

Hop on the server less adventure

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WHAT IS *SERVERLESS?*

"Serverless architectures refer to applications that significantly depend on third-party services (known as Backend as a Service or "BaaS") or on custom code that's run in ephemeral containers (Function as a Service or "FaaS")"

-Martin Fowler

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INFRASTRUCTURE

AS A SERVICE



INTEL

Codepen by awesome @sarah_edo
<https://t.co/PvqK1M2Pwz>

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- Reacts to events
- Autoscales
- 'Pay as you go'

Serverless Cost Calculator (beta)

Calculating cost for AWS Lambda, Azure Functions, Google Cloud Functions, and IBM OpenWhisk

10000

 Number of Executions

300000

 Estimated Execution Time (ms)

1024MB

 Memory Size

True False

 Include Free-Tier

True False

 HTTP Requests

Vendor	Request Cost	Compute Cost	Total
AWS Lambda	\$0.00	\$43.34	\$43.34
Azure Functions	\$0.00	\$41.60	\$41.60
Google Cloud Functions	\$0.00	\$46.50	\$46.50
IBM OpenWhisk	\$0.00	\$44.20	\$44.20

<http://serverlesscalc.com/>

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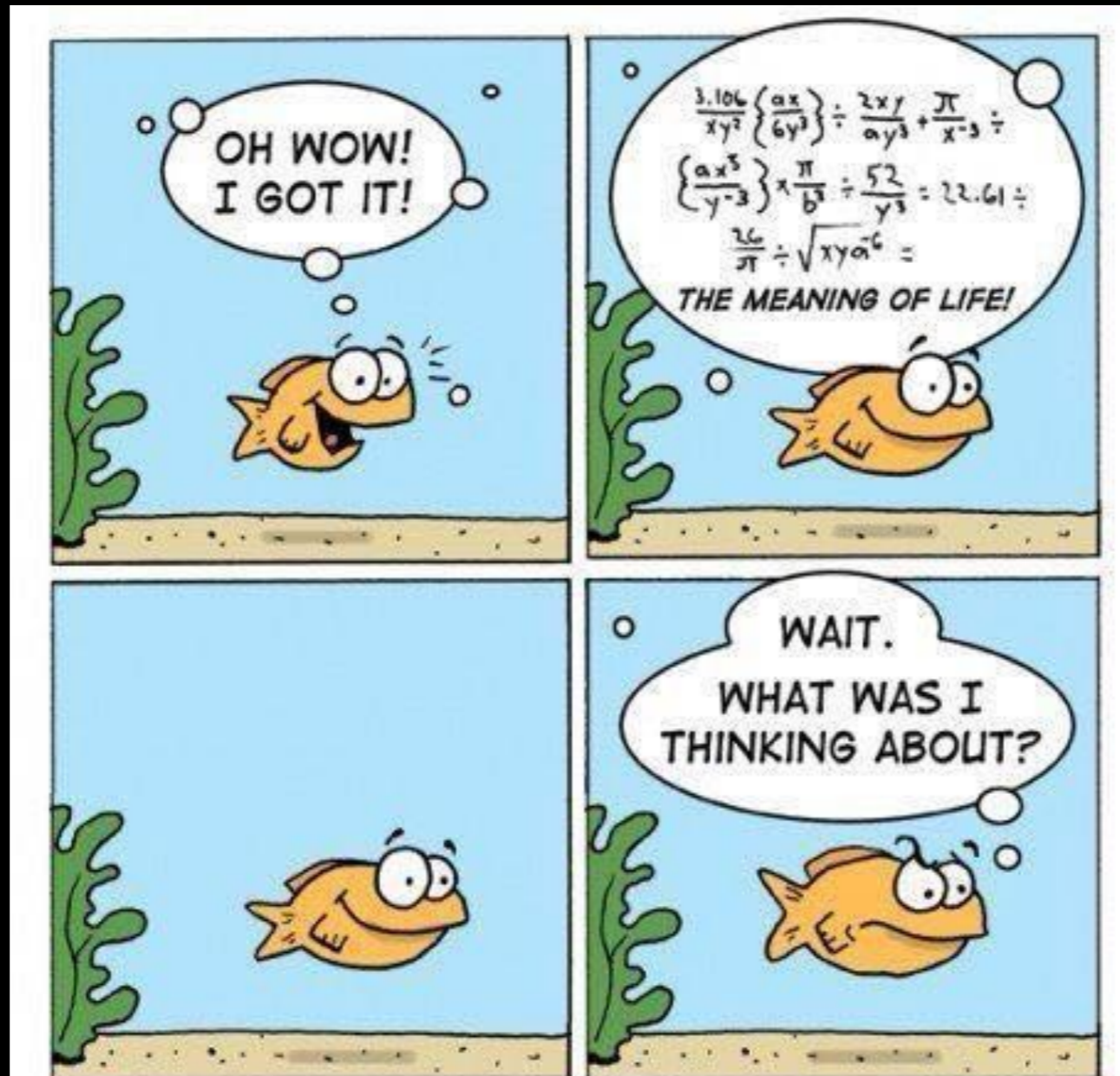
TURBO



Execution time limit



Functions are stateless



SPUDCOMICS.COM

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THE TRAGEDY OF A THREE SECOND MEMORY

You are not on 9GAG.COM

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Cold start



“Serverless computing has made its way **into the enterprise because it **simplifies deployment** and allows developers to focus more on application features than on tasks such as provisioning VMs. Emerging uses for serverless technology include **image processing, task management, workflows and notifications.**”**

Why Node.js?

Because
it's
awesome!



Why Node.js?

- Javascript has a rich ecosystem of libraries and tools
- Enable FE developers to build scalable backends
- Large use base - javascript is the English of languages



Why Node.js?

- Lightweight - helps reduce cold start
- Commonly run in a distributed, horizontally scaled fashion
- Scripting means no compilation required to start from a portal
- Runs equally easy on most OS's



Serverless providers

- Azure Functions
- Amazon Lambda
- Google Cloud Functions
- Auth0 Webtask
- Ibm Openwhisk

**What can I do
with serverless?**

Hello world

```
module.exports.hello = function(context) {  
  context.log(`JavaScript HTTP trigger function  
    processed a request.`);  
  
  context.res = {  
    body: `Go Serverless v1.x!  
      Your function executed successfully!Yay`  
  };  
  
  context.done();  
};
```


Timer

Run background tasks

Web hook

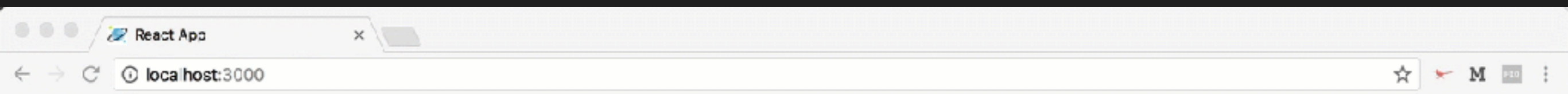
The screenshot shows a Slack interface with a sidebar on the left and a main chat area on the right. The sidebar includes a search bar, a list of channels (serverlessimona, All Threads, general, random), Direct Messages (slackbot, Simona Cotin (you)), and an 'Invite People' button. The main chat area shows a conversation with 'Simona Cotin (you)'. The chat history includes a message from the 'iconify' app at 2:41 PM with a URL and a vertical arrow pointing down. A 'new messages' separator follows. Below it, another message from the 'iconify' app at 2:44 PM shows a URL and a downward arrow pointing to a series of dots. At the bottom, a text input field contains the text 'Got something down'.

```
var NounProject = require('the-noun-project');
var qs = require('querystring');
module.exports = function(context, req) {
  const body = qs.parse(req.body);
  nounProject = new NounProject({
    key: process.env.NounApiKey,
    secret: process.env.NounApiSecret
  });
  nounProject.getIconsByTerm(body.text, { limit: 5 }, (err, data) => {
    const slack_res = {};
    const attachments = [];
    for (icon of data.icons) {
      attachments.push({ image_url: icon.preview_url, text: icon.preview_url });
    }
    if (!err) {
      slack_res = {
        parse: 'full',
        response_type: 'in_channel',
        attachments: attachments
      };
      context.log(data.icons);
    } else {
      context.log(`Error: ${err}`);
      slack_res = {
        response_type: 'ephemeral',
        text: "Sorry, that didn't work. Please try again."
      };
    }
    context.res = {
      body: slack_res
    };
    context.done();
  });
};
```

Web API

Implement CRUD operations

Web API



Heroes

Add New Hero

Web API

Pluralsight course with
John Papa

<https://aka.ms/pbp>

GitHub repo

<https://aka.ms/pbp-serverless>

Data processing

Cloud Developer Advocate Speaking
Microsoft Azure



Filter By

Name	Conference	From	To	Location
Abel Wang	Visual Studio Live	3/13/2017	3/17/2017	Las Vegas
Abel Wang	Tech Summit 2017 Amsterdam	3/20/2017	3/21/2017	Amsterdam
Abel Wang	Tech Summit 2017 Milan	3/20/2017	3/21/2017	Milan
Abel Wang	TechSummit 2017 Seoul	4/26/2017	4/27/2017	Seoul
Abel Wang	Velocity	6/19/2017	6/21/2017	San Jose
Abel Wang	VSLive Redmond	8/15/2017	8/16/2017	Redmond
Abel Wang	Jenkins World	8/29/2017	8/31/2017	San Francisco
Abel Wang	Minneapolis Azure Conference	9/7/2017	9/7/2017	Minneapolis
Abel Wang	Visual Studio Partner Summit	9/20/2017	9/21/2017	Redmond
Abel Wang	MSIgnite 2017	9/24/2017	9/29/2017	Orlando, FL
Abel Wang	Minnesota Developer Conference	10/2/2017	10/2/2017	Minneapolis
Abel Wang	AppConn - Budapest	10/10/2017	10/11/2017	Budapest
Abel Wang	VS Live -Anaheim	10/16/2017	10/17/2017	Anaheim
Abel Wang	AppConn - Houston	11/1/2017	11/2/2017	Houston, TX
Abel Wang	AppConn - Thailand	11/10/2017	11/10/2017	Bangkok



Data processing

Demo by Sarah Drasner

(follow her on Twitter!!)

Article: <https://css-tricks.com/exploring-data-with-serverless-and-vue-part-i/>

How do I get started?

Create function - portal

nodeconfeu - Microsoft Azure x

Secure | https://ms.portal.azure.com/#

Microsoft Azure

Report a bug

sicotin@microsoft.com
MICROSOFT

nodeconfeu

sicotin-hue
FUNCTION APP

Running

sicotin-emotions
COGNITIVE SERVICES

Active

sicotinsentiment

sicotin-twilio
COGNITIVE SERVICES

Resources
SICOTIN-HUE

- sicotin-emotions Cognitive Services
- sicotin-nodeconf Cognitive Services
- sicotinsentiment Storage account
- sicotin-twilio Cognitive Services
- sicotin-hue App Service
- sicotin-hue Application Insights
- sicotinhue9910 Storage account
- UKSouthPlan App Service plan

BUT...

**THAT'S NOT HOW
I USUALLY WRITE CODE**

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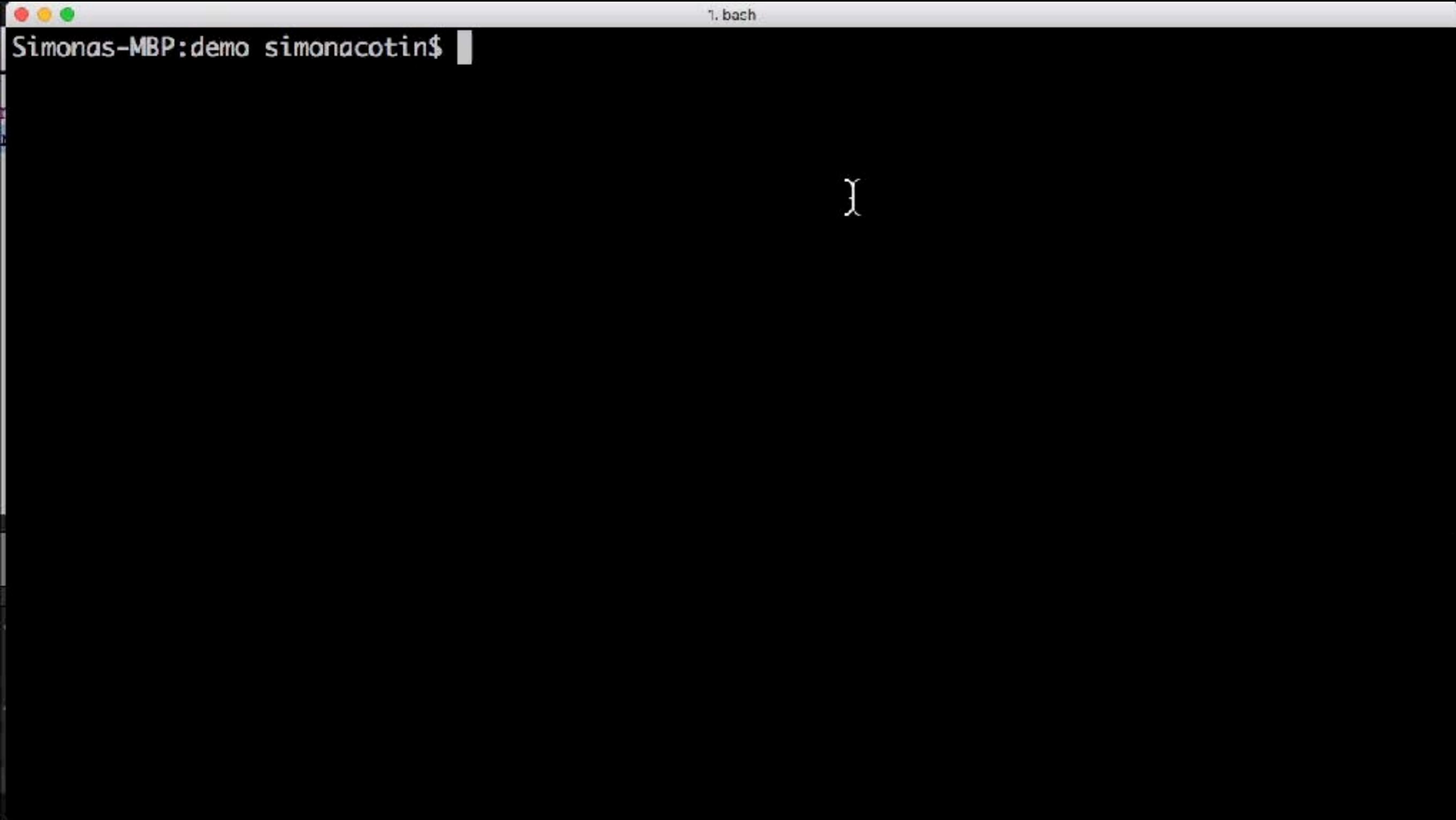
Local debugging - prerequisites

- Node v8.0+
 - Older versions of node will be supported soon.
- .NET Core 2.0
- Azure Core Function Tools 2.0

```
npm install --global azure-functions-core-tools@core
```


Create function - cli

Create function - cli



A terminal window with a title bar containing three colored window control buttons (red, yellow, green) on the left and the text "1. bash" on the right. The terminal content shows the prompt "Simonas-MBP:demo simonacotin\$" followed by a vertical bar cursor. The rest of the terminal area is empty.

```
Simonas-MBP:demo simonacotin$ |
```




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Publish function

Publish function

The screenshot displays the Visual Studio Code interface. On the left, the Explorer sidebar shows a project named 'DEMO' with a folder 'HttpTriggerJS' containing files 'function.json', 'index.js', and 'sample.dat'. Below the Explorer are sections for 'DOCKER', 'COMMITTS', 'COMPARE COMMITTS', 'AZURE FUNCTIONS', and 'AZURE COSMOS DB'. The main editor area shows a 'Welcome' page with options to 'Start' (New file, Open folder..., Add workspace folder...) and 'Recent' files. The bottom panel is split into 'PROBLEMS', 'OUTPUT', 'DEBUG CONSOLE', and 'TERMINAL'. The 'DEBUG CONSOLE' shows a message: 'Debugging with inspector protocol because it was detected. Worker 5963a9c2-76ac-41e6-a441-5c201562bf4e connecting on 127.0.0.1:5 worker-bundle.js:25312'. The status bar at the bottom indicates 'master*' and 'Attach to Azure Functions'.

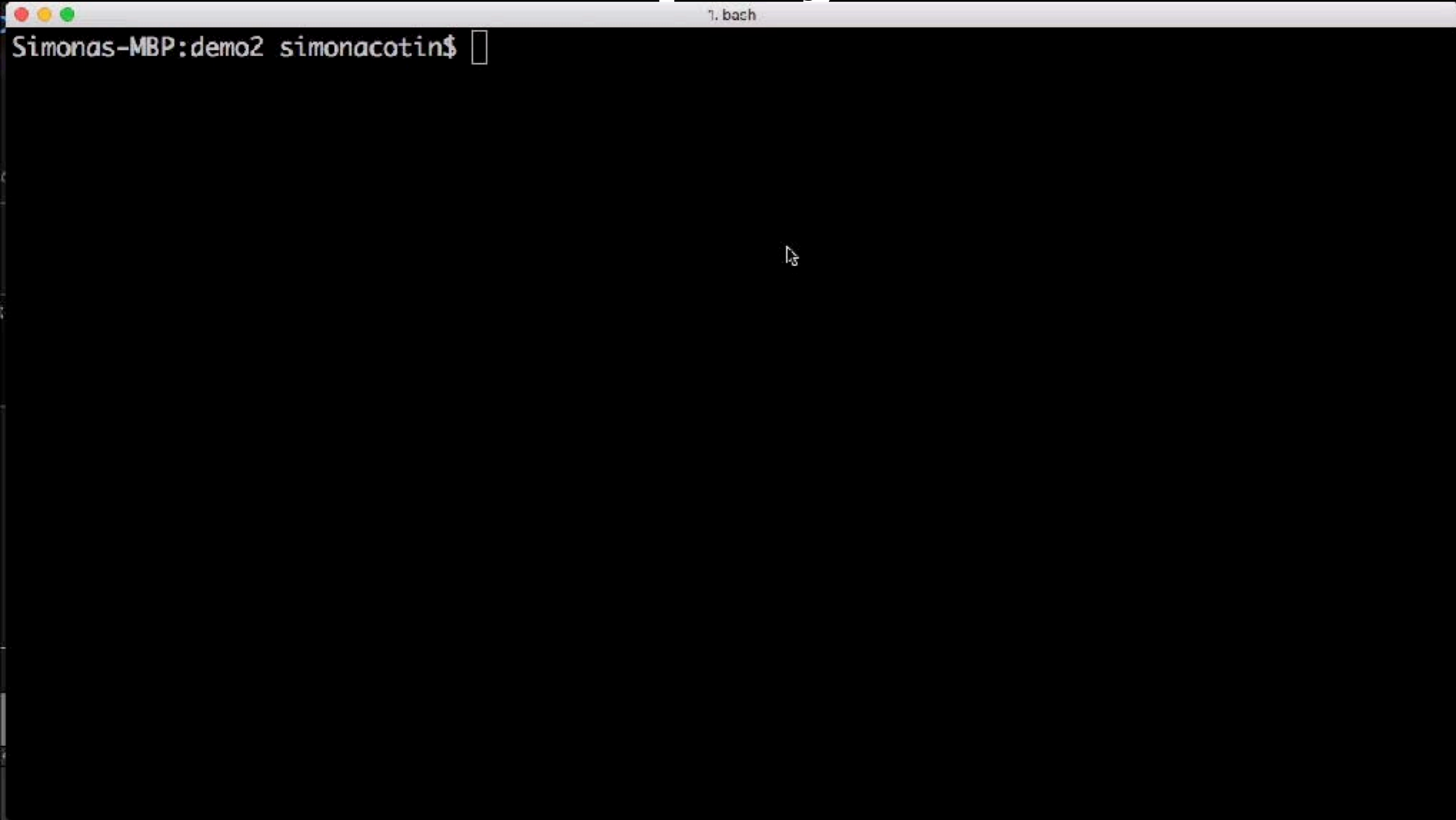


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Git deployment

Git deployment

A terminal window with a dark background and a light gray title bar. The title bar contains three colored window control buttons (red, yellow, green) on the left and the text '1. bash' on the right. The main area of the terminal is black and contains the text 'Simonas-MBP:demo2 simonacotin\$' followed by a white cursor block. A mouse cursor is visible in the center of the terminal area.

```
Simonas-MBP:demo2 simonacotin$
```

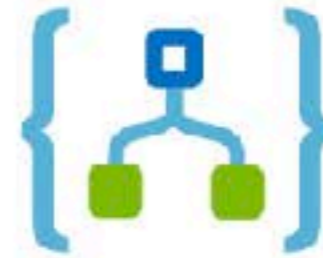
Git deployment - setup

Git deployment - setup

The screenshot shows the Microsoft Azure portal interface. The browser address bar displays <https://ms.portal.azure.com>. The user is logged in as `sicotin@microsoft.com`. The main content area shows the details for a Function App named `sicotin-serverless-deploy`. The app is currently in a **Running** status. The interface includes a navigation pane on the left with options for Functions, Proxies, and Slots (preview). The main panel has tabs for **Overview** and **Platform features**. Under the Overview tab, there are control buttons for **Stop**, **Swap**, **Restart**, **Download publish profile**, and **Reset publish**. Below these buttons, the app's status is shown as **Running** with a green checkmark. Key configuration details are listed:

Status	Subscription	Resource group
Running	sicotin	serverless-s
	Subscription ID	Location
	3b39d901-dea9-4a3c-b6de-8e16105de4b0	UK South

At the bottom of the Overview tab, there is a section for **Configured features**, which includes a link for **Function app settings**.



An open source set of common use cases for Azure Functions & Logic Apps that are ready to deploy into your Azure Subscription!

<h3>⚡ OpenALPR License Plate Reader</h3> <p>App for reading license plate info from a photo. (Function in C#)</p> <p>deploy chart src</p>	<h3>⚡ Stripe Payment Service</h3> <p>Allows for incorporating Stripe payment functionality as a callable web service. (Function in NodeJS)</p> <p>deploy blog chart src</p>	<h3>⚡ LIFX Light Bulb color changer</h3> <p>Timers that set the color of an LIFX bulb based on the outside temperature. (Function in NodeJS)</p> <p>deploy chart src</p>
<h3>⚡ Deploy Git Hosted Azure Function</h3> <p>Deploys an Azure Function(s) via a git Repository URL. (Function in C#)</p> <p>deploy chart src</p>	<h3>⚡ HTTP CRUD on CosmosDB</h3> <p>An HTTP API for CRUD operations against CosmosDB. (So boring, why would you write it yourself?!!) (Function in NodeJS)</p> <p>deploy chart src</p>	<h3>⚡ What to Bring</h3> <p>Returns a list of what items you should bring when traveling to certain cities. (Function in NodeJS)</p> <p>deploy blog chart src</p>

[-https://aka.ms/serverless-demos](https://aka.ms/serverless-demos)

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- Event driven code
- Autoscales
- Only pay for what you're using/Pay as you go

Resources

- <https://github.com/anaibol/awesome-serverless>
- <https://aka.ms/functions>
- <https://github.com/simonaco/pbp-serverless>
- <https://css-tricks.com/exploring-data-with-serverless-and-vue-part-i/>
- <https://github.com/simonaco/property-suggester>

/serverless/ **DAYS**

6 July 2018, St John's Hoxton, London

- 2018/04/06 - CFP Opens
- 2018/04/11 - Tickets go on Sale
- 2018/05/07 - CFP Closes
- 2018/05/21 - Speaker Announcement
- 2018/07/06 - ServerlessDays London

One Day. One Track. One Community

Call for Papers

Sponsor

Code of Conduct

– <https://london.serverlessdays.io/>

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**“the thing that distinguishes
the best, fastest, most
efficient engineering
organizations is how little
code they actually write”**

-Joe Emison

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