

A Contributor's Guide to Launchpad and Bazaar

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launchpad



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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

Profile Related Software Karma Personal Packages



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 how to make the most effective use of MySQL. He has performance tuning at the MySQL Users Conference, Conference, ZendCon, php-tek, OSCON, and Ohio Linux He lives in Columbus, Ohio, with his wife, Julie, and his In his abundant free time, when not being pestered by and two noisy dogs, he daydreams in PHP code and ramifications of `__clone()`.

Email:  jay.pipes@sun.com
 jay@mysql.com


IRC: [jaypipes on network irc.freenode.net](irc://irc.freenode.net/jaypipes)


OpenPGP keys: [9C5804A8](#), [EFE99E75](#)


SSH Keys: [jpipes@serialcoder](#)
[\(view key text\)](#)

OpenID login:  <https://login.launchpad.net/+id/n6eYnA>

Location **Time zone:** America/New_York



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 [Set location and time zone](#)

- Each project has a home page, shown to the right
- Main project team is listed as the “driver”



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](#)

Uses Launchpad for: [Answers](#), [Blueprints](#), [Bug Tracking](#), [Code](#), and [Translations](#).

Languages: C++

Maintainer: [Drizzle-developers](#)

Driver: [Drizzle-developers](#)

Licenses: GNU GPL v2

[Report a bug](#) [Help translate](#) [Ask a question](#) [Mentoring available](#)

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](#)

project teams on launchpad

- To join the team, click the team link, then “Join this team”

Drizzle-developers

Mentoring available ▶




Show map and time zones

Your involvement

You are a member of this team.

Recently approved

-  Roland Bouman (roland-bouman)
-  wtoconnor (wtoconnor)

Summary

Team owner: Brian
Created on: 2008-0
Moderated Team:
administrators.

Membership:
34 active members
3 inactive members

<https://launchpad.net/~drizzle-developers>

launchpad MySQL Sandbox Jay Pipes • Log Out

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

Overview Code **Bugs** Blueprints Translations Answers

Details Announcements **Downloads**

Release series "mysql-sandbox-2.0"

Download	Release	Description
mysql_sandbox_2.0.10.tar.gz (md5)	2.0	mysql sandbox 2.0.10
mysql_sandbox_2.0.9.tar.gz (md5)	2.0	mysql sandbox 2.0.9
mysql_sandbox_2.0.8.tar.gz (md5)	2.0	mysql sandbox 2.0.8
mysql_sandbox_2.0.7.tar.gz (md5)	2.0	mysql sandbox 2.0.7
mysql_sandbox_2.0.6.tar.gz (md5)	2.0	mysql sandbox 2.0.6
mysql_sandbox_2.0.4.tar.gz (md5)	2.0	mysql sandbox 2.0.4
mysql_sandbox_2.0.3.tar.gz (md5)	2.0	mysql sandbox 2.0.3
mysql_sandbox_2.0.2.tar.gz (md5)	2.0	mysql sandbox 2.0.2
mysql_sandbox_2.0.1.tar.gz (md5)	2.0	mysql sandbox 2.0.1
mysql_sandbox_2.0.0.tar.gz (md5)	2.0	mysql sandbox 2.0.0

Release series "mysql-sandbox-1"

Download	Release	Description
mysql_sandbox_1.22.tar.gz (md5)	1.22	mysql sandbox 1.22 "queen-rook-pawn"

Release series "mysql-sandbox-1.99-alpha"

Download	Release	Description
mysql_sandbox_1.99.10.tar.gz (md5)	1.99	mysql sandbox 1.99.10 alpha release
mysql_sandbox_1.99.9.tar.gz (md5)	1.99	mysql sandbox 1.99.9 alpha release
mysql_sandbox_1.99.8.tar.gz (md5)	1.99	mysql sandbox 1.99.8 alpha release



code management on launchpad

Bazaar branches of Drizzle

[+ Register a branch](#)

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
```

Branches with status:

Name	Status	Last Modified	Last Commit
lp:drizzle Series: trunk	★ New	4 days ago	395. Fixed uint/ushort issue in libdrizzle
lp:~jaypipes/drizzle/proto-definitions	New	2 hours 30 minutes ago	373. Added FieldDefinition class, which is...
lp:~mordred/drizzle/codestyle	New	11 hours ago	399. Renamed max/min to cmax/cmin in more ...
lp:~andrey-zhakov/drizzle/drizzle-virtual-columns	Development	12 hours ago	410. Disabling test vcol_blackhole
lp:~mordred/drizzle/split-and-rename-client	New	4 days ago	395. Fixed uint/ushort issue in libdrizzle
lp:~grant-glsoftware/drizzle/datetime-changes	Experimental	4 days ago	381. merge from trunk
lp:~ro4tub/drizzle/main	New	4 days ago	<i>This branch has not been pushed to yet.</i>
lp:~fallenpegasus/drizzle/pluglog	New	7 days ago	384. add pluggable logging
lp:~mkindahl/drizzle/stdize-code	Experimental	7 days ago	330. Merging stdize-code with main trunk.
lp:~drizzle-developers/drizzle/enable-tests	New	8 days ago	413. Added func_length and func_str to tes...
lp:~mordred/drizzle/drizzle-innodb-plugin	New	10 days ago	345. Fixed a few build errors.
lp:~petdance/drizzle/testing-overhaul	New	11 days ago	292. merging
lp:~patg-patg/drizzle/tests-addback	New	2 weeks ago	374. Added back tests, work in progress
lp:~grant-glsoftware/drizzle/drizzle-innodb-plugin	Development	3 weeks ago	344. OK I'm stuck

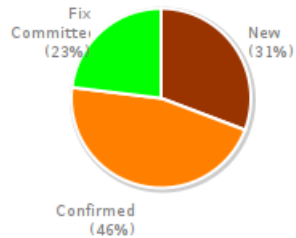
<https://code.launchpad.net/drizzle>



bug tracking on launchpad

Bugs in A Lightweight SQL Database for Cloud and Web

Advanced search by importance



Key contacts

- Driver: Drizzle-developers
- Bug supervisor: Drizzle-developers
- Security contact: Drizzle-developers

- **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**

[Report a bug](#)

[Ask a question](#)

Filters	
Open	13
Assigned to me	1
Critical	0
New	4
Unassigned	
All bugs ever reported	

Series-targets	
trunk	

Protobuf compile error

Affects	Status
Drizzle	New

Project
 (Choose...)

Status **Importance** **Milestone**

Assigned to
 Nobody
 Me
 (Choose...)

Comment on this change (optional)

E-mail me about changes to this bug report

[Also affects project](#) [Also affects distribution](#) [Target to release](#)

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 -Dprotobuf from debian lenny and am using the latest protobuf-2.0.1.tar.gz from the Google project either of the definitions in the problematic header causes more compiler errors, so I really be redundant (if so I would think removing one would fix it). My C++ class/struct is not up to par to fix this quickly, but I thought someone on the project would help. Here is the warning:

```
++ -DDRIZZLE_SERVER -DDEFAULT_DRIZZLE_HOME="/home/eday/drizzle/" -DDATADIR="
```

<https://bugs.launchpad.net/drizzle>

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



answers on launchpad

Questions for Drizzle

by relevancy

[Ask a question](#)

Status

- Open
 Needs information
 Answered
 Solved
 Expired
 Invalid

Summary	Created	Submitter	Status
44565 compiling macosx-fixes	2008-09-08	Sreeram	Answered
44472 How can I help?	2008-09-07	wtoconnor	Answered
42036 how can i download and test drizzle? I don't see anything in the downloads section.	2008-08-13	cronos4d	Answered
41923 libraries for windows			
40052 So where is the cloud part?			

- > List all FAQs
- > Open
- > Answered
- > My questions
- > Need attention
- > Ask a question
- > Set answer contact

Answer contacts for Drizzle

- > Edit question
- > Reject question
- > Change status
- > History
- > Subscribe
- > Link existing bug
- > Create bug report
- > This is a FAQ

<https://answers.launchpad.net/drizzle>

Answered Question #44565, asked on 2008-09-08 by [Sreeram](#)

compiling macosx-fixes

The Wiki says to compile macosx-fixes like this:

```
cd macosx-fixes
./configure --disable-fail
make
make install
```

But I don't find a configure script when I got the macosx-fixes source (using bazaar branch lp:~jimw/drizzle/macosx-fixes)

Am I missing something here?

I am assuming you want the macosx-fixes directory to be alongside drizzle, and built after building and installing drizzle..

[Jay Pipes](#) said on 2008-09-08:

You need to run ./config/autorun.sh to set up the autoconf environment.

```
cd macosx-fixes
./config/autorun.sh
./configure --disable-fail
make
make install
```

Also, Jim's fixes should be already merged into trunk, so you should only need to do bazaar branch lp:drizzle. :)

Drizzle question #44565

Question from: [Sreeram](#)
 Language: English
 Status: Answered
 For: drizzle
 Created: 2008-09-08
 Assignee: No assignee
 Last query: 2008-09-08
 Last reply: 2008-09-08

Subscribers

- [Sreeram](#)
- Also notified: [Drizzle-developers](#)

<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.

Language	Status	Untranslated	Need review	Changed	Last Edited	By
Arabic		1383	—	—	2008-09-02	Fox Mind
Brazilian Portuguese		1139	—	1	2008-09-04	Henrique M. Decaria
Catalan		1362	—	—	2008-08-16	el_libre XDDDDDDDDDDDD...
Chinese (Hong Kong)		1332	—	—	2008-08-16	Monty Taylor
Czech		1377	—	—	2008-09-12	Petr Pulc
Dutch		600	—	6	2008-09-11	Mark Daems
English (Australia)		1386	—	—	2008-08-16	Morgan Tocker
English (United Kingdom)		1026	—	—	2008-09-14	Matthew Gadd

- > Show translations
- > Upload a file
- > Download translations
- > Change details

Template details

1387 messages
28 Languages
Owner:
Monty Taylor
Created: on 2008-08-16
Domain: drizzle
Priority: 0
Translation Group:
None assigned
Permissions: Open for translation
Description:
None given

<https://translations.launchpad.net/drizzle/trunk/+pots/drizzle>



task management on launchpad

Blueprints for Drizzle

Show only blueprints containing: Search blueprints

[Register a blueprint](#)

1 → 47 of 47 results

[First](#) • [Previous](#) • [Next](#) ▶ • [Last](#)

Priority	Blueprint	Design	Delivery	Assignee	Series
High	enable-passing-tests ⓘ	Approved	Slow progress	Jay Pipes	
High	fix-and-enable-tests ⓘ	Approved	Started	Jay Pipes	
High	fix-tests-syntax-failures ⓘ	Approved	Started	Jay Pipes	
High	testing-overhaul ⓘ	Approved	Started	Andy Lester	
High	split-and-rename-client ⓘ	New	Started	Monty Taylor	
Medium	buildbot	Approved	Good progress	Ronald Bradford	
Medium	enable-disabled-tests ⓘ	Approved	Slow progress	Jay Pipes	
Medium	remove-dead-code	Approved	Slow progress		
Medium	tests-refactor-runner	Approved	Started	Andy Lester	
Medium	new-discovery ⓘ	Review	Started	Jay Pipes	
Low	doxygenation ⓘ	Approved	Good progress	Jay Pipes	
Low	item-class-file-reorg ⓘ	Approved	Blocked	Jay Pipes	
Low	use-replace-funcs	Approved	Unknown	Monty Taylor	
Low	rename-test-runner-mysql-to-drizzle	Pending Approval	Unknown		
Low	libicu-charsets	Discussion	Deferred		
Undefined	deb-package	Approved	Unknown	Monty Taylor	
Undefined	macport-package 🇨🇦	Approved	Unknown		
Undefined	rename-mysql-to-drizzle ⓘ	Approved	Good progress		
Undefined	style-cleanup ⓘ	Approved	Good progress		

- > List all blueprints
- > List documentat
- > Assignments
- > Register a bluep

- ### Latest blueprint
- Plug-in Service Registry
 - Port Batch Key patches from 6
 - Find occurrence MySQL in test r and replace wi names
 - Fix tests cases syntax failures changed data SQL mode
 - Enable disable the test suite v should be enab and/or fixes

<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 bazaar bazaar-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 bazaar'
```

- 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 OSX
 - Either grab an image from:
<http://bazaar-vcs.org/Download>
 - Or use MacPorts

```
$> sudo port install bzr bzr-tools meld
```



distributed source control concepts

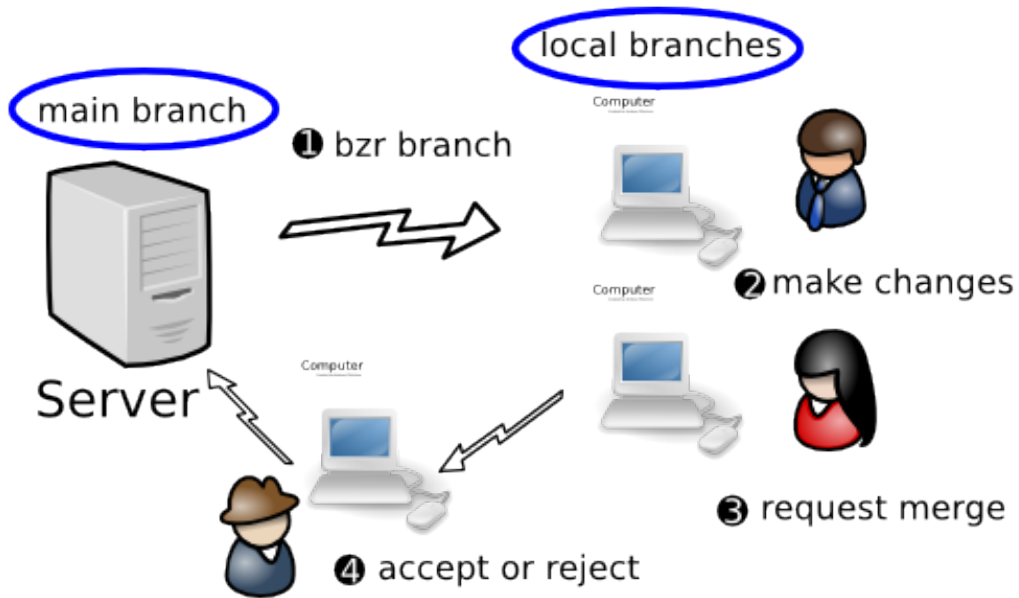
- A *repository* is a collection of *branches*
 - But...there is no central server with single controlling repository
- Instead, developers work on their own branches of a project's code
- Code is maintained for a project by merging branches together
- The project's source tree is merely the collection 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 $> bzd branch lp:drizzle trunk
2 $> vi somefile.cc
3 $> bzd commit somefile.cc -m "code change comment"
4 $> bzd push lp:~username/drizzle/reviews
5 $> bzd branch lp:~username/drizzle/reviews username-reviews
6 $> cd local-trunk && bzd merge ../username-reviews && bzd push
7 $> cd trunk; bzd pull
```



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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

```
$> bzip branch trunk bug32124-crash-ps-var
```

```
$> cd bug32124-crash-ps-var
```

- Make code changes

```
$> bzip commit filename.cc # Repeat as needed
```

- Enter descriptive comments about the change in your editor and save

```
$> bzip 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:



Branch lp:~drizzle-developers/drizzle/enable-tests

Details M

~drizzle-developers/drizzle/enable-tests

Project:  Drizzle
Status: New

Get this branch: bzr branch lp:~drizzle-developers/drizzle/enable-tests
Update this branch: bzr push lp:~drizzle-developers/drizzle/enable-tests
Branch format: Branch format 6
Repository format: Packs containing knits without subtree support

« No branches proposed for merging into this one.
» Not proposed for merging

+ Propose for merging into another branch

Whiteboard

 Edit whiteboard

Linked bug reports and blueprints

+ Link to a bug report

-  Enable as many tests in the existing test suite as possible and fix failing tests (High) - edit
-  Fix tests cases with syntax failures due to changed data types and SQL mode (High) - edit
-  Enable disabled tests in the test suite which should be enabled and/or fixes (Medium) - edit
-  Re-enable passing tests for the Drizzle test suite (High) - edit

+ Link to another blueprint

<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


a task with subtasks

Enable as many tests in the existing test suite as possible and fix failing tests



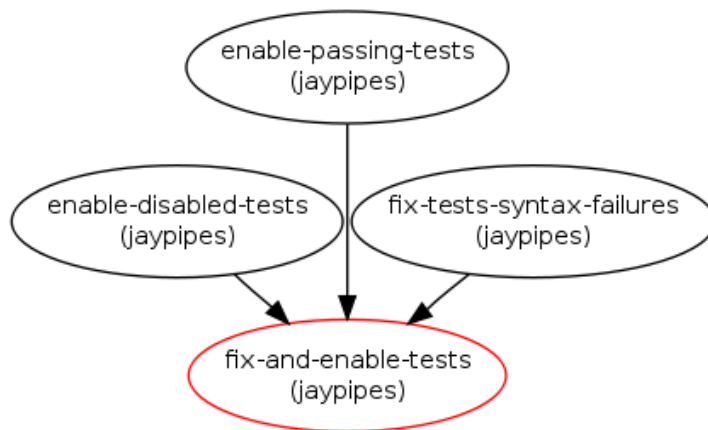
This is an over-arching task to encapsulate enabling passing, failing, and disabled tests in the Drizzle test suite

 [Set the URL for this specification](#)




Milestone target:  cirrus.

» [Offer to mentor someone implementing this blueprint](#)

Dependency tree



* Blueprints in grey have been implemented.

Priority: High
 Definition: Approved
 Implementation: Started
 Assignee:  Jay Pipes
 Drafter:  Jay Pipes
 Approver:  Jay Pipes

- > Edit title and summary
- > Change people
- > Change status
- > Change priority
- > Edit whiteboard
- > Propose as goal
- > Target milestone
- > Request feedback
- > Subscribe yourself
- > Subscribe someone else
- > Link to bug report
- > Link to branch
- > Offer mentorship
- > Add dependency
- > Remove dependency
- > Show dependencies
- > Propose for meeting agenda
- > Mark superseded
- > Retarget

Lifecycle

Registered by: Jay Pipes
 When: 2008-09-09
 Started: 2008-09-09
 by: Jay Pipes

Branches

 enable-tests: (no title) 



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, mysys, 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

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

2 bugs targeted

Report	Importance	Assignee	Status
 268263 Failed Tests - ZEROFILL Syntax Errors	High		Confirmed
 267978 gettext dependency not properly picked up in build process	Low	 Monty Taylor	Confirmed



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:XXXXXX
```

- 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



launchpad

merging one branch into another branch

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

```
$> cd ~/repos/drizzle/enable-tests
```

```
$> bzip 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 bzd gconflicts

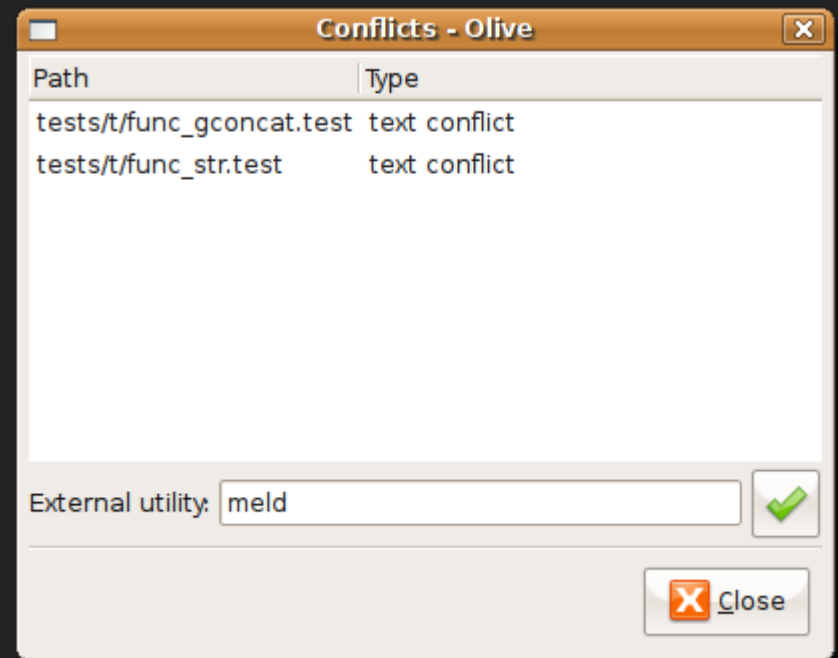
- Conflicts can always be listed with bzd conflicts:

```
[510][jpipes@serialcoder: /home/jpipes/repos/drizzle/enable-tests]$ bzd conflicts  
Text conflict in tests/t/func_gconcat.test  
Text conflict in tests/t/func_str.test
```

- Use Meld to resolve a conflict

\$> bzd 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

func_gconcat.test.BASE : func_gconcat.test.THIS : func_gconcat.test.OTHER - Meld

File Edit Settings Help

New Save Undo Redo Down Up Stop

func_gconcat.test.BASE : func_gconcat.test.THIS : func_gconcat.test.OTHER

```
select grp, numgroup_concat(separator) from t1 group by grp;
drop table t1;

# Test NULL values

create table t1 (grp int, c char(10));
insert into t1 values (1,NULL),(2,"b"),(2,NULL),(3,"E"),(3,NULL),(3,"D");
select grp,group_concat(c order by c) from t1 group by grp;

# Test warnings

set group_concat_max_len = 4;
select grp,group_concat(c) from t1 group by grp;
show warnings;
set group_concat_max_len = 1024;

# Test errors

--error 1111
select group_concat(sum(c)) from t1 group by grp;
--error 1054
select grp,group_concat(c order by 2) from t1 group by grp;

drop table t1;

# Test variable length

create table t1 ( URL_ID int(11), URL varchar(80));
create table t2 ( REQ_ID int(11), URL_ID int(11));
insert into t1 values (4,'www.host.com'), (5,'www.google.com'), (5,'www.
insert into t2 values (1,4), (5,4), (5,5);
# Make this order independent
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL from t1, t2 where
t2.URL_ID = t1.URL_ID group by REQ_ID;
# check min/max function
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL, Min(t1.URL_ID) url1,
Max(t1.URL_ID) url2 from t1, t2 where t2.URL_ID = t1.URL_ID group by RE

drop table t1;
drop table t2;

create table t1 (id int, name varchar(16));
insert into t1 values (1,'longername'),(1,'evenlongername');
select ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shortname') as
select distinct ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shor
drop table t1;

# check zero rows (bug#836)
create table t1(id int);
create table t2(id int);
insert into t1 values(0), (1);
select group_concat(t1.id) FROM t1,t2;
drop table t1;
drop table t2;
```

func_gconcat.test.THIS : func_gconcat.test.OTHER

```
select grp, numgroup_concat(separator) from t1 group by grp;
drop table t1;

# Test NULL values

create table t1 (grp int, c char(10));
insert into t1 values (1,NULL),(2,"b"),(2,NULL),(3,"E"),(3,NULL),(3,"D");
select grp,group_concat(c order by c) from t1 group by grp;

# Test warnings

set group_concat_max_len = 4;
select grp,group_concat(c) from t1 group by grp;
show warnings;
set group_concat_max_len = 1024;

# Test errors

--error 1111
select group_concat(sum(c)) from t1 group by grp;
--error 1054
select grp,group_concat(c order by 2) from t1 group by grp;

drop table t1;

# Test variable length

create table t1 ( URL_ID INT, URL varchar(80));
create table t2 ( REQ_ID INT, URL_ID INT);
insert into t1 values (4,'www.host.com'), (5,'www.google.com'), (5,'www.
insert into t2 values (1,4), (5,4), (5,5);
# Make this order independent
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL from t1, t2 where
t2.URL_ID = t1.URL_ID group by REQ_ID;
# check min/max function
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL, Min(t1.URL_ID) url1,
Max(t1.URL_ID) url2 from t1, t2 where t2.URL_ID = t1.URL_ID group by RE

drop table t1;
drop table t2;

create table t1 (id int, name varchar(16));
insert into t1 values (1,'longername'),(1,'evenlongername');
select ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shortname') as
select distinct ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shor
drop table t1;

# check zero rows (bug#836)
create table t1(id int);
create table t2(id int);
insert into t1 values(0), (1);
select group_concat(t1.id) FROM t1,t2;
drop table t1;
drop table t2;
```

func_gconcat.test.OTHER : func_gconcat.test.OTHER

```
select grp, numgroup_concat(separator) from t1 group by grp;
drop table t1;

# Test NULL values

create table t1 (grp int, c char(10));
insert into t1 values (1,NULL),(2,"b"),(2,NULL),(3,"E"),(3,NULL),(3,"D");
select grp,group_concat(c order by c) from t1 group by grp;

# Test warnings

set group_concat_max_len = 4;
select grp,group_concat(c) from t1 group by grp;
show warnings;
set group_concat_max_len = 1024;

# Test errors

--error 1111
select group_concat(sum(c)) from t1 group by grp;
--error 1054
select grp,group_concat(c order by 2) from t1 group by grp;

drop table t1;

# Test variable length

create table t1 ( URL_ID int(11), URL varchar(80));
create table t2 ( REQ_ID int(11), URL_ID int(11));
insert into t1 values (4,'www.host.com'), (5,'www.google.com'), (5,'www.
insert into t2 values (1,4), (5,4), (5,5);
# Make this order independent
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL from t1, t2 where
t2.URL_ID = t1.URL_ID group by REQ_ID;
# check min/max function
--replace_result www.help.com X www.host.com X www.google.com X
select REQ_ID, Group_Concat(URL) as URL, Min(t1.URL_ID) url1,
Max(t1.URL_ID) url2 from t1, t2 where t2.URL_ID = t1.URL_ID group by RE

drop table t1;
drop table t2;

create table t1 (id int, name varchar(16));
insert into t1 values (1,'longername'),(1,'evenlongername');
select ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shortname') as
select distinct ifnull(group_concat(concat(t1.id, ':', t1.name)), 'shor
drop table t1;

# check zero rows (bug#836)
create table t1(id int);
create table t2(id int);
insert into t1 values(0), (1);
select group_concat(t1.id) FROM t1,t2;
drop table t1;
drop table t2;
```

INS : Ln 81, Col 7



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 bazaar

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

```
[518][jpipes@serialcoder: enable-tests]$ mv tests/t/func_gconcat.test.THIS tests/t/func_gconcat.test
[519][jpipes@serialcoder: enable-tests]$ bazaar resolve tests/t/func_gconcat.test
[522][jpipes@serialcoder: enable-tests]$ mv tests/t/func_str.test.THIS tests/t/func_str.test
[523][jpipes@serialcoder: enable-tests]$ bazaar resolve tests/t/func_str.test
[525][jpipes@serialcoder: enable-tests]$ bazaar commit -m \
"Merge from trunk and resolved conflicts func_gconcat and func_str - simple removal of ZEROFILL args"
```



- Bazaar online manual and user guide

http://doc.bazaar-vcs.org/bzr.dev/en/user-reference/bzr_man.html

<http://doc.bazaar-vcs.org/bzr.dev/en/user-guide/index.html>

- Launchpad user's wiki

<https://help.launchpad.net/>

- IRC on Freenode #launchpad and #bzd