



QA PRO; TEST, MONITOR AND VISUALISE MYSQL PERFORMANCE IN JENKINS

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PERCONA
LIVE

- Jenkins : a continuous integration framework
- Percona Server in Jenkins
- Performance monitoring in Jenkins
 - Sysbench
 - mysql test run
 - Performance graph

- **Jenkins : a continuous integration framework**
- Percona Server in Jenkins
- Performance monitoring in Jenkins
 - Sysbench
 - Mysql test run
 - Performance graph

Jenkins : a continuous integration framework

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- What is Jenkins?
 - It is an open source tool to perform continuous integration
 - Building/testing software projects continuously
 - Monitoring executions of externally-run jobs, such as building a software project or jobs run by cron
- For more info :
 - <https://wiki.jenkins-ci.org/display/JENKINS/Meet+Jenkins>

- Automated performance testing will enable us to check the overall Percona Server performance for each commit/release. There is a chance of a large performance drawback or improvement when making a small code change in the server. To identify such bottlenecks we have created an automated process to test the server using sysbench with various server system configurations

Jenkins by example : Dashboard

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Jenkins

Jenkins ▸ QA ▸

This is the Jenkins system used by Percona.
QA Automated Performance & RQG Testing Jobs

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5.7 All Merge MySQL PS 5.1 PS 5.5 PS 5.6 PT PXB 2.1 PXB 2.2 PXB 2.3 PXC-5.6 Percona-RELEASES Playback **QA** Release

Jobs list

S	W	Name	Last Success	Last Failure
		percona-server-5.5-qa-performance	1 day 11 hr - #875	N/A
		percona-server-5.6-dbg-pquery-run	1 day 9 hr - #36	18 days - #18
		percona-server-5.6-opt-pquery-run	4 days 9 hr - #30	1 day 9 hr - #33
		percona-server-5.1-randgen-pass	3 mo 22 days - #245	8 mo 11 days - #24
		percona-server-5.6-qa-performance	2 days 21 hr - #179	N/A

Jenkins by example : New project

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Jenkins

Jenkins > QA > percona-server-5.5-qa-performance > configuration

[Back to Dashboard](#)[Status](#)[Changes](#)[Workspace](#)[Build Now](#)[Delete Project](#)[Configure](#)[Plots](#)**Build History**[\(trend\)](#)#854 [Mar 19, 2015 2:22:02 AM](#)#853 [Mar 17, 2015 5:47:44 PM](#)

21 KB

#852 [Mar 16, 2015 9:09:30 PM](#)

21 KB

#851 [Mar 15, 2015 11:56:58 PM](#)

21 KB

Project name

percona-server-5.5-qa-performance

Description

Automated QA PS 5.5 performance regression check (executed against nightly binar.

[\[Safe HTML\] Preview](#)☒ Discard Old Builds

Strategy

Log Rotation

Days to keep builds

35

If not empty, build records are only kept up to this number of days

Max # of builds to keep

100

If not empty, only up to this number of build records are kept

☐ Block build if certain jobs are running

Job Priority

100

☐ This build is parameterized

Jenkins by example : Matrix & NodeLabel plugins

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https://wiki.jenkins-ci.org/display/JENKINS/Matrix+Project+Plugin



Matrix Project Plugin

Added by [Jesse Glick](#), last edited by [Dale Beck](#) on Mar 19, 2015 ([@daveck](#))

Message from a Patron of Jenkins

Jenkins

- Home
- Mailing lists
- Source code
- Bugtracker
- Security Advisories
- Events
- Donation
- Commercial Support
- Wiki Site Map

Documents

- Meet Jenkins
- Use Jenkins
- Extend Jenkins
- Plugins
- Servlet Container Notes

Multi-configuration (matrix) project type.

Plugin Information

Plugin ID	matrix-project	Changes	In Latest Release Since Latest Release
Latest Release	1.4 (archives)	Source Code	GitHub
Latest Release Date	Oct 14, 2014	Issue Tracking	Open Issues
Required Core Dependencies	1.561	Maintainer(s)	n/a (id: nenashv)
Usage			Installations
			2014-Apr 2976 2014-May 23961 2014-Jun 33306 2014-Jul 42548 2014-Aug 49927 2014-Sep 57769 2014-Oct 64447 2014-Nov 58675 2014-Dec 70587 2015-Jan 76483 2015-Feb 79235 2015-Mar 88575

See [Building a matrix project](#) for user information.

Extensions

See all extension points here: [Matrix Project Extension Points](#)

Matrix Axis Extension

[NodeLabel Parameter Plugin](#) — This plug-in adds two new parameter types to job configuration – node and label, this allows to dynamically select the node where a job/projects could be executed.

[Dynamic Axis Plugin](#) — This plug-in allows you to define a matrix build axis that is dynamically populated from an environment variable:

Jenkins by example : Node/Slave configuration

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Jenkins

Jenkins > nodes > dell-r420.ci.percona.com

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Name	dell-r420.ci.percona.com
Description	
# of executors	1
Remote FS root	/data1
Labels	perf
Usage	Leave this node for tied jobs only
Launch method	Launch slave agents on Unix machines via SSH
Host	dell-r420.ci.percona.com
Credentials	jenkins (global) 

Build Executor Status

#	Status
1	Building percona-server-5.5-qa-

Availability Keep this slave on-line as much as possible

Jenkins by example : Node/Slave configuration

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Jenkins

Jenkins ▶ centos6-64 ▶

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centos6-64

Nodes

 [vps-centos6-x64-01](#)

 [vps-centos6-x64-02](#)

 [vps-centos6-x64-03](#)

 [vps-centos6-x64-04](#)

 [vps-centos6-x64-05](#)

Projects

None

Jenkins by example : Node/Slave configuration

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Jenkins

Jenkins ▶ perf ▶



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[Overview](#)



[Load Statistics](#)



perf

Nodes



[dell-r420.ci.percona.com](#)

Projects

S	W	Name ↓
		percona-server-5.5-qa-performance
		percona-server-5.6-qa-perf-test
		percona-server-5.6-qa-performance

Icon: [S](#) [M](#) [L](#)

Jenkins by example : Slave/Node info

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☒ Restrict where this project can be run

Label Expression

perf

Slaves in label: 1

If you want to always run this project on a specific node/slave, just specify its name. This works well when you have a small number of nodes.

As the size of the cluster grows, it becomes useful not to tie projects to specific slaves, as it hurts resource utilization when slaves may come and go. For such situation, assign labels to slaves to classify their capabilities and characteristics, and specify a boolean expression over those labels to decide where to run.

Valid Operators

The following operators are supported, in the order of precedence.

(expr)

parenthesis

!expr

negation

expr&&expr

and

expr||expr

or

a -> b

"implies" operator. Equivalent to `!a|b`. For example, `windows->x64` could be thought of as "if run on a Windows slave, that slave must be 64bit." It still allows Jenkins to run this build on linux.

a <-> b

"if and only if" operator. Equivalent to `a&&b || !a&&!b`. For example, `windows<->sfbay` could be thought of as "if run on a Windows slave, that slave must be in the SF bay area, but if not on Windows, it must not be in the bay area."

All operators are left-associative (i.e., `a->b->c <-> (a->b)->c`) An expression can contain whitespace for better readability, and it'll be ignored.

Label names or slave names can be quoted if they contain unsafe characters. For example, `"jenkins-solaris (Solaris)" || "Windows 2008"`

Jenkins by example : New project

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Copy artifacts from another Jenkins job

Build

Copy artifacts from another project

Project name

Which build

☐ Stable build only

Artifacts to copy

Artifacts not to copy

Target directory

Parameter filters

☒ Flatten directories ☐ Optional ☒ Fingerprint Artifacts

Delete

Jenkins by example : build history

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Jenkins

Jenkins > percona-server-5.5-qa-performance >

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 Build History		(trend) 
	#851 Mar 15, 2015 11:56:58 PM	
	#850 Mar 14, 2015 5:24:24 PM	21 KB
	#849 Mar 13, 2015 8:26:25 PM	21 KB
	#848 Mar 13, 2015 12:32:03 AM	21 KB
	#847 Mar 12, 2015 1:22:11 AM	21 KB

Project percona-server-5.5-qa-performance

Automated QA PS 5.5 performance regression check (executed against nightly binaries)



[Workspace](#)



[Recent Changes](#)

Project disk usage information + trend graph

 **Disk Usage:** Workspace 2 MB (On slaves)

Upstream Projects

 [percona-server-5.5-nightly-web+perf-binaries](#)

Downstream Projects

 [percona-server-5.6-qa-performance](#)

Permalinks

Jenkins by example : Job output

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Jenkins



Jenkins > percona-server-5.5-qa-performance > #851

Console Output

23:56:58 Started by upstream project "[percona-server-5.5-nightly-web+perf-binaries](#)" build number [873](#)
23:56:58 originally caused by:
23:56:58 Started by upstream project "[percona-server-5.5-nightly-web+perf-binaries-master](#)" build number [314](#)
23:56:58 originally caused by:
23:56:58 Started by timer
23:56:58 [EnvInject] - Loading node environment variables.
23:56:58 Building remotely on [dell-r420.ci.percona.com](#) (perf) in workspace /data/workspace/percona-server-5.5-qa-performance
23:57:02 Copied 1 artifact from "[percona-server-5.5-nightly-web+perf-binaries ? centos6-64](#)" build number [873](#)
23:57:02 [percona-server-5.5-qa-performance] \$ /bin/bash -xe /tmp/hudson299859962264383220.sh
23:57:02 + ROOT_FS=/data/bench/qa
23:57:02 + cd /data/bench/qa
23:57:02 + grep -v .tar
23:57:02 + xargs rm -Rf
23:57:02 + ls -ld Percona-Server-5.5.42-rel37.1-Linux.x86_64.tar.gz Percona-Server-5.6.23-rel72.1-Linux.x86_64
23:57:02 ++ head -nl
23:57:02 ++ ls -lct Percona-Server-5.5.42-rel37.1-Linux.x86_64.tar.gz
23:57:02 + TAR=Percona-Server-5.5.42-rel37.1-Linux.x86_64.tar.gz
23:57:02 + tar -xf Percona-Server-5.5.42-rel37.1-Linux.x86_64.tar.gz
23:57:04 + mv Percona-Server-5.5.42-rel37.1-Linux.x86_64.tar.gz build_851.tar.gz
23:57:04 ++ grep -v .tar
23:57:04 ++ head -nl
23:57:04 ++ ls -ld Percona-Server-5.5.42-rel37.1-Linux.x86_64
23:57:04 + BASE=Percona-Server-5.5.42-rel37.1-Linux.x86_64
23:57:04 + BUILD_WIPE=811
23:57:04 + '[' -w build_811.tar.gz ']
23:57:04 + rm -Rf build_811.tar.gz

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[Status](#)

[Changes](#)

Console Output

[View as plain text](#)

[Edit Build Information](#)

[Environment Variables](#)

[See Fingerprints](#)

[Previous Build](#)

Timestamps

- ☒ System clock time
- ☐ Elapsed time
- ☐ None

Jenkins by example : Background processes

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```
[ramesh@de1l-r420 qa]$ ps -ef | grep 853 | grep -v grep
jenkins 6628 6606 0 Mar17 ?      00:00:00 /bin/bash ./performance.sh 853 Percona-Server-5.5.42-rel37.1-Linux.x86_64
jenkins 10035 1 31 03:10 ?      00:32:55 /data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/bin/mysqld --no-defaults --basedir=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64 --character-sets-dir=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/share/charsets --secure-file-priv=/data/bench/qa/853/tuned_run --log-bin-trust-function-creators --character-set-server=latin1 --lc-messages-dir=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/share --tmpdir=/data/bench/qa/853/tuned_run/tmp --connect-timeout=60 --pid-file=/data/bench/qa/853/tuned_run/run/master.pid --port=26639 --socket=/data/bench/qa/853/tuned_run/tmp/master.sock --datadir=/data/bench/qa/853/tuned_run/master-data --log-output=table,file --log=/data/bench/qa/853/tuned_run/log/master.log --log-slow-queries=/data/bench/qa/853/tuned_run/log/master-slow.log --server-id=1 --loose-innodb data_file_path=ibdata1:10M:autoextend --local-infile --loose-skip-ndbcluster --key_buffer_size=1M --sort_buffer_size=256K --max_heap_table_size=1M --ssl-ca=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/mysql-test/std_data/cacert.pem --ssl-cert=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/mysql-test/std_data/server-cert.pem --ssl-key=/data1/qa/Percona-Server-5.5.42-rel37.1-Linux.x86_64/mysql-test/std_data/server-key.pem --core-file --loose-new --sql-mode=no_engine_substitution --relay-log=slave-relay-bin --loose-innodb --secure-file-priv= --max-allowed-packet=16Mb --loose-innodb-status-file=1 --master-retry-count=65535 --skip-name-resolve --socket=/data/bench/qa/853/socket.sock --log-output=none --loose-userstat --loose-innodb_lazy_drop_table=1 --innodb-old-blocks_time=0 --innodb-buffer-pool-size=4G --innodb-log-file-size=1G --innodb-io-capacity=2000 --innodb-flush-log-at-trx-commit=1 --innodb-flush-method=0_DIRECT --innodb-buffer-pool-instances=8 --max-connections=900 --innodb-file-per-table=true --skip-log-bin --core-file --open-files-limit=1024
jenkins 10056 6628 35 03:10 ?      00:37:39 /usr/bin/sysbench --test /usr/share/doc/sysbench/tests/db/parallel_prepare.lua --num-threads 40 --oltp-tables-count 40 --oltp-table-size 1000000 --mysql-db test --mysql-user root --db-driver mysql --mysql-socket /data/bench/qa/853/socket.sock run
[ramesh@de1l-r420 qa]$
```

- Jenkins : a continuous integration framework
- **Percona Server in Jenkins**
- Performance monitoring in Jenkins
 - Sysbench
 - mysql test run
 - Performance graph

- As part of QA, we have configured different PS builds in Jenkins. This will help us to test PS quality at various levels
 - <http://jenkins.percona.com/view/QA/job/percona-server-5.6-binaries-valgrind-yassl/>
 - <http://jenkins.percona.com/view/QA/job/percona-server-5.6-binaries-opt-yassl/>
 - <http://jenkins.percona.com/view/QA/job/percona-server-5.6-binaries-debug-yassl/>

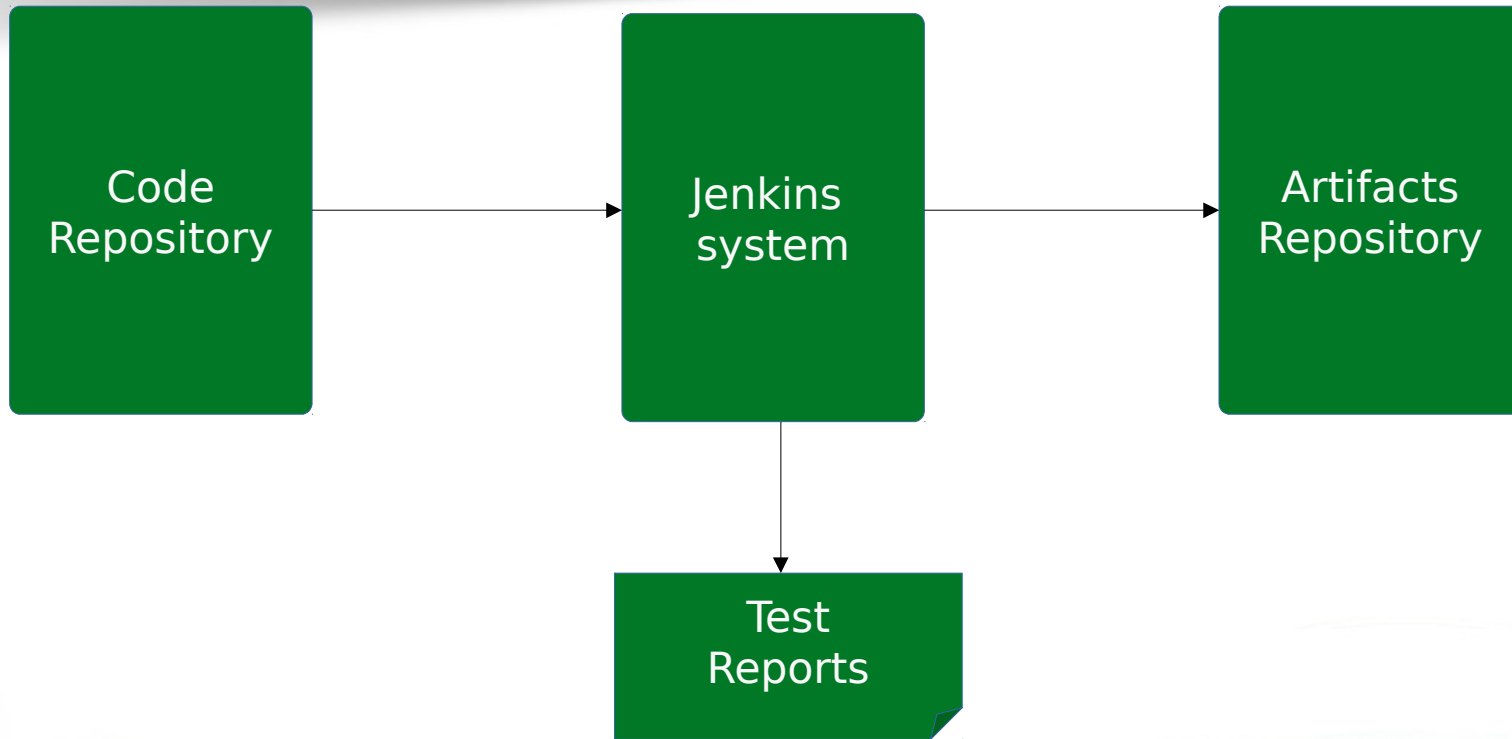
Percona Server in Jenkins

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- Automated performance testing script will run against Percona Server binaries (from Jenkins project)
- We use `lp:percona-qa/performance.sh` script for QA performance tests (available on Launchpad!)
 - <https://launchpad.net/percona-qa>
 - `$ bzr branch lp:percona-qa`

Work flow

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Percona Server in Jenkins

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Jenkins

Jenkins > QA > percona-server-5.6-binaries-opt-yassl >



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[Changes](#)



[Workspace](#)



[Build with Parameters](#)



[Delete Multi-configuration project](#)



[Configure](#)

 Build History	(trend) 
 #288	Mar 16, 2015 12:15:22 AM 369 MB
 #287	Mar 15, 2015 12:15:17 AM 369 MB
 #286	Mar 14, 2015 12:15:23 AM 369 MB
 #285	Mar 13, 2015 12:15:18 AM 369 MB
 #284	Mar 12, 2015 12:15:22 AM 369 MB

Project percona-server-5.6-binaries-opt-yassl

Configurations



[centos5-32](#)



[centos5-64](#)



[centos6-64](#)

Project disk



Upstream Projects



[QA-builds-percona-server-5.6](#)



[percona-server-5.6-RELEASE](#)

Downstream Projects



[percona-server-5.6-opt-pquery-run](#)



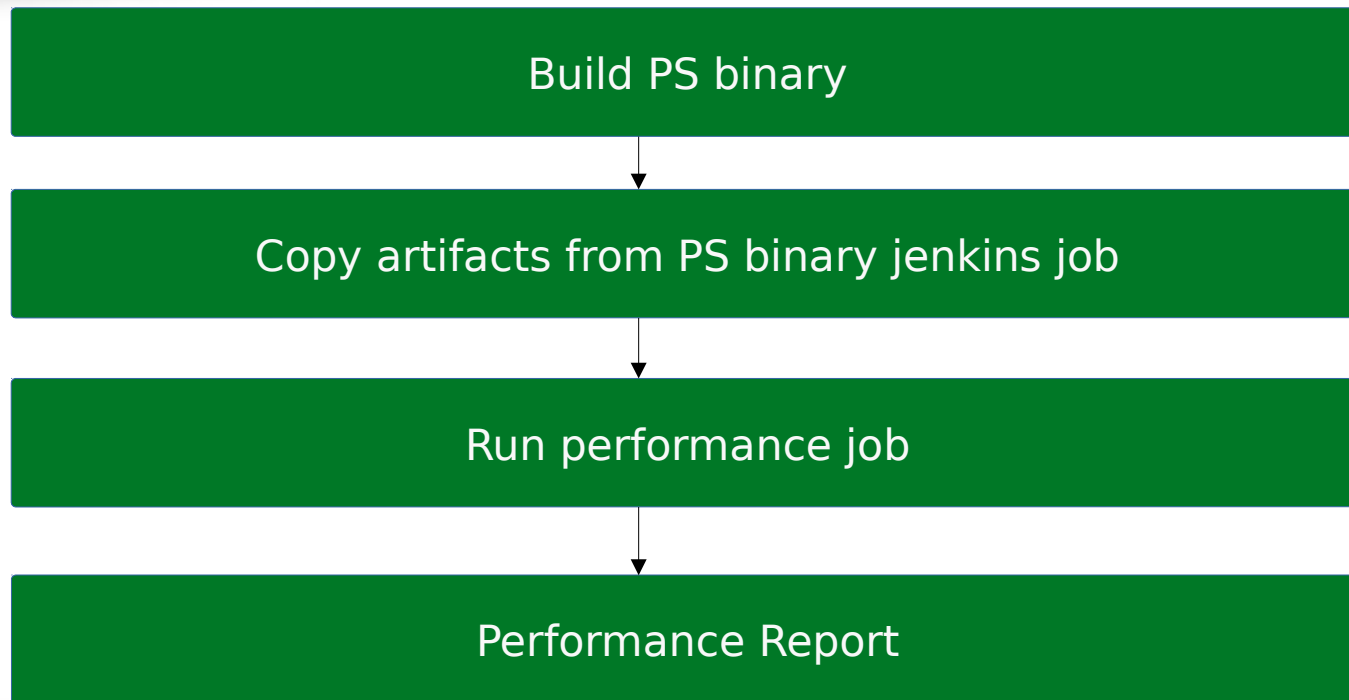
[percona-server-5.6-qa-performance](#)

- Jenkins : a continuous integration framework
- Percona Server in Jenkins
- **Performance monitoring in Jenkins**
 - Sysbench
 - mysql test run
 - Performance graph

- Hardware used for performance testing
 - Model : Dell R420
 - CPU - Intel(R) Xeon(R) CPU E5-2450 0 @ 2.10GHz (32 Threads)
 - Storage - SSD 240GB + HDD 1TB
 - RAM - 50G

Performance job work flow

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Performance job work log

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17:47:44 Started by upstream project "percona-server-5.5-nightly-web+perf-binaries" build number 875

[...]

17:47:44 Building remotely on dell-r420.ci.percona.com (perf) in workspace /data1/workspace/percona-server-5.5-qa-performance

17:47:46 Copied 1 artifact from "percona-server-5.5-nightly-web+perf-binaries ? centos6-64" build number 875

17:47:46 [percona-server-5.5-qa-performance] \$ /bin/bash -xe /tmp/hudson8983591239000179055.sh

[...]

17:47:55 + ./performance.sh 853 Percona-Server-5.5.42-rel37.1-Linux.x86_64

17:47:55 Workdir: /data/bench/qa/853

[...]

07:09:39 Logging: lib/v1/mysql-test-run.pl --start-and-exit --skip-ndb --vardir=/data/bench/qa/853/tuned_run --master_port=26639 --mysqld=--core-file --mysqld=--loose-new --mysqld=--sql-mode=no_engine_substitution --mysqld=--relay-log=slave-relay-bin --mysqld=--loose-innodb --mysqld=--secure-file-priv= --mysqld=--max-allowed-packet=16Mb --mysqld=--loose-innodb-status-file=1 --mysqld=--master-retry-count=65535 --mysqld=--skip-name-resolve --mysqld=--socket=/data/bench/qa/853/socket.sock --mysqld=--log-output=none --mysqld=--loose-userstat --mysqld=--loose-innodb_lazy_drop_table=1 --mysqld=--innodb-old-blocks_time=0 --mysqld=--innodb-buffer-pool-size=4G --mysqld=--innodb-log-file-size=1G --mysqld=--innodb-io-capacity=2000 --mysqld=--innodb-flush-log-at-trx-commit=1 --mysqld=--innodb-flush-method=O_DIRECT --mysqld=--innodb-buffer-pool-instances=8 --mysqld=--max-connections=900 --mysqld=--innodb-file-per-table=true 1st

[...]

10:32:36 Sysbench Run: OLTP RW testing with default server settings + single threaded + cpubound

11:32:36 Sysbench Run: OLTP RW testing with default server settings + multiple threaded (700) + cpubound

12:17:37 Sysbench Run: OLTP RW testing with tuned server settings + single threaded + iobound

13:17:37 Sysbench Run: OLTP RW Run with tuned server settings + multiple threaded (700) + iobound

[...]

14:17:28 Recording plot data

[...]

14:17:28 Finished: SUCCESS

- Sysbench is a benchmark suite to quickly get an impression about system performance without setting up complex database benchmarks.
- Current features allow to test the following system parameters:
 - file I/O performance
 - scheduler performance
 - memory allocation and transfer speed
 - POSIX threads implementation performance
 - database server performance (OLTP benchmark)



- You can download sysbench from below link
 - <https://github.com/akopytov/sysbench>
- Documentation
 - <http://imysql.com/wp-content/uploads/2014/10/sysbench-manual.pdf>
- Useful links
 - <http://www.percona.com/blog/2014/09/02/using-sysbench-0-5-benchmark-mysql-whats-changed-latest-release/>
 - <https://blog.mariadb.org/using-lua-enabled-sysbench/>
 - <http://www.lefred.be/node/154>



- sysbench runs a specified number of threads and which then all execute requests in parallel
- The actual workload produced by requests depends on the specified test mode
- You can limit either the total number of requests or the total time for the benchmark, or both



The general syntax for sysbench is as follows:

```
sysbench [common-options] --test=name [test-options] command
```

Below is a brief description of available commands and their purpose:

prepare

Performs preparative actions for those tests which need them, e.g. creating the necessary files on disk for the fileio test, or filling the test database for the OLTP test.

run

Runs the actual test specified with the --test=name option.

cleanup

Removes temporary data after the test run in those tests which create one.

help

Displays usage information for a test specified with the --test=name option

- We use read/write sysbench combinations to test the server performance with different options, which include threads, buffer, data etc.

Sysbench configuration

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Single Thread

- 1) Default mysqld configurations + Cpu-bound
- 2) Tuned mysqld configurations + Cpu-bound
- 3) Tuned mysqld configurations + io-bound

Multi Thread

- 4) Default mysqld configurations + Cpu-bound
- 5) Tuned mysqld configurations + Cpu-bound
- 6) Tuned mysqld configurations + io-bound

MTR (mysql-test-run)

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- MTR's `--start-and-exit` option starts the server (after which MTR self-terminates), while leaving the server running for future use. Our `performance.sh` script then takes over

Sample MTR startup command

```
perl lib/v1/mysql-test-run.pl \  
  --start-and-exit \  
  --skip-ndb \  
  --vardir=$WORKDIR/$WORKDIRSUB/default_run \  
  --master_port=$PORT \  
  --mysqld=--core-file \  
  --mysqld=--sql-mode=no_engine_substitution \  
  --mysqld=--relay-log=slave-relay-bin \  
  --mysqld=--loose-innodb \  
  --mysqld=--log-output=none \  
  --mysqld=--secure-file-priv= \  
  --mysqld=--max-connections=900 \  
  --mysqld=--socket=$WORKDIR/$WORKDIRSUB/socket.sock
```

MTR (mysql-test-run)

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MTR by example

```
[ramesh@qaserver-03 mysql-test]$ perl lib/v1/mysql-test-run.pl --start-and-exit --skip-ndb --vardir=/sda/1000/default_run 1st
Logging: lib/v1/mysql-test-run.pl --start-and-exit --skip-ndb --vardir=/sda/1000/default_run 1st
2015-03-30 05:52:04 32093 [Warning] Buffered warning: Changed limits: max_open_files: 1024 (requested 5000)

2015-03-30 05:52:04 32093 [Warning] Buffered warning: Changed limits: table_cache: 431 (requested 2000)
[...]
```

Servers started, exiting

```
[ramesh@qaserver-03 mysql-test]$
```

```
[ramesh@qaserver-03 mysql-test]$ /sda/Percona-Server-5.6.22-rel71.0-729.Linux.x86_64/bin/mysqladmin -S/sda/1000/default_run/tmp/master.sock -uroot ping
mysqld is alive
```

```
[ramesh@qaserver-03 mysql-test]$
```

- mysql startup configuration
 - For I/O-bound and read/write CPU-bound operations, configured following mysql options for tuned sysbench run

```
--innodb-old-blocks_time=0
--innodb-buffer-pool-size=4G
--innodb-lru-scan-depth=3000
--innodb-log-file-size=1G
--innodb-io-capacity=2000
--innodb-io-capacity-max=4000
--innodb-flush-log-at-trx-commit=1
--innodb-flush-method=O_DIRECT
--innodb-checksum-algorithm=crc32
--innodb-log-checksum-algorithm=crc32
--innodb-file-per-table=true
```

Performance monitoring in Jenkins

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- To test I/O-bound and RW CPU-bound performance we used large undo logs
- To control the background flushing rate added optimal `innodb_io_capacity` and `innodb_io_capacity_max` values
- We also configured `innodb_lru_scan_depth` (for I/O-intensive workloads) and log checksums

Performance monitoring in Jenkins

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MTR sysbench run by example

- After MTR startup we use sysbench **prepare** script to insert records into table. This prepare script will insert 1 million records in 40 tables

```
/usr/bin/sysbench --test=/usr/share/doc/sysbench/tests/db/parallel_prepare.lua
--num-threads=40 --oltp-tables-count=40 --oltp-table-size=1000000 --mysql-db=test
--mysql-user=root --db-driver=mysql --mysql-socket=$WORKDIR/$WORKDIRSUB/socket.sock run
```

- Before starting performance job, it will initiate read only sysbench run to keep the server buffer pool warm

```
/usr/bin/sysbench --test=/usr/share/doc/sysbench/tests/db/oltp.lua \
--num-threads=$MULTI_THREAD_COUNT --max-time=120 --max-requests=1870000000 \
--oltp-tables-count=30 --mysql-db=test --oltp-read-only --mysql-user=root \
--db-driver=mysql --mysql-socket=$WORKDIR/$WORKDIRSUB/socket.sock \
run
```

MTR sysbench run by example

- The following will start the sysbench read/write combinations one by one to analyse the performance.

```
## OLTP RW Run with Tuned server settings + multiple threaded (400) + cpubound (10  
tables * 1 M Rows each : data size approx = 2.3G )
```

```
/usr/bin/sysbench --test=/usr/share/doc/sysbench/tests/db/oltp.lua --num-  
threads=$MULTI_THREAD_COUNT --max-time=$SYSBENCH_DURATION --max-requests=1870000000  
--oltp-tables-count=10 --mysql-db=test --mysql-user=root --db-driver=mysql --mysql-  
socket=$WORKDIR/$WORKDIRSUB/socket.sock run
```

- Single thread sysbench combinations
 - ## OLTP Read/Write Run with default server settings + single threaded + cpubound (10 tables * 1 M Rows each : data size approx = 2.3G)
 - ## OLTP Read/Write Run with Tuned server settings + single threaded + iobound (30 tables * 1 M Rows each : data size approx = 6.9G)
 - ## OLTP Read/Write Run with Tuned server settings + single threaded + cpubound (10 tables * 1 M Rows each : data size approx = 2.3G)

- Multi thread sysbench combinations
 - ## OLTP Read/Write Run with default server settings + multiple threaded (400) + cpubound (10 tables * 1 M Rows each : data size approx = 2.3G)
 - ## OLTP Read/Write Run with Tuned server settings + multiple threaded (400) + cpubound (10 tables * 1 M Rows each : data size approx = 2.3G)
 - ## OLTP Read/Write Run with Tuned server settings + multiple threaded (400) + iobound (30 tables * 1 M Rows each : data size approx = 6.9G)

Performance monitoring in Jenkins

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- Currently we have configured performance testing job for PS-5.5 and PS-5.6 releases.
- <http://jenkins.percona.com/view/QA/job/percona-server-5.5-qa-performance/plot/>
- <http://jenkins.percona.com/view/QA/job/percona-server-5.6-qa-performance/plot/>

Performance job report

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```
14:02:42 Storing Sysbench results in /data1/workspace/percona-server-5.5-qa-performance
14:02:42 =====
14:02:42 RW_DS_CPUBOUND Last Run: 1566300          | RW_DS_CPUBOUND This Run: 1206440
14:02:42 RW_DM_CPUBOUND Last Run: 27222738         | RW_DM_CPUBOUND This Run: 23206187
14:02:42 RW_TS_CPUBOUND Last Run: 1235580          | RW_TS_CPUBOUND This Run: 1214200
14:02:42 RW_TM_CPUBOUND Last Run: 89683651         | RW_TM_CPUBOUND This Run: 122184036
14:02:42 RW_TS_IOBOUND Last Run: 1219740          | RW_TS_IOBOUND This Run: 1032160
14:02:42 RW_TM_IOBOUND Last Run: 68965504         | RW_TM_IOBOUND This Run: 69368730
14:02:42 =====
14:02:42 RW_DS_CPUBOUND Factor: .77 (77%)
14:02:42 RW_DM_CPUBOUND Factor: .85 (85%)
14:02:42 RW_TS_CPUBOUND Factor: .98 (98%)
14:02:42 RW_TM_CPUBOUND Factor: 1.36 (136%)
14:02:42 RW_TS_IOBOUND Factor: .84 (84%)
14:02:42 RW_TM_IOBOUND Factor: 1.00 (100%)
14:02:42 =====
14:02:42 Warning: big decrease in OLTP RW Run with default server settings + single threaded + cpubound performance
14:02:42 Warning: big decrease in OLTP RW Run with default server settings + multi threaded + cpubound performance
14:02:42 Great: big increase in OLTP RW Run with tuned server settings + multi threaded + cpubound performance
14:02:42 Warning: big decrease in OLTP RW Run with tuned server settings + single threaded + iobound performance
14:02:43 =====
```

Jenkins graph configuration

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- After completing the job we can visualize the performance status using the Jenkins Plot plugin
- This plugin provides generic plotting/graphing capabilities in Jenkins
- After each build completes the plots' data series latest values are pulled from Java properties file(s), CSV file(s), or XML file(s) via an XPath from the workspace
 - <https://wiki.jenkins-ci.org/display/JENKINS/Plot+Plugin>

Jenkins graph configuration

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```
[ramesh@dell-r420 percona-server-5.6-qa-performance]$ cat sysbench_performance_results.xml
<?xml version="1.0" encoding="UTF-8"?>
<performance>
  <RW_DM_CPUBOUND_QUERIES type="result">59830151</RW_DM_CPUBOUND_QUERIES>
  <RW_TM_CPUBOUND_QUERIES type="result">128192015</RW_TM_CPUBOUND_QUERIES>
  <RW_TM_IOBOUND_QUERIES type="result">100774440</RW_TM_IOBOUND_QUERIES>
</performance>
[ramesh@dell-r420 percona-server-5.6-qa-performance]$ pwd
/data1/workspace/percona-server-5.6-qa-performance
[ramesh@dell-r420 percona-server-5.6-qa-performance]$ 
[ramesh@dell-r420 percona-server-5.6-qa-performance]$
```

Jenkins graph configuration

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Post-build Actions

Plot build data

[Delete Plot](#)

Plot group

Automated QA Sysbench Performance Check for PS 5.6

Plot title

1) Sysbench OLTP RW QPR Across Builds (Multiple thread)

Number of builds to include

35

Plot y-axis label

Queries(Duration - 45 Minutes)

Plot style

Line

Build Descriptions as labels ☐

Data series file

sysbench_performance_results.xml

☐

Load data from properties file

☐

Load data from csv file

☒

Load data from xml file using xpath

XPath Result type: **Nodeset** **Node** **String** **Boolean** **Number**☐☐☐☐☐

XPath Expression

/performance/*[@type='result']

URL

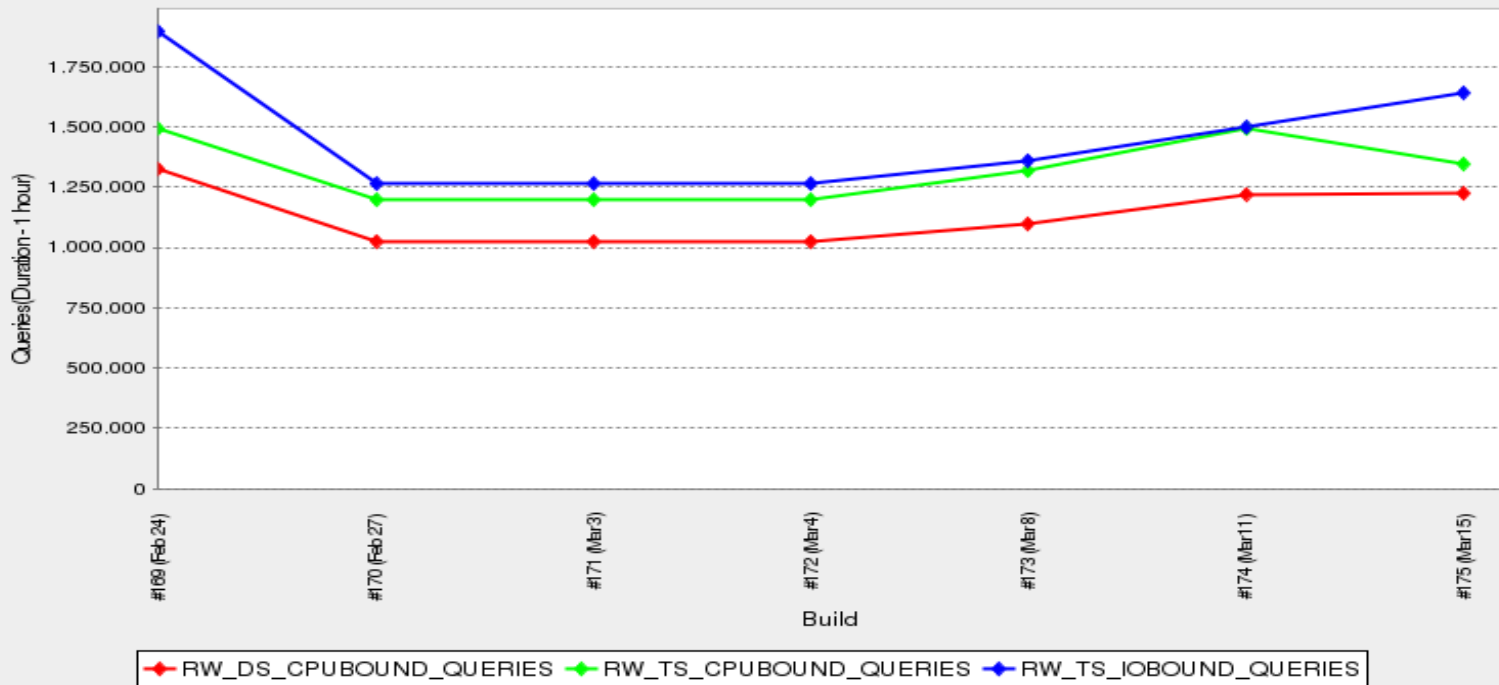
[Delete Data Series](#)

Performance monitoring in Jenkins

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Sysbench OLTP read/write QPR across builds (Single thread)

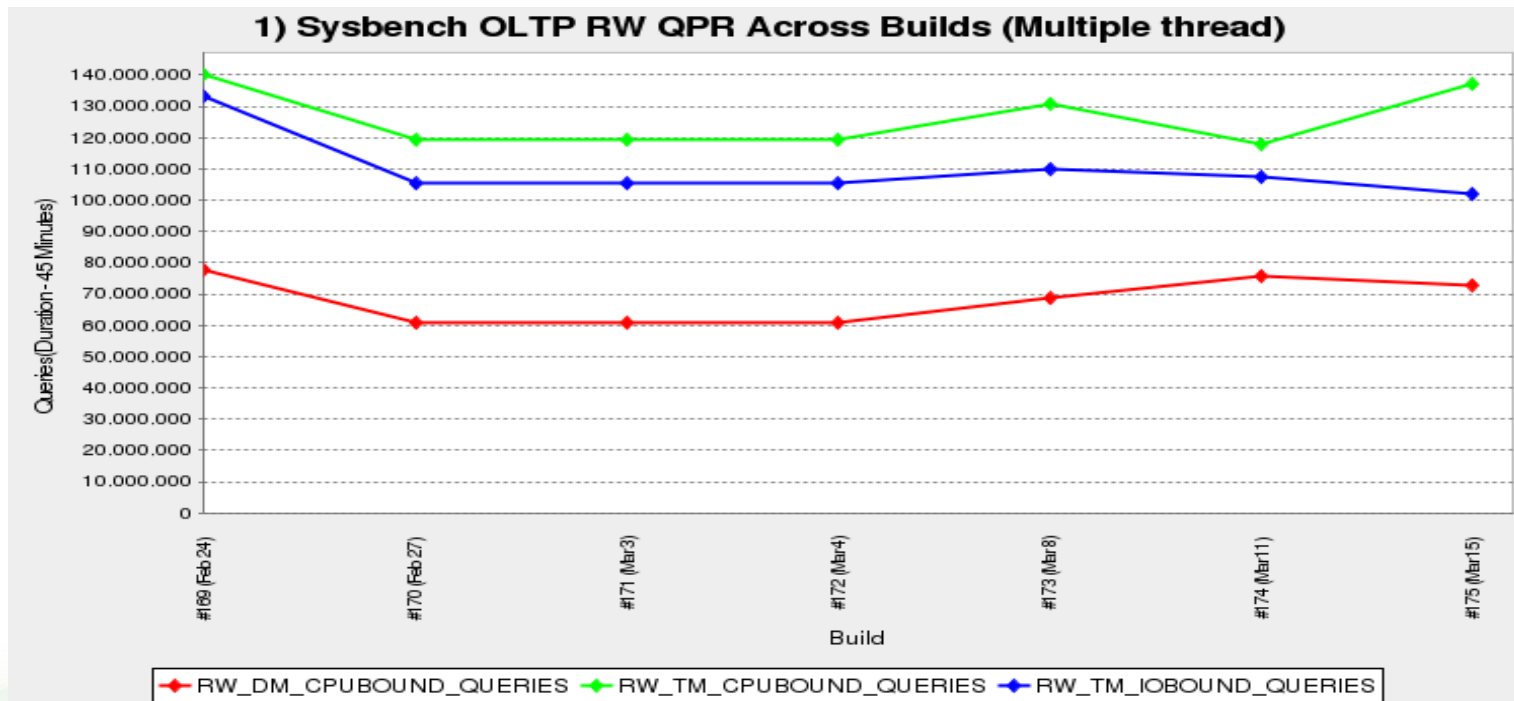
2) Sysbench OLTP RW QPR Across Builds (Single thread)



Performance monitoring in Jenkins

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Sysbench OLTP read/write QPR across builds (Multiple thread)



Q & A