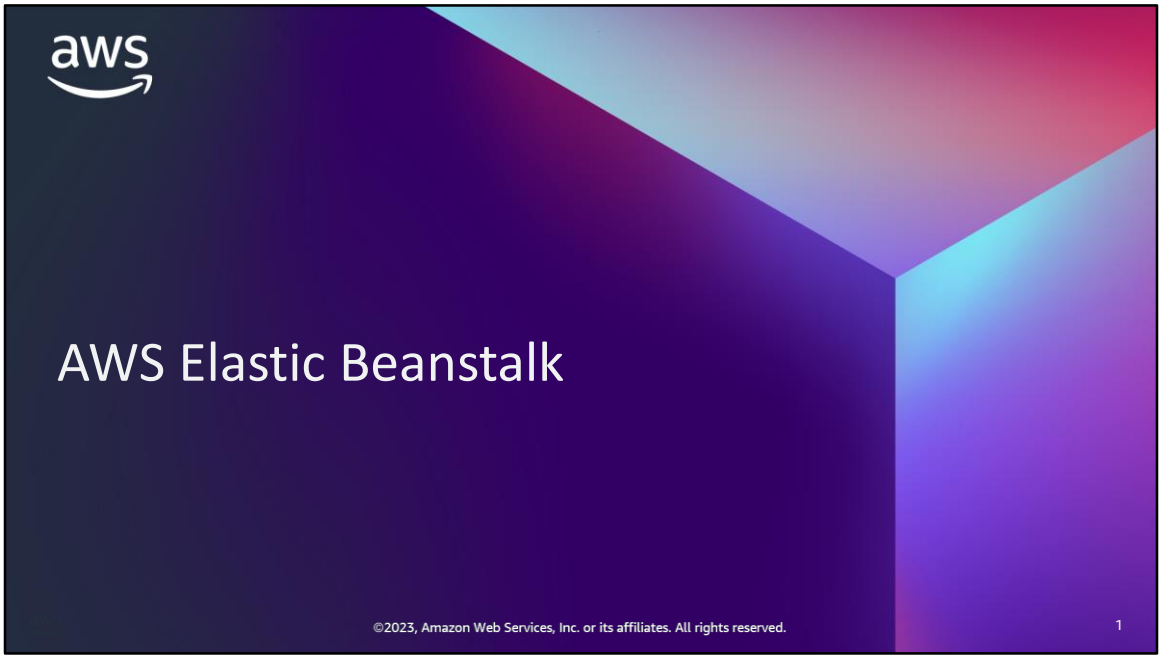


AWS Elastic Beanstalk

At the core of the lesson

You will learn how to describe AWS Elastic Beanstalk and its features.

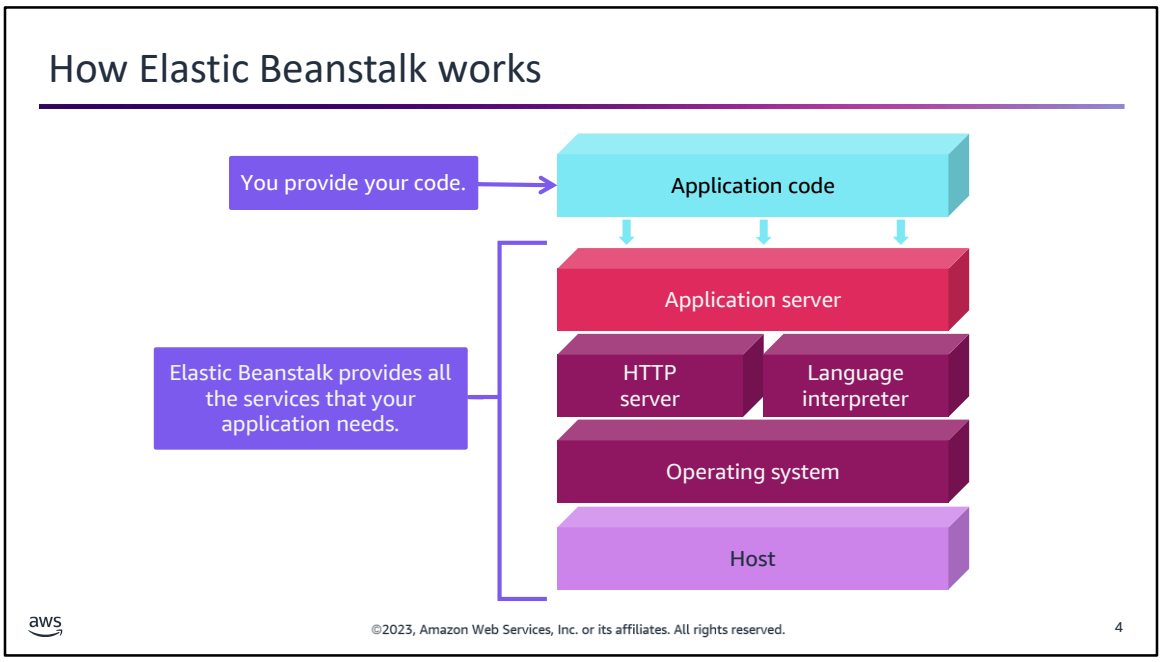
What is Elastic Beanstalk?

AWS Elastic Beanstalk

- Elastic Beanstalk is a platform as a service (PaaS) that facilitates the quick deployment, scaling, and management of your applications.
- As a managed service, it automatically handles the following:
  - Infrastructure provisioning and configuration
  - Application deployment
  - Load balancing
  - Automatic scaling
  - Health monitoring

With AWS Elastic Beanstalk, you can quickly deploy and manage applications in the AWS Cloud. You don't have to learn about the infrastructure that runs your applications. You upload your application, and Elastic Beanstalk automatically handles the deployment details of capacity provisioning, load balancing, auto scaling, and application health monitoring.

Elastic Beanstalk uses proven AWS features and services, such as Amazon Elastic Compute Cloud (Amazon EC2), Amazon Relational Database Service (Amazon RDS), Elastic Load Balancing (ELB), Amazon EC2 Auto Scaling, Amazon Simple Storage Service (Amazon S3), and Amazon Simple Notification Service (Amazon SNS), to create an environment that runs your application.



To use Elastic Beanstalk, you upload your code and provide information about your application. Elastic Beanstalk automatically launches an environment and creates and configures the AWS resources to run your application. These resources include EC2 instances, HTTP servers, and application servers. Elastic Beanstalk runs on the Amazon Linux AMI and the Windows Server AMI.

You can deploy your code through the AWS Management Console, the AWS Command Line Interface (AWS CLI), or an integrated development environment (IDE) such as Visual Studio or Eclipse.

After your environment is launched, you can then manage your environment and deploy new application versions.

At the same time, you retain full control over the AWS resources that power your application, and you can access the underlying resources at any time.

Elastic Beanstalk features

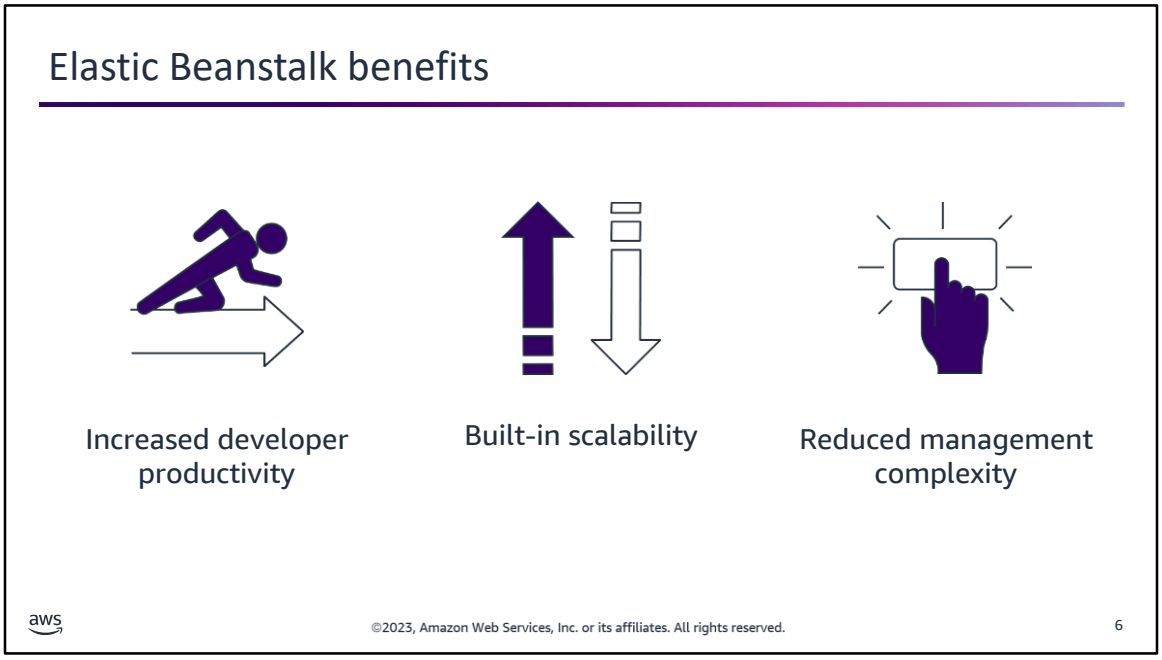
- Elastic Beanstalk supports web applications written for common platforms, including Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker.
- It gives you control over key runtime configuration options and resources, such as the following:
  - EC2 instance type
  - Database
  - Amazon EC2 Auto Scaling options
- There is no charge to use the Elastic Beanstalk service itself. You pay for only the resources used by the underlying services that store and run your applications.

Elastic Beanstalk provides platforms for different programming languages, web servers, application servers, and containers, including the following:

- Programming languages: Go, Java, Node.js, PHP, Python, and Ruby
- Web servers: Apache HTTP Server, Nginx, and Microsoft Internet Information Services (IIS)
- Application servers: Tomcat, Passenger, and Puma
- Docker containers

Elastic Beanstalk handles the automatic building of your runtime environment, but you still remain in control. For example, you can choose your instance type and database and can set automatic scaling options. You can also adjust load balancer options and access your server log files.

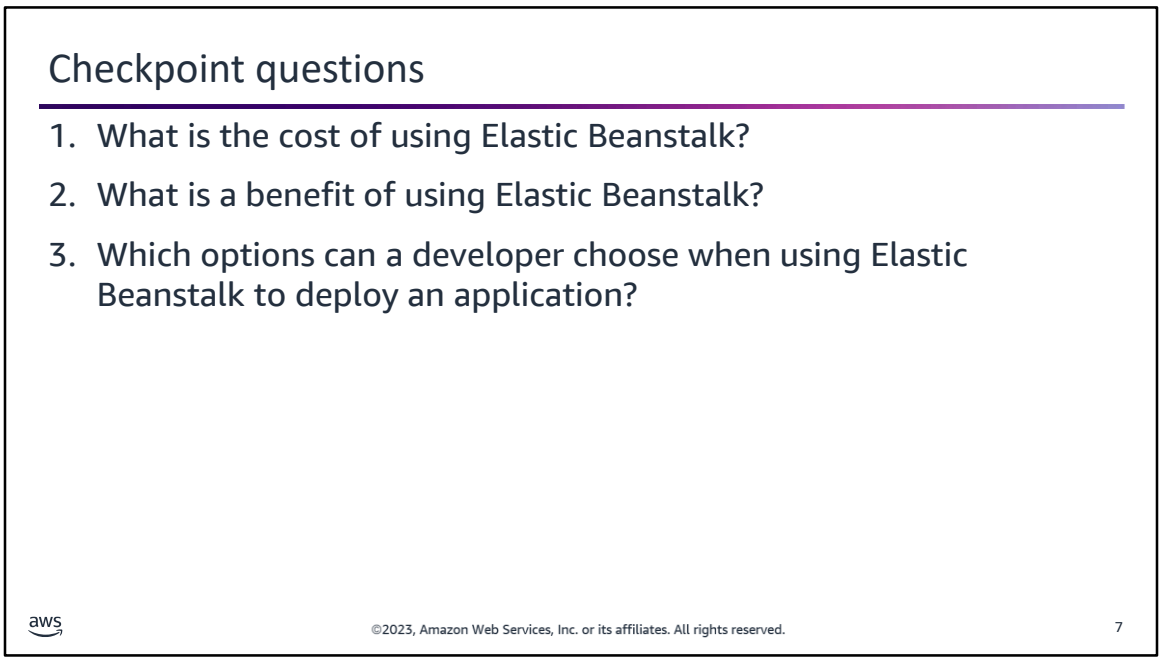
There is no charge for using Elastic Beanstalk. You pay for the AWS resources that you create (for example, EC2 instances or S3 buckets) to store and run your application. You pay for only what you use as you use it.



By using Elastic Beanstalk, you can focus on developing your application and not spend a lot of time performing deployment-oriented tasks, such as provisioning servers, setting up load balancing, or managing scaling. You focus on writing code instead of managing and configuring servers, databases, load balancers, firewalls, and networks. Elastic Beanstalk is the fastest way to get web applications up and running on AWS. Furthermore, when you must update your application after you deploy it, you only need to upload the new code.

In addition, the runtime environment that Elastic Beanstalk creates for your application is designed to handle peaks in workload or traffic while minimizing costs. It automatically scales your application up and down based on your application's needs by using adjustable Amazon EC2 Auto Scaling settings. For example, you can use CPU utilization metrics to initiate Amazon EC2 Auto Scaling actions.

Elastic Beanstalk reduces management complexity by provisioning and operating the infrastructure and also managing the application stack or platform for you. For example, it keeps the underlying platform that runs your application up to date with the most recent patches and updates. You still retain full control over the AWS resources that power your application. If you decide that you want to take over some or all of the elements of your infrastructure, you can do so seamlessly by using the management capabilities that Elastic Beanstalk provides.



The answers to the questions are as follows:

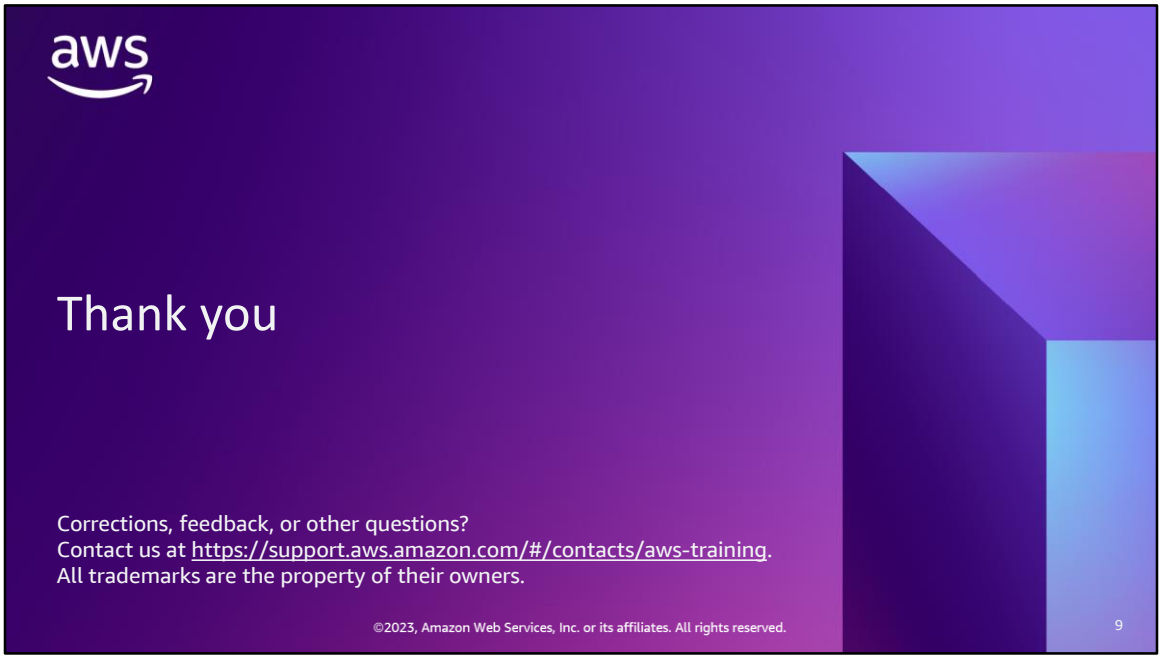
1. What is the cost of using Elastic Beanstalk?
   There is no cost to use Elastic Beanstalk. You pay for only the underlying services that you use.

2. What is a benefit of using Elastic Beanstalk?
   Benefits of using Elastic Beanstalk include increased developer productivity, built-in scalability, and reduced management complexity.

3. Which options can a developer choose when using Elastic Beanstalk to deploy an application?
   When deploying an application by using Elastic Beanstalk, a developer can control options such as instance type, database, Amazon EC2 Auto Scaling options, and load balancer options.

Key ideas

- Elastic Beanstalk is the fastest way to get web applications up and running on AWS.
  - You upload the application code and define deployment options.
  - Elastic Beanstalk automatically provisions and configures the infrastructure.
- Elastic Beanstalk supports common platforms, including Java, .NET, PHP, Node.js, Python, Ruby, Go, and Docker.
- There is no charge to use the Elastic Beanstalk service itself. You pay for only the underlying AWS resources that you use.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