Technical Documentation: - Umbraco CMS Deployment

Overview

This document outlines the DevOps engineering processes, tools, pipelines, infrastructure, and security configurations for the project, focusing on best practices.

Project Structure

- Azure DevOps Project
- Repositories
- Branches: devops, Development (deploys to Dev), main (deploys to Prod)

CI/CD Pipeline Architecture

- YAML-based Azure Pipelines using shared templates.
- Build and release strategy includes gated approval and environment promotion.
- Advanced Security Tools and SonarQube integrated for security and code quality.

Deployment Targets

- Azure App Services: UmbracoCms-Prod, Manager-Prod

Configuration Management

- Secrets and environment variables injected via App Service Configuration.

Observability

- Application Insights for metrics, logs, and traces.

Infrastructure-as-Code

- All resources provisioned with Terraform including App Services, SQL, Storage, VM, Front Door, DNS.

Tagging Policy

Resources tagged for environment, owner, cost center, and app name.

Environment-Specific Configurations

- Dev: Slot-based deployment, auto from Development branch.
- Prod: Gated deploy to 'prerelease' slot from main branch.

Security Practices

- No secrets in code.
- Advanced security and WAF enabled.
- RBAC minimized; private VNets access.

Azure Front Door & WAF

- Front Door with WAF for security and performance.
- IP rate-limiting, DDoS protection, and alerting configured.

Database Architecture

- Azure SQL for Umbraco CMS.
- SQL Server on Azure VM for production database.
- Weekly backup of database to Storage Account.
- Last 3 backups were retained; older ones moved to Cool tier.

Rollback & Recovery Strategy

- Slot-based rollback, Azure-native backups, geo-redundancy enabled.

Monitoring & Alerting

- Application Insights, Azure Monitor alerts, Teams/email integration.

Summary

- End-to-end DevOps best practices:
- CI/CD pipelines with security gates
- Terraform-based IaC
- SonarQube integration
- Front Door with WAF
- Secure database and backup strategies