ALL THE DIFFERENT WAYS TO HOST DRUPAL ON AWS

Brian Thompson // @rvtraveller26

mindgrub

OBLIGATORY INTRODUCTION

- Director of Web Engineering @ Mindgrub

- Working with web tech since 2006

- AWS Certified Solutions Architect

- @rvtraveller26

- Baker, outdoorsman, tech nerd

We Want To Use The Cloud!

We Want To Use AWS!

Compute

Amazon EC2

Amazon Elastic Container Service

Amazon Elastic Container Service for Kubernetes

Amazon Elastic Container Registry

Amazon Lightsail

AWS Batch

AWS Elastic Beanstalk

AWS Fargate

AWS Lambda

AWS Serverless Application Repository

Auto Scaling

Elastic Load Balancing

VMware Cloud on AWS

Storage

Amazon Simple Storage Service (S3)

Amazon Elastic Block Storage (EBS)

Amazon Elastic File System (EFS)

Amazon Glacier

AWS Storage Gateway

AWS Snowball

AWS Snowball Edge

AWS Snowmobile

Database

Amazon Aurora

Amazon RDS

Amazon DynamoDB

Amazon ElastiCache

Amazon Redshift

Amazon Neptune

AWS Database Migration Service

Migration

AWS Migration Hub

AWS Application Discovery Service

AWS Database Migration Service

AWS Server Migration Service

Networking & Content Delivery

Amazon VPC

Amazon CloudFront

Amazon Route 53

Amazon API Gateway

AWS Direct Connect

Elastic Load Balancing

Developer Tools

AWS CodeStar

AWS CodeCommit

AWS CodeBuild

AWS CodeDeploy

AWS CodePipeline

AWS Cloud9

AWS X-Ray

AWS Tools & SDKs

Management Tools

Amazon CloudWatch

AWS CloudFormation

AWS CloudTrail

AWS Config

AWS OpsWorks

AWS Service Catalog

AWS Systems Manager

AWS Trusted Advisor

AWS Personal Health Dashboard

AWS Command Line Interface

AWS Management Console

AWS Managed Services

Media Services

Amazon Elastic Transcoder

Amazon Kinesis Video Streams

AWS Elemental MediaConvert

AWS Elemental MediaLive

AWS Elemental MediaPackage

AWS Elemental MediaStore

Machine Learning

Amazon SageMaker

Amazon Comprehend

Amazon Lex

Amazon Polly

Amazon Rekognition

Amazon Machine Learning

Amazon Translate

Amazon Transcribe

AWS DeepLens

AWS Deep Learning AMIs

Apache MXNet on AWS

TensorFlow on AWS

Analytics

Amazon Athena

Amazon EMR

Amazon CloudSearch

Amazon Elasticsearch Service

Amazon Kinesis

Amazon Redshift

Amazon QuickSight

AWS Data Pipeline

AWS Glue

Security, Identity & Compliance

AWS Identity and Access Management (IAM)

Amazon Cloud Directory

Amazon Cognito

Amazon GuardDuty

Amazon Inspector

Amazon Macie

AWS Certificate Manager

AWS CloudHSM

AWS Directory Service

AWS Key Management Service

AWS Organizations

AWS Single Sign-On

AWS Shield

AR & VR

Amazon Sumerian

Application Integration

Amazon MQ

Amazon Simple Queue Service (SQS)

Amazon Simple Notification Service (SNS)

AWS AppSync

AWS Step Functions

Customer Engagement

Amazon Connect

Amazon Pinpoint

Amazon Simple Email Service (SES)

Business Productivity

Alexa for Business

Amazon Chime

Amazon WorkDocs

Amazon WorkMail

Desktop & App Streaming

Amazon WorkSpaces

Amazon AppStream 2.0

Internet of Things

AWS IoT Core

Amazon FreeRTOS

AWS Greengrass

AWS IoT 1-Click

AWS IoT Analytics

AWS IoT Button

AWS IoT Device Defender

AWS IoT Device Management

Game Development

Amazon GameLift

Amazon Lumberyard

Software

SO WHERE DO WE START?

LET'S START SIMPLE

GIVE ME A SERVER!

Keeping
servers simple

Launch a virtual private server with just a few clicks.

AMAZON LIGHTSAIL

- Virtual Private Servers, as you might be used to

- Just like Digital Ocean, Linode, etc

- No need to manage security groups, networks, or other "AWS" stuff

DEMO

WE'RE MISSING A FEW THINGS

WELL-ARCHITECTED FRAMEWORK

WELL-ARCHITECTED FRAMEWORK

- 5 Pillars Of Application Design

- Checklist Of Design Principles

- Questions To Make Sure You Think Things Through

FIVE PILLARS

FIVE PILLARS

- Security

- Reliability

- Performance Efficiency

- Cost Optimization

- Operational Excellence

SECURITY

- Apply security at all layers

- Implement principle of least privilege

- Focus on securing your system

- Automate security best practices

RELIABILITY

- Test recovery procedures

- Automatically recover from failure

- Scale horizontally to increase system availability

- Stop guessing capacity

PERFORMANCE EFFICIENCY

- Democratize advanced technologies

- Go global in minutes

- Experiment more often

- Mechanical sympathy

COST OPTIMIZATION

- Adopt a consumption model

- Benefit from economies of scale

- Analyze expenditure

- Use managed services to reduce cost of ownership

OPERATIONAL EXCELLENCE

- Perform operations with code

- Make regular, small, incremental changes

- Test for responses to unexpected events

- Learn from operational events and failures

- Keep operations procedures current

AWS LIGHTSAIL

Pillar	AWS Lightsail
Security	Partial
Reliability	Partial
Performance Efficiency	No
Cost Optimization	No
Operational Excellence	No

# WE CAN DO BETTER

AWS ELASTIC BEANSTALK

AWS ELASTIC BEANSTALK

- "Easy-to-use" service for deploying and scaling web applications

- Java, .NET, Node.js, Python, Ruby, Go

- And PHP, of course

- Apache, Nginx, IIS, Load Balancing

AWS ELASTIC BEANSTALK

- No additional cost, just pay for resources you use

- Handles capacity provisioning

- Handles health monitoring

- https://docs.aws.amazon.com/elasticbeanstalk/latest/dg/php-hadrupal-tutorial.html

FILE STORAGE
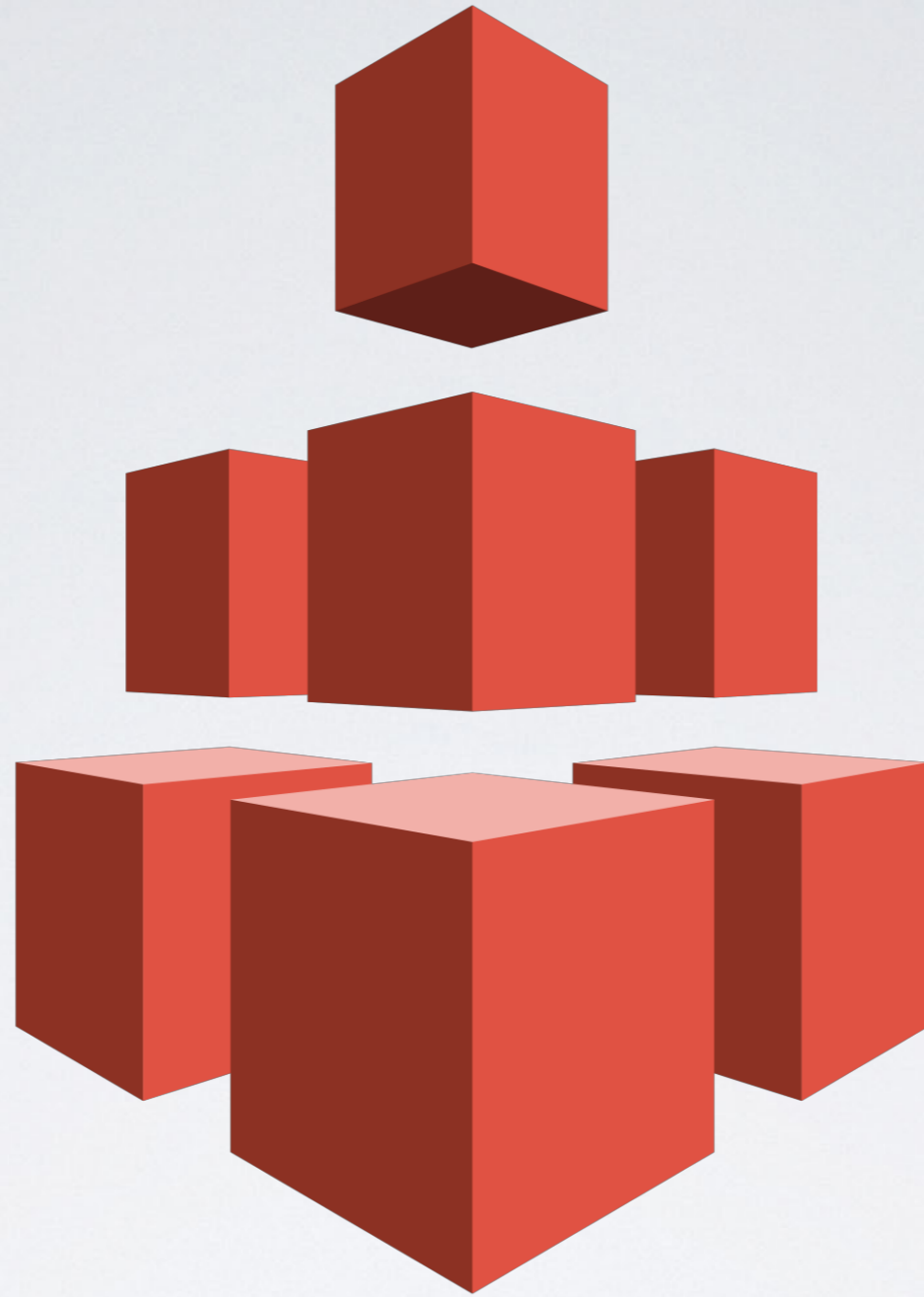
AWS ELASTIC FILESYSTEM

AWS ELASTIC FILESYSTEM

- AKA "EFS"

- Shared file system, similar to NFS

- Automatic capacity provisioning

- Pay only for what you use

AWS ELASTIC FILESYSTEM

- Includes life cycle rules to provide cost savings for infrequently accessed files

AWS ELASTIC FILESYSTEM

- Includes life cycle rules to provide cost savings for infrequently accessed files

Standard Storage (GB-Month)	Infrequent Access Storage (GB-Month)	Infrequent Access Requests (per GB transferred)
$0.30	$0.045	$0.010

DATABASE

AWS RELATIONAL DATABASE SERVICE

AWS RELATIONAL DATABASE SERVICE

- Cost efficient, resizable relational database

- MySQL, MariaDB, and Aurora

- Optimized and tuned for you

AWS RELATIONAL DATABASE SERVICE

- 2 different varieties of Aurora

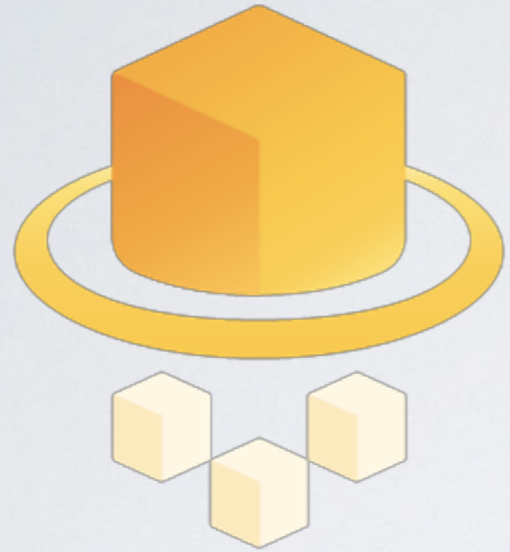- Provisioned and "Serverless"

AWS RDS SERVERLESS

- Automatically scales disk space, CPU, memory

- Pay only for what you use

- "Starts" in < 30 seconds

DEMO

PROVISIONED CAPACITY

PROVISIONED CAPACITY

- Even with Elastic Beanstalk, still provisioning servers

- Provisioning capacity means wasting capacity

AWS FARGATE

- Run containers without managing servers

- No need to worry about patching, updating, or "hardware" failure

- Pay per CPU and Memory used

AWS FARGATE

- Drupal uploaded files

- https://www.drupal.org/project/s3fs

DEMO

OTHER "CONTAINER" SOLUTIONS

- AWS Elastic Container Service

- AWS Elastic Kubernetes Service

Pillar	AWS Lightsail	AWS Elastic Beanstalk	AWS Fargate
Security	Partial	Yes	Yes
Reliability	Partial	Yes	Yes
Performance Efficiency	No	Partial	Yes
Cost Optimization	No	Partial	Yes
Operational Excellence	No	Yes	Yes

USE WHAT YOU ARE COMFORTABLE WITH!

QUESTIONS?

- Brian Thompson, Director of Web Engineering

- @rvtraveller26