



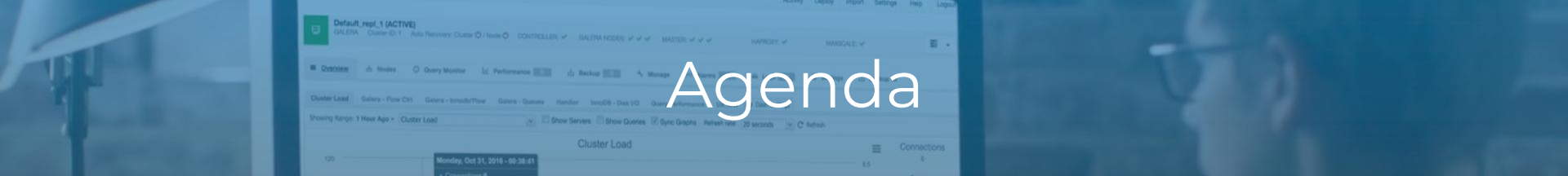
PERCONA
LIVEONLINE
MAY 12 - 13th
2021

Improving Security in MySQL



Who am I?

- Background in MySQL & security via building one of the biggest & fastest data breach empires in the world – [BreachDirectory.com](https://breachdirectory.com)
- Blogs – lukasvileikis.com & [BreachDirectory.com/blog](https://breachdirectory.com/blog), also other places (Severalnines, CERT etc.)
- Conferences – Build Stuff, DevTalks, TEDx, Percona LIVE...
- Marketing @ Severalnines – blogs, conferences, webinars...



Agenda

- MySQL Security Basics
- MySQL Access Control – Accounts & their Security, Account Locking & Unlocking, Privileges & Roles, Password Management & Security
- MySQL Security Plugins
- MySQL Backup Security
- How do MySQL Security Decisions Impact Performance?
- Summary

MySQL Security 101 – Key Considerations

- Look into `mysql_secure_installation`
- Security plugins
- General factors – access control, preventing SQL injection etc.
- Strong passwords
- Backups



MySQL Access Control – Accounts

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ACCOUNTS

Avoid giving accounts
access to the user
table

Only grant necessary privileges

Security through
obscurity

MySQL Access Control – Account Locking & Unlocking



ACCOUNT LOCKING

Access denied for user 'username'@'hostname'. Account is locked.

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Privileges & Roles

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PRIVILEGES

LOAD DATA INFILE

LOAD DATA & INTO OUTFILE

local_infile

Password Management & Security

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PASSWORD MANAGEMENT

Periodic Password
Changes

Disallow use of previously used
passwords, generate them, use the
ability to check their strength

Lock out an account
from accessing a DB

MySQL Security Plugins

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SECURITY PLUGINS

Authentication &
connection-control
plugins

The password validation plugin

Audit & firewall
plugins

MySQL Backup Security

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BACKUP SECURITY

Encrypt your backups

`mysqldump-secure`

Avoid putting
password in the
console - use `my.cnf`
instead

Performance Considerations

```
163 innodb_data_file_path = ibdata1:12M:autoextend
164 innodb_buffer_pool_size = 256M
165 innodb_log_file_size = 256M
166 innodb_log_buffer_size = 8M
167 innodb_flush_log_at_trx_commit = 1
168 innodb_lock_wait_timeout = 50
169 innodb_flush_method=normal
```

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Search	Query	Export	Import	Operations	Privileges	Routines	More
★	Browse	Structure	Search	Insert	Empty	Drop	~146,055 InnoDB utf8mb4_unicode_ci 43.5 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~30,491,235 InnoDB gb2312_chinese_ci 5.9 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	~73,528,371 InnoDB utf8mb4_unicode_ci 13.4 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	3,307 InnoDB utf8mb4_unicode_ci 3.3 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~394,852 InnoDB utf8mb4_unicode_ci 106.7 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	16,989 InnoDB utf8mb4_unicode_ci 8.0 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	35,103 InnoDB utf8mb4_unicode_ci 14.5 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~77,549,892 InnoDB utf8mb4_unicode_ci 12.0 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	~8,724,944 InnoDB utf8mb4_unicode_ci 1.8 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	18,756 InnoDB utf8mb4_unicode_ci 5.8 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~459,312 InnoDB utf8mb4_unicode_ci 111.7 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~5,918,471 InnoDB utf8mb4_unicode_ci 1.1 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	~2,943,785 InnoDB utf8mb4_unicode_ci 599.3 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~3,009,217,743 InnoDB utf8mb4_unicode_ci 673.4 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	~55,936,687 InnoDB utf8mb4_unicode_ci 10.7 GiB
★	Browse	Structure	Search	Insert	Empty	Drop	~151,109 InnoDB utf8mb4_unicode_ci 40.5 MiB
★	Browse	Structure	Search	Insert	Empty	Drop	~156,993,225 InnoDB utf8mb4_unicode_ci 31.1 GiB
Sum					~9,269,874,288 InnoDB utf8mb4_unicode_ci 1.8 TiB		

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✓ Showing rows 0 - 24 (3009217743 total, Query took 0.0400 seconds.)

SELECT * FROM ██████████

☐ Profiling [\[Edit inline\]](#) [\[Edit \]](#) [\[Explain SQL \]](#) [\[Create PHP code \]](#) [\[Refresh \]](#)

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Summary

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SUMMARY

Basics - account
security, privileges &
roles, backups

Look into MySQL security plugins

Don't neglect
performance

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Thank You!

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