

Microsoft Certified: Github Actions (GH-200)

This GitHub Actions certification (GH-200) training covers everything needed to pass the GH-200 exam and work confidently in real CI/CD environments. Configure workflows from scratch, write conditional logic, manage secrets and permissions, and build reusable workflows. Master custom actions in JavaScript, Docker, and composite formats, alongside OIDC authentication, supply chain security, enterprise governance, runner management, caching, and performance tuning.

[CBT Nuggets course material](#) →

WEEK 1

Automation Basics with Github Actions

The Basic Workflow Framework

Changing Workflow Events and Steps

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Workflow Triggers and Filters

Branch Filters

Path Filters

Type Filters

Scheduling Recurring Workflows

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Jobs, Steps, and Conditional Logic

Basic Job And Step Syntax

Running Multiple Jobs In Parallel

Controlling Job Dependencies

Workflow Inputs

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Contexts, Expressions, and Env Vars

Understanding Workflow Context

Investigating Context Values

Contexts From Previous Steps

Contexts From Other Jobs

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Matrix Strategies for Github Actions

Matrix Strategy Basics

Using Matrix Strategies For Multiple Variables

Other Matrix Strategy Settings

When Matrix Strategies Are Overkill

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Artifacts and Caching

Basics of Artifacts

Sharing Artifacts Between Workflows

Workflow Sharing Permissions

Basics of Caching

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Job Summaries And Badges

Understanding Step and Job Summaries

Using Markdown Tables and Other Structures

Using Badges

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Service Containers

Basics of Service Containers

Adding Service Containers To Workflows

Containerizing Jobs

Using Embedded Python Scripts

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YAML Anchors and Basic Reusability Strategies

YAML Anchors

Testing YAML Syntax With PyYAML

Manually Rendering YAML

Reusing YAML Anchors Across Multiple Files

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Working With Custom Actions

Creating Composite Actions

Custom Action Inputs and Outputs

Creating JavaScript Actions

Creating Docker Container Actions

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Building JavaScript Actions

JavaScript Action Structure and Setup

Using A Bundler For JavaScript Actions

Using the @actions/core Package

Working With Action Outputs

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Building Docker Container Actions

The Layers Of A Docker Container Action

A Full Docker Container Action Walkthrough

How Runner VMs And Docker Container Actions Interact

Using Docker Container Actions For Tools

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Building Reusable Workflows

Making Workflows Callable

How Jobs Work In Callable Workflows

Workflow Sequencing

Using Context In Multi-Workflow Scenarios

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Versioning and Distributing Actions

Semantic Versioning For Actions

Using Tags For Action Versioning

Creating Action Releases

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Workflow Development Processes And Tools

The "Github Actions Developer" Mindset

Designing Workflows For Quick Testing

Automating Script Testing

Using Actionlint

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Advanced Github API Automation

Automatic PR Labeling

Unit-Testing and Integration-Testing New Workflows

Publishing New Github API Workflows

Automatically Assigning A Reviewer

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Working with the GitHub API in Workflows

Modifying GitHub Resources From Workflows

Understanding Permissions and GITHUB_TOKEN

Unit-Testing GitHub API Scripts

Setting Your Own GITHUB_TOKEN

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Pull Request Automation

Using Workflows To Validate PRs

Protecting Branches With Rulesets

What Is A "Failed Job" Anyway?

Auto-Labeling PRs - An Easier Way

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Secrets and Variables Management

Storing And Accessing Secrets

Understanding Secret Scoping

Storing And Accessing Variables

Working With Environment Secrets and Variables

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Release Automation with GitHub Actions

Automatically Creating Releases From Tags

Building And Attaching Distributable Packages

Automatically Updating Semver Tags

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Managing Runners

Setting Up A Self-Hosted Runner

Using Runner Labels

The Runner Context

Using Runner Groups

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Workflow Security

Script Injection Demo

Avoiding Script Injection

Compromised Third-Party Actions

Protecting Workflows From Third-Party Actions

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Optimizing Workflow Performance and Cost

How Does Billing Work For Github Actions?

Canceling Obsolete Workflow Runs

Setting Job And Step Timeouts

Run Selectively And Fail Fast

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Common Github Actions Design Patterns

Fan-Out, Fan-In, Gate

Build Once, Promote Many

Privilege Separation

Policy Gates

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Advanced Github Actions Design Patterns

Dynamic Scoping

Idempotent Workflows

Partial Retries

Control-Plane Workflows

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