Percona Server 5.6

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Percona

Hi!
I work for

PERCONA

Performance Consulting Experts

which is a MySQL support, consulting and development company you may have heard of

Director of Server Development

So I'm totally biased. Feel free to take some grains of salt.

What is Percona Server?

"branch" of MySQL. Not as different as MariaDB.
closely track upstream. Within 30 days.
we base on the Oracle release, add our own patchset
performance, usability and managability improvements

What was Percona Server 5.1?

performance!
management!
A very mature and stable DB now.
will continue to be maintained.
but only as there is direct customer requests.
Accounts for very small %age of downloads.
if using, plan to transition to PS 5.5 soon.
We'll always support you though.

Percona Server 5.5

is now stable, reliable, performant
took a long time to get to market
obviously we didn't want this for PS 5.6

Process changes

since early days of Percona Server we've made many changes
to development processes at Percona
to help ensure quality

Most advanced dev+test processes

of any MySQL server variant (including MySQL itself)
I feel pretty confident in saying this.

tick-tock releases

Tick: upgrade to latest upstream MySQL release
Tock: Percona added bug fixes to our own code and upstream

Gated trunk

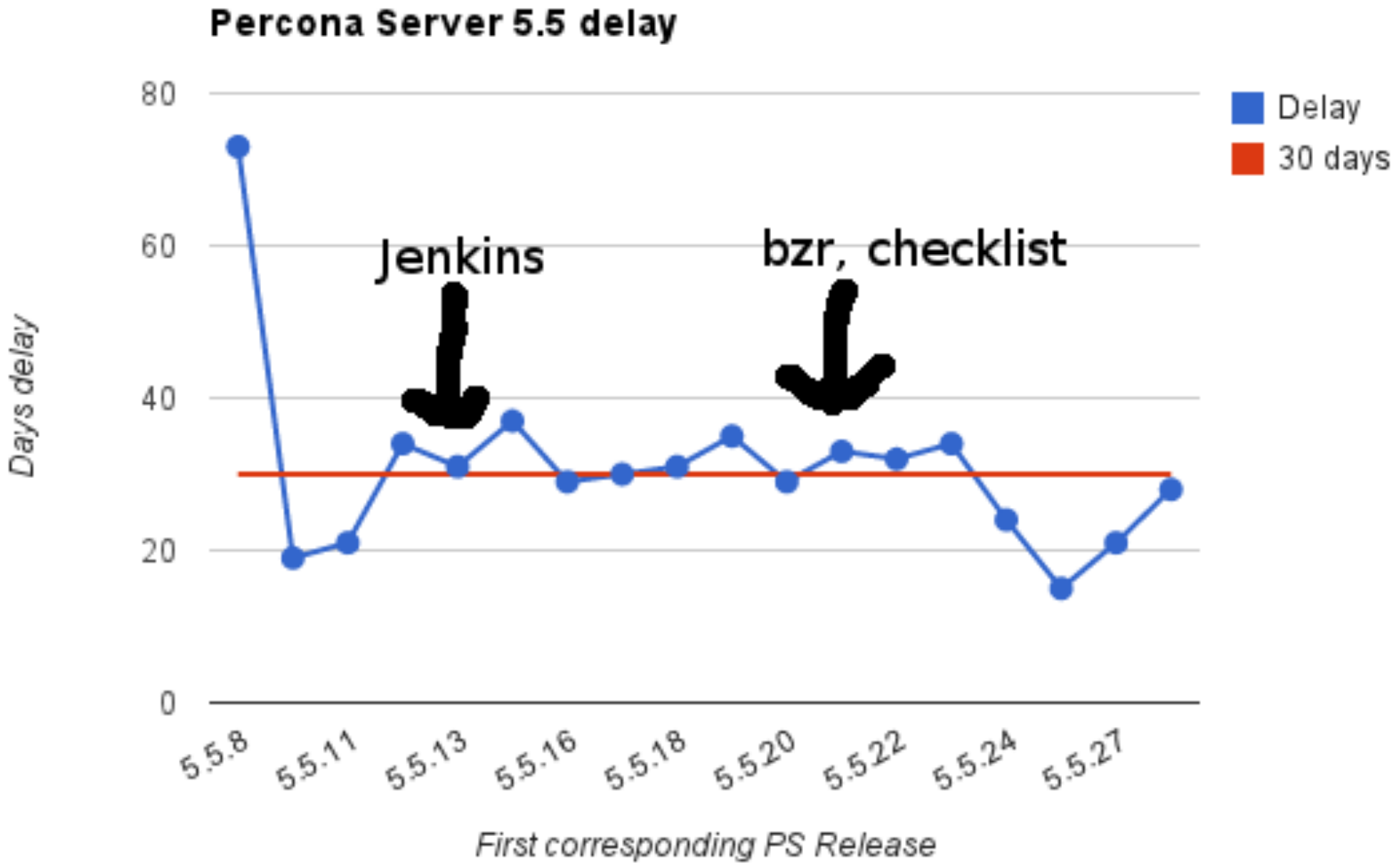
Idea is nobody ever pushes directly
People suck at verifying software
You can actually link benchmark+test runs to merges
automated audit trail
trunk always builds and works.

Auto-deploy documentation

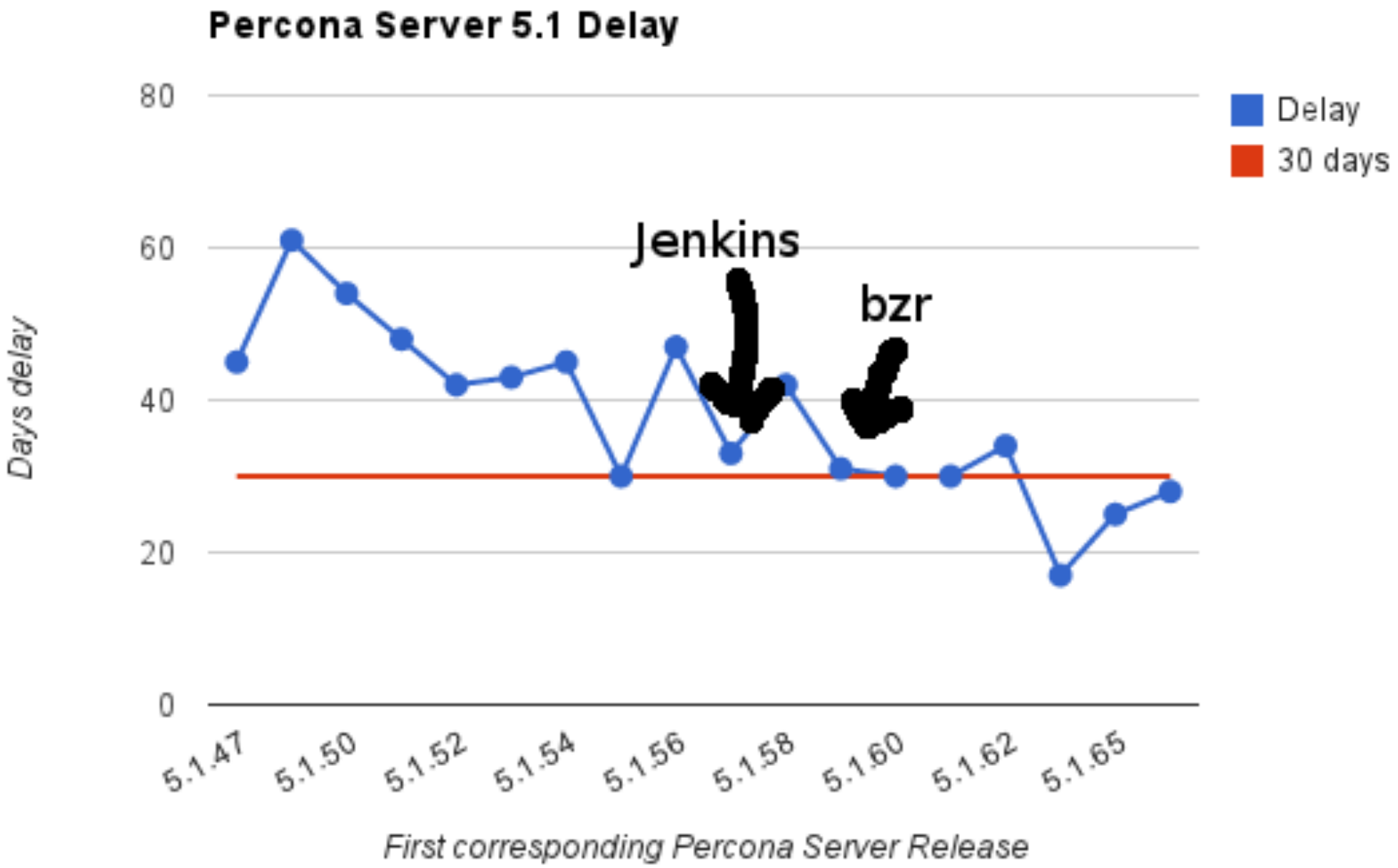
after push to trunk
build docs
push to web server
bug fixes to docs can be seen very quickly

Performance regression tests

nightly performance regression tests
staging performance regression tests
no code hits trunk that destroys performance


Percona Server 5.5 delay
80
60
40
20
0
Days delay
Jenkins
bzr, checklist
Delay
30 days
5.5.8
5.5.11
5.5.13
5.5.16
5.5.18
5.5.20
5.5.22
5.5.24
5.5.27
First corresponding PS Release

has helped, at same time improving quality


Percona Server 5.1 Delay
80
60
40
20
0
Days delay
Delay
30 days
Jenkins
bzr
5.1.47
5.1.50
5.1.52
5.1.54
5.1.56
5.1.58
5.1.60
5.1.62
5.1.65
First corresponding Percona Server Release

much more visible with 5.1 version (longer history)

Expect more of the same with 5.6

First:

MySQL 5.6

Not really going to talk about it
Honest opinion: best MySQL release so far.

Stewart's dot twenty rule

all software is annoying until point release .20
generally a good rule.

MySQL 5.6.11

There will be a bunch more bug fixes coming in.

Changes in PS 5.6

No HandlerSocket

probably not what you want anyway.
We'll see if HS gues upgrade to 5.6

fast_index_creation

server option is replaced by MySQL 5.6 functionality

MySQL 5.6

ALGORITHM= [DEFAULT|INPLACE|COPY]

SHOW -> INFORMATION_SCHEMA

At least for temporary tables, now just available via I_S
Move away from SHOW and towards I_S.
decreases maintenance, increases modularity and compatibility.

Out: InnoDB timer based concurrency throttling

Out: InnoDB recovery stats

SHOW INNODB STATUS
Oldest View

replaced by:
I_S.XTRADB_READ_VIEW

XtraDB specific I_S tables prefixed with XTRADB_

easier for people to keep track of compatibility

SHOW INNODB STATUS hash tables

replaced by:
I_S.XTRADB_INTERNAL_HASH_TABLES

INNODB_RSEG -> XTRADB_RSEG

Maybe small pain for some users now, benefit in long run

PS features now in MySQL 5.6

Some features in PS 5.5 have been implemented by Oracle
Where sensible, we prefer to take the Oracle implementation,
possibly improving upon it.

SHOW ENGINE INNODB MUTEX

replaced by:
PERFORMANCE_SCHEMA

Crash resistant replication

now the MySQL implementations

InnoDB I/O Scalability

Some of our patches no longer relevant
We're making our own improvements to InnoDB scalability though in different places than before.

InnoDB data dictonary limits

replaced with MySQL implementation. In PS first.

InnoDB data dictionary I_S tables

replaced with MySQL ones. Near identical. In PS first.

XtraDB SYS_STATS persistent table statistics

replaced with MySQL impl. In PS first

Dump/restore buffer pool

MySQL implementation. In PS first

So, Let's go onto things that are more PS specific new tihngs

PS 5.6 Features

PAM Plugin

bringing this forward to 5.6
any PAM authentication method

User and table statistics

still the simplest performance monitoring interface

Extended slow query log

we have plans to convert it into a much more efficient plugin
After initial PS5.6 GA. Prototype available now

Thread pool

from MariaDB

XtraDB

moving from performance to features

InnoDB kill idle transactions

keeping from PS 5.5
long running txn blocks purge
prevents that

InnoDB fake changes

still great way of keeping slave cache warm
combined with Percona Playback, this is pretty special

Incremental Backup

Currently entirely XtraBackup based
We record LSN on full backup
for incremental, scan each page in file.

Scan full tablespace

=

SLOW

Log archiving

archive InnoDB redo logs, ship them off somewhere
replay them against full backup
presto: incremental backup at near zero cost on master

Archive REDO

Replay REDO

Advantage: low overhead

for backing up

Disadvantage: longer prepare

but you can be near up-to-the-minute
theoretically we could have this work against mysqld. Contact us

Bitmap based incremental backups

Another XtraDB feature
When we change a page, set a bit in a bitmap.
For incremental backup, we just read those pages.
Bitmap index of changed pages
Backup only those pages rather than full scan of data files
apply is linear scan writing pages.

What is Percona Server 5.6 about?

Evolution
not
Revolution

We're evolving what was in PS 5.5
and evolving what's in MySQL 5.6
to greate something that's suitable for
Change the world but only in a way that's immediately useful

Percona Server 5.6

for real production environments

bug fixes, performance improvements and features
that make living with MySQL easier.

First release: August 2012

Current: March 2013

Percona Server 5.6.10-60.2

Next release: May 2013

will incorporate most of the PS 5.5 features

Thank you.

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At the Percona booth (now)