

CMON – Cluster Monitoring

CMONX - cluster enterprise monitor

DASHBOARD TOOLS LIBRARY CONTACT

Dashboard

- Updates and Information
- Blogs

Monitored Clusters

cluster id	cluster name	status	memory (dm / lm)	last reported	actions
2	name your cluster!	STARTED	48.70 % / 31.75 %	2009-10-30 20:43:09	view manage

Pending Alarms

No pending alarms!

Updates and

Monitored Clusters

cluster id	cluster name	status	memory (dm / lm)	last reported	actions
2	name your cluster!	STARTED	48.70 % / 31.73 %	2009-10-30 20:44:23	view manage

Pending Alarms

ms!

Cluster - 2

Storage Layer

- cluster log
- cluster statistics
- memory usage
- backup

SQL Layer

- list mysql servers
- mysql statistics (all)

Administration

- add mysql
- remove mysql

or Cluster '2'

mysql cluster statistics

per. sec

80 k
60 k
40 k
20 k
0

Wed 12:00 Thu 00:00

Viewing MySQL servers for cluster '2'

nodeid	hostname	port	status	replication role	last reported	details	last error
32	127.0.0.1	3306	Connected	none	2009-10-30 20:50:19	view graphs	

Statistics for Cluster '2'

Statistics for mysqld (127.0.0.1:3306)

Last 24 hours

mysql statistics

per. sec

200
100
0

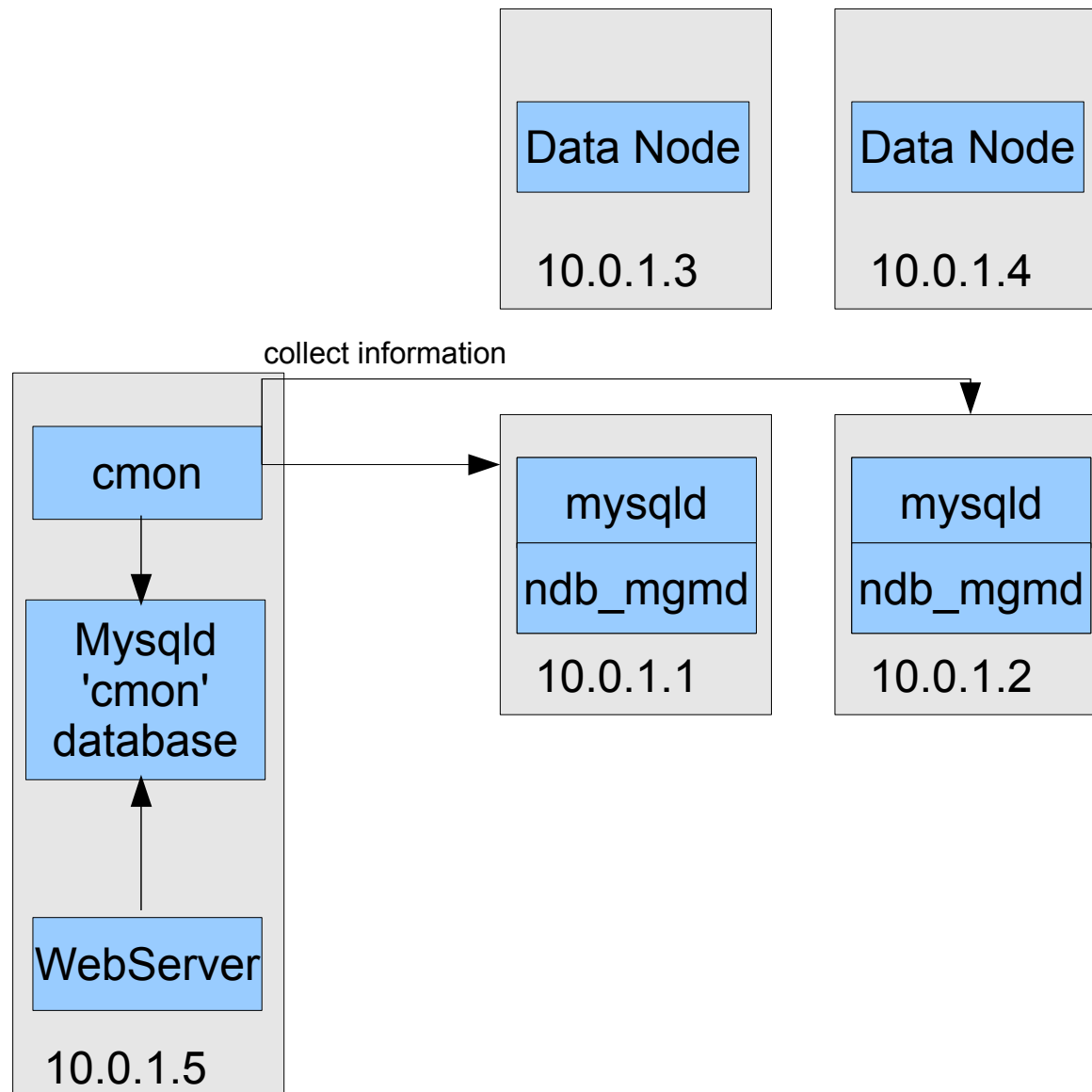
Wed 12:00 Thu 00:00

	Current	Avg	Max	Min
COM_SELECT	1	17	201	1
COM_INSERT	4	5	35	1
COM_UPDATE	5	5	6	1
COM_DELETE	1	1	1	0
COM_REPLACE	12	12	13	1

CMON – Cluster Monitoring

- You need the following to install CMON:
 - MySQL Server for storing the CMON database
 - CMON collects information from the data nodes, the management server and the mysql servers connected to the cluster and stores this in the CMON database.
 - Web Server (tested with Apache)
 - The web front end presents data from the CMON database.
 - RRDTOOL
 - Generates graphs
 - MySQL Cluster

CMON – Cluster Monitoring example deployment



The cmon agent on 10.0.1.5 logs information to the mysql server on 10.0.1.5.

The mysql servers on 10.0.1.1 and 10.10.1.2 are connected to the cluster.

A web server on 10.10.1.5 presents the information.

CMON – Cluster Monitoring

- CMON comes in both source and binary distributions
- Source distributions
 - should work for all supported platforms of MySQL Cluster
 - Released often
- Binary distributions
 - Only for Linux at the moment (end of 2009)
 - Released with every binary release of MySQL Cluster 7.0
 - Contact info@severalnines.com if you need a build for a particular release.

CMON – Preparations

- You must have one free [mysqld] slot in order start CMON:

```
cmonx johan$ ndb_mgm -e show
```

```
Connected to Management Server at: localhost:1186
```

```
Cluster Configuration
```

```
-----
```

```
[ndbd(NDB)] 2 node(s)
```

```
...
```

```
[mysqld(API)] 6 node(s)
```

```
...
```

```
id=6 (not connected, accepting connect from localhost) <--- free slot!
```

- If you don't have a free mysqld slot, then you must add one to config.ini and restart management servers and data nodes.
 - See the MySQL Reference Manual (<http://dev.mysql.com/doc/refman/5.1/en/mysql-cluster-rolling-restart.html>)

CMON – Cluster Monitoring

Building from source

- Download the source from <http://www.severalnines.com/cmon/>
- `tar xvfz cmon-1.0.0.tar.gz`
- `cd cmon-1.0.0`
- `export PATH=/usr/local/mysql/mysql/bin:$PATH`
 - You must have `mysql_config` on the PATH!
- You must have `gcc/g++/make/autoconf/automake` installed
- `./configure --prefix=/usr/local/cmon`
 - Make sure yo add `/cmon` to the prefix!
- `make`
- `make install`
- See “Installing CMON”

CMON – Cluster Monitoring

Binary distributions

- Download the binary distribution from <http://www.severalnines.com/cmon/>
- `Cd /usr/local/`
- `tar xvfz cmon-1.0.0-<platform etc>.tar.gz`
- `ln -s cmon-1.0.0-<platform etc> cmon`
- `cd cmon`
- See “Installing CMON”

CMON – Cluster Monitoring

Installing CMON

- `cd /usr/local/cmon`
- `cd bin`
- `./cmon_install.sh`
 - Answer all the questions
 - `../etc/cmon.conf` will be written
- Issue the GRANTs that you are recommended to do
 - The next couple of slides are more about GRANTs and setting up RRD

CMON – Cluster Monitoring

Starting CMON

- If you have installed using `cmon_install.sh` script:
 - `/etc/init.d/cmon start`
- If manual install:
- You may have to set the `LD_LIBRARY_PATH` - e.g.
 - `export LD_LIBRARY_PATH=/usr/local/mysql/mysql/lib/mysql:
$LD_LIBRARY_PATH`
- `sbin/cmon -h10.0.1.5 -P3333 -ppassword \
-c 10.0.1.1:1186;10.0.1.2:1186 \
--nodaemon`
 - `'--nodaemon'` is good for testing.

CMON – Cluster Monitoring

Starting CMON

- Start MySQL Cluster
- Decide which mysqld should have the 'cmon' database
 - Example: mysqld has ip=10.0.1.5, port=3333
 - Connectstring to cluster is 10.0.1.1:1186;10.0.1.2:1186
- Allow 'cmon' to connect to the mysqld on 10.0.1.5
 - GRANT CREATE, SELECT, INSERT,UPDATE,DELETE ON cmon.* TO 'cmon'@'10.0.1.5' IDENTIFIED BY 'password';
 - GRANT SUPER ON *.* TO 'cmon'@'10.0.1.5' IDENTIFIED BY 'password';
- Cmon does not use sockets to connect to mysql serves – only by IP so if you run *mysqld* and *cmon* on localhost you need to grant with '127.0.0.1' instead of 'localhost'

CMON – Cluster Monitoring

Web interface

- If you did not install the www files using the `cmon_install.sh` script you need to copy this manually.
 - Copy `cmon-1.0.0/www/cmon/` to WWWROOT!
 - Common WWWROOTs:
 - Suse : `/srv/www/htdocs`
 - Red Hat : `/var/www/`
 - Fedora core 9 : `/var/www/html`
 - Debian/Ubuntu : `/var/www/`
 - BSD : `/usr/local/www/`
 - Mac OS X : `/Library/WebServer/Documents/`
 - Thus you should do (e.g):
 - `sudo cp -r cmon-0.99b/www/cmon /var/www/`
 - `sudo chmod 744 /var/www/cmon/config/`
 - The `chmod` is needed for the setup to write config data.

CMON – Cluster Monitoring

Web interface

- You also need to GRANT the webserver to connect to the mysqld having the cmon database.
 - Consider apache running on '10.0.1.5'
 - GRANT insert,select,update,delete ON cmon.* TO 'cmon'@'10.0.1.5' identified by '<password>'
- Point your web browser to <http://10.10.1.5/cmon/setup.php> to run the setup
 - Enter the connection information to connect to the cmon database!
 - I do believe firefox will render the page better than IE, since I don't have IE.

CMON – Cluster Monitoring Graphs

- Install RRDTOOL
 - <http://www.cyberciti.biz/faq/howto-install-rrdtool-on-rhel-linux/>
 - yum install rrdtool
 - apt-get install rrdtool
- Edit etc/cmon.conf
 - Using the scripts/cmon_install.sh script you can also “edit” this file (ports, passwords etc).
- Verify the scripts are working
 - ./create_rrd.sh ../etc/cmon.conf
 - ./update_rrd.sh ../etc/cmon.conf
 - ./create_graphs.sh ../etc/cmon.conf
- If that does not print out any errors, then it is good
- Otherwise, check PATHs, GRANTs, etc in cmon.conf

CMON – Cluster Monitoring Graphs

- edit crontab (crontab -e)
 - Add content from cmon-1.0.0/scripts/rrd/crontab.sample to cron, but change the PATHs in crontab.sample!
 - Make sure cronjob user can write to {WWWROOT}/cmon/graphs/
 - Also, dry run each script listed in crontab so you know they work!
- Now if all is good you should get graphs in the web interface!

CMON – adding mysql servers for monitoring

- In the Web system:
 - Administration --> Add MySQL Server
 - Fill out the information.
- On the added mysql server add the following GRANTs:
 - GRANT SELECT ON mysql.* TO 'cmon'@'10.0.1.5' IDENTIFIED BY 'password';
 - GRANT SUPER ON *.* TO 'cmon'@'10.0.1.5' IDENTIFIED BY 'password';
- This will allow CMON to collect information from the newly added mysql server.
- Note: The added mysqld can be in state “No contact”. If it remains in No contact for longer than 10 seconds, check:
 - Is the mysqld started?
 - Correct host/port and GRANTs?