

# bzr - The Bazaar source revision control system



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2008-09-11

[SAGE@GUUG-Meeting](#), Hamburg, Germany

# Agenda

- Introduction to DVCS
- Features of Bazaar
- Terminology
- Workflows, Commands, Examples
- Related Tools / Links

# DVCS: Concepts

- No central instance
- Every branch a full copy (incl. History)
- Disconnected operation
- Easy to create new branches
- Merging of revisions from other repos
- Multi-Protocol support (http, SSH, SMTP, local filesystem)

# DVCS: Benefits

- Empowering developers: local commits
- Encourage experimenting
- Easy collaboration: sharing and merging
- Patches don't bit-rot

## Benefits (2)

- Parallel development of new features
- Maintaining local modifications
- Faster: local operations vs. Network
- Every branch is a full backup

# Bazaar: Features

- Python
- Centralized and decentralized workflows
- Shared repositories to save space
- One single `.bzd` directory
- Various transport protocols

# Features (2)

- Merge tracking
- Moved files retain history
- Hooks and Scripts
- Plugins (e.g. GUI extensions)
- Command Aliases

# Bazaar: Terminology

- Revision
  - Snapshot of a tree of files/directories
  - Includes Metadata (date, author, comment, parent revisions)
  - Can be exported
- Working Tree
  - Version-controlled directory
  - Contains editable files and directories



# Bazaar: Terminology (cont.)

- Branch
  - An ordered series of revisions
  - Can be split (cloned) and merged back together
  - Checkouts
- Repository
  - A store of revisions
  - Default: one repository/branch
  - Shared repositories to save space and improve performance

# General Syntax

```
bzr [global opts] command [opts] [args]
```

# Getting Help

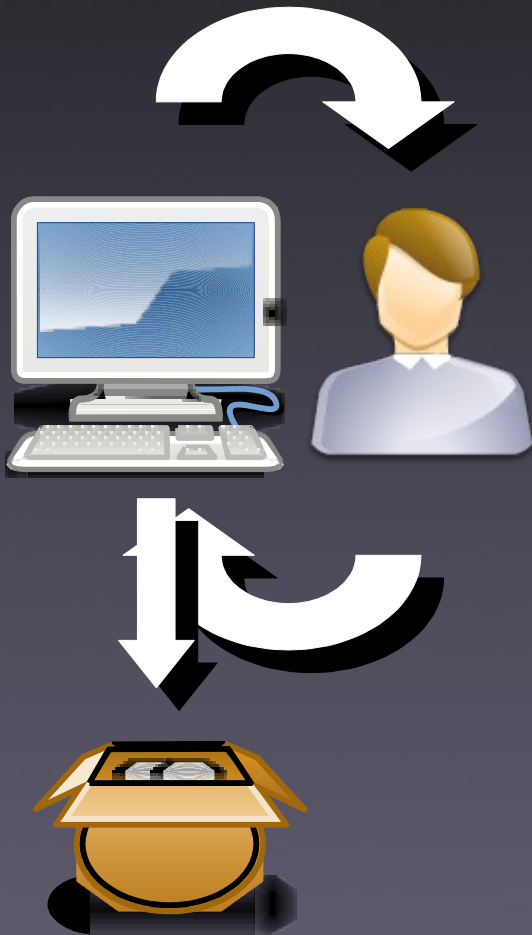
```
bzr help <command>
```

```
bzr help commands
```

```
bzr help topics
```

# Solo Workflow

- Create project
- Commit changes
- Review/browse history
- Package release
- Apply new changes
- Rinse & Repeat



# Initializing a Repository

```
bzr init <directory>
```

# Adding/Modifying Files

```
bzr add <files>  
bzr diff <files>
```

# Committing Changes

```
bzr commit <files>
```

```
  bzr gcommit
```

```
  bzr qcommit
```

# Looking at revision history

```
bzr log
```

```
bzr diff
```

```
bzr visualize
```



# bzr visualize

The screenshot shows the 'mysql-5.1 - revision history' window. The main area displays a graph of revisions with a table of details. The table has columns for Revision No, Summary, Committer, and Date. A yellow callout box points to revision 2655.3.7 with the text 'clone-5.1.27-build'. Another yellow callout box points to revision 2646.18.5 with the text 'Disabled two test cases in 5.1 because of random failures.' The bottom panel shows the details for revision 2655.3.8, including the commit message and a revert fix for a bug.

Revision No	Summary	Committer	Date
2670.1.3	Merge from mysql-5.1.27 release tree.	Davi Arnaut	2008-07-22 19:41
2655.3.8	Bug#33812: mysql client incorrectly parsing DELIMITER	Davi Arnaut	2008-07-17 20:20
2655.3.7	Set version number to 5.1.27	mysqldev	2008-07-14 16:46
2670.1.2	merge	Sergei Gol...	2008-07-22 16:42
2646.18.7	auto merge	Kristofer P...	2008-07-22 13:33
1810.3751.3	merge 5.0->5.0-bugteam	Kristofer P...	2008-07-22 12:55
2646.18.6	Disabled two test cases in 5.1 because of random failures.	Kristofer P...	2008-07-22 13:04
2646.18.5	merge 5.1->5.1-bugteam	Kristofer P...	2008-07-22 12:56
2646.18.4		Kristofer P...	2008-07-22 12:41
1810.3751.2	Auto merge	Kristofer P...	2008-07-21 12:24
2646.18.3	auto-merge	Tatiana A. ...	2008-07-22 08:54
2646.25.4	BUG#38269: pushbuild gives valgrind error in ha_statistic...	Sven Sand...	2008-07-21 21:05
2646.25.3	Corrected merge mistake.	Kristofer P...	2008-07-21 16:41
2646.25.2	Auto merge	Kristofer P...	2008-07-21 14:00
2646.25.1	Manual merge	Kristofer P...	2008-07-21 11:18
1810.3751.1	Bug#37027 expire_logs_days and missing binlogs cause ...	Kristofer P...	2008-07-24 14:28
2646.18.2	auto-merge + post-merge fixies	Tatiana A. ...	2008-07-21 11:20

**Revision Id:** davi.arnaut@sun.com-20080717182001-459akat8qx1e3nfx  
**Committer:** Davi Arnaut <Davi.Arnaut@Sun.COM>  
**Branch nick:** mysql-5.1.27-release  
**Timestamp:** Thu 2008-07-17 15:20:01 -0300

**Bug#33812: mysql client incorrectly parsing DELIMITER**  
Revert fix for this bug as it introduced a regression reported in Bug#38158.

# Pair programming

Create repository  
Push, Commit



Developer A

Branch, pull, merge  
Push, Commit



Developer B

Push, Commit

# Branching

```
bzr branch FROM TO
```

# Publishing changes

```
bzr push  
bzr send
```

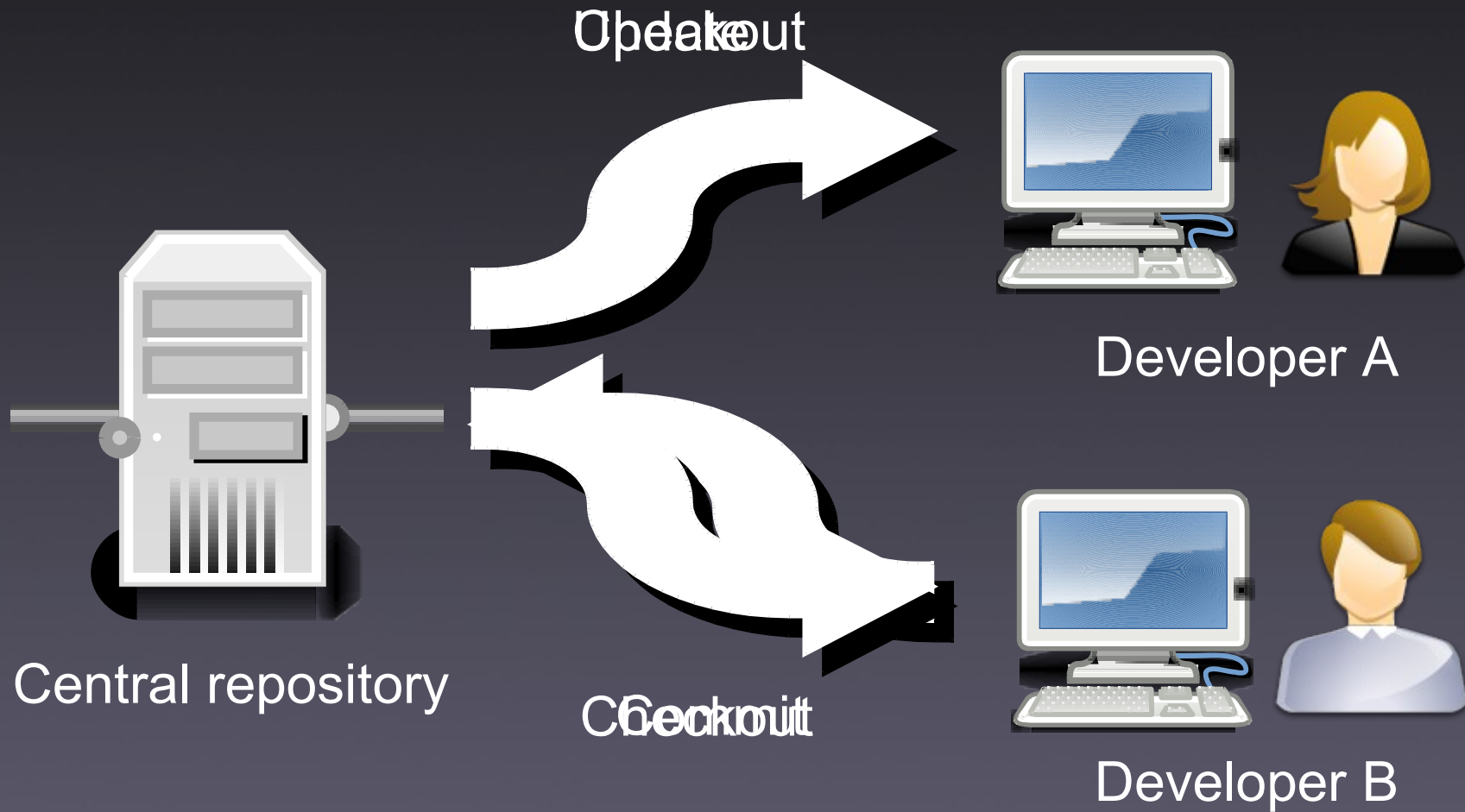
# Retrieving updates

`bzr pull`

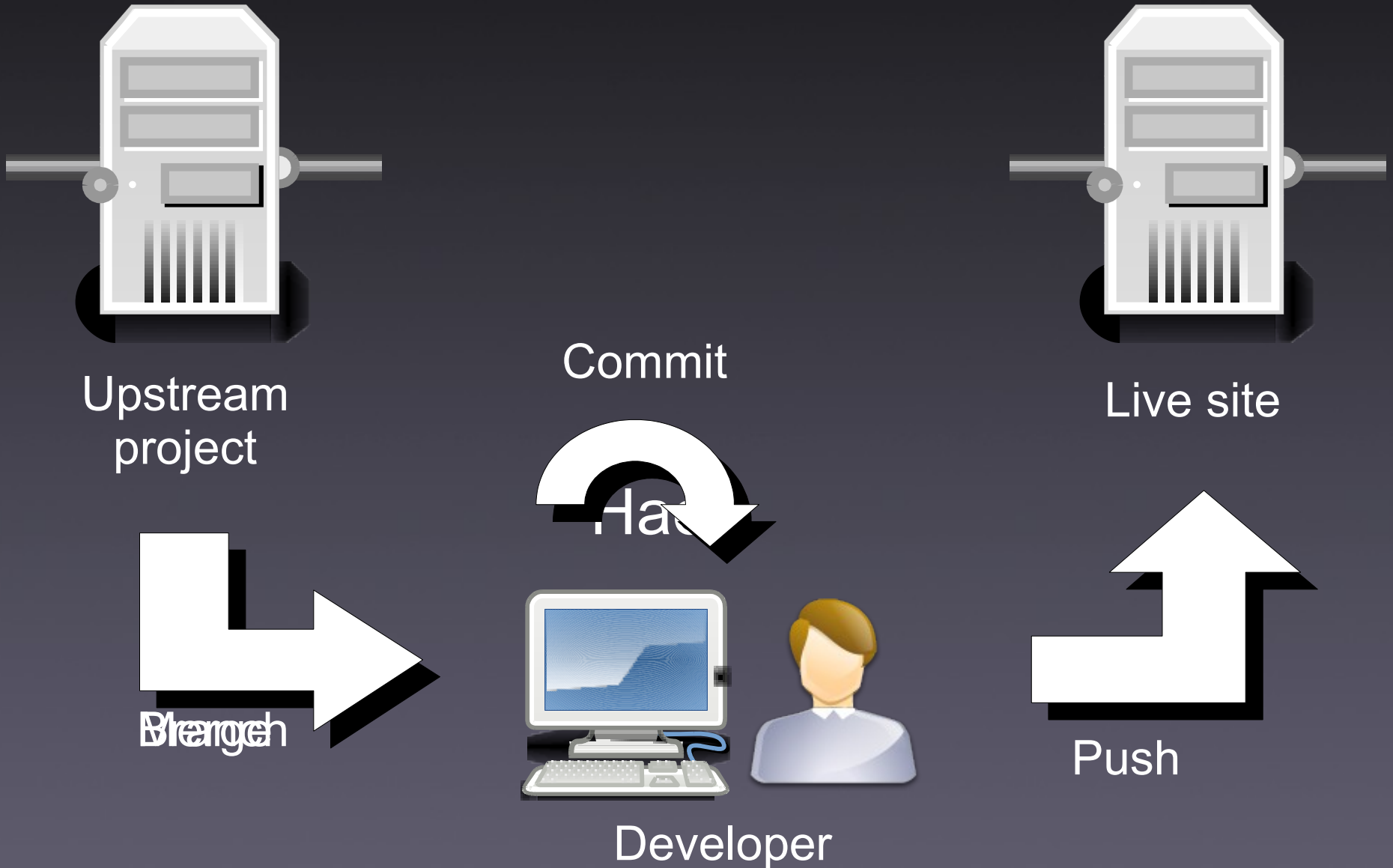
`bzr merge`

`bzr missing`

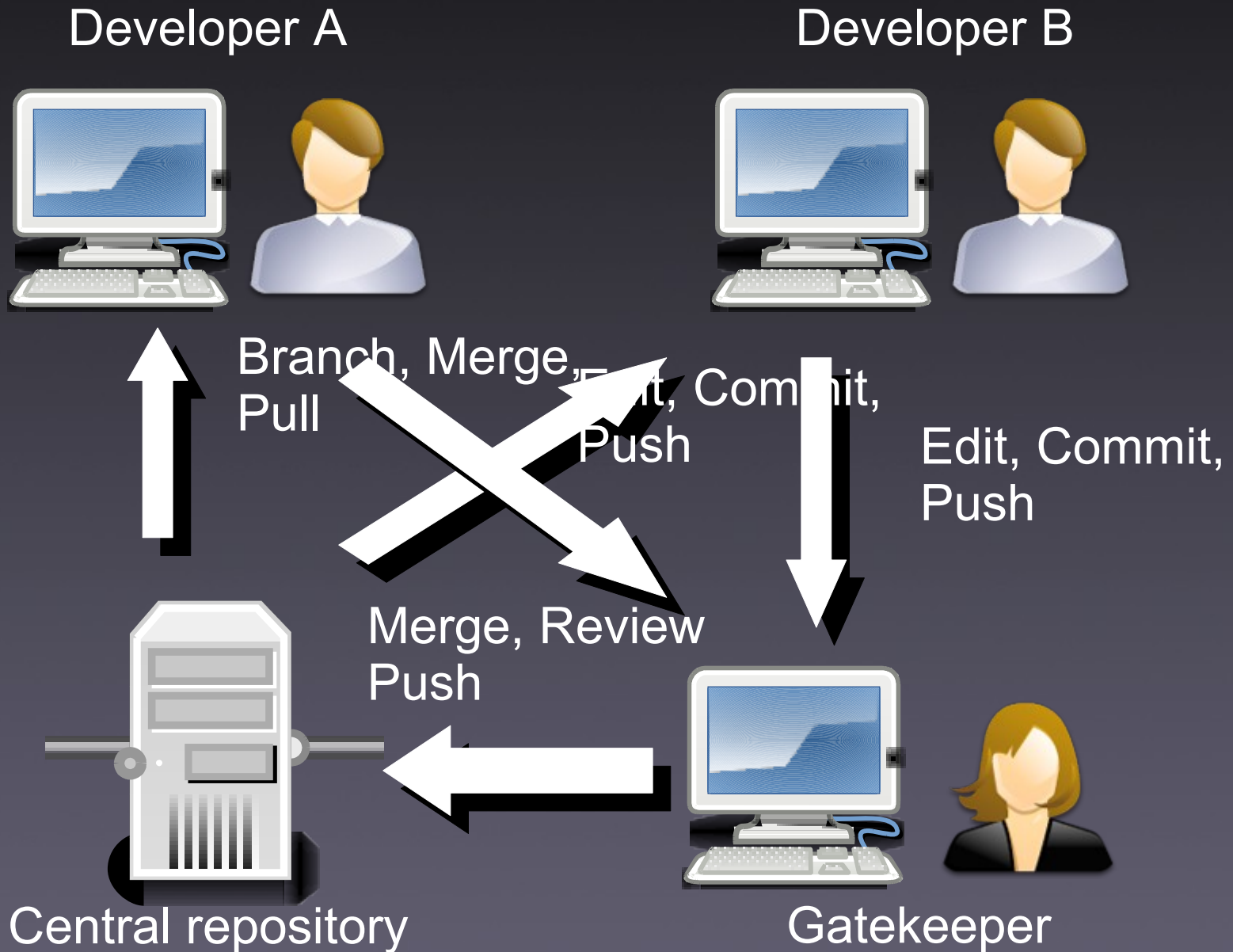
# Centralized Workflow



# Code deployment



# Central Branch & Gatekeeper





# Related tools / Links

- Project Home Page: <http://bazaar-vcs.org/>
- BundleBuggy:  
<http://code.aaronbentley.com/bundlebuggy/>
- Hacking on Drupal with Bazaar  
<http://drupal.org/node/45368>  
<https://code.launchpad.net/drupal>
- PQM (Patch Queue Management):  
<https://launchpad.net/pqm>
- LaunchPad:  
<https://launchpad.net>
- #bzd on [irc.freenode.net](http://irc.freenode.net)  
<http://planet.bazaar-vcs.org/>

Q & A

Questions, Comments?

Thank you!  
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