General Linear Model

Between-Subjects Factors

		Value Label	N
Router Type Protocol	1	ecmp-mptcp	140
	2	ps-mptcp	140
	3	ps-tcp	140
	4	static-tcp	140
Juggler Enabled	1	false	280
	2	true	280

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Goodput	ecmp-mptcp	false	309335.1853	62642.33135
		true	312189.9091	94032.96760
		Total	310762.5472	79619.47346
	ps-mptcp	false	319248.1130	49958.05184
		true	334333.9065	114823.2028
		Total	326791.0097	88549.35647
	ps-tcp	false	390451.4154	136455.3706
		true	348461.1974	202274.9577
		Total	369456.3064	173197.6433
	static-tcp	false	390250.0852	65532.11367
		true	402780.8061	91903.02971
		Total	396515.4457	79774.80780
	Total	false	352321.1997	93372.93802
		true	349441.4548	137020.2870
		Total	350881.3272	117149.5538
Throughput	ecmp-mptcp	false	756729.7157	96954.55016
		true	715990.9140	91457.84029
		Total	736360.3148	96105.96377
	ps-mptcp	false	788454.4973	101992.7965
		true	771451.4705	98913.43586
		Total	779952.9839	100465.8246
	ps-tcp	false	886510.9806	270862.8923
		true	732670.4523	135073.5539
		Total	809590.7165	226794.0499

	Router Type Protocol	Juggler Enabled	N
Goodput	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	ps-tcp	false	70
		true	70
		Total	140
	static-tcp	false	70
		true	70
		Total	140
	Total	false	280
		true	280
		Total	560
Throughput	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	ps-tcp	false	70
		true	70
		Total	140

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
	static-tcp	false	812377.7385	123069.8450
		true	811332.2005	125473.7017
		Total	811854.9695	123830.8484
	Total	false	811018.2330	170544.0670
		true	757861.2593	119401.9608
		Total	784439.7462	149465.6002
Flow Completion Time	ecmp-mptcp	false	87.077251	12.2116932
		true	88.556587	16.3269302
		Total	87.816919	14.3841160
	ps-mptcp	false	83.612153	9.9048116
		true	83.324580	15.2975920
		Total	83.468366	12.8408313
	ps-tcp	false	71.626320	14.0737055
		true	86.022900	19.7832417
		Total	78.824610	18.5685423
	static-tcp	false	68.671070	9.3003645
		true	67.533026	11.1793873
		Total	68.102048	10.2617324
	Total	false	77.746699	13.8585004
		true	81.359273	17.8573964
		Total	79.552986	16.0712107
Mean Network Utilization	ecmp-mptcp	false	.7739697435	.1180108827
		true	.8010927030	.1202826252
		Total	.7875312232	.1195003666
	ps-mptcp	false	.9859751329	.0069904059
		true	.9889066784	.0070439215
		Total	.9874409057	.0071449979
	ps-tcp	false	.9872415682	.0072423602
		true	.9874475436	.0078339017
		Total	.9873445559	.0075174563
	static-tcp	false	.3332886521	.1864239998
		true	.3584328571	.2178691304
		Total	.3458607546	.2024200316

	Router Type Protocol	Juggler Enabled	N
	static-tcp	false	70
		true	70
		Total	140
	Total	false	280
		true	280
		Total	560
Flow Completion Time	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	ps-tcp	false	70
		true	70
		Total	140
	static-tcp	false	70
		true	70
		Total	140
	Total	false	280
		true	280
		Total	560
Mean Network Utilization	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	ps-tcp	false	70
		true	70
		Total	140
	static-tcp	false	70
		true	70
		Total	140

 Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Total	false	.7701187742	.2888982906
	true	.7839699455	.2859654337
·	Total	.7770443599	.2872620356

Descriptive Statistics

Router Type Protocol	Juggler Enabled	N
Total	false	280
	true	280
	Total	560

Box's Test of Equality of Covariance Matrices^a

Box's M	2635.372
F	36.762
df1	70
df2	417164.632
Sig.	.000

Tests the null hypothesis that the observed covariance matrices of the dependent variables are equal across groups.

a. Design: Intercept + router_proto + juggler_enabled + router_proto * juggler_enabled

Multivariate Tests^a

⊏#oot		Value	F	Hypothosis df	Error df
Effect		value		Hypothesis df	Ellor di
Intercept	Pillai's Trace	.999	100775.122 ^b	4.000	549.000
	Wilks' Lambda	.001	100775.122 ^b	4.000	549.000
	Hotelling's Trace	734.245	100775.122 ^b	4.000	549.000
	Roy's Largest Root	734.245	100775.122 ^b	4.000	549.000
router_proto	Pillai's Trace	1.045	73.667	12.000	1653.000
	Wilks' Lambda	.097	171.613	12.000	1452.809
	Hotelling's Trace	7.887	359.967	12.000	1643.000
	Roy's Largest Root	7.702	1061.019 ^c	4.000	551.000
juggler_enabled	Pillai's Trace	.109	16.862 ^b	4.000	549.000
	Wilks' Lambda	.891	16.862 ^b	4.000	549.000
	Hotelling's Trace	.123	16.862 ^b	4.000	549.000
	Roy's Largest Root	.123	16.862 ^b	4.000	549.000
router_proto * juggler_enabled	Pillai's Trace	.131	6.268	12.000	1653.000
	Wilks' Lambda	.870	6.552	12.000	1452.809
	Hotelling's Trace	.149	6.808	12.000	1643.000
	Roy's Largest Root	.146	20.119 ^c	4.000	551.000

Multivariate Tests^a

Effect		Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.000	.999
	Wilks' Lambda	.000	.999
	Hotelling's Trace	.000	.999
	Roy's Largest Root	.000	.999
router_proto	Pillai's Trace	.000	.348
	Wilks' Lambda	.000	.541
	Hotelling's Trace	.000	.724
	Roy's Largest Root	.000	.885
juggler_enabled	Pillai's Trace	.000	.109
	Wilks' Lambda	.000	.109
	Hotelling's Trace	.000	.109
	Roy's Largest Root	.000	.109
router_proto *	Pillai's Trace	.000	.044
juggler_enabled	Wilks' Lambda	.000	.045
	Hotelling's Trace	.000	.047
	Roy's Largest Root	.000	.127

- a. Design: Intercept + router_proto + juggler_enabled + router_proto * juggler_enabled
- b. Exact statistic
- c. The statistic is an upper bound on F that yields a lower bound on the significance level.

Levene's Test of Equality of Error Variances^a

		Levene Statistic	df1	df2	Sig.
Goodput	Based on Mean	6.036	7	552	.000
	Based on Median	1.623	7	552	.126
	Based on Median and with adjusted df	1.623	7	260.483	.129
	Based on trimmed mean	2.713	7	552	.009
Throughput	Based on Mean	5.457	7	552	.000
	Based on Median	3.168	7	552	.003
	Based on Median and with adjusted df	3.168	7	222.572	.003
	Based on trimmed mean	3.891	7	552	.000
Flow Completion Time	Based on Mean	3.473	7	552	.001
	Based on Median	1.546	7	552	.149
	Based on Median and with adjusted df	1.546	7	371.172	.150
	Based on trimmed mean	2.337	7	552	.023
Mean Network Utilization	Based on Mean	44.430	7	552	.000
	Based on Median	14.396	7	552	.000
	Based on Median and with adjusted df	14.396	7	164.211	.000
	Based on trimmed mean	30.279	7	552	.000

Tests the null hypothesis that the error variance of the dependent variable is equal across groups.

a. Design: Intercept + router_proto + juggler_enabled + router_proto * juggler_enabled

Tests of Between-Subjects Effects

		Type III Sum of	16	
Source	Dependent Variable	Squares	df _	Mean Square
Corrected Model	Goodput	7.219E+11 ^a	7	1.031E+11
	Throughput	1.417E+12 ^b	7	2.024E+11
	Flow Completion Time	37517.797 ^c	7	5359.685
	Mean Network Utilization	38.481 ^d	7	5.497
Intercept	Goodput	6.895E+13	1	6.895E+13
	Throughput	3.446E+14	1	3.446E+14
	Flow Completion Time	3544059.436	1	3544059.436
	Mean Network Utilization	338.127	1	338.127
router_proto	Goodput	6.464E+11	3	2.155E+11
	Throughput	5.202E+11	3	1.734E+11
	Flow Completion Time	30138.824	3	10046.275
	Mean Network Utilization	38.433	3	12.811
juggler_enabled	Goodput	1161010352	1	1161010352
	Throughput	3.956E+11	1	3.956E+11
	Flow Completion Time	1827.097	1	1827.097
	Mean Network Utilization	.027	1	.027
router_proto *	Goodput	7.430E+10	3	2.477E+10
juggler_enabled	Throughput	5.010E+11	3	1.670E+11
	Flow Completion Time	5551.875	3	1850.625
	Mean Network Utilization	.021	3	.007
Error	Goodput	6.950E+12	552	1.259E+10
	Throughput	1.107E+13	552	2.006E+10
	Flow Completion Time	106862.855	552	193.592
	Mean Network Utilization	7.647	552	.014
Total	Goodput	7.662E+13	560	
	Throughput	3.571E+14	560	
	Flow Completion Time	3688440.088	560	
	Mean Network Utilization	384.255	560	
Corrected Total	Goodput	7.672E+12	559	
	Throughput	1.249E+13	559	
	Flow Completion Time	144380.652	559	
	Mean Network Utilization	46.128	559	

Tests of Between-Subjects Effects

Corrected Model Goodput 8.191 .000 .094 Throughput 10.092 .000 .113 Flow Completion Time 27.685 .000 .260 Mean Network Utilization 396.820 .000 .834 Intercept Goodput 5476.120 .000 .908 Throughput 17181.087 .000 .969 Flow Completion Time 18306.836 .000 .971 Mean Network Utilization 24407.400 .000 .978 Touter_proto Goodput 17.115 .000 .045 Throughput 8.646 .000 .045 Throughput 19.24 .000 .834 juggler_enabled Goodput 19.724 .000 .034 Flow Completion Time 9.438 .002 .017 Mean Network Utilization 1.939 .164 .004 router_proto* Goodput 1.967 .118 .011 Throughput 8.326 .000 .043 <th>Source</th> <th>Dependent Variable</th> <th>F</th> <th>Sig.</th> <th>Partial Eta Squared</th>	Source	Dependent Variable	F	Sig.	Partial Eta Squared
Flow Completion Time 27.685 .000 .260	Corrected Model	Goodput	8.191	.000	.094
Mean Network Utilization 396.820 .000 .834		Throughput	10.092	.000	.113
Intercept		Flow Completion Time	27.685	.000	.260
Throughput		Mean Network Utilization	396.820	.000	.834
Flow Completion Time 18306.836 .000 .971	Intercept	Goodput	5476.120	.000	.908
Mean Network Utilization 24407.400 .000 .978		Throughput	17181.087	.000	.969
Touter_proto Goodput Throughput 17.115 .000 .085 Throughput 8.646 .000 .045 Flow Completion Time 51.894 .000 .220 Mean Network Utilization 924.754 .000 .834 juggler_enabled Goodput .092 .761 .000 Throughput 19.724 .000 .034 Flow Completion Time 9.438 .002 .017 Mean Network Utilization 1.939 .164 .004 router_proto * juggler_enabled Goodput 1.967 .118 .011 Throughput 8.326 .000 .043 Flow Completion Time 9.559 .000 .049 Mean Network Utilization .513 .674 .003 Error Goodput Flow Completion Time		Flow Completion Time	18306.836	.000	.971
Throughput		Mean Network Utilization	24407.400	.000	.978
Flow Completion Time 51.894 .000 .220	router_proto	Goodput	17.115	.000	.085
Mean Network Utilization 924.754 .000 .834 juggler_enabled Goodput .092 .761 .000 Throughput 19.724 .000 .034 Flow Completion Time 9.438 .002 .017 Mean Network Utilization 1.939 .164 .004 router_proto * Goodput 1.967 .118 .011 juggler_enabled Throughput 8.326 .000 .043 Flow Completion Time 9.559 .000 .049 Mean Network Utilization .513 .674 .003 Error Goodput		Throughput	8.646	.000	.045
Juggler_enabled Goodput 1.092 1.761 1.000 Throughput 19.724 1.000 1.034 Flow Completion Time 9.438 1.002 1.017 Mean Network Utilization 1.939 1.64 1.004 Touter_proto *		Flow Completion Time	51.894	.000	.220
Throughput		Mean Network Utilization	924.754	.000	.834
Flow Completion Time 9.438 .002 .017	juggler_enabled	Goodput	.092	.761	.000
Mean Network Utilization		Throughput	19.724	.000	.034
Total Goodput Throughput Flow Completion Time Flow Complet		Flow Completion Time	9.438	.002	.017
Throughput		Mean Network Utilization	1.939	.164	.004
Throughput 8.326 .000 .043		Goodput	1.967	.118	.011
Mean Network Utilization .513 .674 .003 Error Goodput Throughput Flow Completion Time Mean Network Utilization Total Goodput Throughput Flow Completion Time Corrected Total Goodput Throughput Flow Completion Time	juggler_enabled	Throughput	8.326	.000	.043
Error Goodput Throughput Flow Completion Time Mean Network Utilization Total Goodput Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time Mean Network Utilization Flow Completion Time		Flow Completion Time	9.559	.000	.049
Throughput Flow Completion Time Mean Network Utilization Total Goodput Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time Flow Completion Time		Mean Network Utilization	.513	.674	.003
Flow Completion Time Mean Network Utilization Total Goodput Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time	Error	Goodput			
Total Goodput Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time Mean Network Utilization Flow Completion Time		Throughput			
Total Goodput Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time		Flow Completion Time			
Throughput Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time		Mean Network Utilization			
Flow Completion Time Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time	Total	Goodput			
Mean Network Utilization Corrected Total Goodput Throughput Flow Completion Time		Throughput			
Corrected Total Goodput Throughput Flow Completion Time		Flow Completion Time			
Throughput Flow Completion Time		Mean Network Utilization			
Flow Completion Time	Corrected Total	Goodput			
		Throughput			
Mean Network Utilization		Flow Completion Time			
		Mean Network Utilization			

a. R Squared = .094 (Adjusted R Squared = .083)

b. R Squared = .113 (Adjusted R Squared = .102)

- c. R Squared = .260 (Adjusted R Squared = .250)
- d. R Squared = .834 (Adjusted R Squared = .832)

Post Hoc Tests

Router Type | Protocol

Multiple Comparisons

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Mean Difference (I-J)
Goodput	ecmp-mptcp	ps-mptcp	-16028.4625
		ps-tcp	-58693.7592 [*]
		static-tcp	-85752.8985 [*]
	ps-mptcp	ecmp-mptcp	16028.46251
		ps-tcp	-42665.2967 [*]
		static-tcp	-69724.4360 [*]
	ps-tcp	ecmp-mptcp	58693.7592 [*]
		ps-mptcp	42665.2967 [*]
		static-tcp	-27059.1393
	static-tcp	ecmp-mptcp	85752.8985 [*]
		ps-mptcp	69724.4360 [*]
		ps-tcp	27059.13929
Throughput	ecmp-mptcp	ps-mptcp	-43592.6690
		ps-tcp	-73230.4016 [*]
		static-tcp	-75494.6547 [*]
	ps-mptcp	ecmp-mptcp	43592.66904
		ps-tcp	-29637.7326
		static-tcp	-31901.9857
	ps-tcp	ecmp-mptcp	73230.4016 [*]
		ps-mptcp	29637.73260
		static-tcp	-2264.25306
	static-tcp	ecmp-mptcp	75494.6547 [*]
		ps-mptcp	31901.98566
		ps-tcp	2264.253062

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Std. Error
Goodput	ecmp-mptcp	ps-mptcp	13411.23510
		ps-tcp	13411.23510
		static-tcp	13411.23510
	ps-mptcp	ecmp-mptcp	13411.23510
		ps-tcp	13411.23510
		static-tcp	13411.23510
	ps-tcp	ecmp-mptcp	13411.23510
		ps-mptcp	13411.23510
		static-tcp	13411.23510
	static-tcp	ecmp-mptcp	13411.23510
		ps-mptcp	13411.23510
		ps-tcp	13411.23510
Throughput	ecmp-mptcp	ps-mptcp	16926.97169
		ps-tcp	16926.97169
		static-tcp	16926.97169
	ps-mptcp	ecmp-mptcp	16926.97169
		ps-tcp	16926.97169
		static-tcp	16926.97169
	ps-tcp	ecmp-mptcp	16926.97169
		ps-mptcp	16926.97169
		static-tcp	16926.97169
	static-tcp	ecmp-mptcp	16926.97169
		ps-mptcp	16926.97169
		ps-tcp	16926.97169

•			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Sig.
Goodput	ecmp-mptcp	ps-mptcp	.630
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.630
		ps-tcp	.008
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.008
		static-tcp	.183
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		ps-tcp	.183
Throughput	ecmp-mptcp	ps-mptcp	.050
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.050
		ps-tcp	.298
		static-tcp	.236
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.298
		static-tcp	.999
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.236
		ps-tcp	.999

Tukey HSD			95%
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Lower Bound
Goodput	ecmp-mptcp	ps-mptcp	-50587.5221
		ps-tcp	-93252.8188
		static-tcp	-120311.958
	ps-mptcp	ecmp-mptcp	-18530.5971
		ps-tcp	-77224.3562
		static-tcp	-104283.496
	ps-tcp	ecmp-mptcp	24134.69959
		ps-mptcp	8106.237074
		static-tcp	-61618.1989
	static-tcp	ecmp-mptcp	51193.83888
		ps-mptcp	35165.37637
		ps-tcp	-7499.92029
Throughput	ecmp-mptcp	ps-mptcp	-87211.3379
		ps-tcp	-116849.071
		static-tcp	-119113.324
	ps-mptcp	ecmp-mptcp	-25.9998751
		ps-tcp	-73256.4015
		static-tcp	-75520.6546
	ps-tcp	ecmp-mptcp	29611.73272
		ps-mptcp	-13980.9363
		static-tcp	-45882.9220
	static-tcp	ecmp-mptcp	31875.98578
		ps-mptcp	-11716.6833
		ps-tcp	-41354.4158

Tukey HSD

95% Confidence ..

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Upper Bound
Goodput	ecmp-mptcp	ps-mptcp	18530.59707
		ps-tcp	-24134.6996
		static-tcp	-51193.8389
	ps-mptcp	ecmp-mptcp	50587.52210
		ps-tcp	-8106.23707
		static-tcp	-35165.3764
	ps-tcp	ecmp-mptcp	93252.81876
		ps-mptcp	77224.35624
		static-tcp	7499.920294
	static-tcp	ecmp-mptcp	120311.9581
		ps-mptcp	104283.4955
		ps-tcp	61618.19888
Throughput	ecmp-mptcp	ps-mptcp	25.99987511
		ps-tcp	-29611.7327
		static-tcp	-31875.9858
	ps-mptcp	ecmp-mptcp	87211.33795
		ps-tcp	13980.93632
		static-tcp	11716.68325
	ps-tcp	ecmp-mptcp	116849.0705
		ps-mptcp	73256.40151
		static-tcp	41354.41585
	static-tcp	ecmp-mptcp	119113.3236
		ps-mptcp	75520.65457
		ps-tcp	45882.92197

·			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Mean Difference (I-J)
Flow Completion Time	ecmp-mptcp	ps-mptcp	4.348553 [*]
		ps-tcp	8.992309 [*]
		static-tcp	19.714871 [*]
	ps-mptcp	ecmp-mptcp	-4.348553 [*]
		ps-tcp	4.643756 [*]
		static-tcp	15.366319 [*]
	ps-tcp	ecmp-mptcp	-8.992309 [*]
		ps-mptcp	-4.643756 [*]
		static-tcp	10.722562 [*]
	static-tcp	ecmp-mptcp	-19.714871 [*]
		ps-mptcp	-15.366319 [*]
		ps-tcp	-10.722562 [*]
Mean Network Utilization	ecmp-mptcp	ps-mptcp	199909682 [*]
		ps-tcp	199813333 [*]
		static-tcp	.441670469 [*]
	ps-mptcp	ecmp-mptcp	.199909682*
		ps-tcp	.0000963498
		static-tcp	.641580151*
	ps-tcp	ecmp-mptcp	.199813333*
		ps-mptcp	000096350
		static-tcp	.641483801 [*]
	static-tcp	ecmp-mptcp	441670469 [*]
		ps-mptcp	641580151 [*]
		ps-tcp	641483801 [*]

·			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Std. Error
Flow Completion Time	ecmp-mptcp	ps-mptcp	1.6630099
		ps-tcp	1.6630099
		static-tcp	1.6630099
	ps-mptcp	ecmp-mptcp	1.6630099
		ps-tcp	1.6630099
		static-tcp	1.6630099
	ps-tcp	ecmp-mptcp	1.6630099
		ps-mptcp	1.6630099
		static-tcp	1.6630099
	static-tcp	ecmp-mptcp	1.6630099
		ps-mptcp	1.6630099
		ps-tcp	1.6630099
Mean Network Utilization	ecmp-mptcp	ps-mptcp	.0140679250
		ps-tcp	.0140679250
		static-tcp	.0140679250
	ps-mptcp	ecmp-mptcp	.0140679250
		ps-tcp	.0140679250
		static-tcp	.0140679250
	ps-tcp	ecmp-mptcp	.0140679250
		ps-mptcp	.0140679250
		static-tcp	.0140679250
	static-tcp	ecmp-mptcp	.0140679250
		ps-mptcp	.0140679250
		ps-tcp	.0140679250

·			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Sig.
Flow Completion Time	ecmp-mptcp	ps-mptcp	.045
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.045
		ps-tcp	.028
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.028
		static-tcp	.000
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		ps-tcp	.000
Mean Network Utilization	ecmp-mptcp	ps-mptcp	.000
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.000
		ps-tcp	1.000
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	1.000
		static-tcp	.000
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		ps-tcp	.000

			95%
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Lower Bound
Flow Completion Time	ecmp-mptcp	ps-mptcp	.063186
		ps-tcp	4.706943
		static-tcp	15.429505
	ps-mptcp	ecmp-mptcp	-8.633919
		ps-tcp	.358390
		static-tcp	11.080952
	ps-tcp	ecmp-mptcp	-13.277676
		ps-mptcp	-8.929123
		static-tcp	6.437196
	static-tcp	ecmp-mptcp	-24.000238
		ps-mptcp	-19.651685
		ps-tcp	-15.007929
Mean Network Utilization	ecmp-mptcp	ps-mptcp	236160949
		ps-tcp	236064599
		static-tcp	.4054192020
	ps-mptcp	ecmp-mptcp	.1636584158
		ps-tcp	036154917
		static-tcp	.6053288844
	ps-tcp	ecmp-mptcp	.1635620660
		ps-mptcp	036347616
		static-tcp	.6052325346
	static-tcp	ecmp-mptcp	477921735
		ps-mptcp	677831418
		ps-tcp	677735068

Tukey HSD

95% Confidence ..

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Upper Bound
Flow Completion Time	ecmp-mptcp	ps-mptcp	8.633919
		ps-tcp	13.277676
		static-tcp	24.000238
	ps-mptcp	ecmp-mptcp	063186
		ps-tcp	8.929123
		static-tcp	19.651685
	ps-tcp	ecmp-mptcp	-4.706943
		ps-mptcp	358390
		static-tcp	15.007929
	static-tcp	ecmp-mptcp	-15.429505
		ps-mptcp	-11.080952
		ps-tcp	-6.437196
Mean Network Utilization	ecmp-mptcp	ps-mptcp	163658416
		ps-tcp	163562066
		static-tcp	.4779217353
	ps-mptcp	ecmp-mptcp	.2361609491
		ps-tcp	.0363476164
		static-tcp	.6778314178
	ps-tcp	ecmp-mptcp	.2360645993
		ps-mptcp	.0361549169
		static-tcp	.6777350680
	static-tcp	ecmp-mptcp	405419202
		ps-mptcp	605328884
		ps-tcp	605232535

Based on observed means.

The error term is Mean Square(Error) = .014.

Homogeneous Subsets

^{*.} The mean difference is significant at the .05 level.

Goodput

Tukey HSD^{a,b}

		Subset	
Router Type Protocol	N	1	2
ecmp-mptcp	140	310762.5472	
ps-mptcp	140	326791.0097	
ps-tcp	140		369456.3064
static-tcp	140		396515.4457
Sig.		.630	.183

Means for groups in homogeneous subsets are displayed. Based on observed means.

The error term is Mean Square(Error) = 12590285877.140.

- a. Uses Harmonic Mean Sample Size = 140.000.
- b. Alpha = .05.

Throughput

Tukey HSD^{a,b}

		Subset		
Router Type Protocol	N	1	2	
ecmp-mptcp	140	736360.3148		
ps-mptcp	140	779952.9839	779952.9839	
ps-tcp	140		809590.7165	
static-tcp	140		811854.9695	
Sig.		.050	.236	

 $\label{thm:means} \mbox{Means for groups in homogeneous subsets are displayed.}$

Based on observed means.

The error term is Mean Square(Error) = 20056565951.944.

- a. Uses Harmonic Mean Sample Size = 140.000.
- b. Alpha = .05.

Flow Completion Time

Tukey HSD^{a,b}

		Subset			
Router Type Protocol	N	1	2	3	4
static-tcp	140	68.102048			
ps-tcp	140		78.824610		
ps-mptcp	140			83.468366	
ecmp-mptcp	140				87.816919
Sig.		1.000	1.000	1.000	1.000

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 193.592.

- a. Uses Harmonic Mean Sample Size = 140.000.
- b. Alpha = .05.

Mean Network Utilization

Tukey HSD^{a,b}

		Subset			
Router Type Protocol	N	1	2	3	
static-tcp	140	.3458607546			
ecmp-mptcp	140		.7875312232		
ps-tcp	140			.9873445559	
ps-mptcp	140			.9874409057	
Sig.		1.000	1.000	1.000	

Means for groups in homogeneous subsets are displayed.

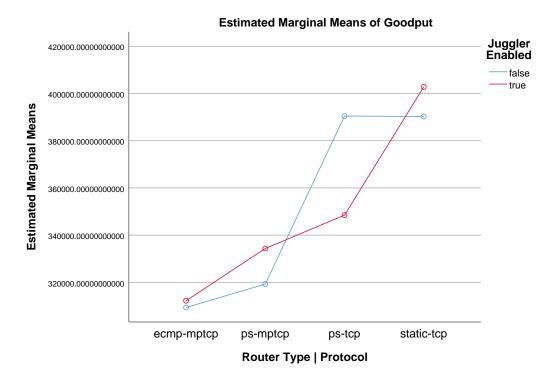
Based on observed means.

The error term is Mean Square(Error) = .014.

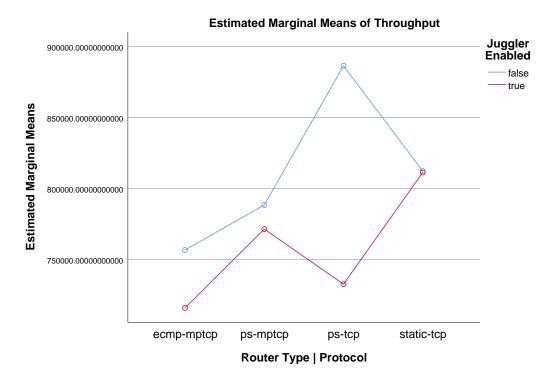
- a. Uses Harmonic Mean Sample Size = 140.000.
- b. Alpha = .05.

Profile Plots

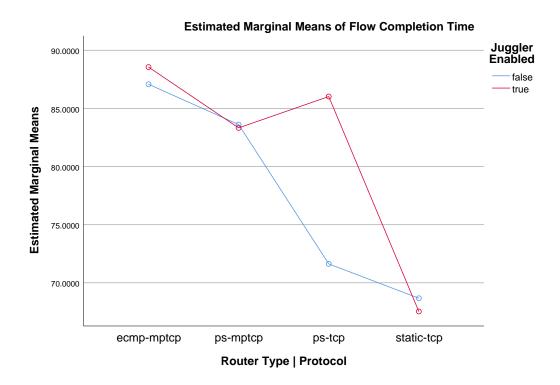
Goodput



Throughput



Flow Completion Time



Mean Network Utilization

