Evaluating Durability of Cloud Distributed Database: MongoDB Atlas

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Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	9592551	216	20
Primary	Local	Journaled	2147756	214	1
Primary	Majority	Majority	1036483	400	5
Primary Preferred	Local	Primary	9856189	370	16
Primary Preferred	Local	Journaled	2243534	135	2
Primary Preferred	Majority	Majority	1167928	219	2

Table 1: Experiment results MongoDB 3.6.0-rc0 with *poweroff* failure on 0.7 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	9990014	286	56
Primary	Local	Journaled	4785076	131	3
Primary	Majority	Majority	2104506	126	0
Primary Preferred	Local	Primary	6479998	207	12
Primary Preferred	Local	Journaled	4955932	108	1
Primary Preferred	Majority	Majority	1435925	1384	0

Table 2: Experiment results MongoDB 3.6.0-rc0 with *poweroff* failure on 0.3 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	10828748	253	5
Primary	Local	Journaled	2273225	224	2
Primary	Majority	Majority	1001785	288	9
Primary Preferred	Local	Primary	6857561	247	3
Primary Preferred	Local	Journaled	2417068	192	6
Primary Preferred	Majority	Majority	1022519	245	0

Table 3: Experiment results MongoDB 3.6.0-rc0 with *shutdown* failure on 0.7 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	10077071	194	7
Primary	Local	Journaled	3539111	205	3
Primary	Majority	Majority	2332298	259	0
Primary Preferred	Local	Primary	6431277	517	62
Primary Preferred	Local	Journaled	3515669	280	4
Primary Preferred	Majority	Majority	2169081	332	0

Table 4: Experiment results MongoDB 3.6.0-rc0 with *shutdown* failure on 0.3 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	7785243	147	4
Primary	Local	Journaled	2501673	323	3
Primary	Majority	Majority	1816455	122	0
Primary Preferred	Local	Primary	5330372	125	3
Primary Preferred	Local	Journaled	3037972	160	2
Primary Preferred	Majority	Majority	1686559	478	0

Table 5: Experiment results MongoDB 4.4.1 with *poweroff* failure on 0.7 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	10109777	187	3
Primary	Local	Journaled	5395643	360	1
Primary	Majority	Majority	2489586	522	0
Primary Preferred	Local	Primary	9510701	144	6
Primary Preferred	Local	Journaled	4422671	233	2
Primary Preferred	Majority	Majority	2586482	532	0

Table 6: Experiment results MongoDB 4.4.1 with *poweroff* failure on 0.3 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	9222431	57	0
Primary	Local	Journaled	3049889	11	0
Primary	Majority	Majority	1749498	22	0
Primary Preferred	Local	Primary	10767806	31	0
Primary Preferred	Local	Journaled	3243673	5	0
Primary Preferred	Majority	Majority	1855437	47	0

Table 7: Experiment results MongoDB 4.4.1 with *shutdown* failure on 0.7 write probability

Read Preference	Read Concern	Write Concern	Throughput	Errors	Lost Writes
Primary	Local	Primary	9932068	38	0
Primary	Local	Journaled	5887524	29	0
Primary	Majority	Majority	3851065	52	0
Primary Preferred	Local	Primary	9855821	29	0
Primary Preferred	Local	Journaled	5325963	21	0
Primary Preferred	Majority	Majority	2751518	24	0

Table 8: Experiment results MongoDB 4.4.1 with *shutdown* failure on 0.3 write probability