Builders Online Series

Deploy your first web application in minutes

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Great ways to get started with deploying your web apps on AWS

- Static websites & front end apps
- Virtual Private Servers
- Fully managed application and database servers

Static websites & front end web apps

AWS Amplify Console

Host your static websites and front end app on AWS in just a few clicks

AWS Amplify Console is great for static content

Perfect for static websites, or serverless web apps

Progressive Web Apps (PWA)

PWAs offer native app-like performance, work offline, support push notifications, and can be updated over-the-air. Use AWS Amplify to deploy PWAs to mobile devices.

Blogs and marketing websites

Use static site generators (SSG) like Gatsby, Hugo, or Jekyll to publish a blog. SSGs perform faster than traditional websites. Deploy SSGs with AWS Amplify from the AWS console.
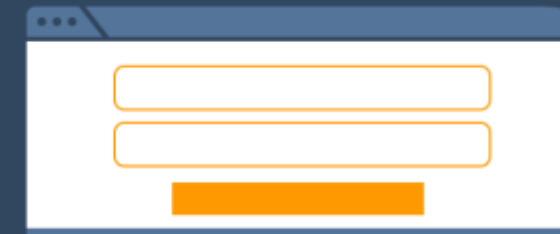
Fullstack serverless web apps

Add dynamic functionality to your static web app using GraphQL or REST APIs. Use AWS Amplify Console to deploy your front end and backend in a single workflow.

AWS Amplify Console makes CI/CD easy

Powerful CI/CD features

Simplified continuous workflows

Connect your repository to 'git push' changes to your frontend and backend in a single workflow.

Atomic deployments

All deployments either roll out successfully or fail without requiring maintenance windows.

Feature branch deployments

Work on new features without impacting production. Create branch deployments linked to each feature branch.

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AWS Amplify Console gives you fast and easy hosting

Worldwide hosting, on our domain or yours

Globally available

Your app is served via Amazon's reliable content delivery network with hundreds of points of presence around the world.

Easy custom domain setup

Set up custom domains managed in Amazon Route 53 with a single click, plus get a free HTTPS certificate.

Password protection

Share yet-to-be released features with internal stakeholders by setting a username and password.

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What people are saying: AWS Amplify Console

"I'm a huge fan of Amplify hosting, it's AWS best kept secret."

"Been using @AWSAmplify for the last couple of months on a personal projects and I couldn't be more happier. The DX only keeps getting better and the Amplify Console is beautiful."

"Big shout out to #AWS #Amplify for making #continuous #delivery and #release of mobile and web #apps so freaking easy it's unbelievable. Highly recommended."
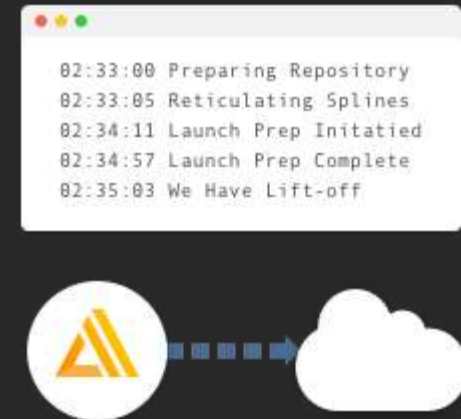
AWS Amplify Console – How it works

How it works

1. Connect your repository

GitHub Bit Bucket

GitLab CodeCommit

2. Configure build settings

3. Deploy your app

```
02:33:00 Preparing Repository
02:33:05 Reticulating Splines
02:34:11 Launch Prep Initiated
02:34:57 Launch Prep Complete
02:35:03 We Have Lift-off
```

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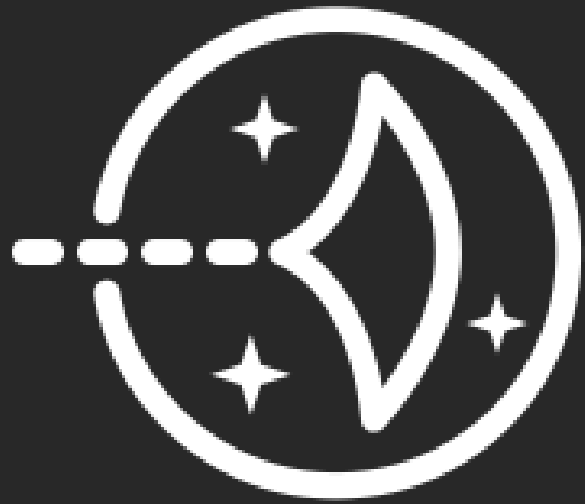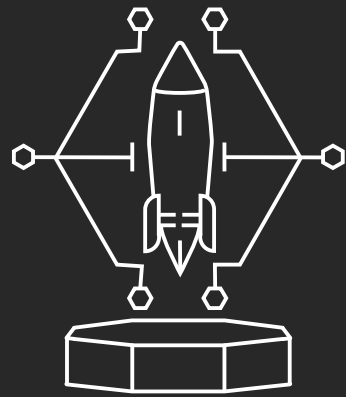
Demo

Virtual Private Servers

Amazon Lightsail

Virtual servers, storage, databases, and networking for a low, predictable price

Amazon Lightsail: Cloud made easy
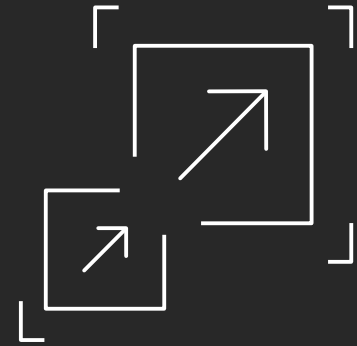
Launch

Get started in minutes

Low, predictable pricing

Manage

Intuitive global console

Robust API and CLI

Grow

Easily scale your ideas

Access other AWS services

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When to choose Amazon Lightsail?

Amazon Lightsail

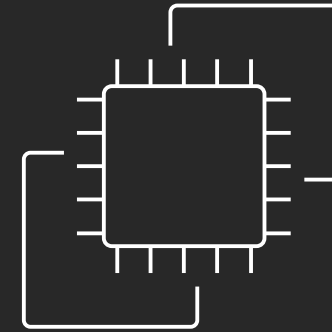Small-scale, multi-tier apps

Websites

Web apps

Testing environment

Line-of-business software

Amazon Elastic Compute Cloud (Amazon EC2)

Large, multi-tier applications

(several dozens of instances)

Anything requiring instances that are workload-optimized, highly configurable, or resource-intensive

E.g., big data analytics, high performance computing, scientific computing

Advanced networking

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Amazon Lightsail is great for…

Simple web applications

Pre-configured development stacks for LAMP, Nginx, MEAN, and Node.js.

Websites

Pre-configured click-to-install applications including WordPress, Magento, Plesk, and Joomla.

Business software

Quickly launch your line-of-business software like file sharing and storage, backups, financial and accounting software, and more.

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What people are saying: Amazon Lightsail

in "Finally tried AWS Ligthsail [sic]. Lightsail has the friendly fixed pricing to start small and fast. Plans starting at $3.50 per month! Also, many easy one click-to-launch OS and Apps, e.g. Gitlabs CE."

in "#AWS #Lightsail great VPS on Amazon Web service. Plans starting at $3.50 per month #AWSome"

in "If you are using AWS EC2 instances for your workload and want to reduce the monthly bill, consider using AWS Lightsail. It can reduce the cost significantly compared to similar on-demand EC2 instance configuration.

Lightsail provides you with -
* Virtual Server
* Managed Databases - MySQL and PostgreSQL
* Load Balancers
* High Availability Storage - SSD backed
* Powerful API - to configure your servers from console, API or CLI."
- neelabh-tripathi-66411623

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Amazon Lightsail has many preconfigured templates

Get your server up and running in minutes with click-to-install OS, application, and developer stacks

Operating Systems

Amazon Linux   Ubuntu   Debian   FreeBSD   OpenSUSE   Windows Server

Applications

WordPress   Magento   Drupal   Joomla!   Ghost   Redmine   Plesk

Stacks

Node.js   GitLab   LAMP   MEAN   Nginx   Django

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Demo

Managed Application Servers

AWS Elastic Beanstalk

Upload your code and let AWS handle the deployment, load balancing, and scaling

Growing beyond a Virtual Private Server

How do I migrate my web application to the cloud?
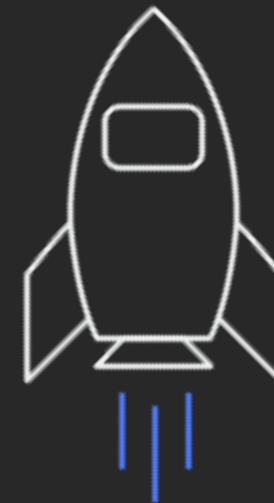
…and design for high availability?

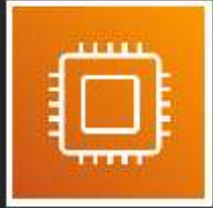…and scale dynamically?

…and deploy new application versions safely?

…and keep my run-time updated?

…and keep my OS patched?

…and monitor application health?

AWS has a lot of options

Compute: Amazon EC2, AWS Lambda, Amazon Elastic Container Service (ECS), Amazon Elastic Kubernetes Service (EKS), Amazon Lightsail, AWS Fargate

Storage: Amazon S3, Amazon Elastic File System (EFS)

Network: Classic Load Balancer, Application Load Balancer, Network Load Balancer, Security Groups, Amazon Virtual Private Cloud (Amazon VPC)

Database: Amazon Relational Database Service (Amazon RDS), Amazon DynamoDB, Amazon Aurora

Management: AWS Auto Scaling, AWS CloudFormation, AWS Systems Manager, Amazon CloudWatch

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But is there just one service I can use to host my web application?

Yes

AWS Elastic Beanstalk

A single service for web applications that automatically handles…

- Infrastructure provisioning
- Auto scaling configurations
- Network and security configurations
- Load balancing configurations

- OS and runtime updates
- Application deployments
- Application health monitoring
- Application analysis & debugging tools

… at no additional cost

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AWS Elastic Beanstalk runtime support

AWS Elastic Beanstalk
supports the most popular
runtimes for web applications,
as well as Docker images

AWS Elastic Beanstalk also
supports custom platforms
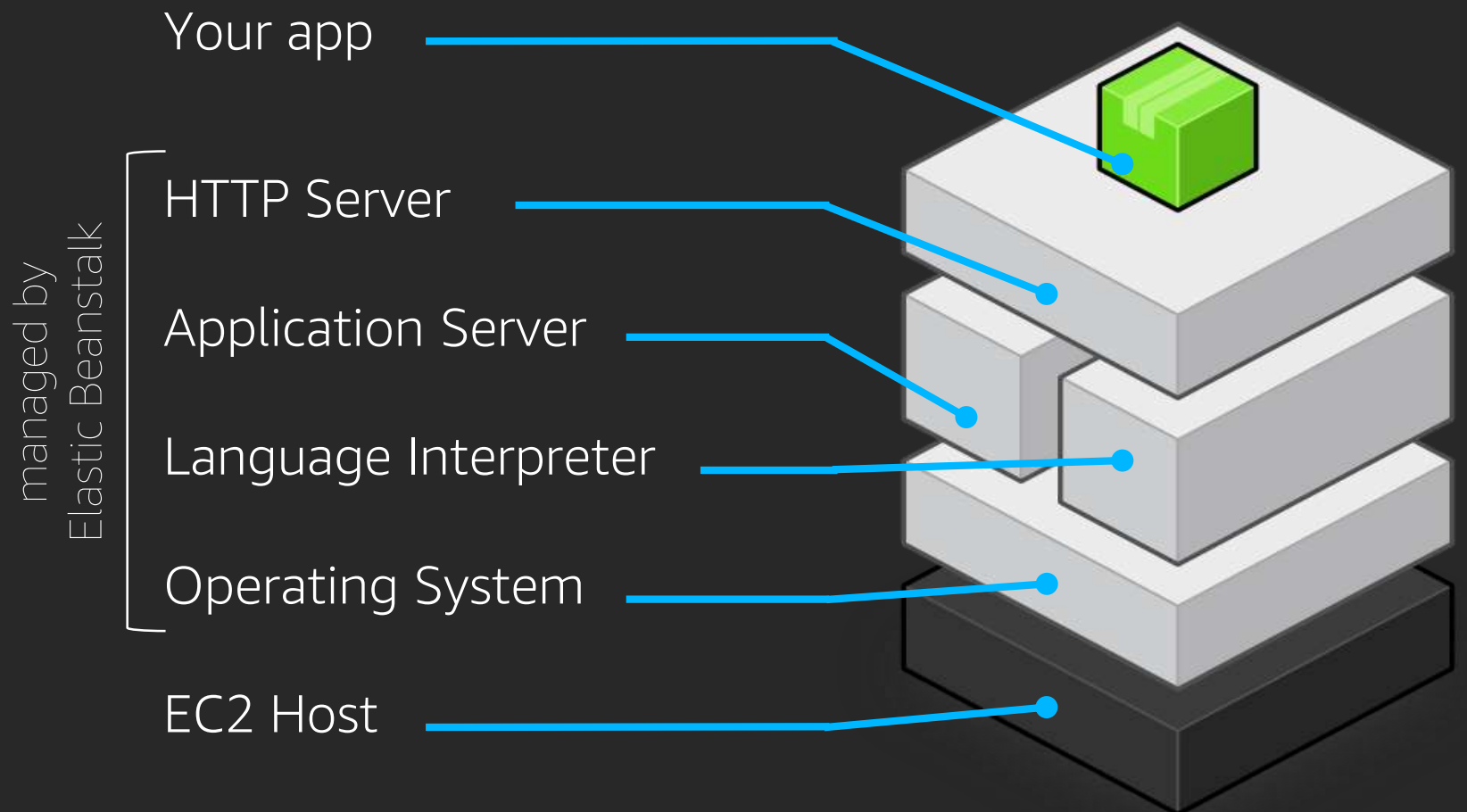and custom images

AWS Elastic Beanstalk platforms

Applications run on the
AWS Elastic Beanstalk platform

12 different platform options
based on OS and runtime

Ensures all of the components are
working seamlessly together

Your app

HTTP Server

Application Server

Language Interpreter

Operating System

EC2 Host

managed by
Elastic Beanstalk

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What people are saying: AWS Elastic Beanstalk

Prezi moved two of its most critical back-end services to AWS Elastic Beanstalk, which deploys and scales web applications and services automatically. This lets Prezi's developers worry less about managing infrastructure.
- *AWS Prezi Case Study*

"Using AWS Elastic Beanstalk, the transformation to AWS was incredibly easy"
- *Ron Rejwan, Cofounder, Jelly Button Games*

"Elastic Beanstalk handles that extra demand, and when our demand goes down, our environment scales down as well — we're not stuck with datacenter equipment to depreciate"
- *Geoff Clitheroe, GeoNet Development Manager, GNS Science*

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AWS Elastic Beanstalk workflows
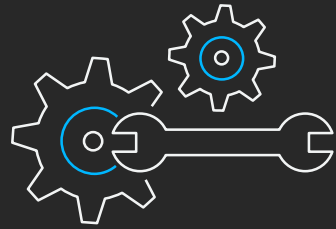
Configure & provision

Deploy

Monitor & manage

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Demo

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Options for deploying applications

All at once

Fastest. May result in small amount of downtime.

Rolling

Avoids downtime, minimizes reduced availability. Slightly longer deploy times.

Rolling with additional batch

Avoids any reduced availability. Longer deployment times.

Immutable

Slower deployment that ensures your new application version is deployed to new virtual machines. Makes rollbacks quick and safe.

Traffic splitting

Canary testing deployments. Direct a portion of traffic to the new application version while monitoring health.

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Health monitoring

System level metrics
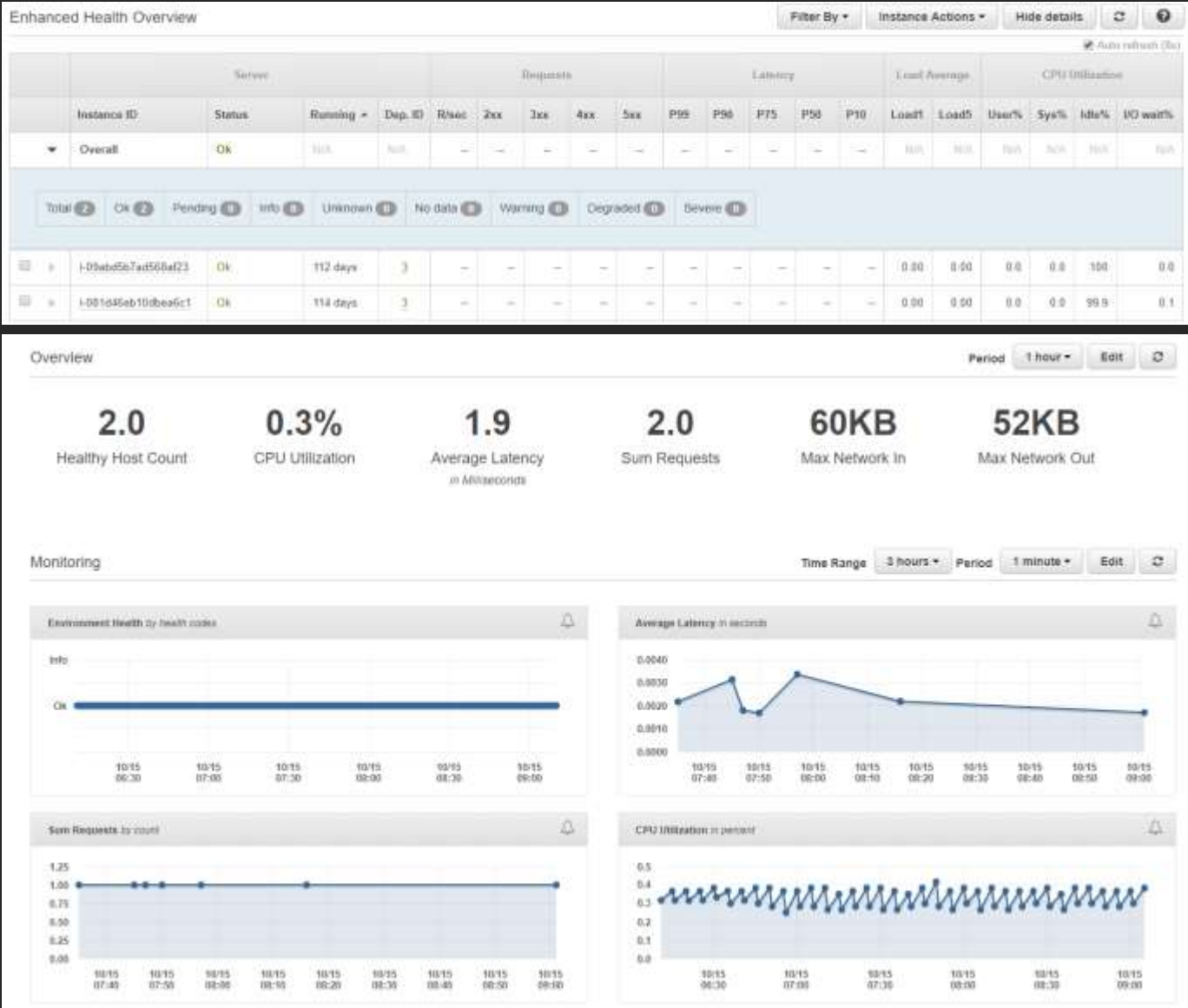
CPU utilization

Memory & disk usage

Service level metrics

Serving request (2xx)

Errors & failures (4xx, 5xx)

Latency

Application specific metrics

Automated platform updates

Enabled by default

Applies latest OS and runtime security patches, fixes, minor updates

Configurable maintenance windows

Modify managed updates

Managed platform updates

Enable managed platform updates to apply platform updates automatically during a weekly maintenance window that you choose. Your application stays available during the update process.

Managed updates ☐ Enabled

Weekly update window Tuesday at 02 : 06 UTC

Update level Minor and patch

Instance replacement ☐ If enabled, an instance replacement will be scheduled if no other updates are available.

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Prefer the command line? Use the *eb* CLI!

Create your AWS Elastic Beanstalk app

```
$ eb init
```

Create the resources and launch the application

```
$ eb create
```

Deploy updates

```
$ eb deploy
```

https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/eb-cli3.html

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Summary

Static website / App hosting

AWS
Amplify Console

Global content delivery network

Effortless CI / CD

Perfect for static websites and apps

Virtual Private Servers

Amazon
Lightsail

Simple server setup

Click-to-launch OS & applications

Plans starting at $3.50 per month

Managed application servers

AWS
Elastic Beanstalk

Fast and simple to begin

Automatic scaling built-in

Managed environments for many popular platforms and languages

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Where to learn more

AWS Amplify Console

AWS Amplify Console User Guide
https://docs.aws.amazon.com/amplify/latest/userguide/getting-started.html

Amazon Lightsail

Workshop: Deploying and Scaling Applications with Amazon Lightsail
https://lightsailworkshop.com/

AWS Elastic Beanstalk

AWS Elastic Beanstalk Getting Started Resources
https://aws.amazon.com/elasticbeanstalk/getting-started/

Other options for web apps on AWS

Serverless

Amazon API Gateway

"Front door" for HTTP & WebSocket APIs

AWS Lambda

Run code without provisioning any servers

AWS Amplify

The fastest and easiest way to develop web apps that scale.

Databases & Storage

Amazon RDS

Fully managed relational databases MySQL/PostgreSQL/Oracle/ Microsoft SQL Server

Amazon DynamoDB

Fast and flexible NoSQL database for any scale. Serverless option available.

Amazon Aurora

MySQL / PostgreSQL compatible database with 3 to 5x performance. Serverless option available.

Amazon S3

Store any amount of data from anywhere. Great for uploads and static content.

Containers

Elastic Load Balancing

Highly available, secure, and scalable load balancing.

AWS Fargate

Run containers without needing to provision and manage servers.
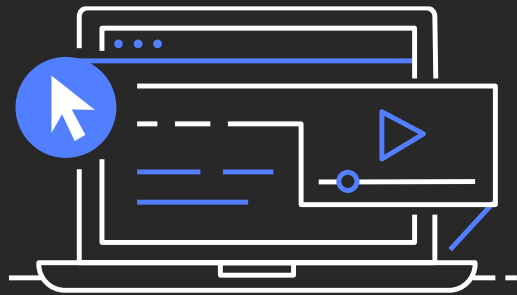
Amazon ECS

Fully managed container orchestration with deep AWS integration.

Amazon EKS

Run Kubernetes on AWS without installing, operating, and maintaining your own Kubernetes control plane.

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AWS Digital Training

Flexibility to Learn Your Way

Build cloud skills with 550+ free digital training courses, or dive deep with classroom training

Featured Courses

- **AWS Cloud Practitioner Essentials (Second Edition)**
  Learn the fundamentals of the AWS Cloud and prepare for the AWS Certified Cloud Practitioner exam.

- **Amazon DynamoDB for Serverless Architectures**
  An introduction to Amazon DynamoDB and how it's leveraged in building a serverless architecture.

- **AWS Security Fundamentals**
  Learn fundamental cloud computing and AWS security concepts, including AWS access control and management, governance, logging, and encryption methods.

- **Getting Started with Amazon Simple Storage Service (Amazon S3)**
  The course provides you with the knowledge to determine when to use Amazon S3 by reviewing typical use cases and understanding how the service provides object storage for your applications.

aws.amazon.com/training

Thank you for attending AWS Builders Online Series

We hope you found it interesting! A kind reminder to **complete the survey.**
Let us know what you thought of today's event and how we can improve the event experience for you in the future.

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Thank you

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