A Contributor's Guide to Launchpad and Bazaar

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about launchpad

- Written by the folks at Canonical/Ubuntu
- Online platform for project and code management

Features
- Source control services
- Translation services
- Bug tracking
- Task management
- Answers/FAQ functionality
Profile
Location
SSH public keys
Team memberships
Most active projects
Karma

Jay Pipes

Jay Pipes is the North American Community Relations Co-author of Pro MySQL (Apress, 2005), Jay has also Linux Magazine and regularly assists software developers to make the most effective use of MySQL. He is a performance tuning at the MySQL Users Conference, Conference, ZendCon, php-tek, OSCON, and Ohio Linux Fest. He lives in Columbus, Ohio, with his wife, Julie, and his two noisy dogs, he daydreams in PHP code and the ramifications of __clone().

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jay@mysql.com
IRC: jaypipes on network irc.freenode.net
OpenPGP keys: 9C5804A8, EFE99E75
SSH Keys: jpipes@senalcoder

Location

Time zone: America/New_York

https://launchpad.net/~jaypipes
• Each project has a home page, shown to the right
• Main project team is listed as the “driver”

Drizzle

A Lightweight SQL Database for Cloud and Web

The Drizzle project is building a database optimized for Cloud and Net applications. It is being designed derived from MySQL.

The drizzle project is discussed on the drizzle-discuss mailing list. If you want to show your support for the mailing list, sign up here: https://launchpad.net/~drizzle-discuss/

The project is focused on making a database that is:
1) Reliable
2) Fast and scalable on modern architecture
3) Simply design for ease of installation and management

Quick Build:
bzr branch lp:drizzle ; cd drizzle; ./config/autorun.sh ; ./configure && make

Wiki


Languages: C++

Maintainer: Drizzle-developers

Driver: Drizzle-developers

Licenses: GNU GPL v2

Announcements

★ 2008-08-22: Cirrus Milestone Created
★ 2008-07-29: Buildbot Now Accepting Slaves

More announcements

Make announcement

Series and milestones

Trunk: focus of development
Milestones: cirrus

https://code.launchpad.net/drizzle
To join the team, click the team link, then “Join this team”
## project downloads

This site is running pre-release code. Please report all bugs.

### Release series “mysql-sandbox-2.0”

<table>
<thead>
<tr>
<th>Download</th>
<th>Release</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>mysql_sandbox_2.0.10.tar.gz (md5)</td>
<td>2.0</td>
<td>mysql sandbox 2.0.10</td>
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<tr>
<td>mysql_sandbox_2.0.9.tar.gz (md5)</td>
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</table>

### Release series “mysql-sandbox-1”

<table>
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<td>mysql sandbox 1.22 &quot;queen-rook-pawn&quot;</td>
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### Release series “mysql-sandbox-1.99-alpha”

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<td>mysql sandbox 1.99.10 alpha release</td>
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<tr>
<td>mysql_sandbox_1.99.9.tar.gz (md5)</td>
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<td>mysql_sandbox_1.99.8.tar.gz (md5)</td>
<td>1.99</td>
<td>mysql sandbox 1.99.8 alpha release</td>
</tr>
</tbody>
</table>

[https://edge.launchpad.net/mysql-sandbox/+download](https://edge.launchpad.net/mysql-sandbox/+download)
Bazaar branches of Drizzle

97 branches owned by 26 people and 1 team, 198 commits by 14 people in the last month

2 active reviews, 0 approved merges

You can browse the source code for the development focus branch or get a copy of the branch using the command:

```
bzr branch lp:drizzle
```

https://code.launchpad.net/drizzle
Bug tracking on Launchpad

**Bugs in A Lightweight SQL Database for Cloud and Web**

- **Bug tracker:** Launchpad
- **0 bugs fixed elsewhere**
- **0 open CVE bugs - CVE reports**
- **0 incomplete bugs can expire**
- **List all open bugs**
- **Subscribe to bug mail**

https://bugs.launchpad.net/drizzle

**Protobuf compile error**

- **Project:** Drizzle
- **Status:** New
- **Assigned to:** Nobody
- **Comment on this change (optional):**

This probably is a protobuf issue and not a drizzle bug, but I thought someone here might have some insight before trying to report this to protobuf (since drizzle is compiled with a debian lenny and am using the latest protobuf 2.0.1.tar.gz from the Google project instead of the definitions in the problematic header causes more compiler errors, so it's really be redundant (if so I would think removing one would fix it). My C++ class is not up to par to fix this quickly, but I thought someone on the project would have better insight:

https://bugs.launchpad.net/drizzle/+bug/271075

https://bugs.launchpad.net/drizzle
answers on launchpad

Questions for Drizzle

- 44565 compiling macOSX-fixes
- 44472 How can I help?
- 42036 how can I download and test drizzle? I don't see anything in the downloads section.
- 41923 libraries for windows
- 40052 So where is the cloud part?

https://answers.launchpad.net/drizzle

https://answers.edge.launchpad.net/drizzle/+question/44565
translations on launchpad

Translation status for drizzle

This template has no description, you can create one now.

<table>
<thead>
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<th>Status</th>
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<th>Need review</th>
<th>Changed</th>
<th>Last Edited</th>
<th>By</th>
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<td>—</td>
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<td>Brazilian Portuguese</td>
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<td>Catalan</td>
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https://translations.launchpad.net/drizzle/trunk/+pots/drizzle
## Blueprints for Drizzle

Show only blueprints containing:  

<table>
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<tr>
<th>Priority</th>
<th>Blueprint</th>
<th>Design</th>
<th>Delivery</th>
<th>Assignee</th>
<th>Series</th>
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<tbody>
<tr>
<td>High</td>
<td>enable-passing-tests</td>
<td>Approved</td>
<td>Slow progress</td>
<td>Jay Pipes</td>
<td></td>
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<tr>
<td>High</td>
<td>fix-and-enable-tests</td>
<td>Approved</td>
<td>Started</td>
<td>Jay Pipes</td>
<td></td>
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<td>High</td>
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<td>Approved</td>
<td>Started</td>
<td>Jay Pipes</td>
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<tr>
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<td>Started</td>
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<tr>
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<td>Started</td>
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<tr>
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<td>buildbot</td>
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<td>Good progress</td>
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<tr>
<td>Medium</td>
<td>enable-disabled-tests</td>
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<td>Medium</td>
<td>remove-dead-code</td>
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<td>Slow progress</td>
<td></td>
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<td>tests-refactor-runner</td>
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<td>doxygenation</td>
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<td></td>
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<tr>
<td>Low</td>
<td>item-class-file-reorg</td>
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<td>Blocked</td>
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<tr>
<td>Low</td>
<td>use-replace-funcs</td>
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<td></td>
<td></td>
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<td>Low</td>
<td>rename-test-runner-mysql-to-drizzle</td>
<td>Pending Approval</td>
<td>Unknown</td>
<td>Monty Taylor</td>
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<td>Low</td>
<td>libc-stdio-charset</td>
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<td>Deferred</td>
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<td>Good progress</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Undefined</td>
<td>style-cleanup</td>
<td>Approved</td>
<td>Good progress</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

[https://blueprints.launchpad.net/drizzle](https://blueprints.launchpad.net/drizzle)
about bazaar

• Written in C and Python
  – C modules for networking and I/O layers
  – Python for everything else

• Maintained by a small group of developers with community-driven roadmap

• Bazaar is released *every ~4 weeks*

• Current focus is on performance
  – 1.5 -> 1.6.1 massive increases in performance of large, history-rich projects such as the MySQL server
installing bazaar on linux

- **Ubuntu/Debian**
  
  \$> sudo apt-get install bzr bzr-tools meld

- **Red Hat**
  
  \$> su -c 'rpm -Uvh http://download.fedora.redhat.com/pub/epel/5/i386/epel-release-5-2.noarch.rpm'
  
  \$> su -c 'yum install bzr'

- **Bazaar Tools**
  
  - GUI tools and useful plugins

- **Meld** is a graphical source conflict resolver
installing bazaar on windows and mac osx

• Windows:
  – Grab the installer from:
    http://bazaar-vcs.org/Download
  – Run it. :)

• Mac OS X
  – Either grab an image from:
    http://bazaar-vcs.org/Download
  – Or use MacPorts
    $> sudo port install bzr bzr-tools meld
distributed source control concepts

- A repository is a collection of branches
  - But...there is no central server with single controlling repository
- Instead, developers work on their own branches of a project's code
- Code is maintained for a project by merging branches together
- The project's source tree is merely the collection of branches that contain source code
decentralized model with gatekeeper

1. Developer creates a local branch from some branch of the project
2. Developer makes changes to the local branch
3. Developer commits changes to the local branch
4. Developer pushes a changeset to another branch
5. Gatekeeper (or merge captain) reviews the pushed changeset
6. Gatekeeper merges changes into a branch which serves as a “trunk” or active development branch
7. Developer pulls from trunk branch to update locally
decentralized model with gatekeeper

1. $>$ bzr branch lp:drizzle trunk
2. $> vi$ somefile.cc
3. $>$ bzr commit somefile.cc -m “code change comment”
4. $>$ bzr push lp:~username/drizzle/reviews
5. $>$ bzr branch lp:~username/drizzle/reviews username-reviews
6. $> cd$ local-trunk && bzr merge ../username-reviews && bzr push
7. $> cd$ trunk; bzr pull
setting up a local development repository

$> mkdir ~/repos

$> cd repos; bzr init-repo drizzle

$> cd drizzle

$> bzr branch lp:drizzle trunk

• To pull in any changesets merged into the trunk branch, do this on a periodic basis:

$> cd ~/repos/drizzle/trunk; bzr pull

• Consider scripting the pull in cron
working on a bug locally

$> bzr branch trunk bug32124-crash-ps-var
$> cd bug32124-crash-ps-var

• Make code changes

$> bzr commit filename.cc  # Repeat as needed
• Enter descriptive comments about the change in your editor and save

$> bzr push lp:~username/drizzle/reviews
proposing a branch for review

- In Launchpad.net, click “Propose for merging into another branch” as shown in the screenshot below:

https://code.launchpad.net/~drizzle-developers/drizzle/enable-tests
best practices for using launchpad and bazaar

- Use small, manageable “work units”
  - GOOD: “split and enable func_md5 plugin tests”
  - BAD: “refactor the server” :)

- Use the Blueprints system to relate common and dependent tasks
  - Very helpful in organizing larger blueprints with smaller, more specific subtasks

- Have a personal “reviews” branch
  - Good for small patch reviews for your own code

- Have specific branches for larger tasks
small work units

- A blueprint should be small and as descriptive as possible
- Blueprints can be created to group smaller tasks into a common “super-task”
- Use the “Add dependency” action to link a subtask to a super-task
- The super-task will show a graphical representation of the dependencies
Enable as many tests in the existing test suite as possible and fix failing tests

This is an over-arching task to encapsulate enabling passing, failing, and disabled tests in the Drizzle test suite.

- Set the URL for this specification

Milestone target: cirrus.

- Offer to mentor someone implementing this blueprint

Dependency tree:

- enable-passing-tests (jaypipes)
  - enable-disabled-tests (jaypipes)
  - fix-tests-syntax-failures (jaypipes)
- fix-and-enable-tests (jaypipes)

* Blueprints in grey have been implemented.

https://blueprints.launchpad.net/drizzle/+spec/fix-and-enable-tests
using milestones to provide direction

- A milestone is simply a container which acts as a “target” for developers.
- You can link bugs, blueprints, and branches to a milestone.
- Multiple milestones can exist simultaneously for a project.
Milestone cirrus for Drizzle

First stable release of the Drizzle Server.

Targeted features/functionality:

* Clean up of the code style
* Removal of custom libraries for regex, msys, dbug
* Use of Google Proto Buffers in place of current discovery system and .frm files
* Overhaul of testing framework
* Standardization on stdint
* Removal of all compiler warnings

9 blueprints targeted

<table>
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<tr>
<th>Specification</th>
<th>Priority</th>
<th>Assignee</th>
<th>Delivery</th>
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<td>Enable as many tests in the existing test suite as possib...</td>
<td>High</td>
<td>Jay Pipes</td>
<td>Started</td>
</tr>
<tr>
<td>Fix tests cases with syntax failures due to changed data ...</td>
<td>High</td>
<td>Jay Pipes</td>
<td>Started</td>
</tr>
<tr>
<td>Overhaul the testing infrastructure</td>
<td>High</td>
<td>Andy Lester</td>
<td>Started</td>
</tr>
<tr>
<td>Re-enable passing tests for the Drizzle test suite</td>
<td>High</td>
<td>Jay Pipes</td>
<td>Slow progress</td>
</tr>
<tr>
<td>Enable disabled tests in the test suite which should be e...</td>
<td>Medium</td>
<td>Jay Pipes</td>
<td>Slow progress</td>
</tr>
<tr>
<td>Remove dead code</td>
<td>Medium</td>
<td>Jay Pipes</td>
<td>Slow progress</td>
</tr>
<tr>
<td>A new table discovery mechanism</td>
<td>Medium</td>
<td>Jay Pipes</td>
<td>Started</td>
</tr>
<tr>
<td>Use autotools AC_REPLACE_FUNCS for duplicate functions</td>
<td>Low</td>
<td>Monty Taylor</td>
<td>Unknown</td>
</tr>
<tr>
<td>Clean up coding style</td>
<td>Undefined</td>
<td>Monty Taylor</td>
<td>Good progress</td>
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2 bugs targeted

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<th>Importance</th>
<th>Assignee</th>
<th>Status</th>
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<tbody>
<tr>
<td>#268263 Failed Tests - ZEROFILL Syntax Errors</td>
<td>High</td>
<td>Monty Taylor</td>
<td>Confirmed</td>
</tr>
<tr>
<td>#267978 gettext dependency not properly picked up in build process</td>
<td>Low</td>
<td>Monty Taylor</td>
<td>Confirmed</td>
</tr>
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</table>
closing a launchpad bug through bazaar

• Extremely useful option to the bzr commit command

• Allows you to automatically relate a bug to a specific commit in the source tree

• Automatically changes the bug status to fix committed

$> bzr commit --fixes=lp:XXXXXXX

• Where XXXXXX is the bug ID from Launchpad

• Also prefixes for other bug trackers (see bzr manual)
merging and resolving conflicts

- Use `bzr merge` to merge one branch's changes into another.
- A *merge conflict* occurs when source files cannot be cleanly merged together.
  - Typically when two developers have edited the same lines of the same source file.
- Conflicting files will have `file.OTHER`, `file.THIS`, and `file.BASE` in the source directory.
- Resolve the conflicts using `Meld`. 
merging one branch into another branch

• To merge, go to the target branch and specify the source directory:

$> cd ~/repos/drizzle/enable-tests
$> bzr merge ../trunk

• This would merge trunk's changes into the enable-tests branch

• Conflicts listed at end of merge output:

    Text conflict in tests/t/func_gconcat.test
    Text conflict in tests/t/func_str.test
    2 conflicts encountered.
using bzr gconflicts

- Conflicts can always be listed with `bzr conflicts`:

```bash
$ bzr conflicts
Text conflict in tests/t/func_gconcat.test
Text conflict in tests/t/func_str.test
```

- Use Meld to resolve a conflict

```
$ bzr gconflicts
```

- This will list all files with conflicts

- Choose a file to resolve and select “meld” from the dropdown of utilities
using meld to resolve a conflict
using meld for visual diffs

- Ctrl-D to jump to the next conflict (Ctrl-E goes back one conflict)
- The left-most file is the BASE file, the middle file is the local file and the right-most file is the one from the merged branch
- Decide how to resolve the conflict and edit the middle file (filename.THIS)
- Changes can be applied by editing the files directly or by clicking the small arrows in the gray area in between the files
- Ctrl-S to save the changes
resolving the conflict in bzr

- You need to now tell bzr that you've resolved the conflict
- First, rename filename.THIS to filename
- Then tell bzr that you've resolved things
- Then commit

```bash
[jpipes@serialcoder: enable-tests]$ mv tests/t/func_gconcat.test.THIS tests/t/func_gconcat.test
[jpipes@serialcoder: enable-tests]$ bzr resolve tests/t/func_gconcat.test
[jpipes@serialcoder: enable-tests]$ mv tests/t/func_str.test.THIS tests/t/func_str.test
[jpipes@serialcoder: enable-tests]$ bzr resolve tests/t/func_str.test
[jpipes@serialcoder: enable-tests]$ bzr commit -m "Merge from trunk and resolved conflicts func_gconcat and func_str - simple removal of ZEROFILL args"
```
resources

• Bazaar online manual and user guide

• Launchpad user's wiki
  https://help.launchpad.net/

• IRC on Freenode #launchpad and #bzr