Lab: What is Infrastructure as Code?

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Infrastructure as Code is essentially a hub that can be used for collaboration across the IT organization to improve infrastructure deployments, increase our ability to scale quickly, and improve the application development process. Infrastructure as Code allows us to do all this consistently and proficiently. By using Infrastructure as Code for both our on-premises infrastructure and the public cloud, our organization can provide dynamic infrastructure to both our internal team members and ensure our customers have an excellent experience.

Benefits of IaC

While there are many benefits of Infrastructure as Code, a few key benefits include simplifying cloud adoption, allowing us to adopt cloud-based services and offerings to improve our capabilities quickly. Infrastructure as Code allows us to remove many of the manual steps required today for infrastructure requests, giving us the ability to automate approved requests without worrying about tickets sitting in a queue. We can also use Infrastructure as Code to provide capacity-on-demand by offering a library of services for our developers. We can publish a self-service capability where developers and application owners can be empowered to request and provision infrastructure that better matches their requirements. Again, all of this is possible while driving standardization and consistency throughout the organization, which can drive efficiencies and reduce errors or deviations from established norms.

Example of IaC

IaC Tools

The list below represents some of the most popular Infrastructure as Code tools used by many organizations worldwide. These tools focus on deploying infrastructure on a private or public cloud platform. The list does NOT include tools such as Puppet, Chef, Saltstack, or Ansible since those are commonly placed in the configuration management category and don't really deploy infrastructure resources. There are likely other tools available, but they are not as popular as the ones listed below.

- HashiCorp Terraform - terraform.io
- AWS CloudFormation - aws.amazon.com/cloudformation
- Azure Resource Manager (ARM) - azure.microsoft.com
- Google Cloud Deployment Manager - cloud.google.com/deployment-manager/docs
- Pulumi - pulumi.com