

General Linear Model

Between-Subjects Factors

		Value Label	N
Router Type Protocol	1	ecmp-mptcp	160
	2	ps-mptcp	160
Juggler Enabled	1	false	160
	2	true	160

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Goodput	ecmp-mptcp	false	2163610.944	187810.2190
		true	2322324.351	45669.04507
		Total	2242967.647	157793.4860
	ps-mptcp	false	2274885.068	251914.0979
		true	2299065.103	58734.82017
		Total	2286975.086	182734.5708
	Total	false	2219248.006	228410.0793
		true	2310694.727	53725.33961
		Total	2264971.366	171871.0868
Throughput	ecmp-mptcp	false	3677803.449	987857.5594
		true	3270438.850	1035782.327
		Total	3474121.149	1029397.259
	ps-mptcp	false	3144856.989	1088379.792
		true	3834824.352	1154062.388
		Total	3489840.670	1170497.430
	Total	false	3411330.219	1069989.404
		true	3552631.601	1129125.383
		Total	3481980.910	1100506.748
Flow Completion Time	ecmp-mptcp	false	12.214184	1.1520984
		true	11.292455	.2293893
		Total	11.753319	.9483499
	ps-mptcp	false	13.815303	21.6318882
		true	11.409761	.2998489
		Total	12.612532	15.2970002

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	N
Goodput	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	Total	false	160
		true	160
		Total	320
Throughput	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	Total	false	160
		true	160
		Total	320
Flow Completion Time	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Mean Network Utilization	Total	false	13.014743	15.2905921
		true	11.351108	.2725399
		Total	12.182926	10.8289313
	ecmp-mptcp	false	.7681071363	.1127646620
		true	.8260722090	.1078613177
		Total	.7970896727	.1137702275
	ps-mptcp	false	.9877527941	.0069484658
		true	.9862868183	.0063680291
		Total	.9870198062	.0066841445
	Total	false	.8779299652	.1359369180
		true	.9061795137	.1107164625
		Total	.8920547394	.1245810899

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	N
	Total	false	160
		true	160
		Total	320
Mean Network Utilization	ecmp-mptcp	false	80
		true	80
		Total	160
	ps-mptcp	false	80
		true	80
		Total	160
	Total	false	160
		true	160
		Total	320

**Box's Test of
Equality of
Covariance
Matrices^a**

Box's M	3870.694
F	126.083
df1	30
df2	274544.420
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	.999	71860.750 ^b	4.000	313.000
	Wilks' Lambda	.001	71860.750 ^b	4.000	313.000
	Hotelling's Trace	918.348	71860.750 ^b	4.000	313.000
	Roy's Largest Root	918.348	71860.750 ^b	4.000	313.000
router_proto	Pillai's Trace	.624	129.960 ^b	4.000	313.000
	Wilks' Lambda	.376	129.960 ^b	4.000	313.000
	Hotelling's Trace	1.661	129.960 ^b	4.000	313.000
	Roy's Largest Root	1.661	129.960 ^b	4.000	313.000
juggler_enabled	Pillai's Trace	.178	16.926 ^b	4.000	313.000
	Wilks' Lambda	.822	16.926 ^b	4.000	313.000
	Hotelling's Trace	.216	16.926 ^b	4.000	313.000
	Roy's Largest Root	.216	16.926 ^b	4.000	313.000
router_proto * juggler_enabled	Pillai's Trace	.158	14.668 ^b	4.000	313.000
	Wilks' Lambda	.842	14.668 ^b	4.000	313.000
	Hotelling's Trace	.187	14.668 ^b	4.000	313.000
	Roy's Largest Root	.187	14.668 ^b	4.000	313.000

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	.624
	Wilks' Lambda	.000	.624
	Hotelling's Trace	.000	.624
	Roy's Largest Root	.000	.624
juggler_enabled	Pillai's Trace	.000	.178
	Wilks' Lambda	.000	.178
	Hotelling's Trace	.000	.178
	Roy's Largest Root	.000	.178
router_proto * juggler_enabled	Pillai's Trace	.000	.158
	Wilks' Lambda	.000	.158
	Hotelling's Trace	.000	.158
	Roy's Largest Root	.000	.158

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

b. Exact statistic

Levene's Test of Equality of Error Variances^a

		Levene Statistic	df1	df2	Sig.
Goodput	Based on Mean	14.398	3	316	.000
	Based on Median	13.362	3	316	.000
	Based on Median and with adjusted df	13.362	3	117.464	.000
	Based on trimmed mean	13.644	3	316	.000
Throughput	Based on Mean	3.445	3	316	.017
	Based on Median	3.768	3	316	.011
	Based on Median and with adjusted df	3.768	3	253.644	.011
	Based on trimmed mean	3.537	3	316	.015
Flow Completion Time	Based on Mean	3.444	3	316	.017
	Based on Median	.940	3	316	.422
	Based on Median and with adjusted df	.940	3	79.213	.425
	Based on trimmed mean	.950	3	316	.417
Mean Network Utilization	Based on Mean	72.620	3	316	.000
	Based on Median	70.797	3	316	.000
	Based on Median and with adjusted df	70.797	3	158.938	.000
	Based on trimmed mean	72.991	3	316	.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

Source	Dependent Variable	Type III Sum of Squares	df	Mean Square
Corrected Model	Goodput	1.186E+12 ^a	3	3.953E+11
	Throughput	2.570E+13 ^b	3	8.567E+12
	Flow Completion Time	324.508 ^c	3	108.169
	Mean Network Utilization	3.020 ^d	3	1.007
Intercept	Goodput	1.642E+15	1	1.642E+15
	Throughput	3.880E+15	1	3.880E+15
	Flow Completion Time	47495.577	1	47495.577
	Mean Network Utilization	254.644	1	254.644
router_proto	Goodput	1.549E+11	1	1.549E+11
	Throughput	1.977E+10	1	1.977E+10
	Flow Completion Time	59.060	1	59.060
	Mean Network Utilization	2.886	1	2.886
juggler_enabled	Goodput	6.690E+11	1	6.690E+11
	Throughput	1.597E+12	1	1.597E+12
	Flow Completion Time	221.415	1	221.415
	Mean Network Utilization	.064	1	.064
router_proto * juggler_enabled	Goodput	3.620E+11	1	3.620E+11
	Throughput	2.408E+13	1	2.408E+13
	Flow Completion Time	44.034	1	44.034
	Mean Network Utilization	.071	1	.071
Error	Goodput	8.237E+12	316	2.607E+10
	Throughput	3.606E+14	316	1.141E+12
	Flow Completion Time	37083.267	316	117.352
	Mean Network Utilization	1.931	316	.006
Total	Goodput	1.651E+15	320	
	Throughput	4.266E+15	320	
	Flow Completion Time	84903.352	320	
	Mean Network Utilization	259.595	320	
Corrected Total	Goodput	9.423E+12	319	
	Throughput	3.863E+14	319	
	Flow Completion Time	37407.775	319	
	Mean Network Utilization	4.951	319	

Tests of Between-Subjects Effects

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Corrected Model	Goodput	15.165	.000	.126
	Throughput	7.506	.000	.067
	Flow Completion Time	.922	.431	.009
	Mean Network Utilization	164.785	.000	.610
Intercept	Goodput	62976.844	.000	.995
	Throughput	3399.451	.000	.915
	Flow Completion Time	404.727	.000	.562
	Mean Network Utilization	41678.656	.000	.992
router_proto	Goodput	5.944	.015	.018
	Throughput	.017	.895	.000
	Flow Completion Time	.503	.479	.002
	Mean Network Utilization	472.344	.000	.599
juggler_enabled	Goodput	25.664	.000	.075
	Throughput	1.400	.238	.004
	Flow Completion Time	1.887	.171	.006
	Mean Network Utilization	10.449	.001	.032
router_proto * juggler_enabled	Goodput	13.887	.000	.042
	Throughput	21.101	.000	.063
	Flow Completion Time	.375	.541	.001
	Mean Network Utilization	11.562	.001	.035
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			

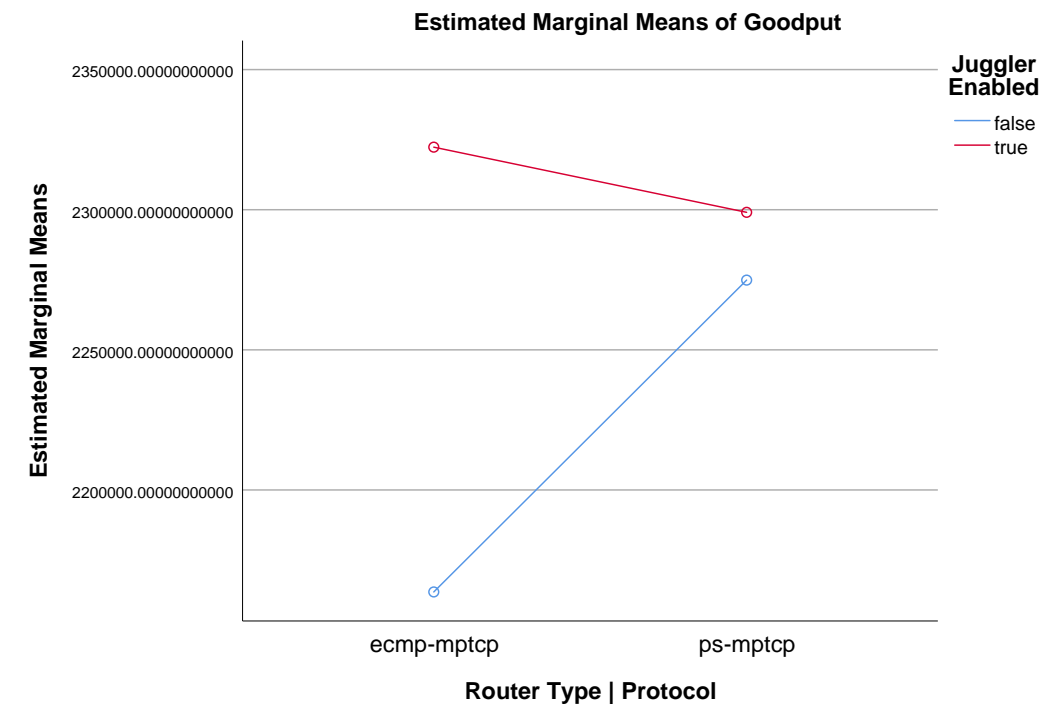
a. R Squared = .126 (Adjusted R Squared = .118)

b. R Squared = .067 (Adjusted R Squared = .058)

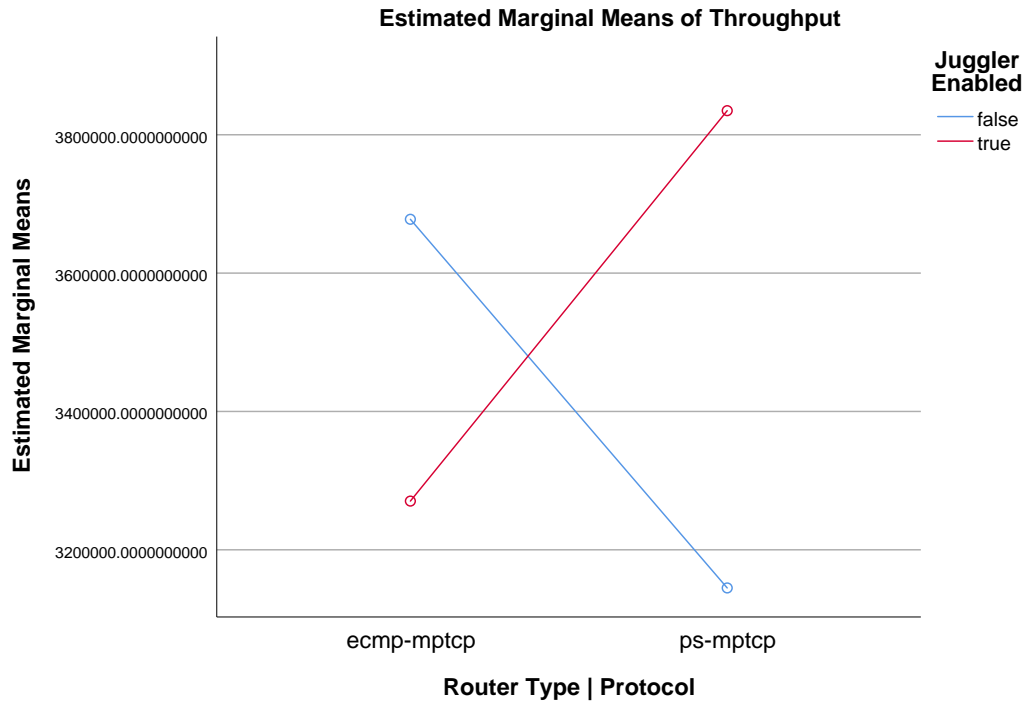
- c. R Squared = .009 (Adjusted R Squared = -.001)
- d. R Squared = .610 (Adjusted R Squared = .606)

Profile Plots

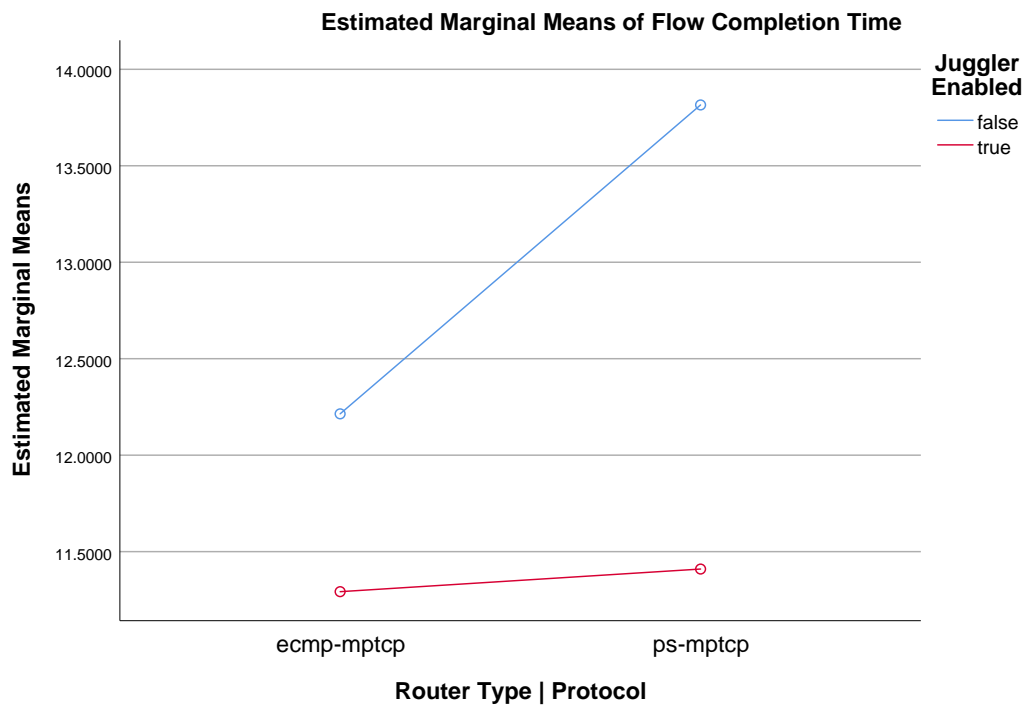
Goodput



Throughput



Flow Completion Time



Mean Network Utilization

