

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

# Bazaar: Features

- Written in Python
- Centralized and decentralized workflows
- Shared repositories to save space
- One single .bzd directory
- Various transport protocols
- Merge tracking
- Moved files retain history
- Hooks and Scripts
- Plugins (e.g. GUI extensions)
- 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]
```



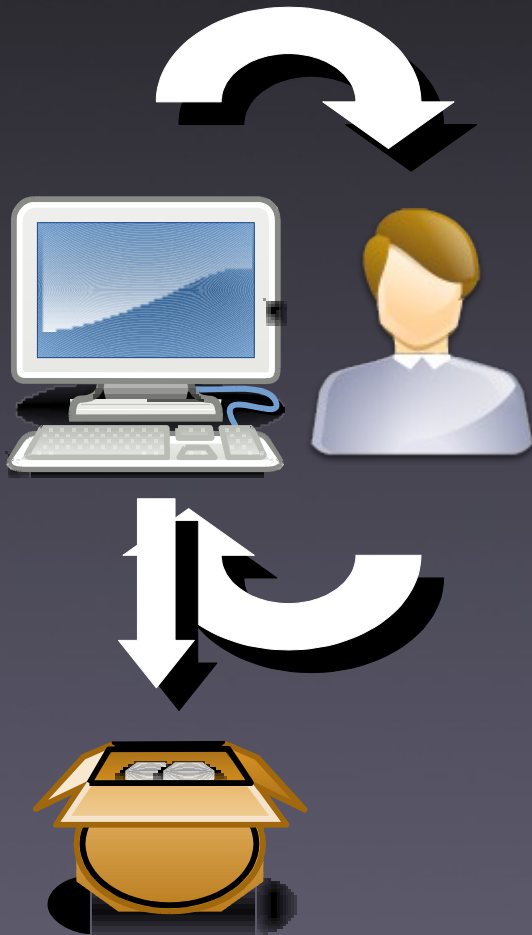
# Getting Help

```
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

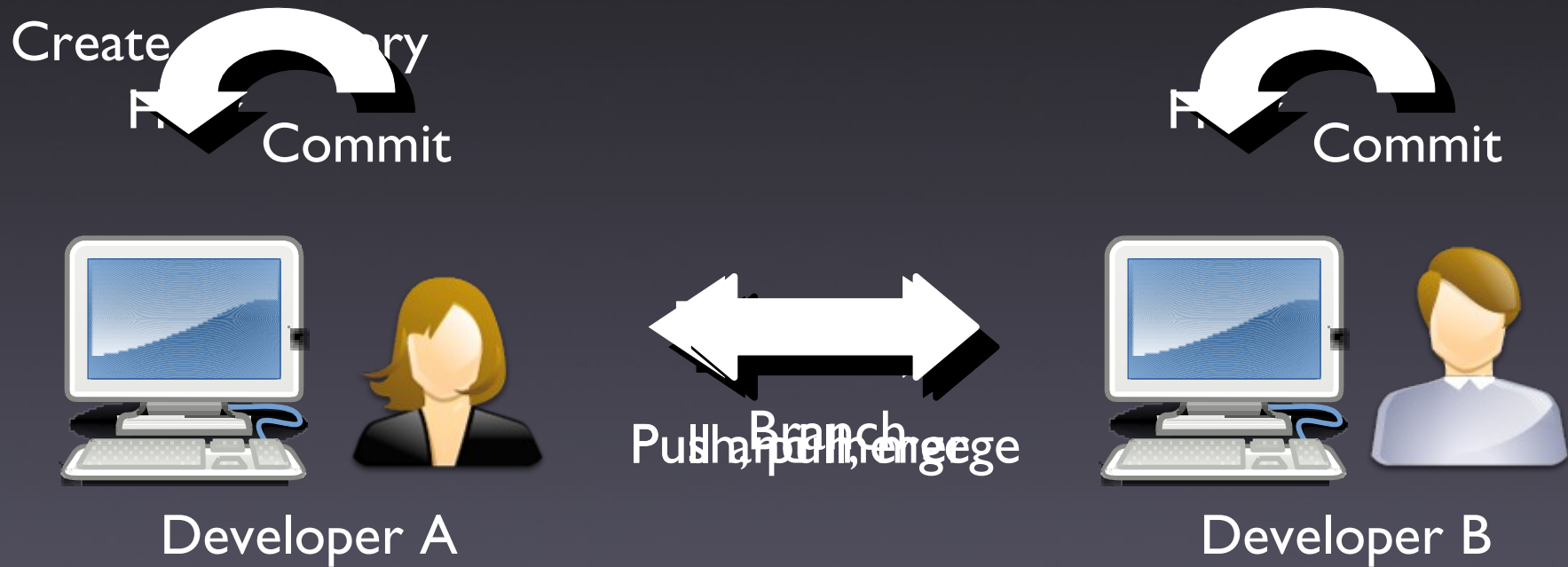
The screenshot shows a window titled "mysql-5.1 - revision history" with a menu bar (File, Edit, View, Go, Revision, Branch, Help) and a toolbar. The main area is a table of revision history with columns for Revision No, Summary, Committer, and Date. A visualization on the left shows a graph of revisions with nodes and colored lines representing branches and merges. A yellow callout box highlights revision 2655.3.7 with the text "clone-5.1.27-build". Another yellow callout box highlights revision 2646.18.5 with the text "Disabled two test cases in 5.1 because of random failures." Below the table are tabs for "General", "Relations", "Per-file", and "Bugs". The "General" tab is active, showing details for revision 2655.3.8: Revision Id, Committer (Davi Arnaut), Branch nick (mysql-5.1.27-release), Timestamp, and a description of Bug#33812.

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





# Branching

```
bzr branch FROM TO
```

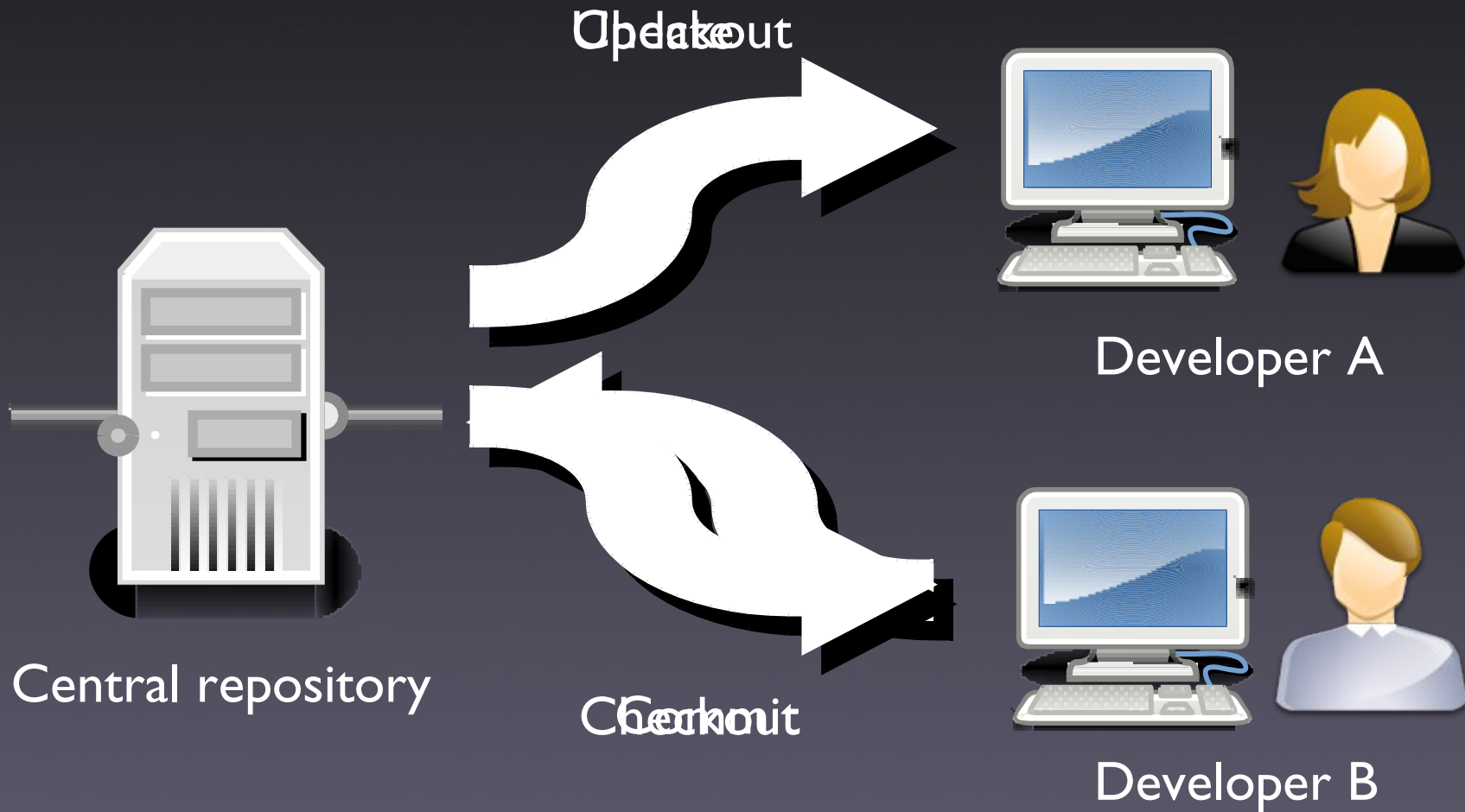
# Publishing changes

```
bzr push  
bzr send
```

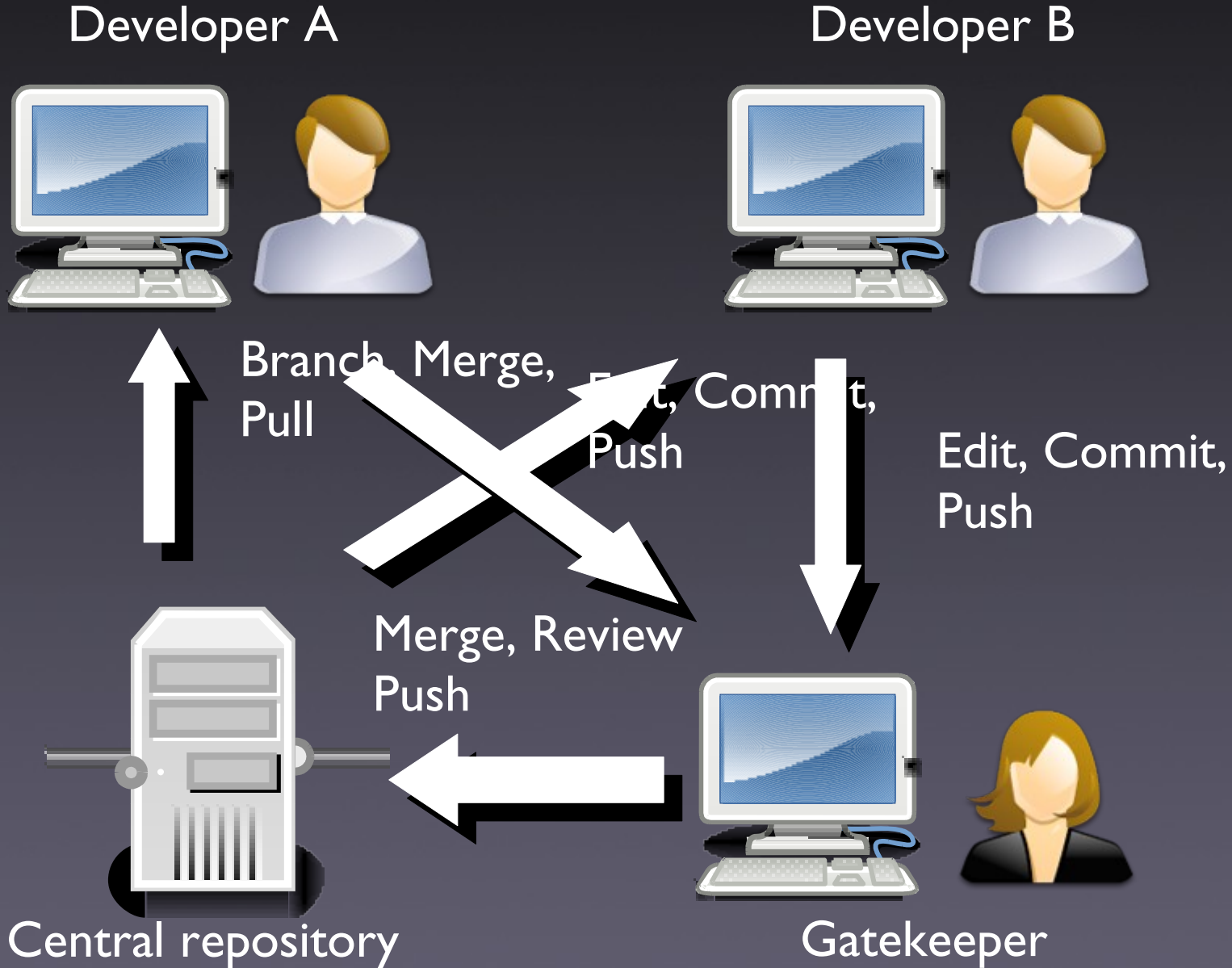
# Retrieving updates

```
bzr pull  
bzr merge
```

# Centralized Workflow



# Central Branch & Gatekeeper



# Related tools / Links

- Project Home Page:  
<http://bazaar-vcs.org/>
- BundleBuggy:  
<http://code.aaronbentley.com/bundlebuggy/>
- 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/>