What is AWS Elastic Beanstalk?

Overview

AWS Elastic Beanstalk is a Platform as a Service (PaaS) that simplifies deploying and managing web applications. It automatically handles capacity provisioning, load balancing, auto-scaling, and application health monitoring, allowing developers to focus on writing code.

Supported Platforms

- Java, .NET, PHP, Node.js, Python, Ruby, Go
- Docker containers for custom platforms
- Apache, Nginx, Passenger, and IIS servers
- Multiple versions of each platform

Key Features

- **Simplified Deployment:** Upload code and Elastic Beanstalk handles the rest
- **Automatic Scaling:** Adjusts capacity based on traffic automatically
- **Managed Infrastructure:** AWS manages EC2, load balancers, and networking
- **Health Monitoring:** Built-in dashboard for application status
- **Multiple Environments:** Separate dev, staging, and production environments

Deployment Strategies

- **All at Once:** Fastest method, may involve brief downtime
- **Rolling:** Updates instances in batches, reduces downtime
- **Rolling with Additional Batch:** Maintains full capacity during updates
- **Immutable:** Deploys to new instances, safe rollback
- **Traffic Splitting (Canary):** Gradual traffic shift for testing
- **Blue/Green:** Separate environment with traffic swap

AWS Service Integration

- Amazon RDS for managed databases
- Amazon S3 for storage
- Amazon CloudWatch for logging and monitoring
- AWS IAM for access control
- Amazon VPC for network isolation
- Elastic Load Balancing for traffic distribution

PaaS Benefits: Elastic Beanstalk abstracts infrastructure complexity while maintaining full control over AWS resources. You retain the ability to customize configurations while benefiting from automated management.