Git clone Tiki

New to Git?
See here: Git
or here: Pro Git Book (CC ND SA 3.0) by Scott Chacon and Ben Straub

The clone operation creates a local repository by copying information from a source repository. In the standard behavior, git will bring the entire changes history from source repository to local repository. That means both source and local repository will have the same history at the clone moment.

Cloning Tiki

The basics

The basic and short syntax is `git clone <repository> <directory>`, where the mandatory argument `<repository>` is the source repository path or URL and the optional argument `<directory>` is the directory name where git will create the local repository.

By default, the clone process creates a repository in a folder with the same name of source repository, so in this case, the folder for local repository will have the name tiki.

Clone into tiki folder

```
git clone https://gitlab.com/tikiwiki/tiki.git
```

By passing a second argument to clone command, it is possible to define the name to the folder for the cloned repository, like the examples below.

Also clone into tiki folder

```
git clone https://gitlab.com/tikiwiki/tiki.git tiki
```

Clone into tikiwiki folder

```
git clone https://gitlab.com/tikiwiki/tiki.git tikiwiki
```

Clone into current folder

```
git clone https://gitlab.com/tikiwiki/tiki.git .
```

Choosing a branch

By default, the clone operation creates a local repository having the current branch set to master. There is an option called --branch to change this behavior. The examples below creates 4 clones, each one with a different branch set.

Clone and set 21.x into tiki21 folder

```
git clone --branch=21.x https://gitlab.com/tikiwiki/tiki.git tiki21
```

Clone and set 18.x into tiki18 folder

```
git clone --branch=18.x https://gitlab.com/tikiwiki/tiki.git tiki18
```

Clone and set 15.x into tiki15 folder
Please note that the examples above clone Tiki source repository with the entire history.

Dealing with Tiki huge repository

After a decade of contributions, Tiki history sizes 3GB when decompressed locally. That is too big when several Tiki instances is needed. As of now, two approaches were tested to deal with this problem:

- Share git objects with other clones
  - `git clone --shared --reference=<local-repository> <repository> [<directory>]`
- Trim history size
  - `git clone --depth=1 <repository>`

For example to create a clone of branch 24 in a folder named tiki24 without all the history, which is also called a shallow clone

```bash
Shallow clone and set 24.x into tiki24 folder
git clone --depth=1 --branch=24.x https://gitlab.com/tikiwiki/tiki.git tiki24
```

More examples:

```bash
Shallow clone and set 21.x into tiki21 folder
git clone --depth=1 --branch=21.x https://gitlab.com/tikiwiki/tiki.git tiki21
```

```bash
Shallow clone and set 21.x into current folder instead
git clone --depth=1 --branch=21.x https://gitlab.com/tikiwiki/tiki.git .
```

Use master (previously called trunk):

```bash
Shallow clone and set master into current folder

git clone --depth=1 --branch=master https://gitlab.com/tikiwiki/tiki.git .
```

Sharing git history

That is a good approach to developers needing to have the full Tiki history, but without waste network bandwidth or disk space. Git is capable to borrow information from other local clone when creating a new clone. This reduces the network usage while cloning and reduces disk usage to maintain several Tiki instances.

Information sharing is set by using the option `--reference=<local-repository>` and the option `--shared`, where `<local-repository>` is another clone made before.

The first step is to create a standard Tiki clone, like the example below.

```bash
Clone into tikiwiki folder

git clone https://gitlab.com/tikiwiki/tiki.git tikiwiki
```
Then, other clones can be created by borrowing the information from the clone above.

### Clone and set master into tikimaster folder

```bash
git clone --branch=master --reference=./tikiwiki --shared
https://gitlab.com/tikiwiki/tiki.git tikimaster
```

### Clone and set 21.x into tiki21 folder

```bash
git clone --branch=21.x --reference=./tikiwiki --shared
https://gitlab.com/tikiwiki/tiki.git tiki21
```

### Clone and set 18.x into tiki18 folder

```bash
git clone --branch=18.x --reference=./tikiwiki --shared
https://gitlab.com/tikiwiki/tiki.git tiki18
```

### Clone and set 15.x into tiki15 folder

```bash
git clone --branch=15.x --reference=./tikiwiki --shared
https://gitlab.com/tikiwiki/tiki.git tiki15
```

### Trimming git history

Another available to reduce disk and network usage is the `--depth=<n>` option, where `<n>` is the number of history entries desired to bring. This approach may not be so good to Tiki development, because the change history is not available. But it is good to keep track of file state when installing Tiki in a server.

#### Clone into tiki18 folder with 1 commit in history

```bash
git clone --branch=18.x --depth=1 https://gitlab.com/tikiwiki/tiki.git tiki18
```

#### Clone into tiki18 folder with 2 commits in history

```bash
git clone --branch=18.x --depth=2 https://gitlab.com/tikiwiki/tiki.git tiki18
```

On the examples above, just the last `<n>` commits of branch 18.x will be available on local repository. All other information about branches and tags will not exist on local repository.

It is possible to have a cloned repository with the last `<n>` commits of each branch available. This is done by passing `--no-single-branch` to clone command.

### Creating a workspace

This is just a suggestion on how to setup a workspace in a development environment. The paths below can be set up in Nginx, Apache or any other webserver.

1. Create a base folder and change to it

   ```bash
   mkdir "/var/www/html"
   cd "/var/www/html"
   ```

2. Create a standard tiki clone

   ```bash
   git clone https://gitlab.com/tikiwiki/tiki.git tiki
   ```
3. Create a clone per tiki instance, referencing the tiki folder

```bash
# For each instance
git clone --branch=20.x --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git
doc.tiki.org
# For each instance
git clone --branch=20.x --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git
dev.tiki.org
# For each instance
git clone --branch=18.x --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git
example.com
git clone --branch=master --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git	ikimaster.docker
# For each instance
git clone --branch=20.x --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git
tiki20.docker
# For each instance
# For each instance
git clone --branch=18.x --shared --reference=./tiki https://gitlab.com/tikiwiki/tiki.git	ikiti18.docker
```

After above commands, the working space should have this structure:

```
/var/www/html/tiki
/var/www/html/doc.tiki.org
/var/www/html/dev.tiki.org
/var/www/html/example.com
/var/www/html/tikimaster.docker
/var/www/html/tiki20.docker
/var/www/html/tiki19.docker
/var/www/html/tiki18.docker
```

Reference

- [https://git-scm.com/docs/git-clone](https://git-scm.com/docs/git-clone)