A CLOUD GURU

Back from the future

Learnings from 3 & ½ years of serverless
You do not have any running instances in this region.

First time using EC2? Check out the Getting Started Guide.

Click the Launch Instance button to start your own server.
Yeah. No, I know. You did send me back to the future, but I'm back. I'm back from the future.

Serverless, 3.5 years in
Teaching the world to cloud

800k engineers
170+ countries
3.5 years
## Why Serverless?

<table>
<thead>
<tr>
<th></th>
<th>IaaS</th>
<th>PaaS</th>
<th>Serverless</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Unit of Scale</strong></td>
<td>Virtual Machine or Container (Docker)</td>
<td>Application</td>
<td>Function</td>
</tr>
<tr>
<td><strong>Fleet Operational Responsibility</strong></td>
<td>Application developer</td>
<td>Shared between developer and vendor</td>
<td>Vendor only</td>
</tr>
<tr>
<td><strong>Required Management &amp; Maintenance</strong></td>
<td>High – Operating System level</td>
<td>Medium – Application level</td>
<td>Low – function level</td>
</tr>
<tr>
<td><strong>Billing</strong></td>
<td>Per VM per minute or hour</td>
<td>Per VM per minute or hour</td>
<td>Per 100 milliseconds (continuous)</td>
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<tr>
<td><strong>Impact of Idle Time</strong></td>
<td>Economic loss when machines are idle or underused</td>
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<td>None – functions execute only when needed</td>
</tr>
<tr>
<td><strong>Integration with other vendor services</strong></td>
<td>Manual</td>
<td>Mixed</td>
<td>Automatic</td>
</tr>
</tbody>
</table>

*Source: Serverless Design Patterns (T. Wagner, Y. Kiriaty, P. Sbarski)*
Footprint:
• 268 Lambda Functions
• 30 Micro-services
• 3.6TB of data in S3

Daily Usage:
• 6.53m Lambda Invocations $1,635 / mo
• 1.85m API Requests $483 / mo

1+ trillion S3 requests per month
Achieving escape velocity
Invention is born of necessity
Video Lessons
Quiz Engine
Online Store
Sign Up / Login
Scale Effortlessly
Low Operational Overhead
AngularJS Web Site

Auth0

Firebase
Peter uploads a file

Source S3 Bucket

Lambda

Elastic Transcoder

Firebase

Lambda

Destination S3
Lift off!
10 tips
No Ops? Yes, Ops.
Don’t look for serverless developers
Encourage & reassure candidates
Join the community

A CLOUD GURU

The #1 community-sourced collection for cloud computing

Serverless Superheroes: Jay and Frank are keeping the original promise of serverless
Welcome to “Serverless Superheroes”!

Applause from you, Drew Firment, and 24 others

Serverless
JAY & FRANK

The evolution from servers to functions
Peer through the lens of a developer’s most common decision criteria—time and money

Applause from Drew Firment and 48 others
Expect to pioneer
A serverless monolith

AngularJS Web Site

Auth0

Firebase
Monolith to micro
Serverless AMPLIFIES the need for good development practices.
Automation is not optional
Test all the things
```javascript
exports.myHandler = function(event, context, callback) {

```

Log Groups → Streams for /aws/lambda/null_bucket → Events for 2015/10/28/[$LATEST]e0dd783...

Filter: Search for events

Date/Time: 2015/10/28 23:11:25 UTC (GMT)

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Event Data

- Loading function
- START RequestId: 35380431-7dc9-11e5-a501-33166be05948 Version: $LATEST
- Using waiter to waiting for object to persist thru s3 service...
- CONTENT TYPE: application/octet-stream
- ETag: "e1d3d859a811b363814550d1982ff33c"
- Content-Length: 2780
- Keyname: Bacon App Architecture.graffle
- Event-> principalId: AWS:AIDAJT7PRNOPKHUQ4GF4C
- Deleting object...Bacon App Architecture.graffle
- END RequestId: 35380431-7dc9-11e5-a501-33166be05948
- REPORT RequestId: 35380431-7dc9-11e5-a501-33166be05948 Duration: 318.06 ms Billed Duration:
- 400 ms Memory Size: 128 MB Max Memory Used: 42 MB
Test all the things
Managed services are moving targets