bzr - The Bazaar source revision control system

Lenz Grimmer

<lenz@grimmer.com>

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 .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
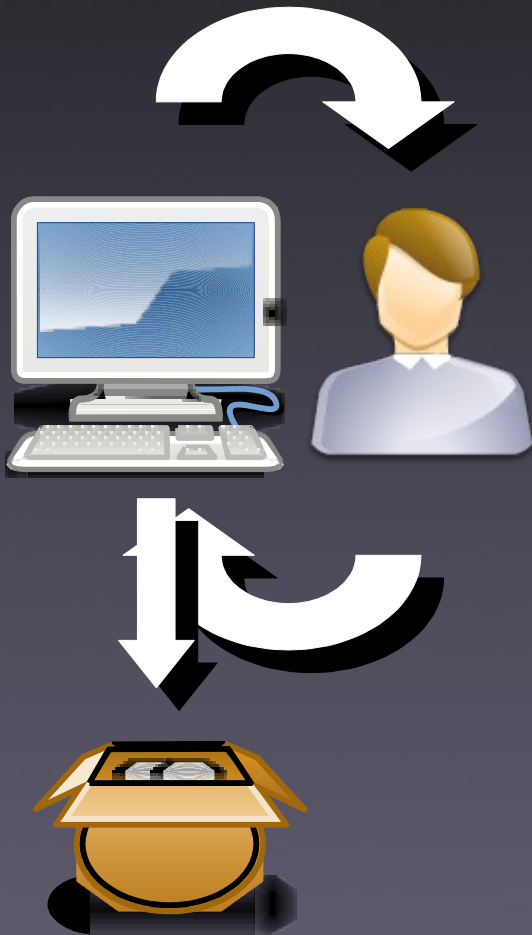
Initializing a Repository

```
bzr init <directory>
```

Adding/Modifying Files

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

Commiting Changes

```
bzr commit <files>
bzr gcommit
bzr qcommit
```

Looking at revision history

```
bzr log
bzr diff
bzr visualize
```

bzr visualize

Pair programming

Create repository   Hack

Track Commit   Commit

Developer A   Branch   Developer B
Pull, push, merge

Branching

`bzr branch FROM TO`

Publishing changes

```
bzr push
bzr send
```
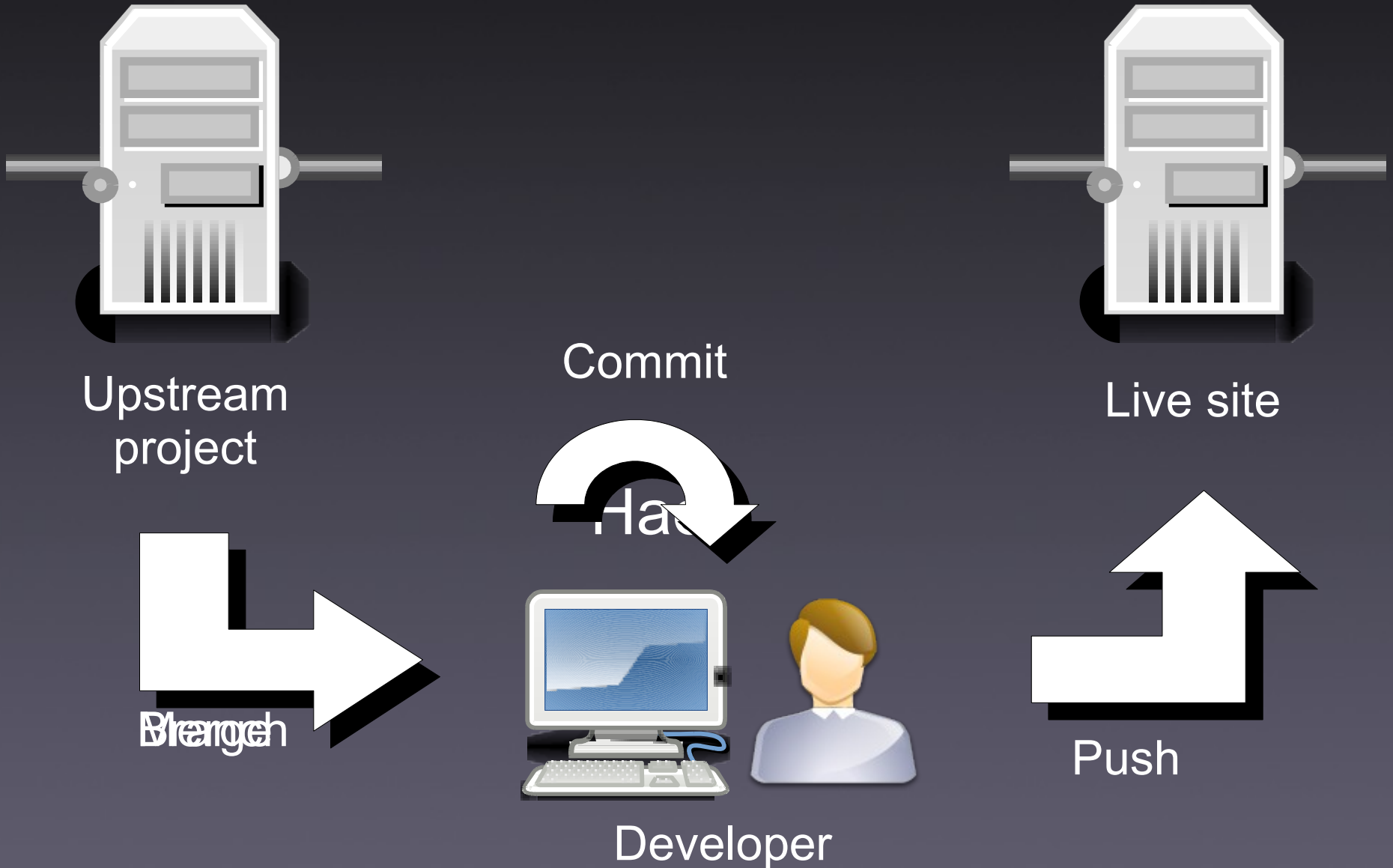
Retrieving updates

```
bzr pull
bzr merge
bzr missing
```

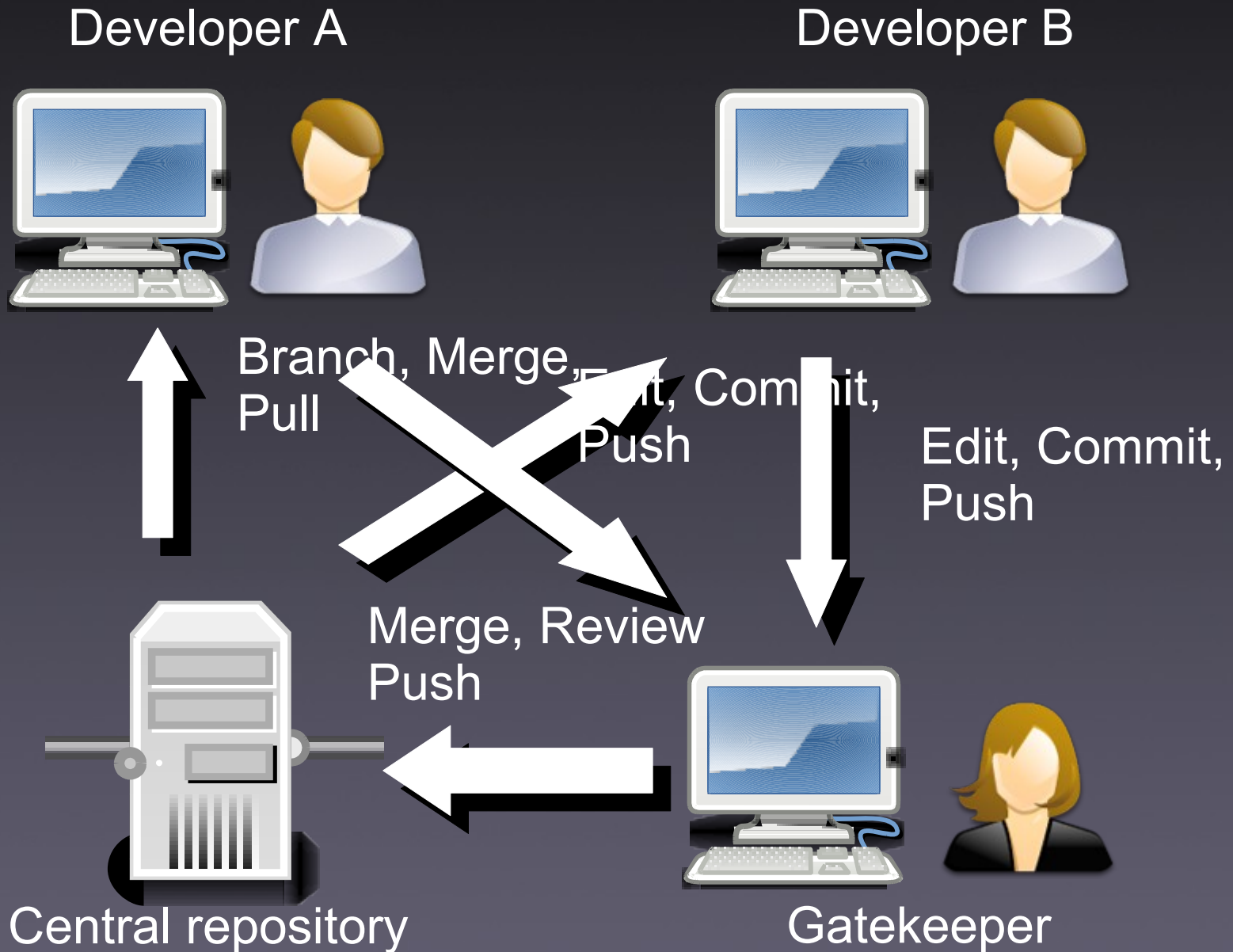# Centralized Workflow

Update Checkout

Central repository

Commit Checkout

Developer A

Developer B

Code deployment

Upstream
project

Commit

Live site

Ha

Branch
Merge

Developer

Push
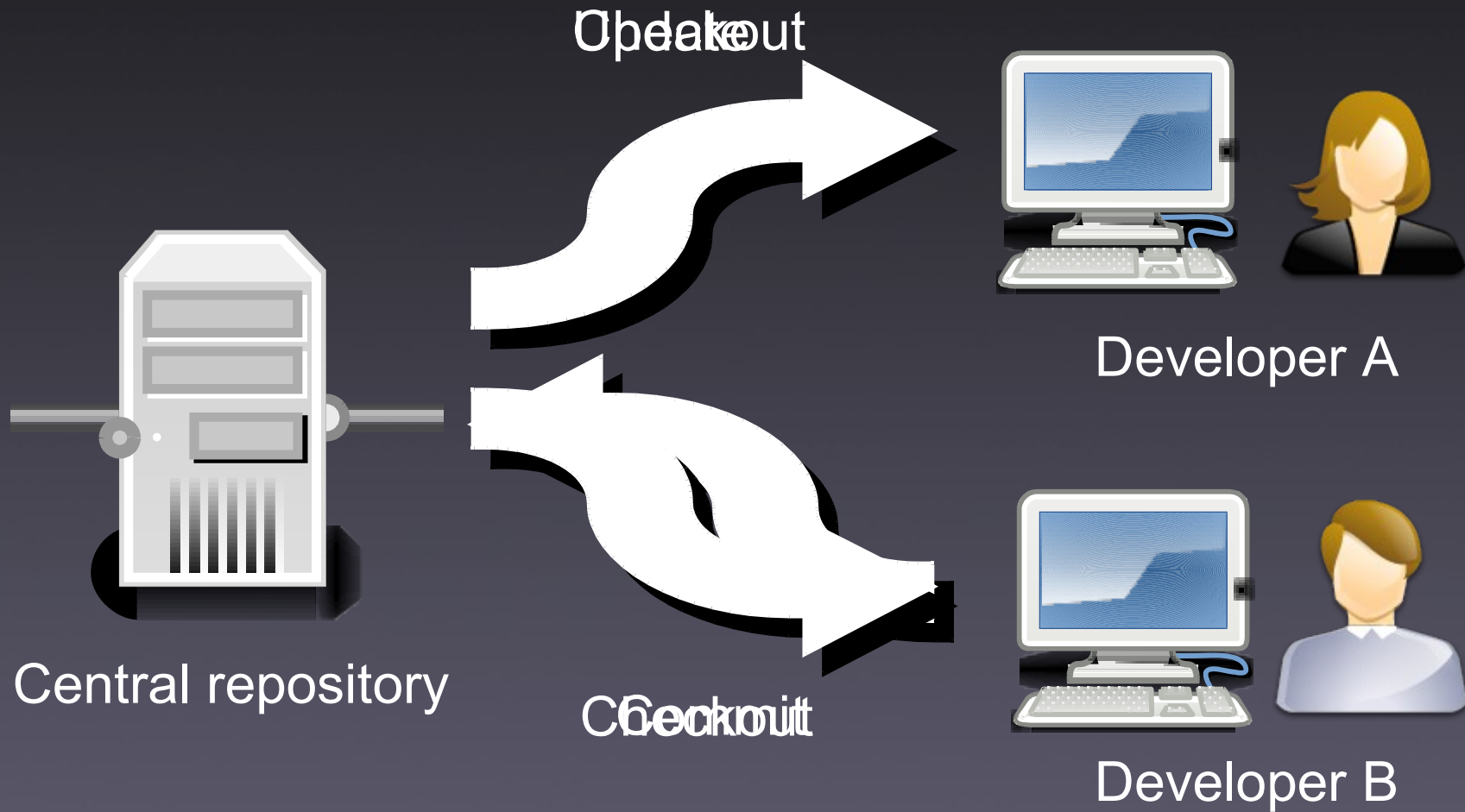
Central Branch & Gatekeer

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

- #bzr on irc.freenode.net
  http://planet.bazaar-vcs.org/

Q & A

Questions, Comments?

Thank you!
Lenz Grimmer <lenz@grimmer.com>