General Linear Model

Between-Subjects Factors

		Value Label	N
Router Type Protocol	1	ecmp-mptcp	160
	2	ps-mptcp	160
	3	ps-tcp	160
	4	static-tcp	160
Juggler Enabled	1	false	320
	2	true	320

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Goodput	ecmp-mptcp	false	2025190.411	89072.37427
		true	1940790.770	198167.8902
		Total	1982990.591	158889.2185
	ps-mptcp	false	2090586.414	102010.4434
		true	1967948.508	183618.6979
		Total	2029267.461	160330.5709
	ps-tcp	false	2224292.141	95403.14659
		true	2134132.205	182925.1288
		Total	2179212.173	152291.8880
	static-tcp	false	2259415.239	10891.67852
		true	2198130.070	49561.79511
		Total	2228772.655	47162.23139
	Total	false	2149871.051	126505.2421
		true	2060250.388	197032.8975
		Total	2105060.720	171408.8042
Throughput	ecmp-mptcp	false	2404914.233	322073.5556
		true	2468607.478	443296.8242
		Total	2436760.856	387554.0594
	ps-mptcp	false	2408021.824	141763.3309
		true	2511661.630	456341.2581
		Total	2459841.727	340816.9897
	ps-tcp	false	2454362.317	87394.75527
		true	2487965.316	331853.1101
		Total	2471163.817	242478.6644

	Router Type Protocol	Juggler Enabled	N
Goodput	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	ps-tcp	false	80
		true	80
		Total	160
	static-tcp	false	80
		true	80
		Total	160
	Total	false	320
		true	320
		Total	640
Throughput	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	ps-tcp	false	80
		true	80
		Total	160

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
	static-tcp	false	2484491.831	11976.67690
		true	2450871.318	261396.7212
		Total	2467681.574	185215.7811
	Total	false	2437947.551	183581.1959
		true	2479776.435	380716.3512
		Total	2458861.993	299369.0195
Flow Completion Time	ecmp-mptcp	false	.253312	.0114504
		true	.268528	.0507983
		Total	.260920	.0374900
	ps-mptcp	false	.245550	.0133578
		true	.263003	.0312521
		Total	.254276	.0255060
	ps-tcp	false	.230662	.0112821
		true	.242329	.0289201
		Total	.236496	.0226504
	static-tcp	false	.226613	.0010912
		true	.233044	.0053225
		Total	.229828	.0050072
	Total	false	.239034	.0150506
		true	.251726	.0361584
		Total	.245380	.0283920
Mean Network Utilization	ecmp-mptcp	false	.6885334953	.1460427221
		true	.7133390116	.1504395003
		Total	.7009362535	.1483132335
	ps-mptcp	false	.9196064353	.0442901377
		true	.9315820438	.0418299112
		Total	.9255942395	.0433599728
	ps-tcp	false	.9093420424	.0395344980
		true	.9167801796	.0492672923
		Total	.9130611110	.0446821199
	static-tcp	false	.3178552759	.1880232503
		true	.2868896444	.0837457934
		Total	.3023724602	.1459145257

	Router Type Protocol	Juggler Enabled	N
	static-tcp	false	80
		true	80
		Total	160
	Total	false	320
		true	320
		Total	640
Flow Completion Time	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	ps-tcp	false	80
		true	80
		Total	160
	static-tcp	false	80
		true	80
		Total	160
	Total	false	320
		true	320
		Total	640
Mean Network Utilization	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	ps-tcp	false	80
		true	80
		Total	160
	static-tcp	false	80
		true	80
		Total	160

Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Total	false	.7088343122	.2730798256
	true	.7121477199	.2762359378
	Total	.7104910160	.2744524232

Descriptive Statistics

Router Type Protocol	Juggler Enabled	N
Total	false	320
	true	320
	Total	640

Box's Test of Equality of Covariance Matrices^a

Box's M	3464.509
F	56.537
df1	60
df2	479815.043
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

Effect		Value	F	Hypothesis df	Error df
Intercept	Pillai's Trace	1.000	791714.461 ^b	4.000	629.000
	Wilks' Lambda	.000	791714.461 ^b	4.000	629.000
	Hotelling's Trace	5034.750	791714.461 ^b	4.000	629.000
	Roy's Largest Root	5034.750	791714.461 ^b	4.000	629.000
router_proto	Pillai's Trace	1.259	114.033	12.000	1893.000
	Wilks' Lambda	.083	216.989	12.000	1664.469
	Hotelling's Trace	6.960	364.038	12.000	1883.000
	Roy's Largest Root	6.308	995.023 ^c	4.000	631.000
juggler_enabled	Pillai's Trace	.132	23.837 ^b	4.000	629.000
	Wilks' Lambda	.868	23.837 ^b	4.000	629.000
	Hotelling's Trace	.152	23.837 ^b	4.000	629.000
	Roy's Largest Root	.152	23.837 ^b	4.000	629.000
router_proto *	Pillai's Trace	.035	1.854	12.000	1893.000
juggler_enabled	Wilks' Lambda	.965	1.857	12.000	1664.469
	Hotelling's Trace	.036	1.859	12.000	1883.000
	Roy's Largest Root	.024	3.790 ^c	4.000	631.000

Multivariate Tests^a

Effect		Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.000	1.000
	Wilks' Lambda	.000	1.000
	Hotelling's Trace	.000	1.000
	Roy's Largest Root	.000	1.000
router_proto	Pillai's Trace	.000	.420
	Wilks' Lambda	.000	.564
	Hotelling's Trace	.000	.699
	Roy's Largest Root	.000	.863
juggler_enabled	Pillai's Trace	.000	.132
	Wilks' Lambda	.000	.132
	Hotelling's Trace	.000	.132
	Roy's Largest Root	.000	.132
router_proto *	Pillai's Trace	.036	.012
juggler_enabled	Wilks' Lambda	.035	.012
	Hotelling's Trace	.035	.012
	Roy's Largest Root	.005	.023

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

			164	110	0:
		Levene Statistic	df1	df2	Sig.
Goodput	Based on Mean	13.933	7	632	.000
	Based on Median	12.049	7	632	.000
	Based on Median and with adjusted df	12.049	7	364.616	.000
	Based on trimmed mean	12.633	7	632	.000
Throughput	Based on Mean	14.669	7	632	.000
	Based on Median	8.716	7	632	.000
	Based on Median and with adjusted df	8.716	7	378.434	.000
	Based on trimmed mean	11.279	7	632	.000
Flow Completion Time	Based on Mean	9.226	7	632	.000
	Based on Median	7.416	7	632	.000
	Based on Median and with adjusted df	7.416	7	209.820	.000
	Based on trimmed mean	7.581	7	632	.000
Mean Network Utilization	Based on Mean	20.585	7	632	.000
	Based on Median	13.653	7	632	.000
	Based on Median and with adjusted df	13.653	7	213.810	.000
	Based on trimmed mean	15.495	7	632	.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		
Source	Dependent Variable	Squares	df	Mean Square
Corrected Model	Goodput	7.994E+12 ^a	7	1.142E+12
	Throughput	7.973E+11 ^b	7	1.139E+11
	Flow Completion Time	.131 ^c	7	.019
	Mean Network Utilization	40.704 ^d	7	5.815
Intercept	Goodput	2.836E+15	1	2.836E+15
	Throughput	3.869E+15	1	3.869E+15
	Flow Completion Time	38.535	1	38.535
	Mean Network Utilization	323.070	1	323.070
router_proto	Goodput	6.632E+12	3	2.211E+12
	Throughput	1.150E+11	3	3.832E+10
	Flow Completion Time	.103	3	.034
	Mean Network Utilization	40.633	3	13.544
juggler_enabled	Goodput	1.285E+12	1	1.285E+12
	Throughput	2.799E+11	1	2.799E+11
	Flow Completion Time	.026	1	.026
	Mean Network Utilization	.002	1	.002
router_proto *	Goodput	7.682E+10	3	2.561E+10
juggler_enabled	Throughput	4.024E+11	3	1.341E+11
	Flow Completion Time	.003	3	.001
	Mean Network Utilization	.069	3	.023
Error	Goodput	1.078E+13	632	1.706E+10
	Throughput	5.647E+13	632	8.935E+10
	Flow Completion Time	.384	632	.001
	Mean Network Utilization	7.428	632	.012
Total	Goodput	2.855E+15	640	
	Throughput	3.927E+15	640	
	Flow Completion Time	39.050	640	
	Mean Network Utilization	371.203	640	
Corrected Total	Goodput	1.877E+13	639	
	Throughput	5.727E+13	639	
	Flow Completion Time	.515	639	
	Mean Network Utilization	48.132	639	

Tests of Between-Subjects Effects

Corrected Model Goodput	Source	Dependent Variable	F	Sig.	Partial Eta Squared
Flow Completion Time 30.846 .000 .255	Corrected Model	Goodput	66.945	.000	.426
Mean Network Utilization		Throughput	1.275	.260	.014
Intercept		Flow Completion Time	30.846	.000	.255
Throughput		Mean Network Utilization	494.732	.000	.846
Flow Completion Time	Intercept	Goodput	166256.573	.000	.996
Mean Network Utilization 27487.100 .000 .978		Throughput	43305.131	.000	.986
Touter_proto Goodput 129.593 .000 .381 Throughput .429 .732 .002 Flow Completion Time 56.313 .000 .211 Mean Network Utilization 1152.363 .000 .845 juggler_enabled Goodput 75.337 .000 .107 Throughput 3.133 .077 .005 Flow Completion Time 42.422 .000 .063 Mean Network Utilization .149 .699 .000 router_proto* Goodput 1.501 .213 .007 Throughput 1.501 .213 .007 Flow Completion Time 1.521 .208 .007 Mean Network Utilization 1.961 .119 .009 Error Goodput		Flow Completion Time	63434.021	.000	.990
Throughput		Mean Network Utilization	27487.100	.000	.978
Flow Completion Time 56.313 .000 .211 Mean Network Utilization 1152.363 .000 .845 juggler_enabled Goodput 75.337 .000 .107 Throughput 3.133 .077 .005 Flow Completion Time 42.422 .000 .063 Mean Network Utilization .149 .699 .000 router_proto * juggler_enabled Goodput 1.501 .213 .007 Throughput 1.501 .213 .007 Flow Completion Time 1.521 .208 .007 Mean Network Utilization 1.961 .119 .009 Error Goodput	router_proto	Goodput	129.593	.000	.381
Mean Network Utilization 1152.363 .000 .845		Throughput	.429	.732	.002
Juggler_enabled Goodput 75.337 .000 .107 Throughput 3.133 .077 .005 Flow Completion Time 42.422 .000 .063 Mean Network Utilization .149 .699 .000 router_proto *		Flow Completion Time	56.313	.000	.211
Throughput 3.133 .077 .005		Mean Network Utilization	1152.363	.000	.845
Flow Completion Time	juggler_enabled	Goodput	75.337	.000	.107
Mean Network Utilization .149 .699 .000		Throughput	3.133	.077	.005
Total Goodput 1.501 .213 .007		Flow Completion Time	42.422	.000	.063
Throughput		Mean Network Utilization	.149	.699	.000
Throughput		Goodput	1.501	.213	.007
Mean Network Utilization 1.961 .119 .009	juggler_enabled	Throughput	1.501	.213	.007
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	1.521	.208	.007
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	1.961	.119	.009
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 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 = .426 (Adjusted R Squared = .419)

b. R Squared = .014 (Adjusted R Squared = .003)

c. R Squared = .255 (Adjusted R Squared = .246)

d. R Squared = .846 (Adjusted R Squared = .844)

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	-46276.8701 [*]
		ps-tcp	-196221.582 [*]
		static-tcp	-245782.064 [*]
	ps-mptcp	ecmp-mptcp	46276.8701 [*]
		ps-tcp	-149944.712 [*]
		static-tcp	-199505.194 [*]
	ps-tcp	ecmp-mptcp	196221.582 [*]
		ps-mptcp	149944.712 [*]
		static-tcp	-49560.4819 [*]
	static-tcp	ecmp-mptcp	245782.064 [*]
		ps-mptcp	199505.194 [*]
		ps-tcp	49560.4819 [*]
Throughput	ecmp-mptcp	ps-mptcp	-23080.8710
		ps-tcp	-34402.9611
		static-tcp	-30920.7188
	ps-mptcp	ecmp-mptcp	23080.87096
		ps-tcp	-11322.0902
		static-tcp	-7839.84787
	ps-tcp	ecmp-mptcp	34402.96112
		ps-mptcp	11322.09016
		static-tcp	3482.242293
	static-tcp	ecmp-mptcp	30920.71883
		ps-mptcp	7839.847866
		ps-tcp	-3482.24229

randy rieb			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Std. Error
Goodput	ecmp-mptcp	ps-mptcp	14602.26441
		ps-tcp	14602.26441
		static-tcp	14602.26441
	ps-mptcp	ecmp-mptcp	14602.26441
		ps-tcp	14602.26441
		static-tcp	14602.26441
	ps-tcp	ecmp-mptcp	14602.26441
		ps-mptcp	14602.26441
		static-tcp	14602.26441
	static-tcp	ecmp-mptcp	14602.26441
		ps-mptcp	14602.26441
		ps-tcp	14602.26441
Throughput	ecmp-mptcp	ps-mptcp	33420.23274
		ps-tcp	33420.23274
		static-tcp	33420.23274
	ps-mptcp	ecmp-mptcp	33420.23274
		ps-tcp	33420.23274
		static-tcp	33420.23274
	ps-tcp	ecmp-mptcp	33420.23274
		ps-mptcp	33420.23274
		static-tcp	33420.23274
	static-tcp	ecmp-mptcp	33420.23274
		ps-mptcp	33420.23274
		ps-tcp	33420.23274

randy 1102			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Sig.
Goodput	ecmp-mptcp	ps-mptcp	.009
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.009
		ps-tcp	.000
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		static-tcp	.004
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		ps-tcp	.004
Throughput	ecmp-mptcp	ps-mptcp	.901
		ps-tcp	.732
		static-tcp	.791
	ps-mptcp	ecmp-mptcp	.901
		ps-tcp	.987
		static-tcp	.995
	ps-tcp	ecmp-mptcp	.732
		ps-mptcp	.987
		static-tcp	1.000
	static-tcp	ecmp-mptcp	.791
		ps-mptcp	.995
		ps-tcp	1.000

Tukey 110D			95%
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Lower Bound
Goodput	ecmp-mptcp	ps-mptcp	-83890.5385
		ps-tcp	-233835.251
		static-tcp	-283395.733
	ps-mptcp	ecmp-mptcp	8663.201758
		ps-tcp	-187558.381
		static-tcp	-237118.862
	ps-tcp	ecmp-mptcp	158607.9139
		ps-mptcp	112331.0438
		static-tcp	-87174.1503
	static-tcp	ecmp-mptcp	208168.3958
		ps-mptcp	161891.5256
		ps-tcp	11946.81349
Throughput	ecmp-mptcp	ps-mptcp	-109167.352
		ps-tcp	-120489.442
		static-tcp	-117007.199
	ps-mptcp	ecmp-mptcp	-63005.6096
		ps-tcp	-97408.5707
		static-tcp	-93926.3284
	ps-tcp	ecmp-mptcp	-51683.5194
		ps-mptcp	-74764.3904
		static-tcp	-82604.2383
	static-tcp	ecmp-mptcp	-55165.7617
		ps-mptcp	-78246.6327
		ps-tcp	-89568.7229

Tukey HSD

95% Confidence ..

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Upper Bound
Goodput	ecmp-mptcp	ps-mptcp	-8663.20176
		ps-tcp	-158607.914
		static-tcp	-208168.396
	ps-mptcp	ecmp-mptcp	83890.53853
		ps-tcp	-112331.044
		static-tcp	-161891.526
	ps-tcp	ecmp-mptcp	233835.2507
		ps-mptcp	187558.3805
		static-tcp	-11946.8135
	static-tcp	ecmp-mptcp	283395.7326
		ps-mptcp	237118.8624
		ps-tcp	87174.15027
Throughput	ecmp-mptcp	ps-mptcp	63005.60960
		ps-tcp	51683.51944
		static-tcp	55165.76173
	ps-mptcp	ecmp-mptcp	109167.3515
		ps-tcp	74764.39040
		static-tcp	78246.63270
	ps-tcp	ecmp-mptcp	120489.4417
		ps-mptcp	97408.57072
		static-tcp	89568.72286
	static-tcp	ecmp-mptcp	117007.1994
		ps-mptcp	93926.32843
		ps-tcp	82604.23827

·			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Mean Difference (I-J)
Flow Completion Time	ecmp-mptcp	ps-mptcp	.006644
		ps-tcp	.024424*
		static-tcp	.031092*
	ps-mptcp	ecmp-mptcp	006644
		ps-tcp	.017781 [*]
		static-tcp	.024448*
	ps-tcp	ecmp-mptcp	024424*
		ps-mptcp	017781 [*]
		static-tcp	.006667
	static-tcp	ecmp-mptcp	031092 [*]
		ps-mptcp	024448*
		ps-tcp	006667
Mean Network Utilization	ecmp-mptcp	ps-mptcp	224657986 [*]
		ps-tcp	212124858 [*]
		static-tcp	.398563793*
	ps-mptcp	ecmp-mptcp	.224657986 [*]
		ps-tcp	.0125331285
		static-tcp	.623221779*
	ps-tcp	ecmp-mptcp	.212124858 [*]
		ps-mptcp	012533128
		static-tcp	.610688651 [*]
	static-tcp	ecmp-mptcp	398563793 [*]
		ps-mptcp	623221779 [*]
		ps-tcp	610688651 [*]

•			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Std. Error
Flow Completion Time	ecmp-mptcp	ps-mptcp	.0027556
		ps-tcp	.0027556
		static-tcp	.0027556
	ps-mptcp	ecmp-mptcp	.0027556
		ps-tcp	.0027556
		static-tcp	.0027556
	ps-tcp	ecmp-mptcp	.0027556
		ps-mptcp	.0027556
		static-tcp	.0027556
	static-tcp	ecmp-mptcp	.0027556
		ps-mptcp	.0027556
		ps-tcp	.0027556
Mean Network Utilization	ecmp-mptcp	ps-mptcp	.0121210187
		ps-tcp	.0121210187
		static-tcp	.0121210187
	ps-mptcp	ecmp-mptcp	.0121210187
		ps-tcp	.0121210187
		static-tcp	.0121210187
	ps-tcp	ecmp-mptcp	.0121210187
		ps-mptcp	.0121210187
		static-tcp	.0121210187
	static-tcp	ecmp-mptcp	.0121210187
		ps-mptcp	.0121210187
		ps-tcp	.0121210187

randy 1102			
Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Sig.
Flow Completion Time	ecmp-mptcp	ps-mptcp	.076
Tiow Completion Time	comp imptop	ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.076
	Pop.op	ps-tcp	.000
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		static-tcp	.074
	static-tcp	ecmp-mptcp	.000
		ps-mptcp	.000
		ps-tcp	.074
Mean Network Utilization	ecmp-mptcp	ps-mptcp	.000
		ps-tcp	.000
		static-tcp	.000
	ps-mptcp	ecmp-mptcp	.000
		ps-tcp	.730
		static-tcp	.000
	ps-tcp	ecmp-mptcp	.000
		ps-mptcp	.730
		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	000454
		ps-tcp	.017326
		static-tcp	.023994
	ps-mptcp	ecmp-mptcp	013742
		ps-tcp	.010682
		static-tcp	.017350
	ps-tcp	ecmp-mptcp	031523
		ps-mptcp	024879
		static-tcp	000431
	static-tcp	ecmp-mptcp	038190
		ps-mptcp	031546
		ps-tcp	013766
Mean Network Utilization	ecmp-mptcp	ps-mptcp	255880265
		ps-tcp	243347137
		static-tcp	.3673415139
	ps-mptcp	ecmp-mptcp	.1934357066
		ps-tcp	018689151
		static-tcp	.5919995000
	ps-tcp	ecmp-mptcp	.1809025781
		ps-mptcp	043755408
		static-tcp	.5794663715
	static-tcp	ecmp-mptcp	429786073
		ps-mptcp	654444059
		ps-tcp	641910930

Tukey HSD

95% Confidence ..

Dependent Variable	(I) Router Type Protocol	(J) Router Type Protocol	Upper Bound
Flow Completion Time	ecmp-mptcp	ps-mptcp	.013742
		ps-tcp	.031523
		static-tcp	.038190
	ps-mptcp	ecmp-mptcp	.000454
		ps-tcp	.024879
		static-tcp	.031546
	ps-tcp	ecmp-mptcp	017326
		ps-mptcp	010682
		static-tcp	.013766
	static-tcp	ecmp-mptcp	023994
		ps-mptcp	017350
		ps-tcp	.000431
Mean Network Utilization	ecmp-mptcp	ps-mptcp	193435707
		ps-tcp	180902578
		static-tcp	.4297860727
	ps-mptcp	ecmp-mptcp	.2558802654
		ps-tcp	.0437554079
		static-tcp	.6544440587
	ps-tcp	ecmp-mptcp	.2433471369
		ps-mptcp	.0186891509
		static-tcp	.6419109302
	static-tcp	ecmp-mptcp	367341514
		ps-mptcp	591999500
		ps-tcp	579466371

Based on observed means.

The error term is Mean Square(Error) = .012.

Homogeneous Subsets

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

Goodput

Tukey HSD^{a,b}

		Subset			
Router Type Protocol	N	1	2	3	4
ecmp-mptcp	160	1982990.591			
ps-mptcp	160		2029267.461		
ps-tcp	160			2179212.173	
static-tcp	160				2228772.655
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) = 17058090078.938.

- a. Uses Harmonic Mean Sample Size = 160.000.
- b. Alpha = .05.

Throughput

Tukey ${\sf HSD}^{{\sf a},{\sf b}}$

		Subset
Router Type Protocol	N	1
ecmp-mptcp	160	2436760.856
ps-mptcp	160	2459841.727
static-tcp	160	2467681.574
ps-tcp	160	2471163.817
Sig.		.732

Means for groups in homogeneous subsets are displayed.

Based on observed means.

The error term is Mean Square(Error) = 89352956494.894.

- a. Uses Harmonic Mean Sample Size = 160.000.
- b. Alpha = .05.

Flow Completion Time

Tukey HSD^{a,b}

		Subset	
Router Type Protocol	N	1	2
static-tcp	160	.229828	
ps-tcp	160	.236496	
ps-mptcp	160		.254276
ecmp-mptcp	160		.260920
Sig.		.074	.076

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

The error term is Mean Square(Error) = .001.

- a. Uses Harmonic Mean Sample Size = 160.000.
- b. Alpha = .05.

Mean Network Utilization

Tukey HSD^{a,b}

		Subset		
Router Type Protocol	N	1	2	3
static-tcp	160	.3023724602		
ecmp-mptcp	160		.7009362535	
ps-tcp	160			.9130611110
ps-mptcp	160			.9255942395
Sig.		1.000	1.000	.730

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

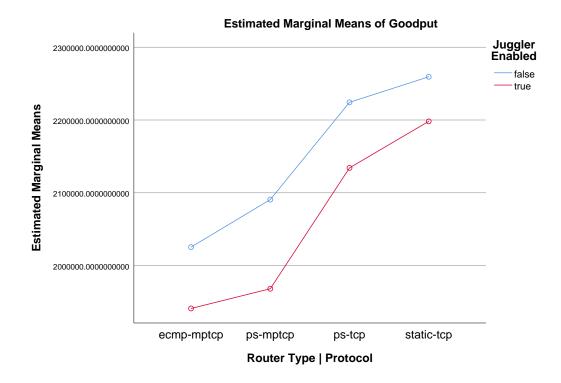
Based on observed means.

The error term is Mean Square(Error) = .012.

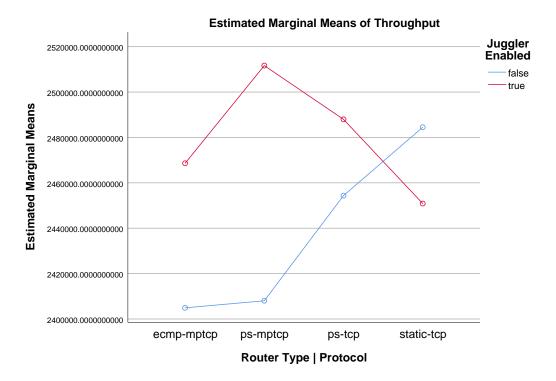
- a. Uses Harmonic Mean Sample Size = 160.000.
- b. Alpha = .05.

Profile Plots

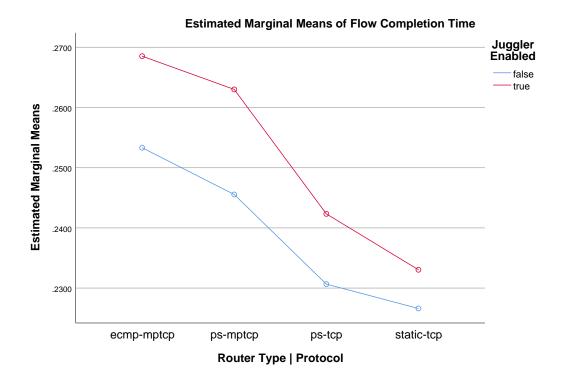
Goodput



Throughput



Flow Completion Time



Mean Network Utilization

