snp technologies inc.

DevOps on Azure with GitHub

8 Week Implementation

Estimated cost- $25k

DevOps simplifies deployment from your repository to Azure using GitHub and GitHub Enterprise. By leveraging GitHub Actions, GitHub Project Management, Code-spaces, and Security, you can package and publish code, create GitHub web pages, automate, customize, and execute CI/CD.

With DevOps on Azure using GitHub, you can enable capabilities such as:

- Infrastructure: A standard template deployment across organizations using GitHub Actions pipelines.
- GitHub Actions: Automate, customize and execute workflows and discover, create, and share actions across the organization.
- Code security: Enable secret scanning, code scanning, and Dependabot alerts. Customize analysis with CodeQL packs.
- Administration: Manage access to your data, authentication, billing management, project insights, security, and customized settings.
- Enterprise Cloud: Harden security, hosted compute networking, IAM, Enforce policies, monitor user activity, and GitHub advanced security.

SNP's 4 Week Implementation Includes:

During our 4-week engagement, we will assess your repository, source code, current CI/CD practices, authentication, code security, open-source GitHub packages, and code merging practices with a proof of concept. We will then provide a customized approach and design to meet your needs.

Our 4 Step Approach:

Our engagement will include end-to-end DevOps using GitHub practices, such as:

1. Infrastructure as Code: A standard template for deploying your infrastructure resources using GitHub Actions and reusable workflows.
2. Source code management: GitHub repos for managing application source code and separate repository for reusable workflows.
3. CI/CD: GitHub actions for end-to-end DevOps setup and deployment to Azure services IAAS and PAAS platforms.
4. Documentation, Knowledge Transfer, with 2-day managed support

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Step 1: Infrastructure as code

- Assess/Learn about current infrastructure workloads.
- Identify the resource components required for the code-base deployment.
- Evaluate the network topology in line with best practices and potential for expansion (e.g., multi-cloud)
- Review the current security, governance, and identity practices.
- Prepare scripts for identified resources considering best
- practices – Terraform/ARM.
- Standardize the template for at-scale deployment.
- Set up GitHub actions for deployment, and reuse workflows.
- Plan and test the standard template by deploying it to Sandbox Subscriptions using GitHub actions.
- Roll out to the production environment in the next steps.

Step 2: Source code management

- Assess, review, and understand your SDLC process, Branching strategy, Code review process, Pull requests and approvals, and Feature and hotfix release strategies.
- Understand repository structure, authentication, and permissions process.
- Identify and remove secrets in code and perform source code scanning for vulnerabilities.
- Incorporate a secret management tool like Azure key vault or Hashicorp vault for keys, certificates, and secret data.
- Implements a proper and standardized workflow to simplify code management.
- Reusable workflows to avoid duplication and create new workflows quickly.
- Proper use of scopes to repositories – who can access and what level of permissions the users have etc.
- Code reviews and proper authorization and approvals to merge changes into the main branch.
- Validate and enhance security practices including user activities on the repository.
- Plan for backup and disaster recovery strategy.
- Modernize applications to microservices to enhance performance and minimize downtime during maintenance.
- Use of self-hosted runners, caching dependencies, and storing artifacts.

Step 3: Continuous Integration and Continuous Deployment

Assess:

- Assess, review, and understand the current continuous integration and continuous deployment process.
- Pipeline policies, security, trigger events, and approval process for promoting to production environments.
- Current secret store integrations, Variables, and environment configuration files in the code.
- Containerize applications and set up self-hosted agent runners.

Implement:

- Creating a multi-stage pipeline workflow for more visibility, simplicity, and easier integrations using GitHub Actions.
- Establishing and securing a connection to Cloud provider - Azure services using OIDC.
- Ensuring consistent build and deployment using GitHub Actions.
- Creating, publishing, consuming, and managing build artifacts in GitHub Artifacts.
- Caching dependencies for making workflows faster and more efficient.
- Creating reusable workflows to avoid duplication and quickly create new workflows.
- Incorporating code scanning and secret scanning tools in the build and release pipelines for vulnerabilities.
- Implement deployment strategy to avoid downtime and last-minute failures.
- Implementing image scanning for containerized applications.
- Post-deployment checks for final validation to production using GitHub policies.

Step 4: Documentation, Knowledge Transfer and Day-2 support

- As built documentation
  - For discovery findings
  - Planning document
  - Defining solution architecture components
  - Infrastructure deployment process document
  - Build and release pipelines document – GitHub Actions
  - Recommendations and best practices document.
- Templates - Terraform/ARM, reusable workflows, workflow templates, and Helm charts.
- Knowledge Transfer and Day-2 Support
  - Hand over the documentation for review
  - 2 KT sessions to showcase the End-to-End DevOps process using GitHub
  - Leverage SNP's DevOps on Azure using GitHub for simplifying deployment and for Day-2 support

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Microsoft Azure

About SNP Technologies Inc.

SNP's consulting services help businesses of all sizes transform with innovative, cloud-based solutions that harness the power of Microsoft Azure.

We combine elements from our ISO certifications and Microsoft specializations as well as the most efficient and innovative technology tools and platforms to help our clients become more agile, more customer focused and more operationally efficient.

Member of
Microsoft Intelligent Security Association
Microsoft

Let's move forward together with confidence. We're here to help at every step.

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