Deployment of WordPress Website with AKS Cluster on Azure

## For Knixat Academy Blog

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Project Design Consideration

- Scalability
- Security
- Availability
- Cost Effective
- High Acceptance Access
- Disaster Management
- Project/Application Management Capabilities

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Project Architecture Overview

This is an infrastructure adopting the hybrid cloud, the MySQL server will be hosted on-prem while the AKS Cluster will be hosted on Azure cloud.
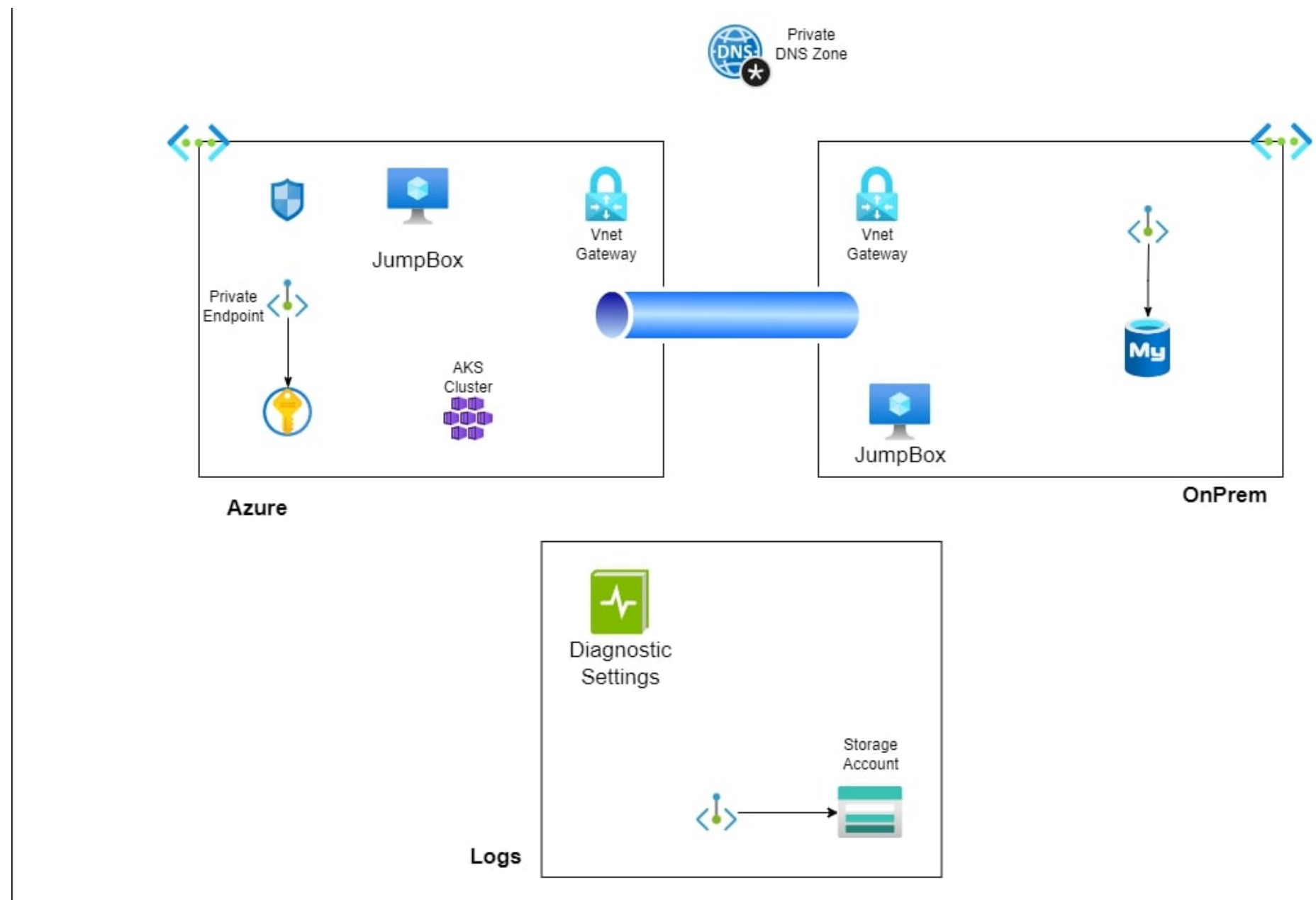
Project Design Consideration

SCALABILITY

- The AKS cluster provides the ability to scale the WordPress website easily to handle increased traffic.

SECURITY

- Private endpoints for the MySQL server and key vault, preventing any public access.

- The private DNS zones enhances security by ensuring that private endpoints are only accessible within the network.

AVAILABIILITY

- The AKS cluster is designed with redundancy, ensuring high availability of the WordPress website.

- Additional measure such as load balancing to further enhance availability.

APPLICATION MANAGEMENT CAPABILITIES

- The logs and metrics collected enable effective web application management by providing visibility into the performance, health, and usage patterns of the resources.

- This information facilitates troubleshooting, capacity planning, and resource optimization, improving overall management capabilities.

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Project Development & Management Tools

INTEGRATED DEVELOPMENT ENVIRONMENT:
- Virtual Studio Code
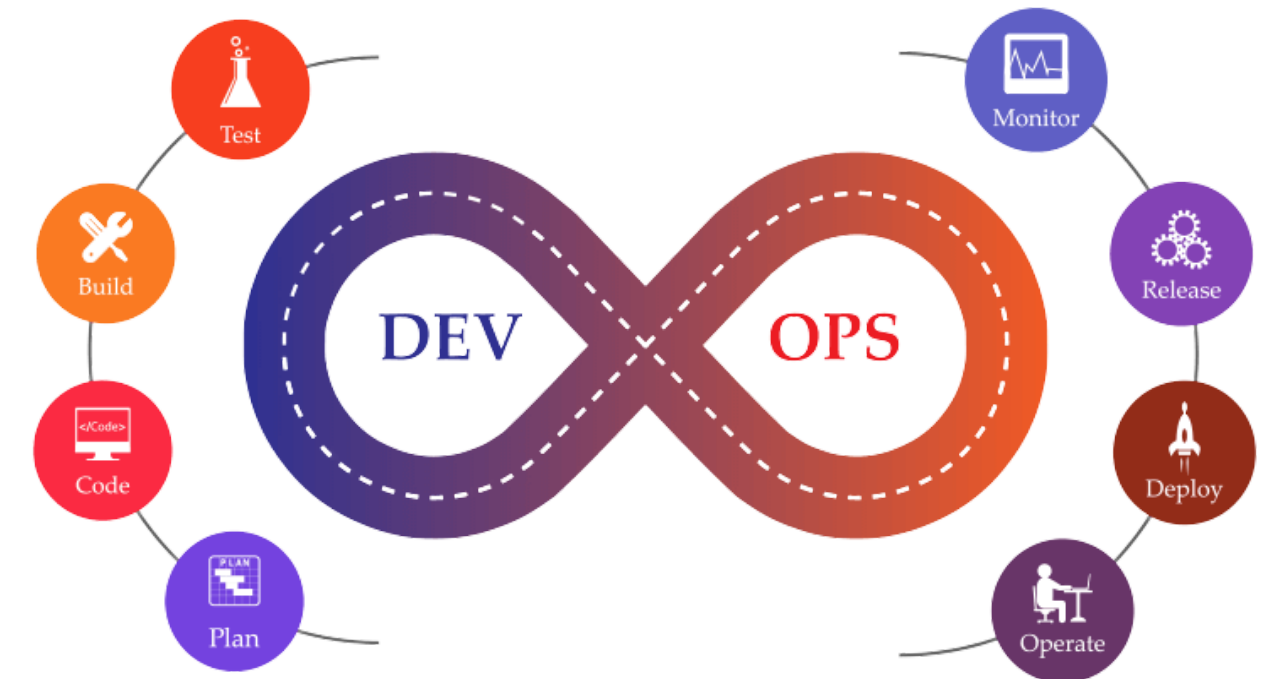
CONTINUOUS INTEGRATION / CONTINUOUS DEPLOYMENT:
- GitHub Actions

INFRASTRUCTURE AS CODE:
- Terraform

VERSION CONTROL SYSTEM:
- Git/GitHub

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WordPress Website Deployment Process

During the implementation phase, the following steps were followed:

- Provisioned storage account account to store logs , metrics and the terraform configuration state.
- Provisioned the virtual networks, subnets and configured network gateways for the on-prem and azure cloud resources.
- Created the first jump server and established its public IP access.
- Deployed the MySQL server with a private endpoint on the first network.
- Tested database connectivity through the first jump server.

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WordPress Website Deployment Process

During the implementation phase, the following steps were followed:

- Created the second jump server, AKS cluster, and key vault secret on the second network.
- Configured the private endpoints for the key vault and AKS Cluster
- Configured the diagnostic setting to collect logs and store them in the storage account.
- Deployed the WordPress website on the AKS cluster.
- Verified the successful deployment and functionality of the website.

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