Ian Talarico

Ian is the Technical Lead for the Cloud# Team’s Tooling and Diagnostic efforts. He has spent the last 5 year at Google working on developer tools. Ian strives to ensuring internal and external developers have a simple, intuitive and hassle free experience when using Google’s tools.

Talk location: 747 6th St S, Kirkland, WA, us

Simon (Google) – one of the organizers of the meetup.

<https://github.com/GoogleCloudPlatform/dotnet-docs-samples/tree/master/applications/googlehome-meets-dotnetcontainers>

Google Home + ASP.NET Core on Google Cloud

Google Home Mini -> Google Asisstant -> Dialogflow (HTTPS) -> {Google Cloud Platform [ASP.NET Core App (App Engine/GKE) Stackdriver ] }-> Vision API / -> Big Query -> Search

Dialogflow

An end-to-end developer platform for building natural and rich conversational experiences.

*Easy integration of devices*

Runs on any platform

Across devices

Around the world

Dialogflow – use machine learning to understand what users are saying

*Book a flight from Los Angeles to Hawaii for less than $300.*

*“Intent”*

*Hey Google, let me talk to my test app.*

*Hey Google, what am I running?*

*Running on Google.engine. dotnetcontainers.*

Dialogflow - Training phrases

Google Cloud Platform

*Collection of services*

Computer, Storage and databases, networking, big data, machine learning, identity & security, management tools, developer tools.

Tools for GCP/AWS

Easily get Cloud SDK using powershell

GCP

Highly customizable

Computer engine

Cloud launcher – enables users get an image setup

Middle ground of customizable and managed

Kubernetes Engine

App Engine

Container Builder

Container Registry

Highly managed

Cloud managed

Cloud launcher

Creates a template setup, size of the machine you want

Cores and Memory

*no need to worry about installation*

.NET container on Google Cloud Platform

A lightweiught way to virtualize applications

Linux (or Windows) processes

.NET deployment options

Compute engine

ASP.NET Core on Linux

App engine

Kubernetes engine

Microsoft SQL Server on Compute engine

App Engine (flex)

*Shows basic telemetry*

*You can have versions of your applications*

*You can use multiple versions of your applications*

*You can split traffic by IP Address, Cookie, Random*

Autoscaling

Kubernetes

Means “governor”.

Manages applications

Manages container clusters

Manage applications not machines

*The system will bring it back up.*

Google Kubernetes Engine (GKE)

Managed service

*Show what APIs are managed*

*Show what permissions are*

*Q: Better than docker? Or worse?*

*A: It uses docker images*

Machine Learning and Big Data

Use our pre-trained models

Create & serve your custom models

*TensorFlow*

Using Models: Machine Learning APIs

Vision API

*Hey Google let me talk to my test app*

*Let’s use the Vision API*

*Images of Seattle*

*Select image 5*

*Describe this image*

*Is this image safe?*

*Are there any landmarks in this picture?*

*A: Seattle.*

Big Query

Based on internal Google technology Gremmel?

Massively Parallel Processing

*Hey Google let me talk to my test app*

*Let’s use the Big Query API*

*What was the top hacker news on January 2, 2015*

Returned: top 10 news.

*Goodbye*

Maintaining your App: Stackdriver

SaaS package for monitoring, logging, and diagnostics

Dialogflow -> [ (Kubernetes Engine) Stackdriver]] ->

*Error Reporting*

*Throw exception*

*Hey Google let me talk to my test app*

*Throw an exception*

Return: my test app isn’t responding right now.

*You can also have logging*

*Logging framework and push to stackdriver*

*We take the event id if possible.*

*GAE Application -> Default Service -> V3/V4 – you can see what is running*

*NuGet package - > you can configure how fast*

*Q: logs of different type of format?*

*A: there’s an API you can use and can accept any format.*

*Q: aggregation of logs?*

*A: Yes. You can create your own dashboards. Either thru the API of stackdrive or the engine. For exceptions, you can use error reporting.*

*Q: is is GDE compliant?*

*A: Yes, it is.*

Q: what about load balance? Which machine it came from?

A: Yes, you can see it.

Trace list

*Same NuGet Package with logging*

*Trace the length of how long the request was run*

*Conversation request - > Dialog -> Conversation - > platform.describe*

Debugger (Stackdriver)

*.NET Core debugger*

*When deploying in Google Engine, it will send request to all that is running, and return info.*

*Hey Google, let me talk to my test app*

*Let’s use the Vision API*

*Images of Seattle*

Returned: breakpoint debugging

*Q: Concurrent requests of users?*

*A: Greedy algorithm. You and I can use the breakpoint simultaneously.*

*Q: if two users debug?*

*A: first breakpoint encountered will be returned first.*

*Hey Google let me talk to my test app*

*Let me talk to the Vision API*

*Images of Seattle*

Returned: debug breakpoint. next error is in queue

*Q: does it keep the user’s data is encrypted?  
A: stored in debugger, can be seen by people in the project. Auto block credit cards, etc.*

*Q: can I debug GCP in VS?*

*A: Not yet.*

*Q: Advantage of GCP?*

*A: comfortable. You know it’s there. No remote connection needed.*

*Q: how to get to the right source?*

*A: it will grab most current commit.*

*Q: service integrate with VS?*

*A: nope. All this does is take a snapshot of everything.*

*Negligible overhead. When breakpoint hit, when breakpoint evaluated. Less than 10MB.*

In VS Dockerfile,

FROM gr.io/dotnet-debugger/aspnetcore: 2.0

COPY . /app

WORKDIR /app

EXPOSE 8080 8443

ENV ASPNETCORE\_URLS=http://\*:8000

COPY ./source-context.json /usr/share/dotnet-debugger/agent

ENTRYPOINT [“/usr/share/dotnet-debugger/start-debugger.sh”, “dotnet”, “/app/GOogleHomeAspNetCoreDe…

*Just like a regular container*

In Program.cs

.UseGoogleDiagnostics() // pulls everything, metadata, automatically

public static void

Right panel

Google App Engine

Google Compute Engine

Google Cloud Storage

Google Cloud SQL

Google Cloud Pub/Sub

*You can sign in*

*You can filter projects*

*cloud-sharp-projects*

*Kubernetes*

*Publish*

*That’s our tooling inside VS.*

*Q: Is there a way to isolate logs on local dev?*

*A: if you’re running on one of our services, you don’t have to worry about logs(?). it will be locked in the global.*

*You can do conditional breakpoints. If you have variable in your controller.*

*Q: does it support, event-based handling, like subscripting to some events in the cloud?*

*A: you can do that with throw functions.*

*Q: In Azure you can push measures, can you do that?*

*A: there is a C# library for that.*

*Data studio*

*You can migrate Azure to GCP.*

*The debuggers right now is for containers only. In the Alpha phase.*

*It is served right now in an Ubuntu container*

*No reason to not be able to use in Azure*

Open positions at Google. e-mail [vsubramani@google.com](mailto:vsubramani@google.com) or the business cards.

Looking for .NET developers in Google Kirkland.