

General Linear Model

Between-Subjects Factors

		Value Label	N
Router Type Protocol	1	ecmp-mptcp	140
	2	ps-mptcp	140
Juggler Enabled	1	false	140
	2	true	140

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Goodput	ecmp-mptcp	false	301659.4835	44046.62460
		true	249797.5679	50415.79013
		Total	275728.5257	53870.76032
	ps-mptcp	false	307845.5649	45154.04287
		true	303641.8949	114422.5651
		Total	305743.7299	86693.28380
	Total	false	304752.5242	44551.30937
		true	276719.7314	92146.16948
		Total	290736.1278	73595.22853
Throughput	ecmp-mptcp	false	483559.1959	124157.1724
		true	570648.7035	139848.4934
		Total	527103.9497	138817.4645
	ps-mptcp	false	474211.7406	103859.3794
		true	695273.4408	128847.5844
		Total	584742.5907	160936.8730
	Total	false	478885.4682	114143.0549
		true	632961.0721	147852.4482
		Total	555923.2702	152767.9984
Flow Completion Time	ecmp-mptcp	false	1.733577	.2586301
		true	2.115506	.3409796
		Total	1.924541	.3572802
	ps-mptcp	false	1.701321	.2714573
		true	1.812667	.3892399
		Total	1.756994	.3389839

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	N
Goodput	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	Total	false	140
		true	140
		Total	280
Throughput	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	Total	false	140
		true	140
		Total	280
Flow Completion Time	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	Mean	Std. Deviation
Mean Network Utilization	Total	false	1.717449	.2646613
		true	1.964086	.3949898
		Total	1.840768	.3576145
	ecmp-mptcp	false	.7371761755	.1204998708
		true	.7691865264	.1195890903
		Total	.7531813509	.1206864443
	ps-mptcp	false	.9321688628	.0444716316
		true	.9331295724	.0395439765
		Total	.9326492176	.0419311270
	Total	false	.8346725192	.1332799666
		true	.8511580494	.1210092561
		Total	.8429152843	.1273322614

Descriptive Statistics

	Router Type Protocol	Juggler Enabled	N
	Total	false	140
		true	140
		Total	280
Mean Network Utilization	ecmp-mptcp	false	70
		true	70
		Total	140
	ps-mptcp	false	70
		true	70
		Total	140
	Total	false	140
		true	140
		Total	280

Box's Test of Equality of Covariance Matrices^a

Box's M	640.417
F	20.790
df1	30
df2	209438.549
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	.998	35133.396 ^b	4.000	273.000
	Wilks' Lambda	.002	35133.396 ^b	4.000	273.000
	Hotelling's Trace	514.775	35133.396 ^b	4.000	273.000
	Roy's Largest Root	514.775	35133.396 ^b	4.000	273.000
router_proto	Pillai's Trace	.534	78.204 ^b	4.000	273.000
	Wilks' Lambda	.466	78.204 ^b	4.000	273.000
	Hotelling's Trace	1.146	78.204 ^b	4.000	273.000
	Roy's Largest Root	1.146	78.204 ^b	4.000	273.000
juggler_enabled	Pillai's Trace	.430	51.435 ^b	4.000	273.000
	Wilks' Lambda	.570	51.435 ^b	4.000	273.000
	Hotelling's Trace	.754	51.435 ^b	4.000	273.000
	Roy's Largest Root	.754	51.435 ^b	4.000	273.000
router_proto * juggler_enabled	Pillai's Trace	.099	7.487 ^b	4.000	273.000
	Wilks' Lambda	.901	7.487 ^b	4.000	273.000
	Hotelling's Trace	.110	7.487 ^b	4.000	273.000
	Roy's Largest Root	.110	7.487 ^b	4.000	273.000

Multivariate Tests^a

Effect		Sig.	Partial Eta Squared
Intercept	Pillai's Trace	.000	.998
	Wilks' Lambda	.000	.998
	Hotelling's Trace	.000	.998
	Roy's Largest Root	.000	.998
router_proto	Pillai's Trace	.000	.534
	Wilks' Lambda	.000	.534
	Hotelling's Trace	.000	.534
	Roy's Largest Root	.000	.534
juggler_enabled	Pillai's Trace	.000	.430
	Wilks' Lambda	.000	.430
	Hotelling's Trace	.000	.430
	Roy's Largest Root	.000	.430
router_proto * juggler_enabled	Pillai's Trace	.000	.099
	Wilks' Lambda	.000	.099
	Hotelling's Trace	.000	.099
	Roy's Largest Root	.000	.099

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	5.427	3	276	.001
	Based on Median	3.145	3	276	.026
	Based on Median and with adjusted df	3.145	3	123.588	.028
	Based on trimmed mean	3.597	3	276	.014
Throughput	Based on Mean	1.308	3	276	.272
	Based on Median	.973	3	276	.406
	Based on Median and with adjusted df	.973	3	237.644	.406
	Based on trimmed mean	1.297	3	276	.276
Flow Completion Time	Based on Mean	2.982	3	276	.032
	Based on Median	3.134	3	276	.026
	Based on Median and with adjusted df	3.134	3	254.592	.026
	Based on trimmed mean	2.807	3	276	.040
Mean Network Utilization	Based on Mean	36.306	3	276	.000
	Based on Median	34.137	3	276	.000
	Based on Median and with adjusted df	34.137	3	174.861	.000
	Based on trimmed mean	36.151	3	276	.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	1.578E+11 ^a	3	5.261E+10
	Throughput	2.208E+12 ^b	3	7.361E+11
	Flow Completion Time	7.504 ^c	3	2.501
	Mean Network Utilization	2.291 ^d	3	.764
Intercept	Goodput	2.367E+13	1	2.367E+13
	Throughput	8.653E+13	1	8.653E+13
	Flow Completion Time	948.759	1	948.759
	Mean Network Utilization	198.942	1	198.942
router_proto	Goodput	6.306E+10	1	6.306E+10
	Throughput	2.326E+11	1	2.326E+11
	Flow Completion Time	1.965	1	1.965
	Mean Network Utilization	2.255	1	2.255
juggler_enabled	Goodput	5.501E+10	1	5.501E+10
	Throughput	1.662E+12	1	1.662E+12
	Flow Completion Time	4.258	1	4.258
	Mean Network Utilization	.019	1	.019
router_proto * juggler_enabled	Goodput	3.975E+10	1	3.975E+10
	Throughput	3.141E+11	1	3.141E+11
	Flow Completion Time	1.281	1	1.281
	Mean Network Utilization	.017	1	.017
Error	Goodput	1.353E+12	276	4903317008
	Throughput	4.303E+12	276	1.559E+10
	Flow Completion Time	28.176	276	.102
	Mean Network Utilization	2.233	276	.008
Total	Goodput	2.518E+13	280	
	Throughput	9.305E+13	280	
	Flow Completion Time	984.440	280	
	Mean Network Utilization	203.465	280	
Corrected Total	Goodput	1.511E+12	279	
	Throughput	6.511E+12	279	
	Flow Completion Time	35.681	279	
	Mean Network Utilization	4.524	279	

Tests of Between-Subjects Effects

Source	Dependent Variable	F	Sig.	Partial Eta Squared
Corrected Model	Goodput	10.729	.000	.104
	Throughput	47.218	.000	.339
	Flow Completion Time	24.503	.000	.210
	Mean Network Utilization	94.367	.000	.506
Intercept	Goodput	4826.875	.000	.946
	Throughput	5550.526	.000	.953
	Flow Completion Time	9293.514	.000	.971
	Mean Network Utilization	24588.619	.000	.989
router_proto	Goodput	12.861	.000	.045
	Throughput	14.917	.000	.051
	Flow Completion Time	19.248	.000	.065
	Mean Network Utilization	278.663	.000	.502
juggler_enabled	Goodput	11.219	.001	.039
	Throughput	106.589	.000	.279
	Flow Completion Time	41.710	.000	.131
	Mean Network Utilization	2.351	.126	.008
router_proto * juggler_enabled	Goodput	8.106	.005	.029
	Throughput	20.147	.000	.068
	Flow Completion Time	12.551	.000	.043
	Mean Network Utilization	2.085	.150	.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			

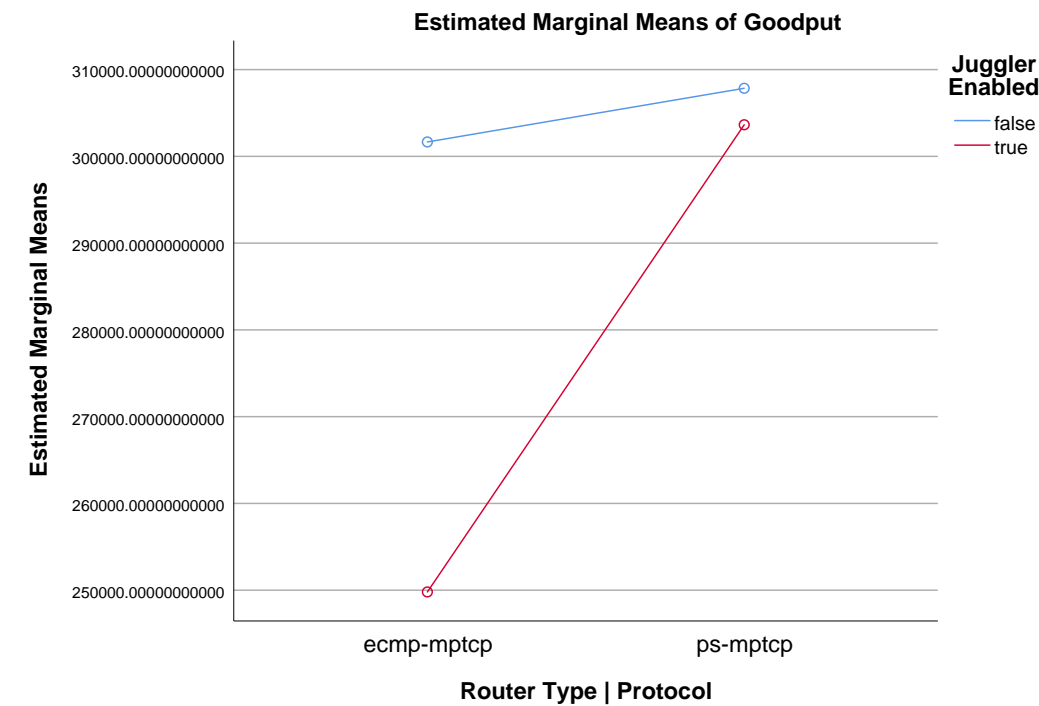
a. R Squared = .104 (Adjusted R Squared = .095)

b. R Squared = .339 (Adjusted R Squared = .332)

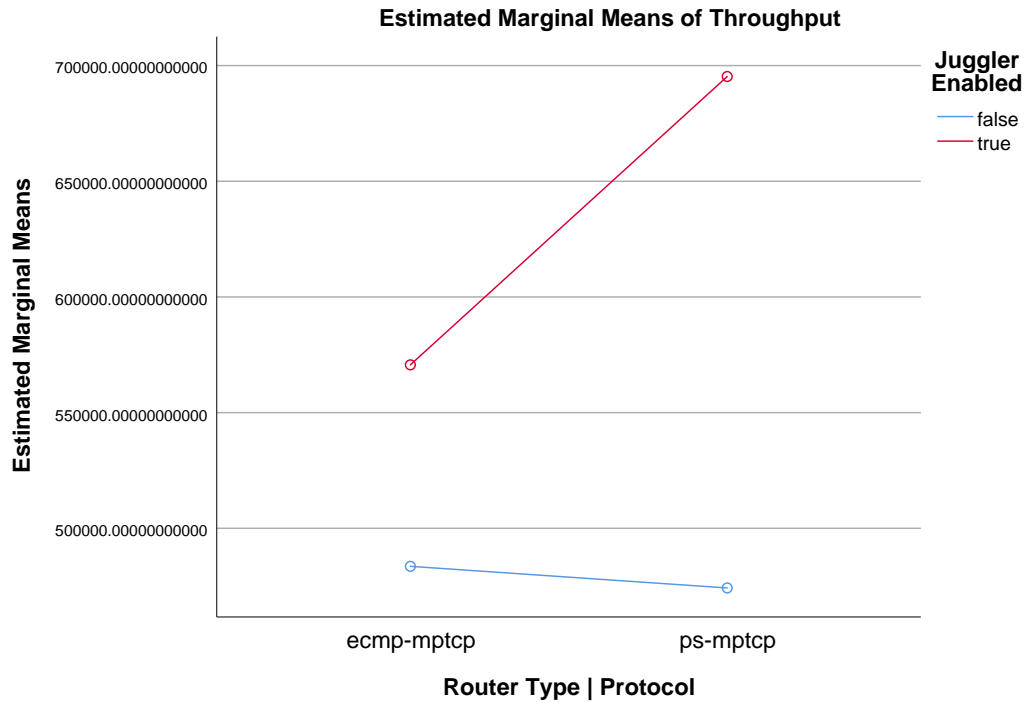
- c. R Squared = .210 (Adjusted R Squared = .202)
- d. R Squared = .506 (Adjusted R Squared = .501)

Profile Plots

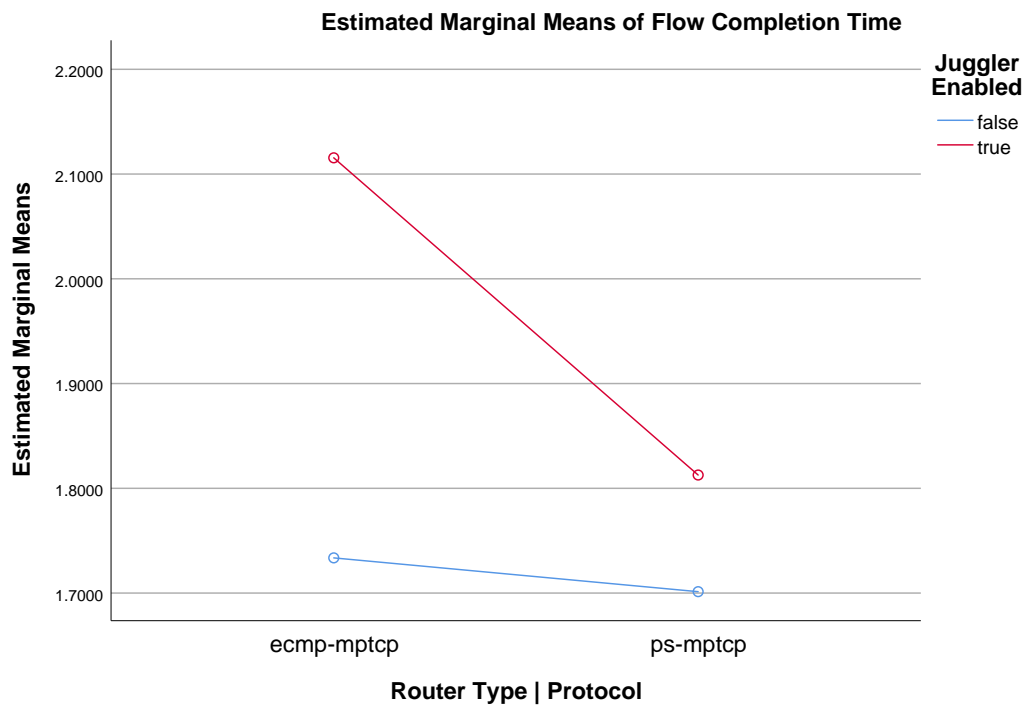
Goodput



Throughput



Flow Completion Time



Mean Network Utilization

