

bzr - The Bazaar source revision control system



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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 `.bZR` 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]
```

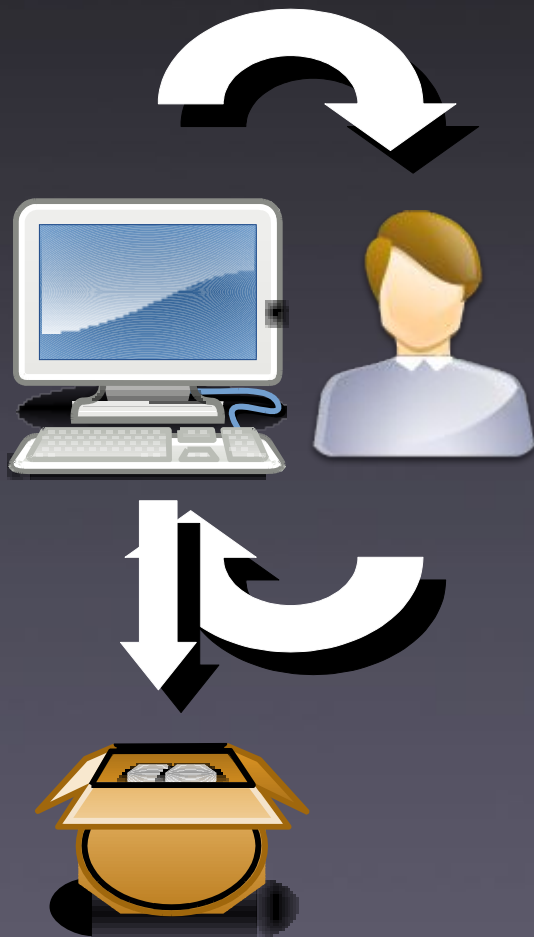
Getting Help

```
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

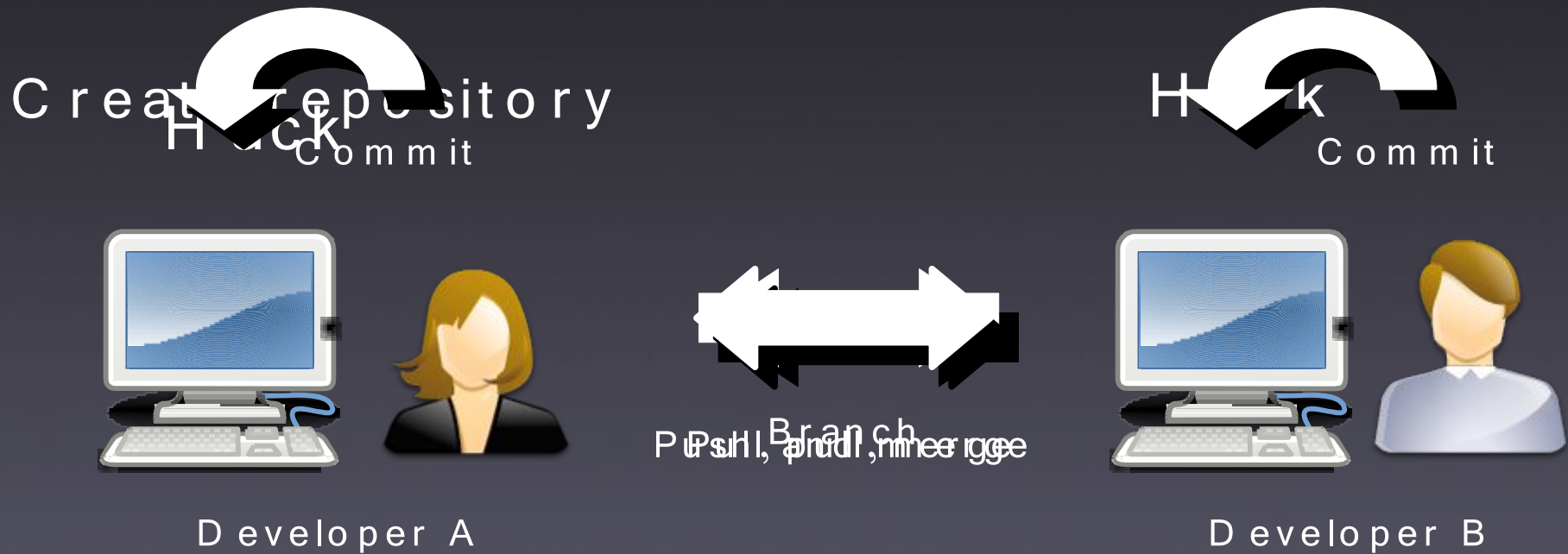
The screenshot displays the 'bzr visualize' application window titled 'mysql-5.1 - revision history'. The interface includes a menu bar (File, Edit, View, Go, Revision, Branch, Help) and a toolbar with navigation icons. The main area is a table of revision history with columns for Revision No, Summary, Committer, and Date. A graph on the left side of the table visualizes the relationships between revisions using colored lines and nodes. A yellow callout box labeled 'clone-5.1.27-build' points to revision 2655.3.7. Another yellow callout box highlights the summary of revision 2646.18.5: 'Disabled two test cases in 5.1 because of random failures.' Below the table, there are tabs for 'General', 'Relations', 'Per-file', and 'Bugs'. The 'General' tab is active, showing details for the selected revision (2655.3.8):

- 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

The bug description for Bug#33812 is: 'mysql client incorrectly parsing DELIMITER'. A revert fix is noted: 'Revert fix for this bug as it introduced a regression reported in Bug#38158.'

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

Pair programming



Branching

`bzr branch FROM TO`

Publishing changes

`bzr push`

`bzr send`

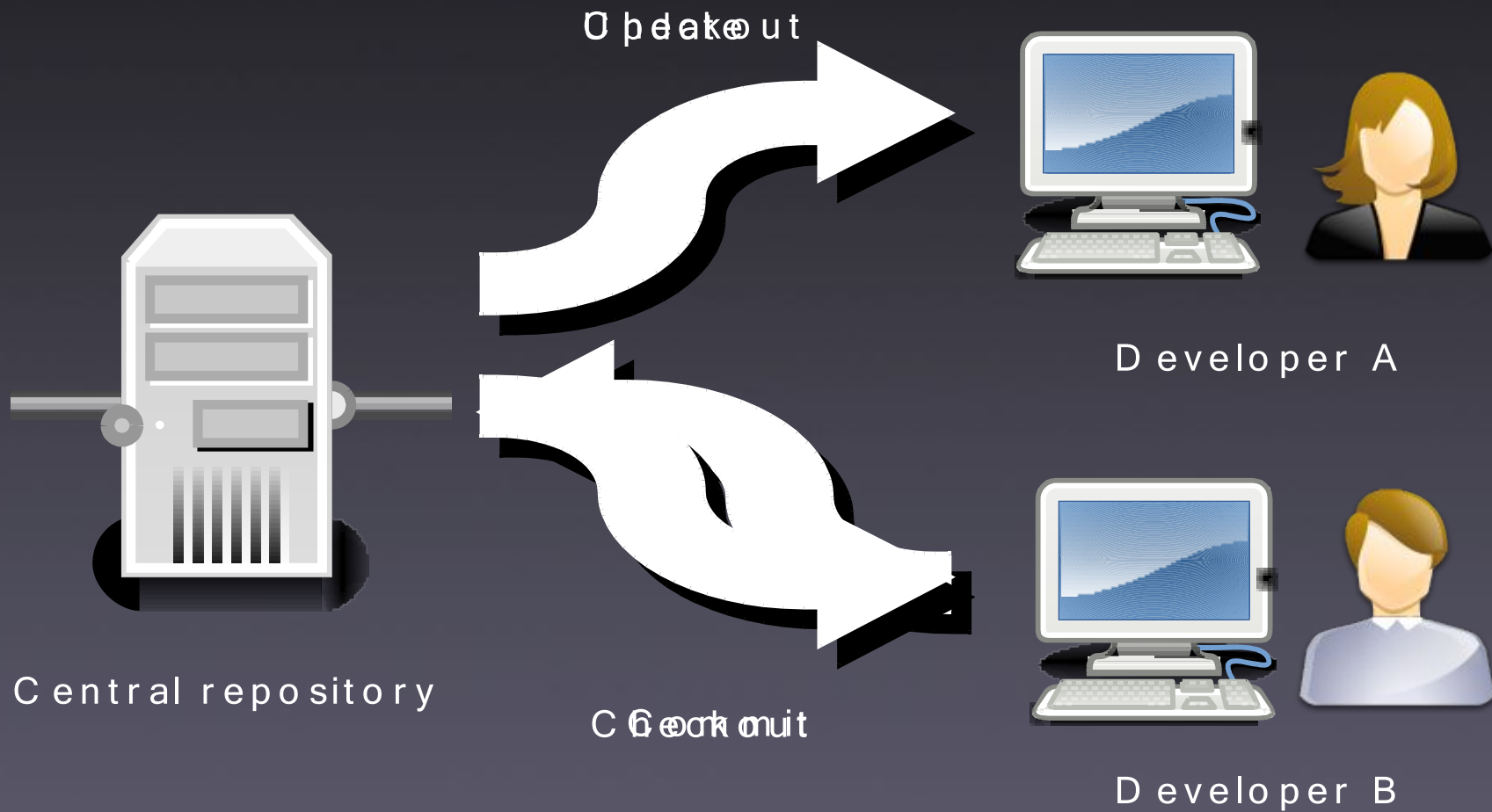
Retrieving updates

`bzr pull`

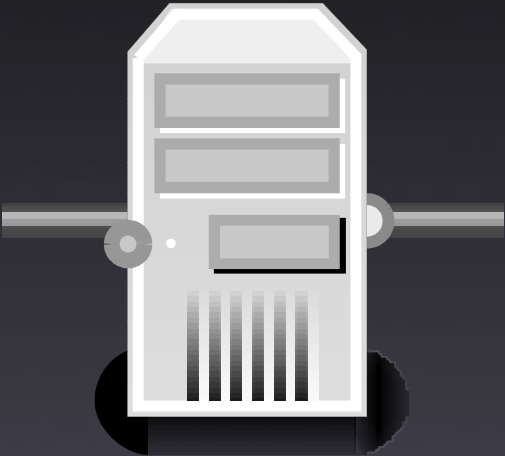
`bzr merge`

`bzr missing`

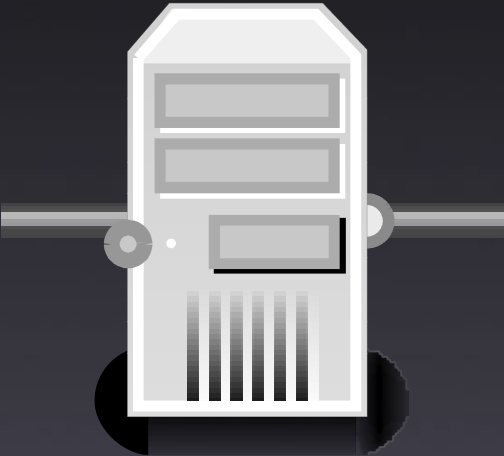
Centralized Workflow



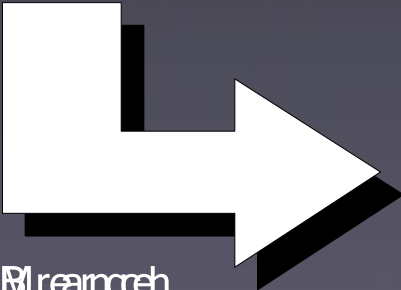
Code deployment



Upstream project



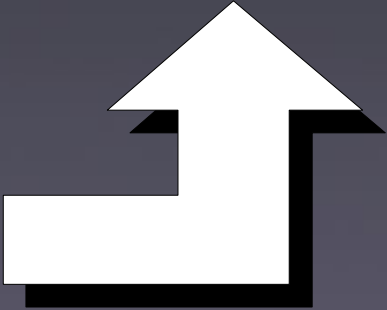
Live site



Fetch

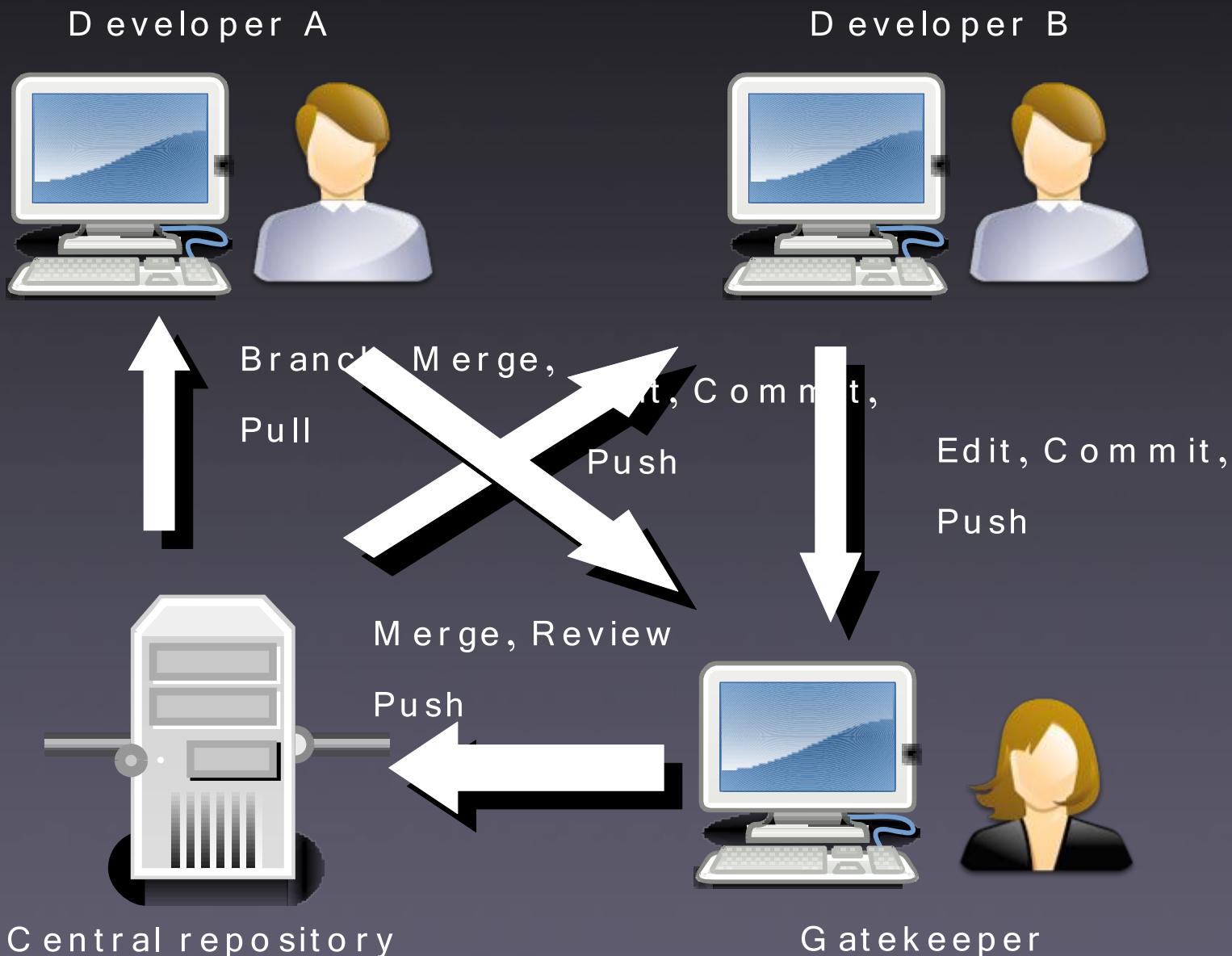


Developer



Push

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://planet.bazaar-vcs.org/>

Q & A

Questions, Comments?

Thank you!

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