

Publishing Node.js packages

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You can publish Node.js packages to a registry as part of your continuous integration (CI) workflow.

Introduction

This guide shows you how to create a workflow that publishes Node.js packages to the GitHub Packages and npm registries after continuous integration (CI) tests pass.

Prerequisites

We recommend that you have a basic understanding of workflow configuration options and how to create a workflow file. For more information, see "[Learn GitHub Actions](#)."

For more information about creating a CI workflow for your Node.js project, see "[Building and testing Node.js](#)."

You may also find it helpful to have a basic understanding of the following:

- "[Working with the npm registry](#)"
- "[Variables](#)"
- "[Using secrets in GitHub Actions](#)"
- "[Automatic token authentication](#)"

About package configuration

The `name` and `version` fields in the `package.json` file create a unique identifier that registries use to link your package to a registry. You can add a summary for the package listing page by including a `description` field in the `package.json` file. For more information, see "[Creating a package.json file](#)" and "[Creating Node.js modules](#)" in the npm documentation.

When a local `.npmrc` file exists and has a `registry` value specified, the `npm publish` command uses the registry configured in the `.npmrc` file. You can use the `setup-node` action to create a local `.npmrc` file on the runner that configures the default registry and scope. The `setup-node` action also accepts an authentication token as input, used to access private registries or publish node packages. For more information, see [setup-node](#).

You can specify the Node.js version installed on the runner using the `setup-node` action.

If you add steps in your workflow to configure the `publishConfig` fields in your `package.json` file, you don't need to specify the registry-url using the `setup-node` action, but you will be limited to publishing the package to one registry. For more information, see "[publishConfig](#)" in the npm documentation.

Publishing packages to the npm registry

You can trigger a workflow to publish your package every time you publish a new release. The process in the following example is executed when the release event of type `published` is triggered. If the CI tests pass, the process uploads the package to the npm registry. For more information, see "[Managing releases in a repository](#)."

To perform authenticated operations against the npm registry in your workflow, you'll need to store your npm authentication token as a secret. For example, create a repository secret called `NPM_TOKEN`. For more information, see "[Using secrets in GitHub Actions](#)."

By default, npm uses the `name` field of the `package.json` file to determine the name of your published package. When publishing to a global namespace, you only need to include the package name. For example, you would publish a package named `my-package` to `https://www.npmjs.com/package/my-package`.

If you're publishing a package that includes a scope prefix, include the scope in the name of your `package.json` file. For example, if your npm scope prefix is "octocat" and the package name is "hello-world", the `name` in your `package.json` file should be `@octocat/hello-world`. If your npm package uses a scope prefix and the package is public, you need to use the option `npm publish --access public`. This is an option that npm requires to prevent someone from publishing a private package unintentionally.

This example stores the `NPM_TOKEN` secret in the `NODE_AUTH_TOKEN` environment variable. When the `setup-node` action creates an `.npmrc` file, it references the token from the `NODE_AUTH_TOKEN` environment variable.

YAML



```
name: Publish Package to npmjs
on:
  release:
    types: [published]
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4
        # Setup .npmrc file to publish to npm
      - uses: actions/setup-node@v3
        with:
          node-version: '20.x'
          registry-url: 'https://registry.npmjs.org'
      - run: npm ci
      - run: npm publish
    env:
      NODE_AUTH_TOKEN: ${ secrets.NPM_TOKEN }
```

In the example above, the `setup-node` action creates an `.npmrc` file on the runner with the following contents:

```
//registry.npmjs.org/:_authToken=${NODE_AUTH_TOKEN}
registry=https://registry.npmjs.org/
always-auth=true
```

Please note that you need to set the `registry-url` to `https://registry.npmjs.org/` in `setup-node` to properly configure your credentials.

Publishing packages to GitHub Packages

You can trigger a workflow to publish your package every time you publish a new release. The process in the following example is executed when the release event of type `published` is triggered. If the CI tests pass, the process uploads the package to GitHub Packages. For more information, see "[Managing releases in a repository](#)."

Configuring the destination repository

Linking your package to GitHub Packages using the `repository` key is optional. If you choose not to provide the `repository` key in your `package.json` file, then your package will not be linked to a repository when it is published, but you can choose to connect the package to a repository later.

If you do provide the `repository` key in your `package.json` file, then the repository in that key is used as the destination npm registry for GitHub Packages. For example, publishing the below `package.json` results in a package named `my-package` published to the `octocat/my-other-repo` GitHub repository.

```
{
  "name": "@octocat/my-package",
  "repository": {
    "type": "git",
    "url": "https://github.com/octocat/my-other-repo.git"
  },
}
```

Authenticating to the destination repository

To perform authenticated operations against the GitHub Packages registry in your workflow, you can use the `GITHUB_TOKEN`. The `GITHUB_TOKEN` secret is set to an access token for the repository each time a job in a workflow begins. You should set the permissions for this access token in the workflow file to grant read access for the `contents` scope and write access for the `packages` scope. For more information, see "[Automatic token authentication](#)."

If you want to publish your package to a different repository, you must use a personal access token (classic) that has permission to write to packages in the destination repository. For more information, see "[Managing your personal access tokens](#)" and "[Using secrets in GitHub Actions](#)."

Example workflow

This example stores the `GITHUB_TOKEN` secret in the `NODE_AUTH_TOKEN` environment variable. When the `setup-node` action creates an `.npmrc` file, it references the token from the `NODE_AUTH_TOKEN` environment variable.

YAML



```
name: Publish package to GitHub Packages
on:
  release:
    types: [published]
jobs:
  build:
```

```

runs-on: ubuntu-latest
permissions:
  contents: read
  packages: write
steps:
  - uses: actions/checkout@v4
  # Setup .npmrc file to publish to GitHub Packages
  - uses: actions/setup-node@v3
    with:
      node-version: '20.x'
      registry-url: 'https://npm.pkg.github.com'
      # Defaults to the user or organization that owns the workflow file
      scope: '@octocat'
  - run: npm ci
  - run: npm publish
  env:
    NODE_AUTH_TOKEN: ${ secrets.GITHUB_TOKEN }

```

The `setup-node` action creates an `.npmrc` file on the runner. When you use the `scope` input to the `setup-node` action, the `.npmrc` file includes the scope prefix. By default, the `setup-node` action sets the scope in the `.npmrc` file to the account that contains that workflow file.

```

//npm.pkg.github.com/:_authToken=${NODE_AUTH_TOKEN}
@octocat:registry=https://npm.pkg.github.com
always-auth=true

```

Publishing packages using yarn

If you use the Yarn package manager, you can install and publish packages using Yarn.

YAML



```

name: Publish Package to npmjs
on:
  release:
    types: [published]
jobs:
  build:
    runs-on: ubuntu-latest
    steps:
      - uses: actions/checkout@v4
      # Setup .npmrc file to publish to npm
      - uses: actions/setup-node@v3
        with:
          node-version: '20.x'
          registry-url: 'https://registry.npmjs.org'
          # Defaults to the user or organization that owns the workflow file
          scope: '@octocat'
      - run: yarn
      - run: yarn npm publish // for Yarn version 1, use `yarn publish` instead
    env:
      NODE_AUTH_TOKEN: ${ secrets.NPM_TOKEN }

```

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