



amazon alexa

“Hello World”



Sleepy?



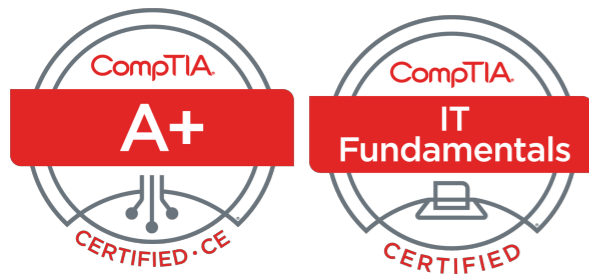
Introduce Speaker



Who is speaking?

Mik Galon, BSCS, MIM a.k.a GigaMike

Freelance Full Stack Web Developer / AWS Solutions Architect / Alexa Skills Developer



 www.gigamike.net

 @gigamikenet

 @gigamike

 @gigamike

 gigamike@gigamike.net

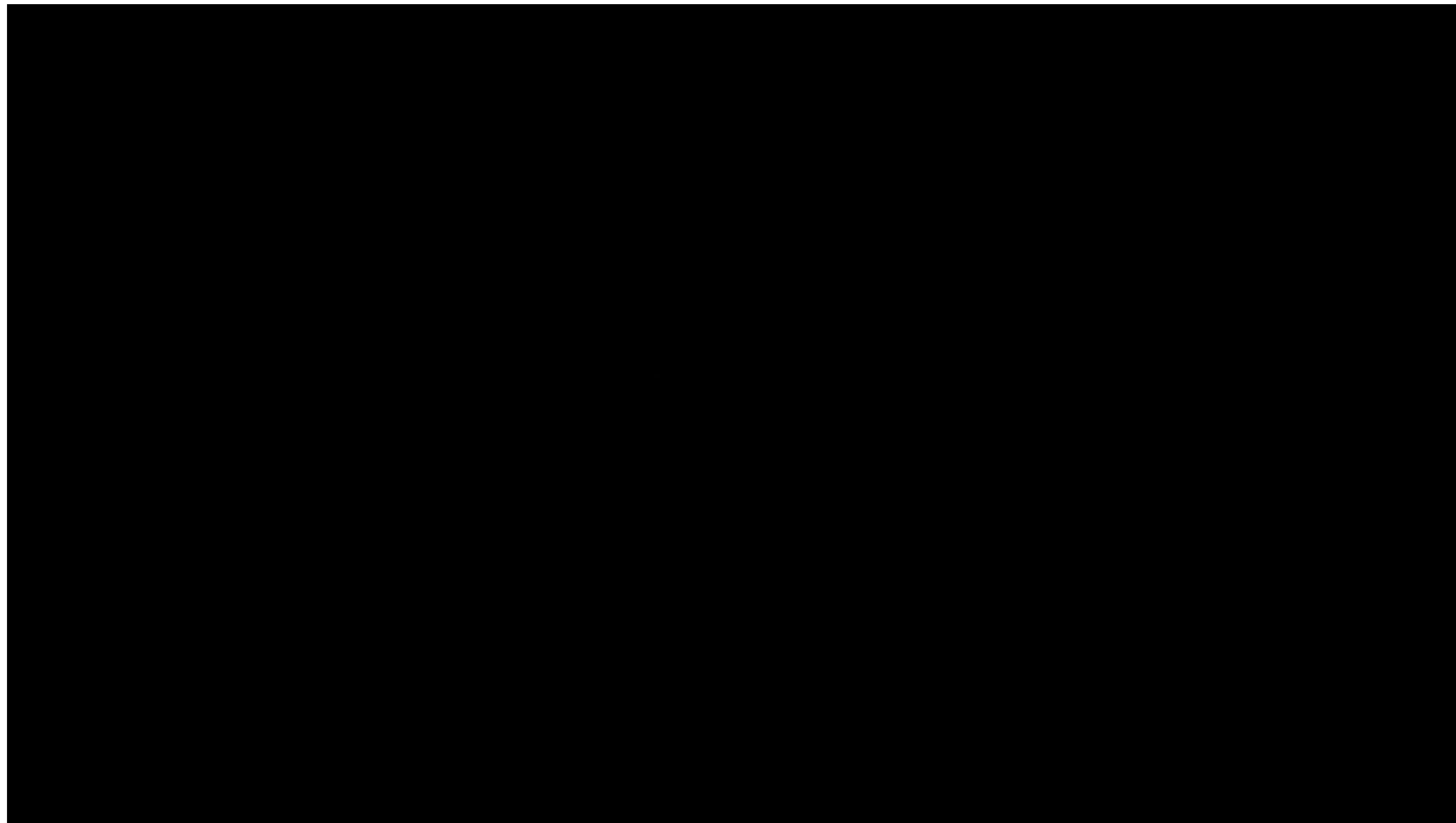


</HACKATHON.PH>



What is Alexa

- Alexa is an Amazon cloud based voice service.
- Using Alexa you can get information, play music, order a pizza, control your things, check weather, check traffic and you can even custom it by creating an Alexa skills.



Voice is the future

- Voice is the new search.
 - Current Usage
 - “Google voice search queries in 2016 are up 35x over 2008” according to Google trends via Search Engine Watch
 - “40% of adults now use voice search once per day” according to Location World
 - “Cortana now has 133 million monthly users” according to Microsoft/Tech Radar
 - “In May 2016, 1 in 5 searches on an Android app in the USA were through speech” according to KPCB
 - Predictions
 - “About 30% of searches will be done without a screen by 2020.” via Mediapos
 - “We estimate there will be 21.4 million smart speakers in the US by 2020” according to Activate
 - “By 2019, the voice recognition market will be a \$601 million industry”, according to a report from Technavio via Skyword.
 - “Year 2017, 25 million devices will be shipped, bringing the total number of voice-first devices to 33 million in circulation.” based on a new study by VoiceLabs via Mediapost

amazon alexa IS THE NEXT SEARCH ENGINE



Alexa has the potential to kill Google.

Gary Vaynerchuk

* <https://edit.co.uk/blog/google-voice-search-stats-growth-trends/>



Amazon Alexa Devices



Echo



Echo Spot



Echo Show



Echo Dot



Portal Plus (Facebook)



Echo Look



Echo Connect



Echo Voice Remote

Devices with Alexa

Home Audio



Automobiles



Home Security



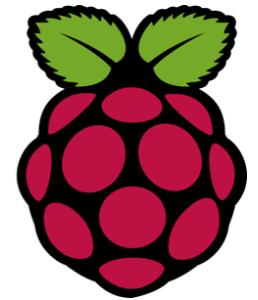
TV / Video



Thermostats



Maker Boards



Smartphones



Wearables



Appliances



<https://github.com/alexa/avs-device-sdk/wiki/Build-Options>



Alexa Skills App

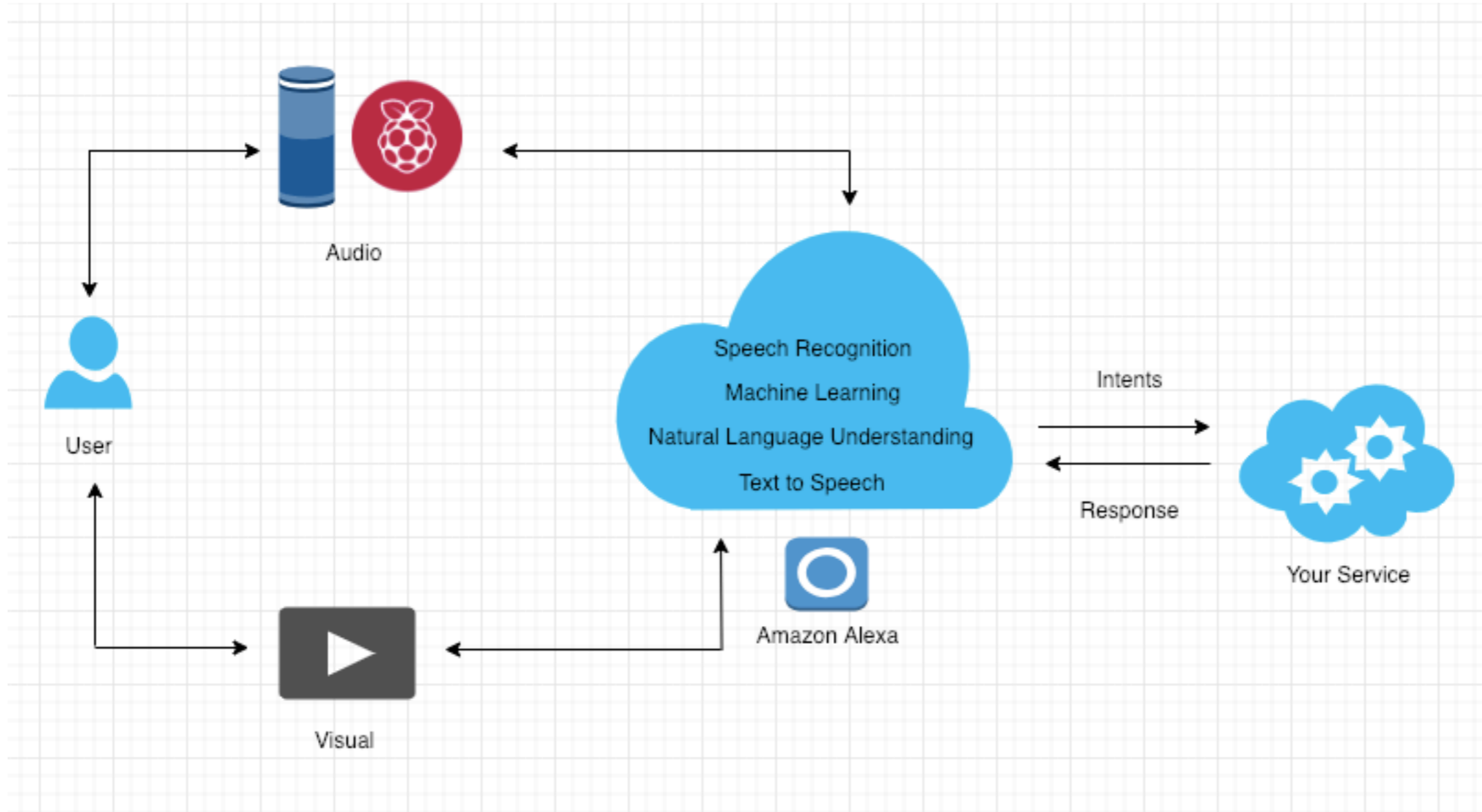
The screenshot displays the Alexa Skills App interface. On the left is a dark sidebar with navigation options: Home, Now Playing, Music & Books, Lists, Reminders & Alarms, Contacts, Skills, Smart Home, Things to Try, Settings, Help & Feedback, and Not Michael? Sign out. The main content area is titled 'All Skills' and includes a search bar labeled 'Search all skills' and a 'Your Skills' button. Below the search bar are three sections of skill recommendations:

- STAFF PICKS:** Four skills are shown in a grid. Each card includes an icon, the skill name, a star rating, and a sample voice command.
 - Watch Your Words:** 5 stars, 2 reviews. Command: "Alexa, start Watch Your Words."
 - Mindfulness : One minute meditation:** 5 stars, 14 reviews. Command: "Alexa, open one minute meditation"
 - Clorox Clean:** 4 stars, 11 reviews. Command: "Alexa, open Clorox Clean"
 - Guess My Name:** 5 stars. Command: "Alexa, open Guess My..."
- "ALEXA, WHAT ARE YOUR TOP SKILLS?":** Four skills are shown in a grid.
 - Reuters TV (U.S.):** 4 stars, 250 reviews. Command: "Alexa, what's my Flash Briefing?"
 - Jeopardy!:** 5 stars, 2489 reviews. Command: "Alexa, Play Jeopardy!"
 - Fox News:** 4 stars, 1294 reviews. Command: "Alexa, what's my Flash Briefing?"
 - Question of the Day:** 5 stars. Command: "Alexa, ask Question of t..."
- PREMIUM SKILLS:** Four skills are shown in a grid.
 - Who Wants to Be a Millionaire:** 4 stars, 379 reviews. Command: "Alexa, Play Who Wants to Be a Millionaire!"
 - Trivial Pursuit Tap:** 4 stars, 192 reviews. Command: "Alexa, open Trivial Pursuit Tap"
 - hypno therapist:** 4 stars, 83 reviews. Command: "Alexa, launch hypno therapist"
 - End Zone Football:** 5 stars. Command: "Alexa, play End Zone F..."

https://alexa.amazon.com/spa/index.html#skills/?ref-suffix=nav_na



How Alexa Skills Works



Basic Alexa Skills

Alexa, use big mike say hello world



what is the horoscope for LEO



HelloWorldIntent

HoroscopeIntent

Intent

{value: "LEO"}

slot value



What Kind of Skill Do You Want to Create?

- **Custom Skill**
- **Smart Home Skill API** - “Alexa, turn on the...”
- **Video Skill API** - “Alexa, play...”
- **Flash Briefing Skill API** - “Alexa, what's my flash briefing”
- **Music Skill API** - “Alexa, play..”
- **Gadget Skill** - echo buttons



Alexa: Hello World

- **Accounts**

- **Amazon Developer Account**



- <https://developer.amazon.com/>

- **Amazon Web Services Account**



- <https://aws.amazon.com/>

- **Amazon Alexa Account**



- <https://alexa.amazon.com/spa/index.html>



developer.amazon.com

The screenshot shows the Amazon Developer website interface. At the top, there is a dark navigation bar with the 'amazondeveloper' logo on the left and user profile 'MG', a help icon '?', and a search icon on the right. Below the navigation bar are several tabs: 'Dashboard', 'Apps & Services', 'Alexa', 'Software & Games', 'Login with Amazon', 'Dash Services', 'Reporting', and 'Settings'. The 'Alexa' tab is selected, and a dropdown menu is open, showing 'Alexa Skills Kit' and 'Alexa Voice Service'. A yellow banner below the navigation bar contains the text: 'Security Profile which is now moved under "Settings"'. Below this banner are two main sections: 'Notifications' and 'Announcements'. The 'Notifications' section has two tabs, 'All' and 'Critical', with 'All' selected. It displays 'No Notifications.'. The 'Announcements' section contains a table of updates:

Announcement Title	Date	Announcement Title	Date
Alexa Gadgets Toolkit: How it Makes the Echo Wall Clock Tick	Dec 19, 2018	ProactiveEvents API	Dec 12, 2018
Alexa Multimodal Skills Challenge	Nov 30, 2018	Alexa Hosted Skills (Preview)	Nov 15, 2018
Test Multi-Turn Conversations using the CLI and SMAPI	Nov 15, 2018	Alexa and Echo Devices Now Available for Pre-order by Customers in Mexico	Nov 7, 2018

At the bottom of the page, there are three logos: 'amazon alexa', 'amazon appstore', and 'amazon dash services'.







Alexa Development Types



developer.amazon.com

Alexa Skills

Create Skill

SKILL NAME	LANGUAGE	TYPE	MODIFIED	STATUS	ACTIONS
 partner portal View Skill ID	English (US)	Custom	2018-11-17	● In Development	Analytics Edit Delete
 Sunny Philippines View Skill ID	English (US)	Custom	2018-11-05	● In Development	Analytics Edit Delete
 vlogpress View Skill ID	English (US)	Custom	2018-07-14	● In Development	Analytics Edit Delete
 AlexaChamp.com Hello Wo... View Skill ID	English (US)	Custom	2018-01-21	● In Development	Analytics Edit Delete
 unionbank View Skill ID	English (US)	Custom	2017-12-01	● In Development	Analytics Edit Delete
 AWS Group PH View Skill ID	English (US)	Custom	2017-11-13	● In Development	Analytics Edit Delete



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Create a new skill

Cancel

Create skill

Skill name

Giga Mike

9/50 characters

Default language

English (US)

More languages can be added to your skill after creation

Choose a model to add to your skill

There are many ways to start building a skill. You can design your own custom model or start with a pre-built model. Pre-built models are interaction models that contain a package of intents and utterances that you can add to your skill.

Custom

SELECTED

Design a unique experience for your users. A custom model enables you to create all of your skill's interactions.

Flash Briefing

Give users control of their news feed. This pre-built model lets users control what updates they listen to.

"Alexa, what's in the news?"

Smart Home

Give users control of their smart home devices. This pre-built model lets users turn off the lights and other devices without getting up.

"Alexa, turn on the kitchen lights"

Music

Give users complete control of their music. This pre-built model lets users search, pause, skip, or shuffle in your skill.

"Alexa, play music by Lady Gaga"

Video






GI
GIGAMIKE

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Choose a template

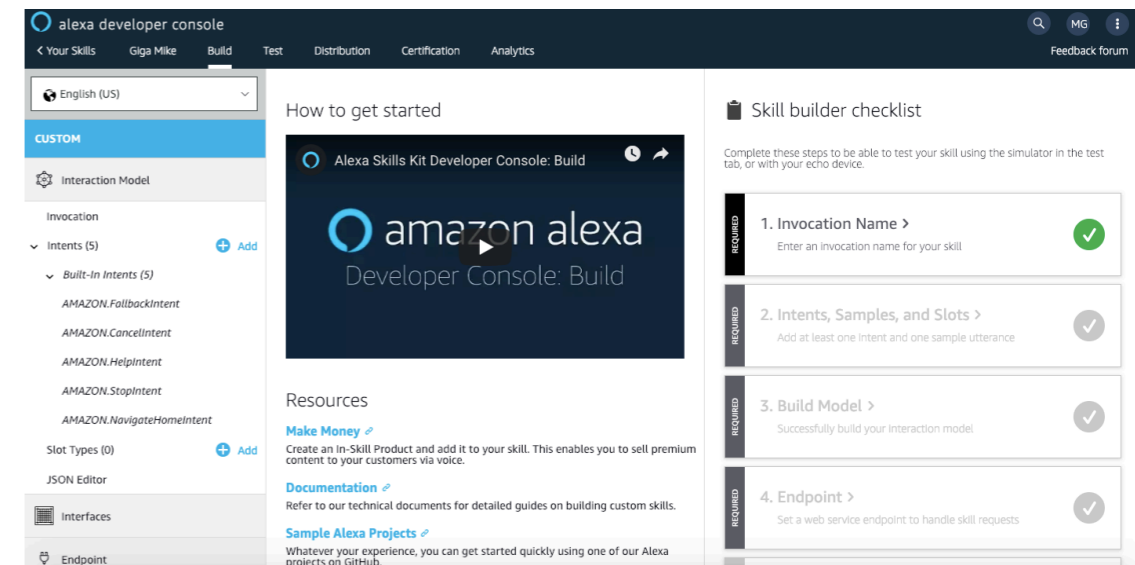
Choose

Select a quick start template to get started with a predefined skill or simply "Start from scratch"

<p>Start from scratch</p> <p>Design a unique experience for your users and define your custom model from scratch.</p>	<p> Fact Skill</p> <p>Provided a list of interesting facts about a topic, Alexa will select a fact at random and tell it to the user when the skill is invoked. Includes 1 custom intent, and 4 built-in intents.</p>	<p> Quiz Game Skill</p> <p>Provided a list of interesting facts about a topic, Alexa will quiz a user with facts from the list. Includes 1 custom intent with 1 slot, and 6 built-in intents.</p>	<p> High-Low Game Skill</p> <p>Try to guess the target number. Alexa tells the player if the target number is higher or lower than their current guess. Includes 2 custom intents with 5 slots, and 5 built-in intents.</p>
--	---	---	---

developer.amazon.com

- **Build**
 - **Interaction Model**
 - **Invocation Name** = App Name
 - **Intents** = Events and Functions
 - **Interface** = How you display
 - **Endpoint** = Lambda or HTTPS



developer.amazon.com

The screenshot shows the Amazon Developer console interface. On the left is a navigation sidebar with the following items: 'CUSTOM' (header), 'Interaction Model', 'Invocation' (highlighted), 'Intents (6)' with an 'Add' button, 'Slot Types (0)' with an 'Add' button, and 'JSON Editor'. Under 'Intents (6)', there is a list of intents: 'HelloWorldIntent', 'Built-In Intents (5)' (expanded), 'AMAZON.FallbackIntent', 'AMAZON.CancelIntent', 'AMAZON.HelpIntent', 'AMAZON.StopIntent', and 'AMAZON.NavigateHomeIntent'. Below the sidebar, there are sections for 'Interfaces', 'Endpoint', and 'Intent History'. The main content area is titled 'Invocation' and contains the following text: 'Users say a skill's invocation name to begin an interaction with a particular custom skill. For example, if the invocation name is "daily horoscopes", users can say:'. Below this is a text box containing the example: 'User: Alexa, ask daily horoscopes for the horoscope for Gemini'. Further down is a 'Skill Invocation Name' field with a help icon and a text input containing 'giga mike'. A light blue callout box titled 'Invocation name requirements' provides detailed rules: 'Your invocation name should be two or more words, and can contain only lower-case alphabetic characters, spaces between words, possessive apostrophes (for example, "sam's science trivia"), or periods used in abbreviations (for example, "a. b. c."). Other characters like numbers must be spelled out. For example, "twenty one".' It also lists prohibited words: 'Invocation names cannot contain any of the Alexa skill launch phrases such as "launch", "ask", "tell", "load", "begin", and "enable". Wake words including "Alexa", "Amazon", "Echo", "Computer", or the words "skill" or "app" are not allowed. Learn more about invocation names for custom skills.' Finally, it states: 'Changes to your skill's invocation name will not take effect until you have built your skill's interaction model. In order to successfully build, your skill's interaction model must contain an intent with at least one sample utterance. Learn more about creating interaction models for custom skills.'

Invocation



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The screenshot shows the Alexa Developer Console interface. At the top, there's a navigation bar with 'Your Skills', 'Giga Mike', 'Build', 'Test', 'Distribution', 'Certification', and 'Analytics'. The 'Build' tab is active. Below the navigation bar, there's a language selector set to 'English (US)', and buttons for 'Save Model', 'Build Model', and 'Utterance Profiler'. The main content area is titled 'Intents / HelloWorldIntent'. It shows a list of 'Sample Utterances (1)' with one entry: 'say hello world'. Below this, there's a section for 'Dialog Delegation Strategy' which is currently disabled, with a link to 'Why is this disabled?'. At the bottom, there's a table for 'Intent Slots (0)' with columns for 'ORDER', 'NAME', 'SLOT TYPE', and 'ACTIONS'. The left sidebar contains a navigation menu with 'Interaction Model', 'Invocation', 'Intents (6)', 'HelloWorldIntent', 'Built-In Intents (5)', 'Slot Types (0)', 'JSON Editor', and 'Interfaces'.

Intents



developer.amazon.com

Interaction Model

Invocation

Intents (6) + Add

- HelloWorldIntent 🗑️
- Built-In Intents (5)
 - AMAZON.FallbackIntent
 - AMAZON.CancelIntent
 - AMAZON.HelpIntent
 - AMAZON.StopIntent
 - AMAZON.NavigateHomeIntent

Slot Types (0) + Add

JSON Editor


Interfaces

Endpoint

Intent History

Display 🔗 BETA

Interfaces

 Enabling interfaces may add additional required intents to your interaction model. You will need to BOTH save interface changes and re-build your model for any updates to take effect.

NAME	DESCRIPTION	
Audio Player	The AudioPlayer interface provides directives and requests for streaming audio and monitoring playback progression. Learn more about the Audio Player Interface.	<input type="checkbox"/>
Display Interface	Echo Show allows skill developers to create skills for Alexa that use both screen and voice interaction. Learn more about the Display Interface.	<input type="checkbox"/>
Video App	The VideoApp interface provides the VideoApp.Launch directive for streaming native video files in Echo Show. Learn more about the VideoApp Interface.	<input type="checkbox"/>
Alexa Gadget BETA	Create Alexa Gadget skills using the Gadget Controller Directives or Game Engine Inputs. Learn More about creating Alexa Gadget Skills. Gadget Controller: Enable your skill to control an Alexa Gadget. Game Engine: Enable your skill to receive input from an Alexa Gadget.	<input type="checkbox"/> <input type="checkbox"/>

Interface



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AMAZON.FallbackIntent
AMAZON.CancelIntent
AMAZON.HelpIntent
AMAZON.StopIntent
AMAZON.NavigateHomeIntent

Slot Types (0) [+ Add](#)

JSON Editor

Interfaces

Endpoint

Intent History

Display [BETA](#)

N-SKILL PRODUCTS

ACCOUNT LINKING

PERMISSIONS

Service Endpoint Type

Select how you will host your skill's service endpoint.

AWS Lambda ARN [?](#)
(Recommended)

Your Skill ID [?](#) amzn1.ask.skill.98b01091-5187-4ffc-8d2f-fb5f040d8cc4
[Copy to Clipboard](#)

Default Region [?](#) (Required)

North America [?](#) (Optional)

Europe and India [?](#) (Optional)

Far East [?](#) (Optional)

HTTPS [?](#)

Endpoint



Endpoint

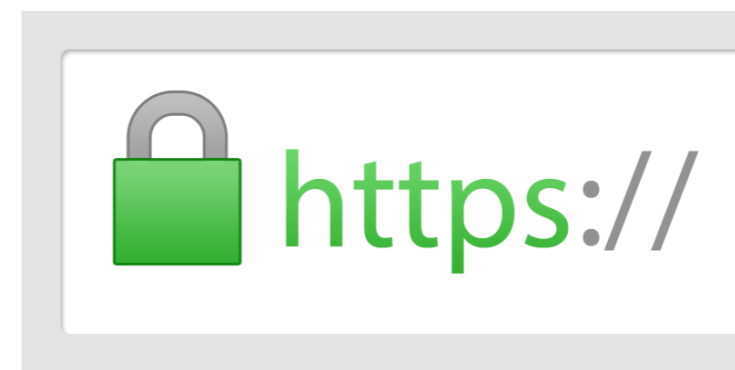
- **Lambda**

- Compute service that lets you run code without provisioning or managing server.
- 1M Request/Month Free. \$0.20 Per 1M Request/Month Thereafter.
- Node.js, Java, C#, Go, Ruby and Python.



- **HTTPS End Point**

- Web Server with SSL/HTTPS
- LAMP, MEAN, IIS/ASP, Python.



NodeJS

```
11  const speechText = 'WELCOME TO GIGAMIKE ALEXA SKILLS APP:';
12
13  return handlerInput.responseBuilder
14    .speak(speechText)
15    .reprompt(speechText)
16    .withSimpleCard('Hello World', speechText)
17    .getResponse();
18  },
19  };
20
21  const HelloWorldIntentHandler = {
22    canHandle(handlerInput) {
23      return handlerInput.requestEnvelope.request.type === 'IntentRequest'
24        && handlerInput.requestEnvelope.request.intent.name === 'HelloWorldIntent';
25    },
26    handle(handlerInput) {
27      const speechText = 'Hello World from GigaMike!';
28
29      return handlerInput.responseBuilder
30        .speak(speechText)
31        .withSimpleCard('Hello World from GigaMike', speechText)
32        .getResponse();
33    },
34  };
35
36  const IntroduceMeIntentHandler = {
37    canHandle(handlerInput) {
38      return handlerInput.requestEnvelope.request.type === 'IntentRequest'
39        && handlerInput.requestEnvelope.request.intent.name === 'IntroduceMeIntent';
40    },
41    handle(handlerInput) {
42      const speechText = 'Mik Galon a.k.a Gigamike is a full stack web developer.';
43
44      return handlerInput.responseBuilder
45        .speak(speechText)
46        .withSimpleCard('Mik Galon a.k.a Gigamike', speechText);
47    },
48  };
49
50  return {
51    'HelloWorldIntent': HelloWorldIntentHandler,
52    'IntroduceMeIntent': IntroduceMeIntentHandler,
53  };
54
55  }
56
57  }
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93  }
94
95  }
96
97  }
98
99  }
100 }
```

npm install

<https://github.com/alexa/skill-sample-nodejs-hello-world>



Lambda

The screenshot displays the AWS Lambda console interface for a function named "bigmik". The top navigation bar includes the AWS logo, "Services", "Resource Groups", and user information. The main content area is divided into several sections:

- Triggers:** A list on the left includes API Gateway, AWS IoT, Alexa Skills Kit, Alexa Smart Home, Application Load Balancer, and CloudFront. The "Alexa Skills Kit" trigger is currently selected and shown in a graph view.
- Layers:** A section for "Layers (0)" is visible, with a note: "Resources that the function's role has access to appear here".
- Function code:** This section contains:
 - Code entry type:** "Upload a file from Amazon S3"
 - Runtime:** "Node.js 8.10"
 - Handler:** "index.handler"
 - Amazon S3 link URL:** "https://s3.amazonaws.com/gigamike/Archive.zip"
- Environment variables:** A section for configuring environment variables is partially visible at the bottom.

The bottom of the screenshot shows a Windows taskbar with various application icons and a footer with "Feedback", "English (US)", and copyright information for Amazon Web Services, Inc. (© 2008 - 2019).

Lambda



Amazon Web Services

The screenshot shows the Amazon S3 console interface for a bucket named 'gigamike' in the 'US East (N. Virginia)' region. The console displays a list of objects with the following details:

Name	Last modified	Size	Storage class
Archive.zip	Jan 21, 2019 7:15:47 AM GMT+0800	153.7 KB	Standard
momolandboomboom.mp4	Jan 17, 2019 11:06:04 AM GMT+0800	3.3 MB	Standard
momolandboomboom2.mp4	Jan 17, 2019 11:06:16 AM GMT+0800	940.1 KB	Standard
ppap.mp4	Jan 17, 2019 11:06:57 AM GMT+0800	3.4 MB	Standard

S3



Alexa: “Hello World” using HTTPS endpoint

- **Amazon Web Services Account**
 - EC2, Route53
- **LAMP Stack**
 - Amazon Linux, Apache, MySQL and PHP
- **SSL/HTTPS**
 - <https://certbot.eff.org/>
- **Alexa PHP Endpoint**
 - <https://github.com/MayBeTall/Alexa-PHP-Endpoint>



Alexa: "Hello World" using HTTPS endpoint

The screenshot shows the AWS Management Console interface for the EC2 service. The main content area is titled 'Resources' and lists the following counts for the US East (N. Virginia) region:

- 0 Running Instances
- 0 Elastic IPs
- 0 Snapshots
- 0 Dedicated Hosts
- 0 Volumes
- 0 Load Balancers
- 1 Key Pairs
- 1 Security Groups
- 0 Placement Groups

Below the resource counts, there is a 'Create Instance' section with a 'Launch Instance' button. The page also includes sections for 'Service Health' and 'Scheduled Events'. The footer contains copyright information for Amazon Web Services, Inc. and links to Privacy Policy and Terms of Use.

EC2



GIGAMIKE
AWS
USER GROUP
PHILIPPINES

Alexa: “Hello World” using HTTPS endpoint

The screenshot shows the AWS Management Console interface for the 'Launch Instance Wizard'. The current step is 'Step 1: Choose an Amazon Machine Image (AMI)'. The page provides instructions on selecting an AMI and lists several options:

- Amazon Linux AMI 2017.09.1 (HVM), SSD Volume Type - ami-1853ac65**: The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages. Root device type: ebs, Virtualization type: hvm, ENA Enabled: Yes. 64-bit.
- Amazon Linux 2 LTS Candidate AMI 2017.12.0 (HVM), SSD Volume Type - ami-428aa838**: Amazon Linux 2 is the next generation of Amazon Linux. It includes the latest LTS kernel (4.9) tuned for enhanced performance on Amazon EC2, systemd support, newer versions of glibc, gcc and binutils, and an additional set of core packages for performance and security improvements. Root device type: ebs, Virtualization type: hvm, ENA Enabled: Yes. 64-bit.
- Red Hat Enterprise Linux 7.4 (HVM), SSD Volume Type - ami-26ebbc5c**: Red Hat Enterprise Linux version 7.4 (HVM), EBS General Purpose (SSD) Volume Type. Root device type: ebs, Virtualization type: hvm, ENA Enabled: Yes. 64-bit.
- SUSE Linux Enterprise Server 12 SP3 (HVM), SSD Volume Type - ami-62bda218**: SUSE Linux Enterprise Server 12 Service Pack 3 (HVM), EBS General Purpose (SSD) Volume Type. Public Cloud, Advanced Systems Management, Web. 64-bit.

The interface includes a 'Quick Start' sidebar with options for 'My AMIs', 'AWS Marketplace', 'Community AMIs', and a 'Free tier only' filter. The bottom of the page shows the macOS dock with various application icons and the footer with '© 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use'.

Operating System



Alexa: "Hello World" using HTTPS endpoint

The screenshot shows the AWS Management Console interface for the EC2 Launch Wizard. The current step is 'Step 2: Choose an Instance Type'. The interface includes a navigation bar with the AWS logo, 'Services', and 'Resource Groups'. Below the navigation bar, there are seven steps: 1. Choose AMI, 2. Choose Instance Type (highlighted), 3. Configure Instance, 4. Add Storage, 5. Add Tags, 6. Configure Security Group, and 7. Review. The main content area displays a table of instance types with the following columns: Family, Type, vCPUs, Memory (GiB), Instance Storage (GB), EBS-Optimized Available, Network Performance, and IPv6 Support. The 't2.micro' instance type is selected, indicated by a blue checkmark and a 'Free tier eligible' badge. Below the table, there are buttons for 'Cancel', 'Previous', 'Review and Launch', and 'Next: Configure Instance Details'. The footer of the console shows 'Feedback', 'English (US)', and copyright information for Amazon Web Services, Inc. or its affiliates.

	Family	Type	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance	IPv6 Support
<input type="checkbox"/>	General purpose	t2.nano	1	0.5	EBS only	-	Low to Moderate	Yes
<input checked="" type="checkbox"/>	General purpose	t2.micro Free tier eligible	1	1	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.small	1	2	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.medium	2	4	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.large	2	8	EBS only	-	Low to Moderate	Yes
<input type="checkbox"/>	General purpose	t2.xlarge	4	16	EBS only	-	Moderate	Yes
<input type="checkbox"/>	General purpose	t2.2xlarge	8	32	EBS only	-	Moderate	Yes

Instance Type



Alexa: "Hello World" using HTTPS endpoint

The screenshot shows the AWS Management Console interface for configuring an EC2 instance. The browser tabs include Lambda Management Console, S3 Management Console, EC2 Management Console, Amazon Apps & Services Dev, and opeario.com. The URL is <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>. The navigation bar shows the user is Michael Gerard Galon in N. Virginia. The wizard progress bar indicates the current step is '3. Configure Instance Details'.

Step 3: Configure Instance Details

Configure the instance to suit your requirements. You can launch multiple instances from the same AMI, request Spot instances to take advantage of the lower pricing, assign an access management role to the instance, and more.

- Number of instances:** 1 (with a link to 'Launch into Auto Scaling Group')
- Purchasing option:** Request Spot instances
- Network:** vpc-05970063 (default) (with a link to 'Create new VPC')
- Subnet:** No preference (default subnet in any Availability Zone) (with a link to 'Create new subnet')
- Auto-assign Public IP:** Use subnet setting (Enable)
- IAM role:** None (with a link to 'Create new IAM role')
- Shutdown behavior:** Stop
- Enable termination protection:** Protect against accidental termination
- Monitoring:** Enable CloudWatch detailed monitoring (with a link to 'Additional charges apply.')
- Tenancy:** Shared - Run a shared hardware instance (with a link to 'Additional charges will apply for dedicated tenancy.')

Buttons at the bottom: Cancel, Previous, Review and Launch, Next: Add Storage.

VPC



Alexa: “Hello World” using HTTPS endpoint

The screenshot shows the AWS Management Console interface for the 'Add Storage' step of an EC2 instance launch wizard. The browser tabs include 'Lambda Management Console', 'S3 Management Console', 'EC2 Management Console', and 'Amazon Apps & Services Dev...'. The URL is 'https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard:'. The navigation bar shows 'Services', 'Resource Groups', and user information 'Michael Gerard Galon' in 'N. Virginia'.

Step 4: Add Storage
Your instance will be launched with the following storage device settings. You can attach additional EBS volumes and instance store volumes to your instance, or edit the settings of the root volume. You can also attach additional EBS volumes after launching an instance, but not instance store volumes. [Learn more](#) about storage options in Amazon EC2.

Volume Type	Device	Snapshot	Size (GiB)	Volume Type	IOPS	Throughput (MB/s)	Delete on Termination	Encrypted
Root	/dev/xvda	snap-01d62e4cbe7d0ddd0	8	General Purpose SSD (GP2)	100 / 3000	N/A	<input checked="" type="checkbox"/>	Not Encrypted

[Add New Volume](#)

Free tier eligible customers can get up to 30 GB of EBS General Purpose (SSD) or Magnetic storage. [Learn more](#) about free usage tier eligibility and usage restrictions.

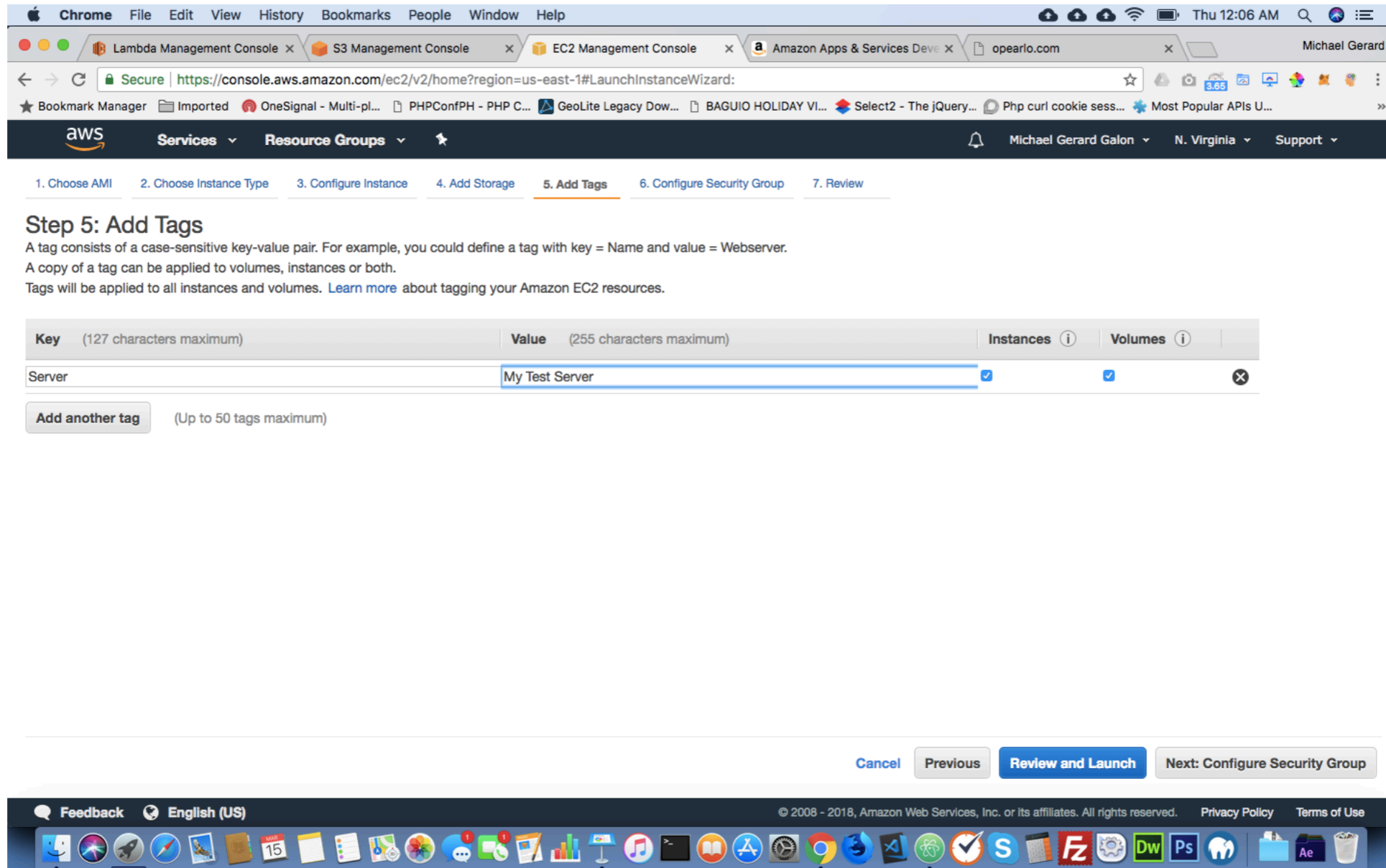
Navigation buttons: [Cancel](#) [Previous](#) [Review and Launch](#) [Next: Add Tags](#)

Footer: Feedback English (US) © 2008 - 2018, Amazon Web Services, Inc. or its affiliates. All rights reserved. Privacy Policy Terms of Use

Storage



Alexa: “Hello World” using HTTPS endpoint



The screenshot shows the AWS Management Console interface for the 'Add Tags' step in the EC2 Launch Instance Wizard. The browser address bar shows the URL: <https://console.aws.amazon.com/ec2/v2/home?region=us-east-1#LaunchInstanceWizard>. The navigation bar includes the AWS logo, 'Services', 'Resource Groups', and user information for 'Michael Gerard Galon' in 'N. Virginia'. The wizard progress bar shows steps: 1. Choose AMI, 2. Choose Instance Type, 3. Configure Instance, 4. Add Storage, 5. Add Tags (current), 6. Configure Security Group, and 7. Review.

Step 5: Add Tags

A tag consists of a case-sensitive key-value pair. For example, you could define a tag with key = Name and value = Webserver. A copy of a tag can be applied to volumes, instances or both. Tags will be applied to all instances and volumes. [Learn more](#) about tagging your Amazon EC2 resources.

Key (127 characters maximum)	Value (255 characters maximum)	Instances (i)	Volumes (i)
Server	My Test Server	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

[Add another tag](#) (Up to 50 tags maximum)

Navigation buttons: [Cancel](#), [Previous](#), [Review and Launch](#), [Next: Configure Security Group](#)

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Tags



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1. Choose AMI 2. Choose Instance Type 3. Configure Instance 4. Add Storage 5. Add Tags 6. Configure Security Group 7. Review

Step 6: Configure Security Group

A security group is a set of firewall rules that control the traffic for your instance. On this page, you can add rules to allow specific traffic to reach your instance. For example, if you want to set up a web server and allow Internet traffic to reach your instance, add rules that allow unrestricted access to the HTTP and HTTPS ports. You can create a new security group or select from an existing one below. [Learn more](#) about Amazon EC2 security groups.

Assign a security group: Create a new security group
 Select an existing security group

Security group name:
Description:

Type	Protocol	Port Range	Source	Description
SSH	TCP	22	Custom 0.0.0.0/0	e.g. SSH for Admin Desktop
HTTP	TCP	80	Custom 0.0.0.0, ::/0	e.g. SSH for Admin Desktop
HTTPS	TCP	443	Custom 0.0.0.0, ::/0	e.g. SSH for Admin Desktop

Warning
Rules with source of 0.0.0.0/0 allow all IP addresses to access your instance. We recommend setting security group rules to allow access from known IP addresses only.

Security Groups



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Step 7: Review Instance Launch

Please review your instance launch details. You can go back to edit changes for each section. Click **Launch** to assign a key pair to your instance and complete the launch process.

⚠ Improve your instances' security. Your security group, Web Server, is open to the world.
Your instances may be accessible from any IP address. We recommend that you update your security group rules to allow access from known IP addresses only. You can also open additional ports in your security group to facilitate access to the application or service you're running, e.g., HTTP (80) for web servers. [Edit security groups](#)

▼ AMI Details [Edit AMI](#)

Amazon Linux AMI 2017.09.1 (HVM), SSD Volume Type - ami-1853ac65

Free tier eligible The Amazon Linux AMI is an EBS-backed, AWS-supported image. The default image includes AWS command line tools, Python, Ruby, Perl, and Java. The repositories include Docker, PHP, MySQL, PostgreSQL, and other packages.
Root Device Type: ebs Virtualization type: hvm

▼ Instance Type [Edit instance type](#)

Instance Type	ECUs	vCPUs	Memory (GiB)	Instance Storage (GB)	EBS-Optimized Available	Network Performance
t2.micro	Variable	1	1	EBS only	-	Low to Moderate

▼ Security Groups [Edit security groups](#)

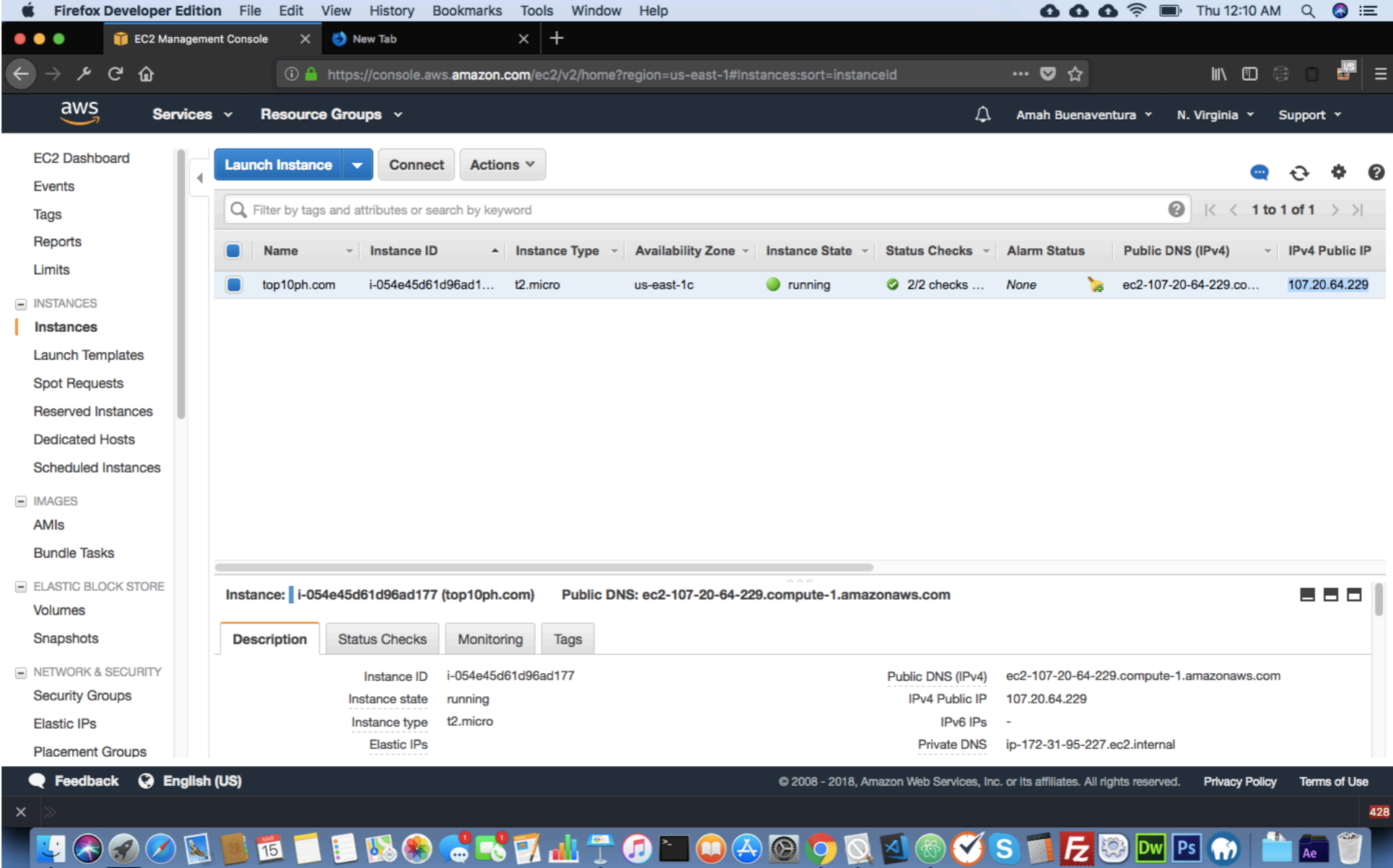
Security group name: Web Server

[Cancel](#) [Previous](#) [Launch](#)

EC2 Instance Review



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The screenshot displays the AWS Management Console interface in a Firefox Developer Edition browser. The main content area shows a list of EC2 instances with the following table:

Name	Instance ID	Instance Type	Availability Zone	Instance State	Status Checks	Alarm Status	Public DNS (IPv4)	IPv4 Public IP
top10ph.com	i-054e45d61d96ad1...	t2.micro	us-east-1c	running	2/2 checks ...	None	ec2-107-20-64-229.co...	107.20.64.229

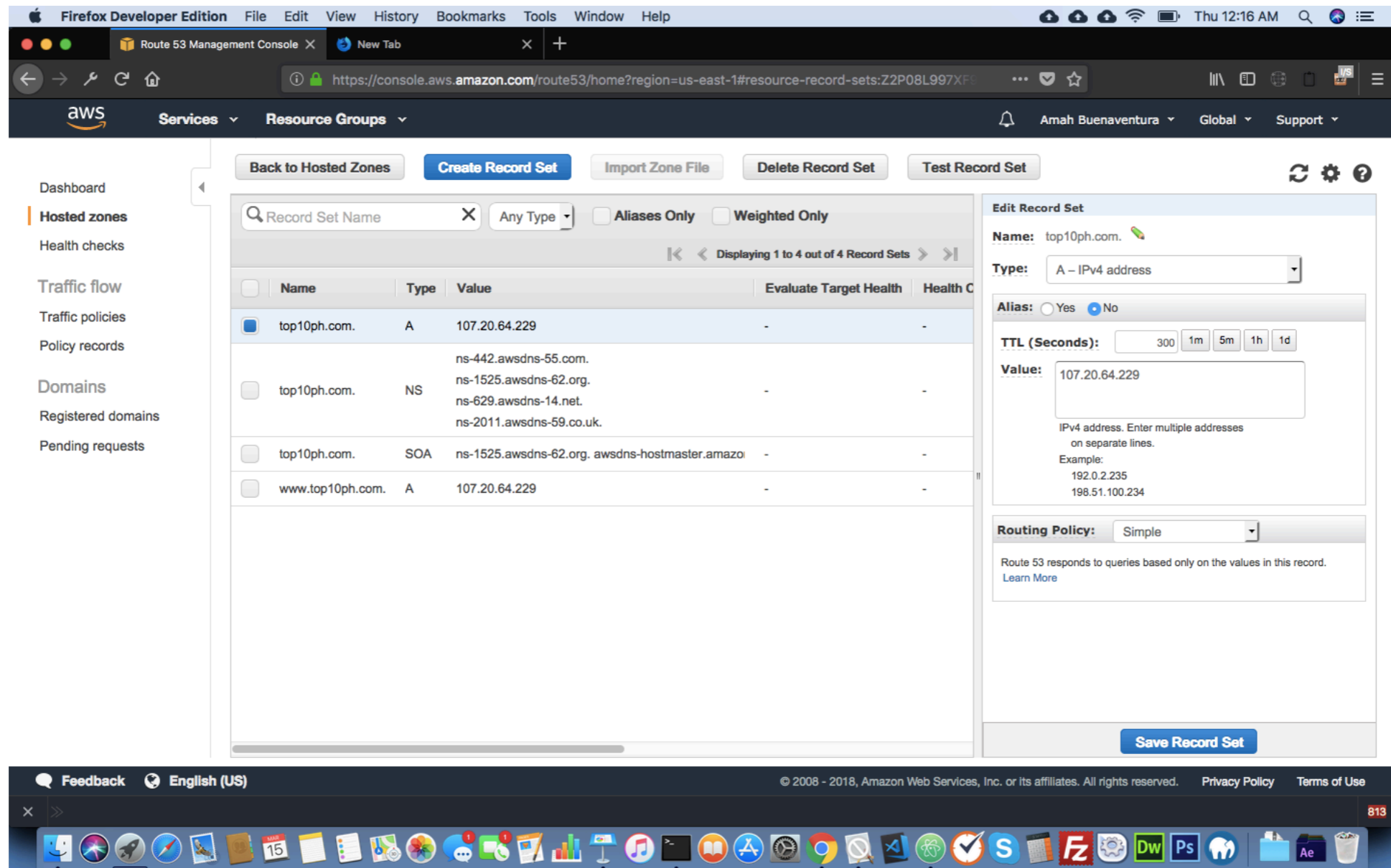
Below the table, the details for the selected instance (i-054e45d61d96ad177) are shown:

- Instance ID: i-054e45d61d96ad177
- Instance state: running
- Instance type: t2.micro
- Public DNS (IPv4): ec2-107-20-64-229.compute-1.amazonaws.com
- IPv4 Public IP: 107.20.64.229
- IPv6 IPs: -
- Private DNS: ip-172-31-95-227.ec2.internal

EC2 Instance Up



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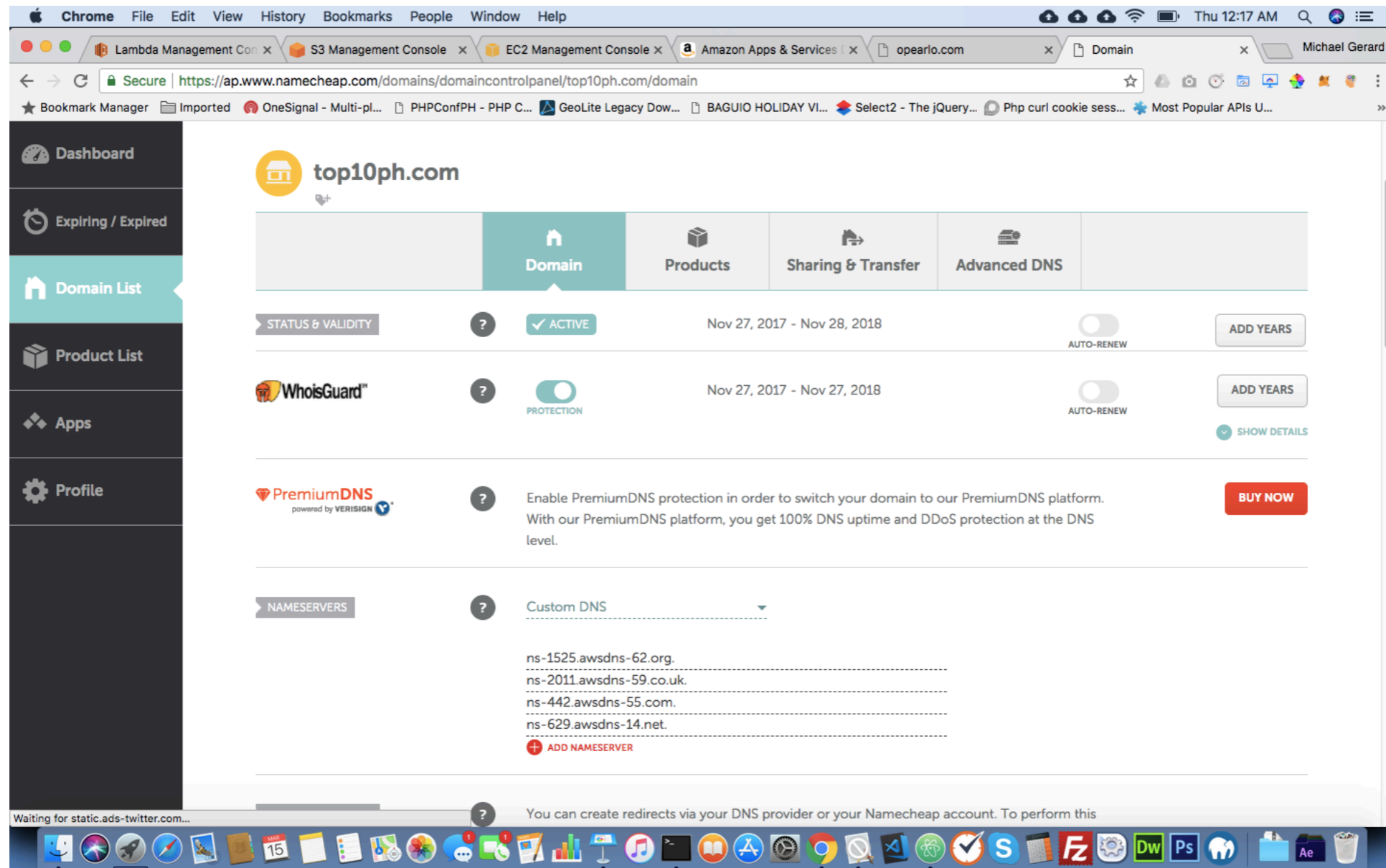
The screenshot displays the AWS Route 53 Management Console in a Firefox Developer Edition browser. The interface shows a list of record sets for the domain top10ph.com. The selected record set is an A record with the value 107.20.64.229. The console also shows the details for this record set, including the type (A - IPv4 address), TTL (300 seconds), and routing policy (Simple).

Name	Type	Value	Evaluate Target Health	Health Check
<input checked="" type="checkbox"/> top10ph.com.	A	107.20.64.229	-	-
<input type="checkbox"/> top10ph.com.	NS	ns-442.awsdns-55.com. ns-1525.awsdns-62.org. ns-629.awsdns-14.net. ns-2011.awsdns-59.co.uk.	-	-
<input type="checkbox"/> top10ph.com.	SOA	ns-1525.awsdns-62.org. awsdns-hostmaster.amazo	-	-
<input type="checkbox"/> www.top10ph.com.	A	107.20.64.229	-	-

Route53



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The screenshot shows a web browser window displaying the Namecheap domain control panel for the domain top10ph.com. The browser's address bar shows the URL https://ap.www.namecheap.com/domains/domaincontrolpanel/top10ph.com/domain. The page features a sidebar with navigation options: Dashboard, Expiring / Expired, Domain List (selected), Product List, Apps, and Profile. The main content area is titled 'top10ph.com' and has tabs for Domain, Products, Sharing & Transfer, and Advanced DNS. Under the 'Domain' tab, there are sections for 'STATUS & VALIDITY' (showing 'ACTIVE' status from Nov 27, 2017 to Nov 28, 2018), 'WhoisGuard™' (showing 'PROTECTION' from Nov 27, 2017 to Nov 27, 2018), and 'PremiumDNS' (with a 'BUY NOW' button). The 'NAMESERVERS' section shows 'Custom DNS' with a list of nameservers: ns-1525.awsdns-62.org, ns-2011.awsdns-59.co.uk, ns-442.awsdns-55.com, and ns-629.awsdns-14.net. A footer note states: 'You can create redirects via your DNS provider or your Namecheap account. To perform this'.

Domain Registrar



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```
Terminal Shell Edit View Window Help
aws — ec2-user@ip-172-31-95-227:~ — ssh -i gigamike.pem ec2-user@ec2-107-20-64-229.compute-1.amazonaws.com — 141x40
[Michaels-MacBook-Air:aws michaelgerardgalon$ cd /Users/michaelgerardgalon/Sites/presentation/alexa/aws
[Michaels-MacBook-Air:aws michaelgerardgalon$ ls
gigamike.pem
[Michaels-MacBook-Air:aws michaelgerardgalon$ chmod 400 gigamike.pem
[Michaels-MacBook-Air:aws michaelgerardgalon$ ssh -i "gigamike.pem" ec2-user@ec2-107-20-64-229.compute-1.amazonaws.com
Last login: Wed Mar 14 16:13:49 2018 from 112.210.55.10

  __|  __|_  )
 _| (  /  Amazon Linux AMI
---|\___|___|

https://aws.amazon.com/amazon-linux-ami/2017.09-release-notes/
-bash: warning: setlocale: LC_CTYPE: cannot change locale (UTF-8): No such file or directory
[ec2-user@ip-172-31-95-227 ~]$
```

SSH Access EC2



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Access EC2 via SSH

```
chmod 400 gigamike.pem  
ssh -i "gigamike.pem" ec2-user@ec2-54-82-253-160.compute-1.amazonaws.com
```

Installing Apache PHP

```
sudo yum update -y  
sudo yum install -y httpd24 php70  
sudo yum install -y mod24_ssl  
sudo service httpd start  
sudo chkconfig httpd on  
sudo usermod -a -G apache ec2-user  
exit  
sudo chown -R ec2-user:apache /var/www  
sudo chmod 2775 /var/www
```



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Apache Configuration

```
cd /var/www/  
mkdir top10ph.com  
cd top10ph.com/  
mkdir public_html  
echo "Hello World" > /var/www/domain.com/public_html/index.php  
sudo mkdir /etc/httpd/sites-available  
sudo mkdir /etc/httpd/sites-enabled  
sudo vi /etc/httpd/conf/httpd.conf  
Add this line: IncludeOptional sites-enabled/*.conf  
sudo vi /etc/httpd/sites-available/domain.com.conf  
<VirtualHost *:80>  
    ServerName www.domain.com  
    ServerAlias domain.com  
    DocumentRoot /var/www/domain.com/public_html  
    ErrorLog /var/www/domain.com/error.log  
    CustomLog /var/www/domain.com/requests.log combined  
</VirtualHost>  
sudo ln -s /etc/httpd/sites-available/domain.com.conf /etc/httpd/sites-enabled/domain.com.conf  
find /var/www -type d -exec sudo chmod 2775 {} \  
find /var/www -type f -exec sudo chmod 0664 {} \  
apachectl restart
```



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Installing SSL/HTTPS

```
sudo yum-config-manager --enable epel
sudo wget https://dl.eff.org/certbot-auto
sudo chmod a+x certbot-auto
sudo ./certbot-auto --debug
```

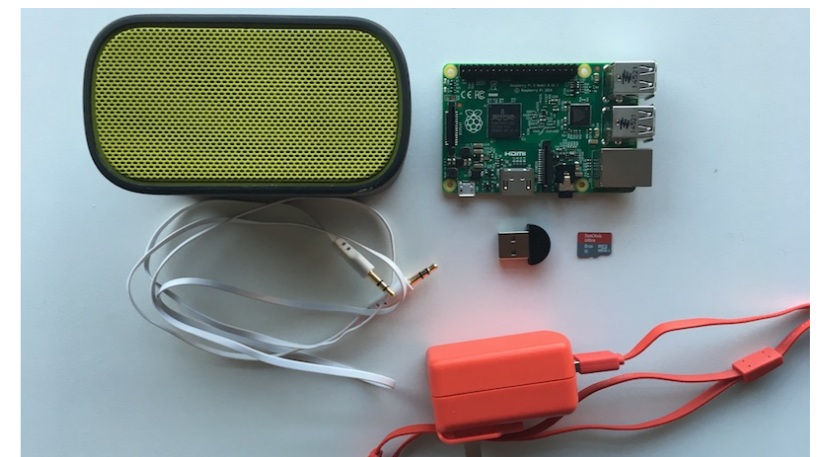
Installing Git

```
cd /var/www/domain/public_html
sudo yum install git -y
git clone https://github.com/MayBeTall/Alexa-PHP-Endpoint.git
```

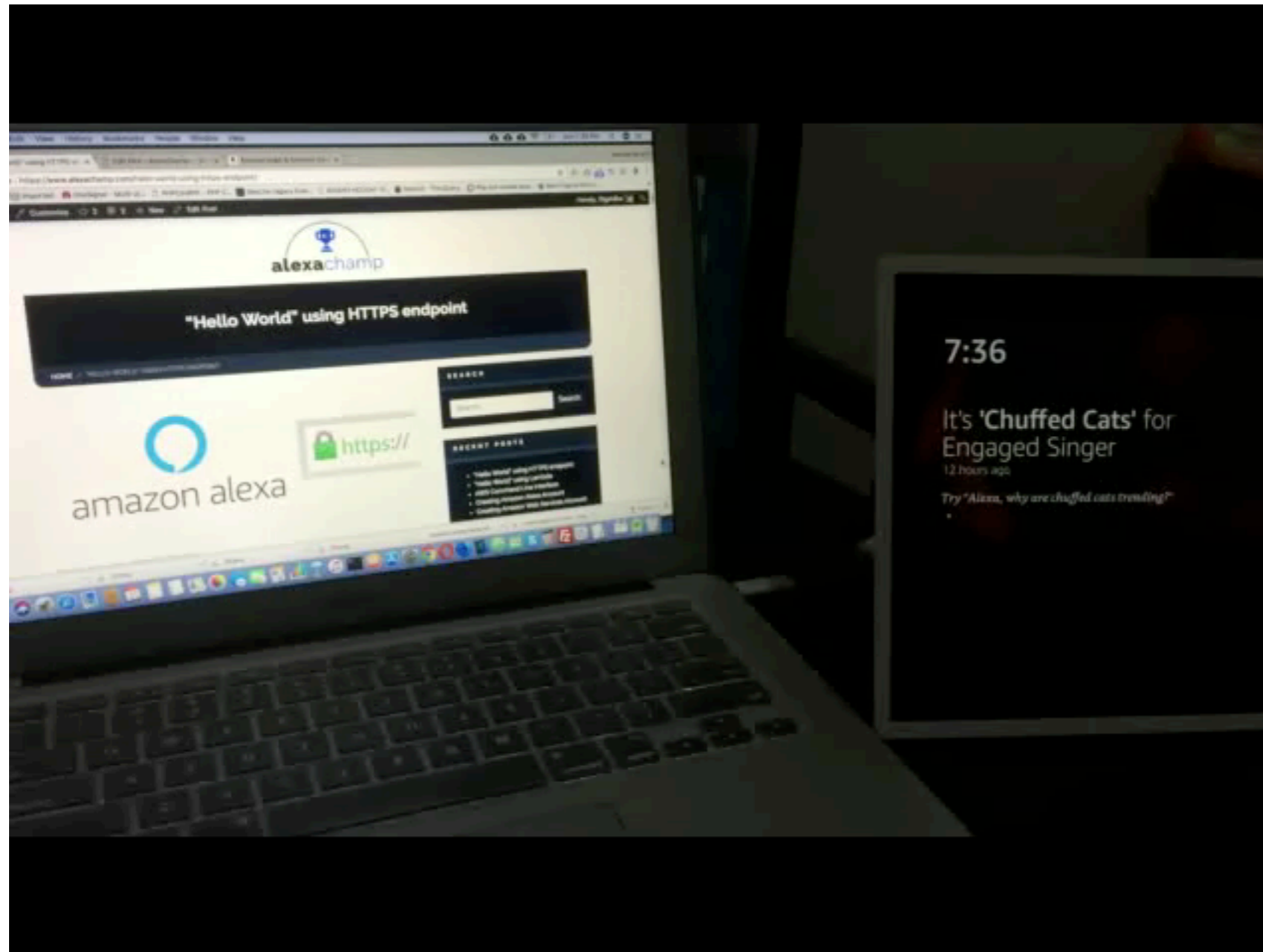


Test

- **Device**
 - **Amazon Echo**
 - **Raspberry PI**
 - <https://github.com/alexa/avs-device-sdk>
 - **Echosim.io: Alexa Skill Testing Tool**
 - <https://echosim.io/welcome>
 - **Amazon Developer Account**
 - <https://developer.amazon.com/>



Alexa: "Hello World"



Others/Tools

- **Alexa Skills Kit**
 - <https://developer.amazon.com/docs/ask-overviews/build-skills-with-the-alexa-skills-kit.html>
- **AWS CLI**
 - <https://docs.aws.amazon.com/cli/latest/userguide/cli-chap-welcome.html>
- **Editor**
 - Atom, Visual Studio Editor
- **Debugging**
 - Cloudwatch
- **Programming Language Framework**
 - NodeJS: Mocha Test Framework
 - Python: Flask-Ask
- **Hosting**
 - Heroku, EC2 free instance (under free tier account)

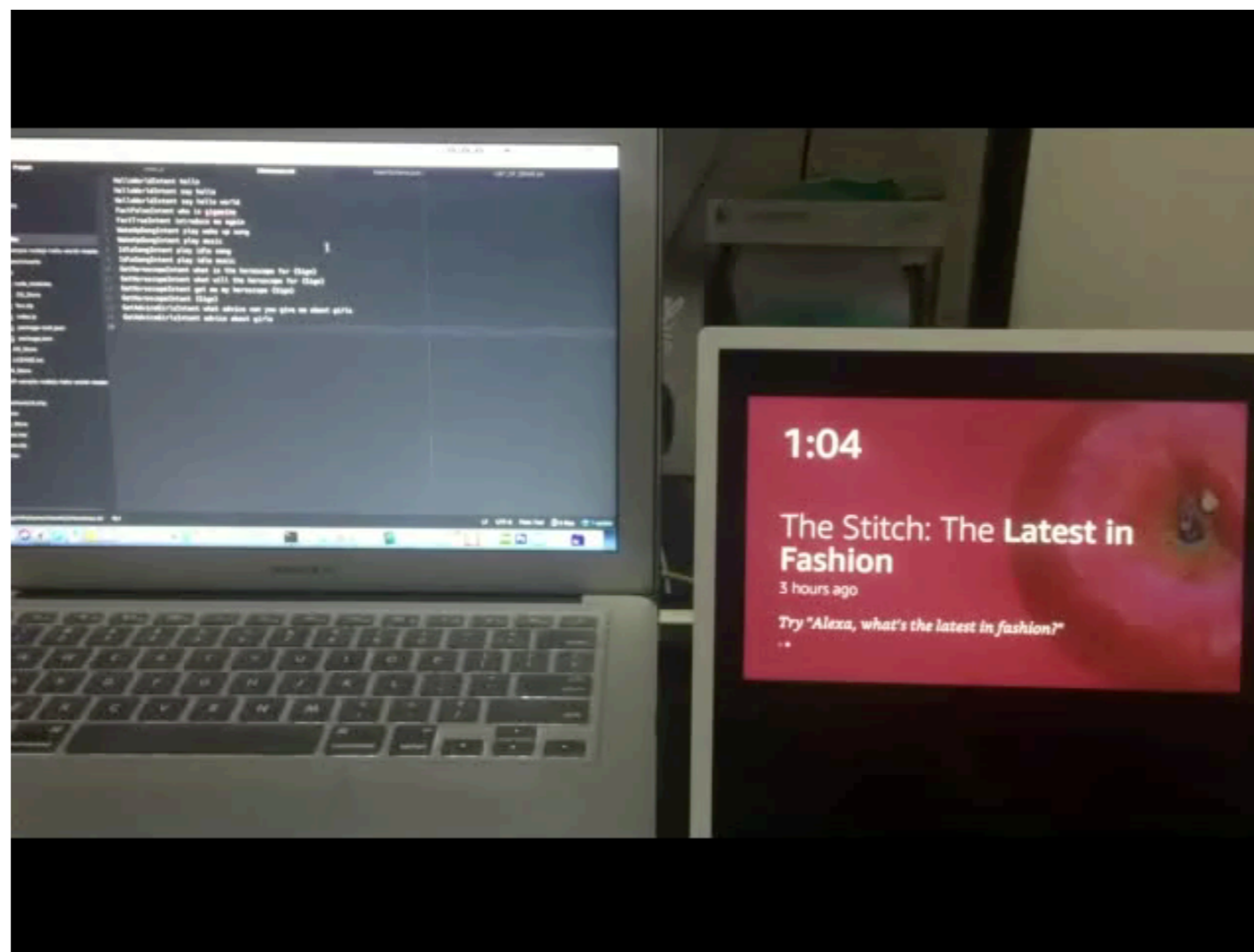


Others/Advance

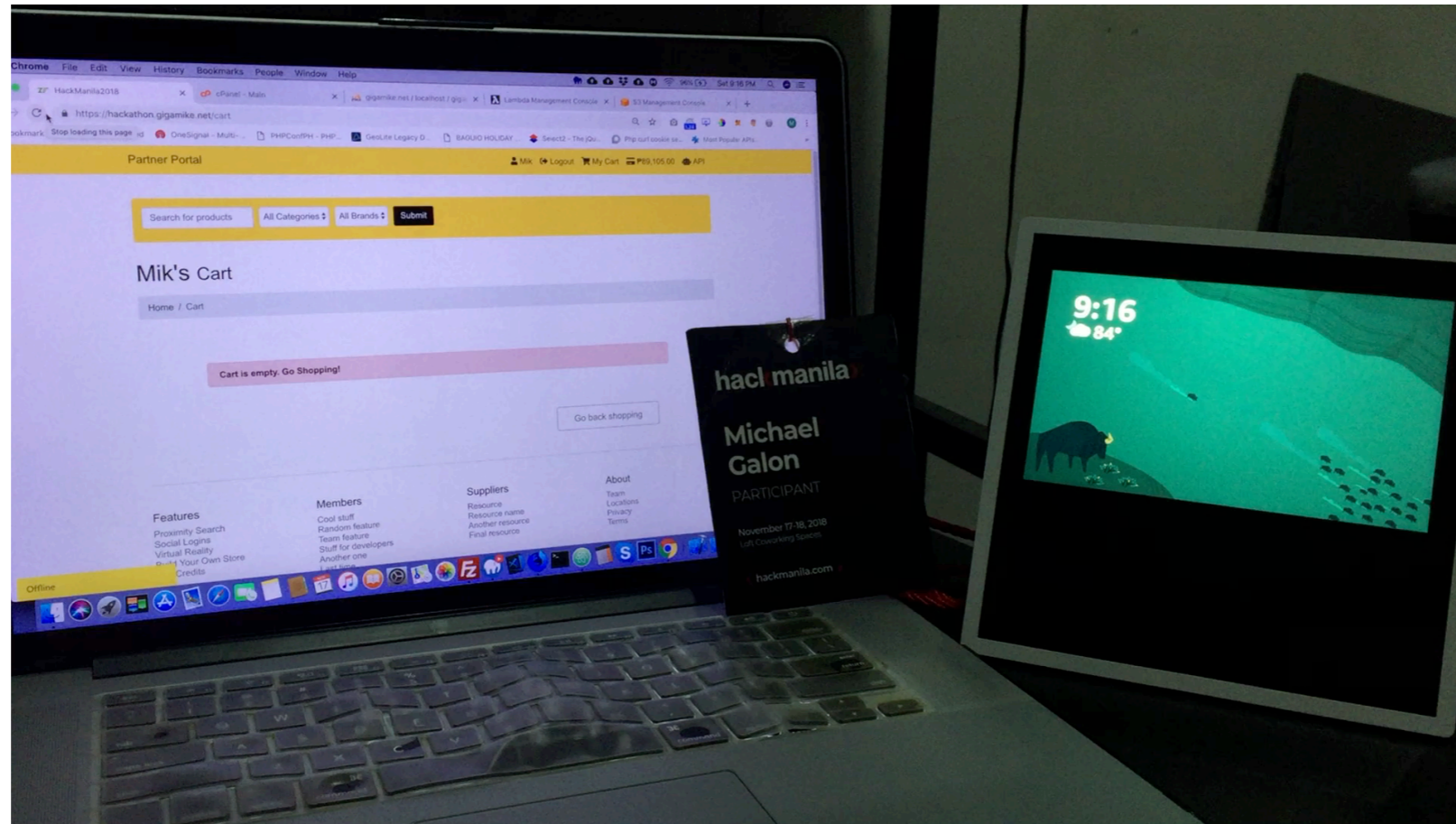
- **Speech Synthesis Markup Language (SSML)**
 - **Link Account = OAuth 2.0**
 - **Video/Audio**
 - **Web Services/API**
 - **Make Money with Your Alexa Skill**
 - In-Skill Purchasing
 - Amazon Pay for Alexa Skills
 - Alexa Developer Rewards
 - **Bluetooth application**
 - **Distribution and Certification**
 - **AWS Certified Alexa Skill Builder – Specialty Beta Exam**
-



SSML



Web Services/API



Questions?

Please Support

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 gigamike@gigamike.net

 www.alexachamp.com

 www.hackathon.ph



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