

KOENIG SOLUTIONS • COURSE OUTLINE

GH-200: Automate Your Workflow with GitHub Actions

Learn to automate development tasks, build CI/CD workflows, publish packages, and manage GitHub Actions across the enterprise.

1 Day

DURATION

7

MODULES

37

TOPICS

6

HANDS-ON EXERCISES

COURSE OVERVIEW

This course covers automating development tasks with GitHub Actions, including workflow components and configuration. It then addresses building continuous integration workflows with environment variables and artifacts, and deploying applications to Azure with status badges and environment protections. Further modules cover automating GitHub through GitHub Script, publishing to GitHub Packages and the Container Registry, and creating and publishing custom actions to the GitHub Marketplace. The course concludes with managing GitHub Actions in the enterprise, covering enterprise models, access control, reusable components, runners, and encrypted secrets.

WHO THIS COURSE IS FOR

Audience profile for this course is the following:

DevOps Engineers looking to streamline support escalation, automate administrative tasks with GitHub APIs, and optimize CI/CD pipelines across enterprise environments

Developers seeking to build secure, consistent workflows, extend GitHub's capabilities with Marketplace integrations, and enhance team productivity

Solution Architects interested in scaling collaboration through Enterprise Teams and Apps, improving governance, and designing resilient, automated development infrastructures

PREREQUISITES

Candidates should have the following:

- A basic understanding of software development concepts and experience using at least one programming or scripting language.
- Familiarity with GitHub, including version control workflows (e.g., branching, pull requests) and working within repositories.
- General knowledge of enterprise environments or development at scale, including CI/CD practices, access controls, and automation tools.
- Experience with integrated development environments (IDEs) and a working knowledge of collaborative development tools or platforms.

What You Will Learn

Learning objectives

- Enable and configure GitHub Actions in enterprise settings by applying repository and environment policies, branch protection rules, workflow permissions, and usage monitoring
- Troubleshoot workflow failures and escalate issues appropriately by generating logs, support bundles, and leveraging GitHub Support resources
- Design secure and scalable CI/CD workflows using best practices for YAML workflows that build, test, lint, and deploy applications
- Integrate automated security checks and code scanning into pipelines to shift security left and enforce quality gates
- Manage secrets and environment variables securely by scoping, rotating, auditing encrypted secrets, and integrating external vaults where needed
- Configure, secure, scale, and monitor runners (GitHub-hosted and self-hosted) to support diverse workloads with high availability and compliance
- Automate publishing of packages and container images via GitHub Packages and Container Registry, including versioning and release processes
- Extend and optimize GitHub Actions through custom Actions development, GitHub Script and REST API scripting, matrix strategies, caching, and artifact management
- Orchestrate self-hosted runner fleets and enforce policy-controlled action usage while integrating external services via Marketplace Apps and webhooks
- Monitor workflow performance, control costs, and maintain governance to ensure enterprise-grade reliability and efficiency

TRAINING APPROACH

This course is designed to be delivered in one full day. The activities are approximately 90% instructional and 10% student-interactive knowledge checks. The student training content for this course is in Microsoft Learn and the exercises (hands-on or demonstrations) are included within the Learn modules.

7 Modules, 37 Topics

Automate Your Workflow with GitHub Actions Part 1 of 2

01

Exercise

Automate Development Tasks by Using GitHub Actions

TOPICS

- Introduction
- How does GitHub Actions automate development tasks?
- Identify the components of GitHub Actions
- Configure a GitHub Actions workflow
- Module assessment
- Summary

02

Exercise

Build Continuous Integration (CI) Workflows by Using GitHub Actions

TOPICS

- Introduction
- How do I use GitHub Actions to create workflows for CI? Customize your workflow with environment variables and artifact data
- Module assessment
- Summary

03

Exercise

Build and Deploy Applications to Azure by Using GitHub Actions

TOPICS

- Introduction
- How do I use GitHub Actions to deploy to Azure?
- Remove artifacts, create status badges, and configure environment protections
- Module assessment
- Summary

04

Exercise

Automate GitHub by Using GitHub Script

TOPICS

Introduction · What is GitHub Script? · Module assessment · Summary

05

Exercise

Leverage GitHub Actions to Publish to GitHub Packages

TOPICS

- Introduction
- What is GitHub Packages?
- Publish to GitHub Packages and GitHub Container Registry
- Knowledge check

06

Create and Publish Custom GitHub Actions

TOPICS

- Introduction
- Create a custom GitHub action
- Publish a newly created action to the GitHub Marketplace
- Module assessment
- Summary

07

Exercise

Manage GitHub Actions in the Enterprise

TOPICS

- | | |
|---|--|
| ■ Introduction | ■ Manage runners |
| ■ Understanding GitHub Enterprise models | ■ Configure self-hosted runners for enterprise use |
| ■ Manage actions and workflows | ■ Manage encrypted secrets |
| ■ Control access and usage of actions in your enterprise | ■ Module assessment |
| ■ Managing and leveraging reusable components in GitHub Actions | ■ Summary |

NOTES

- Exercises and Demos (7 exercises, 3.5 hours): Exercises are to be used as hands-on activities for individual students which are led by the instructor, or demonstrations led by the instructor. The decision to lead hands-on activities or perform demonstrations is the instructor's responsibility.

Practise What You Learn

#	MODULE	ACTIVITY
01	Automate Development Tasks by Using GitHub Actions	Create and run a basic GitHub Actions workflow
02	Build Continuous Integration (CI) Workflows by Using GitHub Actions	Create the CI workflow on GitHub
03	Build and Deploy Applications to Azure by Using GitHub Actions	Create a workflow that deploys a web app to Azure
04	Automate GitHub by Using GitHub Script	Using GitHub Script in GitHub Actions
05	Leverage GitHub Actions to Publish to GitHub Packages	Publish to a GitHub Packages registry learn.microsoft.com
07	Manage GitHub Actions in the Enterprise	Use a repository secret in a GitHub Actions workflow

WHAT IS INCLUDED

Everything You Need to Succeed

- Koenig course material for every module
- Delivery by certified instructors and subject matter experts
- Hands-on exercises throughout the course
- Course completion certificate from Koenig

ABOUT KOENIG

Who We Are

Established in 1993, Koenig Solutions is a globally recognised training provider with 35+ technology partnerships, 5,000+ training programmes and a network of certified instructors and subject matter experts, supporting individuals and enterprise teams worldwide.

FLEXIBLE DELIVERY

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Live Online Classes (ILO)

Fly-Me-A-Trainer (FMAT)

Flexi (Self-Paced)

1-on-1 Training

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