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Azure DevOps Repos:

Azure DevOps Repos provides Git repositories for your source code, allowing you to manage and version control your project's files and assets. Here are some key features:

Git Repository Hosting:

Azure DevOps Repos offers unlimited Git repositories for your projects. You can create multiple repositories to organize your codebase effectively.

Branching and Merging:

Git's branching and merging capabilities allow you to work on multiple features or bug fixes simultaneously without interfering with the main codebase. You can create branches, merge changes, and resolve conflicts within Azure DevOps Repos.

Code Reviews:

Facilitate collaboration and maintain code quality by conducting code reviews within Azure DevOps Repos. Team members can review each other's code, provide feedback, and suggest improvements before changes are merged into the main branch.

Pull Requests:

When you're ready to merge your changes into the main branch, you can create a pull request in Azure DevOps Repos. Pull requests provide a structured way to review and discuss code changes, ensuring that only high-quality code is merged into the repository.

Integration with Azure Pipelines:

Azure DevOps Repos seamlessly integrates with Azure Pipelines, allowing you to trigger CI/CD workflows based on code changes. You can configure pipelines to automatically build and test your code whenever changes are pushed to the repository.

Security and Permissions:

Azure DevOps Repos provides robust security features, including granular access controls and permissions. You can manage who has access to your repositories and enforce policies to protect your code and intellectual property.

Code Search and Navigation:

Easily search and navigate through your codebase using Azure DevOps Repos. You can find specific files, functions, or code snippets quickly, making it easier to understand and maintain your projects.

Azure DevOps Pipelines:

Azure DevOps Pipelines is a cloud-based CI/CD service that allows you to automate your build, test, and deployment processes. Here's what you need to know:

Continuous Integration (CI):

With Azure Pipelines, you can set up CI workflows to automatically build and test your code whenever changes are pushed to the repository. CI helps identify issues early in the development cycle and ensures that your codebase remains stable.

Continuous Deployment (CD):

Azure Pipelines supports CD pipelines for automating the deployment of your applications and infrastructure. You can deploy your code to various environments, such as development, staging, and production, with confidence and reliability.

YAML-based Pipelines:

Azure Pipelines allows you to define your build and release pipelines using YAML syntax, which is stored alongside your code in the repository. YAML pipelines provide version-controlled, reproducible, and customizable CI/CD configurations.

Visual Designer:

If you prefer a graphical interface, Azure Pipelines offers a visual designer that allows you to create and customize your pipelines using a drag-and-drop interface. The visual designer is beginner-friendly and provides a guided experience for setting up your CI/CD workflows.

Extensibility and Integration:

Azure Pipelines integrates seamlessly with a wide range of tools, technologies, and cloud services. You can use built-in tasks and extensions from the Azure DevOps Marketplace or create custom tasks to meet your specific requirements.

Multi-stage Pipelines:

Azure Pipelines supports multi-stage pipelines, allowing you to define complex workflows with multiple stages and dependencies. You can orchestrate parallel and sequential execution of tasks, enabling efficient and optimized CI/CD processes.

Artifact Management:

Azure Pipelines provides built-in support for artifact management, allowing you to publish and consume artifacts such as build outputs, Docker images, and package dependencies. You can store artifacts in Azure Pipelines or external artifact repositories for reuse and sharing.

By leveraging Azure DevOps Repos and Azure DevOps Pipelines, you can implement robust version control, automate your build and deployment processes, and accelerate the delivery of high-quality software products. These services are essential components of modern DevOps practices, enabling teams to collaborate effectively and deliver value to customers more efficiently.

Hands on Activities on Azure DevOps Repos :