

MS-GH100T00: GITHUB FUNDAMENTALS – ADMINISTRATION BASICS AND PRODUCT FEATURES



DURATION	LEVEL	TECHNOLOGY	DELIVERY METHOD	TRAINING CREDITS
1 Day	Beginner	Microsoft GitHub	Instructor-led	NA

INTRODUCTION

In this course, you'll learn the basics of GitHub and gain a better understanding of its fundamental features with a hands-on exercise all within a GitHub repository. You'll learn best practices for building, hosting, and maintaining a secure repository on GitHub.

AUDIENCE PROFILE

This course is intended for students who want to understand and GitHub best practices. You will understand the fundamental features of GitHub, learn about repository management, gain an understanding of the GitHub flow, including branches, commits, and pull requests. Additionally, you will explore the collaborative features of GitHub by reviewing issues and discussions and be able to manage your GitHub notifications and subscriptions.

PREREQUISITES

This course is designed for beginners, so there are no formal prerequisites required. It's ideal for anyone who wants to understand GitHub's core features, including repository management, collaboration tools, and GitHub Flow (branches, commits, pull requests).

COURSE OBJECTIVES

After attending this course, delegates will be able to:

- Identify fundamental GitHub features, including repositories, branches, commits, and pull requests.
- Manage repositories effectively using best practices for security and collaboration.
- Understand GitHub account types and plans, such as Personal, Organization, and Enterprise.
- Implement secure authentication strategies, including SAML single sign-on and GitHub Connect.
- Automate workflows using GitHub Actions and manage dependencies with security updates.
- Respond to and prevent security breaches, including removing sensitive data from commits.
- Set up CI workflows and publish packages using GitHub Packages

COURSE CONTENT

Module 1: Introduction to GitHub

Learn to use key GitHub features, including issues, notifications, branches, commits, and pull requests.

Lessons

- Introduction
- What is GitHub?
- Components of the GitHub flow
- GitHub is a collaborative platform
- GitHub platform management
- Exercise - A guided tour of GitHub
- Module assessment
- Summary

After completing this module, students will be able to:

- Identify the fundamental features of GitHub.
- Learn about repository management.
- Gain an understanding of the GitHub flow, which includes

branches, commits, and pull requests.

- Explore the collaborative features of GitHub by reviewing issues and discussions.
- Recognize how to manage your GitHub notifications and subscriptions.

Module 2: Introduction to GitHub administration

Understand the security and control measures available to GitHub administrators within an organization or enterprise.

Lessons

- Introduction
- What is GitHub administration?
- How does GitHub authentication work?
- How does GitHub organization and permissions work?
- Managing enterprise access, permissions, and governance

- Module assessment
- Summary

After completing this module, students will be able to:

- Summarize the organizational structures and permission levels that GitHub administrators can use to organize members in order to control access and security.
- Identify the various technologies that enable a secure authentication strategy allowing administrators to centrally manage repository access.
- Describe the technologies required to centrally manage teams and members using existing directory information services.
- Describe how you can use GitHub itself as an identity provider for authentication and authorization.

Module 3: Introduction to GitHub's products

This module provides an overview of GitHub products, including the account types, plan options, associated features, and billing. It also covers how to access GitHub on-the-go using GitHub Desktop and GitHub Mobile.

Lessons

- Introduction
- GitHub accounts and plans
- GitHub Mobile and GitHub Desktop
- GitHub billing
- License Usage Stats
- License Usage Stats in Machine and Peripheral Devices
- Metered Usage Reports
- Module assessment
- Summary

After completing this module, students will be able to:

- Define the difference between the different types of GitHub accounts: Personal, Organization, and Enterprise.
- Explain each GitHub plan: GitHub Free for personal accounts and organizations, GitHub Pro for personal accounts, GitHub Team, and GitHub Enterprise.
- Distinguish the features associated with accessing GitHub on GitHub Mobile and GitHub Desktop.
- Describe a brief overview of GitHub billing and payments.

Module 4: Maintain a secure repository by using GitHub best practices

In this module, you'll learn best practices for building, hosting, and maintaining a secure repository on GitHub.

Lessons

- Introduction
- How to maintain a secure GitHub repository
- Automated security
- Exercise - Secure your repository's supply chain
- Module assessment
- Summary

After completing this module, students will be able to:

- Identify the tools and GitHub features to establish a secure development strategy.
- Enable vulnerable dependency detection for private repositories.
- Detect and fix outdated dependencies with security vulnerabilities.
- Automate the detection of vulnerable dependencies with Dependabot.
- Add a security policy with a SECURITY.md file.

- Remove a commit exposing sensitive data in a pull request.
- Remove historical commits exposing sensitive data deep in your repository.

Module 5: Manage sensitive data and security policies within GitHub

Familiarize yourself with GitHub's basic security tools, which prepare repositories for secure development and industry-standard response to threats.

Lessons

- Introduction
- Setting security policies
- Create and manage repository rulesets
- Reporting and logging
- Exercise
- Module assessment
- Summary

After completing this module, students will be able to:

- Create documentation that details security guidelines and useful information for collaborators.
- Set permissions and other rules.
- Automate processes that prevent security breaches.
- Respond to security breaches.

Module 6: Authenticate and authorize user identities on GitHub

This module provides an overview of the authentication and authorization options available to you in your GitHub organization or GitHub Enterprise.

Lessons

- Introduction
- User identity and access management
- User authentication
- User authorization
- Team synchronization
- Module assessment
- Summary

By the end of this module, you will:

- Be able to describe the Authentication and Authorization Model.
- Understand how to manage user access to your GitHub organization through Authorization and Authentication tools.
- Identify the supported identity providers and technologies that support secure repository access.
- Understand the implications of enabling SAML SSO.
- Identify the authorization and authentication options available and understand the administrator's role in enforcement of a secure

access strategy for a GitHub enterprise.

- Describe how users access private information in a GitHub organization.
- Evaluate the benefits of enabling Team Synchronization to manage team membership.

Module 7: GitHub administration for enterprise support and adoption

In this module, you learn about some fundamental features and best practices that can improve the administrative operations of your GitHub Enterprise.

Lessons

- Introduction
- GitHub Enterprise features
- Support for GitHub Enterprise
- Scale your enterprise deployment
- GitHub Enterprise Managed Users
- Module assessment
- Summary

By the end of this module, you're able to:

- Set up authentication with Security Assertion Markup Language (SAML) single sign-on and a connection between Enterprise Server and Enterprise Cloud with GitHub Connect.
- Automate security and version updates for your project's dependencies, as well as administrative duties and user interactions with GitHub.
- Identify when to open a ticket with GitHub Enterprise Support to resolve issues.
- Recognize the capabilities of centrally managing your GitHub enterprise members through GitHub Enterprise Managed User accounts (EMUs).

Module 8: Manage GitHub Actions in the enterprise

Discover which GitHub Actions features are available for your enterprise instance and learn how to use them.

Lessons

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

- Exercise - Use a repository secret in a GitHub Actions workflow - Module assessment - Summary In this module, you'll learn how to: - Identify the different tools you can use at enterprise and organization levels to manage your actions and workflows. - Evaluate what the appropriate runners are for your enterprise instance. - Discover the different configurations available for self-hosted runners and customize them according to your enterprise use case. - Understand what encrypted secrets are and how to use	them in your actions and workflows. Module 9: Leverage GitHub Actions to publish to GitHub Packages Publish your code libraries or Docker images automatically and securely with GitHub Packages. You'll also run Docker images published into GitHub Packages locally. Lessons - Introduction - What is GitHub Packages? - Publish to GitHub Packages and GitHub Container Registry - Knowledge check - Exercise - Publish to a GitHub Packages registry	- GitHub Packages for code packages - Module assessment - Summary By the end of this module, you'll be able to: - Understand what a Package Repository is and when to use it. - Set up a Continuous Integration (CI) workflow with GitHub Actions to publish to GitHub Packages. - Validate your knowledge with an exercise that checks your ability to publish to a GitHub Packages registry. - Identify how to authenticate, install, and manage GitHub Packages.
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ASSOCIATED CERTIFICATIONS & EXAM

This course will prepare delegates to write the GitHub Administration (beta) exam.