

# A UPS Battery-Aware Game-Theoretic Federated Learning Strategy for Power and Workload Optimization in Cloud Data Centers

## Table of Contents

<b><i>I</i></b>	<b><i>Supplementary Materials</i></b> .....	<b>2</b>
1.1	Server Workload Shift Logs .....	2
1.2	Servers Status .....	3
1.3	KPI Results .....	8

# 1 *Supplementary Materials*

## 1.1 Server Workload Shift Logs

**Table A.I. Workload Shift Log**

Workload shifted from Server-3 to Server-32 due to: High Power Consumption	Workload shifted from Server-57 to Server-56 due to: High Power Consumption, Low UPS SoH
Workload shifted from Server-6 to Server-88 due to: High Power Consumption	Workload shifted from Server-59 to Server-34 due to: High Power Consumption, Low UPS SoH
Workload shifted from Server-7 to Server-55 due to: High Power Consumption	Workload shifted from Server-60 to Server-59 due to: High Power Consumption
Workload shifted from Server-12 to Server-6 due to: High Power Consumption	Workload shifted from Server-62 to Server-60 due to: High Power Consumption
Workload shifted from Server-13 to Server-62 due to: High Power Consumption, Low UPS SoH	Workload shifted from Server-65 to Server-62 due to: High Power Consumption
Workload shifted from Server-14 to Server-5 due to: High Power Consumption	Workload shifted from Server-66 to Server-65 due to: High Power Consumption
Workload shifted from Server-15 to Server-14 due to: High Power Consumption	Workload shifted from Server-68 to Server-49 due to: High Power Consumption, Low UPS SoC
Workload shifted from Server-16 to Server-15 due to: High Power Consumption	Workload shifted from Server-71 to Server-96 due to: High Power Consumption, Low UPS SoH
Workload shifted from Server-17 to Server-16 due to: High Power Consumption	Workload shifted from Server-72 to Server-71 due to: High Power Consumption
Workload shifted from Server-21 to Server-38 due to: High Power Consumption, Low UPS SoC	Workload shifted from Server-74 to Server-72 due to: High Power Consumption, Low UPS SoC
Workload shifted from Server-22 to Server-10 due to: High Power Consumption	Workload shifted from Server-76 to Server-74 due to: High Power Consumption
Workload shifted from Server-24 to Server-19 due to: High Power Consumption	Workload shifted from Server-77 to Server-76 due to: High Power Consumption
Workload shifted from Server-25 to Server-24 due to: High Power Consumption	Workload shifted from Server-78 to Server-77 due to: High Power Consumption
Workload shifted from Server-28 to Server-88 due to: High Power Consumption	Workload shifted from Server-80 to Server-29 due to: High Power Consumption
Workload shifted from Server-30 to Server-28 due to: High Power Consumption	Workload shifted from Server-81 to Server-30 due to: High Power Consumption
Workload shifted from Server-31 to Server-7 due to: High Power Consumption	Workload shifted from Server-83 to Server-81 due to: High Power Consumption
Workload shifted from Server-33 to Server-31 due to: High Power Consumption	Workload shifted from Server-85 to Server-83 due to: High Power Consumption
Workload shifted from Server-35 to Server-33 due to: High Power Consumption	Workload shifted from Server-86 to Server-85 due to: High Power Consumption, Low UPS SoH
Workload shifted from Server-36 to Server-40 due to: High Power Consumption	Workload shifted from Server-87 to Server-86 due to: High Power Consumption
Workload shifted from Server-41 to Server-36 due to: High Power Consumption	Workload shifted from Server-91 to Server-87 due to: High Power Consumption, Low UPS SoC
Workload shifted from Server-42 to Server-41 due to: High Power Consumption	Workload shifted from Server-93 to Server-91 due to: High Power Consumption
Workload shifted from Server-45 to Server-25 due to: High Power Consumption, Low UPS SoH	Workload shifted from Server-94 to Server-12 due to: High Power Consumption
Workload shifted from Server-48 to Server-45 due to: High Power Consumption, Low UPS SoC	Workload shifted from Server-97 to Server-94 due to: High Power Consumption
Workload shifted from Server-49 to Server-48 due to: High Power Consumption, Low UPS SoH	Workload shifted from Server-100 to Server-97 due to: High Power Consumption
Workload shifted from Server-52 to Server-59 due to: High Power Consumption	
Workload shifted from Server-54 to Server-52 due to: High Power Consumption	
Workload shifted from Server-56 to Server-11 due to: High Power Consumption	

## 1.2 Servers Status

**Table A.II. Initial Status of Servers**

Before Applying Model (Initial Status)							
Server ID	CPU Usage [%]	Memory Usage [GB]	Storage Usage [TB]	Network Usage [Gbps]	Power Consumption [W]	UPS SoH [%]	UPS SoC [%]
Server-1	42.04	31.57	2.14	2.29	134.08	95.6854	89.04592
Server-2	61.56	41.33	2.68	5.14	173.12	94.60603	96.14688
Server-3	39.14	9.42	3.81	9.88	128.28	93.73861	73.90172
Server-4	62.98	28.51	3.72	2.7	175.96	93.73326	65.25404
Server-5	40.74	62.69	2.21	8.96	131.48	94.99683	86.85852
Server-6	25.35	57.78	3.61	4.08	100.7	91.66281	68.1993
Server-7	18.68	46.54	2.23	5.31	87.36	91.36414	88.72264
Server-8	88.63	62.48	0.23	2.53	227.26	92.57051	70.36274
Server-9	31.38	13.59	1.23	2.61	112.76	94.11631	68.79724
Server-10	74.06	32.2	3.09	6.42	198.12	90.87431	73.34188
Server-11	76.96	28.51	2.11	5.52	203.92	95.60261	72.80608
Server-12	80.03	22.75	3	9.73	210.06	99.85147	74.61994
Server-13	40.59	15.71	1.05	5.7	131.18	90.77864	97.02882
Server-14	48.83	43.45	3.74	2.2	147.66	94.52279	98.11234
Server-15	64.51	4.34	1.62	5.62	179.02	96.42264	91.67098
Server-16	39.45	10.26	2.66	6.96	128.9	92.98028	88.3611
Server-17	35.64	53.21	2.79	4.78	121.28	91.65774	66.79872
Server-18	17.87	32.46	2.32	2.37	85.74	95.83417	62.90426
Server-19	62.97	54.4	2.12	1.08	175.94	94.95085	83.95406
Server-20	18.29	35.37	1.62	8.37	86.58	98.79423	92.10342
Server-21	36.97	29.69	0.23	9.81	123.94	93.43903	62.40606
Server-22	19.64	18.6	2.49	0.22	89.28	96.37817	79.24072
Server-23	10.85	53.36	2.05	1.51	71.7	90.25306	89.2183
Server-24	40.85	26.46	2.39	0.11	131.7	98.39905	94.1883
Server-25	16.95	26.31	0.49	9.42	83.9	91.6616	67.3961
Server-26	28.83	38.76	2.74	3.53	107.66	92.01115	63.22234
Server-27	33.45	34.45	3.84	7.18	116.9	96.66766	90.0531
Server-28	71.19	63.73	1.01	1.85	192.38	96.49657	96.12762
Server-29	83.22	40	1.16	4.14	216.44	91.92864	62.83356
Server-30	14.65	44.26	2.14	2.26	79.3	98.54888	88.7007
Server-31	55.18	54.28	1.09	4.33	160.36	99.55904	96.98964
Server-32	45.96	50.59	2.36	3.53	141.92	90.79115	94.02808
Server-33	70.69	48.4	0.39	9.61	191.38	93.75116	97.57862
Server-34	37.02	43.36	1.73	6.2	124.04	99.49509	74.04596
Server-35	72.25	59.39	3.86	4	194.5	96.31598	77.7455
Server-36	87.36	29.65	2.35	7.3	224.72	93.12726	78.13528
Server-37	24.29	10.21	0.29	1.9	98.58	96.72969	87.29142
Server-38	67.24	33.31	3.84	0.37	184.48	91.65127	86.85552
Server-39	82.66	15.21	1.56	8.34	215.32	99.50228	67.68468
Server-40	88.24	31.86	0.48	3.75	226.48	92.90878	83.02352
Server-41	45.57	33.88	3.66	4.38	141.14	91.50185	86.07886
Server-42	34.22	45.28	3.4	6.56	118.44	91.72516	83.56156
Server-43	14.91	37.03	1.28	3.62	79.82	94.93373	70.07018
Server-44	22.07	55.83	2.65	0.7	94.14	99.86089	82.66586
Server-45	31.42	55.17	2.84	1.89	112.84	90.50955	88.10716
Server-46	26.59	50.14	1.98	7.62	103.18	93.58793	65.85682
Server-47	48.62	62.56	3.05	4.81	147.24	91.1531	88.47276
Server-48	22.41	36.96	3.86	8.94	94.82	97.48947	61.75518
Server-49	14.84	16.73	1.89	5.59	79.68	90.83969	90.90032
Server-50	60.07	59.94	0.1	5.45	170.14	92.51842	81.66986
Server-51	21.66	43.66	0.97	1.68	93.32	90.53777	78.60668
Server-52	16.08	36.53	2.88	2.97	82.16	94.30255	99.24784

Continue (Table A.II)

Server-53	69.34	10.43	0.42	8.62	188.68	98.65789	72.01132
Server-54	50.41	29.66	0.32	5.46	150.82	94.81644	72.25918
Server-55	77.84	33.84	1.15	2.94	205.68	93.82938	66.13432
Server-56	29.25	34.14	0.22	3.26	108.5	97.38718	75.3315
Server-57	85.61	11.89	1.23	5.84	221.22	90.45529	88.12878
Server-58	38.89	18.71	3.68	8.92	127.78	95.31231	76.19222
Server-59	37.91	23.85	3.26	0.29	125.82	90.49115	80.67418
Server-60	15.02	60.45	0.92	8.74	80.04	99.46394	71.33996
Server-61	15.32	58.18	3.55	6.63	80.64	95.41079	61.87936
Server-62	76.71	33.32	3.83	2.2	203.42	96.33365	86.32658
Server-63	84.11	0.43	2.77	6.42	218.22	91.14704	60.23178
Server-64	75.74	2.4	2.93	6.45	201.48	98.32546	67.44852
Server-65	44.38	14.97	1.53	4.49	138.76	97.55658	70.44124
Server-66	32.13	27.12	1.71	8.24	114.26	97.92692	67.66574
Server-67	24.5	0.37	3.42	0.58	99	90.75695	70.211
Server-68	23.82	59.75	0.43	2.58	97.64	95.59986	65.45236
Server-69	28.2	3.21	2.31	6.87	106.4	94.30847	60.9436
Server-70	56.03	29.15	2.2	9.33	162.06	99.83443	68.45794
Server-71	17.69	4.65	1.44	2.17	85.38	90.38575	76.74462
Server-72	57.83	26.74	3.27	3.54	165.66	94.39348	86.45434
Server-73	72.79	9.34	0.19	4.67	195.58	90.86169	80.55442
Server-74	50.84	37.34	3.07	6.59	151.68	99.82498	64.61832
Server-75	72.52	25.91	1.13	3.78	195.04	95.97671	60.10496
Server-76	44.67	33.88	0.15	7.81	139.34	98.18577	88.28066
Server-77	60.97	19.09	0.96	5.15	171.94	92.92416	87.94806
Server-78	29.86	55.69	3.68	5.75	109.72	93.6261	67.64028
Server-79	23.74	43.95	1.31	9.16	97.48	97.6786	86.96252
Server-80	68.3	62.99	3.23	4.94	186.6	99.3339	83.9434
Server-81	44.85	50.79	1.35	3.26	139.7	96.31168	85.3503
Server-82	25.47	62.41	1.39	1.51	100.94	95.87729	70.42906
Server-83	88.53	34.31	0.57	8.2	227.06	91.62598	71.43294
Server-84	41.62	34.81	0.63	9.62	133.24	94.29904	70.32676
Server-85	87.34	8.76	1.39	7.71	224.68	94.28577	87.87532
Server-86	58.49	50.52	1.23	1.3	166.98	91.06724	97.81302
Server-87	65.23	23.25	1.49	0.66	180.46	95.36186	75.71954
Server-88	49.98	47.98	3.53	1.6	149.96	93.01534	99.64004
Server-89	64.06	7.15	1.52	1.99	178.12	97.03969	96.27188
Server-90	62.59	53.43	3.32	8.67	175.18	96.03482	94.68482
Server-91	55.11	59.79	3.32	0.47	160.22	92.95539	61.60978
Server-92	28.77	28.82	2.06	8.81	107.54	97.04023	90.84246
Server-93	45.22	28.45	1.29	9.19	140.44	92.78076	88.74956
Server-94	81.65	57.84	0.1	9.23	213.3	94.21524	72.2167
Server-95	81.06	58.48	0.79	5.19	212.12	95.97109	86.25788
Server-96	63.9	57.77	1.74	8.13	177.8	92.24207	90.9822
Server-97	17.99	7.22	3.72	4.53	85.98	95.22595	99.04402
Server-98	13.25	62.11	0.33	9.58	76.5	91.0512	61.4935
Server-99	67.88	30.4	1.59	4.67	185.76	95.82529	69.35424
Server-100	21.78	15.03	0.27	7.03	93.56	95.66669	93.63644

**Table A.III. Final Status of Servers**

After Applying Model (Final Status)							
Server ID	CPU Usage [%]	Memory Usage [GB]	Storage Usage [TB]	Network Usage [Gbps]	Power Consumption [W]	UPS SoH [%]	UPS SoC [%]
Server-1	20.08	47.75	3.69	1.61	90.16	94.35384	87.51218
Server-2	39.05	62.99	2.67	8.5	128.1	93.49122	94.86488
Server-3	67.76	53.89	2.19	2.18	185.52	92.63313	72.44872
Server-4	49.35	20.75	3.05	6.51	148.7	92.26859	63.66756
Server-5	33.38	18.21	1.33	5.23	116.76	93.81312	85.30996
Server-6	65.92	1.25	0.76	2.57	181.84	90.21769	66.72538
Server-7	61.45	40.61	1.43	5.68	172.9	90.04293	87.1974
Server-8	11.46	39.75	2.6	6.16	72.92	91.31168	68.96568
Server-9	28.89	18.89	1.73	3.99	107.78	92.71655	67.26212
Server-10	37.47	5.66	3.28	3.74	124.94	89.28781	71.76618
Server-11	46.86	7.02	2.73	2.48	143.72	94.47877	71.19442
Server-12	67.06	43.03	1.5	7.22	184.12	98.76536	73.0432
Server-13	80.08	50.03	3.4	7.38	210.16	89.54439	95.44094
Server-14	69.29	2.26	1.05	8.5	188.58	93.24156	96.5452
Server-15	53.8	50.75	0.75	9.47	157.6	95.07453	90.18518
Server-16	71.33	8.76	0.38	4.44	192.66	91.82056	86.80084
Server-17	74.63	30.38	0.76	7.87	199.26	90.07278	65.3282
Server-18	32.87	14.39	1.06	3.18	115.74	94.78368	61.27364
Server-19	15.96	27.31	3.82	0.44	81.92	94.03011	82.44142
Server-20	43.3	40.64	2.43	1.21	136.6	97.76179	90.64176
Server-21	77.01	31.22	3.94	6.41	204.02	92.22789	60.84754
Server-22	66.09	52.62	3.42	1.85	182.18	95.15223	77.68962
Server-23	28.99	55.47	3.38	2.61	107.98	88.88967	87.63616
Server-24	64.78	41.34	0.39	2.7	179.56	97.15026	92.59242
Server-25	76.77	12.63	3.8	4.31	203.54	90.62743	65.95136
Server-26	22.5	37.91	2.97	9.09	95	90.8471	61.76206
Server-27	14.07	41.85	2.36	8.45	78.14	95.53513	88.48754
Server-28	57.65	14.63	0.73	7.64	165.3	95.24197	94.6071
Server-29	38.18	8.35	1.64	9.6	126.36	90.63323	61.15144
Server-30	72.84	57.53	2.93	2.92	195.68	97.27709	87.04792
Server-31	88.86	33.18	0.8	2.78	227.72	98.31251	95.40086
Server-32	12.88	6.1	3.26	7.77	75.76	89.62928	92.43136
Server-33	68.9	31.72	0.61	2.71	187.8	92.70064	95.89004
Server-34	33.02	17.68	1.81	4.74	116.04	98.10291	72.4966

Continue (Table A.III)

Server-35	83.49	34.72	2.88	7.81	216.98	94.83564	76.0438
Server-36	88	14.73	1.5	6.6	226	92.19316	76.67264
Server-37	25.12	38.07	2.53	8.09	100.24	95.30227	85.8365
Server-38	45.7	8.47	3.24	0.4	141.4	90.64419	85.21586
Server-39	31.13	45.56	2.96	0.98	112.26	98.14819	66.19152
Server-40	39.63	14.05	1.21	4.9	129.26	91.77164	81.37638
Server-41	83.81	6.1	1.19	7.15	217.62	90.18767	84.78366
Server-42	67.27	61.22	2.75	1.88	184.54	90.75775	82.073
Server-43	44.03	44.78	1.32	1.2	138.06	93.41893	68.67792
Server-44	28.96	43.16	2.59	1.33	107.92	98.25158	81.24434
Server-45	85.43	25.36	1.34	4.91	220.86	88.99286	86.35936
Server-46	34.83	17.52	3.59	1.34	119.66	92.25745	64.44996
Server-47	10.08	51.93	3.6	0.22	70.16	89.61767	86.91174
Server-48	69.45	10.45	0.93	3.26	188.9	96.57606	60.17034
Server-49	70.36	44.34	3.93	6.81	190.72	89.75189	89.43424
Server-50	10.55	38.7	3.53	9.98	71.1	91.25872	80.30534
Server-51	12.51	46.86	3.94	6.79	75.02	89.16473	77.30328
Server-52	59.9	39.1	3.19	6.88	169.8	93.15906	97.8135
Server-53	44.18	30.77	1.54	0.13	138.36	97.6745	70.428
Server-54	80.13	50.69	0.49	0.39	210.26	93.54671	70.88316
Server-55	24	4.51	0.43	3	98	92.74056	64.5205
Server-56	61.77	19.85	1.22	9.46	173.54	96.162	73.86538
Server-57	71.33	51.37	3.22	9.51	192.66	89.17256	86.68168
Server-58	14.38	38.13	3.65	0.67	78.76	94.18851	74.57668
Server-59	57.07	3.05	0.26	2.92	164.14	89.23234	79.28246
Server-60	71.04	0.99	1.42	7.57	192.08	98.34524	69.90608
Server-61	14.25	43.27	1.61	1.96	78.5	94.21087	60.05534
Server-62	56.22	5.05	1.07	8.08	162.44	95.17933	84.90682
Server-63	48.54	6.28	3.73	3.06	147.08	89.83347	58.90874
Server-64	27.72	24.5	3.67	8.44	105.44	96.87308	66.04916
Server-65	79.93	19.31	3.93	3.68	209.86	95.99232	68.89978
Server-66	71.04	42.37	1.86	2.1	192.08	96.56438	66.03306
Server-67	49.45	55.88	1.14	2.73	148.9	89.50034	68.81452
Server-68	66.41	36.07	3.73	9.5	182.82	94.18843	63.80444
Server-69	13.57	60.22	3	8.77	77.14	92.8312	59.54228
Server-70	19.27	34.13	0.62	1.27	88.54	98.69412	66.93974
Server-71	68.03	3.19	0.24	9.83	186.06	89.37557	75.23616
Server-72	53.52	29.9	2.92	0.51	157.04	93.07902	84.75074
Server-73	15.86	61.74	2.11	1.35	81.72	89.47892	79.0136
Server-74	65.35	21.08	0.16	9.24	180.7	98.88114	63.38556
Server-75	19.68	21.13	1.56	1.69	89.36	94.74773	58.84686
Server-76	74.08	17.82	2.94	4.25	198.16	96.92279	86.67024
Server-77	70.91	25.22	3.22	5.26	191.82	91.91306	86.24132
Server-78	68.01	34.71	2.82	1.76	186.02	92.27778	66.13068
Server-79	21.13	52.82	0.26	0.1	92.26	96.23208	85.5733
Server-80	88.44	51.43	0.91	9.76	226.88	98.28497	82.52672
Server-81	74.72	33.11	1.6	8.44	199.44	95.09611	83.78636
Server-82	33.38	36.73	2.64	9.08	116.76	94.4882	69.00074
Server-83	62.74	15.74	3.33	8.31	175.48	90.47986	70.03822
Server-84	31.89	37.74	3.82	6.63	113.78	93.26396	69.0457
Server-85	59.57	36.56	1.09	2.97	169.14	92.91856	86.2434
Server-86	80.02	8.03	0.13	0.19	210.04	89.87401	96.2977
Server-87	55.1	29.62	2.12	1.29	160.2	93.85071	74.41898
Server-88	40.15	2.93	1.95	8.54	130.3	91.71371	98.08046
Server-89	15.36	56.39	3.37	4.06	80.72	96.24041	94.73508
Server-90	36.64	31.68	0.5	9.03	123.28	94.93553	93.09694
Server-91	63.36	19.61	3.95	6.05	176.72	91.91438	59.95158
Server-92	42.79	47.27	1.17	5.13	135.58	95.74092	89.19976

*Continue (Table A.III)*

Server-93	89.87	62.25	3.22	3.93	229.74	91.6583	87.07352
Server-94	71.65	3.42	1.88	3.84	193.3	93.03223	70.5106
Server-95	14.77	49.56	3.54	9.01	79.54	94.48752	84.96126
Server-96	12.31	35.05	2.57	3.34	74.62	91.3794	89.68186
Server-97	68.16	30.67	2.5	6.05	186.32	94.24732	97.56168
Server-98	21.72	34.85	2.33	4.39	93.44	89.62275	59.79162
Server-99	42.29	33.38	3.73	0.26	134.58	94.5053	68.0677
Server-100	76.24	60.62	3.63	1.48	202.48	94.52979	92.06042

### 1.3 KPI Results

**Table A.IV. KPI Results**

Server ID	MSE	RMSE	MAE	MAPE [%]	Max Error	RMSPE [%]	MARE [%]	MSRE	RMSRE
Server-1	8.26E-05	0.00909	0.007988	0.006294	0.013526	0.007696	0.006294	5.92E-09	7.70E-05
Server-2	0.000226	0.015046	0.011768	0.010329	0.032219	0.014896	0.010329	2.22E-08	0.000149
Server-3	0.00013	0.011383	0.010224	0.007911	0.016021	0.009713	0.007911	9.43E-09	9.71E-05
Server-4	0.000167	0.01294	0.011065	0.007589	0.025043	0.009347	0.007589	8.74E-09	9.35E-05
Server-5	0.000144	0.012016	0.010528	0.00742	0.017459	0.008878	0.00742	7.88E-09	8.88E-05
Server-6	0.000108	0.010404	0.008826	0.006907	0.016623	0.008483	0.006907	7.20E-09	8.48E-05
Server-7	0.000104	0.010183	0.009317	0.007232	0.01595	0.009047	0.007232	8.18E-09	9.05E-05
Server-8	0.00017	0.013052	0.009803	0.008285	0.028007	0.01338	0.008285	1.79E-08	0.000134
Server-9	0.000106	0.010316	0.008237	0.006205	0.01865	0.008956	0.006205	8.02E-09	8.96E-05
Server-10	0.000124	0.011152	0.009952	0.006747	0.021151	0.007856	0.006747	6.17E-09	7.86E-05
Server-11	0.000118	0.010849	0.008301	0.005228	0.021299	0.00658	0.005228	4.33E-09	6.58E-05
Server-12	0.000127	0.011252	0.009728	0.007045	0.01667	0.008867	0.007045	7.86E-09	8.87E-05
Server-13	7.26E-05	0.008522	0.007048	0.005213	0.013375	0.00707	0.005213	5.00E-09	7.07E-05
Server-14	0.000103	0.010162	0.007438	0.006229	0.023524	0.010834	0.006229	1.17E-08	0.000108
Server-15	7.25E-05	0.008517	0.007008	0.005262	0.018751	0.006306	0.005262	3.98E-09	6.31E-05
Server-16	0.000178	0.013327	0.01123	0.007546	0.023087	0.009083	0.007546	8.25E-09	9.08E-05
Server-17	0.000705	0.026558	0.02188	0.015291	0.050107	0.018138	0.015291	3.29E-08	0.000181
Server-18	0.000116	0.010783	0.009837	0.007257	0.016188	0.008592	0.007257	7.38E-09	8.59E-05
Server-19	0.00011	0.01051	0.008537	0.006701	0.020329	0.009539	0.006701	9.10E-09	9.54E-05
Server-20	0.000111	0.010516	0.008729	0.006968	0.01793	0.009452	0.006968	8.93E-09	9.45E-05
Server-21	6.66E-05	0.008158	0.00755	0.005791	0.011583	0.007124	0.005791	5.07E-09	7.12E-05
Server-22	0.000145	0.012052	0.009815	0.0072	0.026076	0.010073	0.0072	1.01E-08	0.000101
Server-23	8.82E-05	0.009394	0.008287	0.006208	0.015135	0.007757	0.006208	6.02E-09	7.76E-05
Server-24	0.0004	0.019991	0.016929	0.011066	0.031719	0.013658	0.011066	1.87E-08	0.000137
Server-25	9.13E-05	0.009557	0.007799	0.005574	0.020866	0.006595	0.005574	4.35E-09	6.60E-05
Server-26	0.000104	0.010203	0.008616	0.006527	0.017356	0.008249	0.006527	6.80E-09	8.25E-05
Server-27	9.78E-05	0.009892	0.007894	0.005634	0.016517	0.007771	0.005634	6.04E-09	7.77E-05
Server-28	8.80E-05	0.009381	0.00871	0.006507	0.012485	0.007705	0.006507	5.94E-09	7.70E-05
Server-29	0.000411	0.020276	0.017309	0.010842	0.033658	0.013217	0.010842	1.75E-08	0.000132
Server-30	9.63E-05	0.009815	0.008561	0.005809	0.016754	0.007399	0.005809	5.47E-09	7.40E-05
Server-31	0.000209	0.014451	0.011305	0.007512	0.025725	0.009849	0.007512	9.70E-09	9.85E-05
Server-32	7.47E-05	0.008643	0.007124	0.005159	0.015378	0.006497	0.005159	4.22E-09	6.50E-05
Server-33	0.000115	0.010729	0.009126	0.006775	0.019448	0.009354	0.006775	8.75E-09	9.35E-05
Server-34	9.37E-05	0.009679	0.008519	0.006184	0.013965	0.007592	0.006184	5.76E-09	7.59E-05
Server-35	0.000175	0.013221	0.011161	0.007539	0.027278	0.01021	0.007539	1.04E-08	0.000102
Server-36	0.000115	0.010735	0.008684	0.006231	0.019863	0.008005	0.006231	6.41E-09	8.01E-05
Server-37	0.00011	0.010472	0.008666	0.00675	0.021679	0.009471	0.00675	8.97E-09	9.47E-05
Server-38	0.000108	0.010383	0.009085	0.006087	0.019052	0.007877	0.006087	6.20E-09	7.88E-05
Server-39	0.000244	0.015612	0.012628	0.008935	0.028891	0.011925	0.008935	1.42E-08	0.000119
Server-40	0.000111	0.010548	0.008934	0.006873	0.019921	0.009407	0.006873	8.85E-09	9.41E-05
Server-41	0.000114	0.010666	0.007549	0.006246	0.022937	0.009461	0.006246	8.95E-09	9.46E-05
Server-42	6.56E-05	0.0081	0.007211	0.006062	0.013527	0.007892	0.006062	6.23E-09	7.89E-05
Server-43	0.000124	0.01113	0.008538	0.006906	0.024504	0.0095	0.006906	9.03E-09	9.50E-05
Server-44	0.000175	0.013245	0.010887	0.00885	0.023212	0.011465	0.00885	1.31E-08	0.000115



Continue (Table A.IV)

Server-45	0.000175	0.01324	0.010507	0.006183	0.024063	0.008127	0.006183	6.60E-09	8.13E-05
Server-46	0.000294	0.017143	0.013635	0.011086	0.032947	0.016253	0.011086	2.64E-08	0.000163
Server-47	8.91E-05	0.009437	0.008366	0.006944	0.016161	0.009403	0.006944	8.84E-09	9.40E-05
Server-48	0.000141	0.011857	0.009589	0.007438	0.025685	0.011389	0.007438	1.30E-08	0.000114
Server-49	0.00024	0.015483	0.011394	0.009749	0.036943	0.016355	0.009749	2.67E-08	0.000164
Server-50	0.000111	0.010521	0.008242	0.006656	0.020814	0.008736	0.006656	7.63E-09	8.74E-05
Server-51	9.06E-05	0.00952	0.008868	0.00704	0.015344	0.007361	0.00704	5.42E-09	7.36E-05
Server-52	8.86E-05	0.009412	0.006991	0.005383	0.021003	0.007351	0.005383	5.40E-09	7.35E-05
Server-53	0.000258	0.016059	0.013013	0.009274	0.031886	0.013075	0.009274	1.71E-08	0.000131
Server-54	0.000105	0.010225	0.008734	0.006818	0.017984	0.007924	0.006818	6.28E-09	7.92E-05
Server-55	6.97E-05	0.008348	0.007229	0.005266	0.014113	0.006856	0.005266	4.70E-09	6.86E-05
Server-56	7.90E-05	0.008891	0.007411	0.005782	0.0146	0.007375	0.005782	5.44E-09	7.38E-05
Server-57	7.41E-05	0.008606	0.00694	0.005377	0.01599	0.007033	0.005377	4.95E-09	7.03E-05
Server-58	0.000156	0.012497	0.009954	0.006629	0.02763	0.008985	0.006629	8.07E-09	8.99E-05
Server-59	8.12E-05	0.00901	0.008274	0.006651	0.015291	0.007397	0.006651	5.47E-09	7.40E-05
Server-60	9.11E-05	0.009544	0.008609	0.006845	0.01334	0.008216	0.006845	6.75E-09	8.22E-05
Server-61	0.000105	0.010243	0.009113	0.006152	0.018351	0.008643	0.006152	7.47E-09	8.64E-05
Server-62	0.000154	0.012415	0.010128	0.00746	0.024819	0.009795	0.00746	9.59E-09	9.80E-05
Server-63	0.000191	0.013807	0.010232	0.008851	0.030522	0.013587	0.008851	1.85E-08	0.000136
Server-64	0.000132	0.011491	0.010608	0.007932	0.016836	0.008685	0.007932	7.54E-09	8.69E-05
Server-65	9.39E-05	0.00969	0.008606	0.006738	0.015277	0.00885	0.006738	7.83E-09	8.85E-05
Server-66	7.51E-05	0.008668	0.007137	0.005685	0.015231	0.008388	0.005685	7.04E-09	8.39E-05
Server-67	7.85E-05	0.008859	0.007503	0.005593	0.016417	0.006533	0.005593	4.27E-09	6.53E-05
Server-68	0.000344	0.018551	0.016415	0.010822	0.027866	0.013165	0.010822	1.73E-08	0.000132
Server-69	0.000111	0.010522	0.009136	0.006772	0.021192	0.007579	0.006772	5.74E-09	7.58E-05
Server-70	9.54E-05	0.009768	0.008142	0.006176	0.016401	0.008075	0.006176	6.52E-09	8.08E-05
Server-71	0.000102	0.010103	0.008498	0.00597	0.021013	0.007028	0.00597	4.94E-09	7.03E-05
Server-72	0.000121	0.010997	0.00952	0.006887	0.018082	0.009399	0.006887	8.83E-09	9.40E-05
Server-73	4.94E-05	0.007029	0.006396	0.005269	0.011429	0.006209	0.005269	3.86E-09	6.21E-05
Server-74	0.000145	0.012052	0.011049	0.009926	0.01779	0.011589	0.009926	1.34E-08	0.000116
Server-75	0.000145	0.012036	0.010464	0.008767	0.020617	0.010253	0.008767	1.05E-08	0.000103
Server-76	0.000115	0.010714	0.008846	0.007031	0.021021	0.010575	0.007031	1.12E-08	0.000106
Server-77	0.000176	0.01325	0.0105	0.006627	0.02405	0.008555	0.006627	7.32E-09	8.55E-05
Server-78	0.000131	0.011462	0.009954	0.00712	0.021337	0.00841	0.00712	7.07E-09	8.41E-05
Server-79	7.79E-05	0.008828	0.007726	0.006396	0.014921	0.007749	0.006396	6.00E-09	7.75E-05
Server-80	7.96E-05	0.008919	0.007806	0.006342	0.01456	0.00788	0.006342	6.21E-09	7.88E-05
Server-81	0.000276	0.016606	0.01435	0.009371	0.029544	0.010981	0.009371	1.21E-08	0.00011
Server-82	6.17E-05	0.007855	0.006655	0.005341	0.0115	0.006971	0.005341	4.86E-09	6.97E-05
Server-83	0.00033	0.018175	0.015551	0.012156	0.032911	0.014722	0.012156	2.17E-08	0.000147
Server-84	0.000212	0.014565	0.011334	0.008622	0.029474	0.011196	0.008622	1.25E-08	0.000112
Server-85	0.000229	0.01513	0.013425	0.00846	0.029339	0.009261	0.00846	8.58E-09	9.26E-05
Server-86	0.000139	0.01181	0.00995	0.006964	0.018285	0.008675	0.006964	7.53E-09	8.67E-05
Server-87	0.000111	0.010544	0.008267	0.007503	0.022565	0.010062	0.007503	1.01E-08	0.000101
Server-88	0.000123	0.011104	0.00916	0.007119	0.021175	0.010041	0.007119	1.01E-08	0.0001
Server-89	8.86E-05	0.009415	0.008534	0.00689	0.015642	0.008881	0.00689	7.89E-09	8.88E-05
Server-90	0.000104	0.01022	0.008005	0.006023	0.01935	0.008965	0.006023	8.04E-09	8.97E-05

*Continue (Table A.IV)*

Server-91	9.87E-05	0.009937	0.007625	0.006268	0.023621	0.011109	0.006268	1.23E-08	0.000111
Server-92	0.000149	0.012208	0.010386	0.00669	0.022813	0.008152	0.00669	6.65E-09	8.15E-05
Server-93	0.000147	0.012142	0.011075	0.00747	0.018039	0.00859	0.00747	7.38E-09	8.59E-05
Server-94	0.00019	0.013786	0.011859	0.00776	0.027481	0.009959	0.00776	9.92E-09	9.96E-05
Server-95	0.000117	0.010805	0.009658	0.008077	0.01749	0.009332	0.008077	8.71E-09	9.33E-05
Server-96	0.000176	0.013252	0.011537	0.009808	0.02205	0.012171	0.009808	1.48E-08	0.000122
Server-97	9.28E-05	0.009631	0.008871	0.006575	0.014622	0.007746	0.006575	6.00E-09	7.75E-05
Server-98	8.29E-05	0.009106	0.00884	0.006298	0.012623	0.007439	0.006298	5.53E-09	7.44E-05
Server-99	0.000201	0.014174	0.012084	0.009896	0.027376	0.011822	0.009896	1.40E-08	0.000118
Server-100	0.000131	0.011465	0.007994	0.005944	0.027205	0.008816	0.005944	7.77E-09	8.82E-05