

Development Environment

SCM – Source Control Management

SCM challenges

- ◎ Allow **many** developers **simultaneously** work with **same** code base
- ◎ **Maintain history** of the **changes**
- ◎ **Implement** code **review** process
- ◎ Be part of **solid CITDDO** workflow

Client-server vs Distributed

Client-Server

- ◎ User management from one place, SSO integration
- ◎ One DB, simple backup
- ◎ Require direct connection to the server
- ◎ “Heavy” branching

Distributed

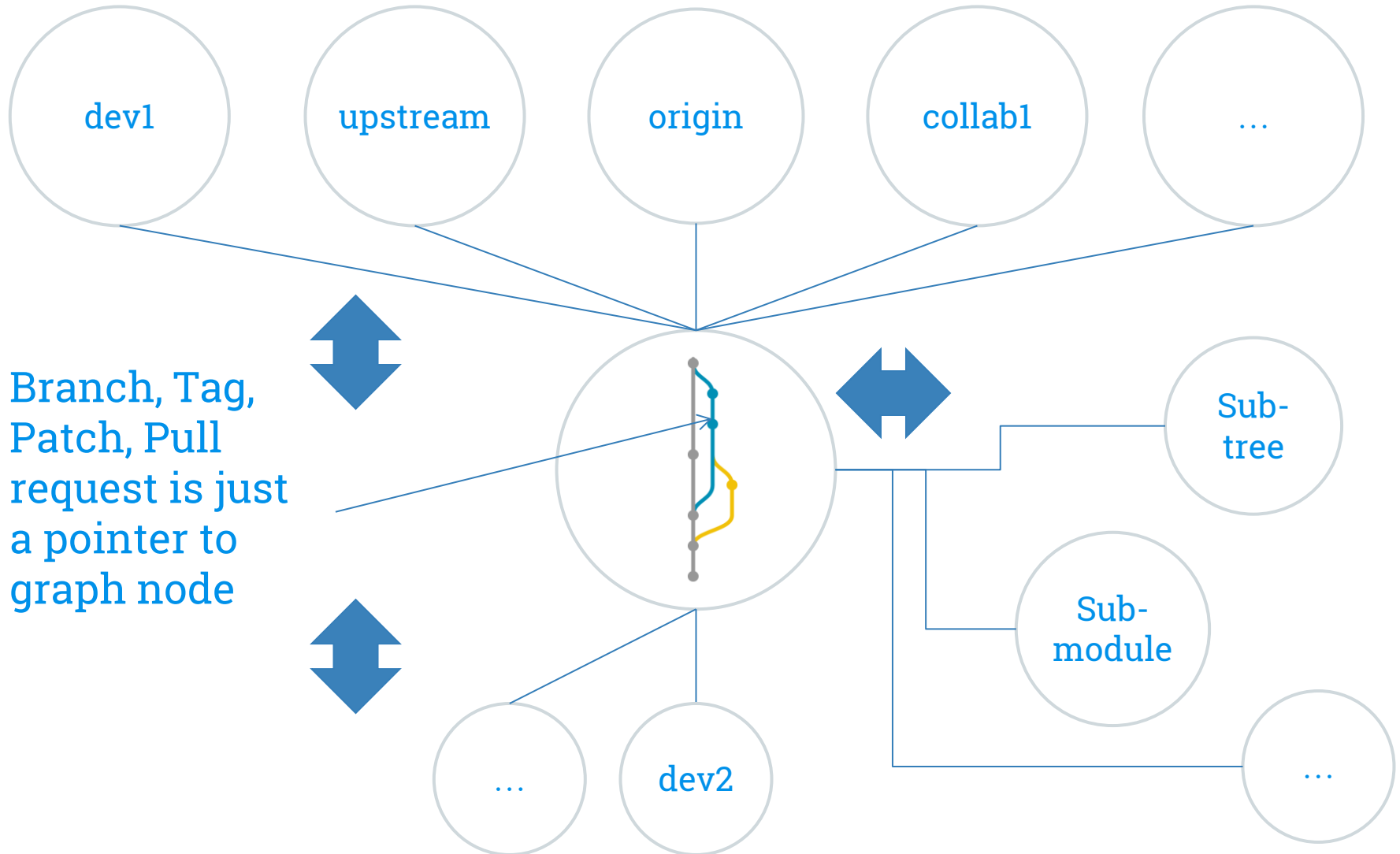
- ◎ SSH/HTTPS access
- ◎ Additional rules for project management
- ◎ Can work without direct access to the any server
- ◎ Simple implementing a rich number of dev workflows

Git

distributed SCM,
commits, remotes,
submodules, branches,
branching mode,
merging



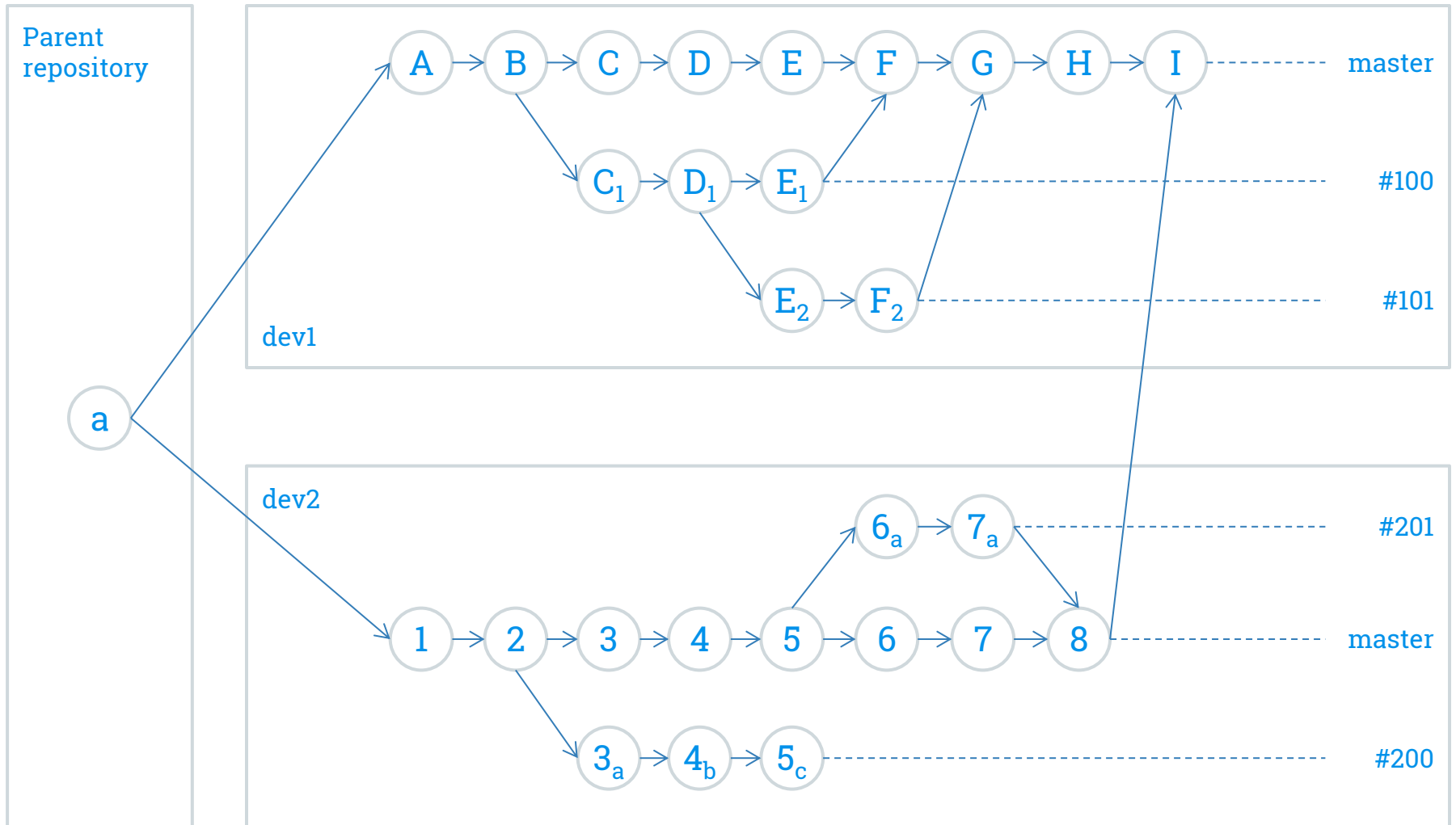
Commits, Branches , Remotes, Sub-modules, Sub-tree



Git bare repository quick setup

<https://github.com/swe-course/content/tree/master/git>

Branching model, merging



У НАС СВОИ ДАТЫ
РЕЛИЗОВ



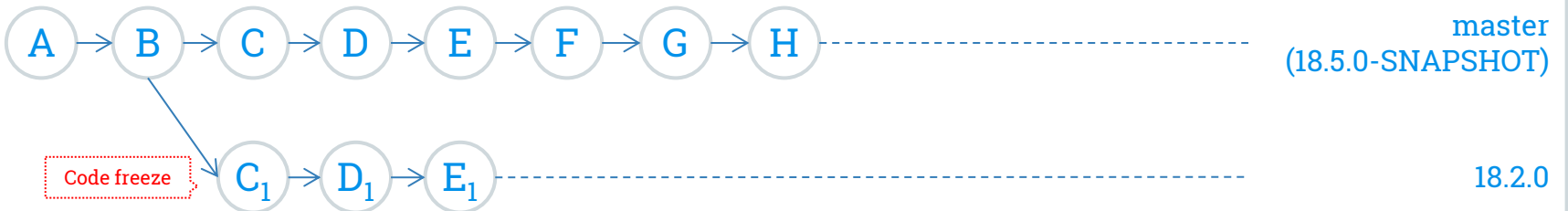
Release model

Release model

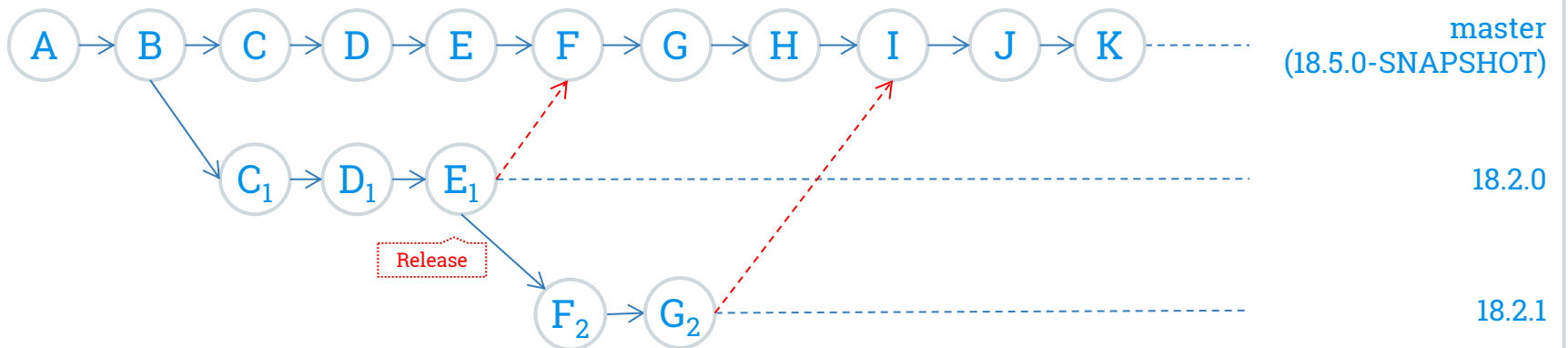
18.2.0



18.2.0 & 18.5.0

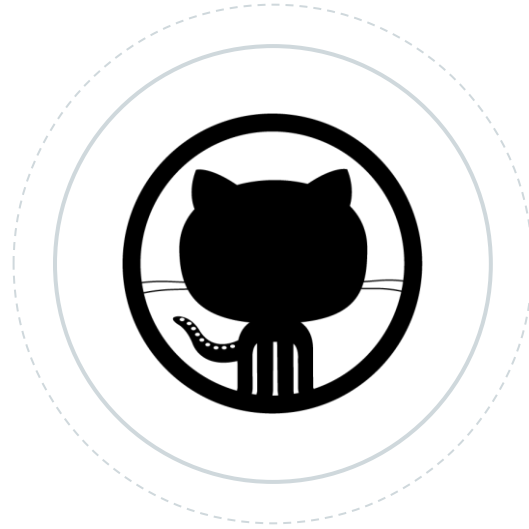


18.2.0 & 18.5.0 & 18.2.1

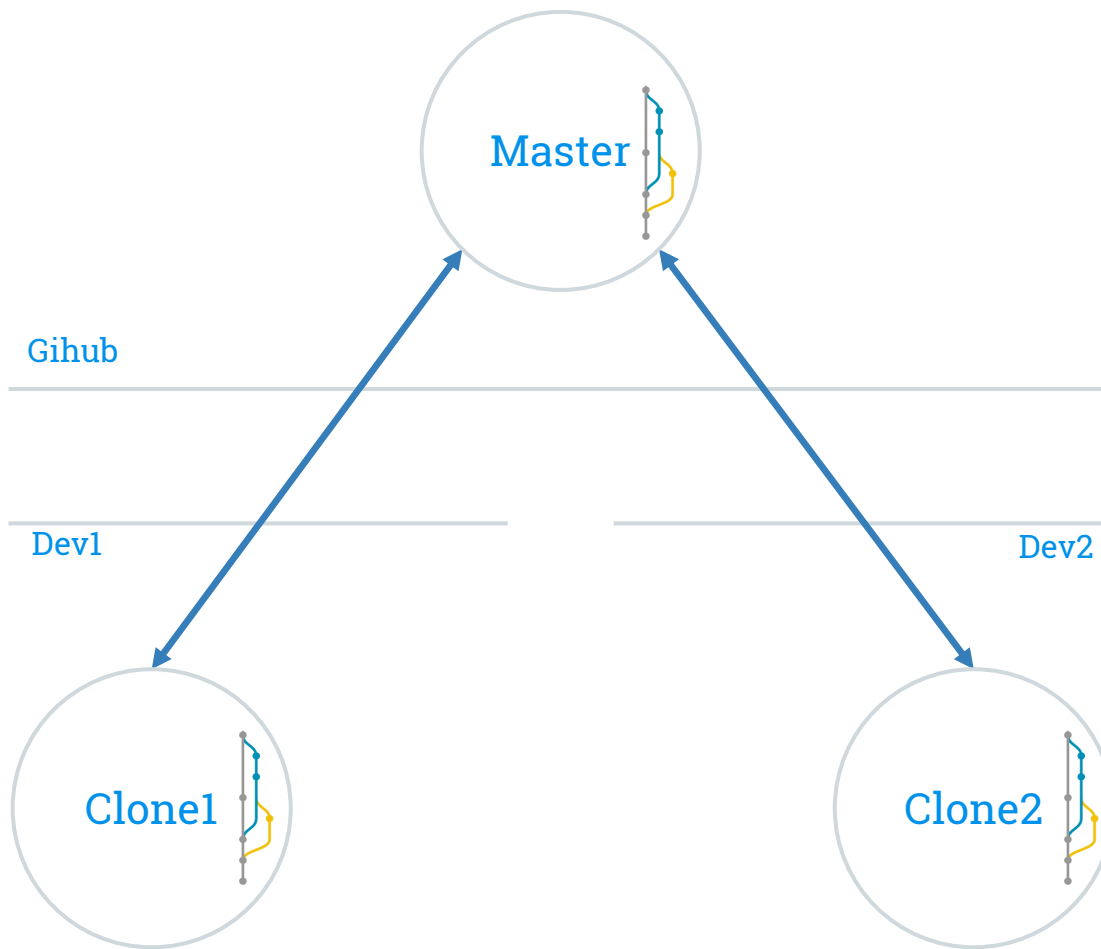


Github

pull-request based
workflow, code review,
integration with
Jenkins, start build on
approved pull request,
pull request pre-checks

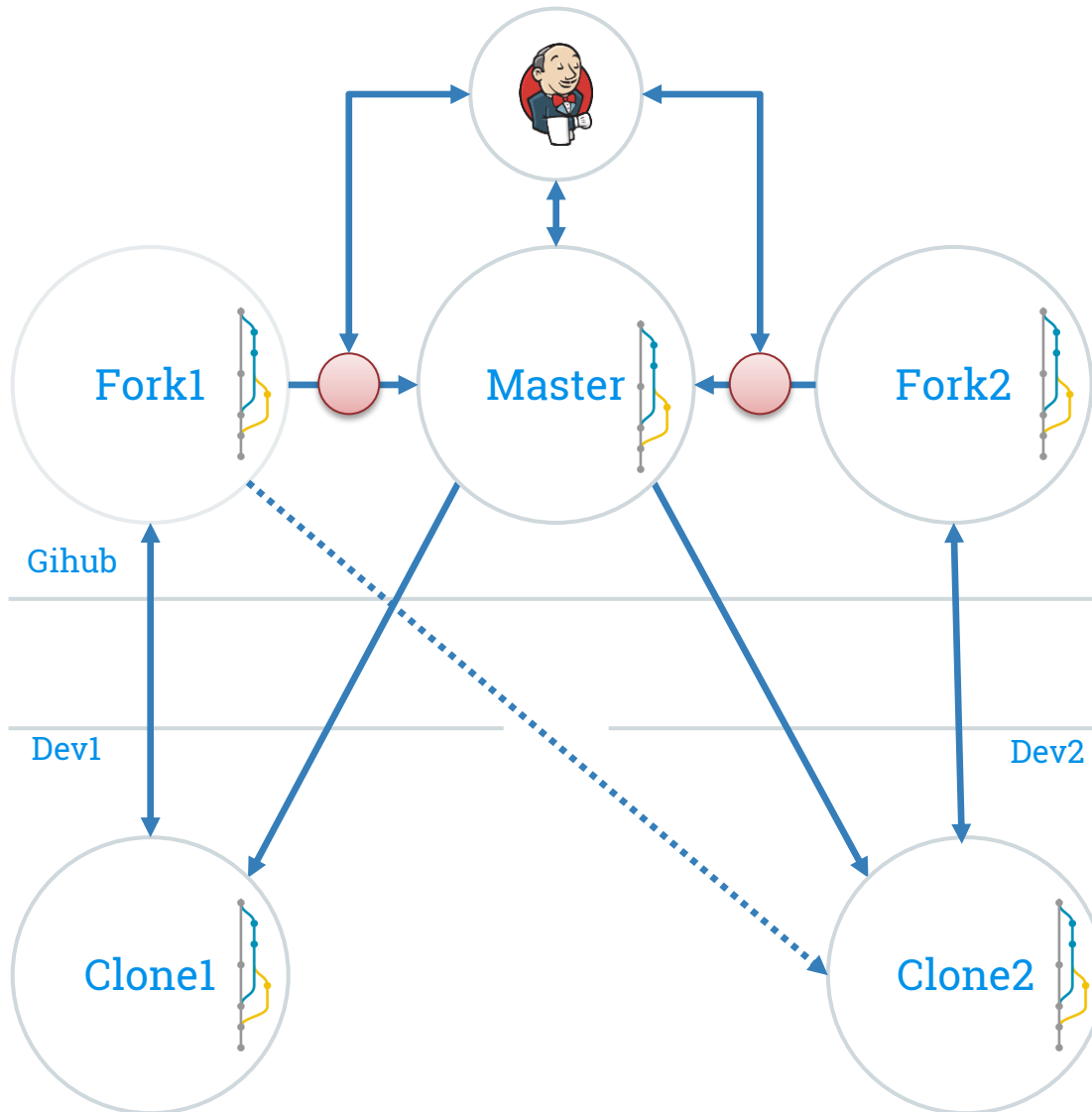



Master repository + Clones



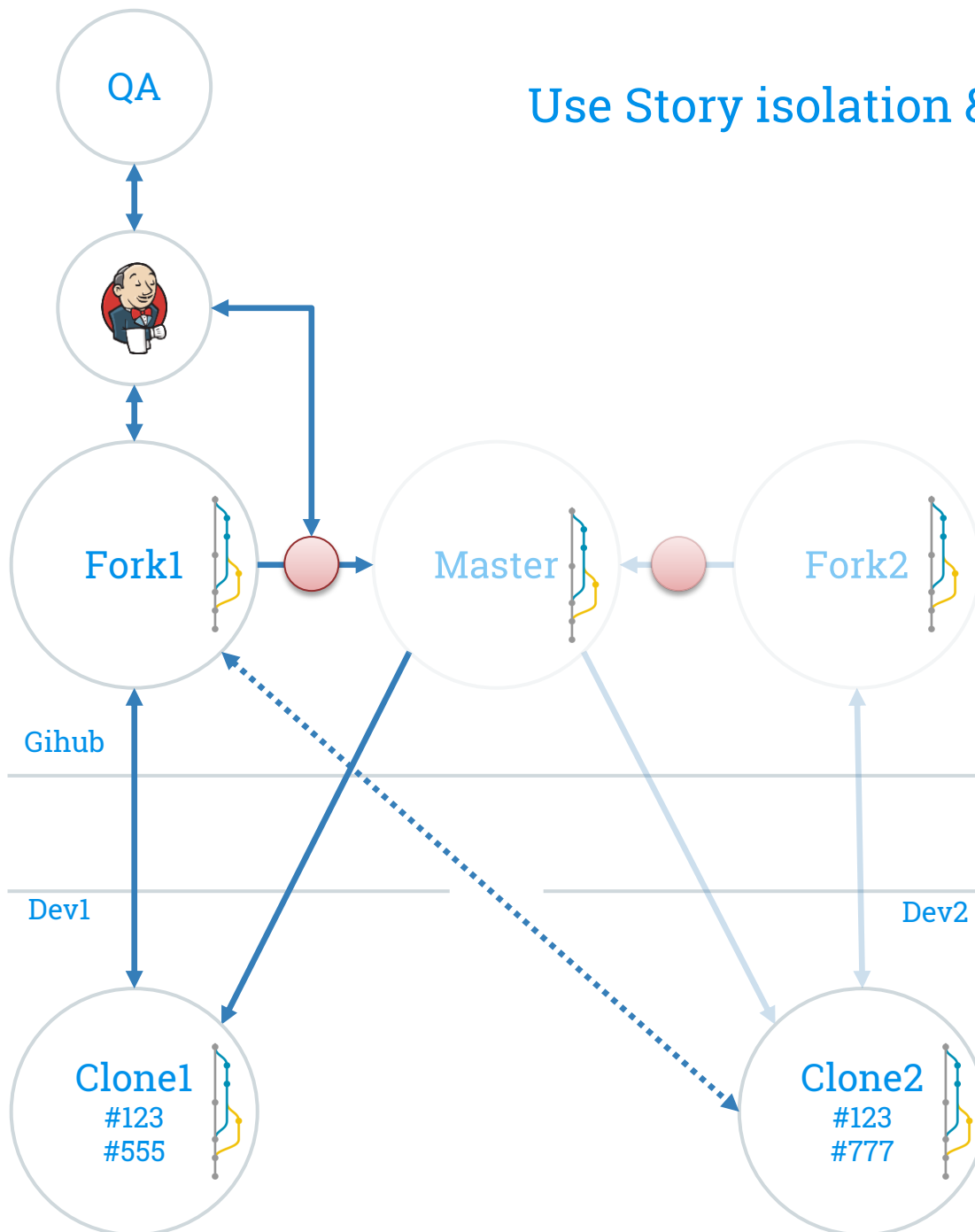
- ◎ Multiple branches
- ◎ All branches are visible for all developers
- ◎ Pull requests are created between branches in master repository
- ◎ Requires selected Release Manager role

Master repository + Forks + Clones + Multiple upstreams



- ◎ A few **Release** branches in the master repository
- ◎ **Any** number of branches inside **forks**
- ◎ **Pull requests** are created between branches in **master** and **fork** repositories
- ◎  Code **merge** after **code review** only
- ◎ Two main remotes: origin & upstream

Use Story isolation & Team collaboration



- ◎ **Dev1** is User Story #123 owner
- ◎ He (she) creates #123 branch inside clone/fork
- ◎ Uses selected Jenkins job to build story code and provide to QA
- ◎ Provides his (her) fork as collaboration source control server. **Dev2** can also be involved in User Story #123 development
- ◎ User Story #123 will be merged into **Master** server only after **Product owner approval**, **Successful Build** and **Code Review**

High-level picture

