

WordPress and AWS

Dylan Barlett

@dylanbarlett

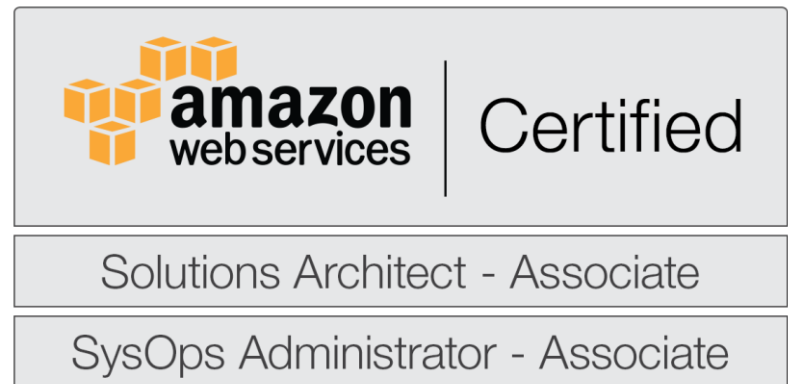
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Topics

- Definitions
- Geography
- Basic use cases
 - Route 53 (DNS)
 - S3 (storage)
 - CloudFront (CDN)
- Intermediate use cases
- Advanced use cases

About Me

- Consultant at Versivo
- Web DevOps at Arlington County
- WP since 2010
- AWS since 2012
- Disclosures:
 - Own 10 shares of AMZN
 - Occasionally receive service credits at hackathons
 - Not under NDA – anything I say is quotable



Cloud Computing (from [NIST](#))

- Essential characteristics
 - On-demand self-service
 - Broad network access
 - Resource pooling
 - Rapid elasticity
 - Measured service
- Service Models
 - Software (SaaS) – Basecamp, WP.com
 - Platform (Paas) – Heroku, some AWS & Azure
 - Infrastructure (IaaS) – AWS, Azure, GCE, HP Cloud

Amazon Web Services (AWS)

- Yes, that Amazon.com
- Users: Netflix, Dropbox, reddit, Obama campaign
- Werner Vogels, Amazon.com CTO:

“The excess capacity story is a myth. It was never a matter of selling excess capacity, actually within 2 months after launch AWS would have already burned through the excess Amazon.com capacity. Amazon Web Services was always considered a business by itself, with the expectation that it could even grow as big as the Amazon.com retail operation.” [Source](#)

Facilities

- Regions
 - Completely independent from each other
 - Data doesn't leave unless you want it to
- Availability Zones (AZ)
 - 2+ zones per region
 - Low-latency links within region
 - Independent power and Internet links
- Edge Locations
 - DNS and CDN only

US Regions

- us-east-1 (Northern VA)
- us-west-1 (Northern CA)
- us-west-2 (Oregon)
- GovCloud (“Northwest US”)

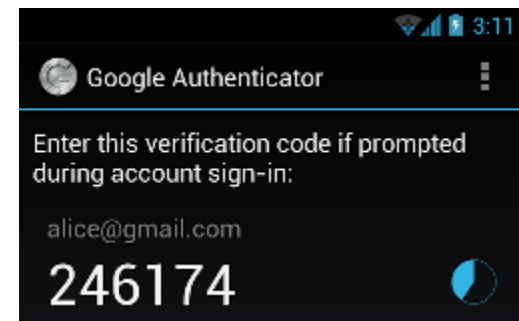


Getting Started

Supplementing your existing sites

Creating an Account

- [Existing Amazon.com account or AWS-specific](#)
- [Free tier](#) for 12 months
- Security
 - [Multi-Factor Authentication](#) (MFA)
 - Hardware fob or card
 - TOTP app (e.g. Google Authenticator)
 - [Identity and Access Management](#) (IAM)
 - Users (who)
 - Policies (what)



Route 53

- Worldwide anycast DNS
- Weighted Round Robin
- Health checks and failover
 - Active-active
 - Active-passive
 - Mixed
- When combined with other AWS components:
 - Latency-based routing
 - ALIAS records

Simple Storage Service (S3)

- Key-value store distributed across region
- 1 byte to 5 TB objects
- 99.999999999% durability and 99.99% availability
- Automatic HTTP(S) and BitTorrent
- Can host static sites
- ACLs and signed URLs

CloudFront

- Content Delivery Network (CDN)
- Faster and more consistency latency than S3
- Worldwide edge locations
- Static, dynamic, and streaming content
 - S3 or your server as origin
 - Watch out for CORS with web fonts in FF and IE
- Origin push or pull
- Note: invalidations cost money (> 1,000/month)

Tools

- AWS Console
- [CloudBerry Explorer](#)
- [W3 Total Cache](#)
- [SDKs, IDE plugins, and CLI tools](#)

Intermediate Use Cases

Going native

Elastic Compute Cloud (EC2)

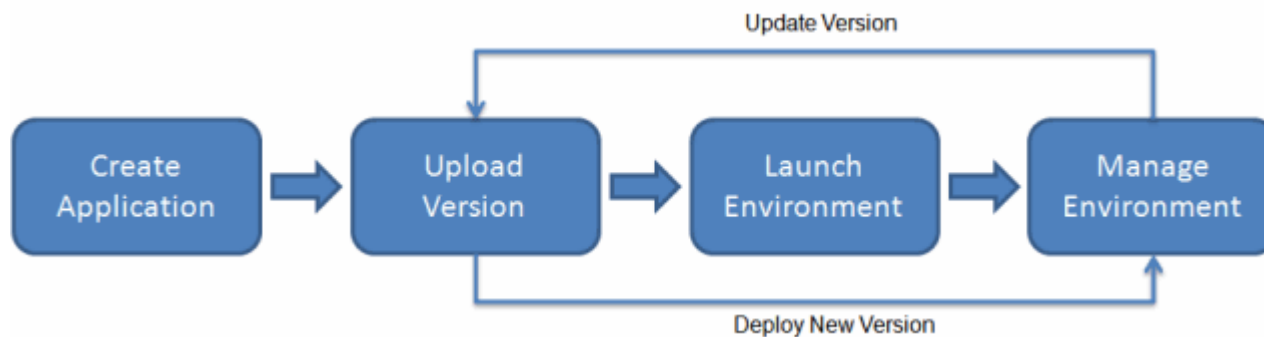
- VMs by the hour
- Storage
 - Instance
 - Elastic Block Storage (ELB)
- Elastic IP addresses (5 per account)
- Auto scaling
- Amazon Machine Images (AMI)
- Virtual Private Cloud (VPC)

Relational Database Service (RDS)

- MySQL 5.1/5.5/5.6
- Automated backups (point-in-time restoration)
- DB snapshots (user-initiated)
- Multi-AZ deployments (asynchronous replication)
- Read replicas (synchronous replication)

Elastic Beanstalk

- PaaS/IaaS hybrid
 - Deploy via Git like Heroku or AppFog
 - Full control over resources



Advanced Use Cases

Into the deep end

Elastic Load Balancing (ELB)

- Route traffic across multiple instances/zones
- SSL termination or pass-through
- Health checks
 - Set URL, port, and frequency
 - No host header sent to server
 - Integrates with Route 53 DNS failover

ElastiCache

- Protocol compliant with Memcached
- Clusters and nodes
- PHP session storage – modify php.ini
- W3TC can use it instead of files
 - DB
 - Object
 - Fragment
 - Page