

How to configure AWR Report System

Introduce AWR

We introduce two AWR report system now. MySQL AWR and MongoDB AWR . All of these are based on Oracle AWR. We got some inspiration from oracle's design thinking.

Compared to Oracle database, other RDBMS databases don't have enough tools to do all-sided management. Percona Company has rolled out many excellent tools to improve management, like XtraBackup, Percona-toolkits etc. But we still need an AWR report to analyze DB system performance in a special range time. In Oracle word, AWR report has already been the most important tools for DBAs to analyze the bottle of database systems, quickly find some strange problems, and design better architecture for particular systems. So, we need another workload system for other RDBMS system not only for DBAs but also for Architect.

How to configure MySQL AWR

We use a MySQL database to store collected-data. All of these data were stored in series tables.

```

Tables_in_dbmon (myawr%)
+-----+
| myawr_active_session
| myawr_cpu_info
| myawr_engine_innodb_status
| myawr_host
| myawr_host_summary_by_file_io
| myawr_host_summary_by_statement_latency
| myawr_innodb_info
| myawr_innodb_lock_waits
| myawr_innodb_locks
| myawr_innodb_trx
| myawr_io_global_event_by_latency
| myawr_io_global_file_by_latency
| myawr_io_info
| myawr_io_read_global_by_file_by_bytes
| myawr_io_write_global_by_file_by_bytes
| myawr_isam_info
| myawr_load_info
| myawr_mysql_info
| myawr_query_review
| myawr_query_review_history
| myawr_segment_global_stat
| myawr_snapshot
| myawr_snapshot_events_waits_summary_global_by_event_name
| myawr_snapshot_file_summary_by_event_name
| myawr_statements_with_full_table_scans
| myawr_statements_with_temp_tables
| myawr_swap_net_disk_info
| myawr_user_summary_by_file_io
| myawr_user_summary_by_statement_latency
| myawr_wait_classes_global_by_avg_latency
+-----+

```

We need to insert items to tell myawr how to show collected data.

```

mysql> select * from myawr_host;
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| id | host_name | ip_addr | port | db_role | version | uptime | check_time | running_thread_threshold | notify_emails | times_per_hour |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | ai-dba-tech01.hz | 10.128.6.21 | 3309 | master | 5.6.17 | 1y 1m 25d 19h 56m 8s | 2015-08-05 10:46:04 | 10000 | NULL | 0 |
| 2 | ai-dba-tech01.hz | 10.128.6.21 | 3310 | master | 5.6.17 | 1y 1m 25d 19h 56m 55s | 2015-08-05 10:45:07 | 10000 | NULL | 0 |
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
2 rows in set (0.00 sec)

```

Which means myawr will generate two MySQL instances workload reports (10.128.6.21 physical machine, 3310 and 3309 port)

```

#cat /usr/local/dbadmin/monitor/myawr21.sh
#!/bin/sh
#-----#
# ScriptName: myawr.sh
# Create Date: 2014-08-19 17:23
# Modify Date: 2014-08-19 17:23
#-----#
/usr/bin/perl /usr/local/dbadmin/monitor/mysqlawr.pl -u dbadmin -p NV7yVBpn88cg4WJCv12d -lh 10.128.6.21 -P 3309 -tu dbmon -tp dbmon -TP 3310 -th 10.128.6.21 -n bond0 -d sdb -I 1
/usr/bin/perl /usr/local/dbadmin/monitor/mysqlawr.pl -u dbadmin -p NV7yVBpn88cg4WJCv12d -lh 10.128.6.21 -P 3310 -tu dbmon -tp dbmon -TP 3310 -th 10.128.6.21 -n bond0 -d sdb -I 2

```

This cron -job runs every minute to collect data and insert them into server database (DBMON server)

```

mysql> use dbmon ;
Reading table information for completion of table and column names
You can turn off this feature to get a quicker startup with -A

Database changed
mysql> select * from myawr_cpu_info limit 10;
+-----+-----+-----+-----+-----+-----+-----+-----+
| id | snap_id | host_id | cpu_user | cpu_system | cpu_idle | cpu_iowait | snap_time |
+-----+-----+-----+-----+-----+-----+-----+-----+
| 1 | 1 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-18 17:59:46 |
| 2 | 2 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-18 18:00:45 |
| 3 | 3 | 1 | 3.00 | 0.00 | 97.00 | 0.00 | 2014-08-18 18:03:00 |
| 4 | 4 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-18 18:03:36 |
| 5 | 5 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-18 18:05:34 |
| 6 | 6 | 1 | 0.00 | 0.00 | 99.00 | 0.00 | 2014-08-18 18:17:40 |
| 7 | 7 | 1 | 2.00 | 0.00 | 97.00 | 0.00 | 2014-08-18 18:33:51 |
| 8 | 8 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-19 17:22:41 |
| 9 | 9 | 1 | 1.00 | 0.00 | 99.00 | 0.00 | 2014-08-19 17:23:46 |
| 10 | 10 | 1 | 0.00 | 0.00 | 100.00 | 0.00 | 2014-08-19 17:41:02 |
+-----+-----+-----+-----+-----+-----+-----+-----+
10 rows in set (0.01 sec)

```

This is an example. Every minutes myawr will insert one record into per table (“snap_id” was designed to record time and “host_id” was used to identify unique instance)

We use a python script dbmon_myawr_review.py to gather html file

```

01 01 * * * source /root/.bash_profile ;python
/usr/local/dbadmin/monitor/dbmon_myawr_review.py --action=start

```

Now we will get a complete workload report

Information of machines and instance

MySQL WorkLoad Report

Host Name	Ip addr	Port	Db role	Version	Uptime
a1-dba-tech01.hz	10.128.6.21	3309	master	5.6.17	1y 1m 25d 10h 12mi 7s

Platform	cores	cpus	sockets	memory
Linux x86_64	12	24	2	126 GB

	Snap Id	Snap Time	Threads_connected	Threads_running
Begin Snap:	409490	2015-08-04 01:01:02	320.00	3.00
End Snap:	410929	2015-08-05 01:00:03	321.00	4.00
Elapsed:	86341 (seconds)			

Some top ten important events.

Start snap value and end snap value

	Begin	End	Diff
query_cache_size :	1048576.00	1048576.00	0
thread_cache_size :	48.00	48.00	0
table_definition_cache :	784.00	784.00	0
max_connections :	6000.00	6000.00	0
table_open_cache :	768.00	768.00	0
slow_launch_time :	2.00	2.00	0
max_heap_table_size :	16777216.00	16777216.00	0
tmp_table_size :	1073741824.00	1073741824.00	0
open_files_limit :	60000.00	60000.00	0
Max_used_connections :	338.00	338.00	0
Threads_connected :	320.00	321.00	1
Threads_cached :	13.00	12.00	-1
Threads_created :	2261.00	2261.00	0
Threads_running :	3.00	4.00	1
Connections :	56197556.00	56306052.00	108496
key_buffer_size :	67108864.00	67108864.00	0
join_buffer_size :	16777216.00	16777216.00	0
sort_buffer_size :	8388608.00	8388608.00	0
Key_blocks_not_flushed :	0.00	0.00	0
Key_blocks_unused :	53121.00	53116.00	-5
Key_blocks_used :	1042.00	1045.00	3
Key_read_requests :	73750994944.00	74161922048.00	410927104

Some Key Load Info

	Per Second
TPS:	16
Com_select(s):	66
Com_insert(s):	6
Com_update(s):	10
Com_delete(s):	0
Innodb_t_row PS:	598
Innodb_rows_inserted(s):	580
Innodb_rows_updated(s):	17
Innodb_rows_deleted(s):	0
Innodb_rows_read(s):	34543
Innodb_data_reads(s):	0
Innodb_data_writes(s):	593
Innodb_data_read(kb/s):	0
Innodb_data_written(kb/s):	18074
Innodb_os_log_fsyncs(s):	11
Innodb_os_log_written(kb/s):	87

MySQL global variables change records.

Top 10 Timed Events

event_name	wait time(picsecond)	wait count
wait/io/table/sql/handler	16982917429946930	1615337345
wait/io/file/innodb/innodb_data_file	2485270460672230	53945490
wait/io/file/innodb/innodb_log_file	418312706299565	2067162
wait/io/file/myisam/dfile	417840348973355	217540293
wait/io/file/sql/binlog	295876606872000	7265697
wait/io/file/myisam/kfile	42887044995025	3344466
wait/lock/table/sql/handler	14949894600025	22372301
wait/io/file/sql/slow_log	84275534805	2863
wait/io/file/sql/dbopt	70807114840	8619
wait/io/file/sql/FRM	58968586985	12944

Top 10 read file Events

event_name	read bytes	read count
wait/io/file/myisam/dfile	66617443368	100948810
wait/io/file/sql/binlog	3829388614	5354257
wait/io/file/innodb/innodb_data_file	62914560	3840
wait/io/file/myisam/kfile	57327115	204230
wait/io/file/sql/FRM	1953541	6616
wait/io/file/sql/binlog_index	8319	3
wait/io/file/sql/partition	344	2
wait/io/file/sql/log_event_info	0	0
wait/io/file/sql/dbopt	0	0
wait/io/file/csv/update	0	0

Top 10 write file Events

event_name	read bytes	read count
wait/io/file/innodb/innodb_data_file	1587821789184	49768544
wait/io/file/myisam/dfile	11773219988	65377521
wait/io/file/innodb/innodb_log_file	7696241152	1033592
wait/io/file/sql/binlog	1914694308	1049219
wait/io/file/myisam/kfile	65983129	2425431
wait/io/file/sql/slow_log	1685509	2743
wait/io/file/sql/log_event_info	0	0
wait/io/file/sql/FRM	0	0
wait/io/file/sql/dbopt	0	0
wait/io/file/csv/update	0	0

Performance items (collected by sys schema)

Performance Schema Stats

Top IO Stat by host

host_name	io_count	io_latency_count(ms)
10.128.250.51	224475620	1107691.82
10.128.6.22	2677183	7660.61
10.128.6.32	2677083	7563.74
10.128.3.57	60384	10393.20
10.128.2.79	33385	755.22
10.128.6.21	8778	31.76
10.128.250.101	0	0.00
10.128.6.230	0	0.00
10.128.3.46	0	0.00
10.128.3.42	0	0.00

Top Summary statement by host

host	total	total_latency	max_latency	lock_latency	rows_sent	rows_examined	rows_affected	full_scans
10.128.250.51	8899826	23142975.11	6894559.67	991982.58	337094781	1361363530	52798877	424552
10.128.6.21	50629	1745128.07	1266.04	8656.61	1277951	108172221	0	31682
10.128.3.57	310678	33517.15	22976.84	2031.66	94943	25872	17253	8619
10.128.6.230	34532	28236.10	2054.80	1590.69	2943853	2943853	0	17266
10.128.2.79	7234	9136.36	1726.87	363.47	1666	274618	2672	1666
10.128.7.148	576	110.64	198.90	41.30	225	900	0	0
10.128.250.101	0	0.00	571.50	0.00	0	0	0	0
10.128.6.22	0	0.00	1.08	0.00	0	0	0	0
10.128.250.50	0	0.00	217.35	0.00	0	0	0	0
10.128.250.102	0	0.00	505.14	0.00	0	0	0	0

Top IO Stat by user

user_name	io_count	io_latency_count(ms)
zabbix	224505299	1107780.29
background	54254694	2526295.42
repl	5354319	15224.44
dbadmin	69162	10424.96
sms	3784	669.89
dbmonitor	0	0.00
dbread	0	0.00
root	0	0.00

Top Summary statement by user

user	total	total_latency	max_latency	lock_latency	rows_sent	rows_examined	rows_affected	full_scans
zabbix	8903871	23151113.84	6894556.16	992267.65	337096689	1361638953	52800603	426220
dbadmin	395839	1806752.63	24825.87	12278.69	4316747	111141946	17253	57567
dbmonitor	100730	14738.19	107.29	2388.02	51804	25902	0	25902
sms	3778	1111.29	946.19	120.08	0	0	946	0
repl	0	0.00	67344861.17	0.00	0	0	0	0
dbread	0	0.00	708.87	0.00	0	0	0	0
root	0	0.00	720662.39	0.00	0	0	0	0

Global Read File IO by Bytes

file_name	count_read	total_read(KB)	avg_read(KB)	write_pct
@@datadir/zabbix/send_msg_table.MYD	1558906	46576592.07	30.36	0.00
@@datadir/zabbix/events.ibd	1683	26928.00	16.00	99.81
@@datadir/zabbix/zaplug_group_role.MYD	7350	22055.98	3.19	0.68
@@datadir/mysql/proc.MYD	5756	8133.72	1.41	0.01
@@datadir/zabbix/tmp_his.frm	6616	1907.75	0.29	0.00
@@datadir/zabbix/applications.ibd	33	528.00	16.00	92.97
@@datadir/zabbix/zaplug_groupid_rule.MYD	421	470.34	0.64	0.01
@@datadir/zabbix/items_applications.ibd	15	240.00	16.00	98.77
@@datadir/zabbix/block_user_table.MYD	2055	199.15	0.11	0.63
@@datadir/zabbix/zaplug_trigger_rule.MYD	830	181.56	0.11	0.01

Global Write File IO by Bytes

file_name	count_write	total_write(KB)	avg_write(KB)	write_pct
@@datadir/ibdata0	3687139	808142208.00	198.82	100.00
@@datadir/zabbix/events.ibd	409699	6587440.00	16.09	99.81
@@datadir/ib_logfile1	305230	2236288.00	5.72	100.00
@@datadir/zabbix/item_discovery.ibd	131603	2105648.00	16.00	100.00
@@datadir/ib_logfile0	268635	1876104.00	5.49	100.00
@@datadir/ib_logfile2	232194	1719253.50	5.72	100.00
@@datadir/ib_logfile3	227538	1684426.50	5.73	100.00
@@datadir/zabbix/hosts.ibd	89560	1432960.00	16.00	100.00
@@datadir/zabbix/items.ibd	14032	224512.00	16.03	99.89
@@datadir/test/heartbeat.ibd	8634	138144.00	16.00	100.00

Global File IO Latency

file_name	total	total_latency(ms)	count_read	read_latency(ms)	count_write	write_latency(ms)	count_misc	misc_latency(ms)
@@datadir/ibdata0	5688513	976743.55	0	0.00	3687139.00	759479.72	2001374.00	217263.83
@@datadir/ib_logfile1	610456	122371.36	0	0.00	305230.00	9099.33	305226.00	113272.03
@@datadir/ib_logfile0	537267	108812.20	0	0.00	268635.00	8111.38	268632.00	100700.82
@@datadir/ib_logfile2	464386	93901.58	0	0.00	232195.00	7007.92	232191.00	86893.66
@@datadir/ib_logfile3	455073	93229.52	0	0.00	227538.00	7153.17	227535.00	86076.35
@@datadir/zabbix/events.ibd	743496	65389.93	1683	3432.34	409699.00	14942.04	332114.00	47015.56
@@datadir/zabbix/send_msg_table.MYD	2313475	28734.36	1558906	28422.19	479.00	12.77	754090.00	299.40
@@datadir/zabbix/item_discovery.ibd	236388	19585.26	0	0.00	131603.00	4507.60	104785.00	15077.66
@@datadir/zabbix/hosts.ibd	140607	10373.37	0	0.00	89560.00	2942.15	51047.00	7431.22
@@datadir/zabbix/sessions.ibd	9112	887.54	1	8.19	4578.00	182.00	4533.00	697.35

Global Event IO Latency

event_name	total	total_latency(ms)	avg_latency(ms)	max_latency(ms)	read_latency(ms)	write_latency(ms)	misc_latency(ms)	total_read	total_written
innodb/innodb_data_file	53945013	2485246.34	0.05	5018.58	18157.18	2045722.12	421367.04	62914560	1587821789184
innodb/innodb_log_file	2067178	418313.79	0.29	7323.70	0.00	31371.72	386942.07	0	7696456704
sql/binlog	7265782	295877.86	0.05	5029.58	15224.35	26052.15	254601.36	3829516094	1914758048
mysam/dfile	217540300	417840.40	0.00	898.12	111280.86	270946.27	35613.27	66617443816	11773220436
mysam/kfile	3344468	42887.45	0.01	1458.66	471.46	11652.09	30763.91	57327115	65983271
sql/slow_log	2863	84.28	0.17	477.05	0.00	79.92	4.36	0	1685509
sql/dbopt	8619	70.81	0.01	308.91	0.00	0.00	70.81	0	0
sql/FRM	12944	58.97	0.01	149.46	12.96	0.00	46.01	1953541	0
sql/global_ddl_log	0	0.00	0.26	209.05	0.00	0.00	0.00	0	0
sql/binlog_index	17	0.40	0.28	99.45	0.01	0.00	0.39	8319	0

Global Event Class Wait latency

event_class	total	total_latency	min_latency	avg_latency	max_latency
wait/io/file	62264512422	286.13h	0 ps	16.54 us	7.32 s
wait/io/table	362754396023	1215.95h	30.03 ns	12.07 us	51.08 s
wait/lock/table	20763748521	2.55h	13.86 ns	441.61 ns	226.95 ms

Global Satament Table Full Scan

db	exec_count	no_idx_count	no_gidx_count	no_ind_use_pct	rows_sent	rows_exam	last_seen_time_stamp
zabbix	15829628	15832745	0	100	15831559	15832030	2015-08-05 01:00:04
zabbix	6961863	6962180	0	100	6962025	6962041	2015-08-05 01:00:04
zabbix	605284	605284	0	100	5788192	16171381	2015-08-05 01:00:04
zabbix	27009289	1	0	0	0	394	2015-08-05 01:00:04
zabbix	17920846	17920846	0	100	3688607537	7377215074	2015-08-05 01:00:03
zabbix	37468889	33842374	0	90	37544369	128869375	2015-08-05 01:00:03
zabbix	605223	605223	0	100	6226	12830347	2015-08-05 01:00:00
zabbix	601184	551039	0	92	2168	342269987	2015-08-05 01:00:00
zabbix	7387236	2	0	0	7387240	14775259	2015-08-05 00:59:56
zabbix	600432	600432	0	100	0	1200864	2015-08-05 00:59:44

Global Satament Table Full SQL

query	digest
SELECT `dv`.`mandatory`,`dv`.`optional` FROM `dbversion` `dv`	b4a3f50693a3f75f89b48a3ca26a861b
SELECT `c`.`*` FROM `config` `c`	0e12373dfae3b705e39b000fd42ddf6
SELECT `mt`.`mediatypeid`,`mt`.`type`,`mt`.`description`,`mt`.`smtp_server`,`mt`.`smtp_helo`,`mt`.`smtp_email`,`mt`.`exec_path`,`mt`.`gsm_modem`,`mt`.`username`,`mt`.`passwd`,`m`.`sendto` FROM `media` `m`,`users_groups` `u`,`config` `c`,`media_type` `mt` WHERE `m`.`userid` = `u`.`userid` AND `u`.`usrgrpid` = `c`.`alert_usrgrpid` AND `m`.`mediatypeid` = `mt`.`mediatypeid` AND `m`.`active` = ? AND `mt`.`status` = ?	ad2f3e3ea58cc7a0e681bd779f14a328
SELECT `h`.`hostid`,`h`.`host`,`h`.`name`,`h`.`status`,`hi`.`inventory_mode` FROM HOSTS `h`,`host_discovery` `hd` LEFT JOIN `host_inventory` `hi` ON `hd`.`hostid` = `hi`.`hostid` WHERE `h`.`hostid` = `hd`.`hostid` AND `hd`.`parent_itemid` = ?	9f466e78406c9fd313cda37facd65857
SELECT `escalationid`,`actionid`,`triggerid`,`eventid`,`r_eventid`,`nextcheck`,`esc_step`,`STATUS`,`itemid` FROM `escalations` ORDER BY `actionid`,`triggerid`,`itemid`,`escalationid`	e658ad35a5912d7cfeed39d0e65624af
SELECT MIN(`t`.`nextcheck`) FROM `httptest` `t`,`HOSTS` `h` WHERE `t`.`hostid` = `h`.`hostid` AND MOD(`t`.`httpstestid`,`?) = ? AND `t`.`status` = ? AND `h`.`proxy_hostid` IS NULL AND `h`.`status` = ? AND (`h`.`maintenance_status` = ? OR `h`.`maintenance_type` = ?)	94175496a41aa702739de9773035499a
SELECT `m`.`maintenanceid`,`m`.`maintenance_type`,`m`.`active_since`,`tp`.`timeperiod_type`,`tp`.`every`,`tp`.`month`,`tp`.`dayofweek`,`tp`.`day`,`tp`.`start_time`,`tp`.`period`,`tp`.`start_date` FROM `maintenances` `m`,`maintenances_windows` `mw`,`timeperiods` `tp` WHERE `m`.`maintenanceid` = `mw`.`maintenanceid` AND `mw`.`timeperiodid` = `tp`.`timeperiodid` AND `m`.`active_since` <= ? AND `m`.`active_till` > ?	601683e7be5fe94ceead9571a54e6a07
SELECT `hostid`,`HOST`,`maintenance_type`,`maintenance_from` FROM HOSTS WHERE STATUS = ? AND `flags` != ? AND `maintenance_status` = ?	9b06a429ce001b15fcf9a48bd083f7cd
SELECT `hostid`,`STATUS` FROM HOSTS WHERE HOST = ? AND STATUS IN (...)	9ef63b35db6f2276a6011fee83581ab0
SELECT `t`.`dcheckid`,`t`.`druleid`,`t`.`type`,`t`.`key`,`t`.`snmp_community`,`t`.`ports`,`t`.`snmpv3_securityname`,`t`.`snmpv3_securitylevel`,`t`.`snmpv3_authpassphrase`,`t`.`snmpv3_privpassphrase`,`t`.`uniq`,`t`.`snmpv3_authprotocol`,`t`.`snmpv3_privprotocol`,`t`.`snmpv3_contextname` FROM `dchecks` `t`,`drules` `r` WHERE `t`.`druleid` = `r`.`druleid` AND `r`.`proxy_hostid` = ? AND `r`.`status` = ? ORDER BY `t`.`dcheckid`	75a31b45a2d0e3c2fa976cd63ed47da

Global Satament TEMP Table Usage

db	exec_count	total_latency(ms)	memory_tmp_tables	disk_tmp_tables	avg_tmp_tables_per_query	tmp_tables_to_disk_pct	last_seen
zabbix	27009377	36149936.36	27009600	27009582	1	100	2015-08-05 01:00:04
zabbix	913398	612771.95	109713	109713	0	100	2015-08-04 20:14:19
zabbix	1203357	670733.43	14929	14929	0	100	2015-08-05 00:59:43
zabbix	3168	7842.56	3168	3168	1	100	2015-08-04 16:05:11
zabbix	2388	5510.18	2388	2388	1	100	2015-08-04 16:05:11
zabbix	2387	4233.23	2387	2387	1	100	2015-08-04 16:05:12
zabbix	2071	3186.01	2071	1572	1	76	2015-08-04 16:05:11
zabbix	53171282	17951941.23	53177564	0	1	0	2015-08-05 01:00:04
zabbix	27009000	15393192.16	27009417	0	1	0	2015-08-05 01:00:04
zabbix	3316322	1424447.22	3316008	0	1	0	2015-08-04 23:30:23

Global Satament TEMP Table SQL

query	digest
SELECT DISTINCTROW 't'. 'triggerid', 't'. 'description', 't'. 'expression', 't'. 'url', 't'. 'status', 't'. 'priority', 't'. 'comments', 't'. 'type' FROM TRIGGERS 't', 'functions' 'f', 'items' 'i', 'item_discovery' 'id' WHERE 't'. 'triggerid' = 'f'. 'triggerid' AND 'f'. 'itemid' = 'i'. 'itemid' AND 'i'. 'itemid' = 'id'. 'itemid' AND 'id'. 'parent_itemid' = ?	7a980a590fedd684ec08c891af751ce2
SELECT 'a'. 'alertid', 'mt'. 'description', 'u'. 'alias', 'u'. 'name', 'u'. 'surname', 'a'. 'subject', 'a'. 'message', 'a'. 'sendto', 'a'. 'status', 'a'. 'retries', 'a'. 'alerttype' FROM EVENTS 'e', 'alerts' 'a' LEFT JOIN 'users' 'u' ON 'u'. 'userid' = 'a'. 'userid' LEFT JOIN 'media_type' 'mt' ON 'mt'. 'mediatypeid' = 'a'. 'mediatypeid' WHERE 'a'. 'eventid' = ? AND 'a'. 'status' = ? AND 'e'. 'eventid' = 'a'. 'eventid' AND 'a'. 'alerttype' IN (...) ORDER BY 'a'. 'alertid' LIMIT ? OFFSET ?	8b3e97776b375d7716e546f608d15c8a
SELECT 'a'. 'alertid', 'a'. 'mediatypeid', 'a'. 'sendto', 'a'. 'subject', 'a'. 'message', 'a'. 'status', 'mt'. 'mediatypeid', 'mt'. 'type', 'mt'. 'description', 'mt'. 'smtp_server', 'mt'. 'smtp_helo', 'mt'. 'smtp_email', 'mt'. 'exec_path', 'mt'. 'gsm_modem', 'mt'. 'username', 'mt'. 'passwd', 'a'. 'retries' FROM 'alerts' 'a', 'media_type' 'mt' WHERE 'a'. 'mediatypeid' = 'mt'. 'mediatypeid' AND 'a'. 'status' = ? ORDER BY 'a'. 'alertid'	1ad601430fb9bfa8eb8442130e7afe50
SELECT DISTINCTROW 't'. ' FROM TRIGGERS 't', 'functions' 'f', 'items' 'i' WHERE 'i'. 'hostid' = ? AND 'f'. 'itemid' = 'i'. 'itemid' AND 'f'. 'triggerid' = 't'. 'triggerid'	63a1677034f13170040c24b36d928eb9
SELECT DISTINCTROW 't'. 'triggerid', 't'. 'expression', 't'. 'description', 't'. 'url', 't'. 'status', 't'. 'priority', 't'. 'comments', 't'. 'type' FROM TRIGGERS 't', 'functions' 'f', 'items' 'i' WHERE 'i'. 'hostid' = ? AND 'f'. 'triggerid' = 't'. 'triggerid' AND 'f'. 'itemid' = 'i'. 'itemid' AND 't'. 'flags' IN (...)	2ca57a6d73000c2b979b8451892fb708
SELECT DISTINCTROW 't'. 'triggerid', 't'. 'expression', 't'. 'description', 't'. 'url', 't'. 'status', 't'. 'priority', 't'. 'comments', 't'. 'type' FROM TRIGGERS 't', 'functions' 'f', 'items' 'i' WHERE 't'. 'flags' = ? AND 'i'. 'hostid' = ? AND 'f'. 'triggerid' = 't'. 'triggerid' AND 'f'. 'itemid' = 'i'. 'itemid'	2ed371ae6a8aac72c05e31e23e7b005
SELECT DISTINCTROW 'h'. 'groupid' FROM 'hosts_groups' 'hg', HOSTS 'h', 'items' 'i', 'functions' 'f', TRIGGERS 't' WHERE 'hg'. 'hostid' = 'h'. 'hostid' AND 'h'. 'hostid' = 'i'. 'hostid' AND 'i'. 'itemid' = 'f'. 'itemid' AND 'f'. 'triggerid' = 't'. 'triggerid' AND 't'. 'triggerid' = ? AND 'hg'. 'groupid' = ?	38a2ae3d10e7dca7eed75f79736182
SELECT DISTINCTROW 'i'. 'itemid', 'i'. 'flags' FROM 'items' 'i', 'functions' 'f' WHERE 'i'. 'itemid' = 'f'. 'itemid' AND 'f'. 'triggerid' = ?	74e3e0ae4565f56895d19349aabeb609
SELECT DISTINCTROW 'g'. 'graphid', 'g'. 'name', 'g'. 'width', 'g'. 'height', 'g'. 'yaxismin', 'g'. 'yaxismax', 'g'. 'show_work_period', 'g'. 'show_triggers', 'g'. 'graphtype', 'g'. 'show_legend', 'g'. 'show_3d', 'g'. 'percent_left', 'g'. 'percent_right', 'g'. 'ymin_type', 'g'. 'ymin_itemid', 'g'. 'ymax_type', 'g'. 'ymax_itemid' FROM 'graphs' 'g', 'graphs_items' 'gi', 'items' 'i', 'item_discovery' 'id' WHERE 'g'. 'graphid' = 'gi'. 'graphid' AND 'gi'. 'itemid' = 'i'. 'itemid' AND 'i'. 'itemid' = 'id'. 'itemid' AND 'id'. 'parent_itemid' = ?	d1b740728a17c7ee2aa3803f014716e6

Global Segments by Index

table_schema	table_name	index_name	rows_selected	select_latency(ms)	rows_inserted	insert_latency(ms)	rows_updated	update_latency(ms)	rows_deleted	delete_latency(ms)
zabbix	items	items_1	585415233	1450944.98	0	0.00	0	0.00	0	0.00
zabbix	functions	functions_2	505823862	1090726.28	0	0.00	0	0.00	0	0.00
zabbix	triggers	PRIMARY	155592583	315743.43	0	0.00	4989	310.49	33	0.00
zabbix	sessions	sessions_1	139895514	225833.32	0	0.00	0	0.00	0	0.00
zabbix	history	history_1	33319402	12555583.18	0	0.00	0	0.00	0	0.00
zabbix	triggers	triggers_1	7344414	3736.97	0	0.00	0	0.00	0	0.00
zabbix	functions	functions_1	5842956	29630.43	0	0.00	0	0.00	0	0.00
zabbix	items	PRIMARY	4745981	38771.97	0	0.00	17253	969.27	38	0.00
zabbix	profiles	profiles_1	3060775	3068.22	0	0.00	0	0.00	0	0.00
zabbix	hosts	PRIMARY	1964559	18271.65	0	0.00	196637	15952.45	0	0.00

Global Segments by Table

table_schema	table_name	rows_selected	select_latency(ms)	rows_inserted	insert_latency(ms)	rows_updated	update_latency(ms)	rows_deleted	delete_latency(ms)
zabbix	items	590163517	1489721.90	224	38.16	17253	969.27	38	12.32
zabbix	functions	511670313	1120375.71	184	14.17	0	0.00	0	0.00
zabbix	triggers	164295195	320493.35	179	17.94	4989	310.49	33	7.52
zabbix	sessions	139905233	226400.77	122	23.48	4484	136.56	0	0.00
zabbix	send_msg table	75936726	104831.80	457	25.85	12	0.52	0	0.00
zabbix	history	33319410	12555590.02	15306635	305310.99	0	0.00	0	0.00
zabbix	hosts	11875509	52650.13	1	0.08	196637	15952.45	0	0.00
zabbix	item_discovery	6727436	48322.15	187	15.51	1280413	17860.70	0	0.00
zabbix	escalations	227349	714.75	168	9.27	235	5.76	172	7.07
zabbix	history_uint	7887	6740.51	31112590	488224.83	0	0.00	0	0.00

InnoDB status

InnoDB activity (1)

Snap Time	Com_ins	Com_upd	Com_del	Com_sel	TPS	Buf_read_req	Hits%	InnoDB_rows_ins	InnoDB_rows_upd	InnoDB_rows_del	InnoDB_rows_read	InnoDB_log_fsyncs	InnoDB_log_wrn(k/s)	Threads_running
2015-08-04 01:25:02	6	100	66	16	221001	100	584	22	0	29400	11	87	4.00	
2015-08-04 01:49:02	6	100	64	16	262508	100	564	13	0	33041	11	82	3.00	
2015-08-04 02:13:02	6	90	63	15	265784	100	606	24	0	33723	11	89	3.00	
2015-08-04 02:37:02	6	100	67	16	265420	100	563	13	0	33632	12	84	3.00	
2015-08-04 03:01:02	6	100	67	16	265420	100	585	14	0	33678	11	89	4.00	
2015-08-04 03:25:03	6	100	66	16	219393	100	582	22	0	28924	11	87	4.00	
2015-08-04 03:49:02	6	100	65	16	264147	100	564	13	0	33564	12	84	3.00	
2015-08-04 04:13:02	6	100	64	16	265784	100	606	24	0	33723	11	91	3.00	
2015-08-04 04:37:02	6	100	67	16	262964	100	562	13	0	33223	11	84	3.00	
2015-08-04 05:01:03	6	100	66	16	265600	100	584	14	0	33700	12	87	3.00	
2015-08-04 05:25:02	6	100	66	16	221155	100	584	22	0	29420	12	88	4.00	
2015-08-04 05:49:03	6	100	65	16	262325	100	563	13	0	33018	11	88	3.00	
2015-08-04 06:13:03	6	100	64	16	265420	100	608	24	0	33723	11	90	3.00	
2015-08-04 06:37:02	6	100	67	16	265605	100	562	13	0	33656	11	84	3.00	
2015-08-04 07:01:02	6	100	66	16	264328	100	585	14	0	33314	12	88	3.00	
2015-08-04 07:25:02	6	100	67	16	220637	100	584	22	0	29309	11	88	4.00	
2015-08-04 07:49:03	6	100	64	16	263781	100	564	13	0	33518	11	83	3.00	
2015-08-04 08:13:02	6	90	63	15	264876	100	606	24	0	33337	11	89	3.00	
2015-08-04 08:37:03	6	100	67	16	264872	100	563	13	0	33563	12	84	3.00	
2015-08-04 09:01:02	6	100	65	16	265969	100	584	14	0	33747	11	86	3.00	

InnoDB activity (2)

Snap Time	InDb_pdata	InDb_pfree	InDb_pdirty	InDb_pflush	InDb_dreads	InDb_dwrites	InDb_dread(k/s)	InDb_dwritten(k/s)	his_list	Inlog_uflush	Inlog_uckpt	queries_inside	queries_queued	read_views
2015-08-04 01:25:02	4010771.00	8200.00	13.00	387	0	416	0	12492	1710.00	0	0	0.00	0.00	1.00
2015-08-04 01:49:02	4010731.00	8197.00	13.00	393	0	422	0	12652	1366.00	0	0	0.00	0.00	0.00
2015-08-04 02:13:02	4010573.00	8195.00	50.00	432	0	461	0	13926	1076.00	0	0	0.00	0.00	0.00
2015-08-04 02:37:02	4010362.00	8192.00	186.00	424	0	455	0	13676	791.00	0	0	0.00	0.00	0.00
2015-08-04 03:01:02	4010343.00	8178.00	1461.00	452	0	482	0	14563	471.00	0	0	0.00	0.00	0.00
2015-08-04 03:25:03	4010400.00	8211.00	0.00	468	0	498	0	15076	1434.00	0	0	0.00	0.00	1.00
2015-08-04 03:49:02	4010438.00	8198.00	1.00	458	0	488	0	14778	1350.00	0	0	0.00	0.00	0.00
2015-08-04 04:13:02	4010622.00	8191.00	1102.00	504	0	535	0	16247	1185.00	0	0	0.00	0.00	0.00
2015-08-04 04:37:02	4010884.00	8200.00	9.00	485	0	516	0	15633	763.00	0	0	0.00	0.00	0.00
2015-08-04 05:01:03	4010910.00	8198.00	24.00	508	0	538	0	16327	454.00	0	0	0.00	0.00	0.00
2015-08-04 05:25:02	4011169.00	8214.00	7.00	521	0	552	0	16782	1979.00	0	0	0.00	0.00	1.00
2015-08-04 05:49:03	4011637.00	8219.00	0.00	523	0	554	0	16850	1392.00	0	0	0.00	0.00	0.00
2015-08-04 06:13:03	4011865.00	8204.00	546.00	570	0	602	0	18340	1177.00	0	0	0.00	0.00	0.00
2015-08-04 06:37:02	4011903.00	8216.00	3.00	545	0	577	0	17556	788.00	0	0	0.00	0.00	0.00
2015-08-04 07:01:02	4012039.00	8191.00	1239.00	568	0	600	0	18272	460.00	0	0	0.00	0.00	0.00
2015-08-04 07:25:02	4012180.00	8211.00	388.00	580	0	612	0	18659	1740.00	0	0	0.00	0.00	1.00
2015-08-04 07:49:03	4012229.00	8205.00	0.00	568	0	599	0	18260	1284.00	0	0	0.00	0.00	0.00
2015-08-04 08:13:02	4012249.00	8192.00	1856.00	597	0	631	0	19219	1232.00	0	0	0.00	0.00	0.00
2015-08-04 08:37:03	4012239.00	8201.00	1499.00	572	0	604	0	18419	792.00	0	0	0.00	0.00	0.00
2015-08-04 09:01:02	4012202.00	8195.00	1.00	589	0	621	0	18923	438.00	0	0	0.00	0.00	0.00
2015-08-04 09:25:02	4012318.00	8195.00	11.00	591	0	624	0	19023	1706.00	0	0	0.00	0.00	1.00
2015-08-04 09:49:02	4012356.00	8200.00	6.00	577	0	609	0	18568	1401.00	0	0	0.00	0.00	0.00

OS load information

OS Load Info

Snap Time	load1	load5	load15
2015-08-04 01:01:02	1.56	1.24	1.18
2015-08-04 01:25:02	1.20	1.30	1.22
2015-08-04 01:49:02	1.24	1.41	1.31
2015-08-04 02:13:02	1.93	1.61	1.47
2015-08-04 02:37:02	1.37	1.28	1.27
2015-08-04 03:01:02	1.14	1.13	1.26
2015-08-04 03:25:03	0.78	1.21	1.25
2015-08-04 03:49:02	0.78	1.28	1.31
2015-08-04 04:13:02	1.40	1.28	1.25
2015-08-04 04:37:02	1.42	1.41	1.38
2015-08-04 05:01:03	1.76	1.41	1.31
2015-08-04 05:25:02	0.78	1.13	1.18
2015-08-04 05:49:03	1.19	1.13	1.18
2015-08-04 06:13:03	1.63	1.33	1.22
2015-08-04 06:37:02	1.31	1.44	1.29
2015-08-04 07:01:02	1.29	1.31	1.26
2015-08-04 07:25:02	1.12	1.35	1.27
2015-08-04 07:49:03	0.65	0.85	0.96
2015-08-04 08:13:02	1.47	1.19	1.07
2015-08-04 08:37:03	0.83	1.12	1.11
2015-08-04 09:01:02	1.40	1.11	1.09
2015-08-04 09:25:02	1.86	1.40	1.16
2015-08-04 09:49:02	0.94	0.93	1.01
2015-08-04 10:13:02	0.86	0.94	1.00
2015-08-04 10:37:02	0.88	1.11	1.06

OS CPU Info

Snap Time	user	system	idle	iowait
2015-08-04 01:01:02	12.00	1.00	87.00	0.00
2015-08-04 01:25:02	6.00	0.00	94.00	0.00
2015-08-04 01:49:02	3.00	1.00	96.00	0.00
2015-08-04 02:13:02	4.00	1.00	95.00	0.00
2015-08-04 02:37:02	4.00	1.00	96.00	0.00
2015-08-04 03:01:02	12.00	1.00	86.00	0.00
2015-08-04 03:25:03	6.00	0.00	94.00	0.00
2015-08-04 03:49:02	3.00	1.00	97.00	0.00
2015-08-04 04:13:02	3.00	1.00	96.00	0.00
2015-08-04 04:37:02	2.00	1.00	97.00	0.00
2015-08-04 05:01:03	11.00	2.00	86.00	0.00
2015-08-04 05:25:02	6.00	0.00	94.00	0.00
2015-08-04 05:49:03	3.00	1.00	96.00	0.00
2015-08-04 06:13:03	8.00	1.00	92.00	0.00
2015-08-04 06:37:02	4.00	1.00	96.00	0.00
2015-08-04 07:01:02	12.00	2.00	86.00	0.00
2015-08-04 07:25:02	9.00	1.00	91.00	0.00
2015-08-04 07:49:03	6.00	1.00	93.00	0.00
2015-08-04 08:13:02	10.00	1.00	89.00	0.00
2015-08-04 08:37:03	7.00	1.00	92.00	0.00
2015-08-04 09:01:02	16.00	2.00	82.00	0.00
2015-08-04 09:25:02	11.00	1.00	88.00	0.00
2015-08-04 09:49:02	8.00	1.00	90.00	0.00
2015-08-04 10:13:02	8.00	1.00	90.00	0.00
2015-08-04 10:37:02	8.00	1.00	90.00	0.00
2015-08-04 11:01:02	19.00	5.00	77.00	0.00
2015-08-04 11:25:02	8.00	1.00	91.00	0.00

OS IO Info

Snap Time	rd_ios_s	wr_ios_s	rkbs	wkbs	queue	svc_t	busy
2015-08-04 01:01:02	0.99	2479.57	15.91	47347.53	0.24	0.05	12.03
2015-08-04 01:25:02	0.00	304.07	0.00	3032.83	0.03	0.06	1.88
2015-08-04 01:49:02	0.00	239.01	0.00	1277.36	0.03	0.11	2.58
2015-08-04 02:13:02	0.00	1703.23	0.00	42044.67	0.13	0.05	7.94
2015-08-04 02:37:02	0.00	822.74	0.00	18840.05	0.06	0.04	3.07
2015-08-04 03:01:02	0.00	1606.30	0.00	39756.65	0.49	0.06	8.95
2015-08-04 03:25:03	0.00	262.05	0.00	1870.95	0.02	0.06	1.48
2015-08-04 03:49:02	0.00	1449.90	0.00	34793.57	1.45	0.05	7.92
2015-08-04 04:13:02	0.00	1673.57	0.00	39702.43	0.18	0.05	7.62
2015-08-04 04:37:02	0.00	249.40	0.00	1726.02	0.02	0.05	1.19
2015-08-04 05:01:03	0.00	2267.11	0.00	59400.00	0.56	0.05	10.37
2015-08-04 05:25:02	0.00	605.18	0.00	13379.19	0.07	0.06	3.36
2015-08-04 05:49:03	0.00	285.15	0.00	1893.07	0.02	0.06	1.58
2015-08-04 06:13:03	0.00	302.10	0.00	2238.55	0.02	0.06	1.78
2015-08-04 06:37:02	0.00	276.27	0.00	1892.17	0.02	0.05	1.49
2015-08-04 07:01:02	0.00	2630.00	0.00	68060.00	0.65	0.08	20.30
2015-08-04 07:25:02	0.00	480.40	0.00	6832.29	0.03	0.04	1.98
2015-08-04 07:49:03	0.00	434.11	0.00	4712.58	0.02	0.03	1.39
2015-08-04 08:13:02	0.00	338.46	0.00	2294.79	0.02	0.04	1.39
2015-08-04 08:37:03	0.00	295.03	0.00	1982.78	0.02	0.05	1.59
2015-08-04 09:01:02	0.00	2652.37	0.00	70335.34	1.92	0.07	18.31
2015-08-04 09:25:02	0.00	1122.92	0.00	27463.24	0.32	0.06	7.16
2015-08-04 09:49:02	0.00	938.87	0.00	19853.82	0.12	0.06	5.38
2015-08-04 10:13:02	0.00	334.91	0.00	1884.22	0.03	0.06	2.09

OS Other Info

Snap Time	swap_in	swap_out	net_rcv	net_snd	file_system	total_mb	used_mb	used_pct	mount_point
2015-08-04 01:01:02	0.00	0.00	1427698.00	24004410.00	/dev/sdb	2814021.00	1114461.00	42.00	/storage/sas
2015-08-04 01:25:02	0.00	0.00	1062764.00	3596168.00	/dev/sdb	2814021.00	1114625.00	42.00	/storage/sas
2015-08-04 01:49:02	0.00	0.00	1049206.00	3670596.00	/dev/sdb	2814021.00	1114765.00	42.00	/storage/sas
2015-08-04 02:13:02	0.00	0.00	1204769.00	7358310.00	/dev/sdb	2814021.00	1114935.00	42.00	/storage/sas
2015-08-04 02:37:02	0.00	0.00	1076846.00	3620838.00	/dev/sdb	2814021.00	1115091.00	42.00	/storage/sas
2015-08-04 03:01:02	0.00	0.00	1190242.00	18354252.00	/dev/sdb	2814021.00	1115265.00	42.00	/storage/sas
2015-08-04 03:25:03	0.00	0.00	797290.00	2645868.00	/dev/sdb	2814021.00	1115431.00	42.00	/storage/sas
2015-08-04 03:49:02	0.00	0.00	643520.00	2193004.00	/dev/sdb	2814021.00	1115578.00	42.00	/storage/sas
2015-08-04 04:13:02	0.00	0.00	710202.00	2416540.00	/dev/sdb	2814021.00	1115735.00	42.00	/storage/sas
2015-08-04 04:37:02	0.00	0.00	686102.00	2358418.00	/dev/sdb	2814021.00	1115876.00	42.00	/storage/sas
2015-08-04 05:01:03	0.00	0.00	890889.00	11125664.00	/dev/sdb	2814021.00	1116043.00	42.00	/storage/sas
2015-08-04 05:25:02	0.00	0.00	923225.00	3165885.00	/dev/sdb	2814021.00	1116202.00	42.00	/storage/sas
2015-08-04 05:49:03	0.00	0.00	1020677.00	3541860.00	/dev/sdb	2814021.00	1116399.00	42.00	/storage/sas
2015-08-04 06:13:03	0.00	0.00	1092412.00	3713521.00	/dev/sdb	2814021.00	1116585.00	42.00	/storage/sas
2015-08-04 06:37:02	0.00	0.00	1448858.00	4999546.00	/dev/sdb	2814021.00	1116721.00	42.00	/storage/sas
2015-08-04 07:01:02	0.00	0.00	1324664.00	13973623.00	/dev/sdb	2814021.00	1116880.00	42.00	/storage/sas
2015-08-04 07:25:02	0.00	0.00	1628176.00	5648526.00	/dev/sdb	2814021.00	1117027.00	42.00	/storage/sas
2015-08-04 07:49:03	0.00	0.00	1875981.00	6562944.00	/dev/sdb	2814021.00	1117167.00	42.00	/storage/sas
2015-08-04 08:13:02	0.00	0.00	1877895.00	6679925.00	/dev/sdb	2814021.00	1117312.00	42.00	/storage/sas
2015-08-04 08:37:03	0.00	0.00	2254958.00	7989303.00	/dev/sdb	2814021.00	1117455.00	42.00	/storage/sas
2015-08-04 09:01:02	0.00	0.00	2694873.00	26211060.00	/dev/sdb	2814021.00	1117585.00	42.00	/storage/sas
2015-08-04 09:25:02	0.00	0.00	2592226.00	9317923.00	/dev/sdb	2814021.00	1117740.00	42.00	/storage/sas
2015-08-04 09:49:02	0.00	0.00	2773763.00	9895831.00	/dev/sdb	2814021.00	1117916.00	42.00	/storage/sas
2015-08-04 10:13:02	0.00	0.00	2669344.00	9528595.00	/dev/sdb	2814021.00	1118070.00	42.00	/storage/sas
2015-08-04 10:37:02	0.00	0.00	2831155.00	10234577.00	/dev/sdb	2814021.00	1118208.00	42.00	/storage/sas

Slow SQL Monitor

TOP SLOW SQL

checksum	db name	ts_min	ts_max	ts_cnt	Query_time_sum	Query_time_pct_95	Lock_time_sum	Lock_time_pct_95	Rows_sent_sum	Rows_sent_pct_95	sample
2421751182617816582	zabbix	2015-08-04 23:30:44	2015-08-05 00:25:44	12	607.589	44.6002	0.03539	0.00329173	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 12:30:46	2015-08-04 13:25:44	12	533.383	46.8302	0.037328	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 17:30:46	2015-08-04 18:25:45	12	529.305	44.6002	0.039516	0.00381058	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 19:30:45	2015-08-04 20:25:44	12	528.068	44.6002	0.033535	0.00329173	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 14:30:46	2015-08-04 15:25:48	12	526.821	44.6002	0.036781	0.00381058	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 10:30:44	2015-08-04 11:25:46	12	526.695	44.6002	0.036818	0.00345631	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 22:30:46	2015-08-04 23:25:43	12	526.694	44.6002	0.035641	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 13:30:47	2015-08-04 14:25:45	12	524.782	44.6002	0.035568	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 08:30:47	2015-08-04 09:25:45	12	524.55	44.6002	0.038491	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 21:30:44	2015-08-04 22:25:45	12	524.42	44.6002	0.037708	0.00345631	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 16:30:45	2015-08-04 17:25:44	12	524.251	44.6002	0.036828	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 03:30:45	2015-08-04 04:25:46	12	524.158	44.6002	0.035232	0.00345631	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 09:30:45	2015-08-04 10:25:44	12	523.898	42.4764	0.039511	0.00400111	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 04:30:45	2015-08-04 05:25:43	12	523.583	42.4764	0.034931	0.00329173	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 07:30:46	2015-08-04 08:25:43	12	521.955	44.6002	0.037298	0.00362913	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 20:30:44	2015-08-04 21:25:44	12	521.085	44.6002	0.042383	0.00400111	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 02:30:46	2015-08-04 03:25:45	12	519.995	44.6002	0.033825	0.00329173	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 18:30:44	2015-08-04 19:25:44	12	519.723	42.4764	0.034891	0.00329173	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 11:30:46	2015-08-04 12:25:44	12	519.498	42.4764	0.041464	0.00381058	0	0	insert into tmp_his ...
2421751182617816582	zabbix	2015-08-04 01:30:47	2015-08-04 02:25:44	12	517.878	42.4764	0.033851	0.00313498	0	0	insert into tmp_his ...

TOP SQL DETAIL

checksum	sql detail
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)
2421751182617816582	insert into tmp_his select h.hostid,i.itemid,hi.value,hi.clock,i.name,h.name from hosts h, items i,(select a.itemid,a.value,a.clock from history a,(select max(clock) clock,itemid from history group by itemid) b where a.itemid=b.itemid and a.clock=b.clock) hi where h.hostid=i.hostid and i.itemid=hi.itemid and i.key_ in (system.cpu.load[percpu,avg1],iostat[iops],system.cpu.util[,idle],vm.memory.usage)

3. How to configure MongoDB AWR

We use a python script to collect data, then store them in a remote mongodb database.

```
> db.serverstatus.findOne()
{
  "_id" : ObjectId("55c240d6284bbc533126fa5c"),
  "load5m" : "0.12",
  "swapout" : 0,
  "us" : "0.08",
  "swapin" : 0,
  "mem" : {
    "resident" : 12383,
    "supported" : true,
    "virtual" : 42638,
    "mappedWithJournal" : 37204,
    "mapped" : 18602,
    "bits" : 64
  },
  "iowait" : "0.00",
  "opcounter" : {
    "getmore" : 19137117,
    "insert" : 2147457,
    "update" : 17379335,
    "command" : 418051044,
    "query" : 36625737,
    "delete" : 261
  },
  "netin" : 2272,
  "indexCounters" : {
```



```
"missRatio" : 0,  
"resets" : 0,  
"hits" : 99783598,  
"misses" : 0,  
"accesses" : 99783687  
},  
"recordStats" : {  
  "admin" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 0  
  },  
  "fencing" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 1  
  },  
  "project211_kdb" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 0  
  },  
  "pageFaultExceptionsThrown" : 0,  
  "local" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 1  
  },  
  "xiaoan_server" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 1  
  },  
  "test" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 0  
  },  
  "drugstore" : {  
    "pageFaultExceptionsThrown" : 0,  
    "accessesNotInMemory" : 0  
  },  
  "accessesNotInMemory" : 3  
},  
"connections" : {  
  "current" : 575,  
  "available" : 4425,  
  "totalCreated" : NumberLong(66615431)  
},  
"locks" : {
```

```
"users" : {
  "timeAcquiringMicros" : {
    "r" : NumberLong(16495407),
    "w" : NumberLong(0)
  },
  "timeLockedMicros" : {
    "r" : NumberLong(32907102),
    "w" : NumberLong(0)
  }
},
"drugstore" : {
  "timeAcquiringMicros" : {
    "r" : NumberLong(195053733),
    "w" : NumberLong(34621036)
  },
  "timeLockedMicros" : {
    "r" : NumberLong("34260300834"),
    "w" : NumberLong("2700184145")
  }
},
"admin" : {
  "timeAcquiringMicros" : {
    "r" : NumberLong(312226319),
    "w" : NumberLong(0)
  },
  "timeLockedMicros" : {
    "r" : NumberLong("5454746661"),
    "w" : NumberLong(0)
  }
},
"fencing" : {
  "timeAcquiringMicros" : {
    "r" : NumberLong(111984730),
    "w" : NumberLong(1885901115)
  },
  "timeLockedMicros" : {
    "r" : NumberLong(201735902),
    "w" : NumberLong(131838258)
  }
},
"project211_kdb" : {
  "timeAcquiringMicros" : {
    "r" : NumberLong(503695296),
    "w" : NumberLong(75959539)
```

```
    },  
    "timeLockedMicros" : {  
      "r" : NumberLong("164142432544"),  
      "w" : NumberLong(910038857)  
    }  
  },  
  "system" : {  
    "timeAcquiringMicros" : {  
      "r" : NumberLong(160),  
      "w" : NumberLong(0)  
    },  
    "timeLockedMicros" : {  
      "r" : NumberLong(789),  
      "w" : NumberLong(0)  
    }  
  },  
  "ban" : {  
    "timeAcquiringMicros" : {  
      "r" : NumberLong(162497),  
      "w" : NumberLong(0)  
    },  
    "timeLockedMicros" : {  
      "r" : NumberLong(214824),  
      "w" : NumberLong(0)  
    }  
  },  
  "xiaoan_server" : {  
    "timeAcquiringMicros" : {  
      "r" : NumberLong(178739907),  
      "w" : NumberLong(19352967)  
    },  
    "timeLockedMicros" : {  
      "r" : NumberLong(471343897),  
      "w" : NumberLong(91364752)  
    }  
  },  
  "user" : {  
    "timeAcquiringMicros" : {  
      "r" : NumberLong(83301),  
      "w" : NumberLong(0)  
    },  
    "timeLockedMicros" : {  
      "r" : NumberLong(212237),  
      "w" : NumberLong(0)  
    }  
  }  
}
```

```
}  
},  
"test" : {  
  "timeAcquiringMicros" : {  
    "r" : NumberLong(82513564),  
    "w" : NumberLong(9)  
  },  
  "timeLockedMicros" : {  
    "r" : NumberLong(171626405),  
    "w" : NumberLong(75)  
  }  
},  
"local" : {  
  "timeAcquiringMicros" : {  
    "r" : NumberLong(1103116414),  
    "w" : NumberLong(134542030)  
  },  
  "timeLockedMicros" : {  
    "r" : NumberLong("7237564324"),  
    "w" : NumberLong(1626238390)  
  }  
},  
"ba" : {  
  "timeAcquiringMicros" : {  
    "r" : NumberLong(1993),  
    "w" : NumberLong(0)  
  },  
  "timeLockedMicros" : {  
    "r" : NumberLong(2892),  
    "w" : NumberLong(0)  
  }  
}  
},  
"idle" : 100,  
"sys" : "0.21",  
"free" : "103593664",  
"sertime" : ISODate("2015-08-06T00:59:01Z"),  
"netout" : 3453,  
"load1m" : "0.15"
```

We will trace slow log, and show slow queries in HTML files

```
rs1:PRIMARY> db.system.profile.find( { millis : { $gt : 1 } }).pretty().limit(1)
```

```
{
  "op" : "getmore",
  "ns" : "local.oplog.rs",
  "cursorid" : 288482469024,
  "ntoreturn" : 0,
  "keyUpdates" : 0,
  "numYield" : 5,
  "lockStats" : {
    "timeLockedMicros" : {
      "r" : NumberLong(612),
      "w" : NumberLong(0)
    },
    "timeAcquiringMicros" : {
      "r" : NumberLong(171),
      "w" : NumberLong(3)
    }
  },
  "nreturned" : 0,
  "responseLength" : 20,
  "millis" : 5012,
  "execStats" : {
  },
  "ts" : ISODate("2015-08-06T04:31:14.083Z"),
  "client" : "10.128.6.26",
  "allUsers" : [
    {
      "user" : "__system",
      "db" : "local"
    }
  ],
  "user" : "__system@local"
}
```

```
01 01 * * * sh /usr/local/dbadmin/monitor/mongoawr_jkdb.sh >>
/storage/sas/mongoddb/log/mongoawr.log
```

We use a cron-job to gather html report every day.

Host information including (time range, hostname, and memory info)

Mysql WorkLoad Report

Host Name	Port	Version	Pid	Starttime
a1-dba-mongo01a.hz	27017	2.6.2	22148	Mon Jul 21 18:35:16.097

Time Line

	Begin Time	Connect
Begin Time:	2015-08-05 00:00:00	575
End Time:	2015-08-06 00:00:00	575

Report Summary

Memory Sizes

	Begin Time	End Time
Res(M):	12383	12383
Mapped(M):	18602	18602
Vsize(M):	42638	42638

Profile information

Opcounter Profile

	Sum	Per Second
getmore	64907.0	1081.78
command	717505.0	11958.42
insert	328.0	5.47
update	15677.0	261.28
query	240394.0	4006.57
delete	0.0	0.00

RecordStats Profile

dbname	accessesNotInMemory	pageFaultExceptionsThrown
xiaoaan_server	0	0
fencing	0	0
drugstore	0	0
project211_kdb	0	0

LockStats Profile

dbname	Read Wait(ms)	Per Second	Write Wait(ms)	Per Second	Read Lock(ms)	Per Second	Write Lock(ms)	Per Second
xiaoaan_server	504	8.00	1	0.00	1320	22.00	65	1.00
fencing	274	4.00	0	0.00	546	9.00	13	0.00
drugstore	711	11.00	70	1.00	21890	364.00	3726	62.00
project211_kdb	1384	23.00	0	0.00	9976	166.00	0	0.00

Initial parameter

Parameter

Parameter Name	value
storage	{u'repairPath': u'/storage/sas/mongodb/data', u'journal': {u'enabled': True}, u'syncPeriodSecs': 10.0, u'dbPath': u'/storage/sas/mongodb/data', u'directoryPerDB': True}
operationProfiling	{u'slowOpThresholdMs': 500, u'mode': u'slowOp}
replication	{u'replSet': u'rs1}
systemLog	{u'path': u'/storage/sas/mongodb/log/mongod_data.log', u'destination': u'file', u'logAppend': True, u'quiet': True}
net	{u'unixDomainSocket': {u'pathPrefix': u'/storage/sas/mongodb/data'}, u'http': {u'enabled': False}, u'port': 27017, u'maxIncomingConnections': 5000}
processManagement	{u'fork': True, u'pidFilePath': u'/storage/sas/mongodb/data/mongod.pid}
config	/storage/sas/mongodb/mongod.cnf
security	{u'keyFile': u'/storage/sas/mongodb/data/rs1.keyfile', u'authorization': u'enabled'}

Slow SQL and OS info

Slow SQL Statistics

Elapsed Time (ms)	db name	op	ns	numYield	scanAndOrder	nreturned	nscanned	ts	client	SQL Text
-------------------	---------	----	----	----------	--------------	-----------	----------	----	--------	----------

OS Statistics

Time	min/idle	max/sys	max/us	sum/swapin	sum/swapout	min/free	max/iowait	max/load1m	max/load5m	avg/netin	avg/netout	snapcount
2015-08-06 01:00:00	99	0.04	0.54	0	0	103586368	0.00	0.16	0.12	2796.0	4022.0	1
2015-08-06 00:00:00	98	0.21	1.04	0	0	103590296	0.00	0.50	0.18	10216.1	157912.08	60
2015-08-05 23:00:00	99	0.21	0.58	0	0	103589688	0.00	0.76	0.30	5509.12	68830.22	60
2015-08-05 22:00:00	99	0.25	0.21	0	0	103591040	0.00	0.68	0.42	5605.62	66945.98	60
2015-08-05 21:00:00	99	0.21	0.71	0	0	103590856	0.00	0.95	0.54	8552.85	107991.38	60
2015-08-05 20:00:00	99	0.33	0.54	0	0	103592176	0.00	0.69	0.31	8290.13	74612.98	60
2015-08-05 19:00:00	99	0.29	0.88	0	0	103591752	0.00	0.93	0.40	10307.02	158137.55	60
2015-08-05 18:00:00	99	0.29	0.58	0	0	103592048	0.00	0.56	0.31	5765.22	70911.23	60
2015-08-05 17:00:00	99	0.21	0.33	0	0	103593368	0.00	0.47	0.31	6086.9	69948.12	60
2015-08-05 16:00:00	99	0.21	0.29	0	0	103594920	0.00	0.80	0.51	6320.87	69443.9	60
2015-08-05 15:00:00	100	0.21	0.08	0	0	103594120	0.00	1.28	0.63	5867.53	68286.7	60
2015-08-05 14:00:00	99	0.21	0.08	0	0	103594528	0.00	0.97	0.48	6444.18	68978.87	60
2015-08-05 13:00:00	98	0.21	1.04	0	0	103595936	0.00	1.27	0.70	10525.98	159751.15	60
2015-08-05 12:00:00	99	0.29	0.67	0	0	103596912	0.00	0.54	0.28	7725.52	74603.42	60
2015-08-05 11:00:00	99	0.21	0.25	0	0	103597568	0.00	0.56	0.25	5344.98	66675.08	60
2015-08-05 10:00:00	99	0.21	0.08	0	0	103598432	0.00	1.36	0.53	5664.45	70204.38	60
2015-08-05 09:00:00	100	0.33	0.12	0	0	103599232	0.00	0.53	0.36	5266.1	66498.72	60

All of scripts have already been uploaded to github.

<https://github.com/ylouis83>