

**NAV  
TECH  
DAYS  
2017**

mibuso.com

# AZURE FUNCTIONS DEEP DIVE

VJEKOSLAV BABIC  
CLOUD READY SOFTWARE

**WHEN YOU ARE PASSIONATE ABOUT MICROSOFT DYNAMICS NAV | [www.navtechdays.com](http://www.navtechdays.com)**

**NAV  
TECH  
DAYS  
2017**

mibuso.com

# About me

- **Vjekoslav Babić**  
developer, consultant, trainer, blogger, author



- Twitter: @vjekob  
Mibuso: Vjeko  
Blog: vjeko.com
- Author of:
  - **Too many** How Do I... videos for MSDN and PartnerSource
  - Even more blog posts and articles about NAV
  - Quite some **crazy tips and tricks**

?

What

How

Why



# THEORY





**PRACTICE**





FaaS

# FaaS

Function as a Service



# Serverless Architecture



# SERVERLESS ARCHITECTURE



# LOOK, MA, NO HANDS!



# Serverless Architecture

Cloud-based

Event-driven

Stateless

Short-lived

Zero-  
administration



### Choice of language

- C#, F#, Python, JavaScript, PHP, batch, bash, ...



### Pay-per-use pricing model

- Affordable model, nearly free



### Support dependencies

- NuGet and NPM



### Integrated security

- OAuth: AAD, Google, Twitter, Facebook, ...



### Flexible development

- Visual Studio, Git



### Open-source

- Runtime available on Git

<https://github.com/azure/azure-webjobs-sdk-script>

# How are Azure Functions invoked

## Azure Triggers

- Blob
- Event hub
- Storage queue
- Service bus

## Other triggers

- HTTP request
- Timer

## Hooks

- GitHub
- Generic



# Azure Functions Architecture

## Function Application

- Settings
- Security
- Authentication
- Service plan
- Resource management
- Deployment options

### Function<sub>1</sub>

- Source code
- Language
- Access keys
- Triggers
- Bindings
- Monitoring

### Function<sub>2</sub>

- Source code
- Language
- Access keys
- Triggers
- Bindings
- Monitoring

### Function<sub>n</sub>

- Source code
- Language
- Access keys
- Triggers
- Bindings
- Monitoring

# Demo

and consuming

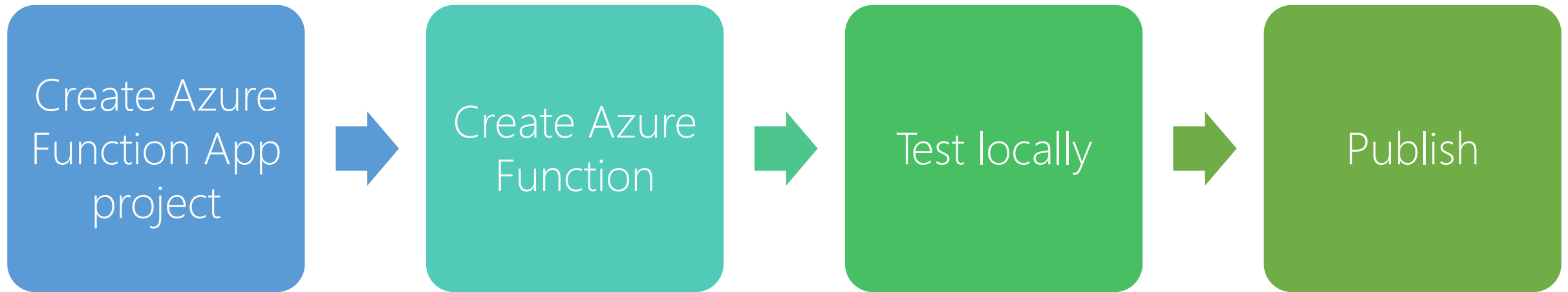
Creating Azure Functions

# Developing Azure Functions





# Visual Studio Development Workflow



# Demo

and consuming  
/

Creating Azure Functions  
Using Visual Studio 2017

# Debugging Azure Functions

Local  
debugging

Remote  
debugging  
with source  
code

Remote  
debugging  
with binaries



# Demo

Debugging Azure Functions  
Using Visual Studio 2017


local



# Remote debugging configuration


## Publish

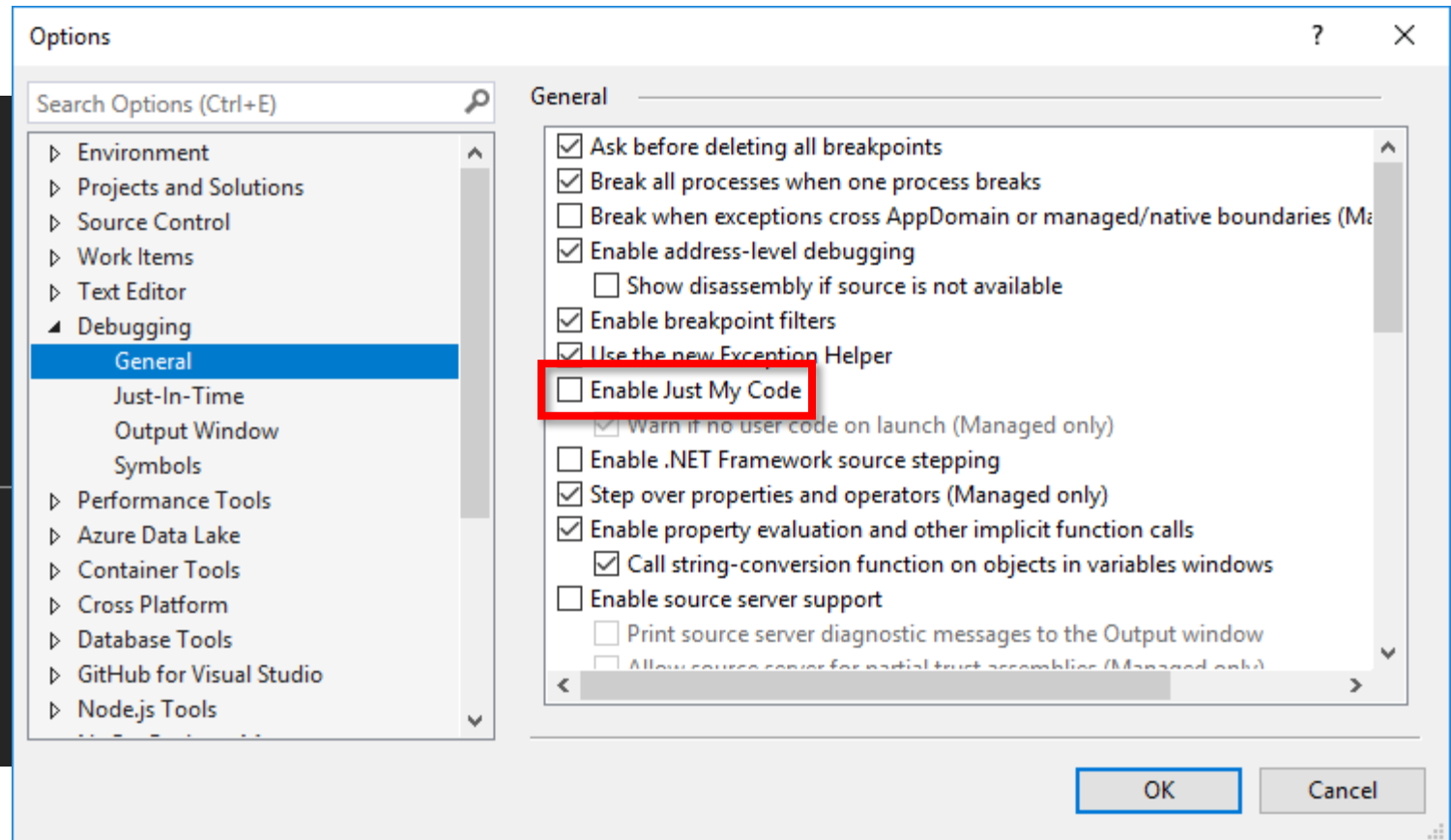
Publish your app to Azure or another host. [Learn more](#)

 TestTechDaysNLRG - Web Deploy ▼ Publish

[Create new profile](#)

## Summary

Site URL	<a href="http://testtechdaysnlrg.azurewebsites.net">http://testtechdaysnlrg.azurewebsites.net</a> 
Configuration	Debug
Delete existing files	False
Username	\$TestTechDaysNLRG
Password	*****



# Demo

remote

Debugging Azure Functions  
Using Visual Studio 2017

# Why do we need Azure Functions

Integrating  
service  
workflows

Providing web  
APIs

Replacing  
.NET  
interoperability

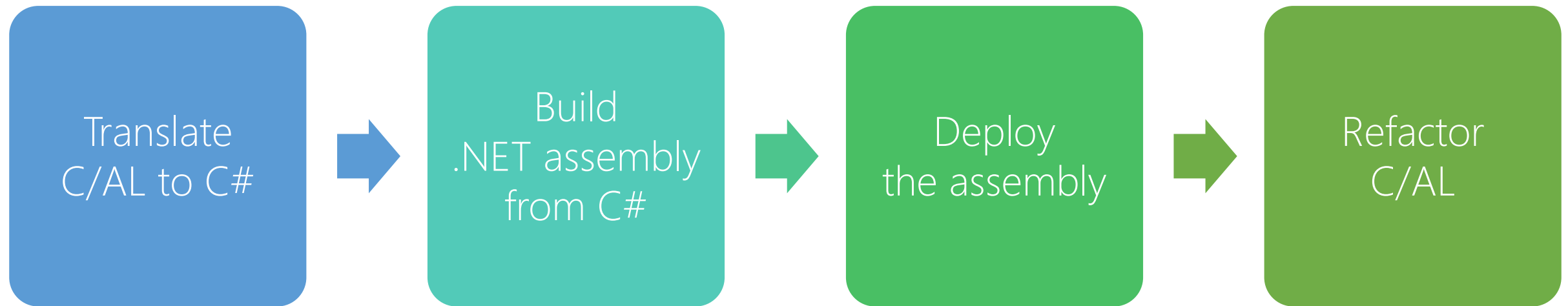
# Replacing .NET

When written  
completely in  
C/AL

When written in  
C# or VB.NET or  
...



# Replacing C/AL.NET with Azure Functions



# Demo

When implemented  
completely in C/AL

Replacing DotNet with  
Azure Functions

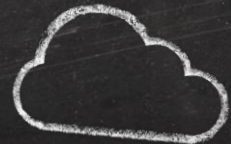
# Replacing C# with Azure Functions





# Demo

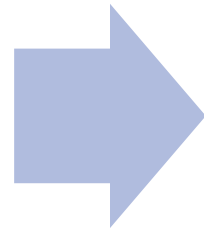
Replacing C# with  
Azure Functions



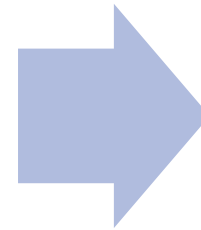


# Continuous deployment

Publish source  
to repository



Configure app  
deployment  
options



**KEEP  
CALM  
AND  
CARRY  
ON**

# Continuous deployment providers

BitBucket

Dropbox

Git (local)

GitHub

OneDrive

Visual Studio  
Team Services

# Demo

Continuous deployment  
Using Git



Git  
ROCKS  
!!!

# Performance of Azure Functions



mibusg.com

Well...



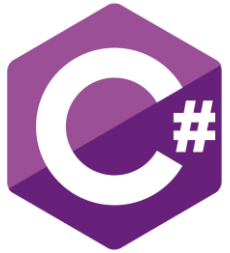


# Demo



Performance  
of  
Azure functions

# Which language?





# Demo

My language is better  
Than  
Your language

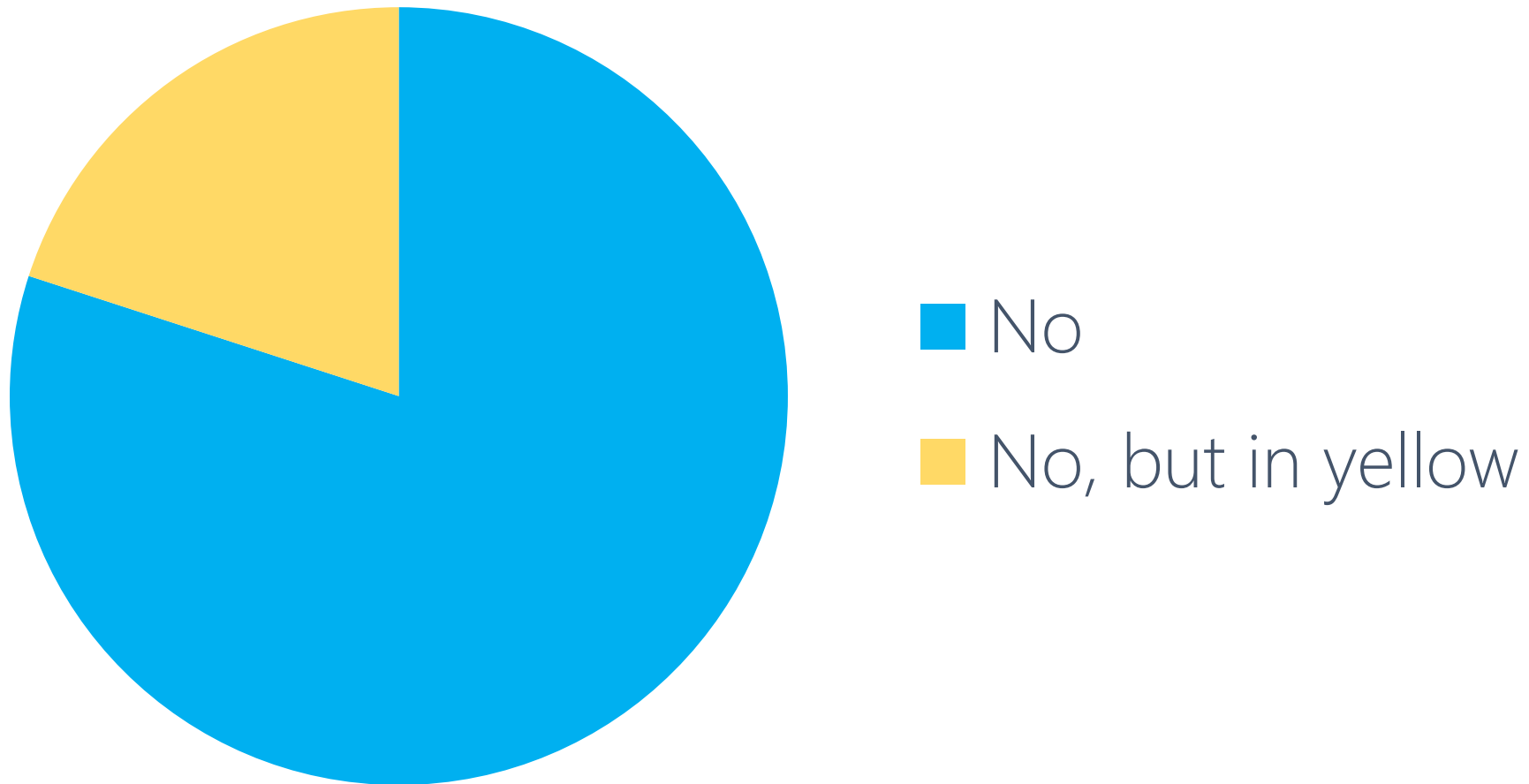


# Securing Azure Functions

- Access Tokens
- OAuth
  - Azure AD
  - Twitter
  - Facebook
  - Google
  - Microsoft Account



# Does security through obscurity work?



# Demo

Securing access  
to  
Azure Functions





*"That's all Folks!"*



**NAV  
TECH  
DAYS  
2017**

mibuso.com

Thank you!