

MySQL vs sqlite (1 year OpSim profile run)

Files

Profile files are attached

[opsim-mysql.prof](#)

[opsim-sqlite.prof](#)

[opsim-sqlite-sync-off.prof](#)

[mysql-1year-stats.out](#)

[sqlite-1year-stats.out](#)

[sqlite-1year-sync-off-stats.out](#)

1 year profile run running OpSim with MySQL

```
[hewelhog:~/LSST/opsim-profile] schandra% cat mysql-1year-stats.out
```

```
===== Top 50 Cumulative =====
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```
Wed Jul 30 20:27:36 2014    opsim-mysql.prof
```

```
17910270287 function calls (16253240991 primitive calls) in 27877.793 seconds
```

```
Ordered by: cumulative time
```

```
List reduced from 866 to 50 due to restriction <50>
```

ncalls	tottime	percall	cumtime	percall	filename:lineno(function)
1	0.002	0.002	27878.561	27878.561	main.py:8(<module>)
1	0.001	0.001	27878.521	27878.521	main.py:94(startLsst)
1	9.448	9.448	27551.356	27551.356	Simulator.py:230(start)
267268	909.736	0.003	18763.494	0.070	ObsScheduler.py:372(suggestObservation)
131871186	761.035	0.000	13384.184	0.000	Instrument.py:1132(GetDelayForTarget)
131533681	239.096	0.000	11853.669	0.000	Instrument.py:1046(GetSlewDelay)
1707871087/131374699	3977.542	0.000	9443.057	0.000	Instrument.py:1006(GetDelayAfter)
365	0.013	0.000	5467.402	14.979	Simulator.py:625(startNight)
365	0.049	0.000	5467.064	14.978	ObsScheduler.py:173(startNight)
365	0.045	0.000	5090.994	13.948	SchedulingData.py:341(startNight)
365	1688.745	4.627	4048.782	11.093	SchedulingData.py:368(computeTargetData)
26901	1329.933	0.049	4018.021	0.149	TransSubSeqProp.py:349(suggestObs)
267240	33.890	0.000	3229.275	0.012	ObsScheduler.py:634(closeObservation)
4089447	10.935	0.000	2898.794	0.001	Database.py:154(executeSQL)
4089447	21.269	0.000	2876.903	0.001	cursors.py:139(execute)
4089447	5.715	0.000	2816.240	0.001	cursors.py:315(_query)
4089447	16.220	0.000	2799.116	0.001	cursors.py:277(_do_query)
4089448	2721.087	0.001	2721.087	0.001	{method 'query' of '_mysql.connection' objects}
919622893	2349.539	0.000	2717.777	0.000	Instrument.py:808(TimeAccelMove)
131533681	521.367	0.000	2171.390	0.000	Instrument.py:465(SetClosestState)

78292182	1043.686	0.000	1619.069	0.000	AstronomicalSky.py:563(getSkyBrightness)
262749398	416.058	0.000	1184.601	0.000	Instrument.py:893(GetDelayFor_TelAz)
262749398	390.210	0.000	1125.437	0.000	Instrument.py:880(GetDelayFor_TelAlt)
59751095	534.953	0.000	1053.782	0.000	SuperSequence.py:774(RankTimeWindow)
365	778.642	2.133	1042.164	2.855	SchedulingData.py:171(updateLookAheadWindow)
267240	7.539	0.000	940.082	0.004	Database.py:455(addSlewHistory)
263672107	608.168	0.000	826.300	0.000	Instrument.py:120(Set)
131374699	303.243	0.000	758.831	0.000	Instrument.py:857(GetDelayFor_DomAz)
312427984	584.610	0.000	730.815	0.000	Instrument.py:335(GetShortestDistanceWithWrap)
131533681	193.296	0.000	728.688	0.000	Instrument.py:461(SetPosition)
131374699	235.001	0.000	696.338	0.000	Instrument.py:843(GetDelayFor_DomAlt)
267240	8.813	0.000	651.676	0.002	Database.py:404(addObservation)
131374699	206.168	0.000	546.941	0.000	Instrument.py:926(GetDelayFor_Rotator)
131533681	161.052	0.000	535.392	0.000	Instrument.py:144(Copy)
131374699	397.648	0.000	514.520	0.000	Instrument.py:914(GetDelayFor_TelOpticsCL)
78024942	92.669	0.000	508.101	0.000	AstronomicalSky.py:773(airmasst)
20196705	330.272	0.000	479.142	0.000	Filters.py:205(computeFilterSeeing)
132067840	105.352	0.000	462.862	0.000	Instrument.py:372(GetTelAzDistanceWithWrap)
267240	1.151	0.000	438.052	0.002	WLprop.py:331(closeObservation)
267240	7.450	0.000	436.901	0.002	TransSubSeqProp.py:748(closeObservation)
1100294241	404.191	0.000	404.191	0.000	{divmod}
267240	11.697	0.000	387.983	0.001	Instrument.py:1196(Observe)
267240	32.945	0.000	387.097	0.001	Proposal.py:744(closeObservation)
131374699	204.248	0.000	377.482	0.000	Instrument.py:939(GetDelayFor_Filter)
86343303	369.045	0.000	369.045	0.000	{sorted}
365	123.527	0.338	366.584	1.004	TransSubSeqProp.py:148(startNight)
1885097	13.170	0.000	361.407	0.000	Database.py:480(addSlewActivities)
356895592	340.320	0.000	340.320	0.000	SuperSequence.py:383(GetProgress)
81346000/813460	148.204	0.000	326.640	0.000	copy.py:145(deepcopy)
1	0.000	0.000	326.407	326.407	Simulator.py:809(closeProposals)

1 year profile run running OpSim with sqlite

[hewelhog:~/LSST/opsim-profile] schandra% cat sqlite-1year-stats.out

===== Top 50 Cumulative =====

Thu Jul 31 00:36:52 2014 opsim-sqlite.prof

17849180434 function calls (16189575860 primitive calls) in 42727.314 seconds

Ordered by: cumulative time

List reduced from 750 to 50 due to restriction <50>

ncalls tottime percall cumtime percall filename:lineno(function)

1 0.027 0.027 42728.084 42728.084 main.py:8(<module>)

1 0.001 0.001 42727.897 42727.897 main.py:72(startLsst)

1 10.674 10.674 40385.487 40385.487 Simulator.py:230(start)

267691	952.165	0.004	18976.057	0.071	ObsScheduler.py:372(suggestObservation)
4094573	24.684	0.000	17490.517	0.004	Database.py:133(executeSQL)
4094575	16312.478	0.004	16312.478	0.004	{method 'commit' of 'sqlite3.Connection' objects}
SEEMS TO BE THE CULPRIT ---->>> THIS					
267664	41.524	0.000	15772.459	0.059	ObsScheduler.py:634(closeObservation)
132081036	785.594	0.000	13590.698	0.000	Instrument.py:1132(GetDelayForTarget)
131737633	241.143	0.000	12043.938	0.000	Instrument.py:1046(GetSlewDelay)
1710525024/131578848	4046.620	0.000	9638.619	0.000	Instrument.py:1006(GetDelayAfter)
1888416	24.643	0.000	7007.324	0.004	Database.py:446(addSlewActivities)
365	0.014	0.000	5466.290	14.976	Simulator.py:625(startNight)
365	0.065	0.000	5464.613	14.972	ObsScheduler.py:173(startNight)
365	0.046	0.000	5108.350	13.995	SchedulingData.py:341(startNight)
365	1646.852	4.512	4124.946	11.301	SchedulingData.py:368(computeTargetData)
26942	1302.087	0.048	3999.149	0.148	TransSubSeqProp.py:349(suggestObs)
921051936	2443.034	0.000	2847.336	0.000	Instrument.py:808(TimeAccelMove)
267664	8.772	0.000	2637.727	0.010	Database.py:370(addObservation)
1	0.000	0.000	2331.868	2331.868	Simulator.py:809(closeProposals)
1	0.000	0.000	2331.868	2331.868	ObsScheduler.py:868(closeProposals)
1	1.643	1.643	2331.868	2331.868	TransSubSeqProp.py:871(closeProposal)
131737633	518.296	0.000	2164.063	0.000	Instrument.py:465(SetClosestState)
267664	3.350	0.000	2135.152	0.008	Database.py:306(addSeqHistoryObsHistory)
535328	10.718	0.000	2081.760	0.004	Database.py:474(addSlewState)
78292606	1073.509	0.000	1708.228	0.000	AstronomicalSky.py:563(getSkyBrightness)
267664	1.628	0.000	1223.090	0.005	WLprop.py:331(closeObservation)
267664	8.133	0.000	1221.462	0.005	TransSubSeqProp.py:748(closeObservation)
263157696	408.613	0.000	1213.774	0.000	Instrument.py:893(GetDelayFor_TelAz)
267664	33.967	0.000	1173.454	0.004	Proposal.py:744(closeObservation)
263157696	385.837	0.000	1155.546	0.000	Instrument.py:880(GetDelayFor_TelAlt)
267664	8.598	0.000	1149.408	0.004	Database.py:421(addSlewHistory)
59872098	560.087	0.000	1095.936	0.000	SuperSequence.py:774(RankTimeWindow)
4094575	1094.731	0.000	1094.731	0.000	{method 'execute' of 'sqlite3.Cursor' objects}
267664	3.944	0.000	1043.883	0.004	Database.py:330(addObsHistoryProposal)
267664	4.363	0.000	1033.706	0.004	Database.py:459(addSlewMaxSpeeds)
365	734.591	2.013	983.356	2.694	SchedulingData.py:171(updateLookAheadWindow)
131578848	303.596	0.000	777.673	0.000	Instrument.py:857(GetDelayFor_DomAz)
264086333	570.842	0.000	774.640	0.000	Instrument.py:120(Set)
312418099	607.572	0.000	752.635	0.000	Instrument.py:335(GetShortestDistanceWithWrap)
131737633	200.437	0.000	704.240	0.000	Instrument.py:461(SetPosition)
131578848	210.524	0.000	696.954	0.000	Instrument.py:843(GetDelayFor_DomAlt)
131578848	217.001	0.000	571.463	0.000	Instrument.py:926(GetDelayFor_Rotator)
78024942	94.910	0.000	528.617	0.000	AstronomicalSky.py:773(airmasst)
131578848	391.398	0.000	514.055	0.000	Instrument.py:914(GetDelayFor_TelOpticsCL)
131737633	163.240	0.000	503.802	0.000	Instrument.py:144(Copy)
20225796	340.291	0.000	494.574	0.000	Filters.py:205(computeFilterSeeing)

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132272640 103.373 0.000 473.906 0.000 Instrument.py:372(GetTelAzDistanceWithWrap)
267664 12.422 0.000 395.621 0.001 Instrument.py:1196(Observe)
1100901515 390.189 0.000 390.189 0.000 {divmod}
131578848 213.199 0.000 388.751 0.000 Instrument.py:939(GetDelayFor_Filter)

```

1 year profile run running OpSim with sqlite with snynchronous=off

[hewelhog:~/LSST/opsim-profile] schandra% cat sqlite-1year-sync-off-stats.out

===== Top 50 Cumulative =====

Thu Jul 31 19:21:52 2014 opsim-sqlite-sync-off.prof

17825688454 function calls (16168875566 primitive calls) in 32981.465 seconds

Ordered by: cumulative time

List reduced from 750 to 50 due to restriction <50>

ncalls	tottime	percall	cumtime	percall	filename:lineno(function)
1	0.007	0.007	32982.281	32982.281	main.py:8(<module>)
1	0.001	0.001	32982.234	32982.234	main.py:72(startLsst)
1	9.818	9.818	31897.593	31897.593	Simulator.py:230(start)
267199	957.684	0.004	18880.002	0.071	ObsScheduler.py:372(suggestObservation)
131850595	764.856	0.000	13540.951	0.000	Instrument.py:1132(GetDelayForTarget)
131517129	246.106	0.000	12023.120	0.000	Instrument.py:1046(GetSlewDelay)
1707658784/131358368	3981.701	0.000	9630.541	0.000	Instrument.py:1006(GetDelayAfter)
4086249	26.164	0.000	7706.445	0.002	Database.py:135(executeSQL)
267172	42.503	0.000	7316.699	0.027	ObsScheduler.py:634(closeObservation)
4086251	6241.882	0.002	6241.882	0.002	{method 'commit' of 'sqlite3.Connection' objects}
365	0.014	0.000	5533.364	15.160	Simulator.py:625(startNight)
365	0.063	0.000	5532.356	15.157	ObsScheduler.py:173(startNight)
365	0.047	0.000	5169.081	14.162	SchedulingData.py:341(startNight)
365	1658.819	4.545	4132.434	11.322	SchedulingData.py:368(computeTargetData)
26890	1319.609	0.049	3932.835	0.146	TransSubSeqProp.py:349(suggestObs)
1884915	28.639	0.000	3184.162	0.002	Database.py:448(addSlewActivities)
919508576	2451.861	0.000	2862.658	0.000	Instrument.py:808(TimeAccelMove)
131517129	513.487	0.000	2146.356	0.000	Instrument.py:465(SetClosestState)
78292114	1085.336	0.000	1707.482	0.000	AstronomicalSky.py:563(getSkyBrightness)
4086251	1376.806	0.000	1376.806	0.000	{method 'execute' of 'sqlite3.Cursor' objects}
262716736	413.436	0.000	1219.151	0.000	Instrument.py:893(GetDelayFor_TelAz)
262716736	400.085	0.000	1168.588	0.000	Instrument.py:880(GetDelayFor_TelAlt)
59724292	542.825	0.000	1089.478	0.000	SuperSequence.py:774(RankTimeWindow)
1	0.000	0.000	1081.402	1081.402	Simulator.py:809(closeProposals)
1	0.000	0.000	1081.402	1081.402	ObsScheduler.py:868(closeProposals)
1	1.925	1.925	1081.402	1081.402	TransSubSeqProp.py:871(closeProposal)

365	753.529	2.064	1036.597	2.840	SchedulingData.py:171(updateLookAheadWindow)
267172	4.262	0.000	996.370	0.004	Database.py:308(addSeqHistoryObsHistory)
267172	8.819	0.000	981.450	0.004	Database.py:372(addObservation)
534344	12.616	0.000	907.897	0.002	Database.py:476(addSlewState)
131358368	313.483	0.000	793.647	0.000	Instrument.py:857(GetDelayFor_DomAz)
263634896	576.088	0.000	790.337	0.000	Instrument.py:120(Set)
311736531	587.543	0.000	729.808	0.000	Instrument.py:335(GetShortestDistanceWithWrap)
131358368	215.538	0.000	711.133	0.000	Instrument.py:843(GetDelayFor_DomAlt)
131517129	199.142	0.000	709.446	0.000	Instrument.py:461(SetPosition)
267172	1.514	0.000	637.503	0.002	WLprop.py:331(closeObservation)
267172	7.643	0.000	635.988	0.002	TransSubSeqProp.py:748(closeObservation)
267172	30.788	0.000	588.837	0.002	Proposal.py:744(closeObservation)
131358368	220.616	0.000	574.724	0.000	Instrument.py:926(GetDelayFor_Rotator)
267172	10.793	0.000	534.081	0.002	Database.py:423(addSlewHistory)
131358368	390.247	0.000	514.125	0.000	Instrument.py:914(GetDelayFor_TelOpticsCL)
78024942	90.989	0.000	510.661	0.000	AstronomicalSky.py:773(airmasst)
131517129	157.137	0.000	510.304	0.000	Instrument.py:144(Copy)
20188954	333.085	0.000	486.722	0.000	Filters.py:205(computeFilterSeeing)
132051152	106.387	0.000	464.198	0.000	Instrument.py:372(GetTelAzDistanceWithWrap)
267172	3.868	0.000	464.176	0.002	Database.py:332(addObsHistoryProposal)
267172	5.482	0.000	436.798	0.002	Database.py:461(addSlewMaxSpeeds)
1098853057	393.682	0.000	393.682	0.000	{divmod}
267172	11.265	0.000	388.791	0.001	Instrument.py:1196(Observe)
131358368	209.321	0.000	387.572	0.000	Instrument.py:939(GetDelayFor_Filter)