

Vue CLI

Vue CLI Overview

- Most real Vue app development starts with Vue CLI
- Creates file structure for new projects
- Can add features to existing ones
 - but commit existing files to version control in case it overwrites any
- Configures use of Babel for transpiling
- Configures use of Webpack for module bundling
- Provides npm scripts to
 - `serve` app using webpack-dev-server
 - `build` app for production deployment
- Can request support for
linting, unit tests, end-to-end (E2E) tests, and more

@vue/cli-service

- A dev dependency of projects created by Vue CLI
- Similar to `react-scripts` dev dependency of projects created by create-react-app
- Supports many npm scripts in `package.json` including
 - `build`, `lint`, `serve`, `test:e2e`, and `test:unit`
- Can be easily upgraded when new versions are released
- Think of it like allowing a team of Vue experts to maintain your build process, while retaining the ability to customize it

Installing and Running

- To install, **npm install -g @vue/cli**
 - makes it usable from any directory
- Two ways to run
 - command line
 - web UI

Vue CLI Command Line ...

- To create a new project
 - `vue create project-name`
- Prompts for options
 - can choose default set of features (Babel and ESLint)
 - can manually select features such as TypeScript, PWA support, Router, Vuex, CSS Pre-processors, Linter/Formatter, Unit Testing, and E2E testing

```
Vue CLI v3.8.2
? Please pick a preset: (Use arrow keys)
  > with-tests-config-in-package-json (babel, eslint, unit-jest, e2e-cypress)
    default (babel, eslint)
    Manually select features
```

Move > with up and down arrow keys.
Select options with space bar.
Press enter to continue to next step.

... Vue CLI Command Line ...

manually selecting features

```
Vue CLI v3.4.0
? Please pick a preset: Manually select features
? Check the features needed for your project: (Press <space> to select, <a> to toggle all, <i>
➤●Babel
○TypeScript
○Progressive Web App (PWA) Support
○Router
○Vuex
○CSS Pre-processors
●Linter / Formatter
○Unit Testing
○E2E Testing
```

```
Vue CLI v3.4.0
? Please pick a preset: Manually select features
? Check the features needed for your project:
●Babel
○TypeScript
○Progressive Web App (PWA) Support
○Router
○Vuex
○CSS Pre-processors
●Linter / Formatter
●Unit Testing
➤●E2E Testing
```

... Vue CLI Command Line ...

```
Vue CLI v3.4.0
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config:
  ESLint with error prevention only
  ESLint + Airbnb config
  ESLint + Standard config
> ESLint + Prettier
```

```
Vue CLI v3.4.0
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i>
>● Lint on save
  ○ Lint and fix on commit
```

```
Vue CLI v3.4.0
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i> to invert selection)
? Pick a unit testing solution:
  Mocha + Chai
> Jest
```

... Vue CLI Command Line ...

```
Vue CLI v3.4.0
```

```
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i> to invert selection)
? Pick a unit testing solution: Jest
? Pick a E2E testing solution: (Use arrow keys)
❯ Cypress (Chrome only)
Nightwatch (Selenium-based)
```

```
Vue CLI v3.4.0
```

```
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i> to invert selection)
? Pick a unit testing solution: Jest
? Pick a E2E testing solution: Cypress
? Where do you prefer placing config for Babel, PostCSS, ESLint, etc.?
In dedicated config files
❯ In package.json
```

```
Vue CLI v3.4.0
```

```
? Please pick a preset: Manually select features
? Check the features needed for your project: Babel, Linter, Unit, E2E
? Pick a linter / formatter config: Prettier
? Pick additional lint features: (Press <space> to select, <a> to toggle all, <i> to invert selection)
? Pick a unit testing solution: Jest
? Pick a E2E testing solution: Cypress
? Where do you prefer placing config for Babel, PostCSS, ESLint, etc.? In package.json
? Save this as a preset for future projects? (y/N) [
```

... Vue CLI Command Line

```
Vue CLI v3.4.0
  ✨ Creating project in /Users/Mark/Documents/programming/languages/javascript/vue/demo.
  📁 Initializing git repository...
  ⚙️ Installing CLI plugins. This might take a while...

> fsevents@1.2.7 install /Users/Mark/Documents/programming/languages/javascript/vue/demo/node_modules/fsevents
> node install

[fsevents] Success: "/Users/Mark/Documents/programming/languages/javascript/vue/demo/node_modules/fsevents/lib/bindings.js"
> yorkie@2.0.0 install /Users/Mark/Documents/programming/languages/javascript/vue/demo/node_modules/yorkie
> node bin/install.js

setting up Git hooks
done

> cypress@3.1.5 postinstall /Users/Mark/Documents/programming/languages/javascript/vue/demo/node_modules/cypress
> node index.js --exec install

Cypress 3.1.5 is installed in /Users/Mark/Library/Caches/Cypress/3.1.5

added 1632 packages from 810 contributors and audited 42282 packages in 53.908s
found 63 low severity vulnerabilities
  run `npm audit fix` to fix them, or `npm audit` for details
  🎉 Invoking generators...
  📦 Installing additional dependencies...

added 56 packages from 42 contributors, updated 3 packages, moved 12 packages and audited 42799 packages in 12.219s
found 64 low severity vulnerabilities
  run `npm audit fix` to fix them, or `npm audit` for details
  ⚡ Running completion hooks...

  📄 Generating README.md...

🎉 Successfully created project demo.
👉 Get started with the following commands:

$ cd demo
$ npm run serve
```

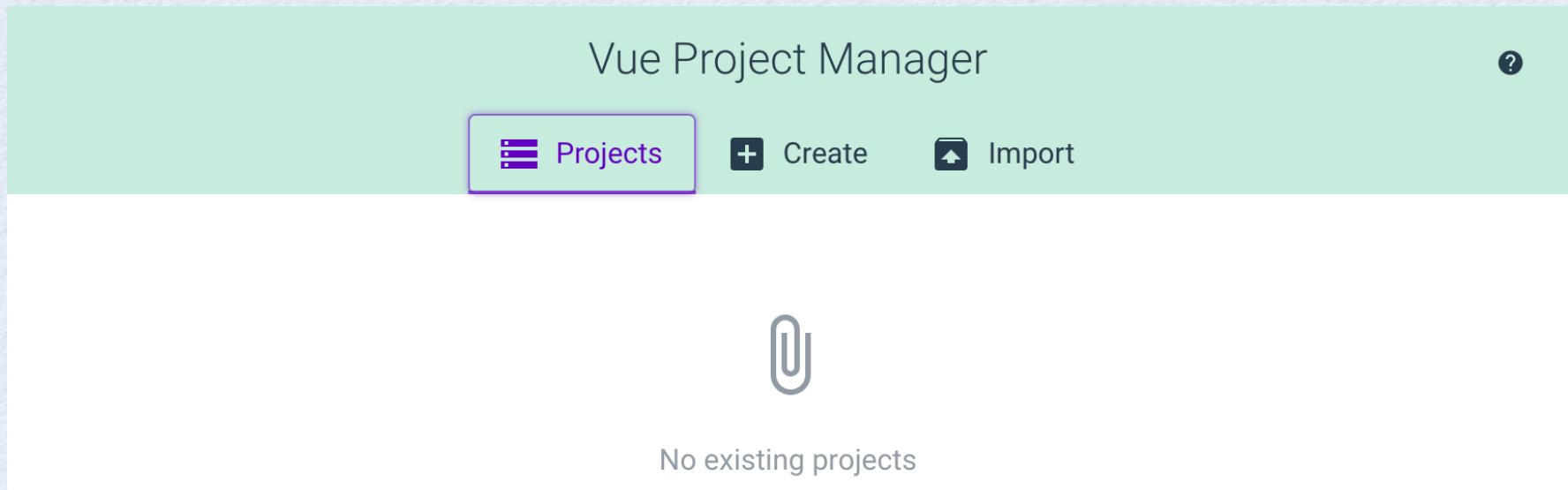
Plugins



- Add functionality to a project
- Examples include
 - apollo, e2e-cypress, markdown, storybook, vuex, and @vue/cli-plugin-unit-jest
- To find more, search at npmjs.org for packages whose names contain “vue” and “cli-plugin”
- To add one, `vue add plugin-name`

Vue CLI Web UI

- Provides a web UI for doing all the things the CLI supports
- Just another option that can be skipped if it seems overkill, but very pretty!
- To start, enter `vue ui`



Create New Project



Vue Project Manager

?

Projects **Create** Import

^ Users Mark Documents programming languages javascript vue edit refresh star down more

- basic
- dialog-demo ▾

+ Create a new project here

No project open /Users/Mark/Documents/programming/languages/javascript/vue Re... 2/15/2019, 4:09:17 PM ⌂ ⌂ ⌂ ⌂



Specify Project Details

Create a new project

Details Presets Features Configuration

Project folder

Type a name

/Users/Mark...ng/languages/javascript/vue/

Package manager

Default

Additional options

Overwrite target folder if it exists

Git repository

Initialize git repository (recommended)

Initial commit message (optional)

Cancel Next →

No project open /Users/Mark/Documents/programming/languages/javascript/vue Re... 2/15/2019, 4:09:17 PM

Select Preset Configuration



Create a new project

☰ Details Presets  Features  Configuration

ⓘ A preset is an association of plugins and configurations. After you've selected features, you can optionally save it as a preset so that you can reuse it for future projects, without having to reconfigure everything again.

Select a preset

- with-tests-config-in-package-json
babel, eslint, unit-jest, e2e-cypress
- Default preset
babel, eslint
- Manual
Manually select features
- Remote preset
Fetch a preset from a git repository

[← Previous](#) [Next →](#)

No project open /Users/Mark/Documents/programming/languages/javascript/vue 2/15/2019, 4:09:17 PM



Select Project Features

Create a new project

≡ Details ✓ Presets **Features** Configuration

ℹ You will be able to add features after the project is created by installing plugins.

Enable features

Babel Transpile modern JavaScript to older versions (for compatibility) More Info	<input checked="" type="checkbox"/>
TypeScript Add support for the TypeScript language More Info	<input type="checkbox"/>
Progressive Web App (PWA) Support Improve performances with features like Web manifest and Service workers More Info	<input type="checkbox"/>
Router Structure the app with dynamic pages More Info	<input type="checkbox"/>
Vuex Manage the app state with a centralized store More Info	<input type="checkbox"/>
CSS Pre-processors Add support for CSS pre-processors like Sass, Less or Stylus More Info	<input type="checkbox"/>

← Previous Next →

No project open /Users/Mark/Documents/programming/languages/javascript/vue Re... 2/15/2019, 4:09:17 PM

Select Project Configuration



Create a new project

Details Presets Features Configuration

Pick a linter / formatter config:
Checking code errors and enforcing an homogeneous code style is recommended.

ESLint + Prettier

Pick additional lint features:

Lint on save
 Lint and fix on commit

Pick a unit testing solution:

Jest

Pick a E2E testing solution:

Cypress (Chrome only)

[← Previous](#)

Create Project

Can Save Selections For Future Projects

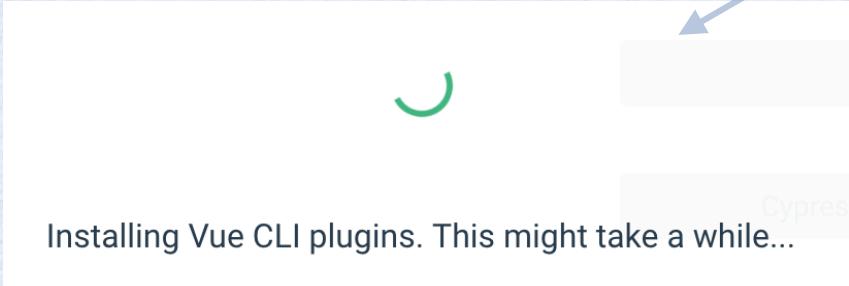


Save as a new preset x

Preset name

Save the features and configuration into a new preset

Cancel Continue without saving Create a new preset

A small window showing a green loading icon and the text "Installing Vue CLI plugins. This might take a while..."

A blue arrow points from the "Create a new preset" button to the "Create a new preset" button in the main dialog.

Project Dashboard



Project dashboard

Welcome tips



Welcome to your new project!

You are looking at the project dashboard where you can put widgets. Use the 'Customize' button to add more! Everything is automatically saved.

On the left are the different available pages. 'Plugins' let you add new Vue CLI plugins, 'Dependencies' for managing the packages, 'Configuration' to configure the tools and 'Tasks' to run scripts (for example webpack).

Return to the project manager with the dropdown at the top left of the screen or the home button in the status bar at the bottom.

Kill port

Ready to kill

Enter a network port

Kill

Customize

Plugins Dependencies Configuration Tasks

...

Home

...

/Users/Mark/Documents/programming/languages/javascript/vue/demo

Get started with the following commands:

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Vue CLI

Project Plugins



Project plugins

Add vue-router Add vuex ⋮ + Add plugin

Installed plugins

	@vue/cli-service version 3.4.0 latest 3.4.0	★ Official	✓ Installed	local service for vue-cli projects	More Info
	@vue/cli-plugin-babel version 3.4.0 latest 3.4.0	★ Official	✓ Installed	babel plugin for vue-cli	More Info
	@vue/cli-plugin-e2e-cypress version 3.4.0 latest 3.4.0	★ Official	✓ Installed	e2e-cypress plugin for vue-cli	More Info
	@vue/cli-plugin-eslint version 3.4.0 latest 3.4.0	★ Official	✓ Installed	eslint plugin for vue-cli	More Info
	@vue/cli-plugin-unit-jest version 3.4.0 latest 3.4.0	★ Official	✓ Installed	unit-jest plugin for vue-cli	More Info

...

Home /Users/Mark/Documents/programming/languages/javascript/vue/demo Get started with the following commands: \$... 2/15/2019, 4:15:26 PM

Project Dependencies



Project dependencies

+ Install dependency

Main dependencies

- vue version 2.6.6 wanted 2.6.6 latest 2.6.6 More Info

Development dependencies

- @vue/eslint-config-prettier version 4.0.1 wanted 4.0.1 latest 4.0.1 More Info
- @vue/test-utils version 1.0.0-beta.29 wanted 1.0.0-beta.29 latest 1.0.0-beta.29 More Info
- babel-core version 7.0.0-bridge.0 wanted 7.0.0-bridge.0 latest ▲ 6.26.3 More Info
- babel-eslint version 10.0.1 wanted 10.0.1 latest 10.0.1 More Info
- babel-jest version 23.6.0 wanted 23.6.0 latest ▲ 24.1.0 More Info
- eslint version 5.14.0 wanted 5.14.0 latest 5.14.0 More Info
- eslint-plugin-vue

...

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Project Configuration



Project configuration

The screenshot shows a sidebar with several icons: a grid, a gear, a folder, a gear with a dot, and a clipboard. The clipboard icon is highlighted with a pink border. Below the sidebar, there's a search bar with a magnifying glass icon. Two configuration items are listed:

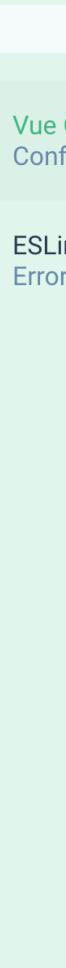
- Vue CLI**
Configure your Vue project
- ESLint configuration**
Error checking & Code quali...

At the bottom of the sidebar, there are three dots (...). The footer of the interface includes a navigation bar with icons for home, folder, and file operations, followed by the path "/Users/Mark/Documents/programming/languages/javascript/vue/demo". It also displays a terminal window with the command "Get started with the following commands: \$...2/15/2019, 4:15:26 PM" and various terminal icons.

Vue CLI Configuration



Project configuration



Search:

Vue CLI
Configure your Vue project

ESLint configuration
Error checking & Code qual...

General settings

Public Path
The base URL your application will be deployed at, for example '/my-app/'. Use an empty string ("") so that all assets are linked using relative paths. [More Info](#)

/

Output directory
The directory where the production build files will be generated [More Info](#)

dist

Assets directory
A directory to nest generated static assets (js, css, img, fonts) under. [More Info](#)

Enable runtime compiler
This will allow you to use the template option in Vue components, but will incur around an extra 10kb payload for your app. [More Info](#)

Enable Production Source Maps
Disabling this can speed up production builds if you don't need source maps for production [More Info](#)

Parallel compilation
Whether to use multiple processors to compile Babel or Typescript. [More Info](#)

[More info](#)  [Cancel changes](#)  [Refresh](#) 

...

/Users/Mark/Documents/programming/languages/javascript/vue/demo  Get started with the following commands: \$... 2/15/2019, 4:15:26 PM   

ESLint Configuration



The screenshot shows the ESLint configuration interface within the Visual Studio Code extension. On the left, there's a sidebar with icons for Home, Projects, Languages, and Help. The main area has a search bar at the top. Below it, two sections are displayed: 'Vue CLI' and 'ESLint configuration'. The 'Vue CLI' section includes a 'Configure your Vue project' link. The 'ESLint configuration' section includes a 'Select config' dropdown set to 'Essential (Default)'.

Project configuration

Open eslintrc

General Rules

Lint on save

Automatically lint source files when saved [More Info](#)

ESLint configuration

Error checking & Code qual...

Select config

Select pre-defined configuration [More Info](#)

Essential (Default)

More info [More Info](#)

Cancel changes Refresh

Project Tasks



Project tasks

- serve
Compiles and hot-reloads f...
- build
Compiles and minifies for p...
- lint
Lints and fixes files
- test:e2e
Run e2e tests with `cypress ...
- test:unit
Run unit tests with Jest
- inspect
Inspect the resolved webpa...

...

Home /Users/Mark/Documents/programming/languages/javascript/vue/demo Get started with the following commands: \$... 2/15/2019, 4:15:26 PM

Serving Web App



Project tasks

- serve
- build
- lint
- test:e2e
- test:unit
- inspect

serve Compiles and hot-reloads for development

vue-cli-service serve

Run task Parameters Output Dashboard Analyzer

Dashboard Open app Parsed ?

Status	Errors	Warnings
Idle	0	0
Assets	Modules	Dependencies
0.0kB (Parsed)	0.0kB (Parsed)	0.0kB 0%

Speed stats

/Users/Mark/Documents/programming/languages/javascript/vue/demo

Get started with the following commands: \$... 2/15/2019, 4:15:26 PM

Project Dashboard



Project dashboard

Welcome tips

Welcome to your new project!

You are looking at the project dashboard where you can put widgets. Use the 'Customize' button to add more! Everything is automatically saved.

⬅️ Welcome tips

On the left you can see the project structure pages. 'Plugins' let you add new Vue CLI plugins, 'Dependencies' for managing the packages, 'Configuration' to configure the tools and 'Tasks' to run scripts (for example webpack).

➡️ Return to the project manager with the dropdown at the top left of the screen or the home button in the status bar at the bottom.

✓ Understood

Kill port

Kill port

Add widgets

Plugin updates

Dependency updates

Vulnerability check

Run task

News feed

Done

/Users/Mark/Documents/programming/languages/javascript/vue/demo INFO Opening file '/Users/Mark/Documents/pr... 2/15/2019, 4:20:37 PM

Vue CLI Default UI



Welcome to Your Vue.js App

For a guide and recipes on how to configure / customize this project,
check out the [vue-cli documentation](#).

Installed CLI Plugins

[babel](#) [eslint](#) [unit-jest](#) [e2e-cypress](#)

Essential Links

[Core Docs](#) [Forum](#) [Community Chat](#) [Twitter](#) [News](#)

Ecosystem

[vue-router](#) [vuex](#) [vue-devtools](#) [vue-loader](#) [awesome-vue](#)

Ready to make changes
and add components!

Other vue Commands ...

- In addition to **vue create** and **vue ui**, can use these
- **vue add**
 - installs a given plugin in an existing project and runs its code generator
 - ex. **vue add @vue/unit-jest**
 - ex. **vue add @vue/cli-plugin-e2e-cypress**
- **vue build**
 - seems broken; use **npm run build** instead
- **vue config**
 - outputs JSON project configuration including plugin configuration
 - add arguments to modify an option

... Other `vue` Commands ...

- **`vue info`**

- outputs environment information including
 - OS - ex. `macOS 10.14.3`
 - CPU - ex. `(8) x64 Intel(R) Core(TM) i7-4870HQ CPU @ 2.50GHz`
 - versions and paths of Node, Yarn, and npm
 - versions of installed web browsers - such as Chrome, Edge, Firefox, and Safari
 - versions and names of installed npm packages

- **`vue init`**

- generates a project from a template

- **`vue invoke`**

- runs the code generator of a given plugin

... Other `vue` Commands

- **vue inspect**
 - outputs the webpack JSON configuration (long!)
- **vue serve**
 - seems broken; use `npm run serve` instead
- **vue upgrade**
 - must run `npm install -g @vue/cli-upgrade` to use
 - seems broken

Provided npm Scripts

- Projects created by Vue CLI have the following npm scripts in `package.json`
- **build**
 - builds application for production deployment
- **lint**
 - runs ESLint on all files if “Linter/Formatter” feature was selected
- **serve**
 - starts a local HTTP server using webpack-dev-server
- **test:e2e**
 - runs all end-to-end tests if “E2E Testing” feature was selected
- **test:unit**
 - runs all unit tests if “Unit Testing” feature was selected

`npm run build` creates `dist` directory containing all files needed to deploy application. This has `css`, `img`, and `js` subdirectories. In the `js` directory, “chunk” files contain compiled and minified dependency code and “app” files contain compiled and minified project-specific code. Source maps are also generated for use in browser devtools debugging.

There is also a “**modern**” mode that creates two JavaScript bundles, one targeted at modern browsers and one targeted at older browsers which require more transpilation and polyfills.