

Alerting With MySQL and Nagios



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What is Monitoring?



- Threshold alerting
- Graphing/trending

Why Monitor?



- Problem alerting
- Find patterns
- Early warning for potential issues

What to Alert?



- Problems you can fix
 - max_connections
 - long running queries
 - locked queries
 - backup disk space

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Open Source Alerting Solutions



- Nagios
- Cacti
- Munin
- Zabbix
- Zenoss
- OpenNMS

Commercial Alerting Solutions



- MySQL Enterprise Monitor
- MONyog
- Oracle Grid Control
- Hyperic HQ



Best to use what you already have

Nagios is great because...



...anyone can write a plugin

The problem with Nagios...



...anyone can write a plugin

Nagios Flexibility



- Templates
- Page after x failures
 - Network, backup disk
- Time between checks
- Escalations
- Dependencies
- Time periods

Official Nagios Plugins for MySQL



- `check_mysql`
- `check_mysql_query`

check_mysql



- db connectivity
- slave running
- slave lag using `seconds_behind_master`

check_mysql_query



- Checks the output of a query is within a certain range (numerical)

Third party plugins



	System vars	Status vars	Caching	Calculations
check_mysql	yes	yes	no	no
check_mysql (standard)	no	yes	no	no
check_mysql_d_status	no	yes	no	no
check_mysql_stats	yes	no	yes	no
check_mysql_d	no	many	no	no
check_mysql_health	yes	yes	no	Hard-coded
check_mysql	yes	yes	no	Hard-coded



“Let us know what you'd like to see!”

What I wanted



	System vars	Status vars	Caching	Calculations
mysql_health_check.pl	yes	yes	yes	flexible

Caching



- Save information to a file
 - `--cache-dir /path/to/dir/`
 - Use the file instead of connecting again
- `--max-cache-age <seconds>`
- `--no-cache` to force connection

--mode=varcomp



- `%metadata{varstatus}`
- `SHOW GLOBAL VARIABLES`
- `SHOW GLOBAL STATUS`
- `--expression` allows word replacement
- `--warning` `--critical` are flexible

Sample Command Definition



```
define command {  
    command_name      check_mysql_tmp_tables  
    command_line      $USER1$/mysql_health_check.pl  
    --hostname $HOSTADDRESS$ --user myuser --password  
    mypass  
    --cache-dir=/var/lib/nagios/mysql_cache  
    --max-cache-age=300  
    --mode=varcomp  
    --expression=  
    "Created_tmp_tables/Uptime_since_flush_status"  
    --warning=">(8/60)" --critical=">(10/60)"  
}
```


Sample Service Definition



```
define service {  
    use                generic-service  
    host_name          HOSTNAME  
    service_description MySQL Temp Tables  
    check_command      check_mysql_tmp_tables  
}
```

--mode=long-query
--mode=locked-query



- %metadata{proc_list}
- SHOW FULL PROCESSLIST

Rates



- Compare to last run
- `mode=lastrun-varcomp`

Sample Command Definition



```
define command {  
    command_name      check_mysql_locked_queries  
    command_line      $USER1$/mysql_health_check.pl  
    --hostname $HOSTADDRESS$ --user myuser  
    --password mypass  
    --cache-dir=/var/lib/nagios/mysql_cache  
    --max-cache-age=300  
    --mode=locked-query  
    --warning=$ARG1$ --critical=$ARG2$  
}
```


Extending Information



```
sub fetch_server_meta_data {}
```

add a new hash key to %metadata

```
$metadata{innodb_status} =  
$dbh->selectall_arrayref(  
q|SHOW ENGINE INNODB STATUS|);
```

Currently Unused



- `%metadata{innodb_status}`
 - SHOW ENGINE INNODB STATUS
- `%metadata{master_status}`
 - SHOW MASTER STATUS
- `%metadata{slave_status}`
 - SHOW SLAVE STATUS

“Standard” checks using this plugin



High Priority:

- % max connections

--expression

'Threads_connected/max_connections*100'

- locked queries
- long-running queries
- InnoDB enabled

--expression

“have_innodb” --comparison="ne 'YES'”

“Standard” checks using this plugin



% of sleeping connections

connected, # running, # max connections

```
--expression="(Threads_connected-  
Threads_running)/max_connections * 100"  
--comparison=">$ARG1$"
```

slaves set as read-only, masters not

```
--expression "read_only" --comparison="ne  
'YES'"
```


Limitations



- One check/calculation per Nagios service
 - Many variables
 - Cache output
- Does not output for performance data

Nagios Plugin for Partitions



```
table_partitions.pl --host  
--user --pass  
--database --table  
--range [days|weeks|months]  
--verify #
```

Nagios Plugin for Partitions



```
table_partitions.pl --host db1.mozilla.com  
--user nagiosuser --pass nagiospass  
--database addons --table user_addons  
--range months  
--verify 3
```

Other monitoring tools



Sar, ksar
lostat
Vmstat
Netstat
pt-config-diff
pt-stalk

Download Today!



www.palominodb.com->Community->Projects

scabral@mozilla.com

OurSQL podcast (oursql.com)



MySQL Administrator's Bible

youtube.com/tcation

<http://planet.mysql.com>