Dotfiles: Best way to store in a bare git repository

Disclaimer: the title is slightly hyperbolic, there are other proven solutions to the problem. I do think the technique below is very elegant though.

Recently I read about this amazing technique in an [Hacker News thread]() on people's solutions to store their [dotfiles](). User `StreakyCobra` [showed his elegant setup]() and ... It made so much sense! I am in the process of switching my own system to the same technique. The only pre-requisite is to install [Git]().

In his words the technique below requires:

No extra tooling, no symlinks, files are tracked on a version control system, you can use different branches for different computers, you can replicate you configuration easily on new installation.

The technique consists in storing a [Git bare repository]() in a "*side*" folder (like `$HOME/.cfg` or `$HOME/.myconfig`) using a specially crafted alias so that commands are run against that repository and not the usual `.git` local folder, which would interfere with any other Git repositories around.

Starting from scratch

If you haven't been tracking your configurations in a Git repository before, you can start using this technique easily with these lines:

```
config config --local status.showUntrackedFiles no
echo "alias config='/usr/bin/git --git-dir=$HOME/.cfg/ --w
```

- The first line creates a folder `~/.cfg` which is a Git bare repository that will track our files.
- Then we create an alias `config` which we will use instead of the regular `git` when we want to interact with our configuration repository.
- We set a flag - local to the repository - to hide files we are not explicitly tracking yet. This is so that when you type `config status` and other commands later, files you are not interested in tracking will not show up as `untracked`.
- Also you can add the alias definition by hand to your `.bashrc` or use the the fourth line provided for convenience.

I packaged the above lines into a snippet up on Bitbucket and linked it from a short-url. So that you can set things up with:

```
curl -Lks http://bit.do/cfg-init | /bin/bash
```

After you've executed the setup any file within the `$HOME` folder can be versioned with normal commands, replacing `git` with your newly created `config` alias, like:

```
config status
config add .vimrc
config commit -m "Add vimrc"
config add .bashrc
```

Installing your dotfiles onto a new system (or migrate to this setup)

If you already store your configuration/dotfiles in a Git repository, on a new system you can migrate to this setup with the following steps:

- Prior to the installation make sure you have committed the alias to your `.bashrc` or `.zsh`:

```
alias config='/usr/bin/git --git-dir=$HOME/.cfg/ --work-tree=$HOME'
```

- And that your source repository ignores the folder where you'll clone it, so that you don't create weird recursion problems:

```
echo ".cfg" >> .gitignore
```

- Now clone your dotfiles into a bare repository in a "*dot*" folder of your `$HOME`:

```
git clone --bare <git-repo-url> $HOME/.cfg
```

- Define the alias in the current shell scope:

```
alias config='/usr/bin/git --git-dir=$HOME/.cfg/ --work-tree=$HOME'
```

- Checkout the actual content from the bare repository to your `$HOME`:

- The step above might fail with a message like:

```
error: The following untracked working tree files would be overwritten by checkout:
    .bashrc
    .gitignore
Please move or remove them before you can switch branches.
Aborting
```

This is because your `$HOME` folder might already have some stock configuration files which would be overwritten by Git. The solution is simple: back up the files if you care about them, remove them if you don't care. I provide you with a possible rough shortcut to move all the offending files automatically to a backup folder:

```
mkdir -p .config-backup && \
config checkout 2>&1 | egrep "\s+\." | awk {'print $1'} | \
xargs -I{} mv {} .config-backup/{}
```

- Re-run the check out if you had problems:

```
config checkout
```

- Set the flag `showUntrackedFiles` to `no` on this specific (local) repository:

```
config config --local status.showUntrackedFiles no
```

- You're done, from now on you can now type `config` commands to add and update your dotfiles:

```
config commit -m "Add vimrc"
config add .bashrc
config commit -m "Add bashrc"
config push
```

Again as a shortcut not to have to remember all these steps on any new machine you want to setup, you can create a simple script, store it as Bitbucket snippet like I did, create a short url for it and call it like this:

```
curl -Lks http://bit.do/cfg-install | /bin/bash
```

For completeness this is what I ended up with (tested on many freshly minted Alpine Linux containers to test it out):

```
git clone --bare https://bitbucket.org/durdn/cfg.git $HOME/.cfg
function config {
   /usr/bin/git --git-dir=$HOME/.cfg/ --work-tree=$HOME $@
}
mkdir -p .config-backup
config checkout
if [ $? = 0 ]; then
  echo "Checked out config.";
  else
    echo "Backing up pre-existing dot files.";
    config checkout 2>&1 | egrep "\s+\." | awk {'print $1'} | xargs -I{} mv {} .config-backup
fi;
config checkout
config config status.showUntrackedFiles no
```

Wrapping up

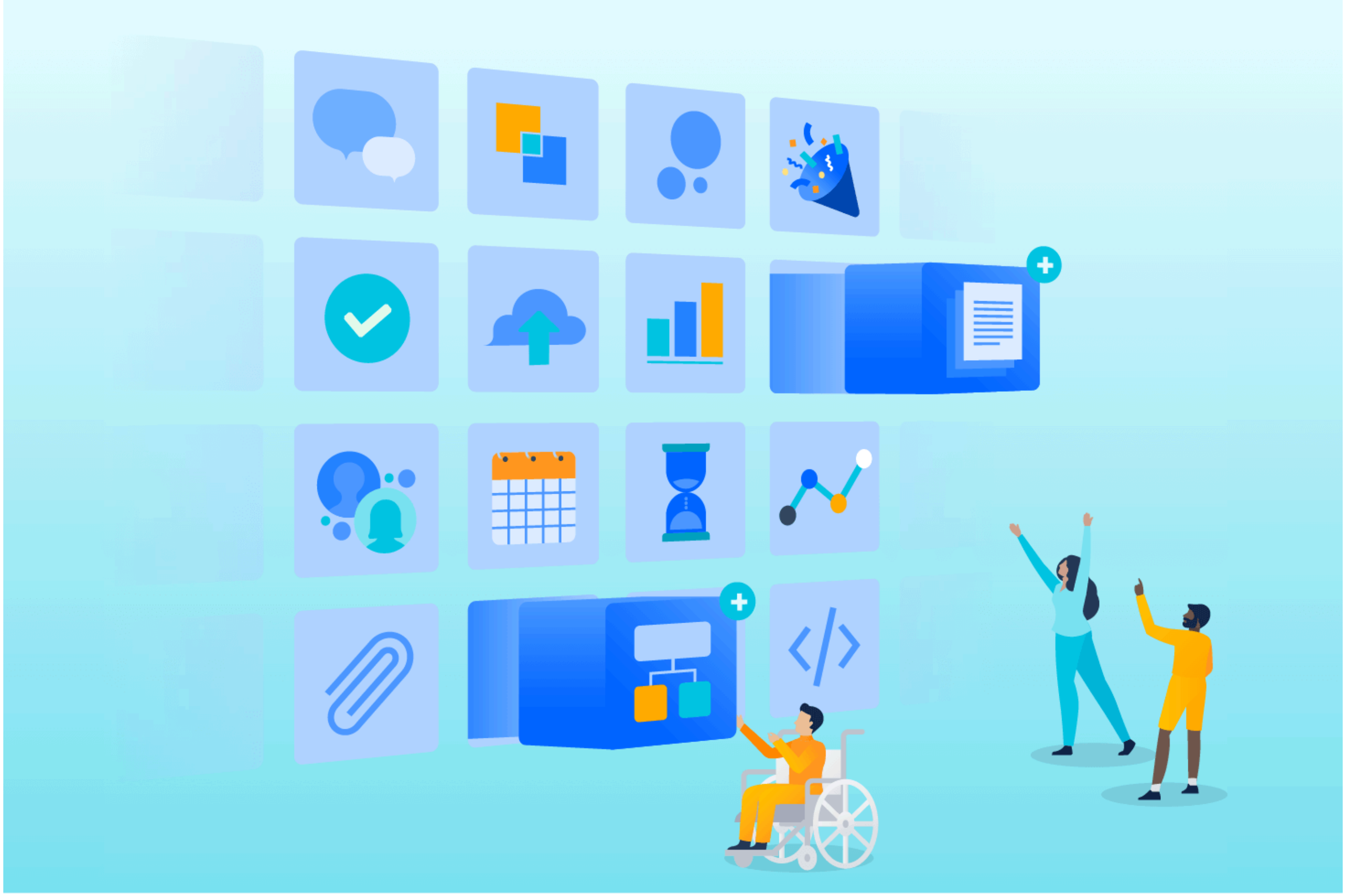
my dotfiles live here. Also please do stay connected by following @durdn or my awesome team at @atlassiandev.

SHARE THIS ARTICLE

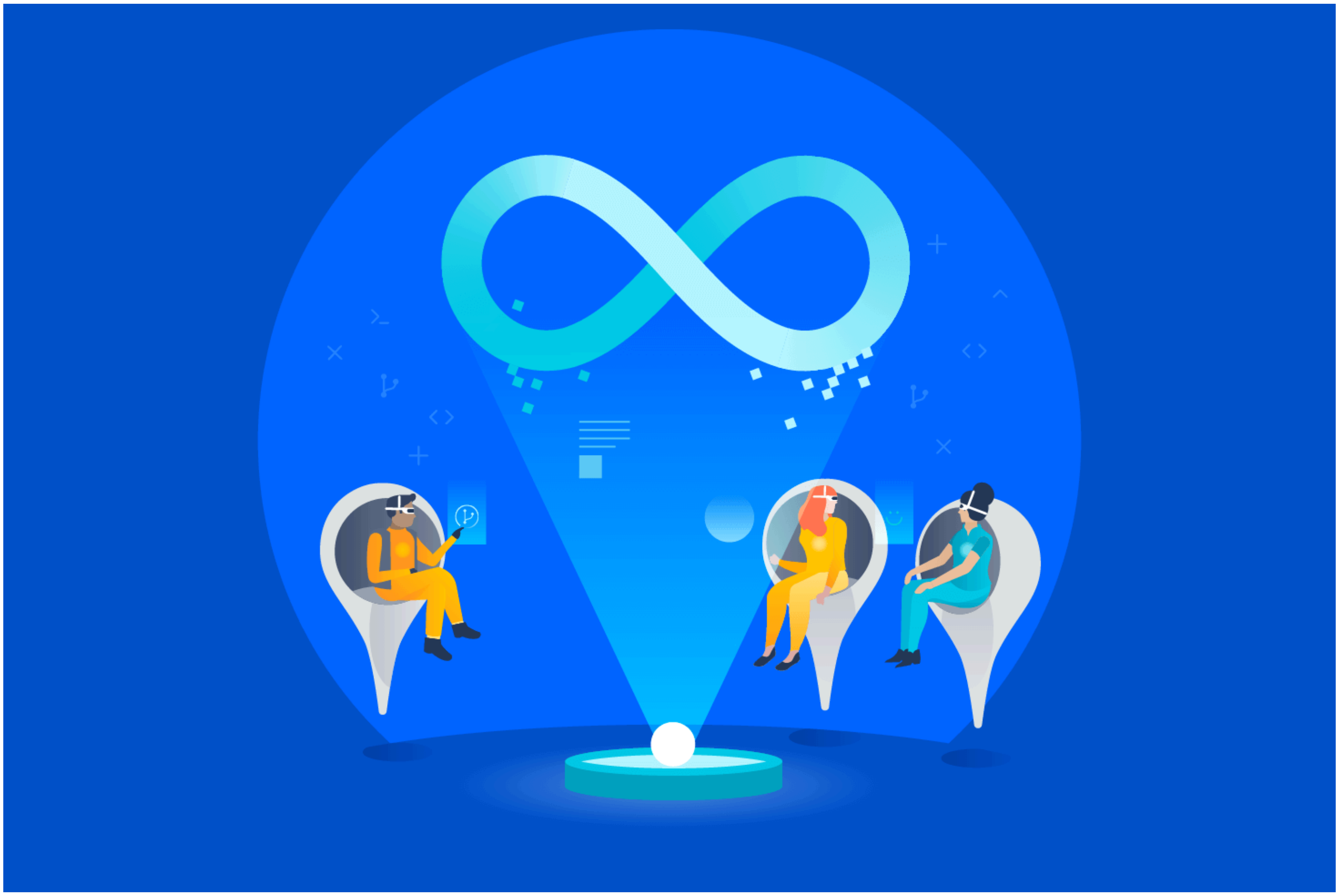
NEXT TOPIC
Git cherry pick →

Recommended reading

Bookmark these resources to learn about types of DevOps teams, or for ongoing updates about DevOps at Atlassian.

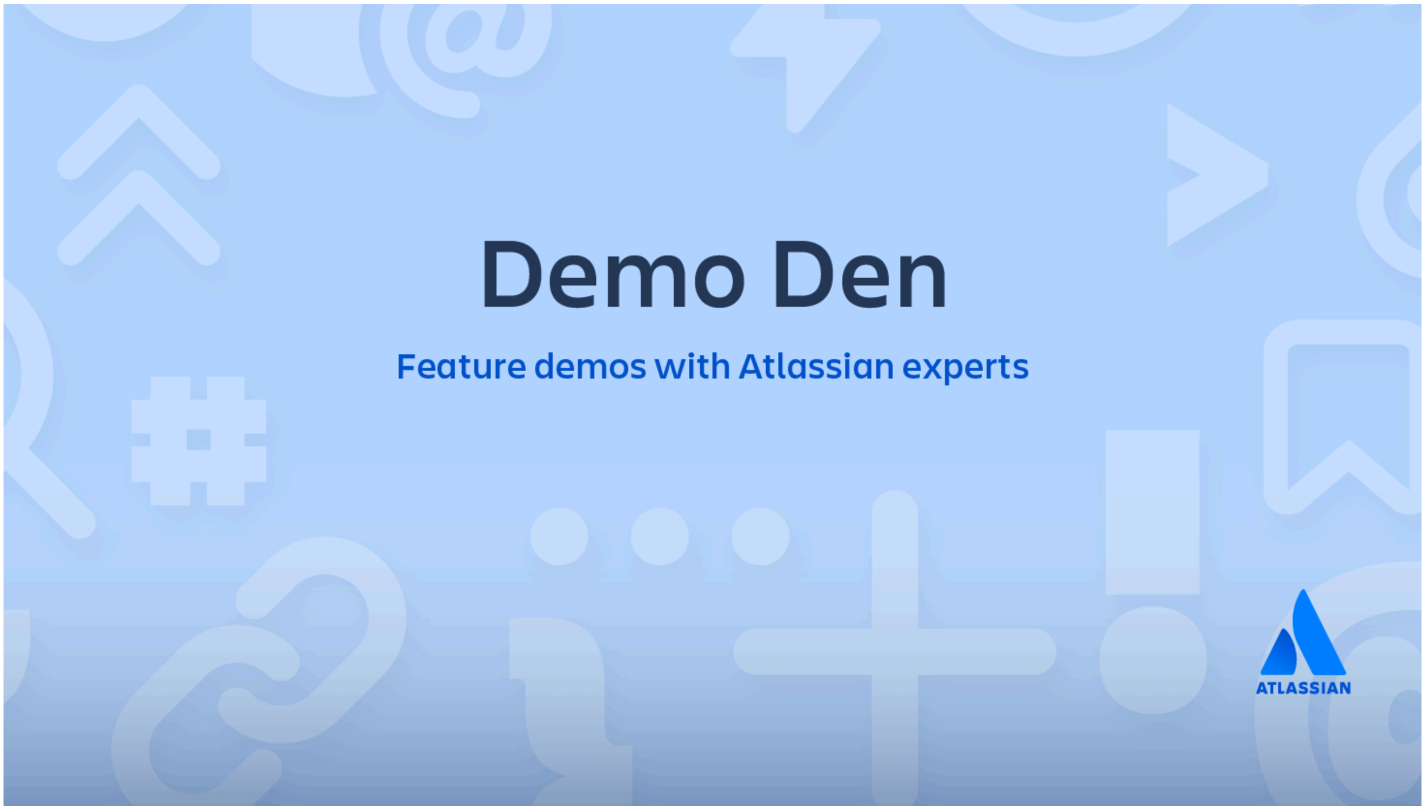


ATLASSIAN



DevOps learning path

Learn more →



How Bitbucket Cloud works with Atlassian Open DevOps

Watch now

Sign up for our DevOps newsletter

Email address

Sign up

ATLASSIAN

Events

Blogs

Investor Relations

Atlassian Foundation

Contact us

PRODUCTS

Rovo

Jira

Jira Align

Jira Service Management

Confluence

Trello

Bitbucket

See all products →

RESOURCES

Technical support

Purchasing & licensing

Atlassian Community

ATLASSIAN

My account

Create support ticket →

LEARN

Partners

Training & certification

Documentation

Developer resources

Enterprise services

See all resources →

Privacy Policy Terms Impressum English ▼