
StriderCD Book

Release 1.4

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What Is Strider

Strider is an Open Source Continuous Integration and Deployment platform. It is written in JavaScript/Node.JS and uses MongoDB. It is released under the BSD license. While similar conceptually to systems such as Travis and Jenkins, Strider is designed to be easy to setup, use, and customize.

What Is Continuous Integration

Continuous Integration (a.k.a. CI) is a software engineering process. It can be defined as running an automated test suite on every commit to a software project and notifying on success and failure.

CI is beneficial as it greatly increases the feedback developers receive on each commit, and the health and well-being of the software overall. It is amazing how many bugs can be found which otherwise would remain covered due to particulars of development environments.

The faster your team gets feedback on bugs and regressions, the sooner your release is ready!

What Is Continuous Deployment

At a high level, Continuous Deployment (a.k.a. CD) extends Continuous Integration to include automated deployment. This can vary from full “deploy-on-green” whereby the system is automatically deployed to production every time the tests pass, to more conservative automatic deployment to staging with a manual push to production.

Continuous Deployment typically includes a notion of “feature flippers” which enable new features to be rolled out gradually, to a subset of customers, or quickly toggled off if they cause issues.

CD makes the software release feedback loop as tight as possible.

Strider Philosophy

We believe that Continuous Integration and Continuous Deployment processes improve the quality and reliability of software.

We want to make these processes more accessible, and one of the main blockers is well-designed, high quality CI and CD tooling.

By choosing sane defaults, automating to the extent possible, and minimizing extraneous UI, Strider can elegantly meet the needs of 80+% users out of the box.

However we realise that in the real-world, integration with other systems and customization is often required. For this reason, Strider has been designed from the ground up to be as easy as reasonably possible to customize and extend - in very powerful ways.

Strider has robust support for extensions (which are simply NPM modules). Have a complex workflow to trigger builds and deployments? Write a Job plugin to handle it. Use an unsupported VCS? Write a Provider plugin.

Features

Strider has the following major features:

Dashboard

Stylish dashboard displaying the current and recent test and deploy status of each project:

Strider

























Dashboard

Email

Password

Sign In

Public Projects

Job	Project		Commit	Duration
 52788b6b	Strider-CD/strider-bitbucket		 adding docs for bitbucket config	 7.7s 9 hours ago
 5277d478	Strider-CD/strider		 mention that nomnom doesn't work well v	 23.2m 22 hours ago
 52760cd4	Strider-CD/strider-git		 adding version getter - not yet used	 5.7s 2 days ago
 52760cc2	Strider-CD/strider-node		 adding caching setting	 7.7s 2 days ago
 52760cb3	Strider-CD/strider-runner-core		 .cmd output aggregation	 7s 2 days ago
 527573b5	Strider-CD/strider-github		 fixing webhook add/remove	 8.6s 3 days ago

Github, Github Enterprise, BitBucket

Strider integrates with Github, Github Enterprise, BitBucket, GitLab and more. Intuitively add projects for CI and CD with only a few clicks. No messing with scripts or SSH keys - Strider does it for you.

The screenshot shows the StriderCD web interface. At the top, there's a navigation bar with 'Strider', 'Dashboard', 'Projects', and 'Account'. A user is logged in as 'test@example.com'. Below the navigation bar, there's a dark banner with a 'niallo' profile icon, 'Manual Add' button, and 'Setup Bitbucket' button. A green notification banner says 'Done, Test started for frozenridge/dirkeeper. Click to watch it run'. On the left, a sidebar lists users: BeyondFog, EstebanSoze, FrozenRidge (with a green '1' icon), Strider-CD (highlighted), SuperHappyDevBox, appersonlabs, breckprog, caseman, niallo, nko3, peterbraden, sbronstein, and whitmo. The main area displays a list of projects, each with a 'Strider-CD/' prefix and a specific configuration name, followed by an 'Add' button. The projects listed are: Strider-CD/go-strider, Strider-CD/heroku-buildpack-nodejs, Strider-CD/mocha-selenium, Strider-CD/strider, Strider-CD/strider-bitbucket (highlighted), Strider-CD/strider-blanket, Strider-CD/strider-book, Strider-CD/strider-browserstack, Strider-CD/strider-cd.github.com, and Strider-CD/strider-custom.

Email And Webhook Notifications

Notification on success and failure. Emails work out of the box to notify humans, Webhooks supported for notifying machines. Want a custom notification method? It's easy to develop a plugin.


The screenshot shows an email notification from Strider. The header includes 'Sort by Date', 'Strider', '10/30/13', and 'Inbox - Frozenridge'. The body of the email contains a green banner that says 'Your tests passed!'. Below this, it lists the project 'Strider-CD/strider-extension-loader', the completion time '2013-10-30 10:19 pm', and the duration '9s'. There is a link 'View Test Output'. At the bottom, it shows a log tail snippet: 'ure', 'npm http 304 https://registry.npmjs.org/tunnel-agent', and 'npm http 304 https://registry.npmjs.org/json-stringify-safe'.

Teams and Collaborators

Development teams via “collaborators”. Give other users read-only access or full admin rights to your projects.

Collaborators

Collaborators will be notified of build success/failure, be able to trigger test jobs and deploys, and access job details. They will not be permitted to add other new collaborators nor change any project configuration.



Public Projects

Let the world at large see your project status dashboard! Public projects may be browsed by anonymous users, but not triggered nor configured. Great for Open Source projects. See Strider’s public CI dashboard at <https://public-ci.stridercd.com>.

Project Visibility

Projects are private by default. Job history, status and console output of public projects are visible to anyone who knows the URL.

Public URL: <https://public-ci.stridercd.com/strider-cd/strider/>

☒ Make this project public

Branches

Each VCS branch may be configured independently, including different deployment configuration. Use this to create powerful workflows. For example, “master” branch may only deploy to production with a manual trigger while “testing” branches deploy to QA automatically on each successful test run.

Strider [Dashboard](#) [Projects](#) [Account](#) [Admin](#)

Configuration - Strider-CD/strider

The configuration for this branch is the same as master, except that “deploy_on_green” is false. Click to configure this branch separate from master.

Pull Requests

GitHub pull requests can be automatically tested when they are opened, with test result status sent back to GitHub to mark the PR. For security reasons, this is only enabled for specific users which you whitelist.

Strider Dashboard Projects Account Admin Logged in as n@niallo.me | [logout]

Configuration - Strider-CD/strider master Deploy Branch Test Branch

Project

Branch

Plugins

ENV Vars

Node

Sauce Labs

Provider: Github

Caching

☐ Cache the project data between runs

Pull Requests

If you have the service hooks installed, you can also choose to test pull requests.

All None

If your project is public, and your runner is insecure (such as the default runner), selecting All is potentially dangerous. A malicious pull request could take down your server, compromise data, etc. If you want to test pull-requests, use a secure runner, such as `docker-runner`.

Service Hooks

Service Hooks are the means by which github notifies strider of new commits and pull requests to your repository.

We already registered the requisite hooks when you added this project, but if you want to remove them or add them back, you can do so here.

Delete Service Hooks Add Service Hooks

Advanced Shell Scripting

Script each phase of each project from the web or config file. Custom prepare, test and deploy scripts easily enable integration with your specific language, environment and existing automation.

Strider Dashboard Projects Account Logged in as test@example.com | [logout]

Configuration - FrozenRidge/dirkeeper master Deploy Branch Test Branch

Project

Branch

Plugins

Runner: Default

Custom Scripts

Heroku

Node

Save

Environment

```
1 # put your shell code here
2 echo hello world!
3 apt-get install -y postgresql
```

Environment commands should only be for installing versions of languages and such things that need to come even before the prepare stage.

Prepare

```
1 # put your shell code here
2
```

These commands are run after the repo is cloned but before the tests. Installing dependencies is a good example.

Test

```
1 # put your shell code here
2 make test
```

If the tests fail, deploy doesn't happen.

Heroku Support

Deploy directly to Heroku apps with the `strider-heroku` plugin.

The screenshot shows the Strider web interface. At the top is a navigation bar with 'Strider', 'Dashboard', 'Projects', and 'Account'. Below this is a header for 'Configuration - FrozenRidge/dirkeeper' with a dropdown menu set to 'master' and two buttons: 'Deploy Branch' and 'Test Branch'. On the left is a sidebar with a list of configuration options: Project, Branch, Plugins, Runner: Default, Custom Scripts, Heroku, and Node. The 'Heroku' option is selected, showing a 'Heroku!' section with 'Linked Accounts' (a dropdown showing 'niallo@stridercd.com' and an 'Add a Heroku Account' button), 'Apps' (a dropdown showing 'getstrider' and a 'Refresh Apps List' button), and a 'Save' button.

Node.js And Python

Out-of-box support for Node.JS and Python projects. Other languages / environments can be supported with thirdparty plugins or custom scripts.

The screenshot shows the Strider web interface displaying a successful test run for the 'FrozenRidge/dirkeeper' project. The top bar shows 'Strider', 'Dashboard', 'Projects', and 'Account'. Below this is a header for 'FrozenRidge/dirkeeper' with a dropdown menu set to 'master' and two buttons: 'Deploy Branch' and 'Test Branch'. The main content area shows a green bar with a checkmark and the text '5276e54f Manually Retesting 14.2s a day ago'. Below this is another green bar with a checkmark and the text 'Node tests passed'. The bottom section shows a terminal output for the 'prepare' and 'test' steps. The 'prepare' step took 3.7s and the 'test' step took 10.4s. The terminal output shows the command 'npm test' and the output of the 'dirkeeper' test suite, which passed all 4 tests.

Front-end JavaScript testing with Sauce Labs

Easily configure SauceLabs.com credentials and select os/browser combinations via Strider's web UI. Strider will even manage the Sauce Connect proxy for you - waiting for it to be connected before running your tests.

Strider Dashboard Projects Account Logged in as test@example.com | (logout)

Configuration - FrozenRidge/dirkeeper master Deploy Branch Test Branch

Project
Branch
Plugins
Runner: Default
Custom Scripts
Heroku
Node
Sauce Labs

Sauce Credentials

Username:

Access Key:

Save Clear Browsers

Linux

Android	Firefox	Google Chrome	Lynx	Opera
4.0 <input type="checkbox"/>	3.6 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input checked="" type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/>	latest <input checked="" type="checkbox"/>	2.8.7 <input type="checkbox"/>	12 <input type="checkbox"/>

Mac 10.6

Firefox	Google Chrome	Safari	iPad	iPhone
4 <input type="checkbox"/> 5 <input type="checkbox"/> 6 <input type="checkbox"/> 7 <input type="checkbox"/> 8 <input type="checkbox"/> 9 <input type="checkbox"/> 10 <input type="checkbox"/> 11 <input type="checkbox"/> 12 <input checked="" type="checkbox"/> 13 <input type="checkbox"/> 14 <input type="checkbox"/> 15 <input type="checkbox"/> 16 <input type="checkbox"/> 17 <input type="checkbox"/> 18 <input type="checkbox"/> 19 <input type="checkbox"/> 20 <input type="checkbox"/> 21 <input type="checkbox"/>	latest <input type="checkbox"/>	5 <input type="checkbox"/>	4.3 <input type="checkbox"/> 5 <input type="checkbox"/>	4.3 <input type="checkbox"/> 5 <input type="checkbox"/>

Extensibility

Strider is designed to be highly extensible. The core is minimal, with most features implemented in plugins (e.g. strider-heroku, strider-github, strider-sauce). In keeping with Node.JS, Strider plugins are simply NPM modules. This makes it easy to support new VCS providers, deployment targets, languages or environments and so on. See the chapter on Extending Strider for more!

Choose Plugins

Drag and drop plugins from Available to Active to enable them for this project. Plugins are run in the order they are specified here. Active plugins can be configured by clicking their corresponding tabs on the left.

Active Plugins

Sauce Labs ☒ Enabled

Custom Scripts ☒ Enabled

Heroku ☒ Enabled

Node ☒ Enabled ☒ Show Status

Available Plugins

ENV Vars

Python

Webhooks

Commercial Support

FrozenRidge, LLC provides commercial support including training, customization/integration and cloud-hosting. Email hi@frozenridge.co to learn more.

Installing StriderCD

Dependencies

Strider requires Node 0.10.x or higher and a MongoDB database. You can get node.js for your platform at <http://nodejs.org>. You can get MongoDB for your platform at <http://mongodb.org>.

We assume you have a MongoDB server running locally on your machine in the interests of simplicity. Of course, you can use a remote or cloud-hosted MongoDB just as easily.

Latest Stable Version

The latest version of Strider in NPM is always a stable version. Once you have Node.JS on your system, you can install the most recent stable version of Strider system-wide with the following command:

```
npm install -g strider
```

Now you should have a `strider` executable in your `$PATH`.

Latest Development Version

The very latest version of Strider is available on Github. While we strive to keep Strider as stable as possible, this should be considered development or pre-release code.

First clone the repository from Github:

```
git clone https://github.com/Strider-CD/strider.git
```

Next go into the `strider` directory and install strider system-wide:

```
cd strider
npm install -g
```

Now you should have a `strider` executable in your `$PATH`.

Adding Users

Strider isn't much use without any user accounts. You will want to create at least one admin user to manage your instance:

```
strider addUser
```

This command will walk you through creating a new user. If you already know an email and password, you can also pass them directly. For example to create a new user with email `foo@example.com` and password `supersecret` with admin privileges:

```
strider addUser -l foo@example.com -p supersecret -a
```

Cloud-hosted or Remote MongoDB

If you don't want to run a local MongoDB, you can also use a cloud-hosted database, such as a free one provided by MongoLab. Using a cloud-hosted database for Strider can be advantageous because you can easily outsource backups, upgrades and other operations tasks which aren't generally fun.

Additionally, a cloud-hosted MongoDB database should be available from anywhere.

Of course, you might already have your own MongoDB set up in your environment, but just not on your local machine.

Strider can be configured to use a remote MongoDB database with the `DB_URI` environment variable. For example:

```
DB_URI=mongodb://username:supersecret@mongodb.example.com/strider npm start
```


CHAPTER 3

Running Strider

CHAPTER 4

Creating a project

Auth

Currently Strider supports two kinds of authentication, cookie and basic. In the near future, Hawk will be added.

Cookie authentication is done by posting to `/login` with a payload of email and password. Content-type is `www-form-urlencoded`. You then have a session cookie.

Note: say something about expiration...

Basic auth is done by sending the header `"Authorization: basic " + base64(username + ":" + password)`. This must be done for every request that requires authentication.

CORS

Strider supports [CORS](#) so that you may call it from a browser or open a websocket to it (Socket.io initiation protocol requires it).

To enable CORS pass a `cors` configuration option when instantiating Strider, which is then passed to the [cors npm module](#).

Example:

```
var strider = require('strider');
var config = {
  cors: {
    origin: 'http://localhost:1337',
    credentials: true,
    headers: [
      'DNT',
      'X-Mx-ReqToken',
      'Keep-Alive',
```

```
    'User-Agent',
    'X-Requested-With',
    'If-Modified-Since',
    'Cache-Control',
    'Content-Type',
    'Accept',
    'Accept-Encoding',
    'Origin',
    'Referer',
    'Pragma',
    'Cookie'
  ],
  methods: [
    'GET',
    'PUT',
    'POST',
    'DELETE',
    'OPTIONS'
  ],
  maxAge: 1728000
}
};

var app = strider(includePath, config, function(){
  console.log("Strider is running");
});
```

CHAPTER 6

Indices and tables

- search