

Guides for GitHub Actions

These guides for GitHub Actions include specific use cases and examples to help you configure workflows.

GitHub Actions learning paths

Learning paths are a collection of guides that help you master a particular subject.

Get started with GitHub Actions

Discover the possibilities of GitHub Actions by creating your first workflow.

Start learning path →

1. Overview [Understanding GitHub Actions](#)
2. How-to guide [Finding and customizing actions](#)
3. Overview [Essential features of GitHub Actions](#)
4. Overview [About workflows](#)
5. How-to guide [Reusing workflows](#)
6. Overview [Security hardening for GitHub Actions](#)

Host your own runners

You can create self-hosted runners to run workflows in a highly customizable environment.

Start learning path →

1. Overview [About self-hosted runners](#)
2. Tutorial [Adding self-hosted runners](#)
3. Tutorial [Configuring the self-hosted runner application as a service](#)
4. Tutorial [Using a proxy server with self-hosted runners](#)
5. Tutorial [Using labels with self-hosted runners](#)
6. Tutorial [Using self-hosted runners in a workflow](#)
7. Tutorial [Managing access to self-hosted runners using groups](#)
8. Tutorial [Monitoring and troubleshooting self-hosted runners](#)

Create an action

Do you have an idea for a new action? Have you built something custom for your project? Learn how to build shareable actions and publish them to GitHub Marketplace.

Start learning path →

1. Overview [About custom actions](#)
2. Tutorial [Creating a Docker container action](#)
3. Tutorial [Creating a JavaScript action](#)
4. Tutorial [Creating a composite action](#)
5. Reference [Metadata syntax for GitHub Actions](#)
6. Reference [Dockerfile support for GitHub Actions](#)

- How-to guide [Setting exit codes for actions](#)
- How-to guide [Publishing actions in GitHub Marketplace](#)

All GitHub Actions guides

54 guides found

Quickstart for GitHub Actions

QUICKSTART

Try out the features of GitHub Actions in 5 minutes or less.

Fundamentals

Understanding GitHub Actions

OVERVIEW

Learn the basics of GitHub Actions, including core concepts and essential terminology.

Fundamentals

Creating a Docker container action

TUTORIAL

This guide shows you the minimal steps required to build a Docker container action.

Action development

Docker

Using starter workflows

TUTORIAL

GitHub provides starter workflows for a variety of languages and tooling.

Workflows

CI

CD

Building and testing Python

TUTORIAL

You can create a continuous integration (CI) workflow to build and test your Python project.

CI

Python

Building and testing Node.js

TUTORIAL

You can create a continuous integration (CI) workflow to build and test your Node.js project.

CI

Node

JavaScript

About packaging with GitHub Actions

OVERVIEW

You can set up workflows in GitHub Actions to produce packages and upload them to GitHub Packages or another package hosting provider.

Packaging

Publishing Docker images

TUTORIAL

You can publish Docker images to a registry, such as Docker Hub or GitHub Packages, as part of your continuous integration (CI) workflow.

- Packaging
- Publishing
- Docker

Caching dependencies to speed up workflows

TUTORIAL

To make your workflows faster and more efficient, you can create and use caches for dependencies and other commonly reused files.

- Workflows

About continuous integration

OVERVIEW

You can create custom continuous integration (CI) workflows directly in your GitHub repository with GitHub Actions.

- CI

Building and testing PowerShell

TUTORIAL

You can create a continuous integration (CI) workflow to build and test your PowerShell project.

- CI
- PowerShell

Building and testing Ruby

TUTORIAL

You can create a continuous integration (CI) workflow to build and test your Ruby project.

- CI
- Ruby

Building and testing Java with Maven

TUTORIAL

You can create a continuous integration (CI) workflow in GitHub Actions to build and test your Java project with Maven.

- CI
- Java
- Maven

Building and testing Java with Gradle

TUTORIAL

You can create a continuous integration (CI) workflow in GitHub Actions to build and test your Java project with Gradle.

- CI
- Java
- Gradle

Building and testing Java with Ant

TUTORIAL

You can create a continuous integration (CI) workflow in GitHub Actions to build and test your Java project with Ant.

- CI
- Java
- Ant

Building and testing Swift

TUTORIAL

You can create a continuous integration (CI) workflow to build and test your Swift project.

- CI
- Swift

Installing an Apple certificate on macOS runners for Xcode development

TUTORIAL

TUTORIAL

You can sign Xcode apps within your continuous integration (CI) workflow by installing an Apple code signing certificate on GitHub Actions runners.

CI Xcode

Building and testing Xamarin applications

TUTORIAL

You can create a continuous integration (CI) workflow in GitHub Actions to build and test your Xamarin application.

CI Xamarin Xamarin.iOS Xamarin.Android Android iOS

Publishing Node.js packages

TUTORIAL

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

Packaging Publishing Node JavaScript

Publishing Java packages with Maven

TUTORIAL

You can use Maven to publish Java packages to a registry as part of your continuous integration (CI) workflow.

Packaging Publishing Java Maven

Publishing Java packages with Gradle

TUTORIAL

You can use Gradle to publish Java packages to a registry as part of your continuous integration (CI) workflow.

Packaging Publishing Java Gradle

Storing workflow data as artifacts

TUTORIAL

Artifacts allow you to share data between jobs in a workflow and store data once that workflow has completed.

Workflows

About service containers

OVERVIEW

You can use service containers to connect databases, web services, memory caches, and other tools to your workflow.

Containers Docker

Creating Redis service containers

TUTORIAL

You can use service containers to create a Redis client in your workflow. This guide shows examples of creating a Redis service for jobs that run in containers or directly on the runner machine.

Containers Docker

Creating PostgreSQL service containers

TUTORIAL

You can create a PostgreSQL service container to use in your workflow. This guide shows examples of creating a PostgreSQL service for jobs that run in containers or directly on the runner machine.

Containers Docker

Deploying to Amazon Elastic Container Service

TUTORIAL

You can deploy to Amazon Elastic Container Service (ECS) as part of your continuous deployment (CD) workflows.

- CD
- Containers
- Amazon ECS

Deploying to Google Kubernetes Engine

TUTORIAL

You can deploy to Google Kubernetes Engine as part of your continuous deployment (CD) workflows.

- CD
- Containers
- Google Kubernetes Engine

Essential features of GitHub Actions

OVERVIEW

GitHub Actions are designed to help you build robust and dynamic automations. This guide will show you how to craft GitHub Actions workflows that include environment variables, customized scripts, and more.

- Fundamentals

Security hardening for GitHub Actions

OVERVIEW

Good security practices for using GitHub Actions features.

- Security

About custom actions

OVERVIEW

Actions are individual tasks that you can combine to create jobs and customize your workflow. You can create your own actions, or use and customize actions shared by the GitHub community.

- Action development
- Fundamentals

Creating a JavaScript action

TUTORIAL

In this guide, you'll learn how to build a JavaScript action using the actions toolkit.

- Action development
- JavaScript

Creating a composite action

TUTORIAL

In this guide, you'll learn how to build a composite action.

- Action development

Migrating from Azure Pipelines to GitHub Actions

TUTORIAL

GitHub Actions and Azure Pipelines share several configuration similarities, which makes migrating to GitHub Actions relatively straightforward.

- Azure Pipelines
- Migration
- CI
- CD

Migrating from CircleCI to GitHub Actions

TUTORIAL

GitHub Actions and CircleCI share several similarities in configuration, which makes migration to GitHub Actions relatively straightforward.

- CircleCI
- Migration
- CI
- CD

Migrating from GitLab CI/CD to GitHub Actions

TUTORIAL

GitHub Actions and GitLab CI/CD share several configuration similarities, which makes migrating to GitHub Actions relatively straightforward.

[GitLab](#) [Migration](#) [CI](#) [CD](#)

Migrating from Jenkins to GitHub Actions

TUTORIAL

GitHub Actions and Jenkins share multiple similarities, which makes migration to GitHub Actions relatively straightforward.

[Jenkins](#) [Migration](#) [CI](#) [CD](#)

Migrating from Travis CI to GitHub Actions

TUTORIAL

GitHub Actions and Travis CI share multiple similarities, which helps make it relatively straightforward to migrate to GitHub Actions.

[Travis CI](#) [Migration](#) [CI](#) [CD](#)

Using GitHub Actions for project management

OVERVIEW

You can use GitHub Actions to automate many of your project management tasks.

[Project management](#)

Closing inactive issues

TUTORIAL

You can use GitHub Actions to comment on or close issues that have been inactive for a certain period of time.

[Workflows](#) [Project management](#)

Scheduling issue creation

TUTORIAL

You can use GitHub Actions to create an issue on a regular basis for things like daily meetings or quarterly reviews.

[Workflows](#) [Project management](#)

Adding labels to issues

TUTORIAL

You can use GitHub Actions to automatically label issues.

[Workflows](#) [Project management](#)

Commenting on an issue when a label is added

TUTORIAL

You can use GitHub Actions to automatically comment on issues when a specific label is applied.

[Workflows](#) [Project management](#)

Moving assigned issues on project boards

TUTORIAL

You can use GitHub Actions to automatically move an issue to a specific column on a project board when the issue is assigned.

[Workflows](#) [Project management](#)

Removing a label when a card is added to a project board column

Removing a label when a card is added to a project board column

TUTORIAL

You can use GitHub Actions to automatically remove a label when an issue or pull request is added to a specific column on a classic project.

[Workflows](#)[Project management](#)

Automating Dependabot with GitHub Actions

HOW-TO GUIDE

Examples of how you can use GitHub Actions to automate common Dependabot related tasks.

[Actions](#)[Dependabot](#)[Version updates](#)[Security updates](#)[Repositories](#)[Dependencies](#)[Pull requests](#)

Keeping your actions up to date with Dependabot

HOW-TO GUIDE

You can use Dependabot to keep the actions you use updated to the latest versions.

[Repositories](#)[Dependabot](#)[Version updates](#)[Actions](#)

Deploying Docker to Azure App Service

TUTORIAL

You can deploy a Docker container to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Containers](#)[Docker](#)[Azure App Service](#)

Deploying Java to Azure App Service

TUTORIAL

You can deploy your Java project to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Java](#)[Azure App Service](#)

Deploying .NET to Azure App Service

TUTORIAL

You can deploy your .NET project to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Azure App Service](#)

Deploying Node.js to Azure App Service

TUTORIAL

You can deploy your Node.js project to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Node](#)[JavaScript](#)[Azure App Service](#)

Deploying PHP to Azure App Service

TUTORIAL

You can deploy your PHP project to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Azure App Service](#)

Deploying Python to Azure App Service

TUTORIAL

You can deploy your Python project to Azure App Service as part of your continuous deployment (CD) workflows.

[CD](#)[Python](#)[Azure App Service](#)

Deploying to Azure Static Web App

TUTORIAL

You can deploy your web app to Azure Static Web App as part of your continuous deployment (CD) workflows.

[CD](#) [Azure Static Web Apps](#)

Deploying to Azure Kubernetes Service

TUTORIAL

You can deploy your project to Azure Kubernetes Service (AKS) as part of your continuous deployment (CD) workflows.

[CD](#) [Azure Kubernetes Service](#)

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