

Windows 10 Home 1903, Intel Core i7-8700K, 32GB RAM, Chrome 81.0.4044.129			
	lovefield-ts 0.7.0	lovefield 2.1.12	
Loading Empty DB			
Init empty DB	66.175	169.725	38.99%
Full table SCUD			
Insert 10000	953.076	634.51	150.21%
Select 10000	33.41	2.84	1176.41%
Update 10000	977.634	861.115	113.53%
Delete 10000	174.274	185.555	93.92%
Insert 20000	1820.801	1385.28	131.44%
Select 20000	67.279	5.13	1311.48%
Update 20000	1938.003	3374.17	57.44%
Delete 20000	424.484	432.515	98.14%
Insert 30000	2758.508	5152.14	53.54%
Select 30000	99.912	7.18	1391.53%
Update 30000	2964.212	5251.61	56.44%
Delete 30000	843.9	807.15	104.55%
Insert 40000	3725.946	6677.405	55.80%
Select 40000	128.049	6.135	2087.19%
Update 40000	3972.446	6758.195	58.78%
Delete 40000	1381.454	1355.44	101.92%
Insert 50000	4629.684	8340.745	55.51%
Select 50000	151.472	12.6	1202.16%
Update 50000	4916.852	8629.41	56.98%
Delete 50000	2071.143	2012.74	102.90%
Full table SCUD mem			
Insert 10000	26.627	44.395	59.98%
Select 10000	4.789	1.595	300.25%
Update 10000	66.484	73.525	90.42%
Delete 10000	35.456	36.08	98.27%
Insert 20000	46.768	42.46	110.15%
Select 20000	3.105	2.26	137.39%
Update 20000	122.24	102.43	119.34%
Delete 20000	161.703	144.88	111.61%
Insert 30000	66.041	52.55	125.67%
Select 30000	4.796	4.71	101.83%
Update 30000	191.723	165.885	115.58%
Delete 30000	603.188	598.005	100.87%

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Insert 40000	81.544	73.975	110.23%
Select 40000	8.305	7.075	117.39%
Update 40000	258.809	237.06	109.17%
Delete 40000	1040.833	1047.93	99.32%
Insert 50000	104.093	94.71	109.91%
Select 50000	9.372	9.39	99.81%
Update 50000	343.417	372.36	92.23%
Delete 50000	1598.192	1602.13	99.75%
PK-based SCUD			
Delete 1	120.249	45.22	265.92%
Insert 1	3.409	12.76	26.72%
Update 1	4.134	3.295	125.46%
Select 1	0.886	0.755	117.35%
Delete 10	122.162	49.935	244.64%
Insert 10	4.044	5.215	77.55%
Update 10	4.111	5.555	74.01%
Select 10	0.842	0.795	105.91%
Delete 100	129.426	50.49	256.34%
Insert 100	13.987	19.735	70.87%
Update 100	14.626	22.315	65.54%
Select 100	1.053	1.015	103.74%
Delete 1000	218.265	139.515	156.45%
Insert 1000	96.741	169.205	57.17%
Update 1000	115.222	170.045	67.76%
Select 1000	4.588	5.12	89.61%
Delete 10000	1011.966	1037.41	97.55%
Insert 10000	918.222	1711.375	53.65%
Update 10000	945.98	1736.495	54.48%
Select 10000	42.979	40.235	106.82%
PK-based SCUD			
Delete 1	0.51	0.88	57.95%
Insert 1	0.216	6.045	3.57%
Update 1	0.403	0.84	47.98%
Select 1	0.36	0.43	83.72%
Delete 10	0.496	6.63	7.48%
Insert 10	0.236	0.295	80.00%
Update 10	0.482	0.805	59.88%

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Select 10	0.382	0.54	70.74%
Delete 100	1.305	2.715	48.07%
Insert 100	0.478	0.585	81.71%
Update 100	1.097	1.175	93.36%
Select 100	0.376	0.37	101.62%
Delete 1000	5.088	7.26	70.08%
Insert 1000	2.485	2.595	95.76%
Update 1000	8.806	9.26	95.10%
Select 1000	0.613	0.705	86.95%
Delete 10000	45.784	50.445	90.76%
Insert 10000	23.742	21.62	109.81%
Update 10000	69.838	68.775	101.55%
Select 10000	2.057	1.485	138.52%
Select benchmark			
SingleRowIndexed	49.987	131.515	38.01%
SingleRowNonIndexed	9.326	18.155	51.37%
SingleRowMultipleIndices	2.505	5.085	49.26%
MultiRowIndexedRange	2.719	2.075	131.04%
MultiRowIndexedSpacedOut	9.584	14.985	63.96%
MultiRowNonIndexedRange	9.297	11.63	79.94%
MultiRowNonIndexedSpacedOut	9.248	10.97	84.30%
IndexedOrPredicate	0.963	1.315	73.23%
IndexedOrPredicateMultiColumn	0.893	8.355	10.69%
IndexedInPredicate	0.774	0.97	79.79%
OrderByIndexed	7.518	11.635	64.62%
OrderByNonIndexed	45.787	44.665	102.51%
OrderByIndexedCrossColumn	10.11	21.85	46.27%
LimitSkipIndexed	0.893	1.36	65.66%
ProjectNonAggregatedColumns	14.431	14.85	97.18%
ProjectAggregateIndexed	22.901	31.285	73.20%
ProjectAggregateNonIndexed	24.6	71.865	34.23%
JoinEqui	34.536	45.35	76.15%
JoinTheta	105.903	124.745	84.90%
CountStar	0.755	1.125	67.11%
Select benchmark mem			
SingleRowIndexed	0.327	0.75	43.60%
SingleRowNonIndexed	7.084	14.965	47.34%

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SingleRowMultipleIndices	1	1.72	58.14%
MultiRowIndexedRange	0.885	2.08	42.55%
MultiRowIndexedSpacedOut	9.843	11.145	88.32%
MultiRowNonIndexedRange	17.354	9.165	189.35%
MultiRowNonIndexedSpacedOut	8.288	8.6	96.37%
IndexedOrPredicate	0.558	0.545	102.39%
IndexedOrPredicateMultiColumn	0.504	0.51	98.82%
IndexedInPredicate	0.367	0.495	74.14%
OrderByIndexed	6.653	11.225	59.27%
OrderByNonIndexed	43.214	48.11	89.82%
OrderByIndexedCrossColumn	7.388	8.4	87.95%
LimitSkipIndexed	0.337	0.395	85.32%
ProjectNonAggregatedColumns	11.255	14.725	76.43%
ProjectAggregateIndexed	10.298	19.94	51.64%
ProjectAggregateNonIndexed	18.67	19.055	97.98%
JoinEqui	28.567	37.71	75.75%
JoinTheta	90.661	133.05	68.14%
CountStar	0.31	0.35	88.57%
Loading Populated DB			
Init populated DB	599.675	748.98	80.07%
Scenario Simulations			
Insert via Tx Attach	36.737	20.975	175.15%
Select	225.903	111.005	203.51%
Select Binding	0.084	0.125	67.20%
Foreign Keys Benchmark			
InsertParent_undefined_immediate	76.394	131.535	58.08%
InsertChild_60000_immediate	141.694	141.98	99.80%
UpdateParent_undefined_immediate	136.663	167.89	81.40%
UpdateChild_60000_immediate	93.011	150.075	61.98%
DeleteParent_50000_immediate	181.161	193.075	93.83%
DeleteChild_60000_immediate	724.776	733.565	98.80%
InsertParent_undefined_deferrable	70.304	71.725	98.02%
InsertChild_60000_deferrable	137.873	138.77	99.35%
UpdateParent_undefined_deferrable	135.072	150.32	89.86%
UpdateChild_60000_deferrable	90.547	92.54	97.85%

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DeleteParent_50000_deferrable	190.512	185.61	102.64%
DeleteChild_60000_deferrable	721.392	727.195	99.20%
InsertParent_undefined_noFK	66.905	70.385	95.06%
InsertChild_60000_noFK	74.221	84.65	87.68%
UpdateParent_undefined_noFK	111.349	141.11	78.91%
UpdateChild_60000_noFK	40.296	54.075	74.52%
DeleteParent_50000_noFK	175.492	174.49	100.57%
DeleteChild_60000_noFK	180.767	221.7	81.54%