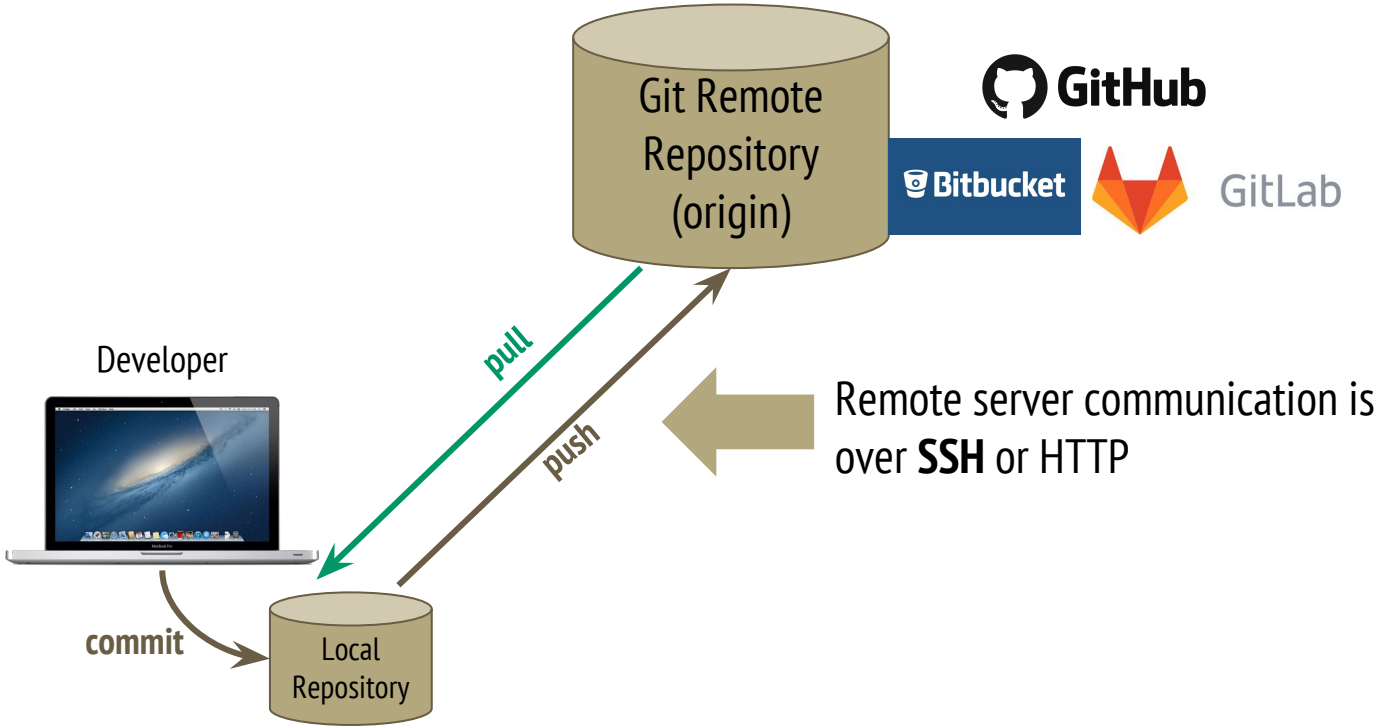
GIT Overview

By Sunit Parekh

Git, a distributed version control system



Git Authentication

- Default authentication with remote is SSH based
- User/password is possible, but hardly anyone uses

Git Basic Commands

- init
- clone
- add, rm, mv
- commit
- push
- pull

Basic Commands Demo

```
➔  git clone git@github.com:sunitparekh/java-rdbms-unittest.git
➔  git add .
➔  git commit -m "demo changes"
➔  git pull --rebase
➔  git push
```

Git Branch Commands

- fetch
- branch
- checkout
- merge
- pull
- push

Branch Command Demo

```
➔ git fetch
➔ git branch -a
➔ git checkout -b test
➔ git commit -m "test commit to branch"
➔ git push
```

Why Git?

- Centralised vs Distributed
  - perform all operations without connected to central server
- Git feels brazing fast, as most of the operations are local
- Easy branching & merging
  - Create local branches without affecting others
  - Merge locally any branch and test easily
- Ignore semantics are easier and more flexible
- Pull Request feature in Git

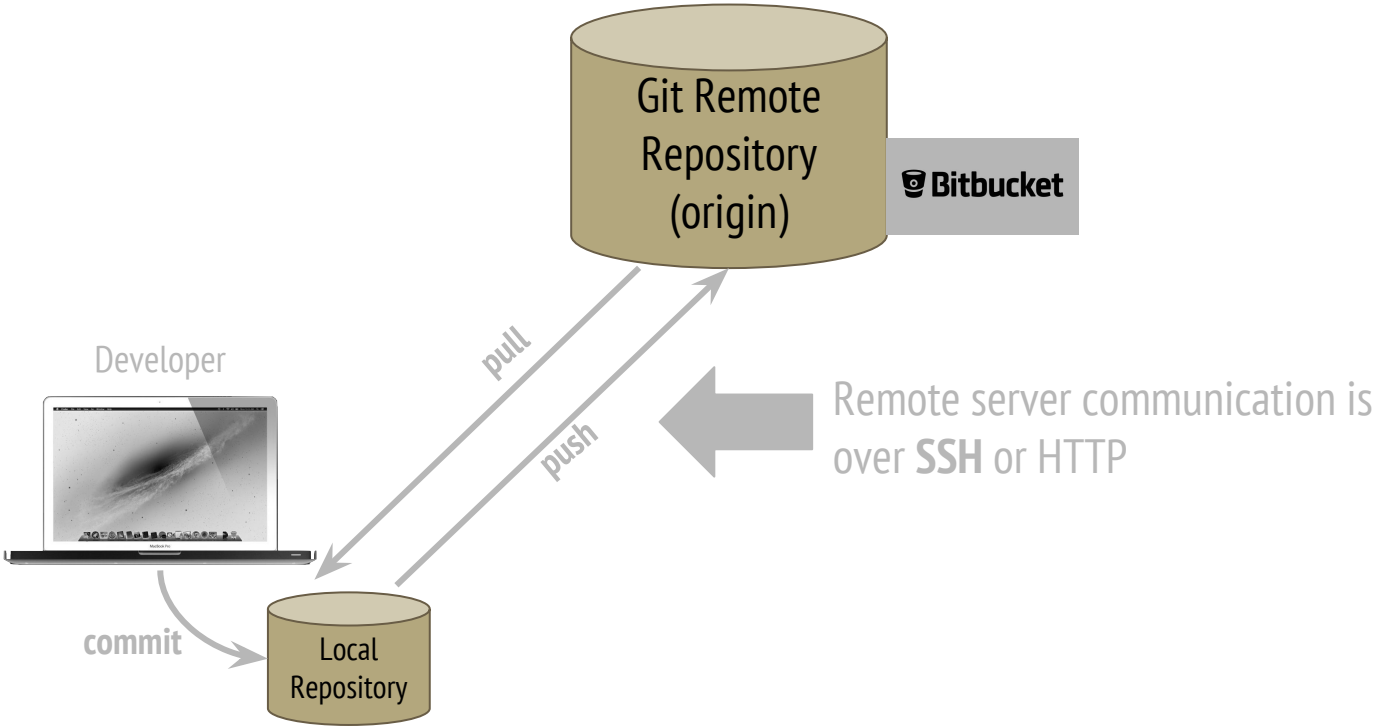
Don’t like Command Line Interfaces !!!

- ungit https://github.com/FredrikNoren/ungit
- ***SourceTree** https://www.sourcetreeapp.com/ (Most Popular)
- TortoiseGit https://tortoisegit.org/
- GitKraken https://www.gitkraken.com/
- GitHub Desktop https://desktop.github.com/

Tools Demo

- SourceTree https://www.youtube.com/playlist?list=PLpL2ONl1hMLtlY1Y7YJNcA5zumvaITLYs
- ungit https://www.youtube.com/watch?v=hkBVAi3oKvo&feature=youtu.be

Always remember, local and remote



SVN to Git mapping

	Subversion	Git
Get copy of code first time from central server	`checkout`	`clone`
Get updates of code from central server	`update`	`pull`
Committing your changes	`commit`	`commit` (local) `push` (remote)
Status	`stat`	`status`

File operations	`add`
	`rm`
	`mv`
		`add`
		`rm`
		`mv`

Branching	`copy`
	`switch`
	`merge`
		`branch` (local)
		`checkout` (local)
		`merge` (local)

Git - SVN Crash Course: http://git.or.cz/course/svn.html

Challenges with Git

- Higher learning curve than Subversion
  - add, commit, push, pull…. more commands to learn
  - New commands available e.g. stash
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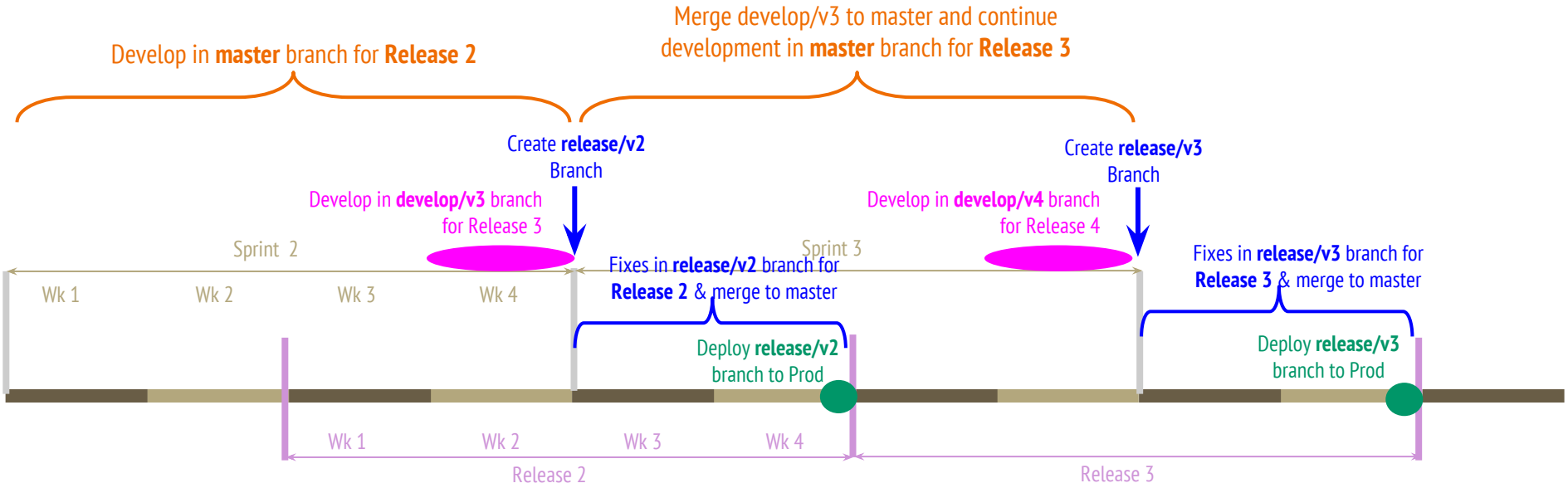
Git Workflows

- 3 branch model
- GitFlow

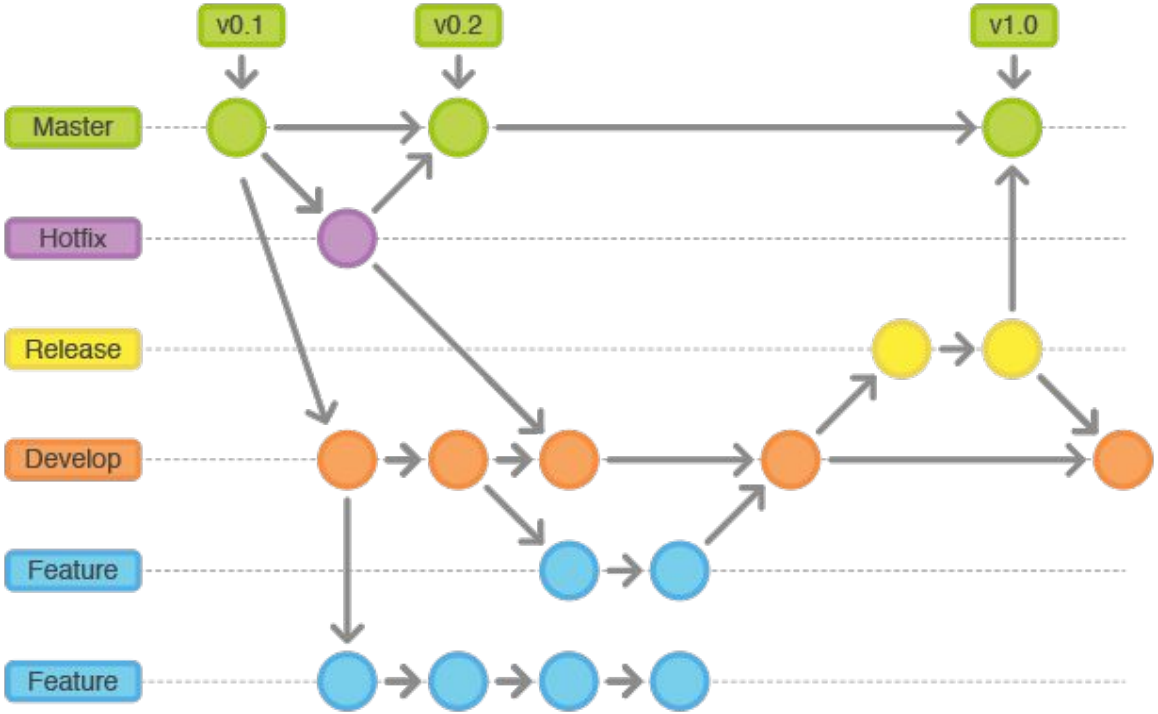
3 branch model with Release and Sprint lifecycle



Release: Fixed time based cycle for developed software to be deployed to production.
Sprint: Development cycle for a release. At end of sprint, development for release should be complete and spillover should be moved to next release.

3 branching model explained in detail:
Video http://bit.ly/branch1234
Slides http://bit.ly/3-branch-model

GitFlow



GitFlow Branching Model Explained in detail: http://nvie.com/files/Git-branching-model.pdf

References

- Git Workflows https://www.atlassian.com/git/tutorials/comparing-workflows/
- Video Tutorials https://git-scm.com/videos
- uDemy course on Git

Why Git?