SUMMARY HERE

Back to top

Scenario Location for the Simulation

Description of Scenario Location Features
ENTER SCENARIO LOCATION DESCRIPTION HERE

Production Notes

ENTER SCENARIO LOCATION PRODUCTION NOTES HERE

All units are meters and degrees unless otherwise noted.

Post-Experiment Analysis of Significant Scenario Location Features

ENTER SCENARIO LOCATION CONCLUSIONS HERE

Simulation Configuration: Viskit Assembly Preparation for ServerWithRenegesAssembly

Simulation configuration is defined by the Viskit Assembly which collects, lists, initializes, and connects all Event Graphs for participating entity models within a single scenario. The runnable assembly is then ready for repeated simulation replications, either for visual validation of behavior or statistical analysis of Measures of Effectiveness (MoEs).

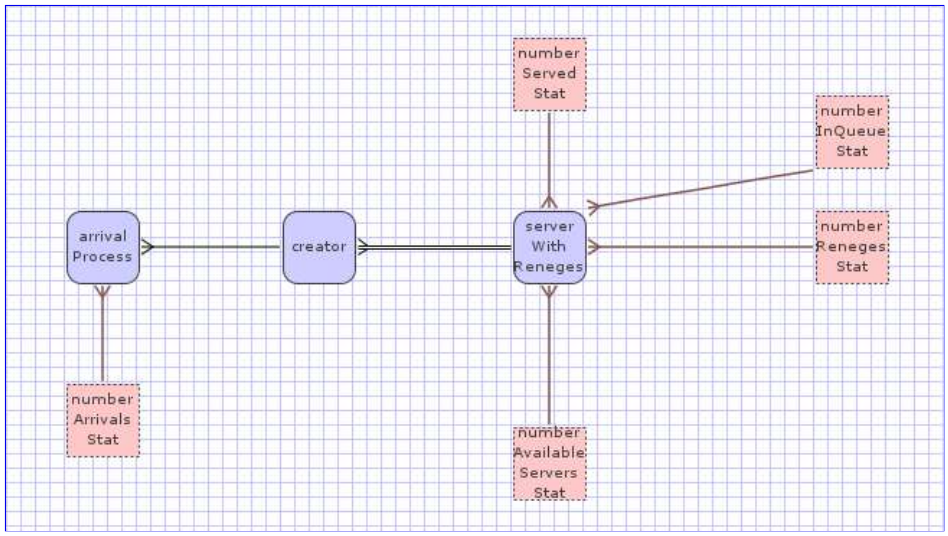

Figure 1: Simulation Assembly Combining all Simulation Entities for this Scenario Experiment

Back to top

Entity Parameters for configuring Event Graphs

Entity parameters configure the behaviors of connected event graphs.

Initialization Parameters for Simulation Entity

Back to top

Initialization Parameters for Simulation Entity

Back to top

Initialization Parameters for Simulation Entity

Back to top

Entity Initialization Parameters for this Simulation Assembly

Initialization parameters are applied to individualize generic behavior models. These parameters customize the event-graph models.

Entity Parameters Conclusions: Post-Experiment Analysis of Entity Behaviors

ENTER ENTITY PARAMETERS CONCLUSIONS HERE

Initialization Parameters for Simulation Entity

Back to top

Initialization Parameters for Simulation Entity

Back to top

Initialization Parameters for Simulation Entity

Back to top

Behavior Descriptions

Description of Behavior Design

Event Graph Behavior: examples.ArrivalProcess

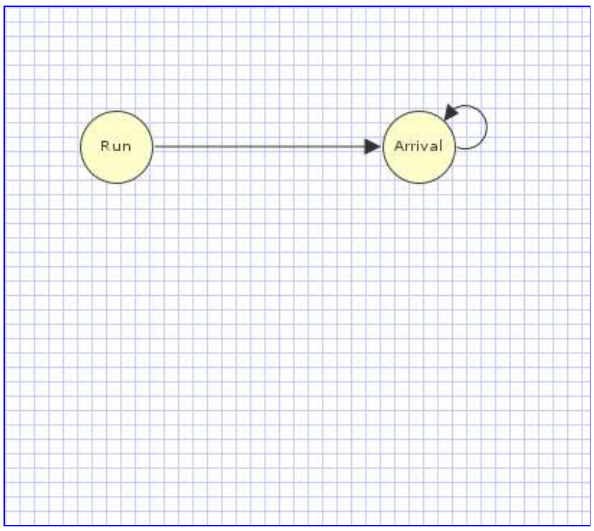

Figure 2: Event Graph for examples.ArrivalProcess

Initialization Parameter	Parameter Type	Description

State Variable	Variable Type	Description
numberArrivals	int	no description found in Event Graph

Back to top

Event Graph Behavior: examples.Creator

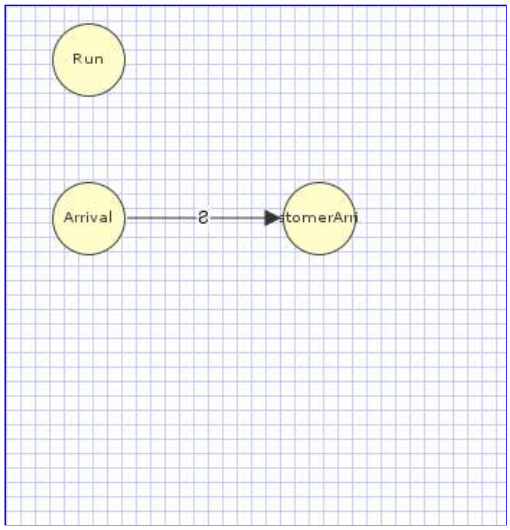

Figure 3: Event Graph for examples.Creator

Initialization Parameter	Parameter Type	Description

State Variable	Variable Type	Description
nextID	int	no description found in Event Graph

Back to top

Event Graph Behavior: examples.ServerWithReneges

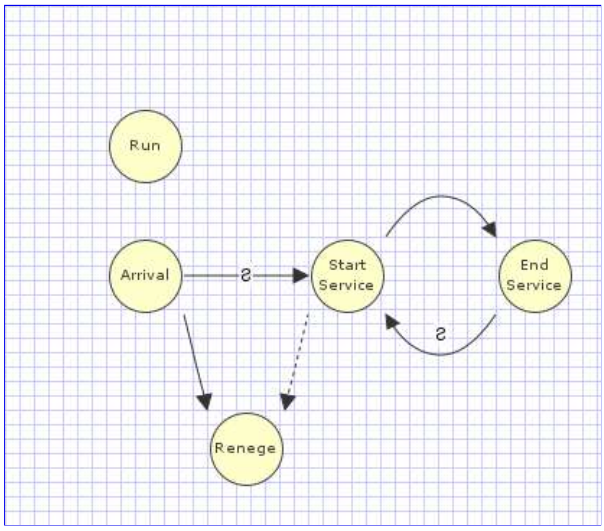

Figure 4: Event Graph for examples.ServerWithReneges

Initialization Parameter	Parameter Type	Description

State Variable	Variable Type	Description
numberAvailableServers	int	no description found in Event Graph
queue	java.util.LinkedList<Integer>	no description found in Event Graph
numberServed	int	no description found in Event Graph
numberReneges	int	no description found in Event Graph

Back to top

Statistical Results for the Simulation

Statistical results are produced by Property Change Listener (PCL) definitions in the Assembly model.

Assembly Simulation Replication Report

Measure of Effectiveness (MoE)

Property: numberServedStat

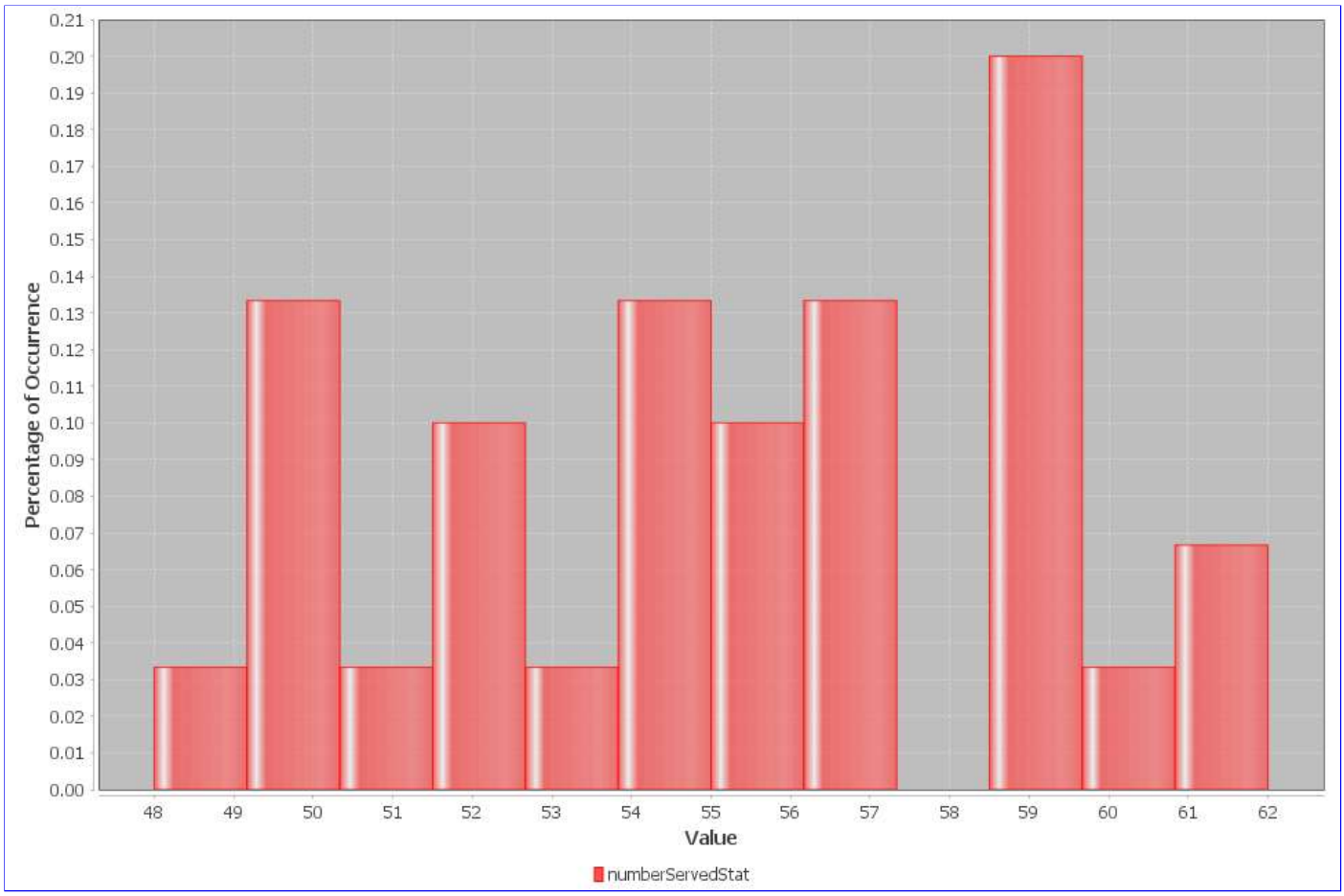

Figure 5: Replications Histogram for numberServedStat

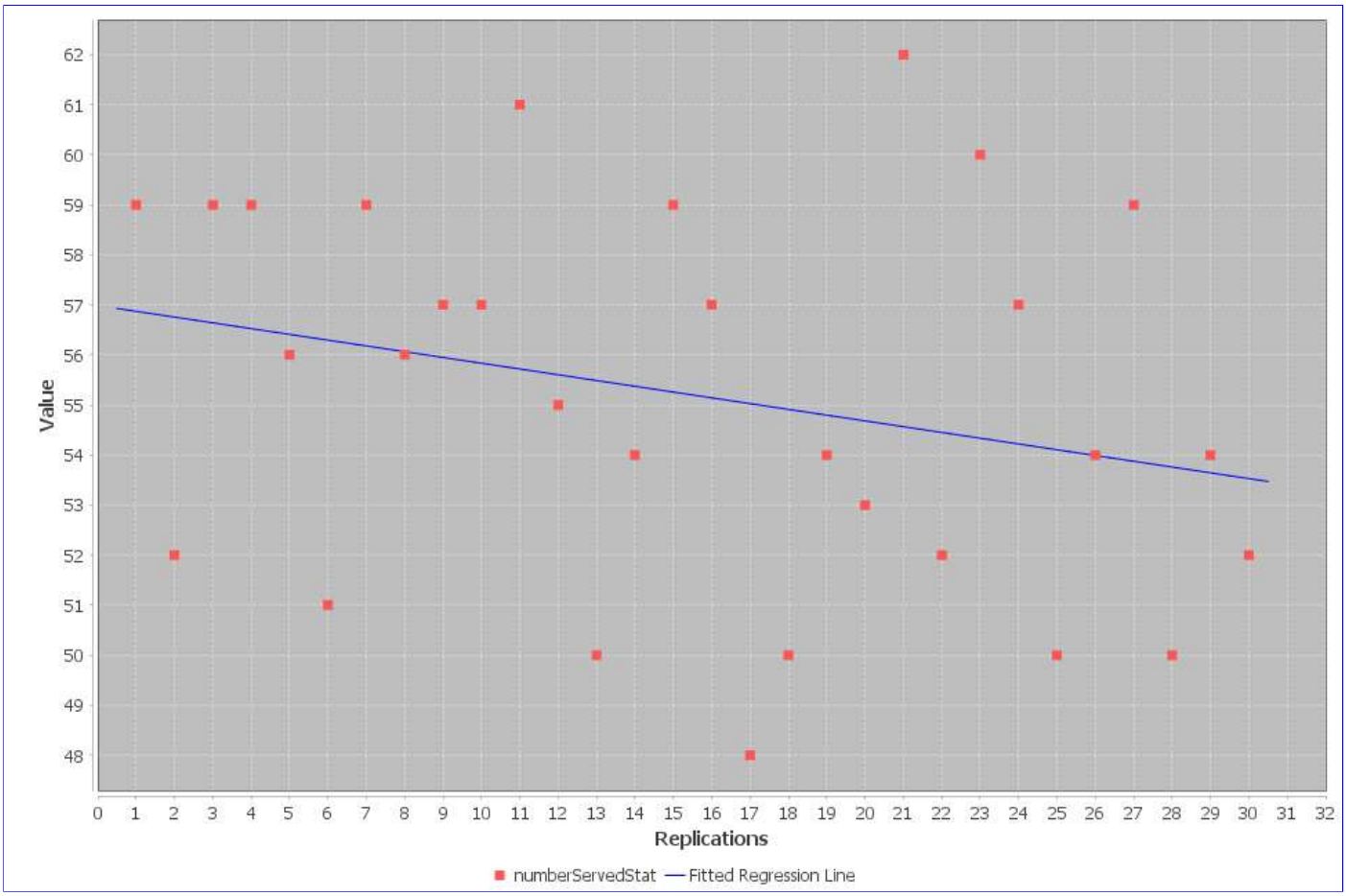

Figure 6: Replications Regression Plot for numberServedStat

Replication #	numberServedStat	Min	Max	Mean	StdDev	Variance
1	59	0.	58.	28.416	16.603	275.669
2	52	0.	51.	22.664	15.091	227.732
3	59	0.	58.	26.900	17.992	323.730
4	59	0.	58.	26.548	17.084	291.874
5	56	0.	55.	26.712	16.819	282.862
6	51	0.	50.	22.023	14.429	208.182
7	59	0.	58.	26.671	16.928	286.570
8	56	0.	55.	25.503	17.484	305.684
9	57	0.	56.	27.069	16.195	262.277
10	57	0.	56.	27.897	16.243	263.838
11	61	0.	60.	30.414	16.333	266.752
12	55	0.	54.	25.839	14.994	224.811
13	50	0.	49.	22.824	14.892	221.782
14	54	0.	53.	24.081	16.345	267.148
15	59	0.	58.	26.278	15.754	248.195
16	57	0.	56.	26.267	15.894	252.633
17	48	0.	47.	24.922	14.192	201.422
18	50	0.	49.	23.970	14.258	203.287
19	54	0.	53.	23.319	16.085	258.730
20	53	0.	52.	26.291	15.952	254.476
21	62	0.	61.	29.567	18.752	351.651
22	52	0.	51.	23.269	14.006	196.154
23	60	0.	59.	30.841	17.299	299.264
24	57	0.	56.	28.543	17.053	290.797
25	50	0.	49.	25.559	14.649	214.584
26	54	0.	53.	25.452	15.709	246.778

27	59	0.	58.	32.550	16.245	263.913
28	50	0.	49.	24.357	14.711	216.410
29	54	0.	53.	27.030	16.137	260.407
30	52	0.	51.	26.761	14.953	223.606

Back to top

Assembly Simulation Replication Report

Measure of Effectiveness (MoE)

Property: numberInQueueStat

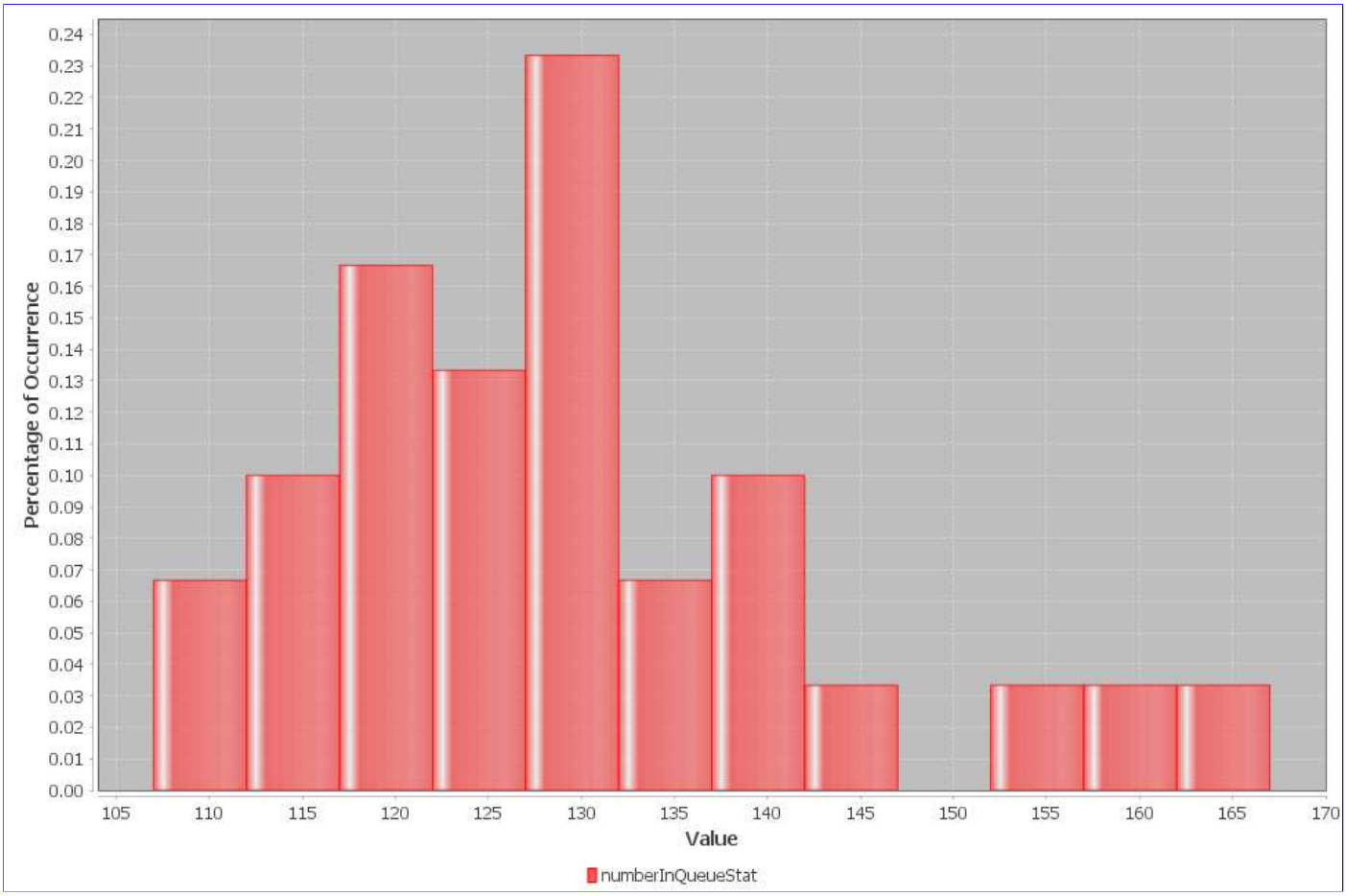

Figure 7: Replications Histogram for numberInQueueStat

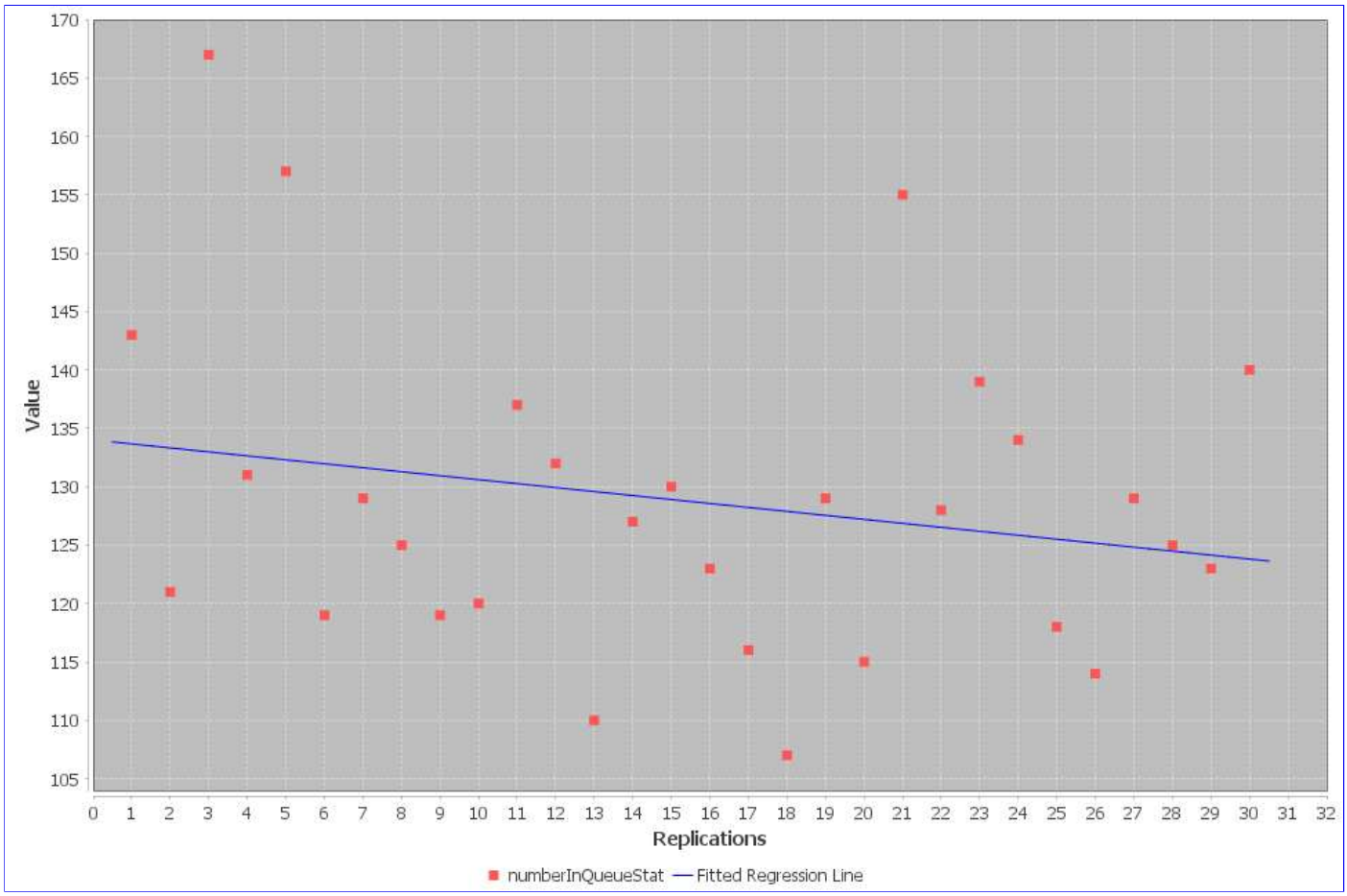

Figure 8: Replications Regression Plot for numberInQueueStat

Replication #	numberInQueueStat	Min	Max	Mean	StdDev	Variance
1	143	0.	7.	1.634	1.631	2.660
2	121	0.	5.	0.937	1.299	1.686
3	167	0.	10.	2.887	2.394	5.729
4	131	0.	5.	1.302	1.406	1.976
5	157	0.	7.	2.385	2.139	4.577
6	119	0.	6.	1.000	1.565	2.451
7	129	0.	6.	1.312	1.490	2.221
8	125	0.	5.	0.828	1.218	1.484
9	119	0.	5.	1.016	1.137	1.293
10	120	0.	7.	0.836	1.292	1.668
11	137	0.	4.	1.025	1.189	1.414
12	132	0.	8.	1.389	1.949	3.798
13	110	0.	6.	0.639	1.146	1.313
14	127	0.	6.	1.220	1.513	2.289
15	130	0.	6.	1.080	1.433	2.055
16	123	0.	5.	1.508	1.246	1.553
17	116	0.	6.	1.018	1.493	2.228
18	107	0.	4.	0.713	0.842	0.709
19	129	0.	8.	1.425	1.908	3.639
20	115	0.	5.	0.901	1.230	1.513
21	155	0.	9.	1.892	2.200	4.842
22	128	0.	6.	1.647	1.602	2.567
23	139	0.	7.	1.472	1.844	3.400
24	134	0.	7.	1.213	1.672	2.795
25	118	0.	8.	0.896	1.591	2.531
26	114	0.	4.	0.451	0.816	0.666

27	129	0.	5.	0.764	1.115	1.244
28	125	0.	5.	1.141	1.438	2.066
29	123	0.	6.	1.247	1.536	2.361
30	140	0.	7.	1.994	1.693	2.866

Back to top

Assembly Simulation Replication Report

Measure of Effectiveness (MoE)

Property: numberAvailableServersStat

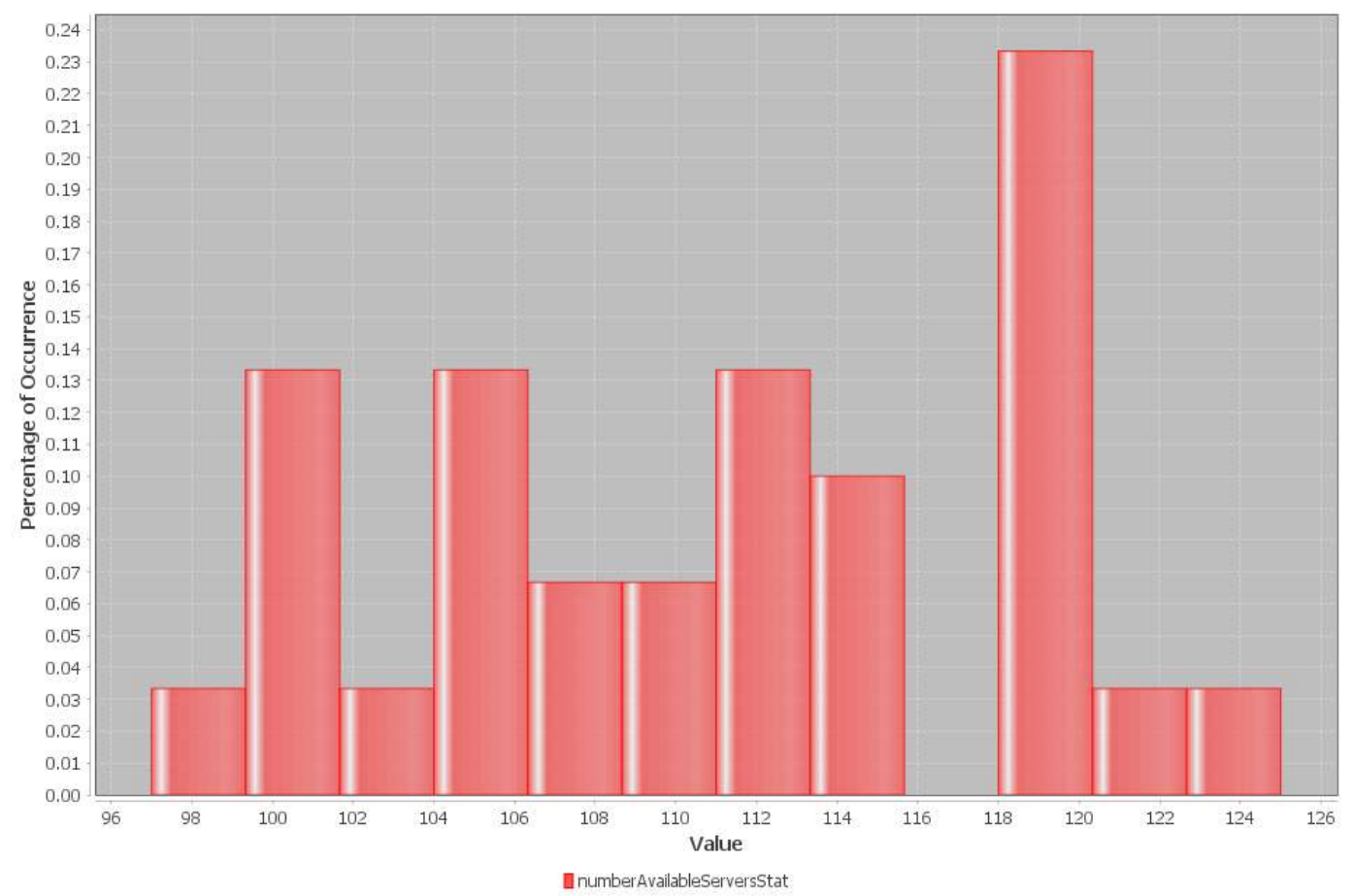

Figure 9: Replications Histogram for numberAvailableServersStat

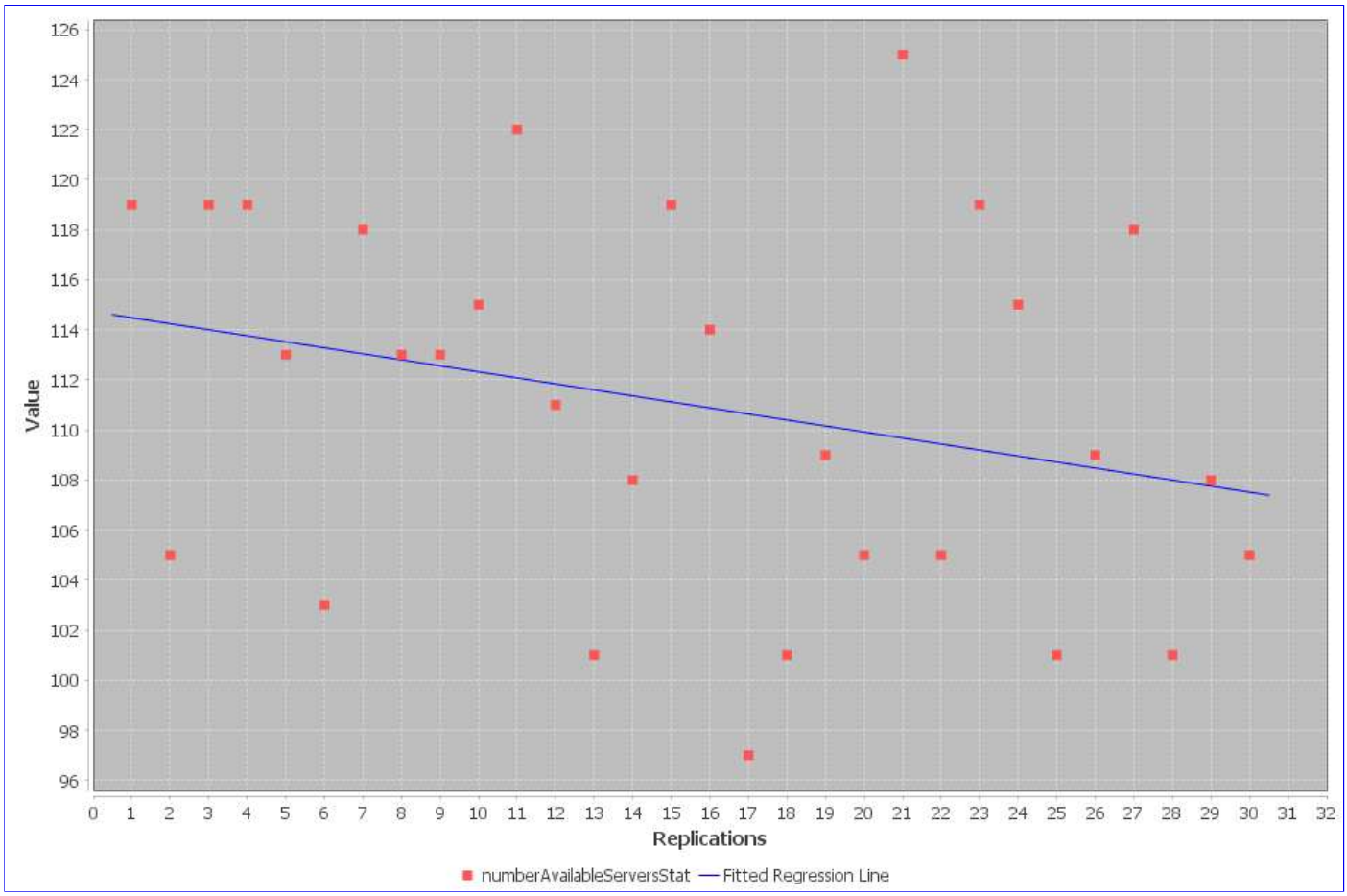

Figure 10: Replications Regression Plot for numberAvailableServersStat

Replication #	numberAvailableServersStat	Min	Max	Mean	StdDev	Variance
1	119	0.	2.	0.613	0.598	0.358
2	105	0.	2.	0.610	0.596	0.356
3	119	0.	2.	0.546	0.548	0.301
4	119	0.	2.	0.546	0.548	0.301
5	113	0.	2.	0.531	0.536	0.287
6	103	0.	2.	0.670	0.632	0.400
7	118	0.	2.	0.585	0.575	0.330
8	113	0.	2.	0.619	0.602	0.363
9	113	0.	2.	0.637	0.613	0.376
10	115	0.	2.	0.670	0.631	0.399
11	122	0.	2.	0.566	0.560	0.314
12	111	0.	2.	0.730	0.660	0.435
13	101	0.	2.	0.713	0.653	0.427
14	108	0.	2.	0.611	0.593	0.352
15	119	0.	2.	0.613	0.598	0.358
16	114	0.	2.	0.570	0.564	0.318
17	97	0.	2.	0.639	0.616	0.379
18	101	0.	2.	0.594	0.586	0.344
19	109	0.	2.	0.624	0.605	0.366
20	105	0.	2.	0.590	0.583	0.340
21	125	0.	2.	0.608	0.594	0.353
22	105	0.	2.	0.571	0.569	0.324
23	119	0.	2.	0.630	0.609	0.371
24	115	0.	2.	0.635	0.612	0.374
25	101	0.	2.	0.713	0.653	0.427
26	109	0.	2.	0.697	0.646	0.417

27	118	0.	2.	0.636	0.609	0.370
28	101	0.	2.	0.574	0.572	0.327
29	108	0.	2.	0.648	0.616	0.380
30	105	0.	2.	0.590	0.583	0.340

Back to top

Assembly Simulation Replication Report

Measure of Effectiveness (MoE)

Property: numberArrivalsStat

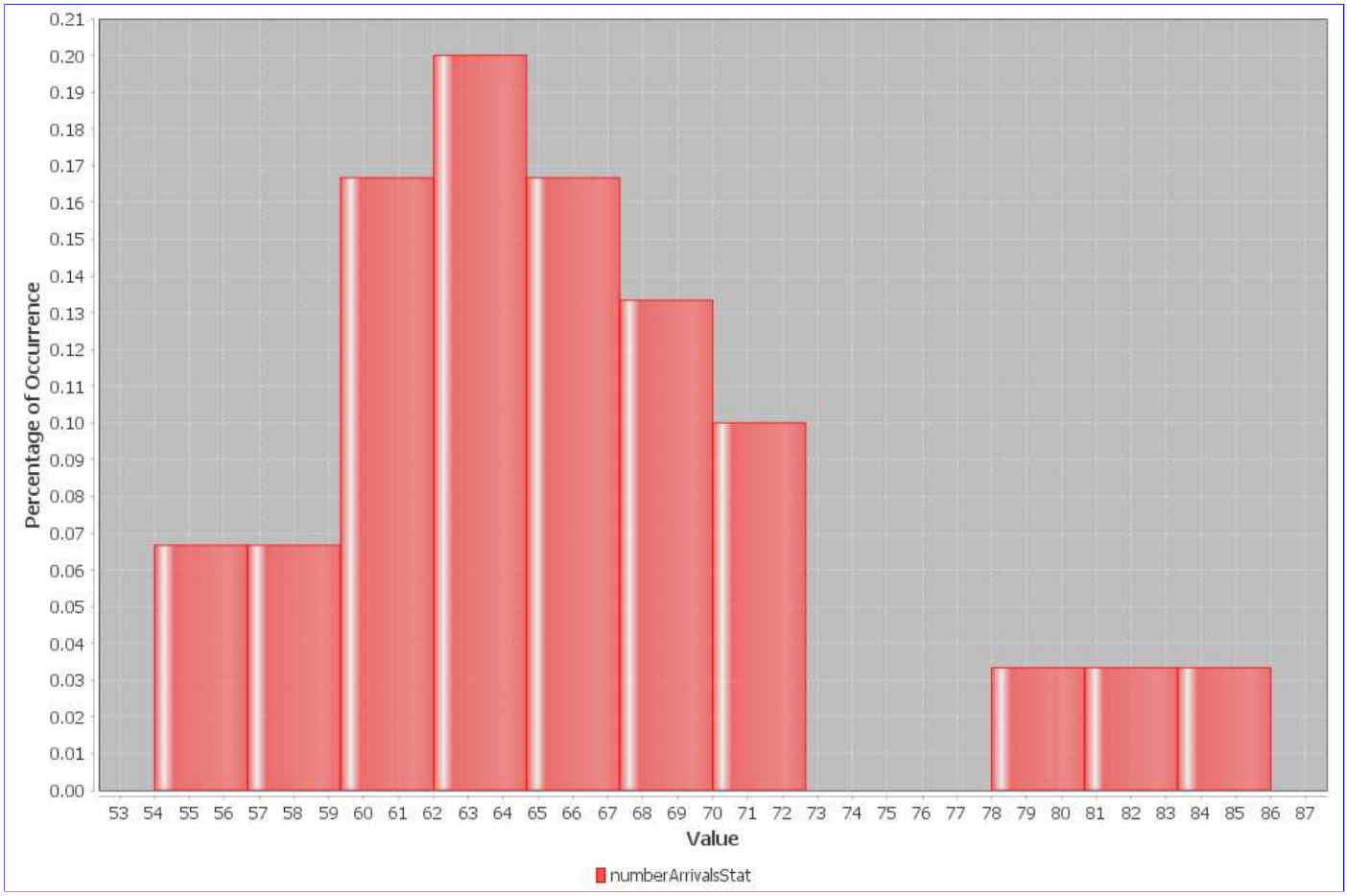

Figure 11: Replications Histogram for numberArrivalsStat

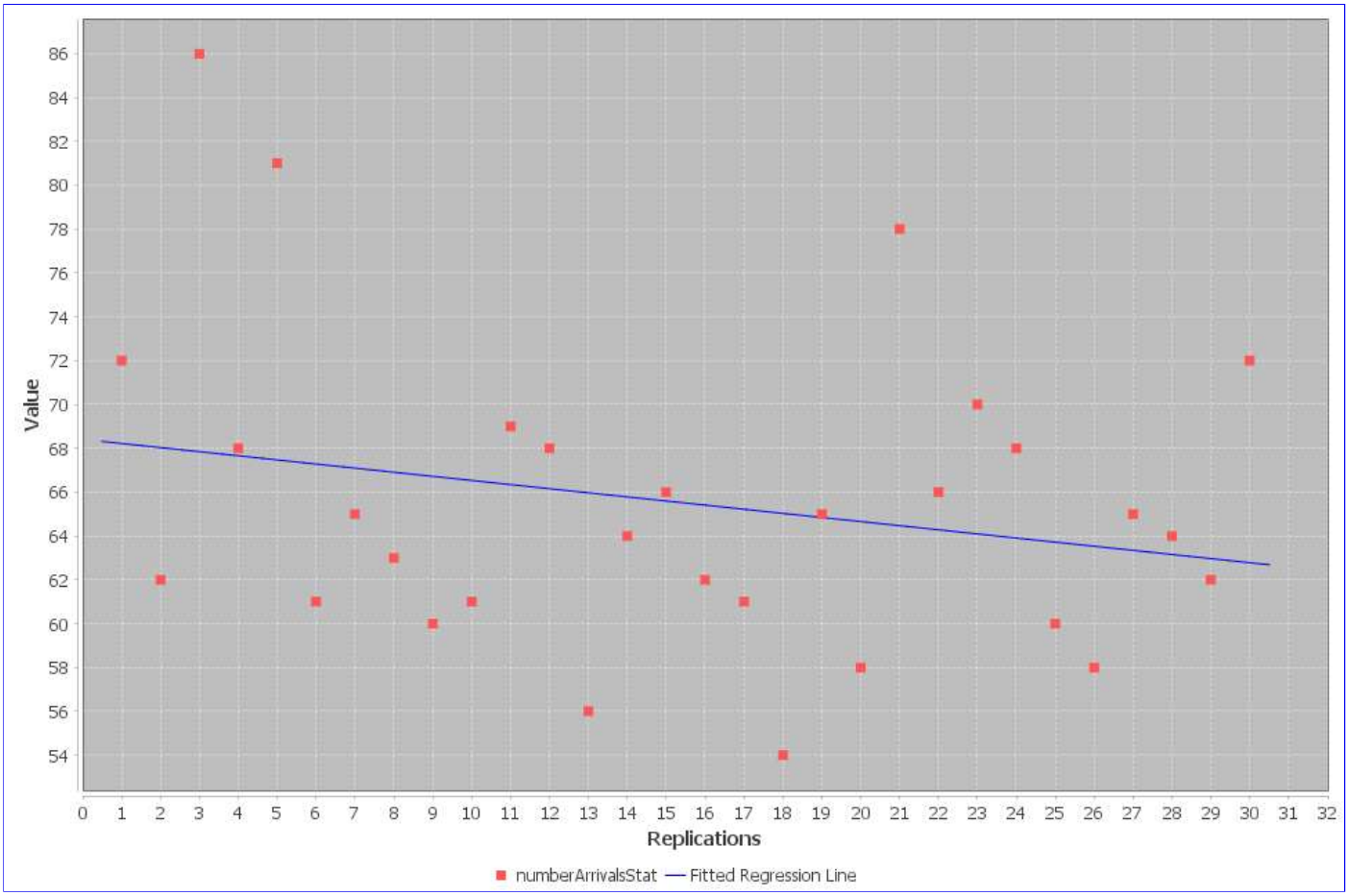

Figure 12: Replications Regression Plot for numberArrivalsStat

Replication #	numberArrivalsStat	Min	Max	Mean	StdDev	Variance
1	72	0.	71.	36.503	20.929	438.010
2	62	0.	61.	29.064	17.592	309.481
3	86	0.	85.	39.670	26.150	683.828
4	68	0.	67.	31.822	18.331	336.013
5	81	0.	80.	41.622	23.019	529.867
6	61	0.	60.	25.267	17.026	289.894
7	65	0.	64.	31.869	18.839	354.889
8	63	0.	62.	31.593	18.637	347.346
9	60	0.	59.	31.714	17.033	290.137
10	61	0.	60.	31.024	16.319	266.294
11	69	0.	68.	36.861	18.615	346.513
12	68	0.	67.	30.690	18.496	342.097
13	56	0.	55.	26.078	16.505	272.417
14	64	0.	63.	29.279	19.581	383.416
15	66	0.	65.	29.688	17.944	321.973
16	62	0.	61.	31.546	17.109	292.705
17	61	0.	60.	29.932	17.151	294.141
18	54	0.	53.	27.485	14.943	223.295
19	65	0.	64.	29.992	19.838	393.539
20	58	0.	57.	31.190	17.598	309.699
21	78	0.	77.	39.392	23.931	572.670
22	66	0.	65.	30.055	17.234	297.012
23	70	0.	69.	37.931	20.713	429.017
24	68	0.	67.	36.448	18.979	360.218
25	60	0.	59.	33.623	15.458	238.935
26	58	0.	57.	27.645	16.329	266.625

27	65	0.	64.	36.055	17.234	297.007
28	64	0.	63.	32.548	18.418	339.231
29	62	0.	61.	34.530	17.639	311.122
30	72	0.	71.	36.004	20.343	413.828

Back to top

Assembly Simulation Replication Report

Measure of Effectiveness (MoE)

Property: numberRenegesStat

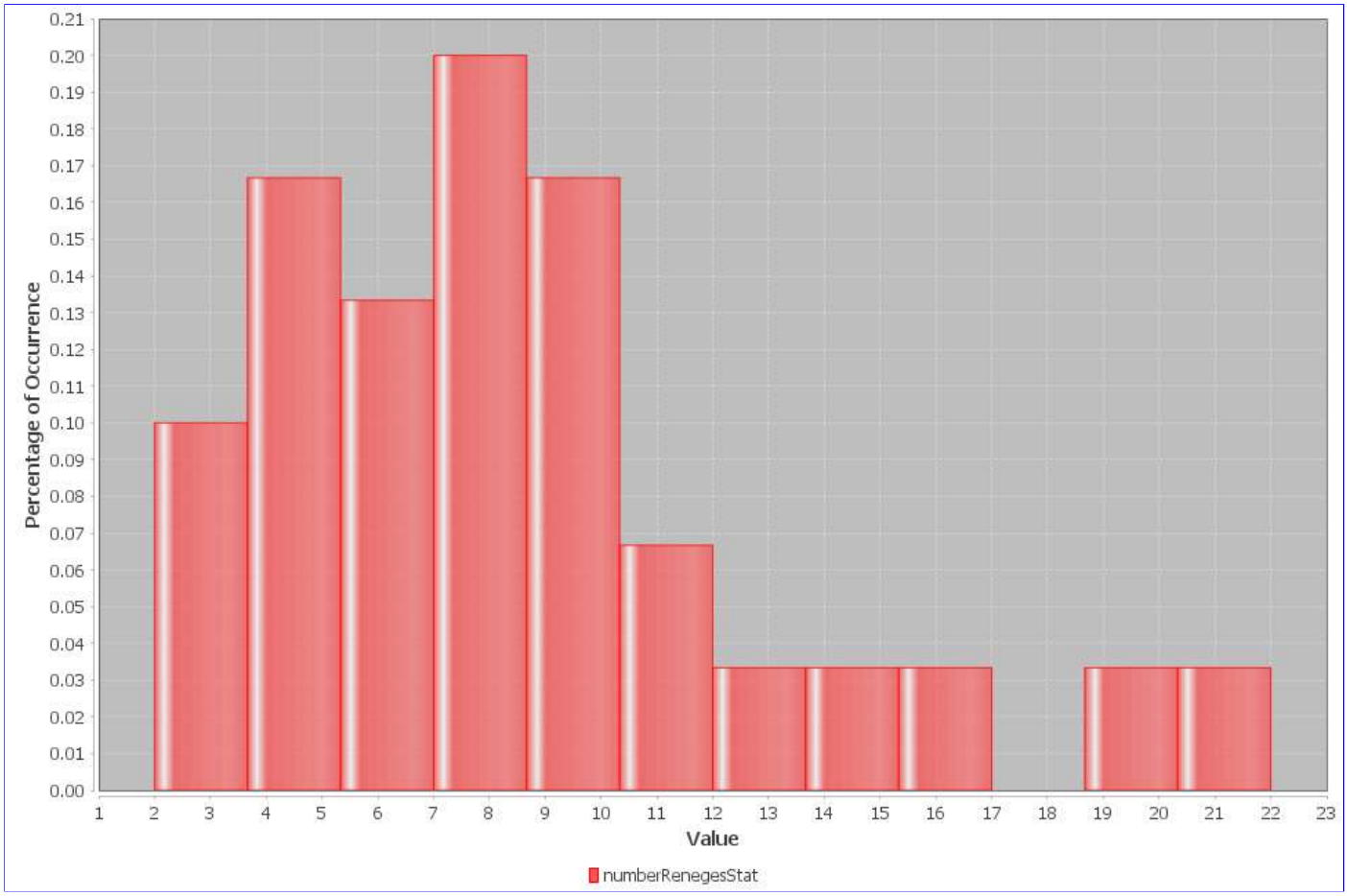

Figure 13: Replications Histogram for numberRenegesStat

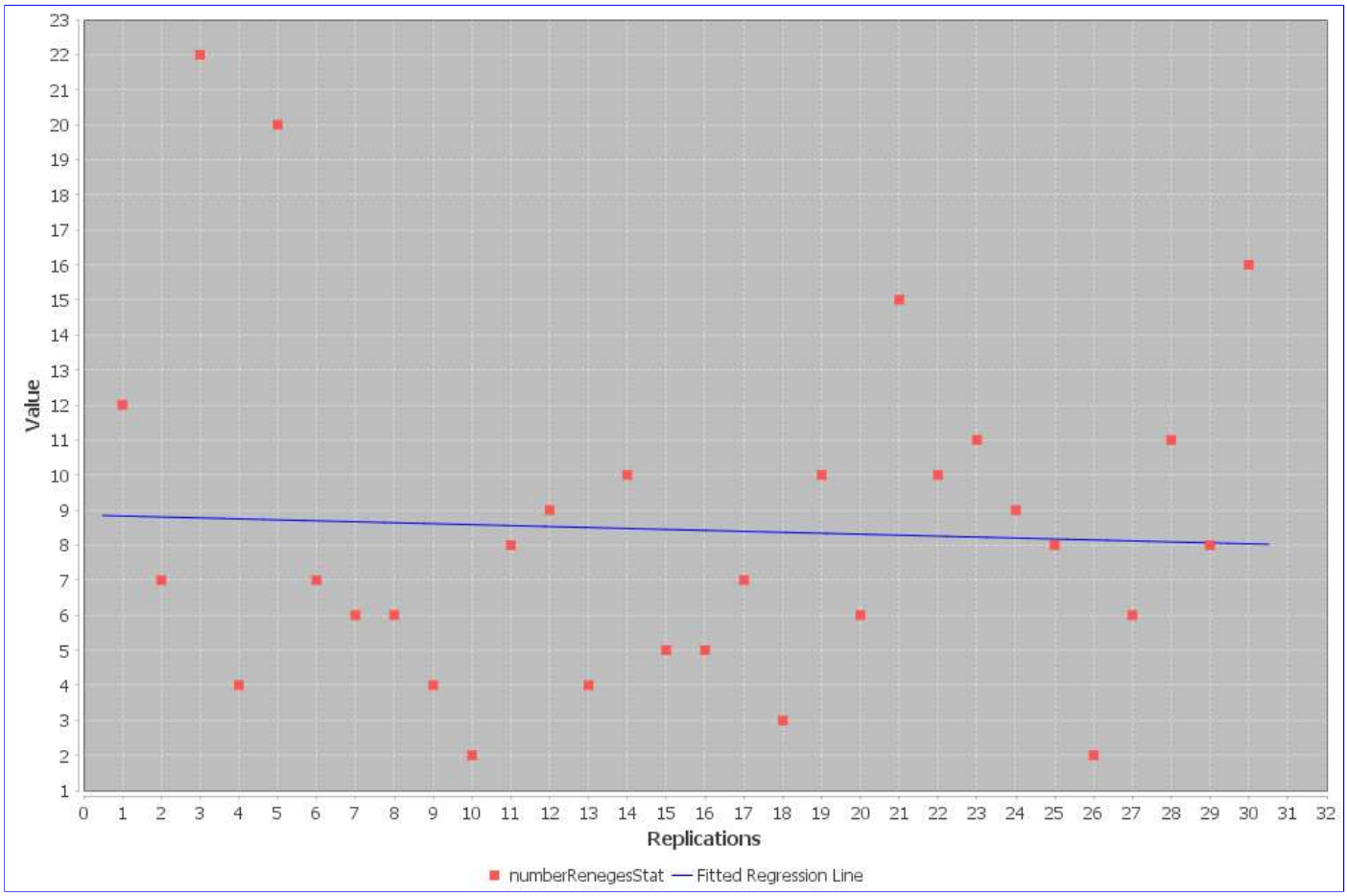

Figure 14: Replications Regression Plot for numberRenegesStat

Replication #	numberRenegesStat	Min	Max	Mean	StdDev	Variance
1	12	0.	11.	4.757	3.589	12.879
2	7	0.	6.	3.877	2.606	6.793
3	22	0.	21.	8.028	7.523	56.591
4	4	0.	3.	2.335	1.143	1.306
5	20	0.	19.	10.714	6.819	46.496
6	7	0.	6.	0.772	1.640	2.691
7	6	0.	5.	2.195	2.085	4.345
8	6	0.	5.	3.709	1.953	3.816
9	4	0.	3.	1.968	1.132	1.281
10	2	0.	1.	0.671	0.470	0.221
11	8	0.	7.	3.687	2.622	6.876
12	9	0.	8.	1.912	2.502	6.260
13	4	0.	3.	1.253	1.462	2.138
14	10	0.	9.	2.315	3.005	9.031
15	5	0.	4.	0.756	1.315	1.730
16	5	0.	4.	2.036	1.241	1.539
17	7	0.	6.	2.316	2.796	7.817
18	3	0.	2.	1.170	0.725	0.526
19	10	0.	9.	3.658	3.267	10.670
20	6	0.	5.	2.359	1.895	3.589
21	15	0.	14.	6.249	5.541	30.706
22	10	0.	9.	3.406	2.855	8.153
23	11	0.	10.	4.012	3.799	14.430
24	9	0.	8.	5.216	2.897	8.392
25	8	0.	7.	5.650	2.659	7.069
26	2	0.	1.	0.399	0.490	0.240

27	6	0.	5.	1.240	1.196	1.431
28	11	0.	10.	5.328	3.652	13.340
29	8	0.	7.	4.574	2.435	5.931
30	16	0.	15.	5.449	4.948	24.484

Back to top

Summary Report

Entity	MoE / MoP	# Replications	Min	Max	Mean	StdDev	Variance
	numberInQueueStat	30	107.	167.	128.733	13.686	187.306
	numberAvailableServersStat	30	97.	125.	111.000	7.469	55.793
	numberServedStat	30	48.	62.	55.200	3.818	14.579
	numberRenegesStat	30	2.	22.	8.433	4.833	23.357
	numberArrivalsStat	30	54.	86.	65.500	7.089	50.259

Back to top

Conclusions and Recommendations

Conclusions
ENTER ANALYST CONCLUSIONS HERE

Recommendations for Future Work
ENTER RECOMMENDATIONS FOR FUTURE WORK HERE

Back to top
