MySQL for System Administrators

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LCA sysadmin miniconf
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Melbourne

der.hans
CDE
Object Rocket, a rackspace company
https://www.ObjectRocket.com/

Yes, we’re hiring :)

ObjectRocket
https://www.objectrocket.com/careers/

Rackspace Technologies
https://rackspace.jobs/

Upcoming Presentations

• List of Some Upcoming and Previous Talks and Publications
  ◦ https://www.LuftHans.com/talks

[LH talks.qr] | LH_talks.qr.png

Social Media and Fediverse

• FLOX_advocate on Mastodon
  ◦ https://floss.social/@FLOX_advocate

• LuftHans on PLUME
  ◦ https://fediverse.blog/~/LuftHans

• LuftHans on Freenode IRC
  ◦ usually in #LOPSA, #PLUGaz and #LibreLounge

[FLOX advocate.Mastodon.qr] | resources/FLOX_advocate.Mastodon.qr.png

Default MySQL prompt
Oh the monotony!

Percolating Selzer

MySQL_PS1

MySQL_PS1 example

```bash
export MYSQL_PS1="(\u@\h:\d)> "
```
MySQL shells, viva la difference

Cluster to three

- that's clusterssh hitting 3 boxen in parallel
- still needs 2 passwords :(  

OpenSSH: the Home Game
Non-automagic authentication

```bash
$ mysql -u root -p password
```

- `ps auxw`
- Shell history
- `~/.mysql_history`
- Copy and paste of command and output

Interactive authentication

```bash
$ mysql -u root -p
```

Automagic authentication

- `~/.my.cnf`
- check /root/.my.cnf
- /etc/mysql/debian.cnf
- MYSQL_PWD
  - use from a config file

**Authorization / Privileges**

- Grant / Revoke
- Read-only: SELECT
- Read-write: SELECT, DELETE, INSERT, UPDATE

**Stored Procedures**

**SQL SECURITY**

**DEFINER**

**INVOKER**

**mysqlldump**

Use for schema dumps

Include `mysql.proc` to preserve routine creation timestamps

```
--no-data --routines --skip-add-locks --skip-opt --triggers -all-databases
```

**Percona XtraBackup**

Cool tool, still uses a lot of resources

**Snapshots**

Put MySQL data on snapshotable filesystem

Snapshot still requires short read-lock

`mylvmbackup` works with LVMv2

**Log files**

/var/log/mysql/

- Error log
• Slow query log
• General log
  ◦ Careful on busy DBen

**Querying Data**

Use the tools we know

**Build your own pipeline**

Use your favorite CLI tools

```
sed | grep | awk | cut | sort | uniq
```

**Sysadminny examples**

```
find horsey music
```

```
$ mysql -e "select album from music" | grep -i horse
```
show root authorized from other than localhost

```bash
$ mysql -B -e "select user, host from mysql.user" | awk '$1 == "root" && $2 !~ /localhost|127.0.0.1|::1/'
```

as of 8.0.22, was something else before

```bash
$ mysql -e "show replica status\G" | grep -E 'Master_Host|Slave_.*_(State|Running)|Seconds_Behind_Master|Last_.*_Err'
```

libreadline

```bash
mysql> pager less
```

## DB stuff

- Use InnoDB
  - Don’t change internal databases
    - mysql.*
    - information_schema.*
    - performance_schema.*
- Use file_per_table
- For faster shutdowns
  - `set global innodb_max_dirty_pages_pct = 0;`

## Character sets

Always specify character set when creating a DB or table

Or get used to Swedish

## Community

- MySQL, Percona and MariaDB, Oh my!
- Oracle stewardship
- Competition
- Cooperative competitive
Resources

• Site: MySQL documentation
• Site: Percona’s MySQL Performance blog
• Site: TokuDB blog
• Book: High Performance MySQL
• Tool: Percona Toolkit
• Conf: Percona Live
• Conf: SCaLE’s MySQL track

Thank You

Credits

Thanks to the LCA organizers and other volunteers for running a conference for us to enjoy

Thanks to the FLOSS database community in its many forms

Thanks to Brian for the Open SSH Home game image

Thanks to OpenBSD and OpenSSH for that critical tool

Mahlzeit!