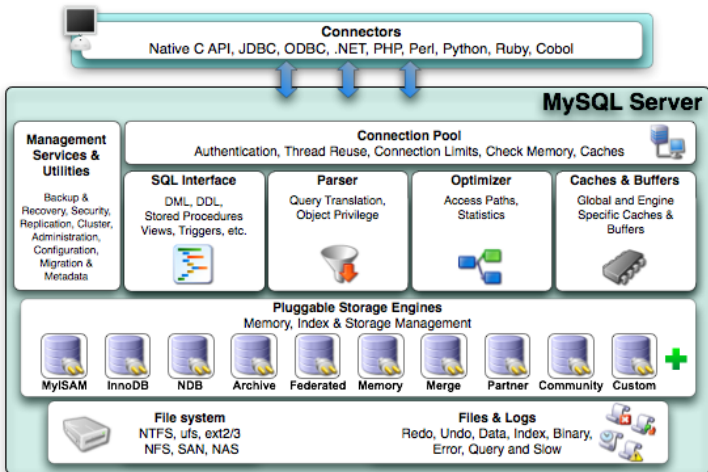


Understanding InnoDB



Storage Engines; CREATE TABLE ... ENGINE=



a

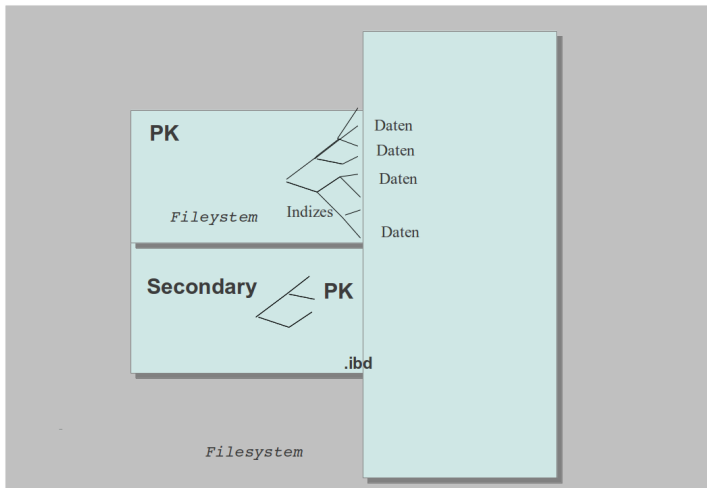
^a <http://docs.oracle.com/cd/E19957-01/mysql-refman-6.0/images/PSEArch.png>

INNODB

- Seit 5.5 Default SE
- *DIE* SE für MySQL

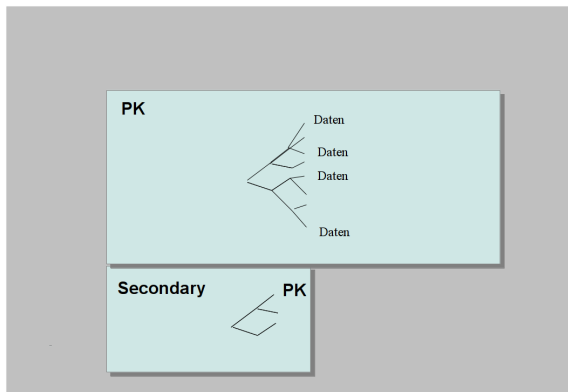
	INNODB
MVCC	Ja
ACID	Ja
Locking	Row
Transaktionen	Ja
FK	Ja
FT	Nein (5.6 Ja)
GIS	Nein
Crash safe	Ja
Backup	Hot

Clustered Index

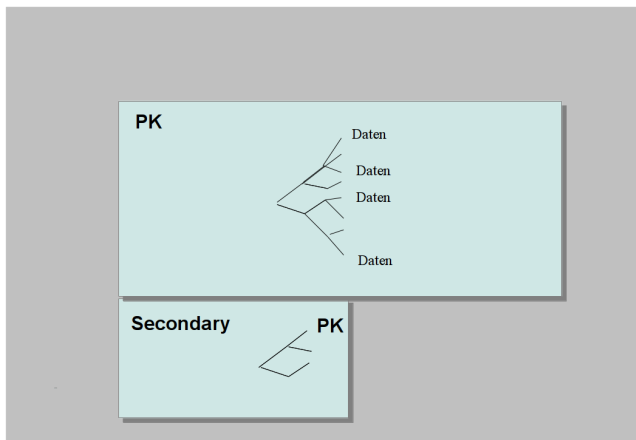


The Way of Inserting

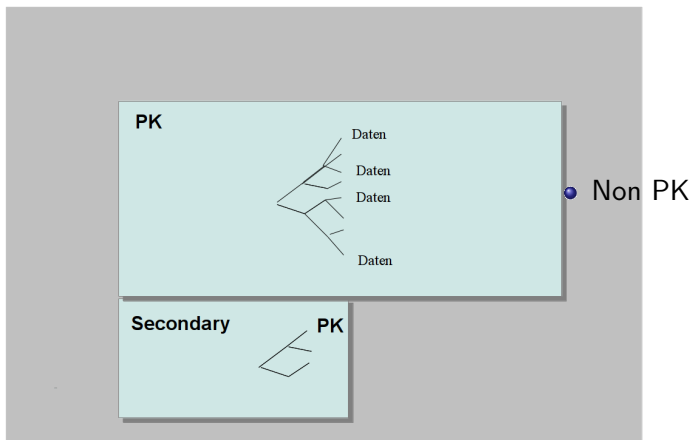
PK ordnet



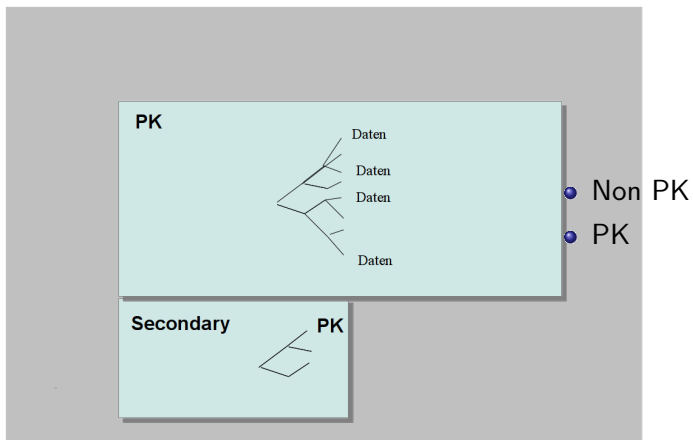
Update Storm



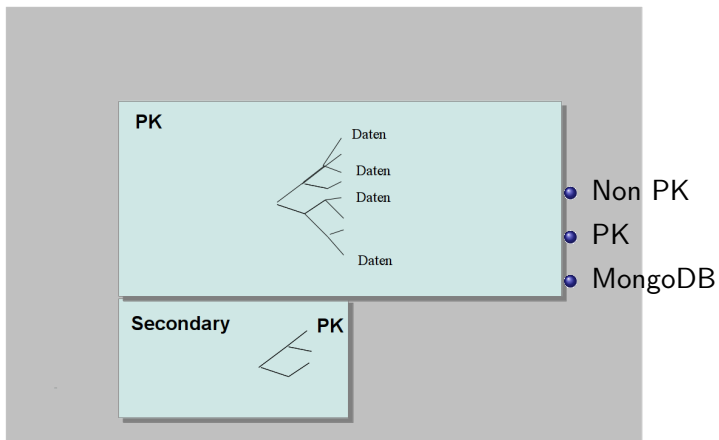
Update Storm



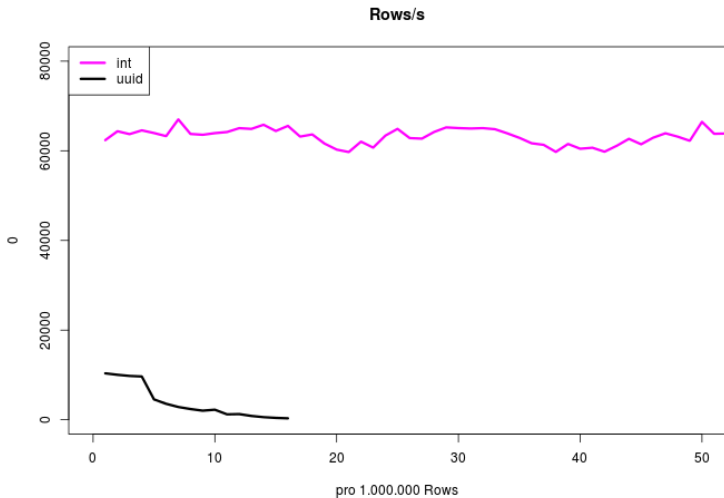
Update Storm



Update Storm



Insert Performance

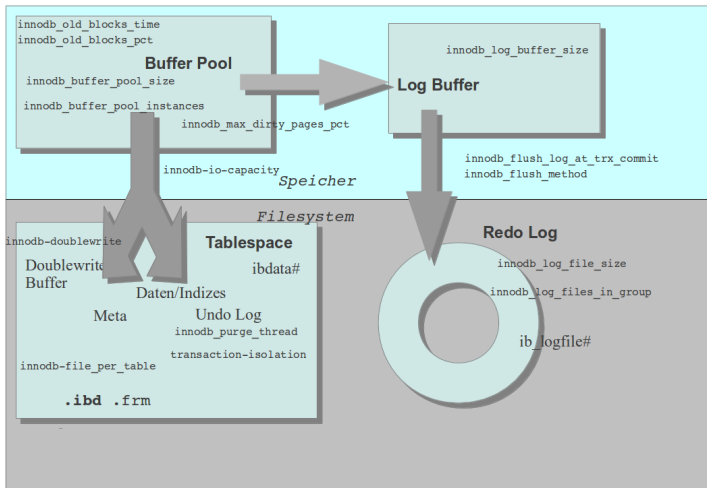


Lokalität

Lohnt sich hier PK not INT?

- `user_id,user_id_friend`
- `thread_id,message_id`
- `user_id,mail_id`

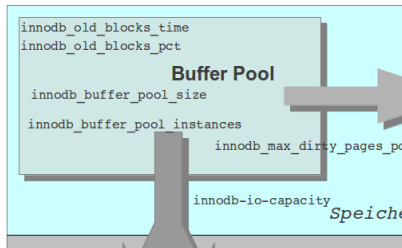
Das große Ganze



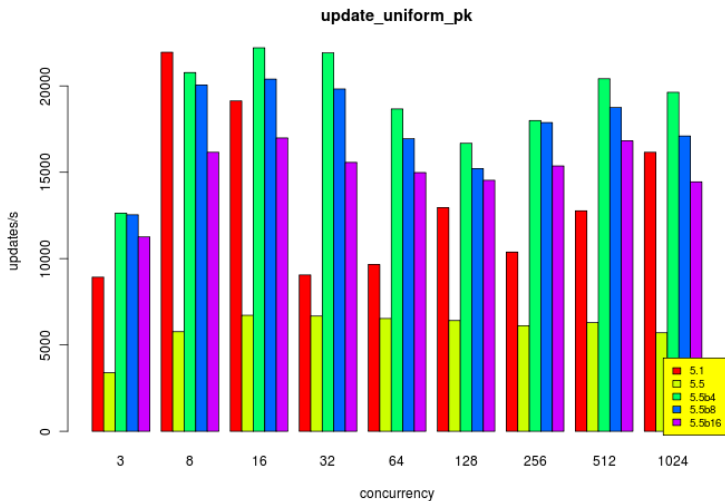
Buffer Pool Configuration: Basics

- `buffer_pool_size`
- `innodb_buffer_pool_instances`

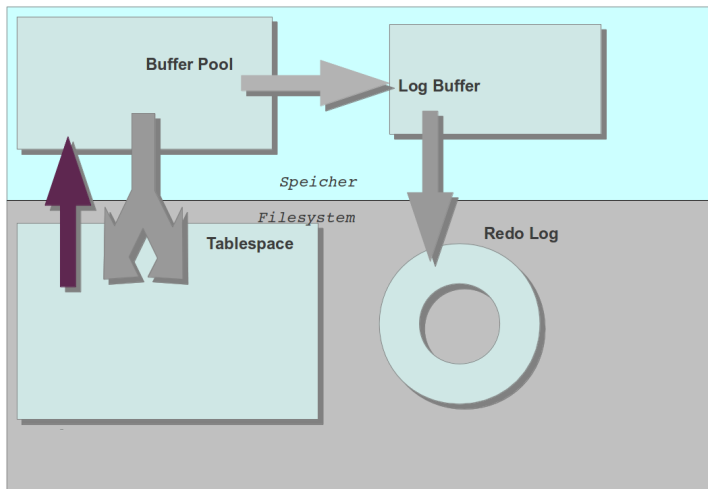
BufferPool cached Indizes und Daten



innodb_buffer_pool_instances

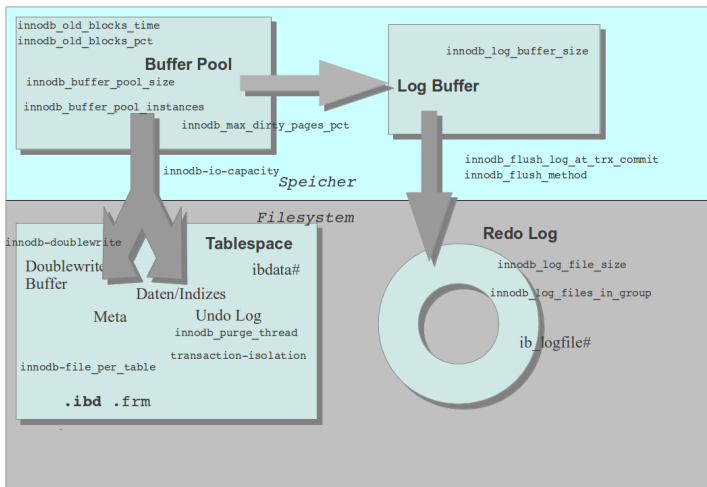


1. SELECT 2. UPDATE

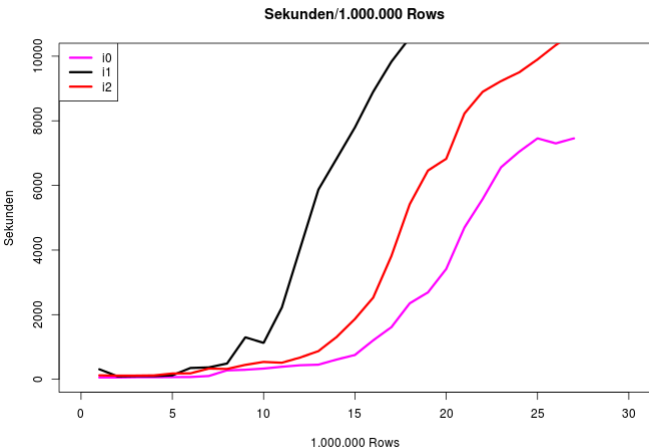


Remind the Pic

Mit Variablen



innodb_flush_log_at_trx_commit

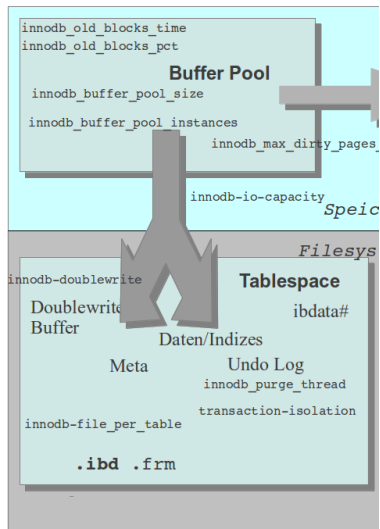


- 0 FCache
- 1 fsync@commit
- 2 fsync@sec

MVCC/Rollback/Transaktionen

- READ [UN]COMMITTED
- REPEATABLE READ
- SERIALIZABLE

- InnoDB ist optimiert auf Commit
- Undo Log ist im Tablespace



Gedankenspielereien

- Lange Transaktionen
- autocommit=0
- Abgebrochene DMLs

log-buffer size

Welcher Status sagt, dass es nicht gereicht hat.

Typische Probleme

- Bufferpool voll
`Innodb_buffer_pool_wait_free`
- Redologs voll
`SHOW ENGINE INNODB STATUS`
- Log Buffer voll
`Innodb_log_waits`

- Was passiert bei einem Crash?

InnoDB

InnoDB ist toll!

Summary

- Clustered Index
- Auto PK
- Normalisierung
- Lokalität
- Auf Commit Optimiert
- Kein FileSystemCache
- innodb_files_per_table (Compreseion etc.)

Ende Gelände

Fragen?!



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www.xing.com/profile/Erkan_Yanar

Links:

- <http://blog.koehntopp.de/archives/1985-Die-InnoDB-Storage-Engine.html>
- <http://blog.koehntopp.de/archives/1997-Die-InnoDB-Storage-Engine-Konfiguration.html>