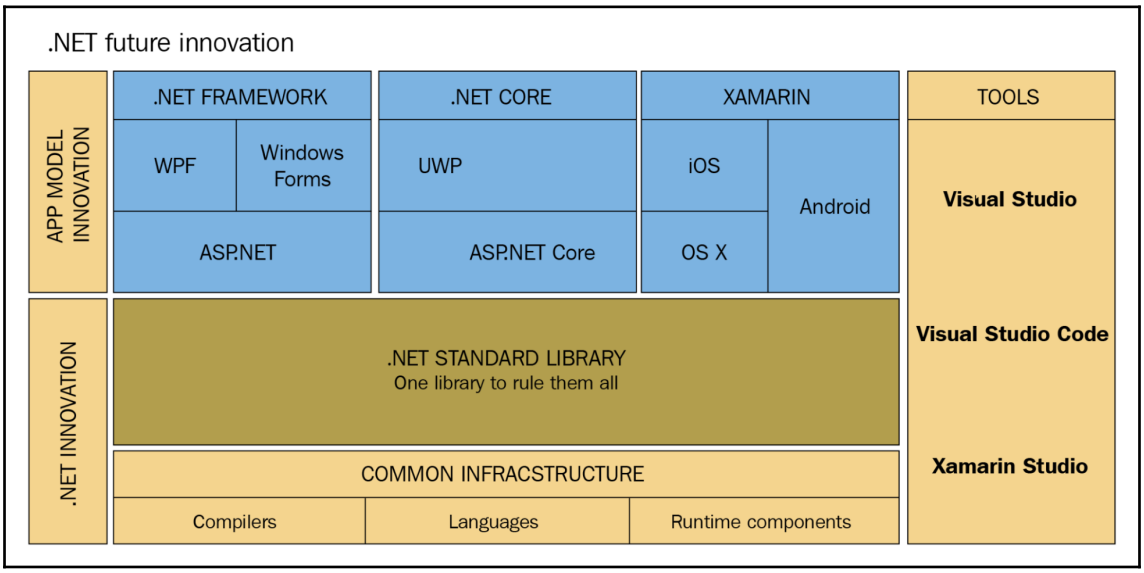
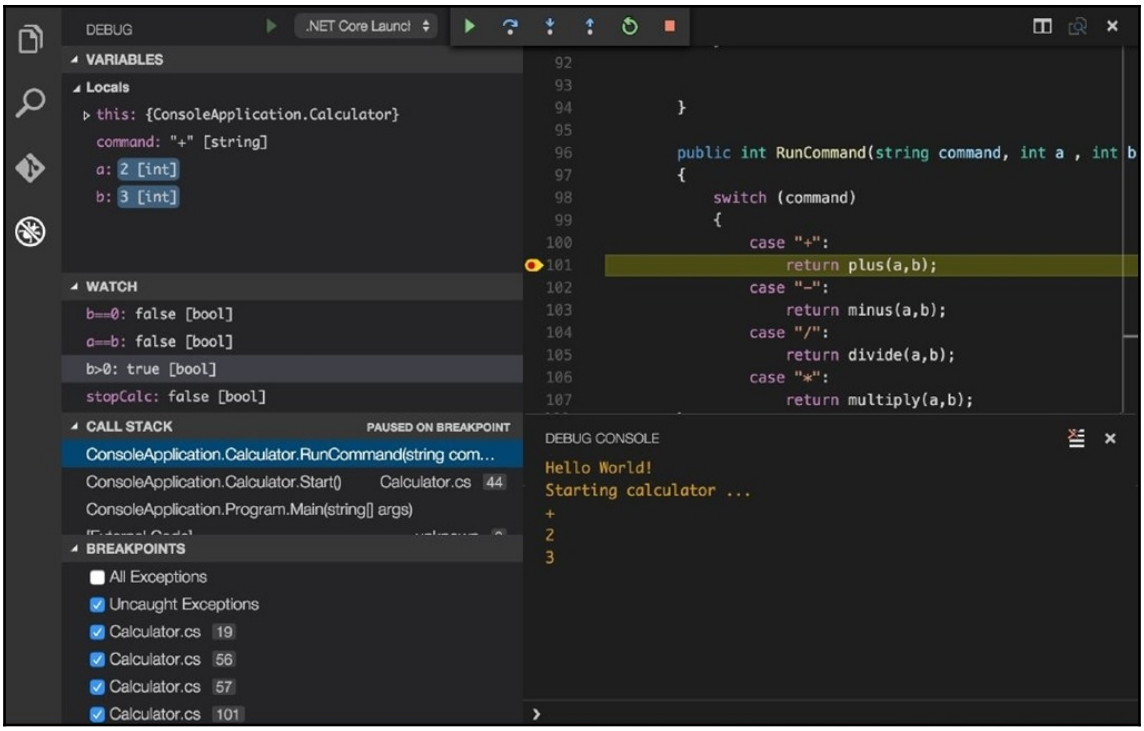
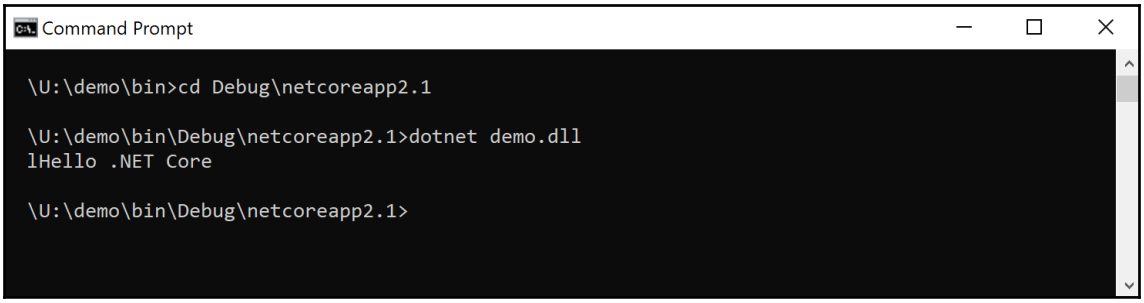
Chapter 1: 1.Getting Started with .NET Core

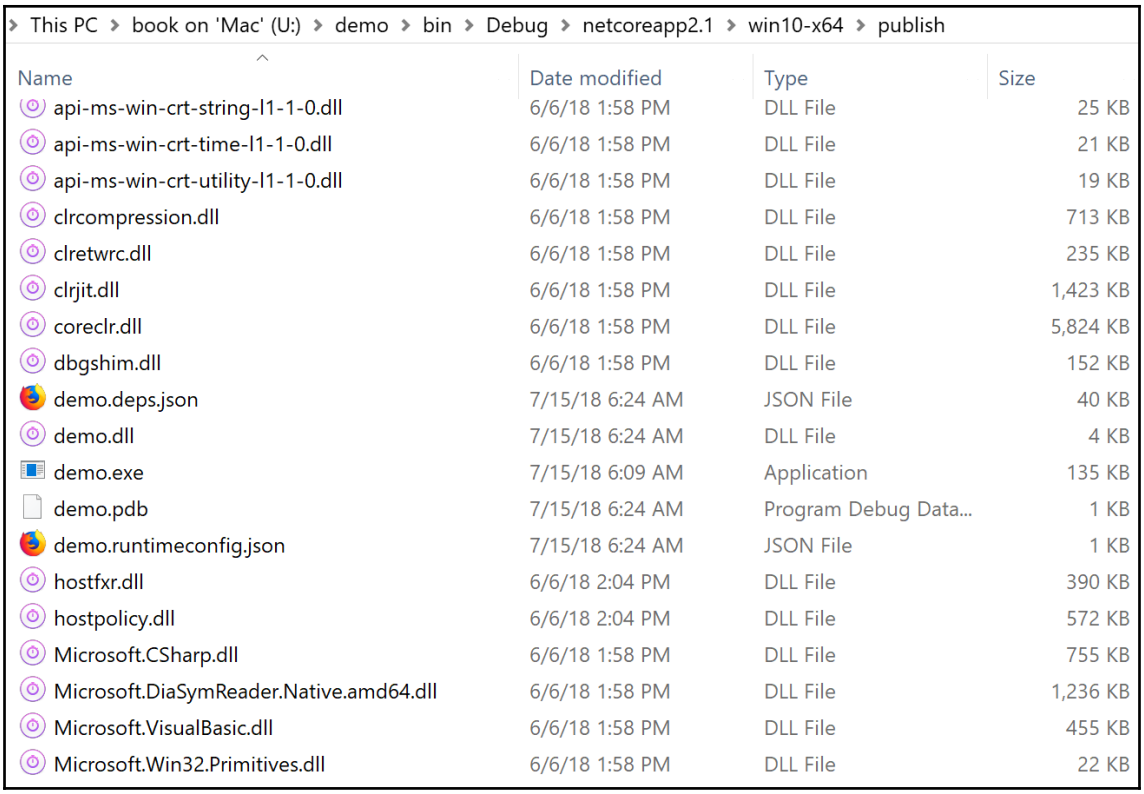



DEBUG
.NET Core Launcl
VARIABLES
Locals
this: {ConsoleApplication.Calculator}
command: "+" [string]
a: 2 [int]
b: 3 [int]
WATCH
b==0: false [bool]
a==b: false [bool]
b>0: true [bool]
stopCalc: false [bool]
CALL STACK
PAUSED ON BREAKPOINT
ConsoleApplication.Calculator.RunCommand(string com...
ConsoleApplication.Calculator.Start() Calculator.cs 44
ConsoleApplication.Program.Main(string[] args)
BREAKPOINTS
All Exceptions
Uncaught Exceptions
Calculator.cs 19
Calculator.cs 56
Calculator.cs 57
Calculator.cs 101
92
93
94 }
95
96 public int RunCommand(string command, int a , int b
97 {
98 switch (command)
99 {
100 case "+":
101 return plus(a,b);
102 case "-":
103 return minus(a,b);
104 case "/":
105 return divide(a,b);
106 case "*":
107 return multiply(a,b);
DEBUG CONSOLE
Hello World!
Starting calculator ...
+
2
3

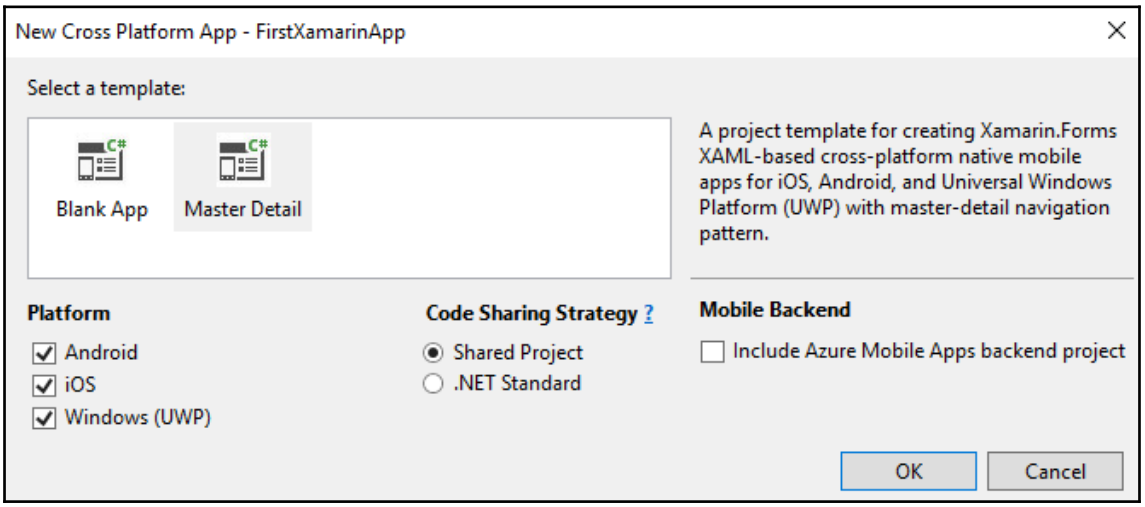
```
Cans-MBP:demo can.bilgin$ dotnet new console
The template "Console Application" was created successfully.

Processing post-creation actions...
Running 'dotnet restore' on /Volumes/Data/book/demo/demo.csproj...
  Restoring packages for /Volumes/Data/book/demo/demo.csproj...
  Generating MSBuild file /Volumes/Data/book/demo/obj/demo.csproj.nuget.g.props.
  Generating MSBuild file /Volumes/Data/book/demo/obj/demo.csproj.nuget.g.targets.
  Restore completed in 236.91 ms for /Volumes/Data/book/demo/demo.csproj.

Restore succeeded.

Cans-MBP:demo can.bilgin$ pico program.cs
Cans-MBP:demo can.bilgin$ dotnet build
Microsoft (R) Build Engine version 15.7.179.6572 for .NET Core
Copyright (C) Microsoft Corporation. All rights reserved.

  Restore completed in 56.6 ms for /Volumes/Data/book/demo/demo.csproj.
  demo -> /Volumes/Data/book/demo/bin/Debug/netcoreapp2.1/demo.dll

Build succeeded.
    0 Warning(s)
    0 Error(s)

Time Elapsed 00:00:03.85
Cans-MBP:demo can.bilgin$ dotnet run
Hello .NET Core
Cans-MBP:demo can.bilgin$
```

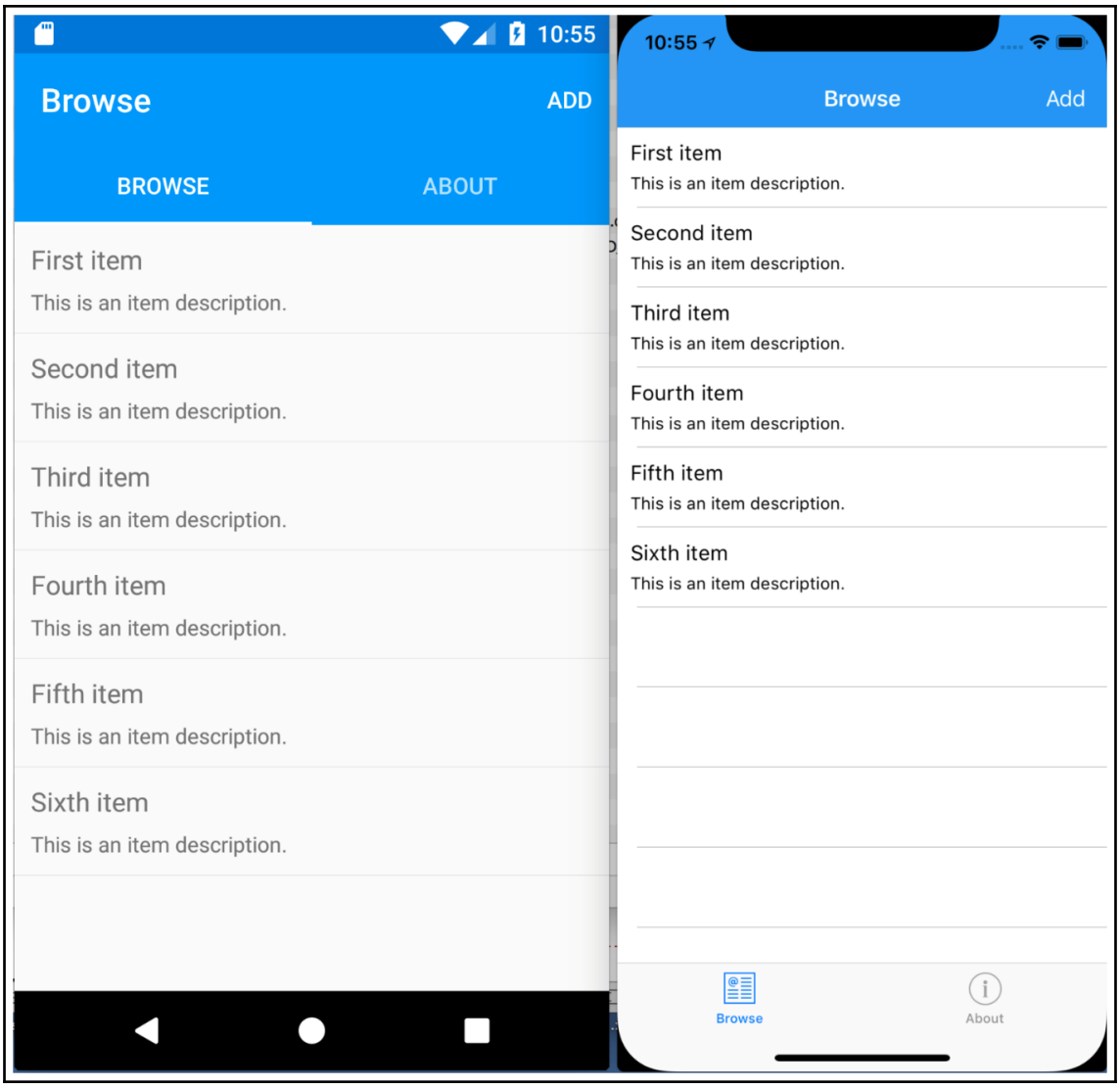


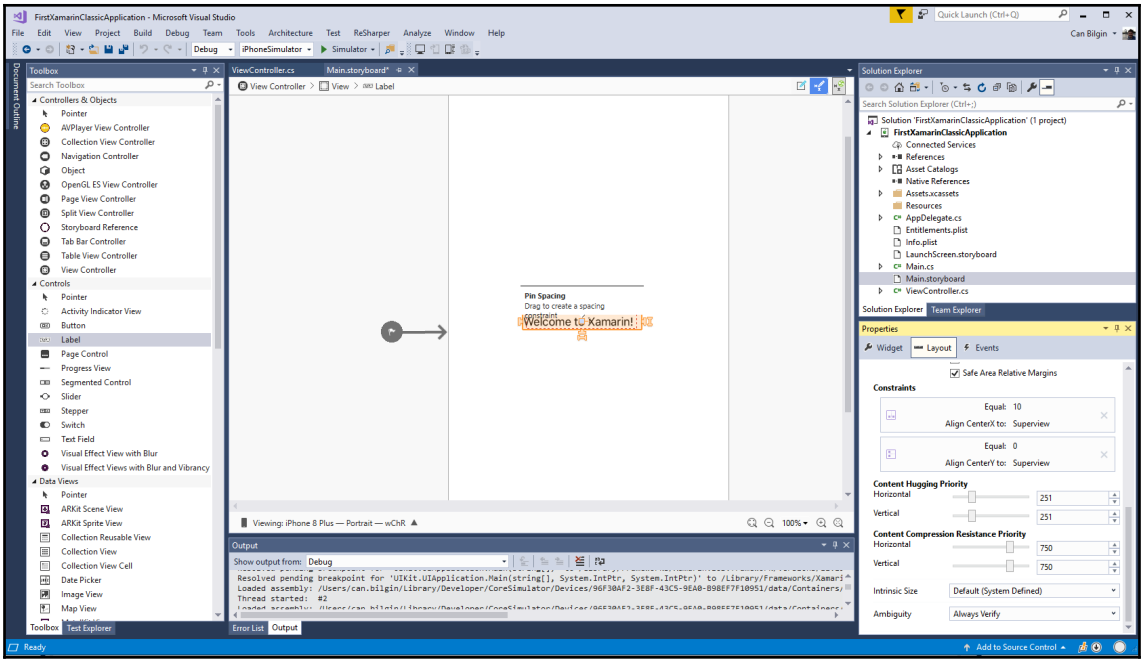
GNU nano 2.0.6 File: demo.csproj
<Project Sdk="Microsoft.NET.Sdk">
<PropertyGroup>
<OutputType>Exe</OutputType>
<TargetFramework>netcoreapp2.1</TargetFramework>
<RuntimeIdentifier>win10-x64</RuntimeIdentifier>
</PropertyGroup>
</Project>
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

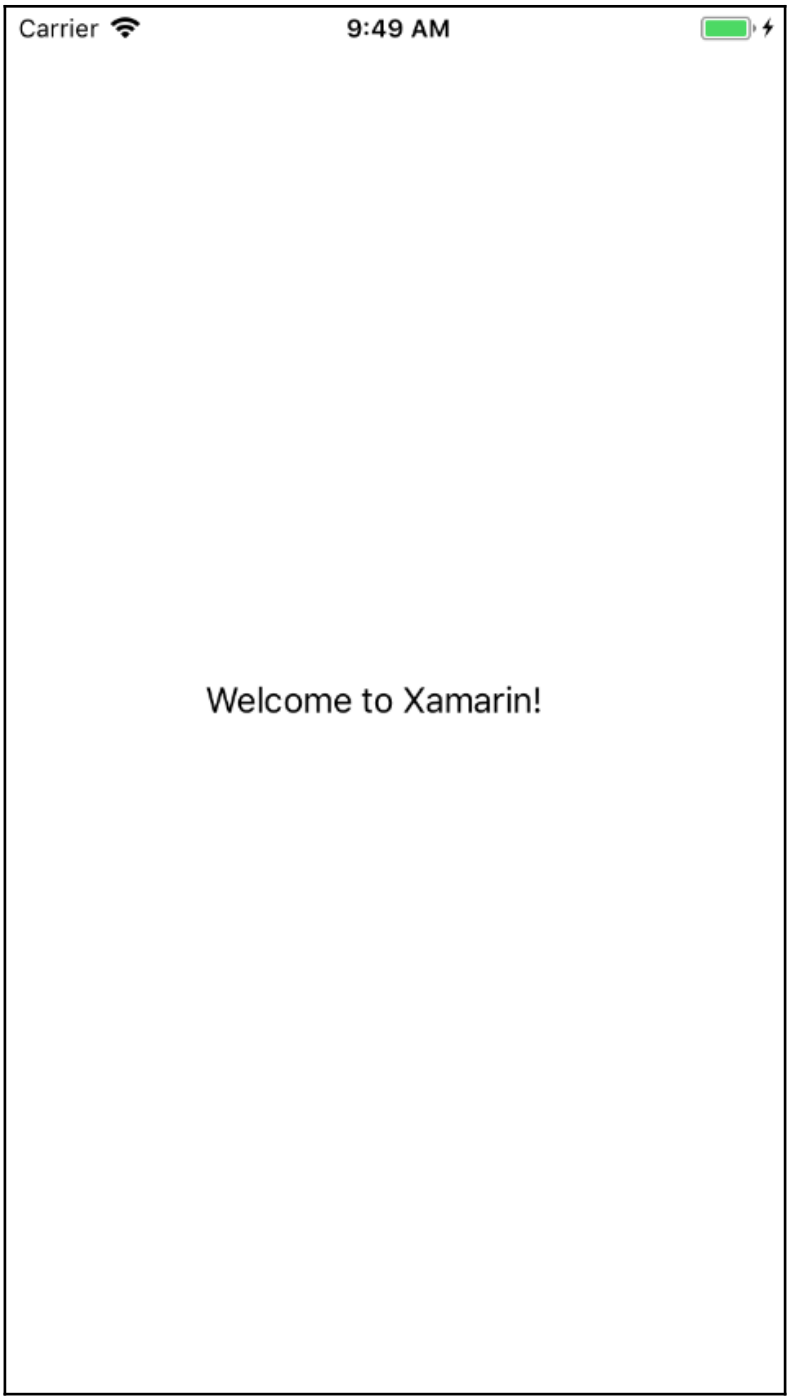

This PC › book on 'Mac' (U:) › demo › bin › Debug › netcoreapp2.1 › win10-x64 › publish
Name
Date modified
Type
Size
api-ms-win-crt-string-l1-1-0.dll 6/6/18 1:58 PM DLL File 25 KB
api-ms-win-crt-time-l1-1-0.dll 6/6/18 1:58 PM DLL File 21 KB
api-ms-win-crt-utility-l1-1-0.dll 6/6/18 1:58 PM DLL File 19 KB
clrcompression.dll 6/6/18 1:58 PM DLL File 713 KB
clretwrc.dll 6/6/18 1:58 PM DLL File 235 KB
clrjit.dll 6/6/18 1:58 PM DLL File 1,423 KB
coreclr.dll 6/6/18 1:58 PM DLL File 5,824 KB
dbgshim.dll 6/6/18 1:58 PM DLL File 152 KB
demo.deps.json 7/15/18 6:24 AM JSON File 40 KB
demo.dll 7/15/18 6:24 AM DLL File 4 KB
demo.exe 7/15/18 6:09 AM Application 135 KB
demo.pdb 7/15/18 6:24 AM Program Debug Data... 1 KB
demo.runtimeconfig.json 7/15/18 6:24 AM JSON File 1 KB
hostfxr.dll 6/6/18 2:04 PM DLL File 390 KB
hostpolicy.dll 6/6/18 2:04 PM DLL File 572 KB
Microsoft.CSharp.dll 6/6/18 1:58 PM DLL File 755 KB
Microsoft.DiaSymReader.Native.amd64.dll 6/6/18 1:58 PM DLL File 1,236 KB
Microsoft.VisualBasic.dll 6/6/18 1:58 PM DLL File 455 KB
Microsoft.Win32.Primitives.dll 6/6/18 1:58 PM DLL File 22 KB

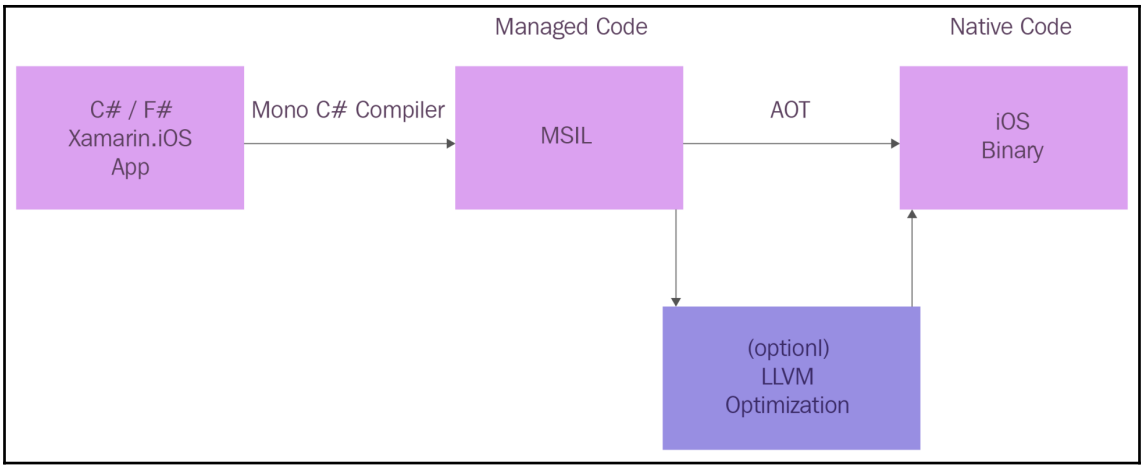
Chapter 2: 2.Xamarin, Mono, and .NET Standard

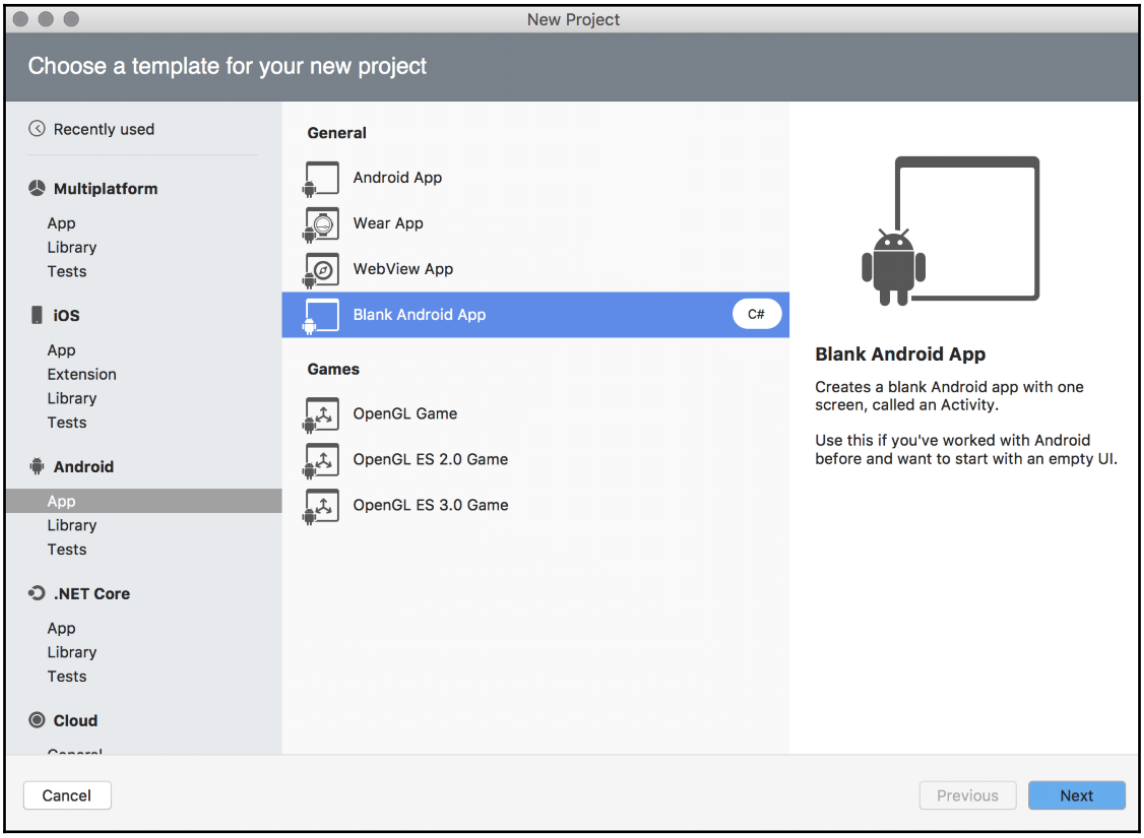


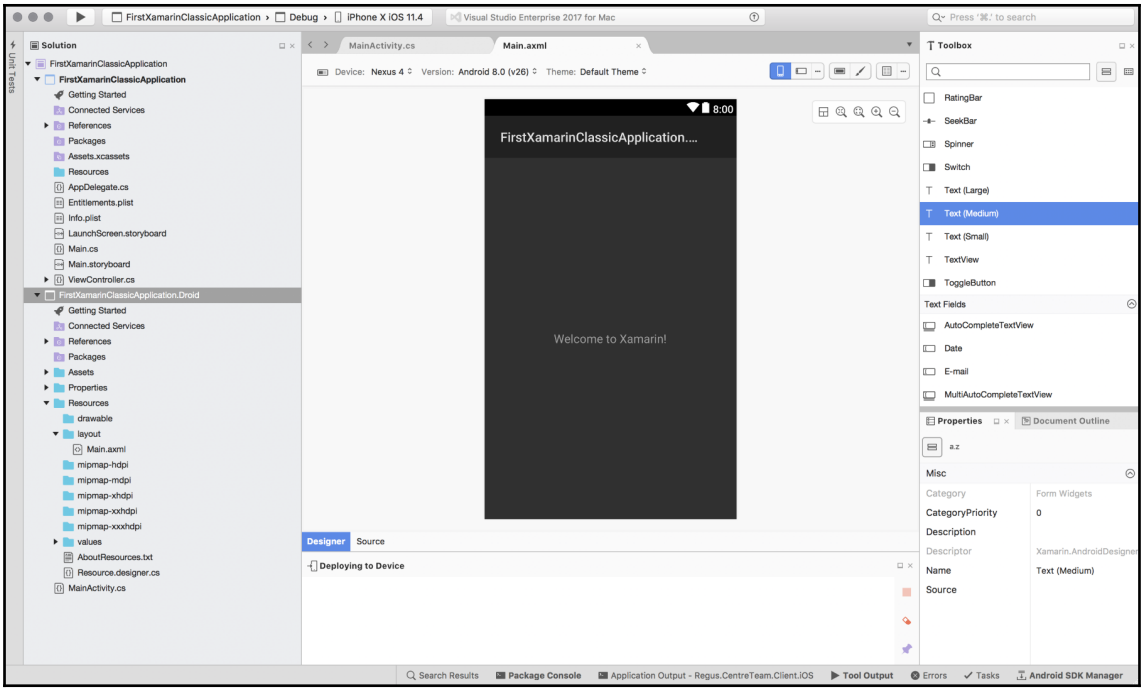

10:55
Browse
ADD
BROWSE
ABOUT
First item
This is an item description.
Second item
This is an item description.
Third item
This is an item description.
Fourth item
This is an item description.
Fifth item
This is an item description.
Sixth item
This is an item description.
10:55
Browse
Add
First item
This is an item description.
Second item
This is an item description.
Third item
This is an item description.
Fourth item
This is an item description.
Fifth item
This is an item description.
Sixth item
This is an item description.
Browse
About

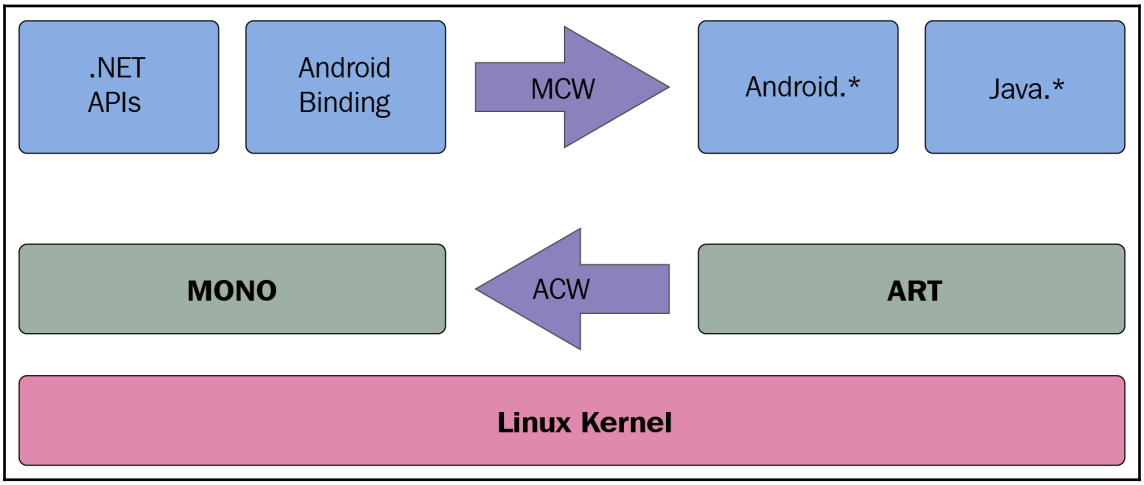

FirstXamarinClassicApplication - Microsoft Visual Studio
File Edit View Project Build Debug Team Tools Architecture Test ReSharper Analyze Window Help
Can Bilgin
Toolbox
Search Toolbox
Controllers & Objects
Pointer
AVPlayer View Controller
Collection View Controller
Navigation Controller
Object
OpenGL ES View Controller
Page View Controller
Split View Controller
Storyboard Reference
Tab Bar Controller
Table View Controller
View Controller
Controls
Pointer
Activity Indicator View
Button
Label
Page Control
Progress View
Segmented Control
Slider
Stepper
Switch
Text Field
Visual Effect View with Blur
Visual Effect Views with Blur and Vibrancy
Data Views
Pointer
ARKit Scene View
ARKit Sprite View
Collection Reusable View
Collection View
Collection View Cell
Date Picker
Image View
Map View
ViewController.cs
Main.storyboard*
View Controller > View > Label
Pin Spacing
Drag to create a spacing constraint
Welcome to Xamarin!
Viewing: iPhone 8 Plus — Portrait — wChR
100%
Output
Show output from: Debug
Resolved pending breakpoint for 'UIKit.UIApplication.Main(string[], System.IntPtr, System.IntPtr)' to /Library/Frameworks/Xamari
Loaded assembly: /Users/can.bilgin/Library/Developer/CoreSimulator/Devices/96F30AF2-3E8F-43C5-9EA0-B9BEF7F10951/data/Containers/
Thread started: #2
Solution Explorer
Search Solution Explorer (Ctrl+;)
Solution 'FirstXamarinClassicApplication' (1 project)
FirstXamarinClassicApplication
Connected Services
References
Asset Catalogs
Native References
Assets.xcassets
Resources
AppDelegate.cs
Entitlements.plist
Info.plist
LaunchScreen.storyboard
Main.cs
Main.storyboard
ViewController.cs
Properties
Widget
Layout
Events
Safe Area Relative Margins
Constraints
Equal: 10
Align CenterX to: Superview
Equal: 0
Align CenterY to: Superview
Content Hugging Priority
Horizontal
Vertical
Content Compression Resistance Priority
Horizontal
Vertical
Intrinsic Size
Default (System Defined)
Ambiguity
Always Verify
Ready
Add to Source Control

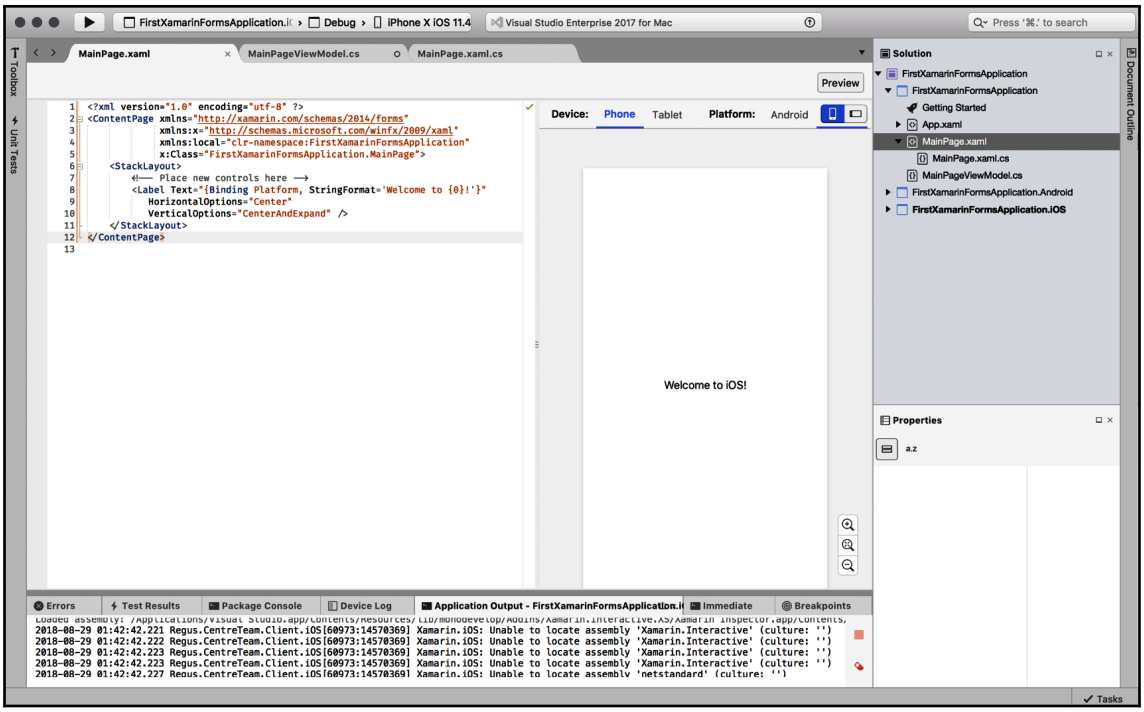

Carrier
9:49 AM
Welcome to Xamarin!

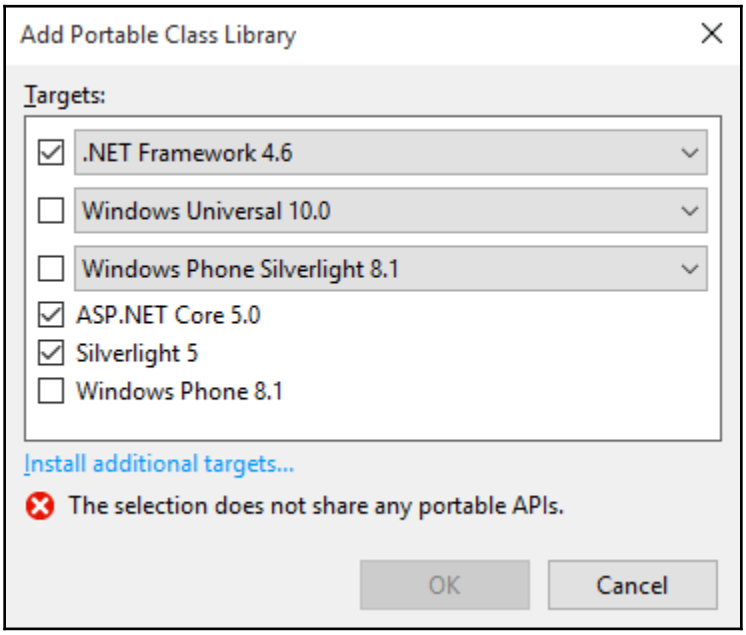

Managed Code
Native Code
C# / F#
Xamarin.iOS
App
Mono C# Compiler
MSIL
AOT
iOS
Binary
(optionl)
LLVM
Optimization

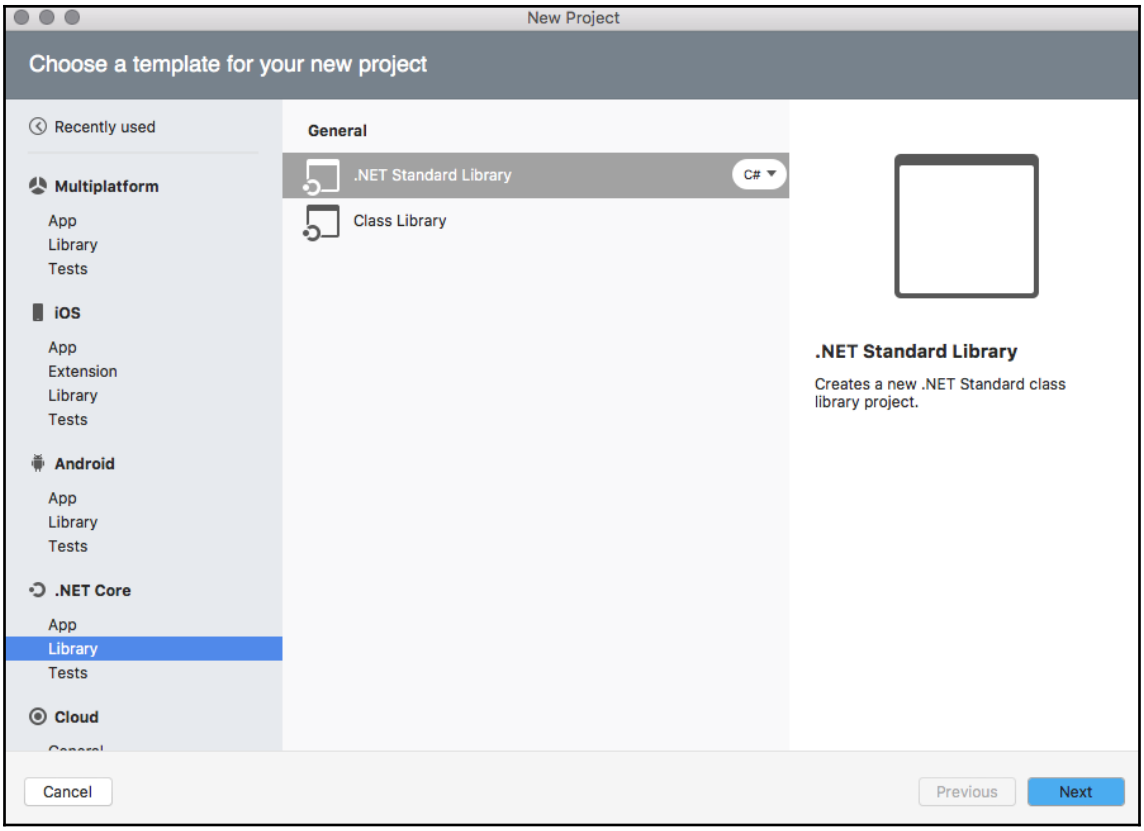

New Project
Choose a template for your new project
Recently used
Multiplatform
App
Library
Tests
iOS
App
Extension
Library
Tests
Android
App
Library
Tests
.NET Core
App
Library
Tests
Cloud
General
Android App
Wear App
WebView App
Blank Android App
C#
Games
OpenGL Game
OpenGL ES 2.0 Game
OpenGL ES 3.0 Game
Blank Android App
Creates a blank Android app with one screen, called an Activity.
Use this if you've worked with Android before and want to start with an empty UI.
Cancel
Previous
Next


FirstXamarinClassicApplication › Debug › iPhone X iOS 11.4
Visual Studio Enterprise 2017 for Mac
Press '⌘.' to search
Solution
FirstXamarinClassicApplication
FirstXamarinClassicApplication
Getting Started
Connected Services
References
Packages
Assets.xcassets
Resources
AppDelegate.cs
Entitlements.plist
Info.plist
LaunchScreen.storyboard
Main.cs
Main.storyboard
ViewController.cs
FirstXamarinClassicApplication.Droid
Getting Started
Connected Services
References
Packages
Assets
Properties
Resources
drawable
layout
Main.axml
mipmap-hdpi
mipmap-mdpi
mipmap-xhdpi
mipmap-xxhdpi
mipmap-xxxhdpi
values
AboutResources.txt
Resource.designer.cs
MainActivity.cs
MainActivity.cs
Main.axml
Device: Nexus 4
Version: Android 8.0 (v26)
Theme: Default Theme
8:00
FirstXamarinClassicApplication....
Welcome to Xamarin!
Designer
Source
Deploying to Device
Toolbox
RatingBar
SeekBar
Spinner
Switch
Text (Large)
Text (Medium)
Text (Small)
TextView
ToggleButton
Text Fields
AutoCompleteTextView
Date
E-mail
MultiAutoCompleteTextView
Properties
Document Outline
Misc
Category
Form Widgets
CategoryPriority
0
Description
Descriptor
Xamarin.AndroidDesigner
Name
Text (Medium)
Source
Search Results
Package Console
Application Output - Regus.CentreTeam.Client.iOS
Tool Output
Errors
Tasks
Android SDK Manager

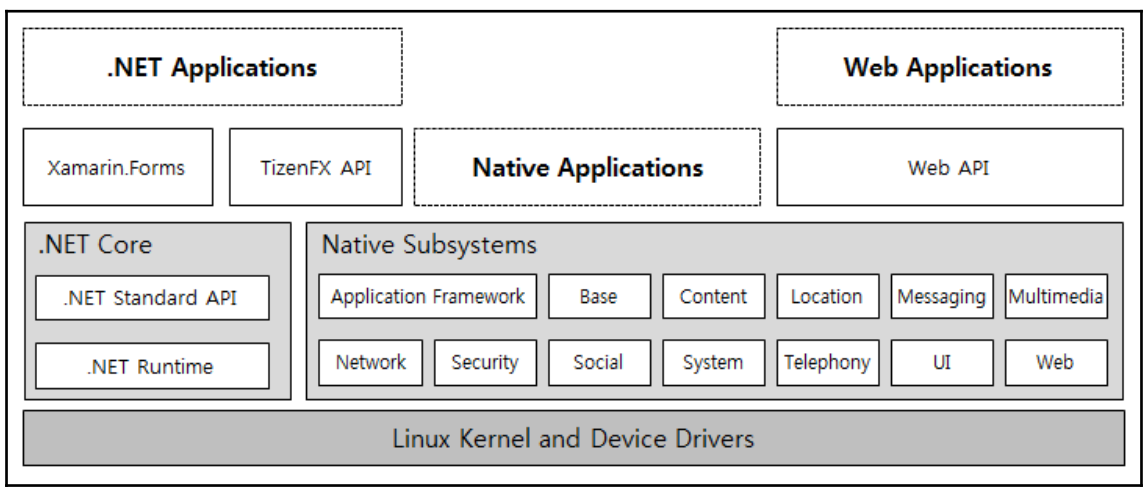

.NET APIs
Android Binding
MCW
Android.*
Java.*
MONO
ACW
ART
Linux Kernel


FirstXamarinFormsApplication.iO
Debug
iPhone X iOS 11.4
Visual Studio Enterprise 2017 for Mac
Press '⌘.' to search
Toolbox
Unit Tests
MainPage.xaml
MainPageViewModel.cs
MainPage.xaml.cs
Preview
<?xml version="1.0" encoding="utf-8" ?>
<ContentPage xmlns="http://xamarin.com/schemas/2014/forms"
xmlns:x="http://schemas.microsoft.com/winfx/2009/xaml"
xmlns:local="clr-namespace:FirstXamarinFormsApplication"
x:Class="FirstXamarinFormsApplication.MainPage">
<StackLayout>
<-- Place new controls here -->
<Label Text="{Binding Platform, StringFormat='Welcome to {0}!'}"
HorizontalOptions="Center"
VerticalOptions="CenterAndExpand" />
</StackLayout>
</ContentPage>
Device:
Phone
Tablet
Platform:
Android
Welcome to iOS!
Solution
FirstXamarinFormsApplication
FirstXamarinFormsApplication
Getting Started
App.xaml
MainPage.xaml
MainPage.xaml.cs
MainPageViewModel.cs
FirstXamarinFormsApplication.Android
FirstXamarinFormsApplication.iOS
Document Outline
Properties
Errors
Test Results
Package Console
Device Log
Application Output - FirstXamarinFormsApplication.i
Immediate
Breakpoints
2018-08-29 01:42:42.221 Regus.CentreTeam.Client.iOS[60973:14570369] Xamarin.iOS: Unable to locate assembly 'Xamarin.Interactive' (culture: '')
2018-08-29 01:42:42.222 Regus.CentreTeam.Client.iOS[60973:14570369] Xamarin.iOS: Unable to locate assembly 'Xamarin.Interactive' (culture: '')
2018-08-29 01:42:42.223 Regus.CentreTeam.Client.iOS[60973:14570369] Xamarin.iOS: Unable to locate assembly 'Xamarin.Interactive' (culture: '')
2018-08-29 01:42:42.223 Regus.CentreTeam.Client.iOS[60973:14570369] Xamarin.iOS: Unable to locate assembly 'Xamarin.Interactive' (culture: '')
2018-08-29 01:42:42.227 Regus.CentreTeam.Client.iOS[60973:14570369] Xamarin.iOS: Unable to locate assembly 'netstandard' (culture: '')
Tasks

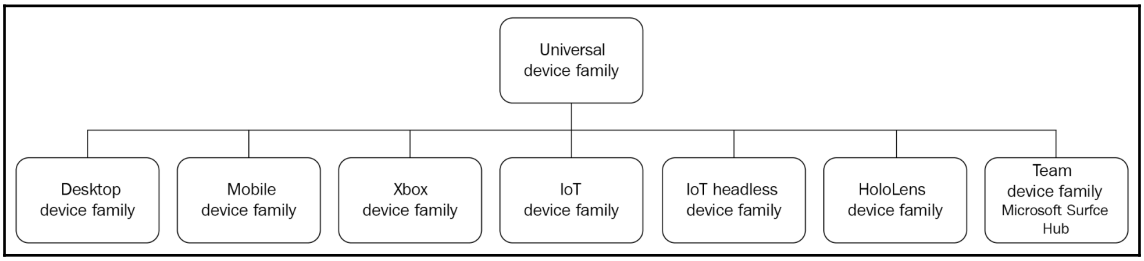

Add Portable Class Library
Targets:
.NET Framework 4.6
Windows Universal 10.0
Windows Phone Silverlight 8.1
ASP.NET Core 5.0
Silverlight 5
Windows Phone 8.1
Install additional targets...
The selection does not share any portable APIs.
OK
Cancel

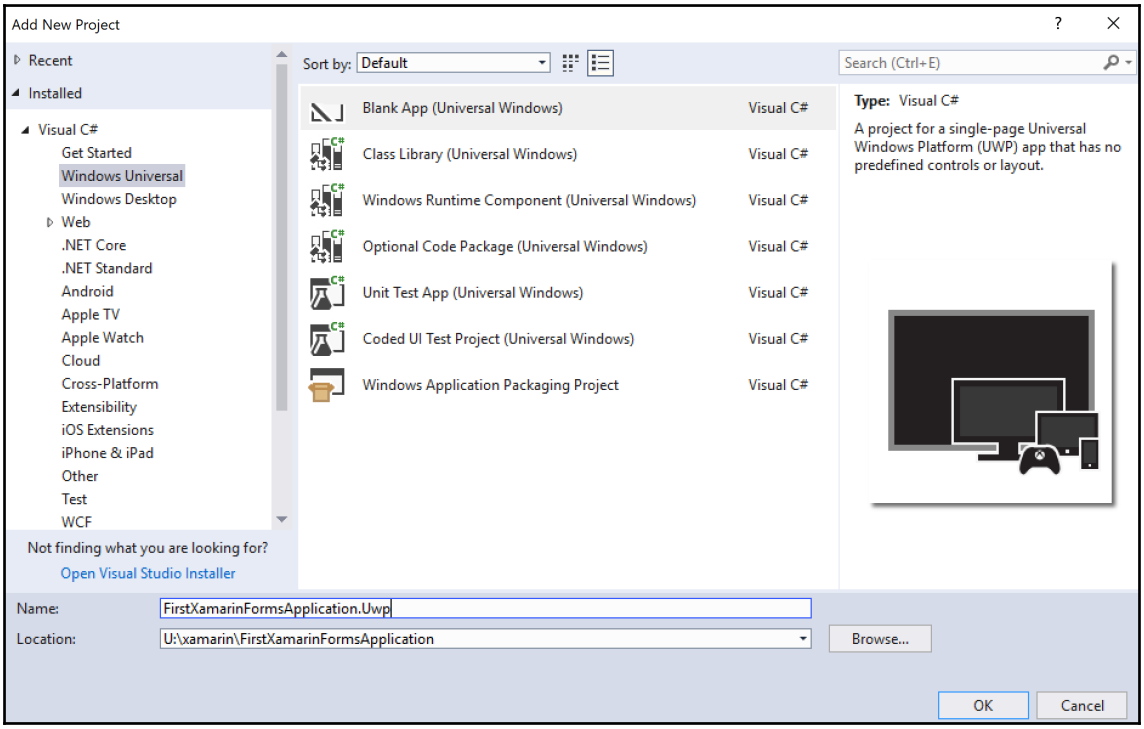

New Project
Choose a template for your new project
Recently used
Multiplatform
App
Library
Tests
iOS
App
Extension
Library
Tests
Android
App
Library
Tests
.NET Core
App
Library
Tests
Cloud
General
.NET Standard Library
C#
Class Library
.NET Standard Library
Creates a new .NET Standard class library project.
Cancel
Previous
Next

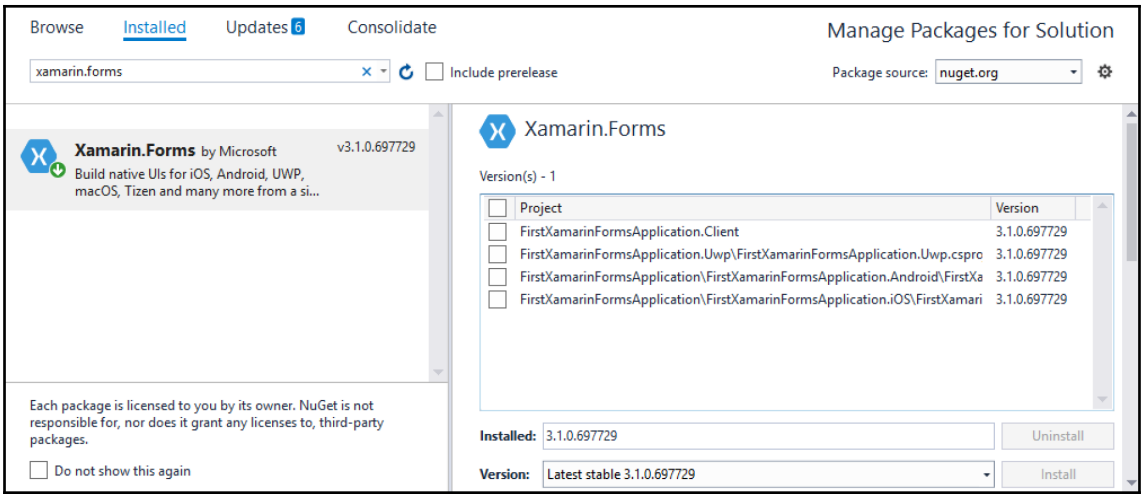
```
    public class MainPageViewModel
    {
        public MainPageViewModel()
        {
        }

        public string Platform
        {
            get 'MainPageViewModel.Platform.get': not all code paths return a value

            {
#if __IOS__
                return "iOS";
#elif __ANDROID__
                return "Android";
#endif
            }
        }
    }
```

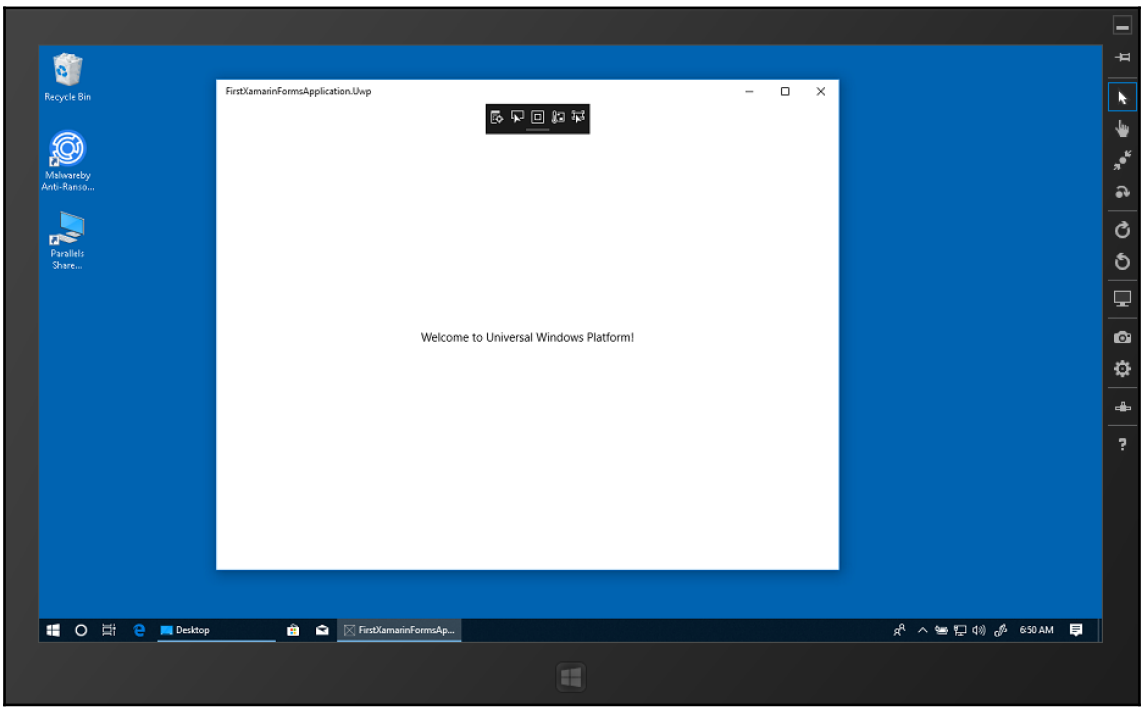


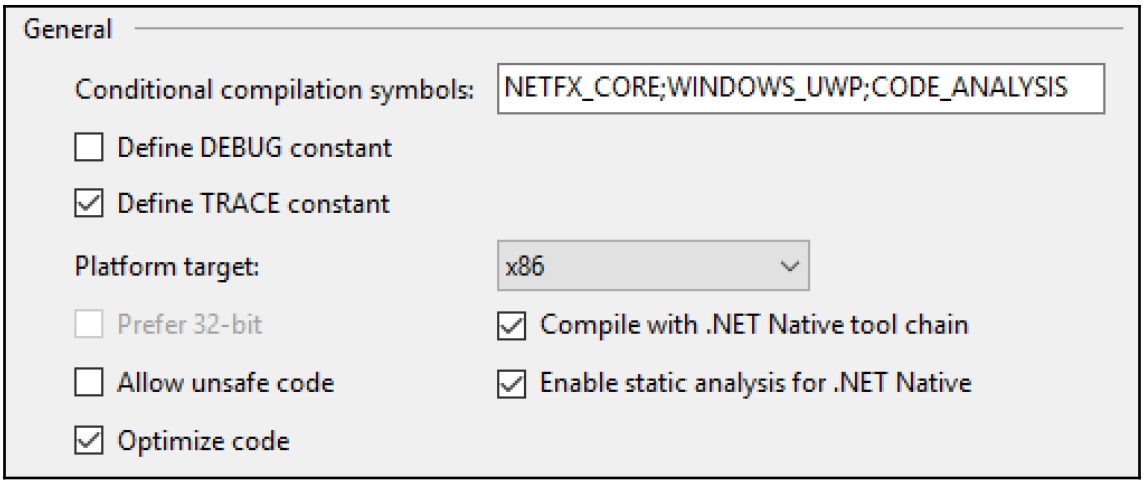
Chapter 3: 3.Universal Windows Platform

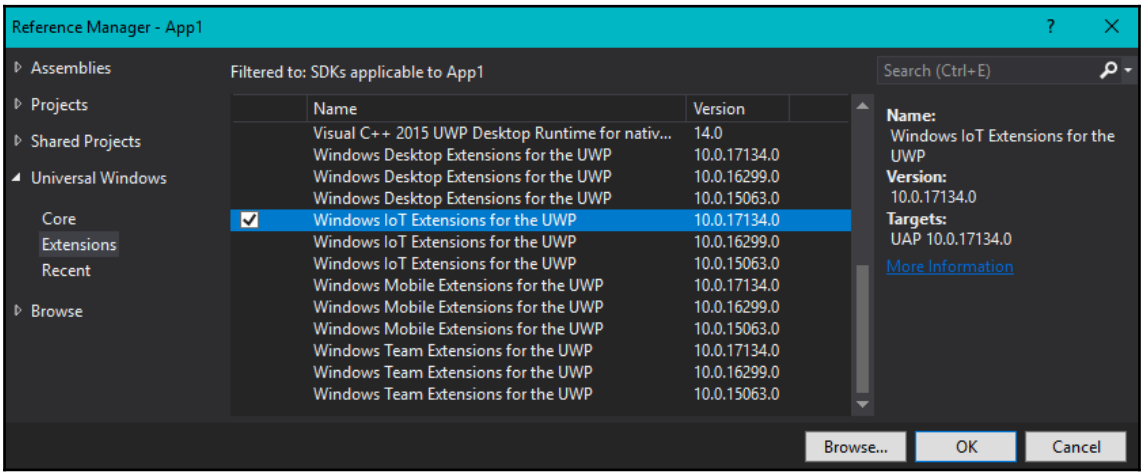




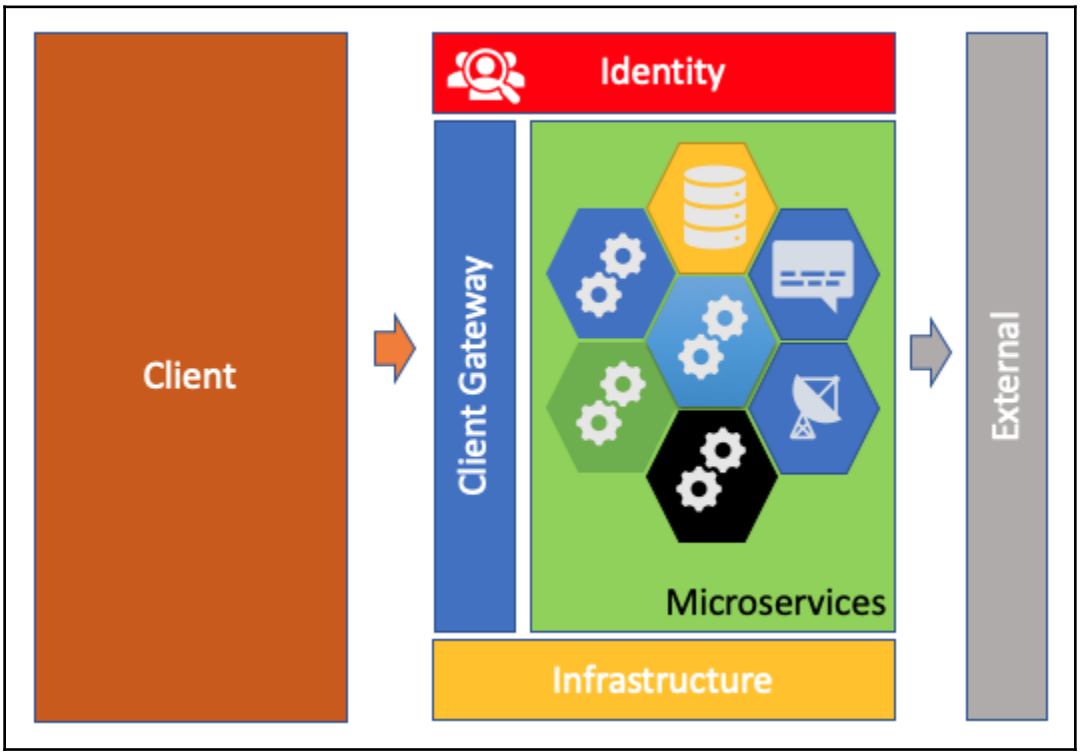

Browse
Installed
Updates 6
Consolidate
Manage Packages for Solution
xamarin.forms
Include prerelease
Package source: nuget.org
Xamarin.Forms by Microsoft
v3.1.0.697729
Build native UIs for iOS, Android, UWP, macOS, Tizen and many more from a si...
Xamarin.Forms
Version(s) - 1
Project
Version
FirstXamarinFormsApplication.Client
3.1.0.697729
FirstXamarinFormsApplication.Uwp\FirstXamarinFormsApplication.Uwp.cspro
3.1.0.697729
FirstXamarinFormsApplication\FirstXamarinFormsApplication.Android\FirstXa
3.1.0.697729
FirstXamarinFormsApplication\FirstXamarinFormsApplication.iOS\FirstXamari
3.1.0.697729
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages.
Do not show this again
Installed: 3.1.0.697729
Uninstall
Version: Latest stable 3.1.0.697729
Install

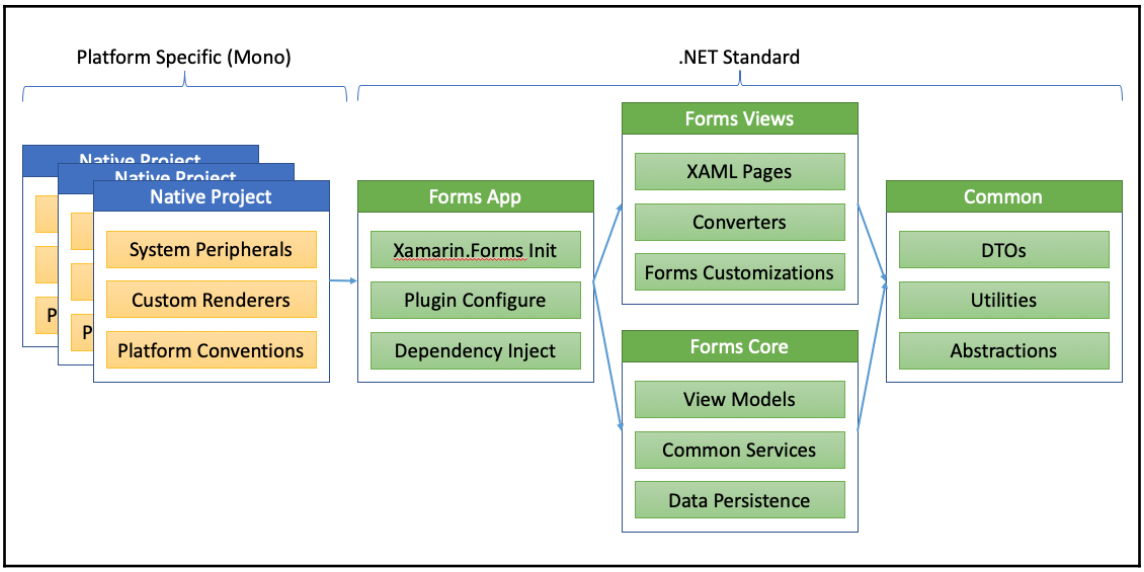

Recycle Bin
Malwarebytes Anti-Ransom...
Parallels Share...
FirstXamarinFormsApplication.Uwp
Welcome to Universal Windows Platform!
Desktop
FirstXamarinFormsAp...
6:50 AM

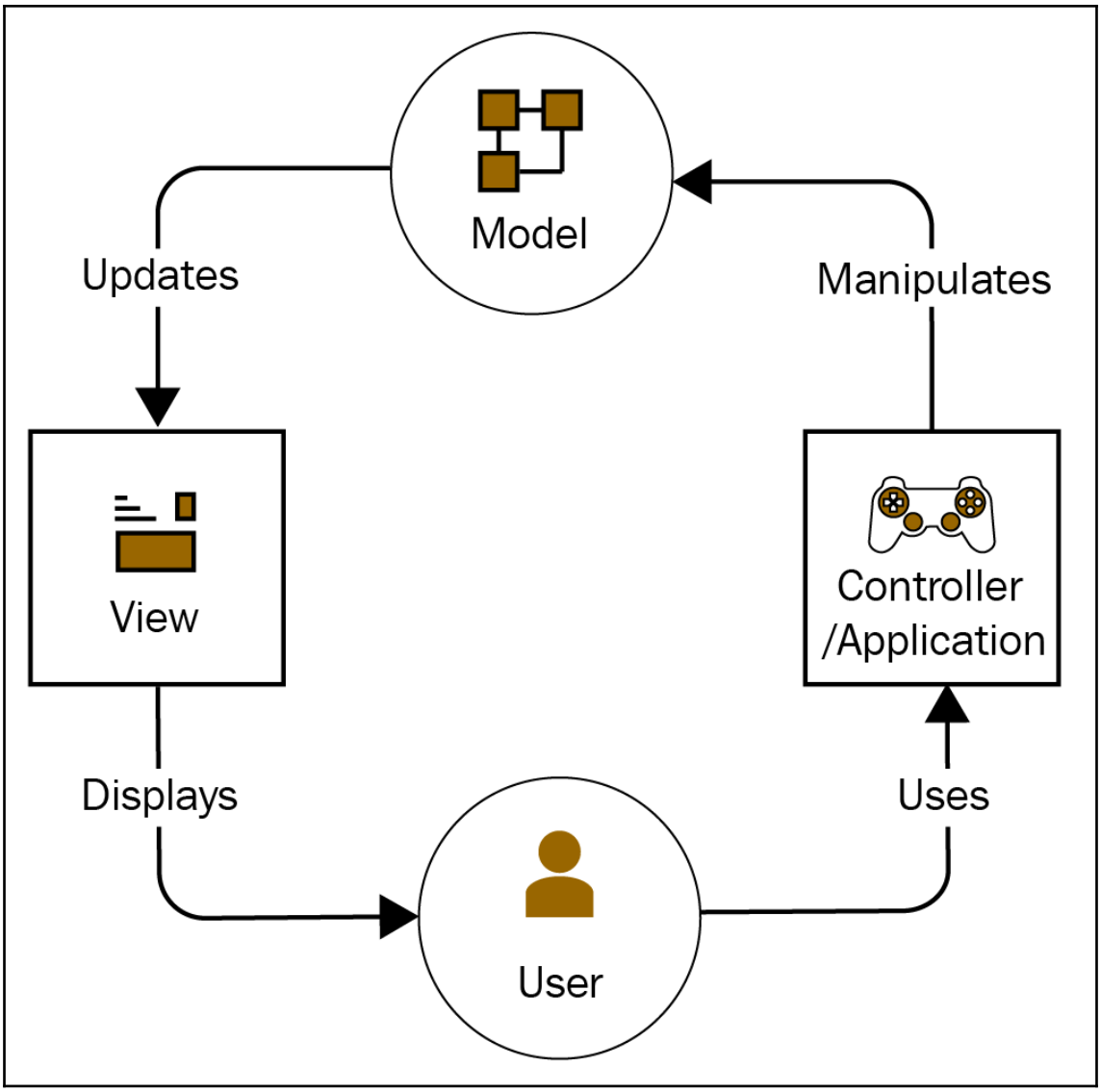

General
Conditional compilation symbols:
NETFX_CORE;WINDOWS_UWP;CODE_ANALYSIS
Define DEBUG constant
Define TRACE constant
Platform target:
x86
Prefer 32-bit
Compile with .NET Native tool chain
Allow unsafe code
Enable static analysis for .NET Native
Optimize code

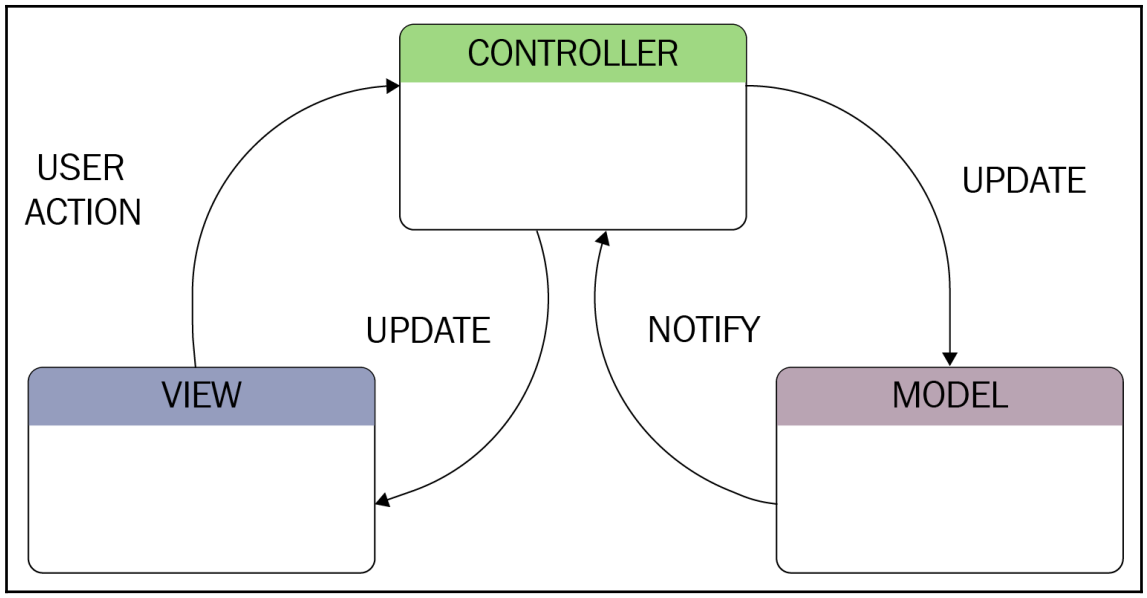

Reference Manager - App1
Assemblies
Projects
Shared Projects
Universal Windows
Core
Extensions
Recent
Browse
Filtered to: SDKs applicable to App1
Search (Ctrl+E)
Name
Version
Visual C++ 2015 UWP Desktop Runtime for nativ... 14.0
Windows Desktop Extensions for the UWP 10.0.17134.0
Windows Desktop Extensions for the UWP 10.0.16299.0
Windows Desktop Extensions for the UWP 10.0.15063.0
Windows IoT Extensions for the UWP 10.0.17134.0
Windows IoT Extensions for the UWP 10.0.16299.0
Windows IoT Extensions for the UWP 10.0.15063.0
Windows Mobile Extensions for the UWP 10.0.17134.0
Windows Mobile Extensions for the UWP 10.0.16299.0
Windows Mobile Extensions for the UWP 10.0.15063.0
Windows Team Extensions for the UWP 10.0.17134.0
Windows Team Extensions for the UWP 10.0.16299.0
Windows Team Extensions for the UWP 10.0.15063.0
Name:
Windows IoT Extensions for the UWP
Version:
10.0.17134.0
Targets:
UAP 10.0.17134.0
More Information
Browse...
OK
Cancel

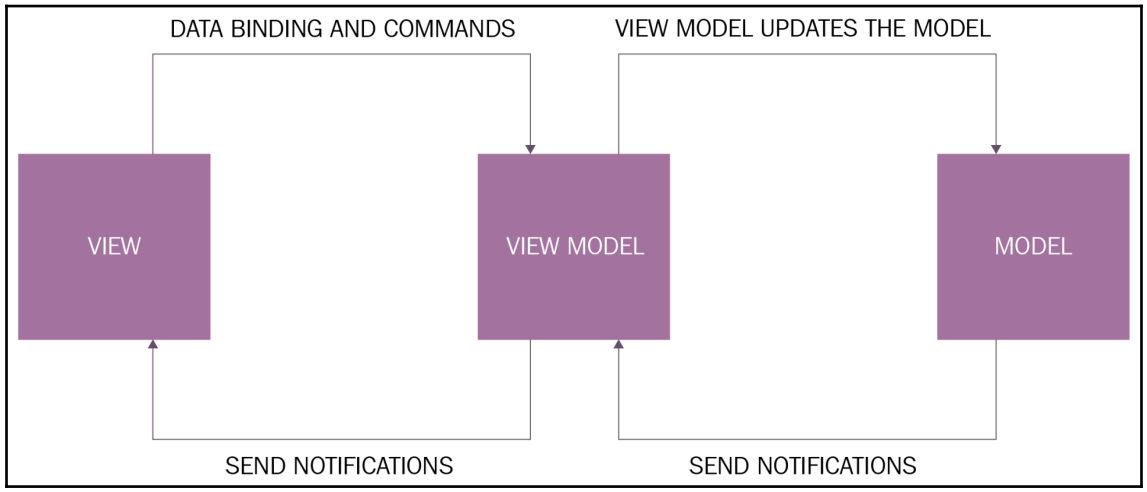
Chapter 4: 4.Developing Mobile Applications with Xamarin

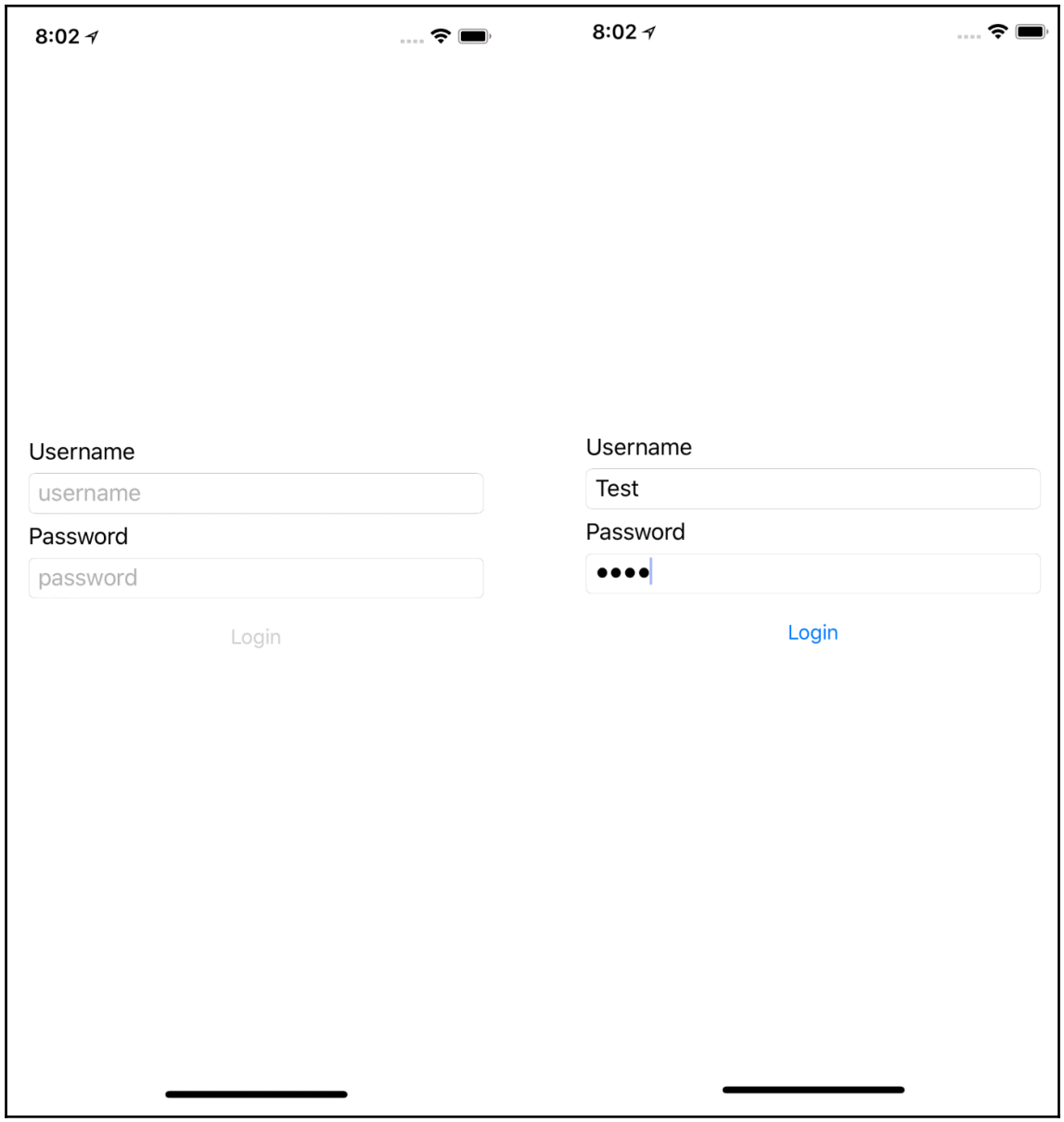


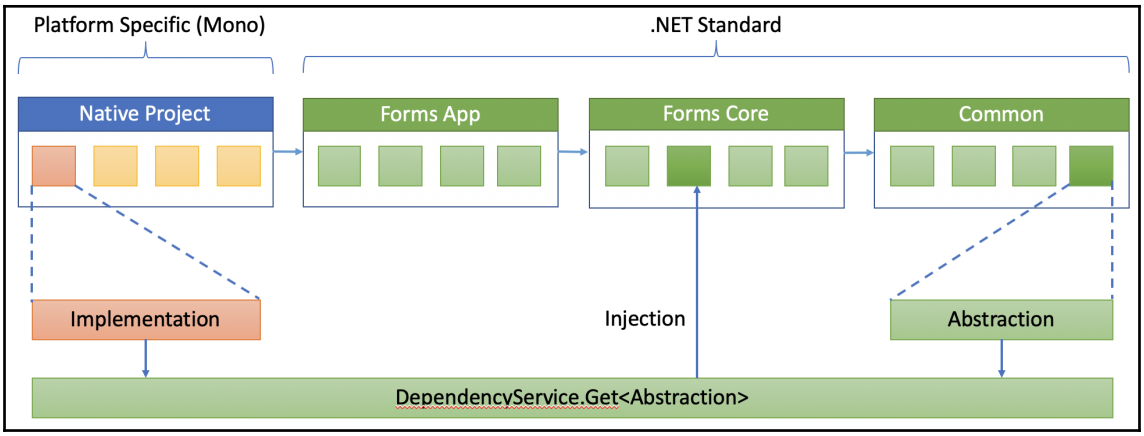

Platform Specific (Mono)
.NET Standard
Native Project
System Peripherals
Custom Renderers
Platform Conventions
Forms App
Xamarin.Forms Init
Plugin Configure
Dependency Inject
Forms Views
XAML Pages
Converters
Forms Customizations
Forms Core
View Models
Common Services
Data Persistence
Common
DTOs
Utilities
Abstractions

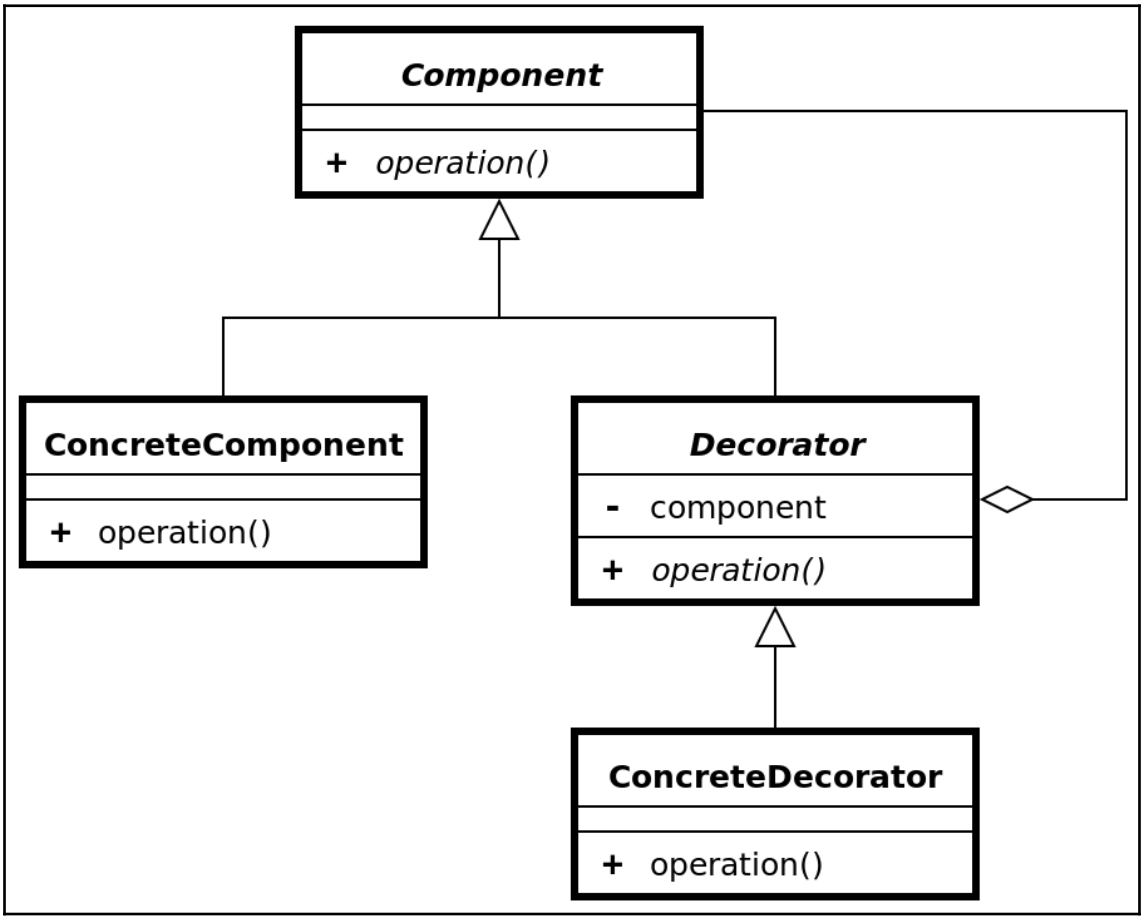

Model
Updates
Manipulates
View
Controller
/Application
Displays
Uses
User


CONTROLLER
USER ACTION
UPDATE
UPDATE
NOTIFY
VIEW
MODEL

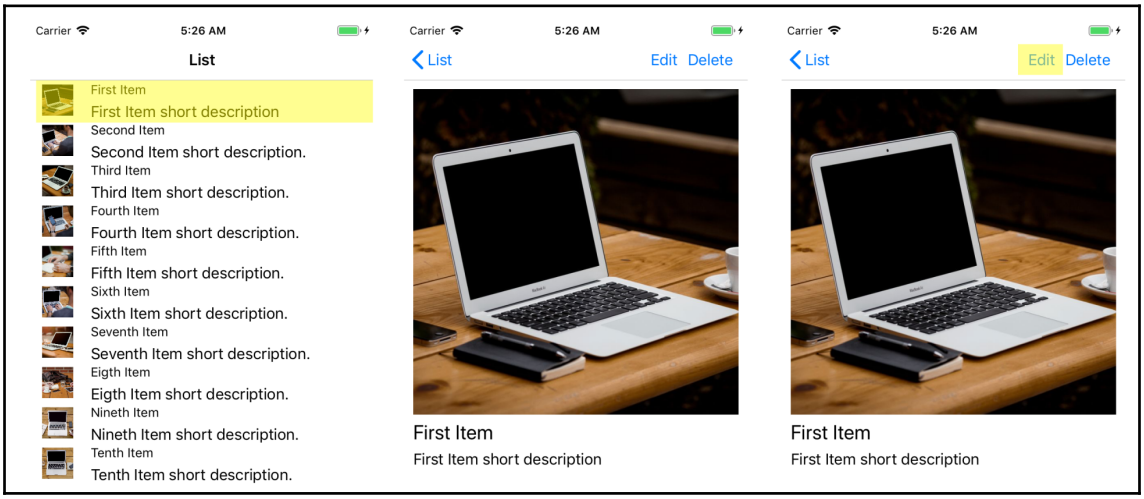

DATA BINDING AND COMMANDS
VIEW MODEL UPDATES THE MODEL
VIEW
VIEW MODEL
MODEL
SEND NOTIFICATIONS
SEND NOTIFICATIONS

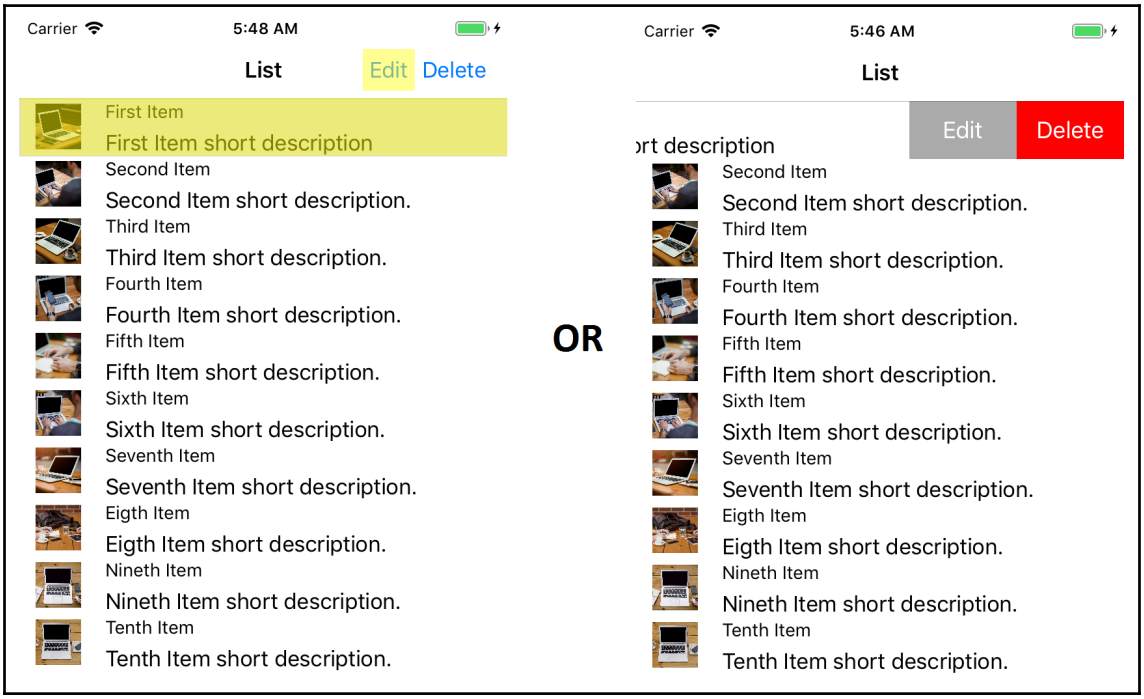

8:02
Username
username
Password
password
Login
8:02
Username
Test
Password
Login

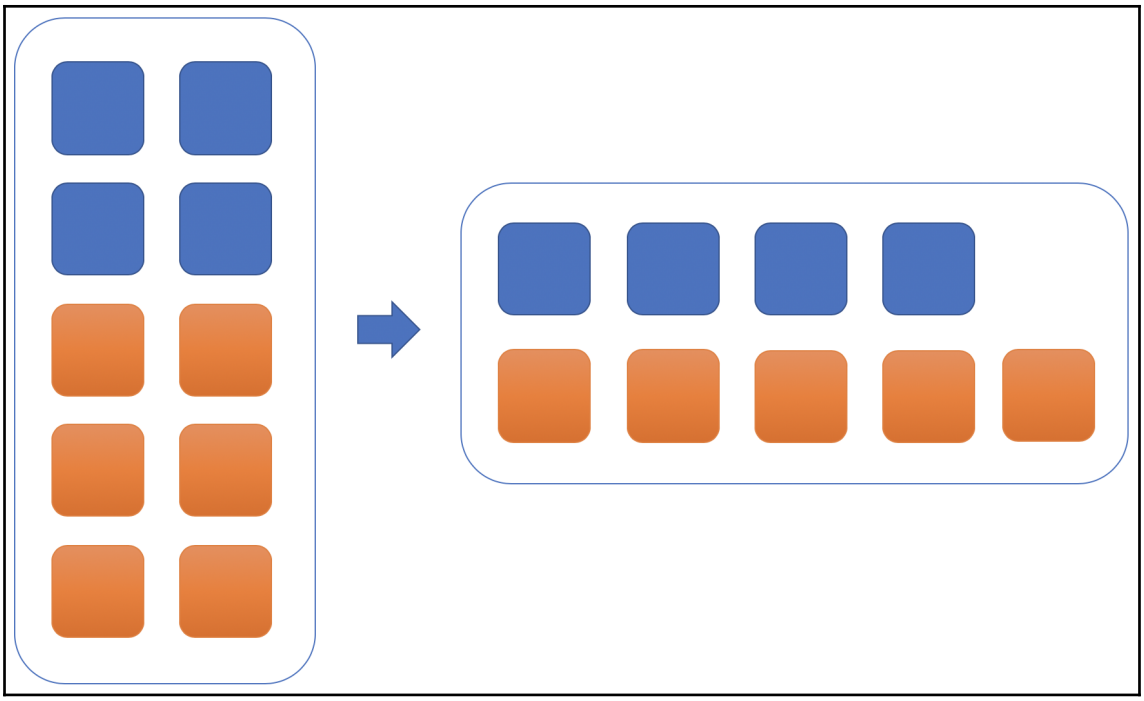

Platform Specific (Mono)
.NET Standard
Native Project
Forms App
Forms Core
Common
Implementation
Injection
Abstraction
DependencyService.Get<Abstraction>

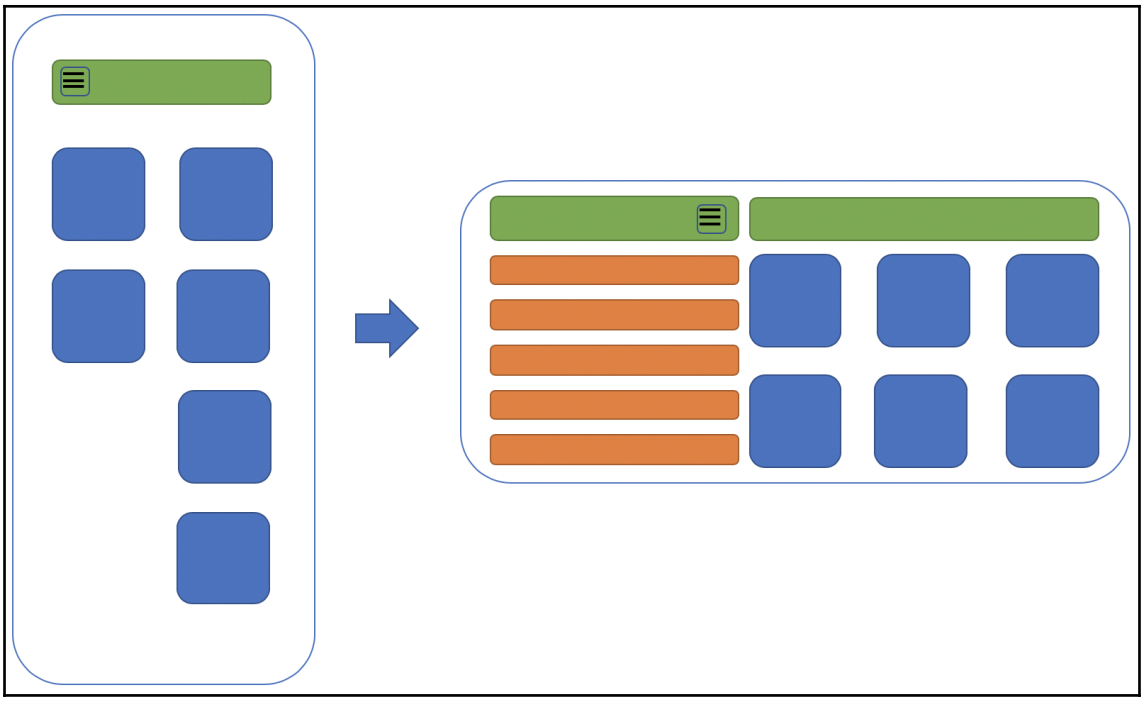

Component
+ operation()
ConcreteComponent
+ operation()
Decorator
- component
+ operation()
ConcreteDecorator
+ operation()

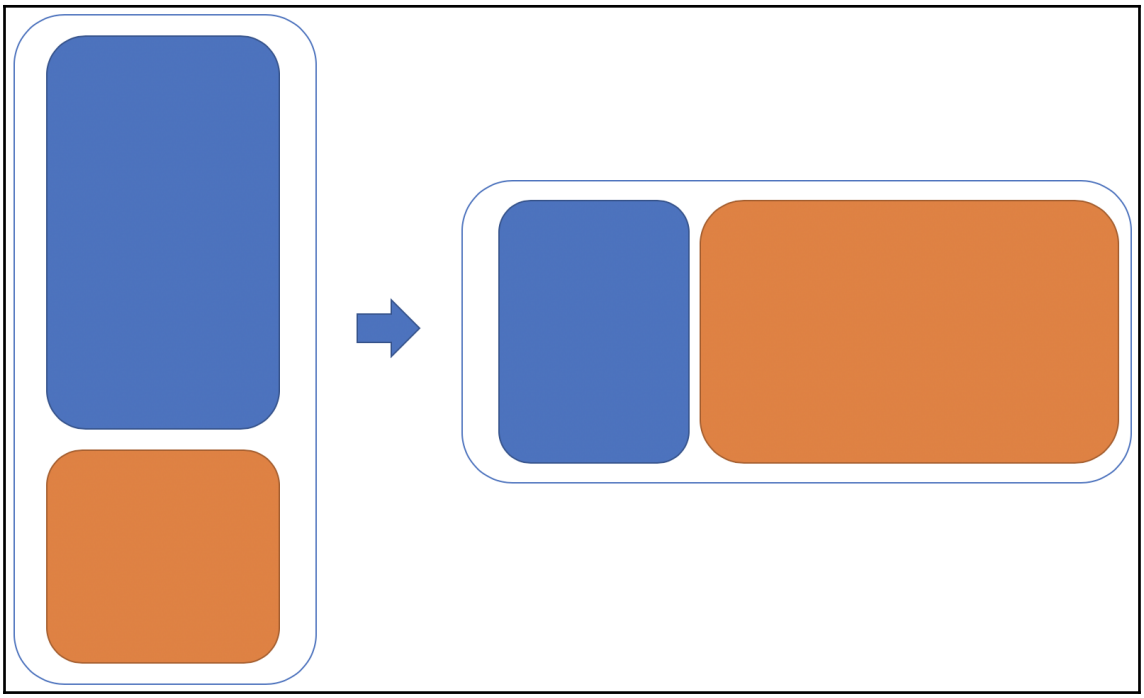
Chapter 5: 5.UI Development with Xamarin

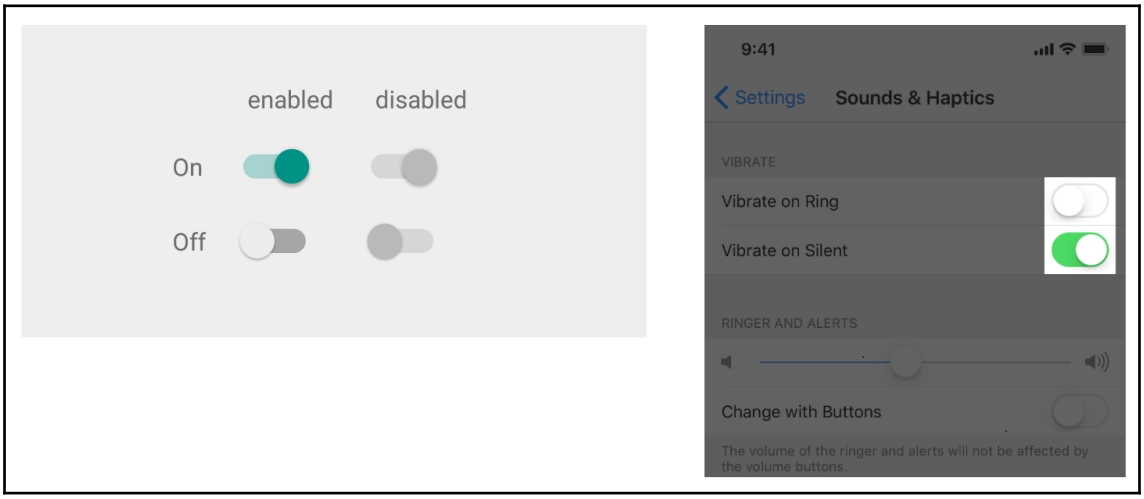


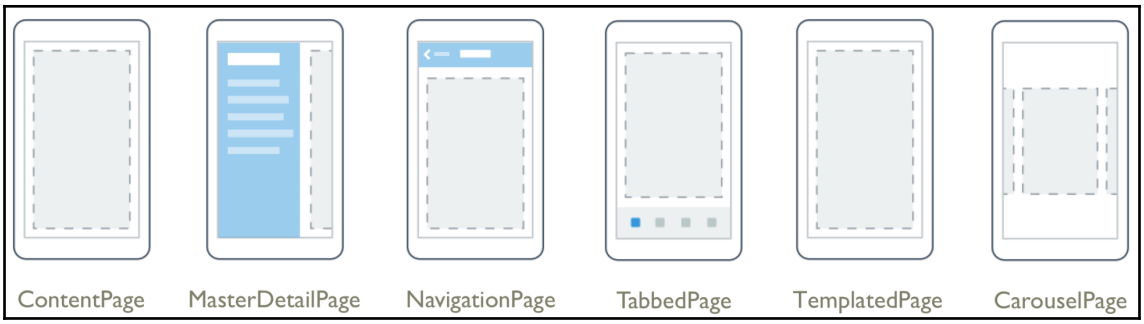


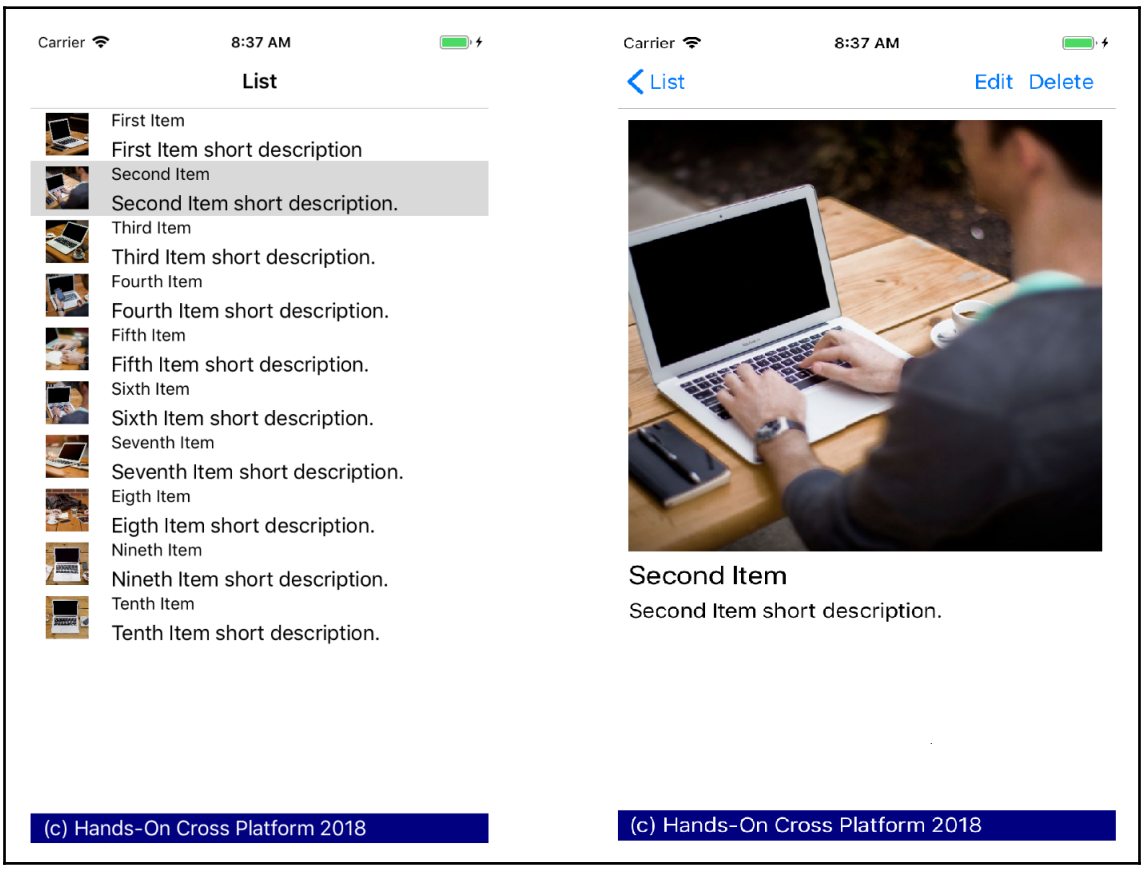


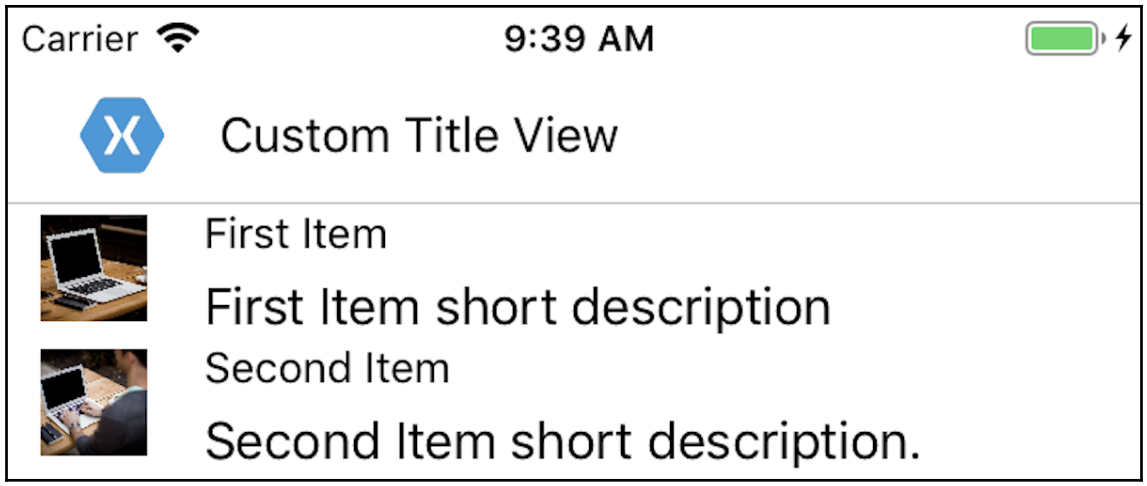


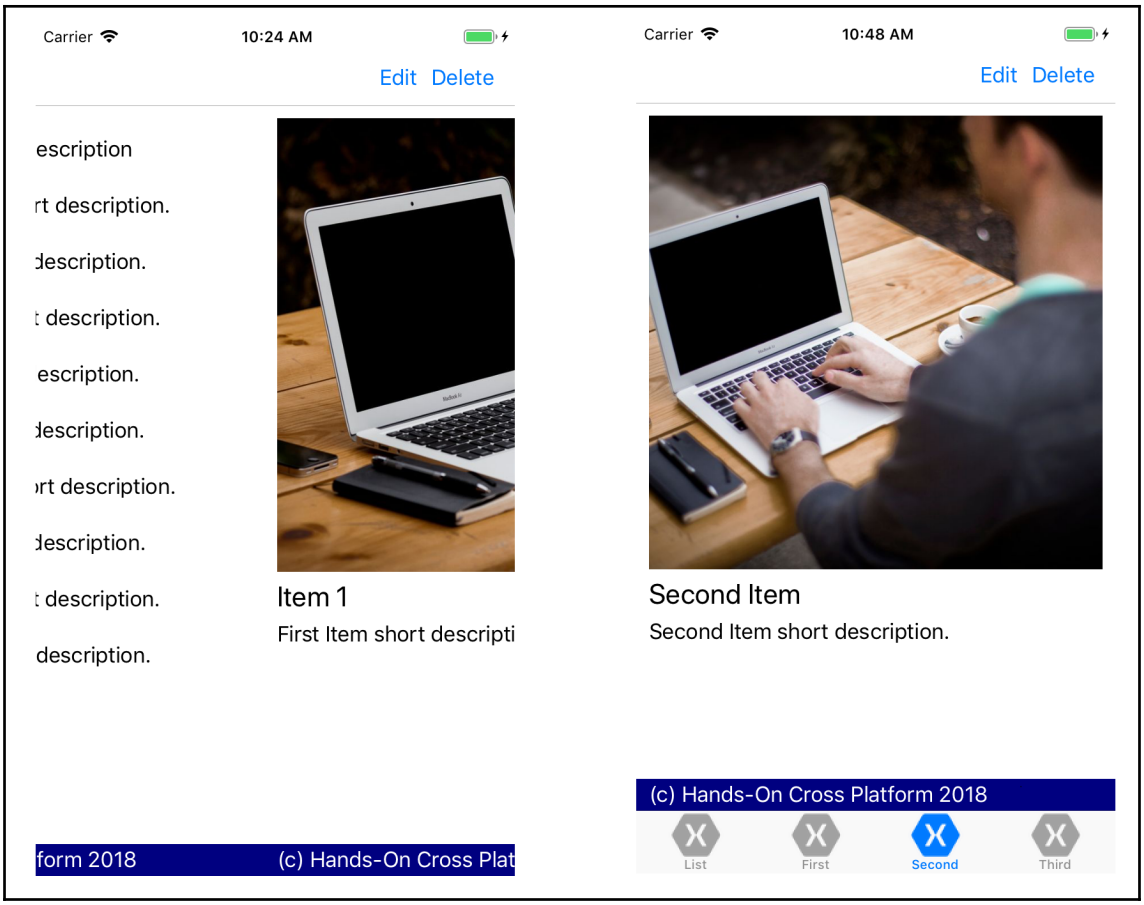



enabled
disabled
On
Off
9:41
Settings
Sounds & Haptics
VIBRATE
Vibrate on Ring
Vibrate on Silent
RINGER AND ALERTS
Change with Buttons
The volume of the ringer and alerts will not be affected by the volume buttons.


ContentPage
MasterDetailPage
NavigationPage
TabbedPage
TemplatedPage
CarouselPage


Carrier
8:37 AM
List
First Item
First Item short description
Second Item
Second Item short description.
Third Item
Third Item short description.
Fourth Item
Fourth Item short description.
Fifth Item
Fifth Item short description.
Sixth Item
Sixth Item short description.
Seventh Item
Seventh Item short description.
Eigth Item
Eigth Item short description.
Nineth Item
Nineth Item short description.
Tenth Item
Tenth Item short description.
(c) Hands-On Cross Platform 2018
Carrier
8:37 AM
List
Edit
Delete
Second Item
Second Item short description.
(c) Hands-On Cross Platform 2018


Carrier
9:39 AM
Custom Title View
First Item
First Item short description
Second Item
Second Item short description.


Carrier
10:24 AM
Edit Delete
escription
rt description.
description.
t description.
escription.
description.
rt description.
description.
t description.
description.
Item 1
First Item short descripti
form 2018
(c) Hands-On Cross Plat
Carrier
10:48 AM
Edit Delete
Second Item
Second Item short description.
(c) Hands-On Cross Platform 2018
List
First
Second
Third

Carrier 11:23 AM

List

First Item
First Item short description

Second Item
Second Item short description.

Third Item
Third Item short description.

Fourth Item
Fourth Item short description.

Fifth Item
Fifth Item short description.

Sixth Item
Sixth Item short description.

Seventh Item
Seventh Item short description.

Eigth Item
Eigth Item short description.

Nineth Item
Nineth Item short description.

Tenth Item
Tenth Item short description.

(c) Hands-On Cross Platform 2018

List First Second Third

Carrier 11:23 AM

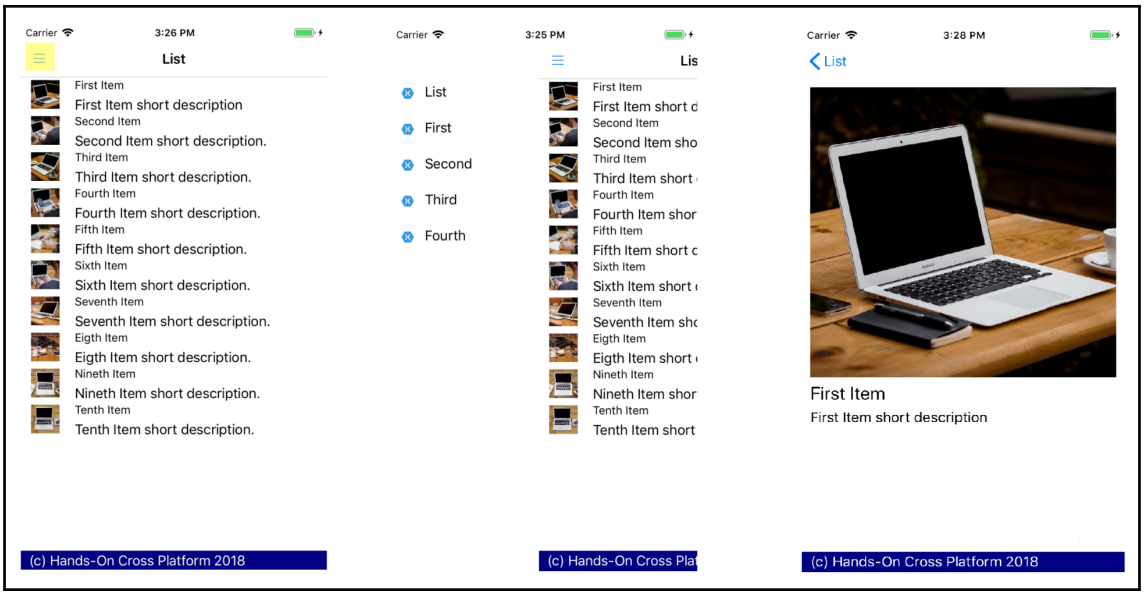
List

Fourth Item

Fourth Item short description.

(c) Hands-On Cross Platform 2018

List First Second Third


Carrier
3:26 PM
List
First Item
First Item short description
Second Item
Second Item short description.
Third Item
Third Item short description.
Fourth Item
Fourth Item short description.
Fifth Item
Fifth Item short description.
Sixth Item
Sixth Item short description.
Seventh Item
Seventh Item short description.
Eigth Item
Eigth Item short description.
Nineth Item
Nineth Item short description.
Tenth Item
Tenth Item short description.
(c) Hands-On Cross Platform 2018
Carrier
3:25 PM
List
First
Second
Third
Fourth
Lis
First Item
Second Item
Third Item
Fourth Item
Fifth Item
Sixth Item
Seventh Item
Eigth Item
Nineth Item
Tenth Item
(c) Hands-On Cross Pla
Carrier
3:28 PM
List
First Item
First Item short description
(c) Hands-On Cross Platform 2018

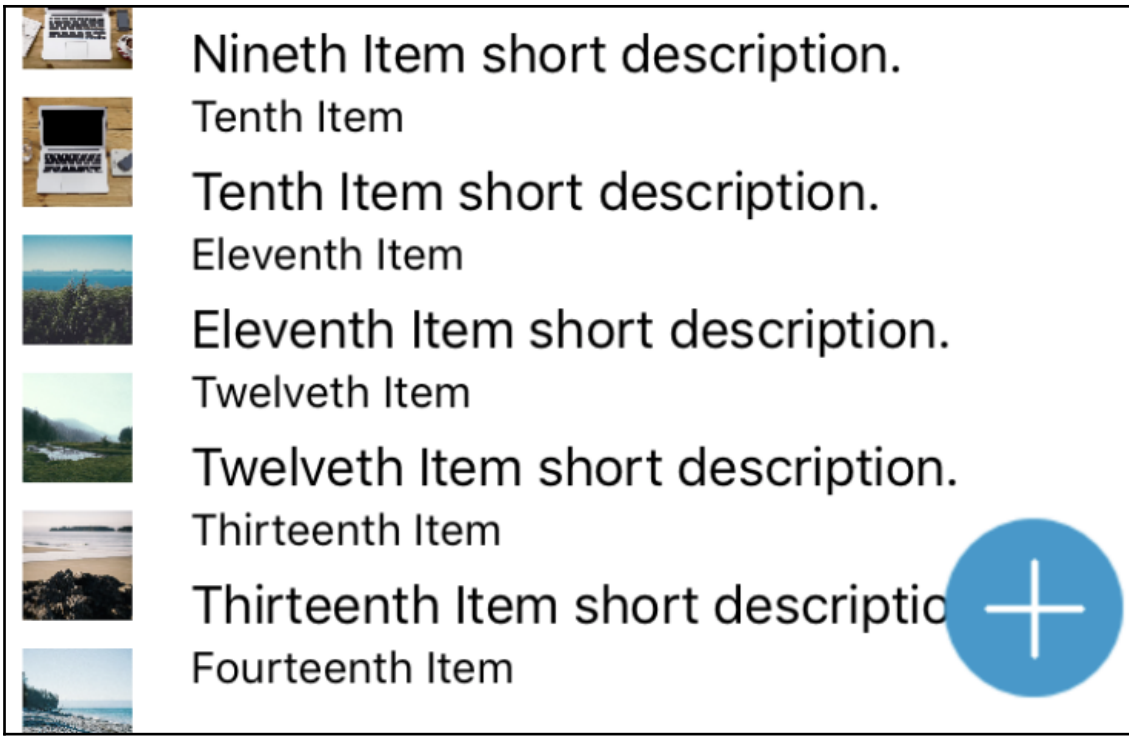
Feature 1
Feat. 2
New Feature
Feature 4
Feature 5
Feature 6
Third Item short description.

Feature 1 Feat. 2 New Feature Feature 4
Feature 5 Feature 6

Second Item short description.

Specifications

Specification 1	Value for Specification
Another Spec.	Value for Specification that is a little longer
Specification 3	Value for Specification
Final Value	Value for Specification



Bundle version	String	1.0
▼ Fonts provided by application	Array	(5 items)
	String	Ubuntu-Bold.ttf
	String	Ubuntu-Italic.ttf
	String	Ubuntu-Light.ttf
	String	Ubuntu-Regular.ttf
	String	Ubuntu-Medium.ttf
Add new entry		

Feature 1 Feat. 2 New Feature Feature 4
Feature 5 Feature 6

Sixth Item short description.

Sixth Item short description.

Specifications

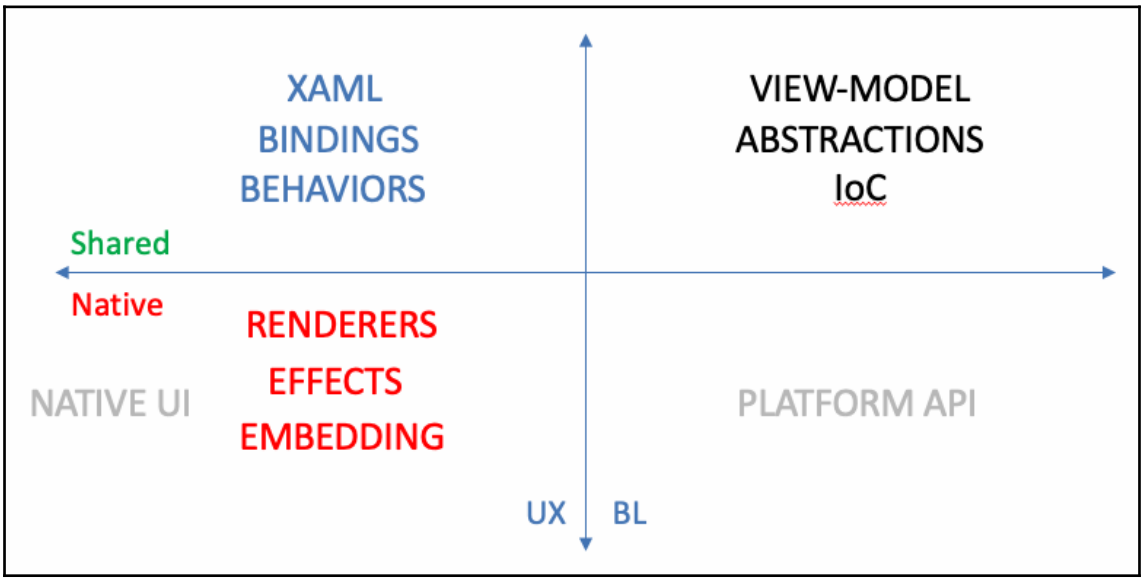
First Item 10/10/2018 00:00:00

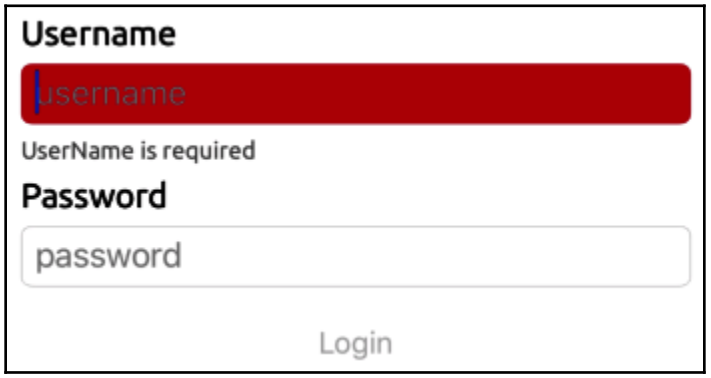
First Item 10/10/2018

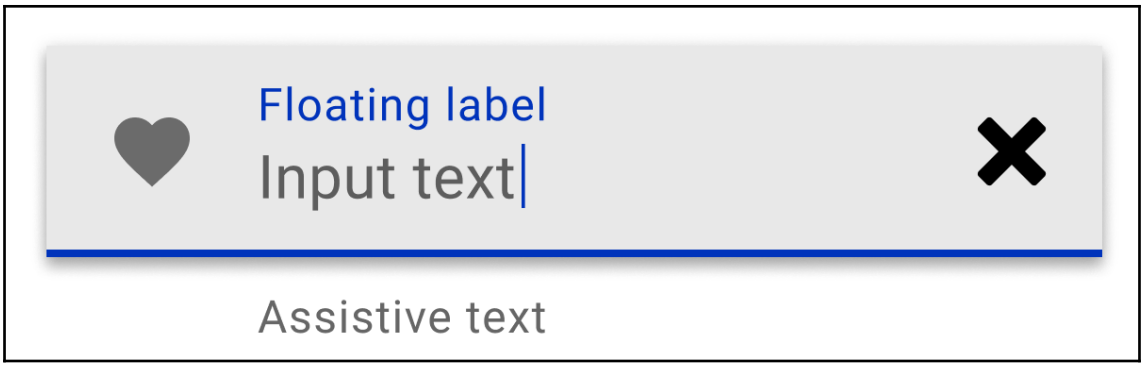
First Item

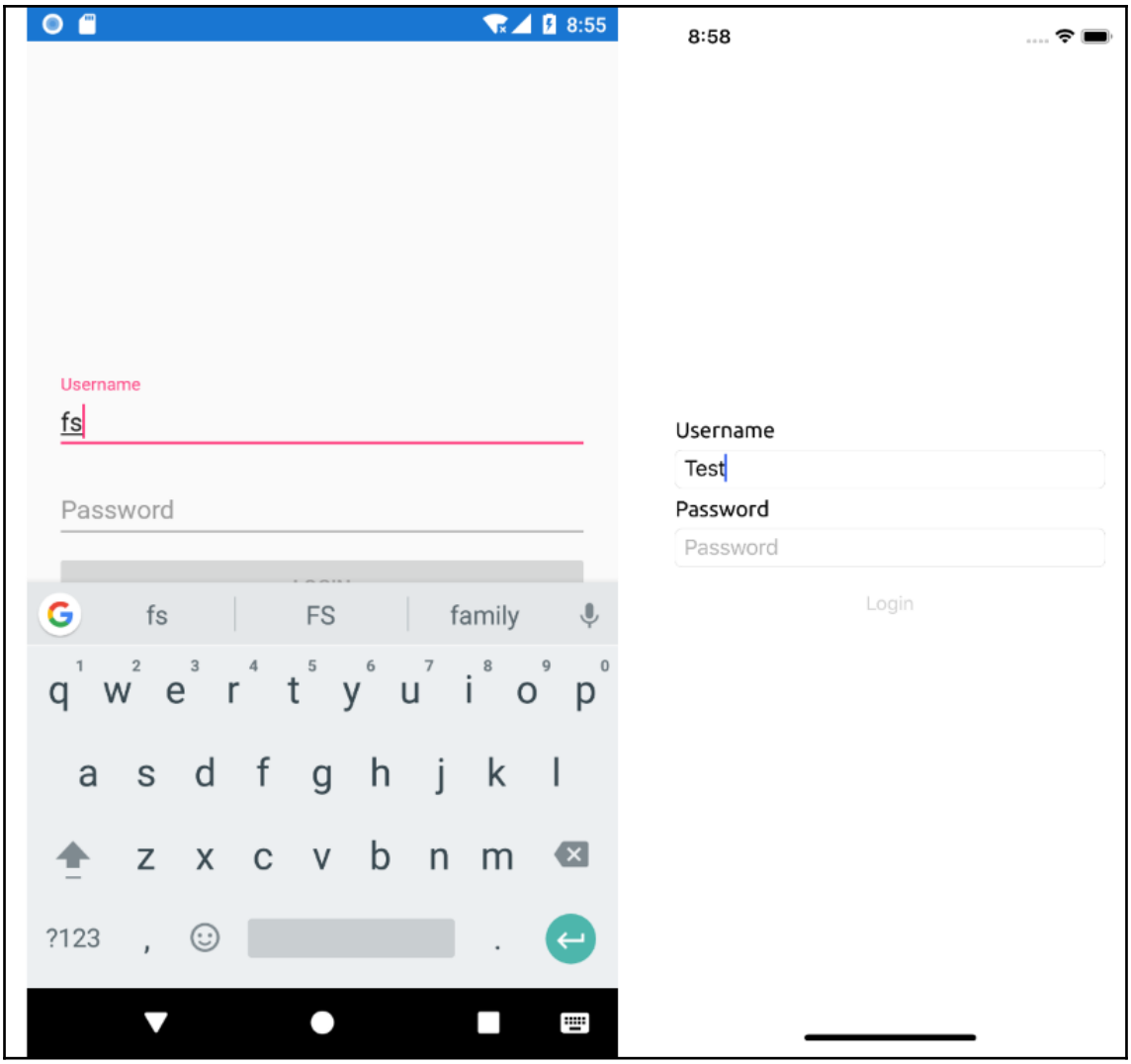
Release 10/10/2018

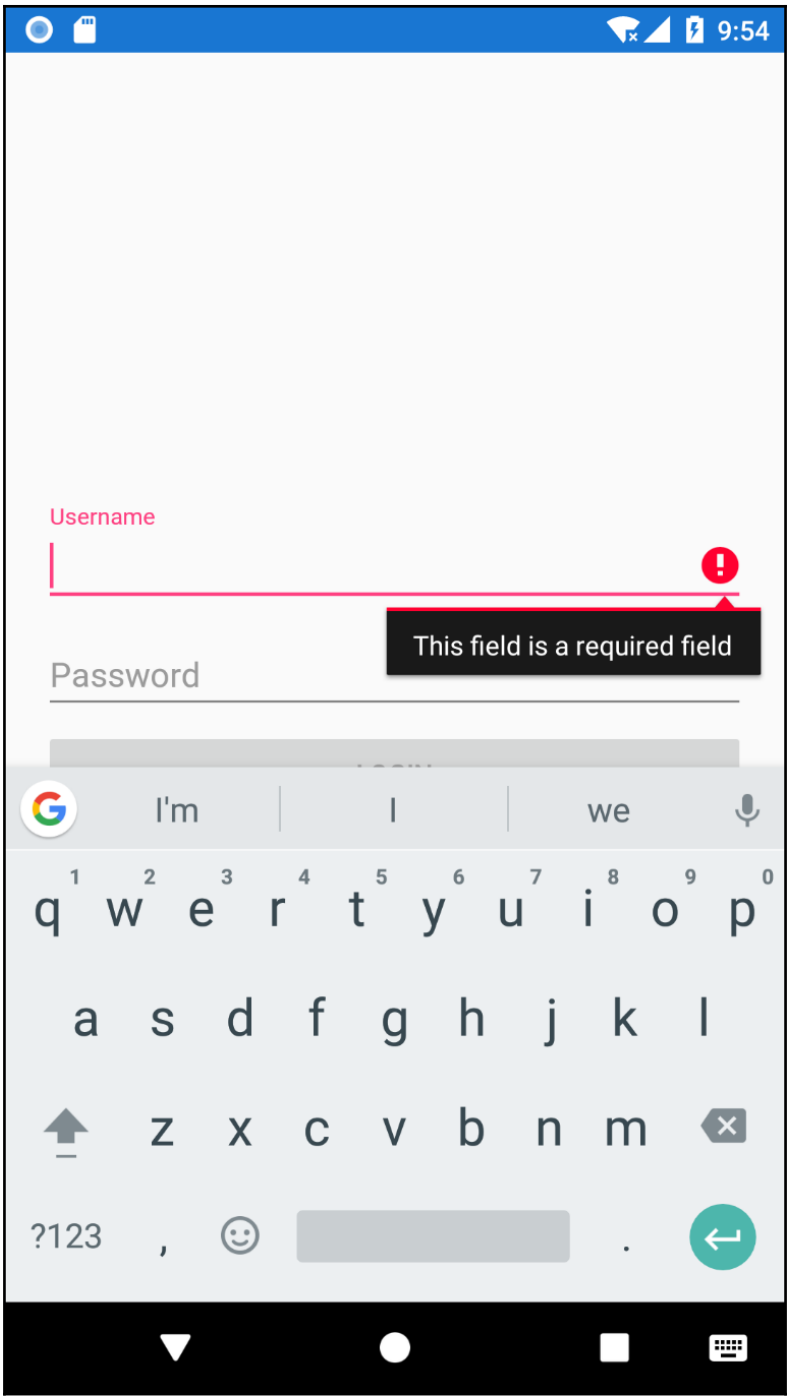
Chapter 6: 6.Customizing Xamarin.Forms



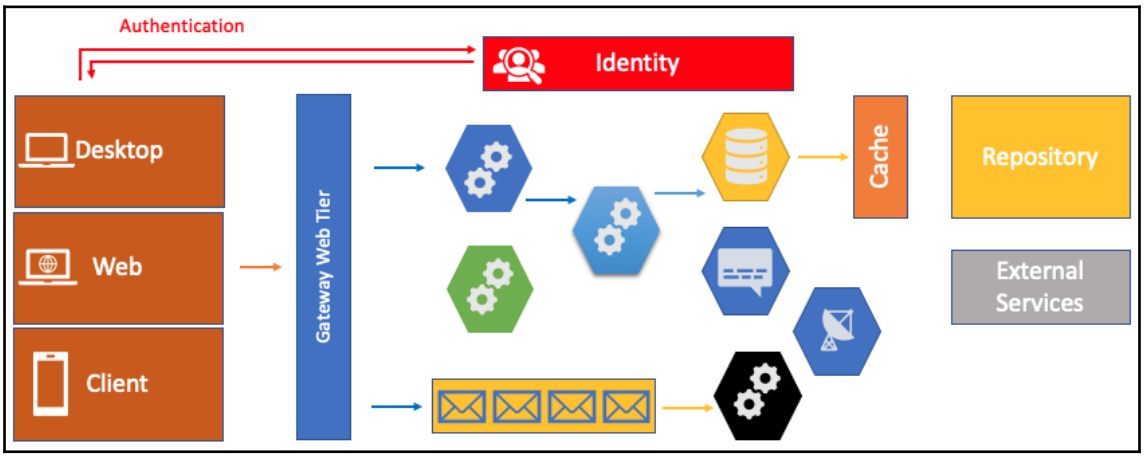


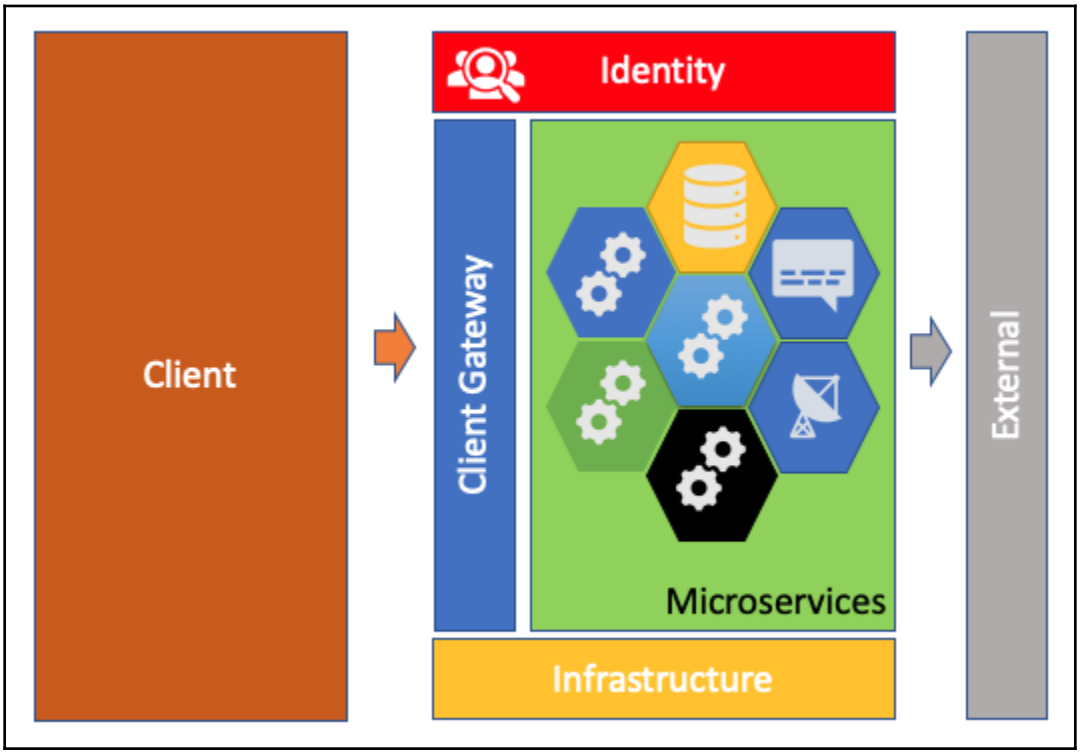

Floating label
Input text
Assistive text

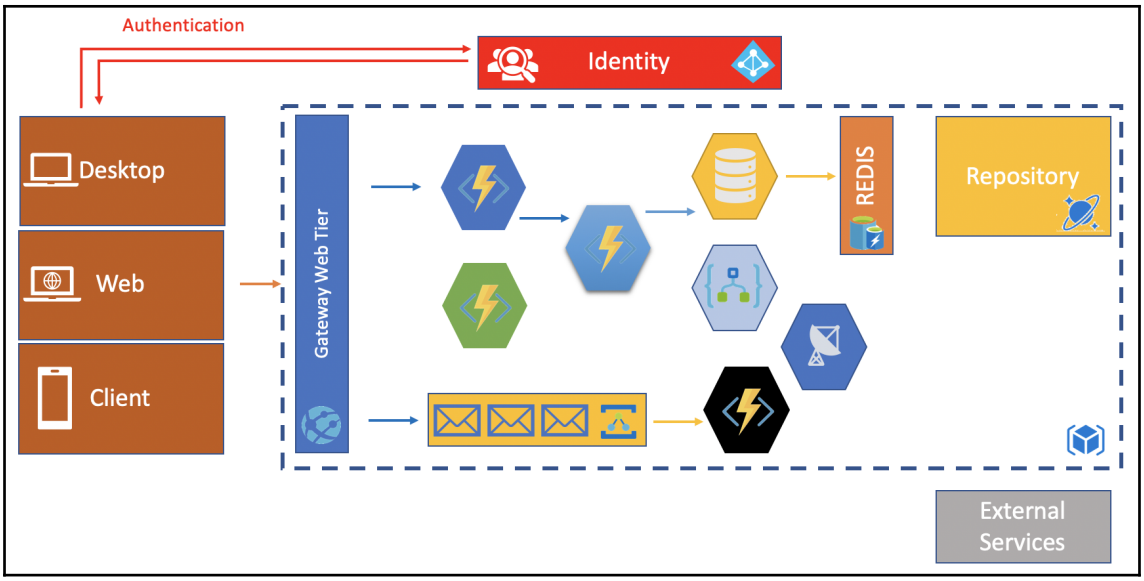

8:55
Username
fs
Password
fs
FS
family
8:58
Username
Test
Password
Password
Login

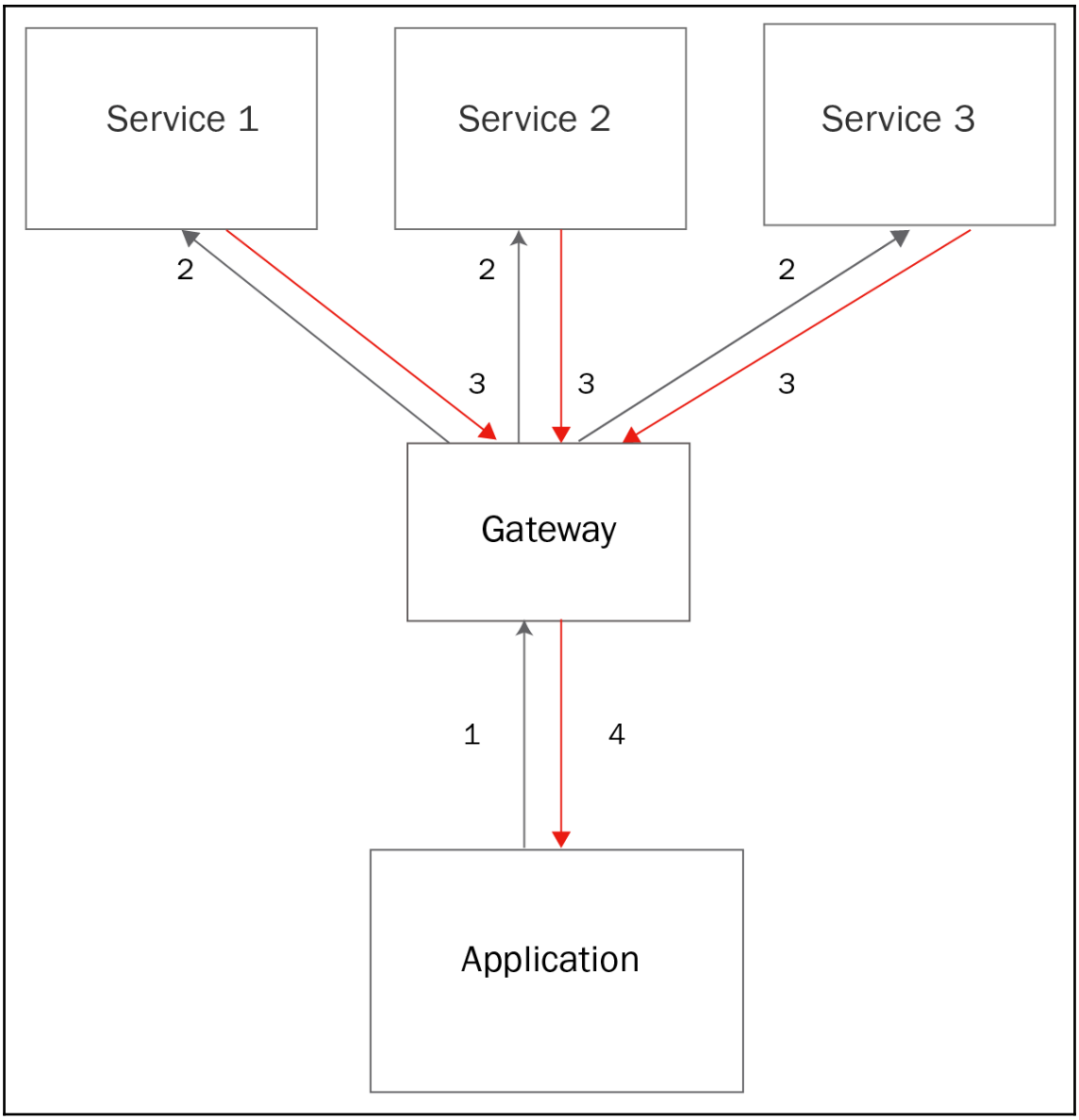

9:54
Username
This field is a required field
Password
I'm
I
we
q w e r t y u i o p
a s d f g h j k l
z x c v b n m
?123
,
.

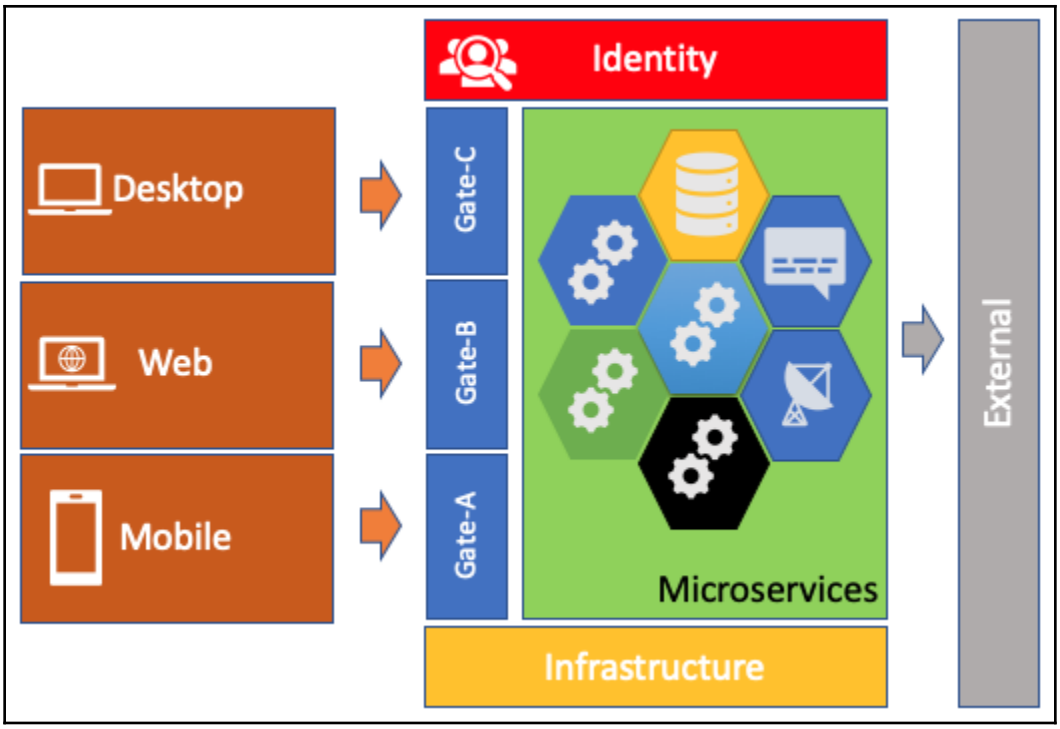
Chapter 7: 7.Azure Services for Mobile Applications

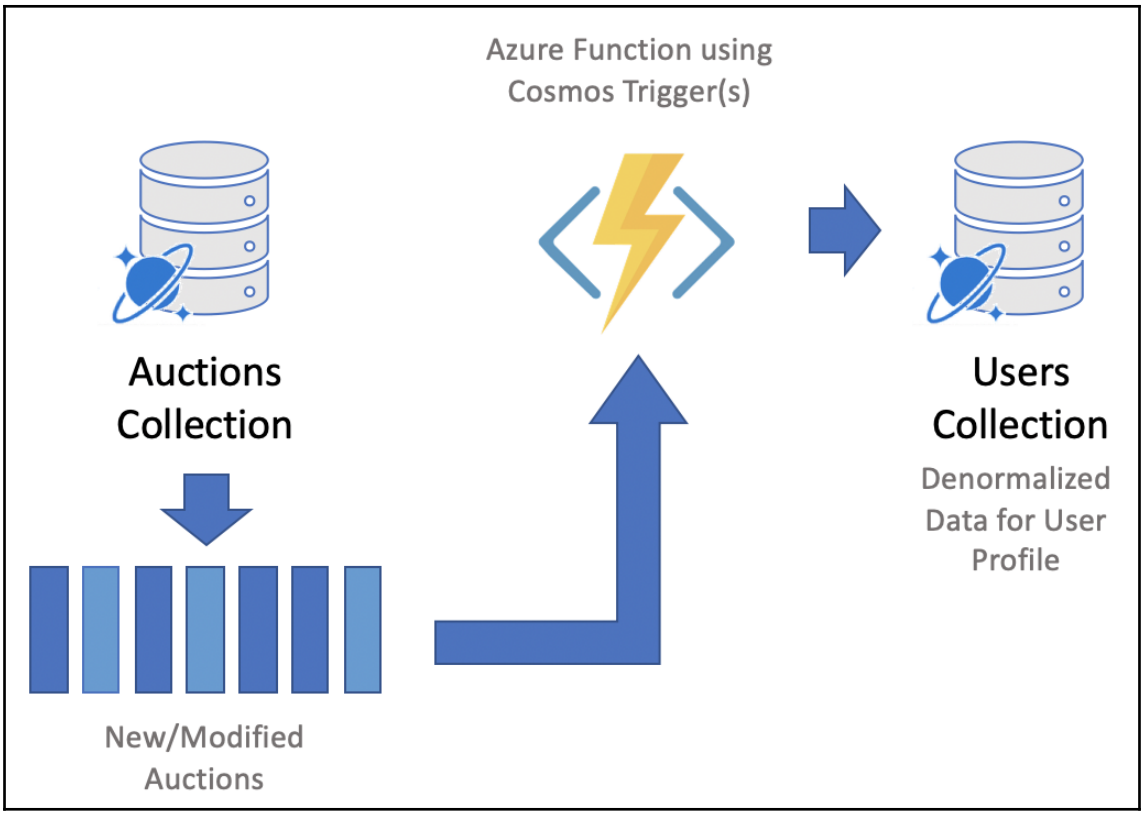


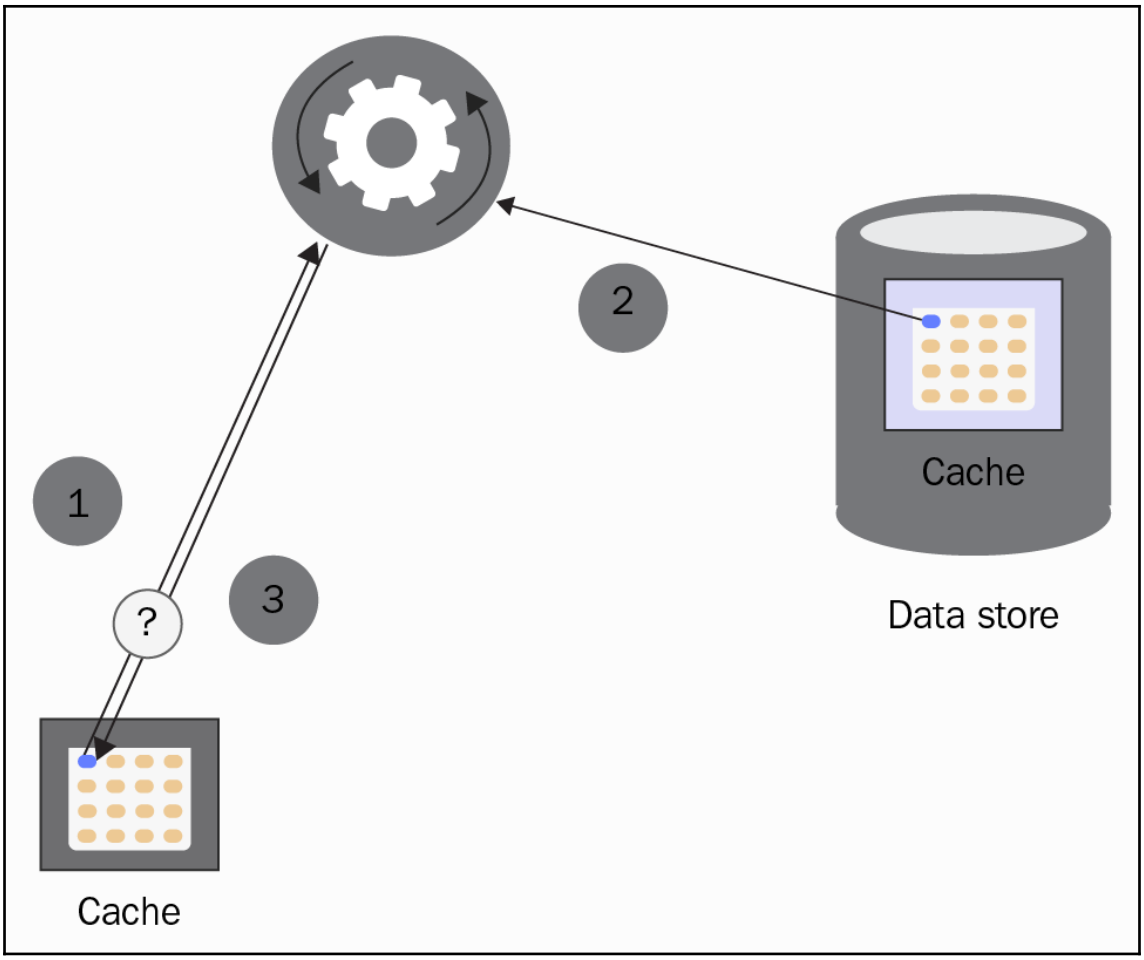


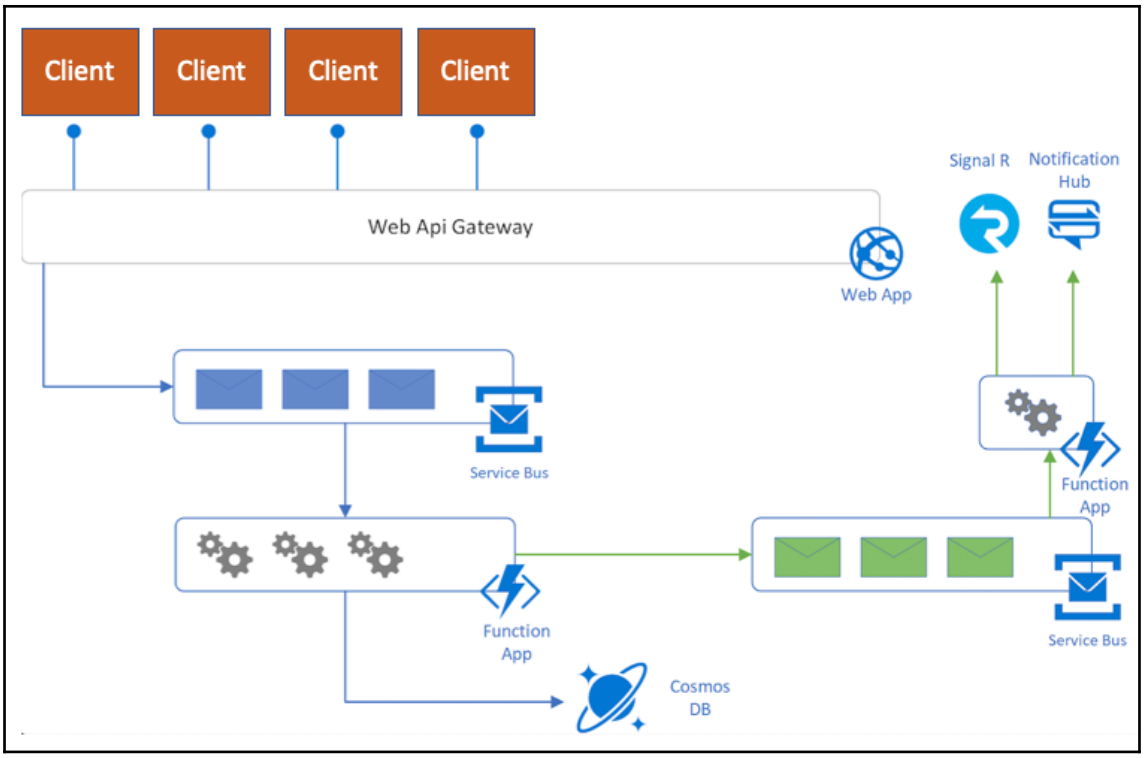

Authentication
Identity
Desktop
Web
Client
Gateway Web Tier
REDIS
Repository
External Services

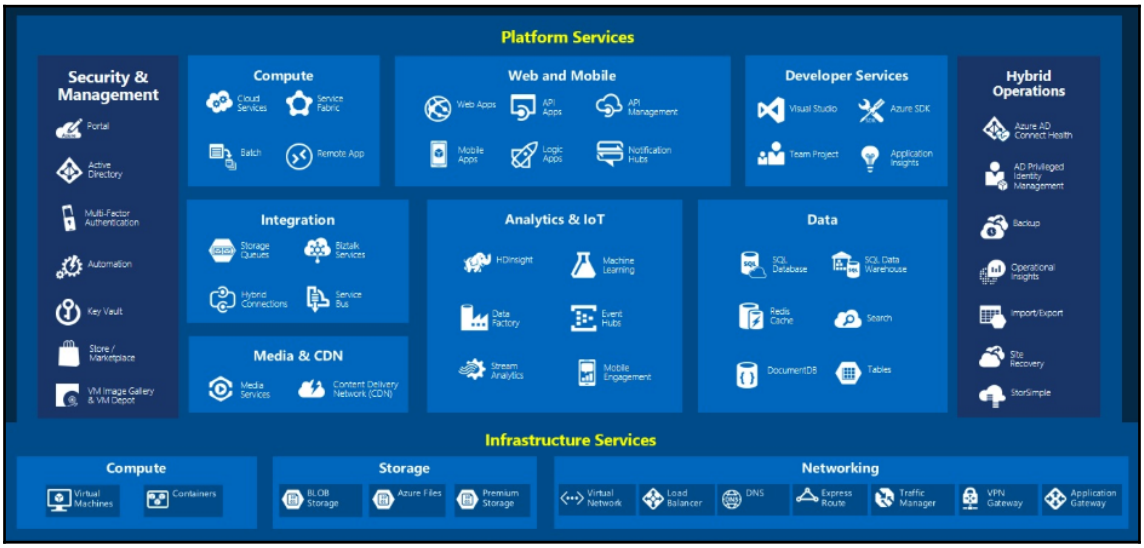

Service 1
Service 2
Service 3
2
2
2
3
3
3
Gateway
1
4
Application


Identity
Desktop
Web
Mobile
Gate-C
Gate-B
Gate-A
Microservices
Infrastructure
External


Azure Function using
Cosmos Trigger(s)
Auctions
Collection
Users
Collection
Denormalized
Data for User
Profile
New/Modified
Auctions


1
2
3
?
Cache
Cache
Data store


Client
Client
Client
Client
Web Api Gateway
Web App
Signal R
Notification Hub
Service Bus
Function App
Function App
Service Bus
Cosmos DB


Platform Services
Security & Management
Portal
Active Directory
Multi-Factor Authentication
Automation
Key Vault
Store / Marketplace
VM Image Gallery & VM Depot
Compute
Cloud Services
Service Fabric
Batch
Remote App
Web and Mobile
Web Apps
API Apps
API Management
Mobile Apps
Logic Apps
Notification Hubs
Developer Services
Visual Studio
Azure SDK
Team Project
Application Insights
Hybrid Operations
Azure AD Connect Health
AD Privileged Identity Management
Backup
Operational Insights
Import/Export
Site Recovery
StorSimple
Integration
Storage Queues
Biztalk Services
Hybrid Connections
Service Bus
Media & CDN
Media Services
Content Delivery Network (CDN)
Analytics & IoT
HDInsight
Machine Learning
Data Factory
Event Hubs
Stream Analytics
Mobile Engagement
Data
SQL Database
SQL Data Warehouse
Redis Cache
Search
DocumentDB
Tables
Infrastructure Services
Compute
Virtual Machines
Containers
Storage
BLOB Storage
Azure Files
Premium Storage
Networking
Virtual Network
Load Balancer
DNS
Express Route
Traffic Manager
VPN Gateway
Application Gateway

To see all resource providers in Azure, and the registration status for your subscription, use:

Azure PowerShell — Copy — Try It

```
Get-AzResourceProvider -ListAvailable | Select-Object ProviderNamespace, RegistrationS
```

Which returns results similar to:

PowerShell — Copy

```
ProviderNamespace                RegistrationState
-------------------------------- ------------------
Microsoft.ClassicCompute         Registered
Microsoft.ClassicNetwork         Registered
Microsoft.ClassicStorage         Registered
Microsoft.CognitiveServices      Registered
...
```

Registering a resource provider configures your subscription to work with the resource provider. The scope for registration is always the subscription. By default, many resource providers are automatically registered. However, you may need to manually register some resource providers. To register a resource provider, you must have permission to perform the `/register/action` operation for the resource provider. This operation is included in the Contributor and Owner roles.

Azure PowerShell — Copy — Try It

```
Register-AzResourceProvider -ProviderNamespace Microsoft.Batch
```

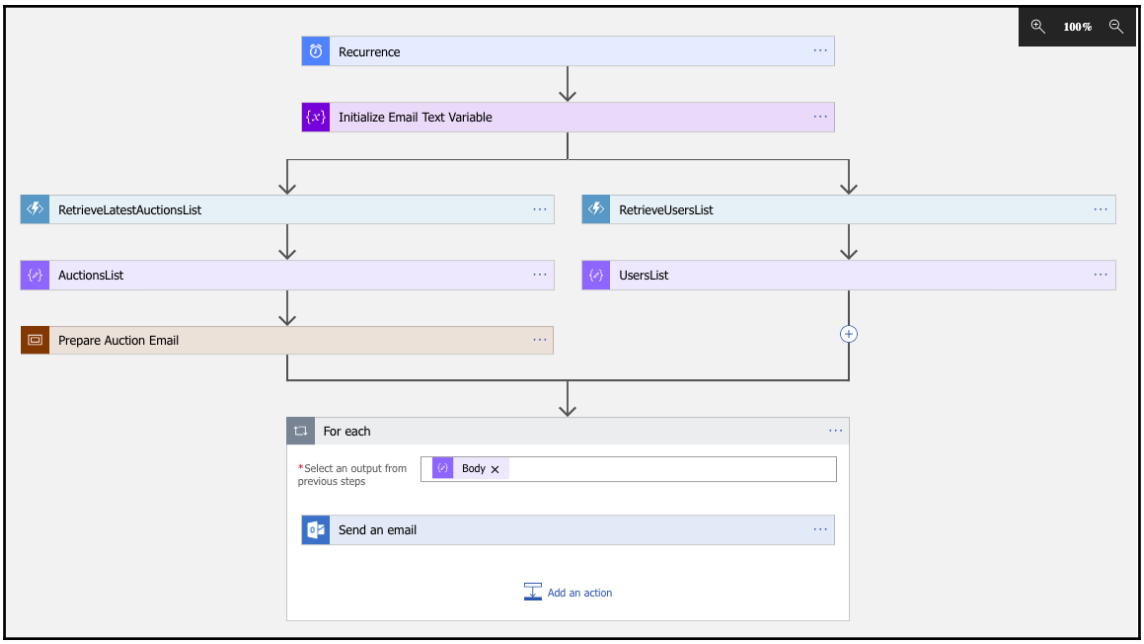
Which returns results similar to:

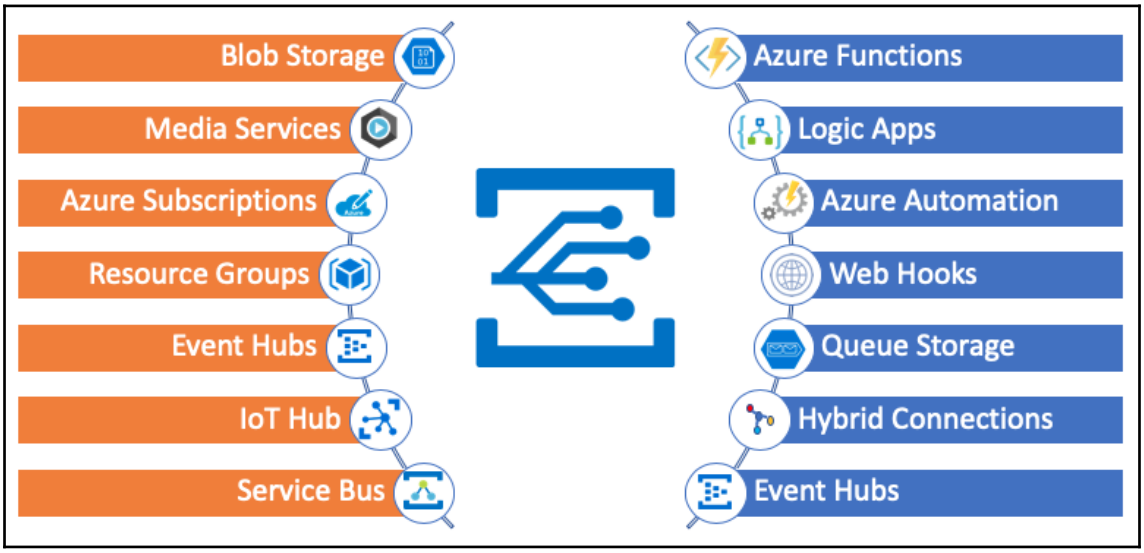
PowerShell — Copy

Azure Cloud Shell — Feedback

```
Type "az" to use Azure CLI 2.0
Type "help" to learn about Cloud Shell


MOTD: Read more about PowerShell in CloudShell: https://aka.ms/pscloudshell/docs

VERBOSE: Authenticating to Azure ...
VERBOSE: Building your Azure drive ...
Azure:/
PS Azure:\> Get-AzResourceProvider -ListAvailable | Select-Object ProviderNamespace,
RegistrationState

ProviderNamespace                RegistrationState
-----------------                -----------------
Microsoft.Advisor                Registered
Microsoft.Batch                  Unregistered
Microsoft.Cache                  Registered
Microsoft.ClassicStorage         Registered
Microsoft.Compute                Registered
Microsoft.ContainerRegistry      Registered
Microsoft.DevTestLab             Registered
Microsoft.DomainRegistration     Registered
Microsoft.EventHub               Registered
microsoft.insights               Registered
Microsoft.Logic                  Registered
Microsoft.MachineLearning        Registered
Microsoft.ManagedIdentity        Registered
Microsoft.Network                Registered
Microsoft.NotificationHubs       Registered
Microsoft.OperationalInsights    Registered
Microsoft.ResourceHealth         Registered
Microsoft.Security               Registered
Microsoft.ServiceBus             Registered
Microsoft.Sql                    Registered
Microsoft.Storage                Registered
Microsoft.Web                    Registered
84codes.CloudAMQP                NotRegistered
AppDynamics.APM                  NotRegistered
Aspera.Transfers                 NotRegistered
```

```
Azure:/
PS Azure:\> Get-AzResourceProvider -ProviderNamespace Microsoft.Compute `
>> | Select-Object ResourceTypes, Locations

ResourceTypes                                                  Locations
-------------                                                  ---------
{availabilitySets}                                             {East US, East US 2, ...
{virtualMachines}                                              {East US, East US 2, ...
{virtualMachines/extensions}                                   {East US, East US 2, ...
{virtualMachineScaleSets}                                      {East US, East US 2, ...
{virtualMachineScaleSets/extensions}                           {East US, East US 2, ...
{virtualMachineScaleSets/virtualMachines}                      {East US, East US 2, ...
{virtualMachineScaleSets/networkInterfaces}                    {East US, East US 2, ...
{virtualMachineScaleSets/virtualMachines/networkInterfaces}    {East US, East US 2, ...
{virtualMachineScaleSets/publicIPAddresses}                    {East US, East US 2, ...
{locations}                                                    {}
{locations/operations}                                         {East US, East US 2, ...
{locations/vmSizes}                                            {East US, East US 2, ...
{locations/runCommands}                                        {East US, East US 2, ...
{locations/usages}                                             {East US, East US 2, ...
{locations/virtualMachines}                                    {East US, East US 2, ...
{locations/publishers}                                         {East US, East US 2, ...
{operations}                                                   {East US, East US 2, ...
{restorePointCollections}                                      {Southeast Asia, East...
{restorePointCollections/restorePoints}                        {Southeast Asia, East...
{virtualMachines/diagnosticSettings}                           {East US, East US 2, ...
{virtualMachines/metricDefinitions}                            {East US, East US 2, ...
```


100%
Recurrence
Initialize Email Text Variable
RetrieveLatestAuctionsList
RetrieveUsersList
AuctionsList
UsersList
Prepare Auction Email
For each
*Select an output from previous steps
Body
Send an email
Add an action


Blob Storage
Media Services
Azure Subscriptions
Resource Groups
Event Hubs
IoT Hub
Service Bus
Azure Functions
Logic Apps
Azure Automation
Web Hooks
Queue Storage
Hybrid Connections
Event Hubs

Azure DevOps

Almost done...

Name your Azure DevOps organization *

dev.azure.com/ practicalnetcore

We'll host your projects in *

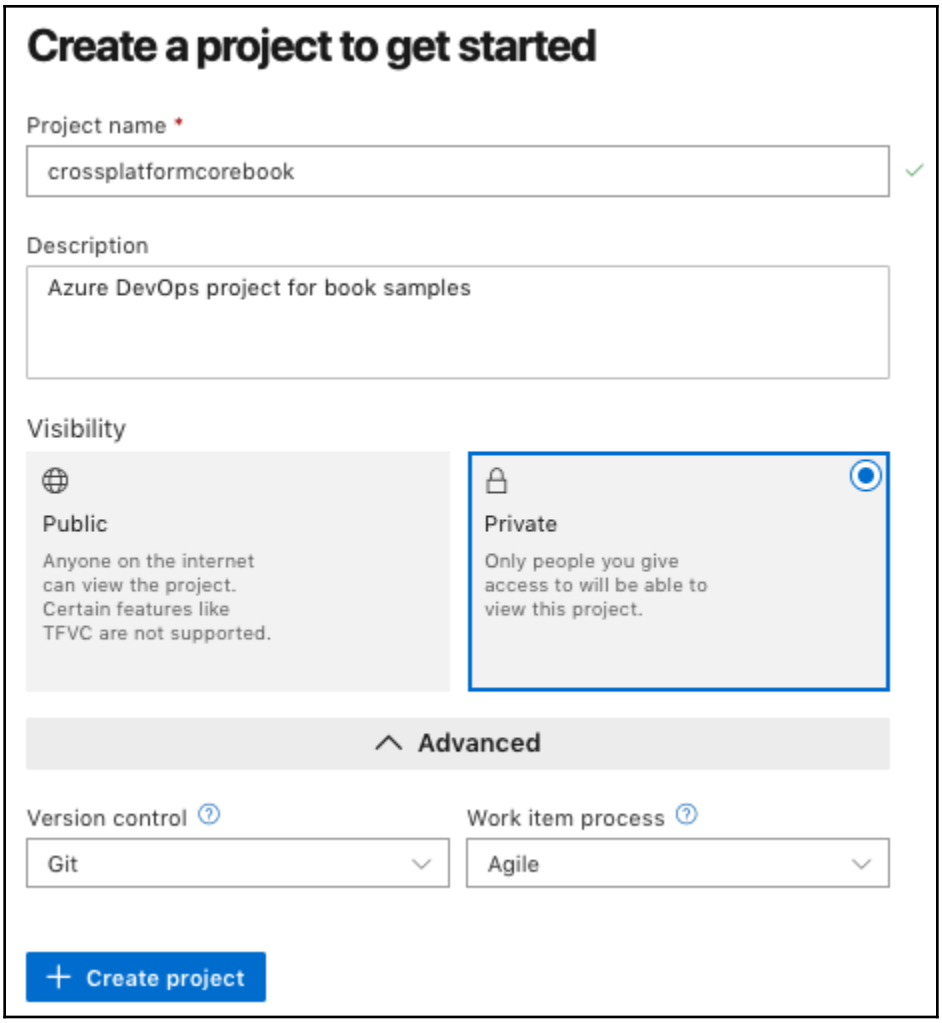
West Europe

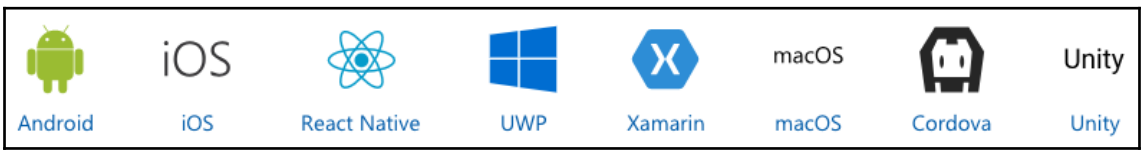
Enter the characters you see

New | Audio

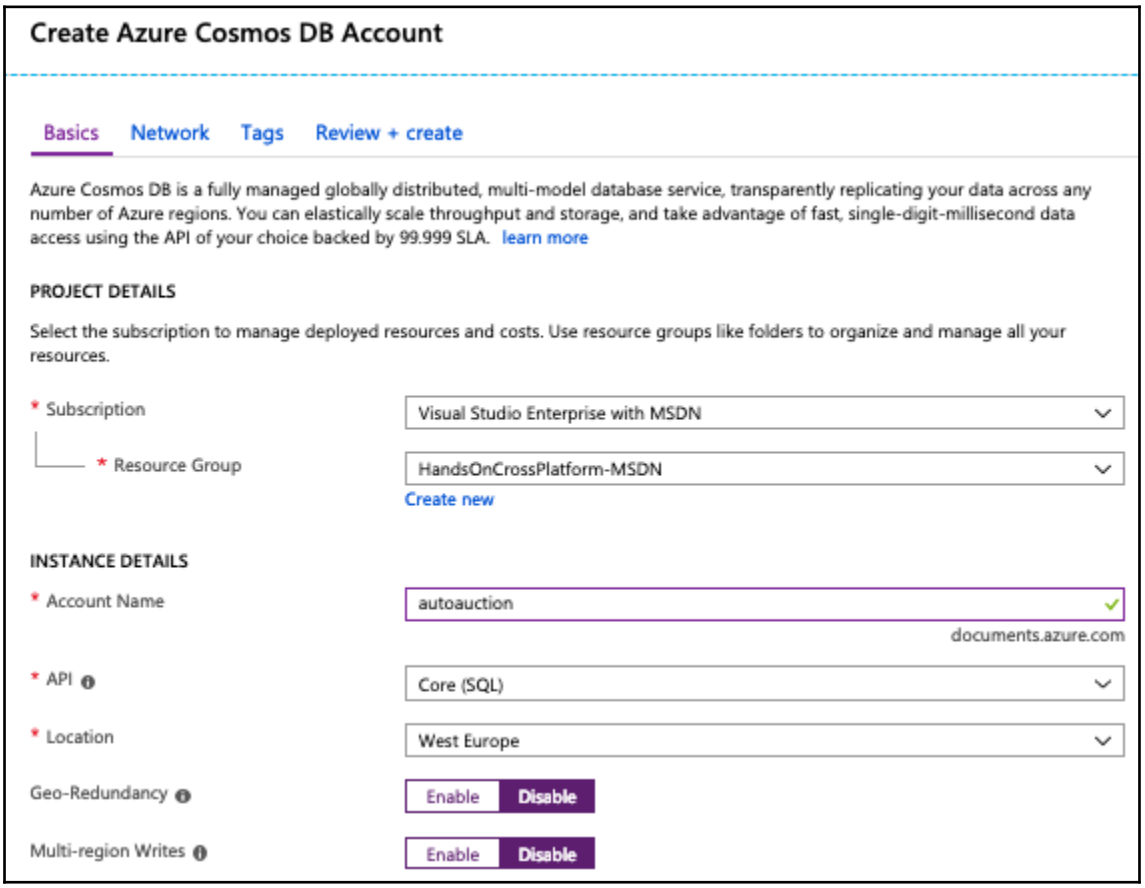
S4WRXM5HJ

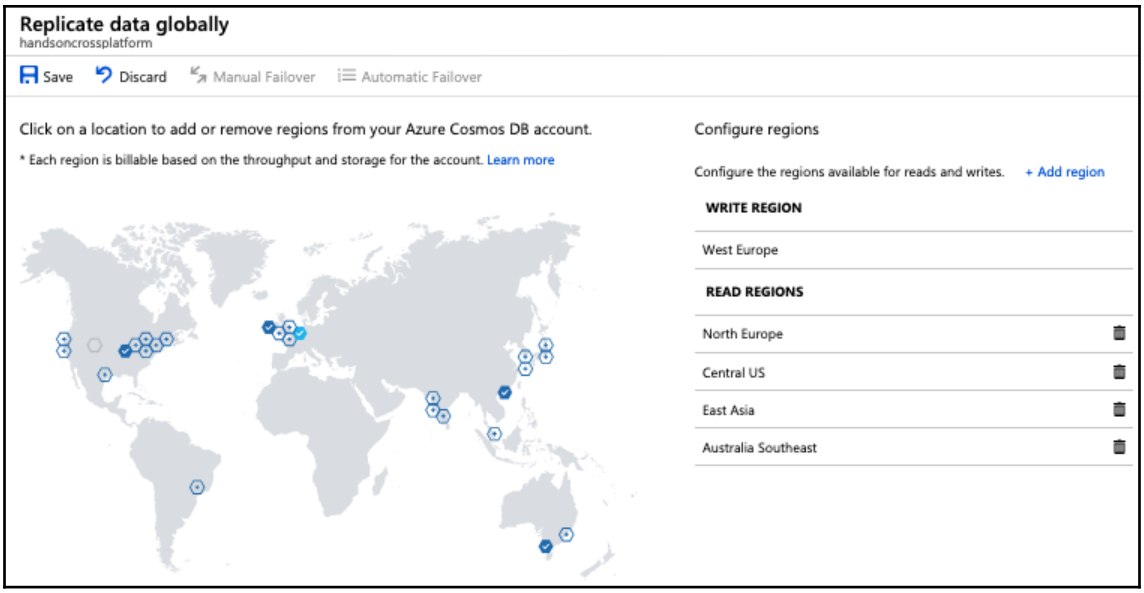
Continue

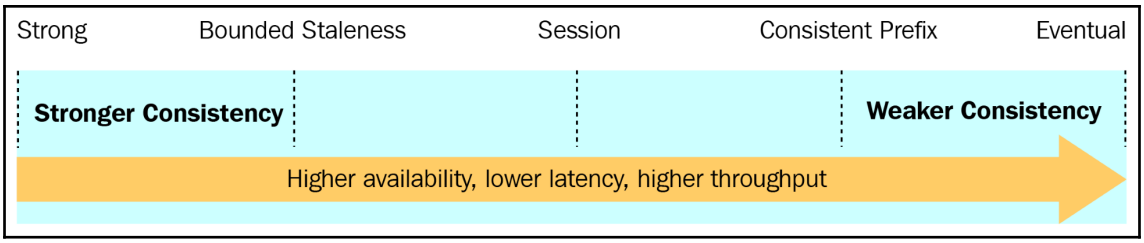

Create a project to get started
Project name *
crossplatformcorebook
Description
Azure DevOps project for book samples
Visibility
Public
Anyone on the internet can view the project. Certain features like TFVC are not supported.
Private
Only people you give access to will be able to view this project.
Advanced
Version control
Git
Work item process
Agile
Create project

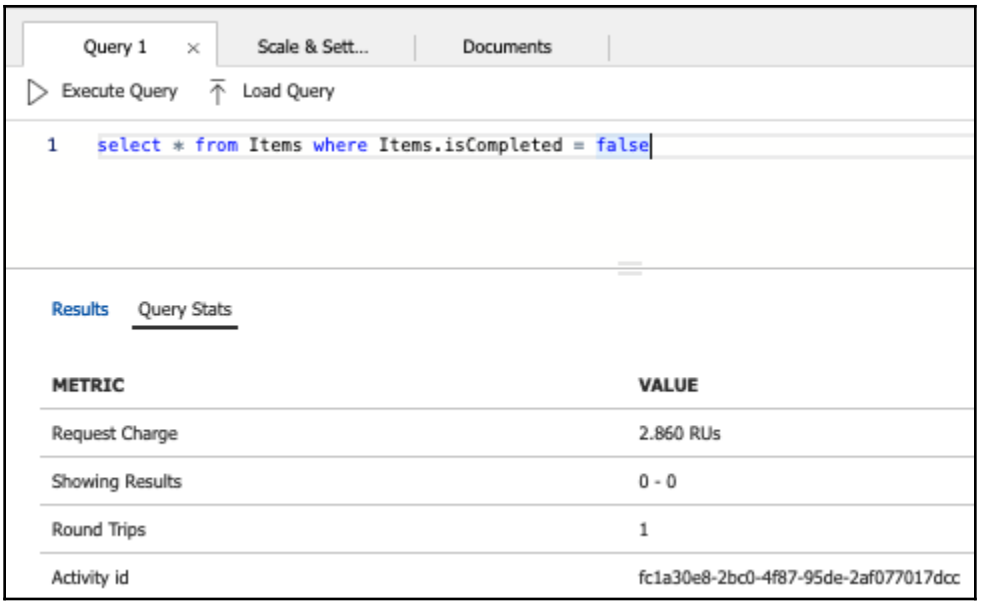

Android
iOS
iOS
React Native
UWP
Xamarin
macOS
macOS
Cordova
Unity
Unity

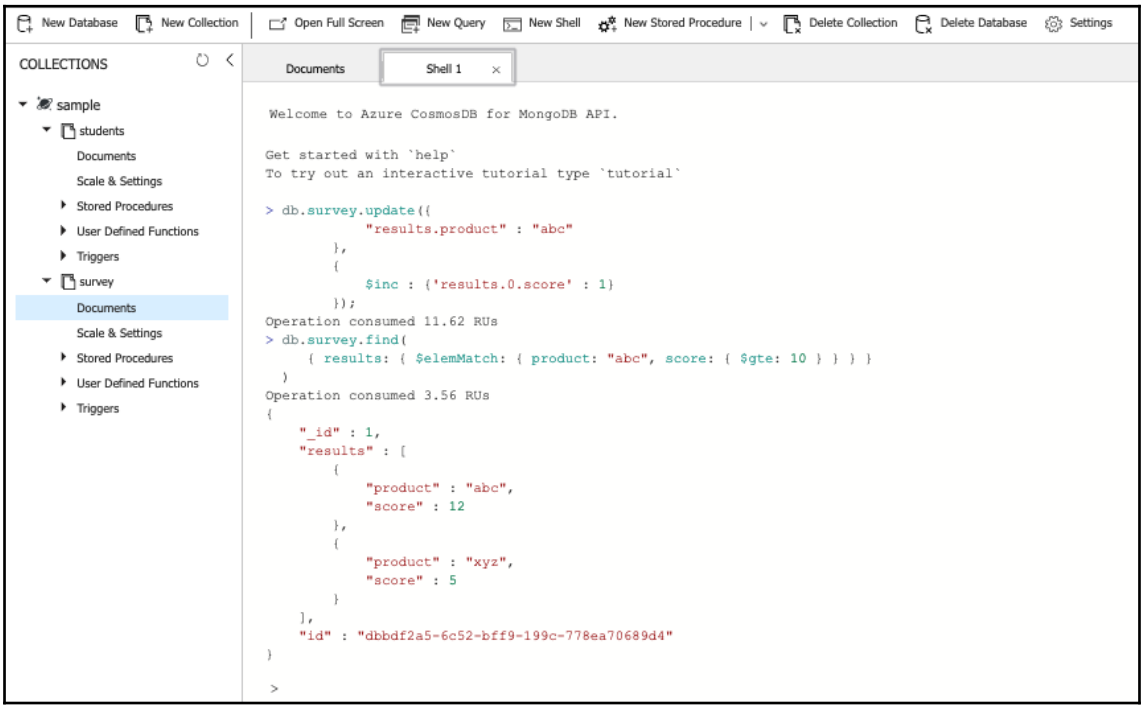
Chapter 8: 8.Creating a Datastore with Cosmos DB

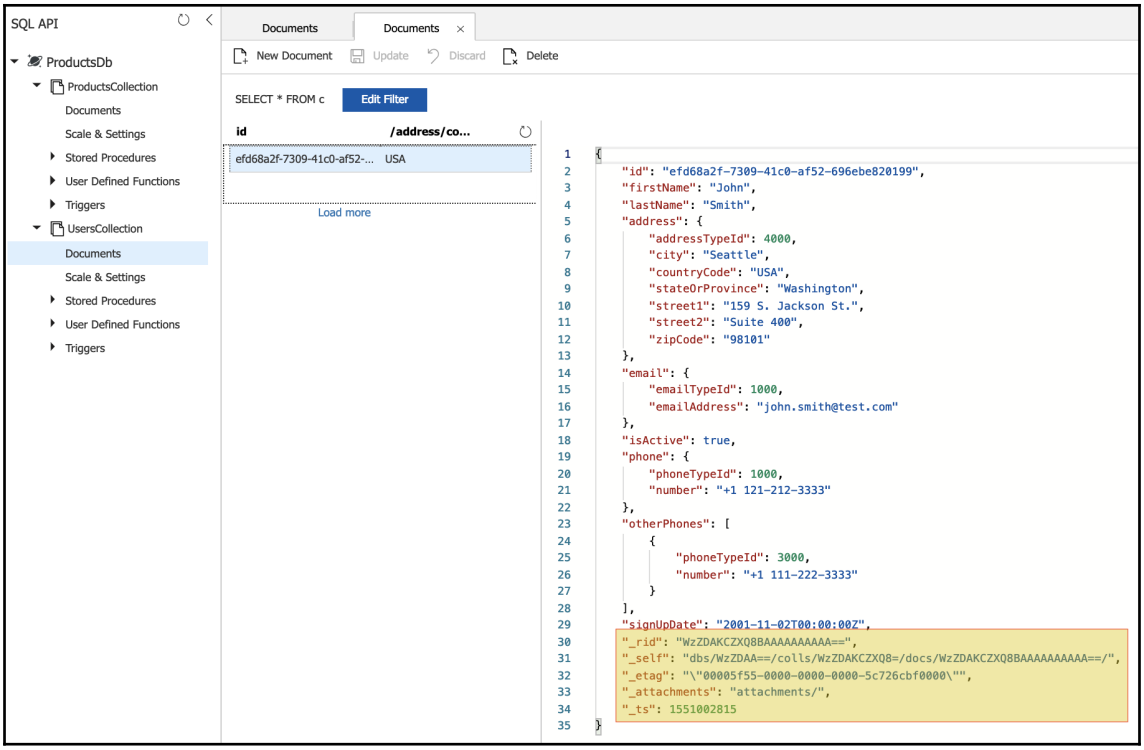



Replicate data globally
handsoncrossplatform
Save
Discard
Manual Failover
Automatic Failover
Click on a location to add or remove regions from your Azure Cosmos DB account.
* Each region is billable based on the throughput and storage for the account. Learn more
Configure regions
Configure the regions available for reads and writes.
+ Add region
WRITE REGION
West Europe
READ REGIONS
North Europe
Central US
East Asia
Australia Southeast


Strong
Bounded Staleness
Session
Consistent Prefix
Eventual
Stronger Consistency
Weaker Consistency
Higher availability, lower latency, higher throughput


Query 1
Scale & Sett...
Documents
Execute Query
Load Query
1 select * from Items where Items.isCompleted = false
Results
Query Stats
METRIC
VALUE
Request Charge
2.860 RUs
Showing Results
0 - 0
Round Trips
1
Activity id
fc1a30e8-2bc0-4f87-95de-2af077017dcc


New Database
New Collection
Open Full Screen
New Query
New Shell
New Stored Procedure
Delete Collection
Delete Database
Settings
COLLECTIONS
sample
students
Documents
Scale & Settings
Stored Procedures
User Defined Functions
Triggers
survey
Documents
Scale & Settings
Stored Procedures
User Defined Functions
Triggers
Documents
Shell 1
Welcome to Azure CosmosDB for MongoDB API.
Get started with `help`
To try out an interactive tutorial type `tutorial`
> db.survey.update({
"results.product" : "abc"
},
{
$inc : {'results.0.score' : 1}
});
Operation consumed 11.62 RUs
> db.survey.find(
{ results: { $elemMatch: { product: "abc", score: { $gte: 10 } } } }
)
Operation consumed 3.56 RUs
{
"_id" : 1,
"results" : [
{
"product" : "abc",
"score" : 12
},
{
"product" : "xyz",
"score" : 5
}
],
"id" : "dbbdf2a5-6c52-bff9-199c-778ea70689d4"
}
>


SQL API
ProductsDb
ProductsCollection
Documents
Scale & Settings
Stored Procedures
User Defined Functions
Triggers
UsersCollection
Documents
Scale & Settings
Stored Procedures
User Defined Functions
Triggers
Documents
Documents
New Document
Update
Discard
Delete
SELECT * FROM c
Edit Filter
id
/address/co...
efd68a2f-7309-41c0-af52-...
USA
Load more
{
"id": "efd68a2f-7309-41c0-af52-696ebe820199",
"firstName": "John",
"lastName": "Smith",
"address": {
"addressTypeId": 4000,
"city": "Seattle",
"countryCode": "USA",
"stateOrProvince": "Washington",
"street1": "159 S. Jackson St.",
"street2": "Suite 400",
"zipCode": "98101"
},
"email": {
"emailTypeId": 1000,
"emailAddress": "john.smith@test.com"
},
"isActive": true,
"phone": {
"phoneTypeId": 1000,
"number": "+1 121-212-3333"
},
"otherPhones": [
{
"phoneTypeId": 3000,
"number": "+1 111-222-3333"
}
],
"signUpDate": "2001-11-02T00:00:00Z",
"_rid": "WzZDAKCZXQ8BAAAAAAAAAA==",
"_self": "dbs/WzZDAA==/colls/WzZDAKCZXQ8=/docs/WzZDAKCZXQ8BAAAAAAAAAA==/",
"_etag": "\"00005f55-0000-0000-0000-5c726cbf0000\"",
"_attachments": "attachments/",
"_ts": 1551002815
}

Partition key

/vehicle.color

Indexing Policy

```
{
    "indexingMode": "consistent",
    "automatic": true,
    "includedPaths": [
        {
            "path": "/*",
            "indexes": [
                {
                    "kind": "Range",
                    "dataType": "Number",
                    "precision": -1
                },
                {
                    "kind": "Range",
                    "dataType": "String",
                    "precision": -1
                },
                {
                    "kind": "Spatial",
                    "dataType": "Point"
                }
            ]
        }
    ],
    "excludedPaths": [
        {
            "path": "/\"_etag\"/?"
        }
    ]
}
```

Trigger Id

updateAggregates

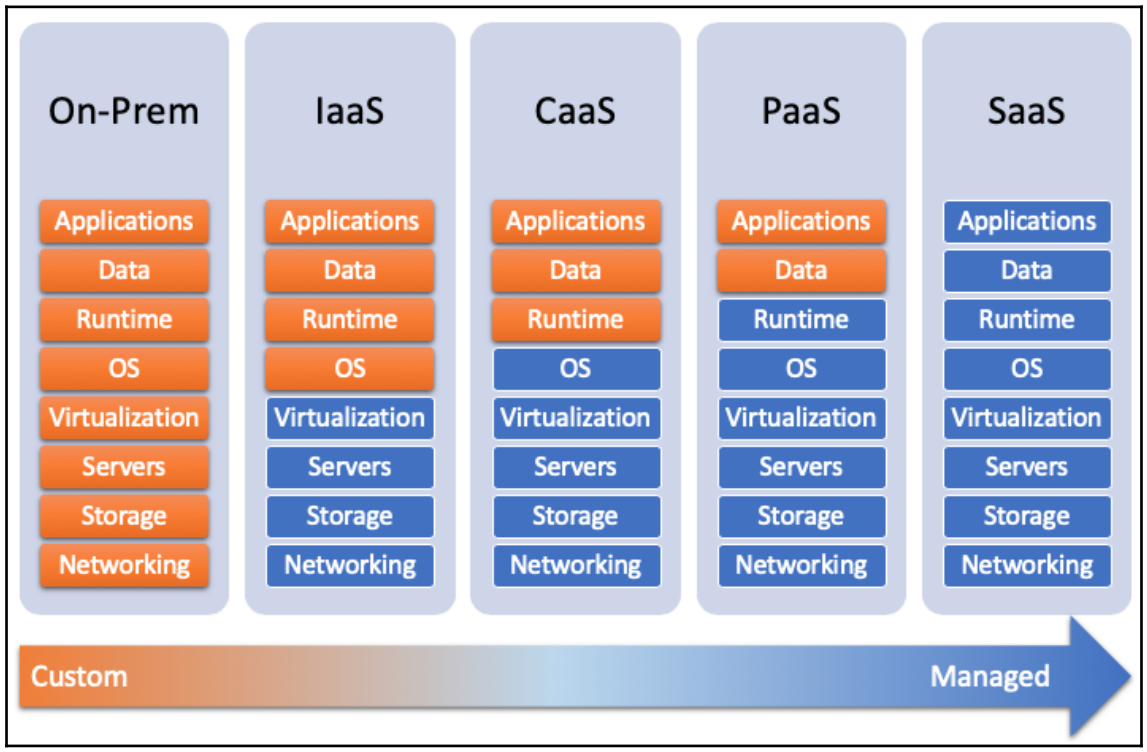
Trigger Type

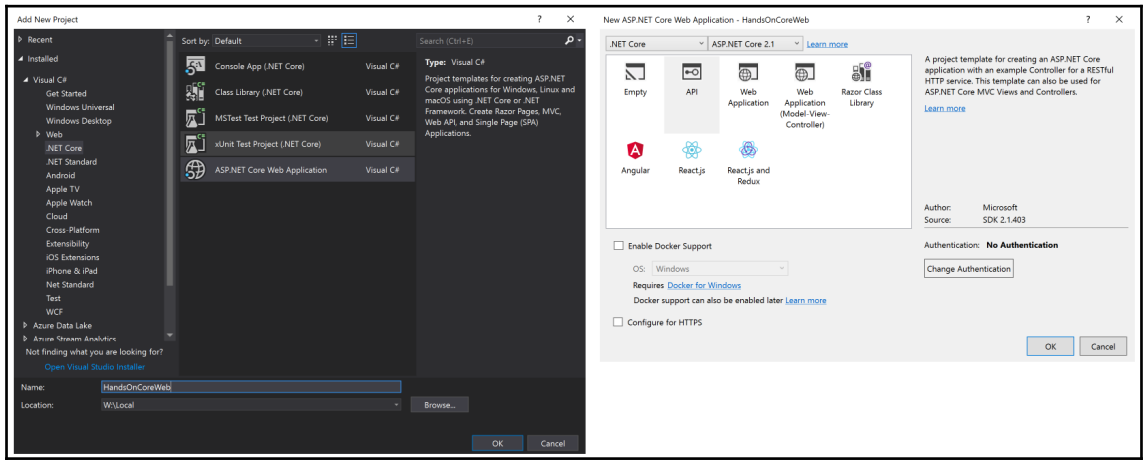
Pre

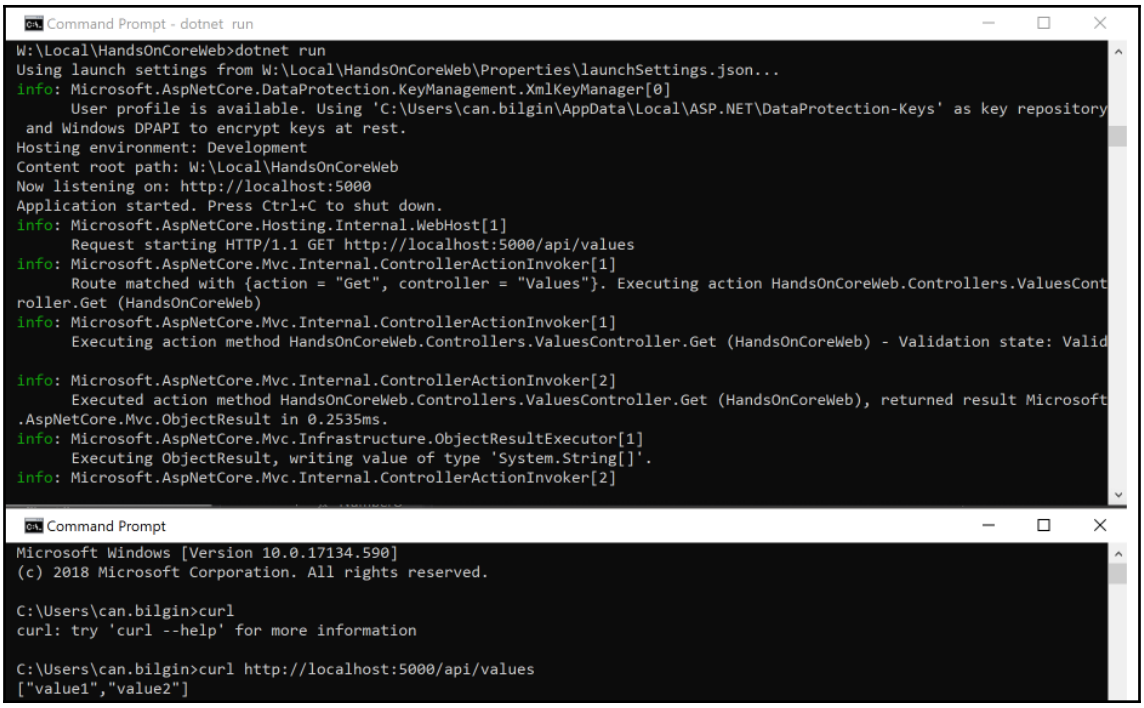
Trigger Operation

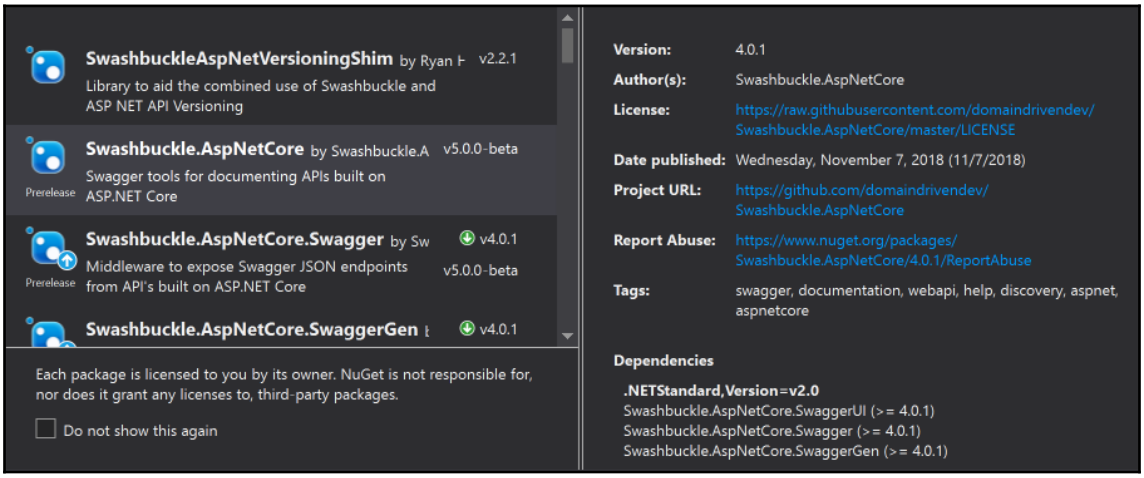
Replace

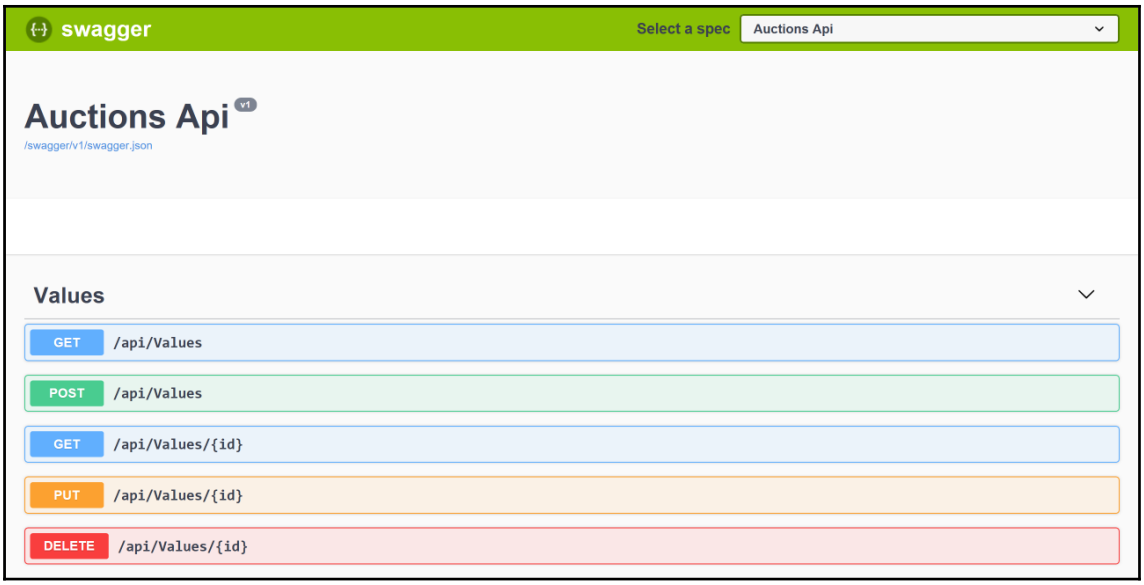
Chapter 9: 9.Creating Microservices Azure App Services

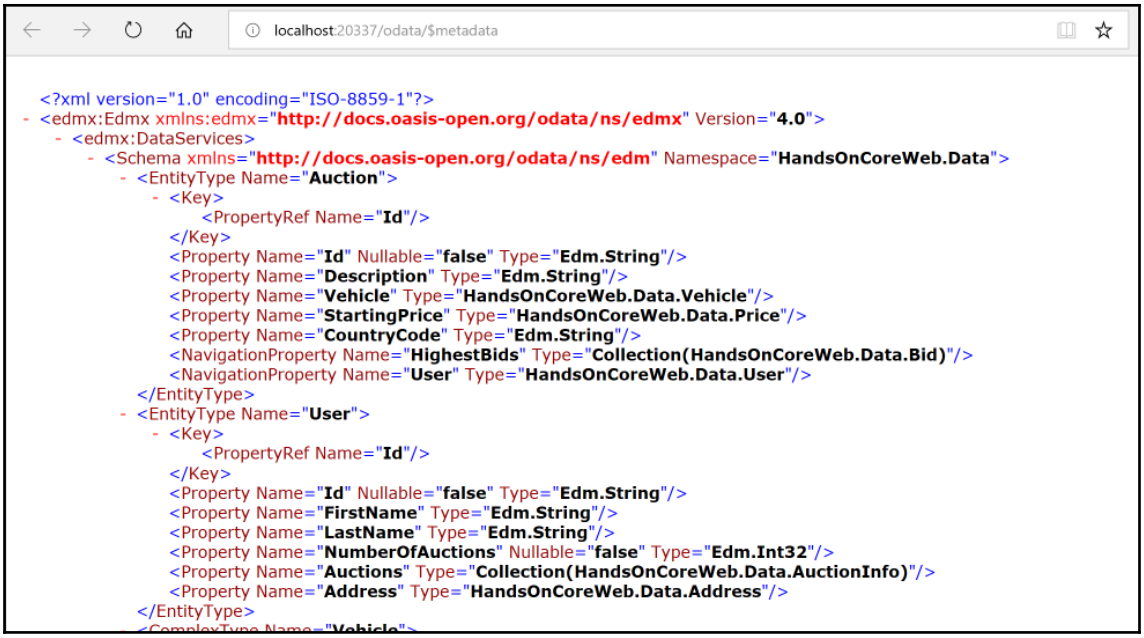


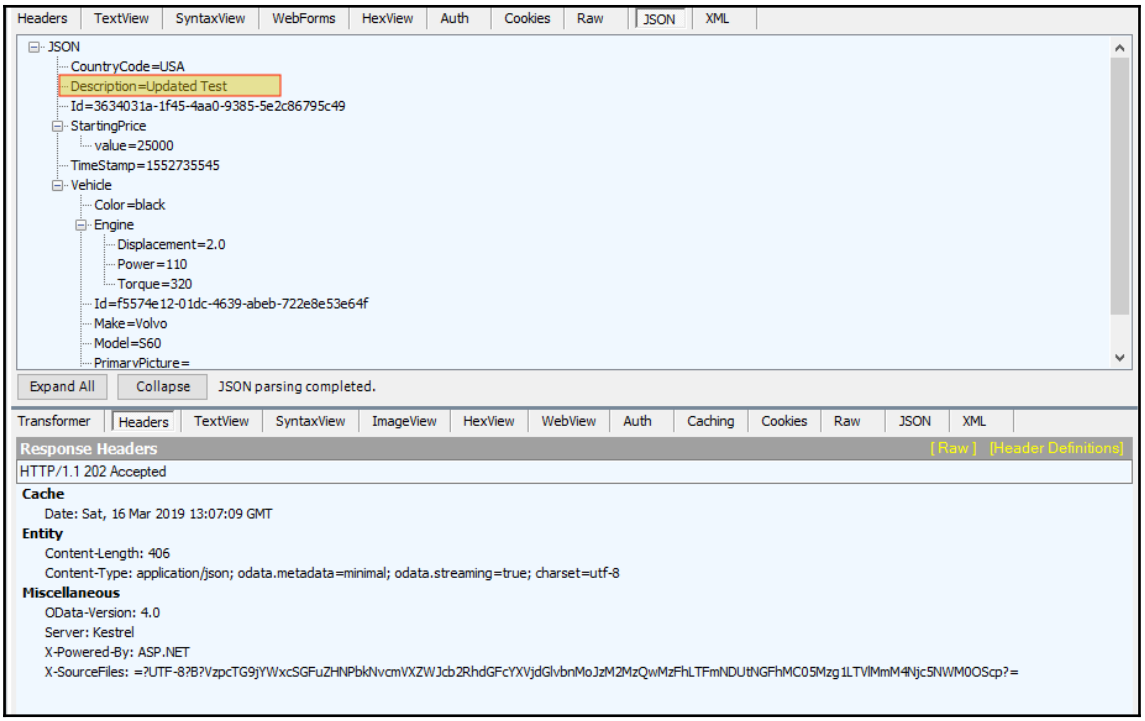


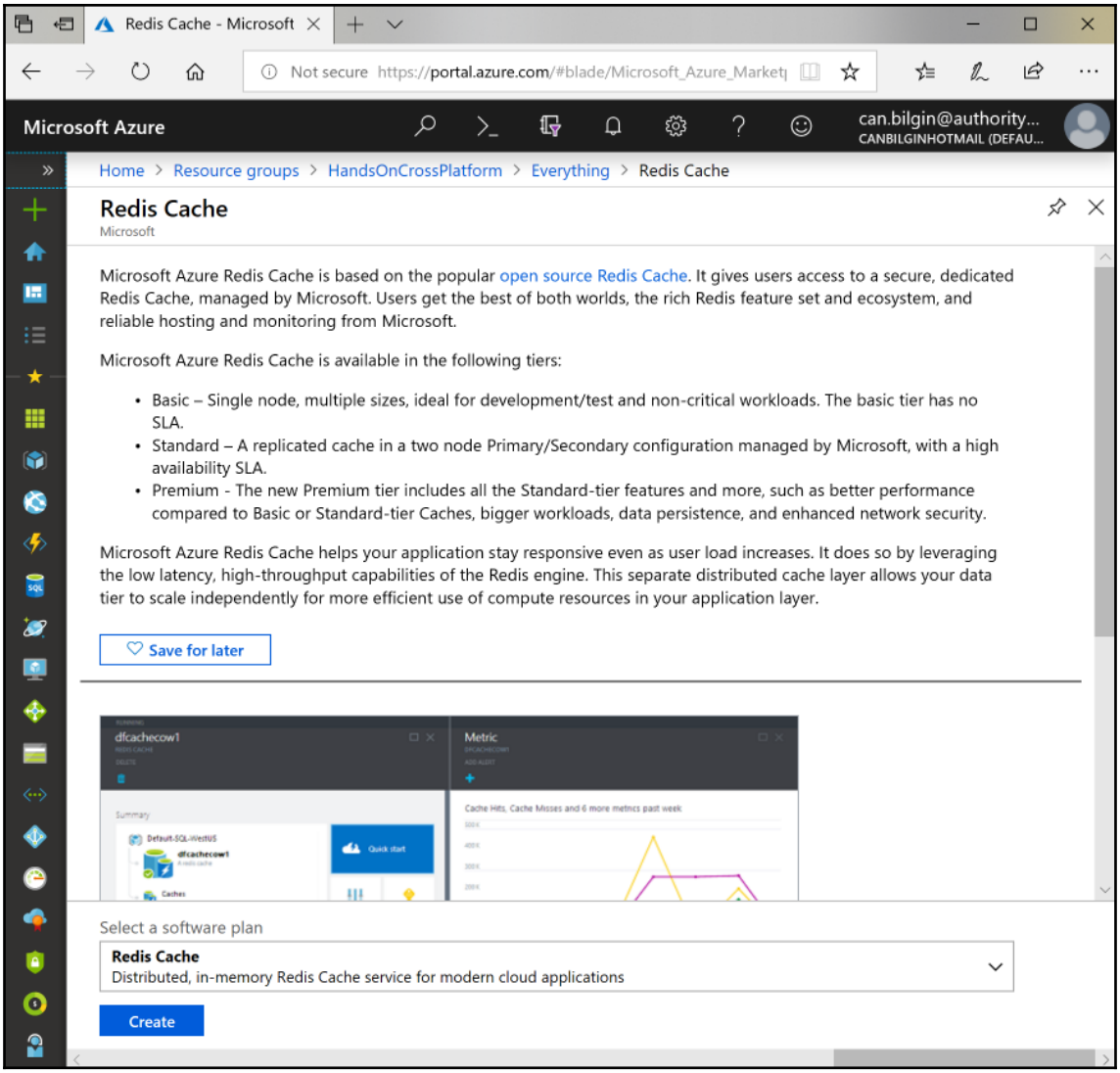

Command Prompt - dotnet run
W:\Local\HandsOnCoreWeb>dotnet run
Using launch settings from W:\Local\HandsOnCoreWeb\Properties\launchSettings.json...
info: Microsoft.AspNetCore.DataProtection.KeyManagement.XmlKeyManager[0]
User profile is available. Using 'C:\Users\can.bilgin\AppData\Local\ASP.NET\DataProtection-Keys' as key repository and Windows DPAPI to encrypt keys at rest.
Hosting environment: Development
Content root path: W:\Local\HandsOnCoreWeb
Now listening on: http://localhost:5000
Application started. Press Ctrl+C to shut down.
info: Microsoft.AspNetCore.Hosting.Internal.WebHost[1]
Request starting HTTP/1.1 GET http://localhost:5000/api/values
info: Microsoft.AspNetCore.Mvc.Internal.ControllerActionInvoker[1]
Route matched with {action = "Get", controller = "Values"}. Executing action HandsOnCoreWeb.Controllers.ValuesController.Get (HandsOnCoreWeb)
info: Microsoft.AspNetCore.Mvc.Internal.ControllerActionInvoker[1]
Executing action method HandsOnCoreWeb.Controllers.ValuesController.Get (HandsOnCoreWeb) - Validation state: Valid
info: Microsoft.AspNetCore.Mvc.Internal.ControllerActionInvoker[2]
Executed action method HandsOnCoreWeb.Controllers.ValuesController.Get (HandsOnCoreWeb), returned result Microsoft.AspNetCore.Mvc.ObjectResult in 0.2535ms.
info: Microsoft.AspNetCore.Mvc.Infrastructure.ObjectResultExecutor[1]
Executing ObjectResult, writing value of type 'System.String[]'.
info: Microsoft.AspNetCore.Mvc.Internal.ControllerActionInvoker[2]
Command Prompt
Microsoft Windows [Version 10.0.17134.590]
(c) 2018 Microsoft Corporation. All rights reserved.
C:\Users\can.bilgin>curl
curl: try 'curl --help' for more information
C:\Users\can.bilgin>curl http://localhost:5000/api/values
["value1","value2"]

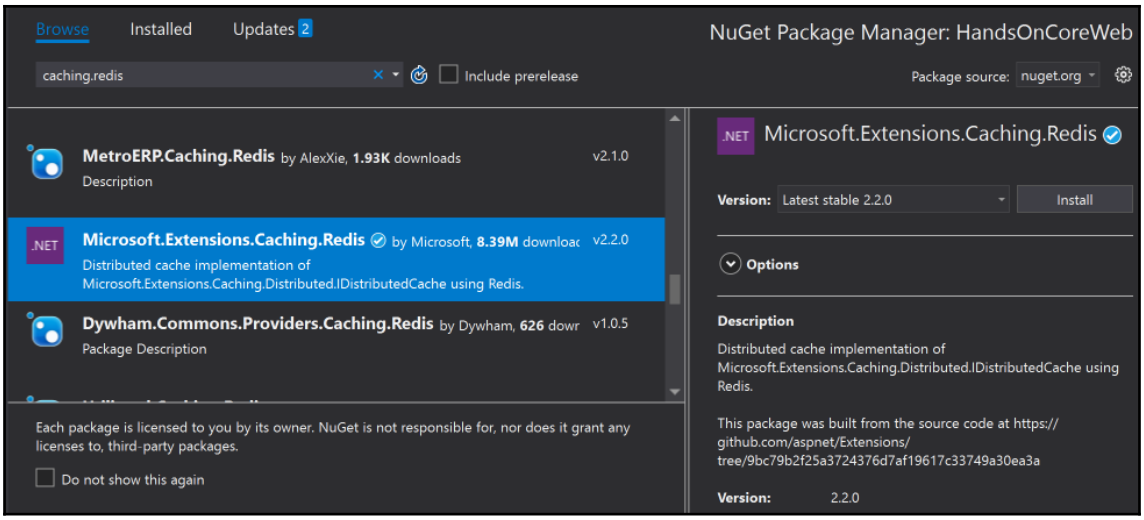

SwashbuckleAspNetVersioningShim by Ryan H v2.2.1
Library to aid the combined use of Swashbuckle and ASP NET API Versioning
Swashbuckle.AspNetCore by Swashbuckle.A v5.0.0-beta
Prerelease
Swagger tools for documenting APIs built on ASP.NET Core
Swashbuckle.AspNetCore.Swagger by Sw v4.0.1
Prerelease
Middleware to expose Swagger JSON endpoints from API's built on ASP.NET Core v5.0.0-beta
Swashbuckle.AspNetCore.SwaggerGen t v4.0.1
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages.
Do not show this again
Version: 4.0.1
Author(s): Swashbuckle.AspNetCore
License: https://raw.githubusercontent.com/domaindrivendev/Swashbuckle.AspNetCore/master/LICENSE
Date published: Wednesday, November 7, 2018 (11/7/2018)
Project URL: https://github.com/domaindrivendev/Swashbuckle.AspNetCore
Report Abuse: https://www.nuget.org/packages/Swashbuckle.AspNetCore/4.0.1/ReportAbuse
Tags: swagger, documentation, webapi, help, discovery, aspnet, aspnetcore
Dependencies
.NETStandard,Version=v2.0
Swashbuckle.AspNetCore.SwaggerUI (>= 4.0.1)
Swashbuckle.AspNetCore.Swagger (>= 4.0.1)
Swashbuckle.AspNetCore.SwaggerGen (>= 4.0.1)

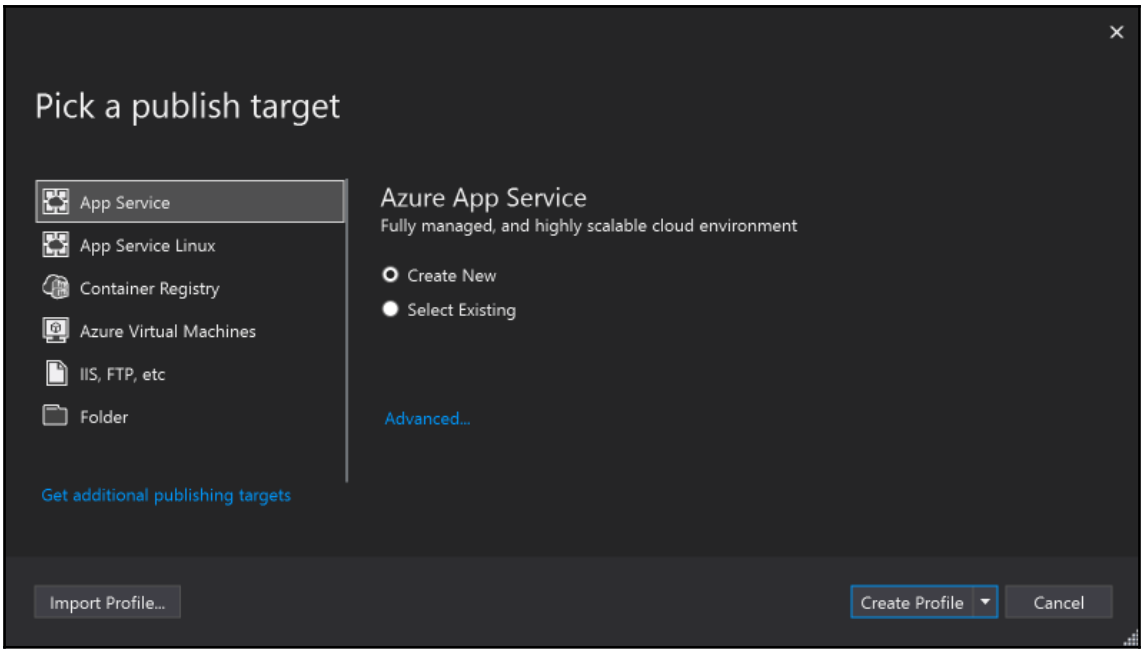

swagger
Select a spec
Auctions Api
Auctions Api
v1
/swagger/v1/swagger.json
Values
GET /api/Values
POST /api/Values
GET /api/Values/{id}
PUT /api/Values/{id}
DELETE /api/Values/{id}

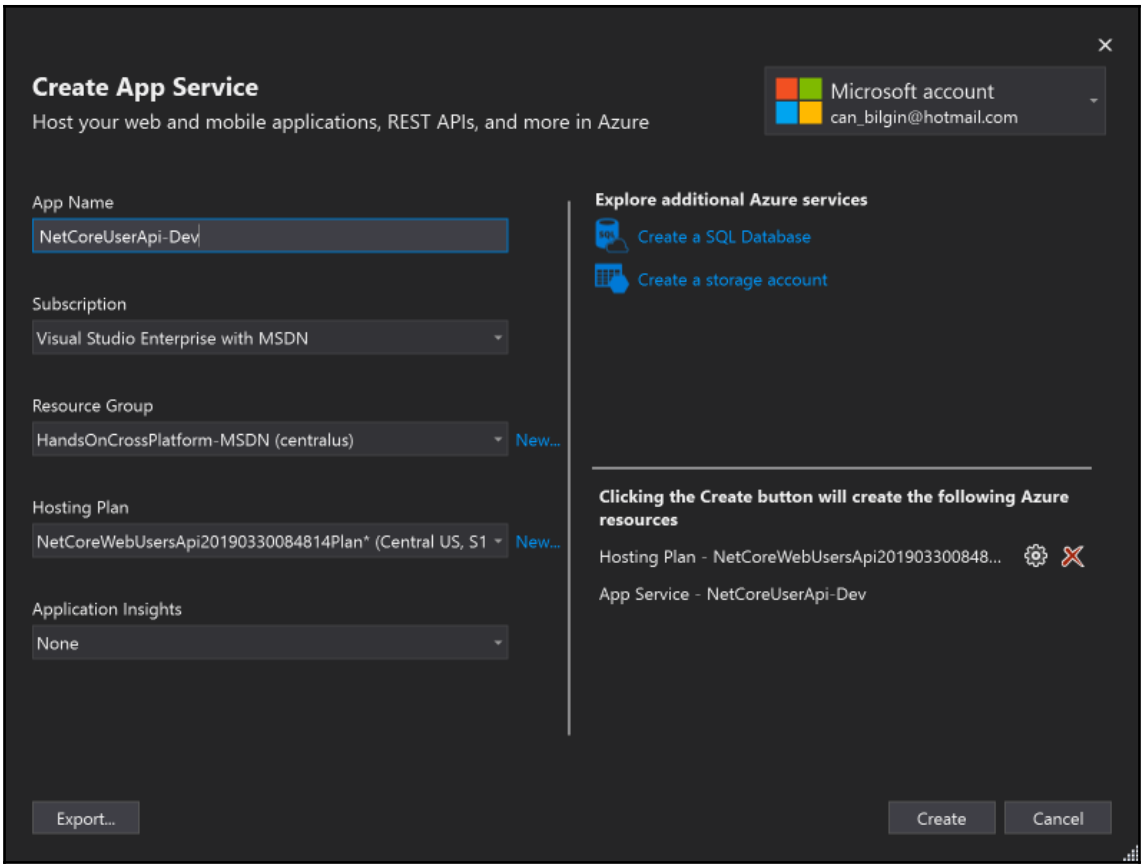

localhost:20337/odata/$metadata
<?xml version="1.0" encoding="ISO-8859-1"?>
<edmx:Edmx xmlns:edmx="http://docs.oasis-open.org/odata/ns/edmx" Version="4.0">
<edmx:DataServices>
<Schema xmlns="http://docs.oasis-open.org/odata/ns/edm" Namespace="HandsOnCoreWeb.Data">
<EntityType Name="Auction">
<Key>
<PropertyRef Name="Id"/>
</Key>
<Property Name="Id" Nullable="false" Type="Edm.String"/>
<Property Name="Description" Type="Edm.String"/>
<Property Name="Vehicle" Type="HandsOnCoreWeb.Data.Vehicle"/>
<Property Name="StartingPrice" Type="HandsOnCoreWeb.Data.Price"/>
<Property Name="CountryCode" Type="Edm.String"/>
<NavigationProperty Name="HighestBids" Type="Collection(HandsOnCoreWeb.Data.Bid)"/>
<NavigationProperty Name="User" Type="HandsOnCoreWeb.Data.User"/>
</EntityType>
<EntityType Name="User">
<Key>
<PropertyRef Name="Id"/>
</Key>
<Property Name="Id" Nullable="false" Type="Edm.String"/>
<Property Name="FirstName" Type="Edm.String"/>
<Property Name="LastName" Type="Edm.String"/>
<Property Name="NumberOfAuctions" Nullable="false" Type="Edm.Int32"/>
<Property Name="Auctions" Type="Collection(HandsOnCoreWeb.Data.AuctionInfo)"/>
<Property Name="Address" Type="HandsOnCoreWeb.Data.Address"/>
</EntityType>

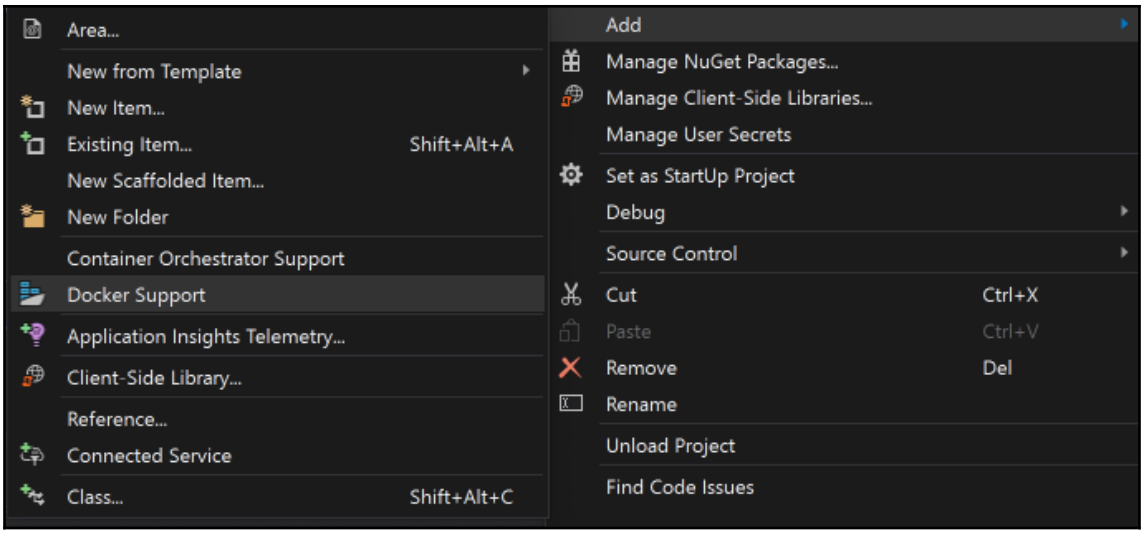

Headers
TextView
SyntaxView
WebForms
HexView
Auth
Cookies
Raw
JSON
XML
JSON
CountryCode=USA
Description=Updated Test
Id=3634031a-1f45-4aa0-9385-5e2c86795c49
StartingPrice
value=25000
TimeStamp=1552735545
Vehicle
Color=black
Engine
Displacement=2.0
Power=110
Torque=320
Id=f5574e12-01dc-4639-abeb-722e8e53e64f
Make=Volvo
Model=S60
PrimaryPicture=
Expand All
Collapse
JSON parsing completed.
Transformer
Headers
TextView
SyntaxView
ImageView
HexView
WebView
Auth
Caching
Cookies
Raw
JSON
XML
Response Headers
[Raw] [Header Definitions]
HTTP/1.1 202 Accepted
Cache
Date: Sat, 16 Mar 2019 13:07:09 GMT
Entity
Content-Length: 406
Content-Type: application/json; odata.metadata=minimal; odata.streaming=true; charset=utf-8
Miscellaneous
OData-Version: 4.0
Server: Kestrel
X-Powered-By: ASP.NET
X-SourceFiles: =?UTF-8?B?VzpcTG9jYWxcSGFuZHNPbkNvcmVXZWJcb2RhdGFcYXVjdGlvbnMoJzM2MzQwMzFhLTFmNDUtNGFhMC05Mzg1LTVlMmM4Njc5NWM0OScp?=

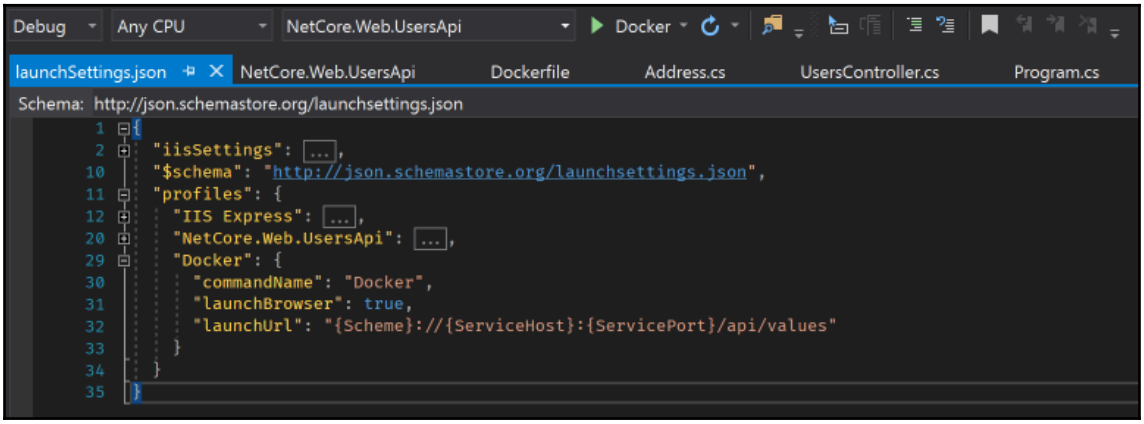

Redis Cache - Microsoft
Not secure https://portal.azure.com/#blade/Microsoft_Azure_Market
Microsoft Azure
can.bilgin@authority...
CANBILGINHOTMAIL (DEFAU...
Home > Resource groups > HandsOnCrossPlatform > Everything > Redis Cache
Redis Cache
Microsoft
Microsoft Azure Redis Cache is based on the popular open source Redis Cache. It gives users access to a secure, dedicated Redis Cache, managed by Microsoft. Users get the best of both worlds, the rich Redis feature set and ecosystem, and reliable hosting and monitoring from Microsoft.
Microsoft Azure Redis Cache is available in the following tiers:
Basic – Single node, multiple sizes, ideal for development/test and non-critical workloads. The basic tier has no SLA.
Standard – A replicated cache in a two node Primary/Secondary configuration managed by Microsoft, with a high availability SLA.
Premium - The new Premium tier includes all the Standard-tier features and more, such as better performance compared to Basic or Standard-tier Caches, bigger workloads, data persistence, and enhanced network security.
Microsoft Azure Redis Cache helps your application stay responsive even as user load increases. It does so by leveraging the low latency, high-throughput capabilities of the Redis engine. This separate distributed cache layer allows your data tier to scale independently for more efficient use of compute resources in your application layer.
Save for later
dfcachecow1
Metric
Cache Hits, Cache Misses and 6 more metrics past week
Quick start
Select a software plan
Redis Cache
Distributed, in-memory Redis Cache service for modern cloud applications
Create

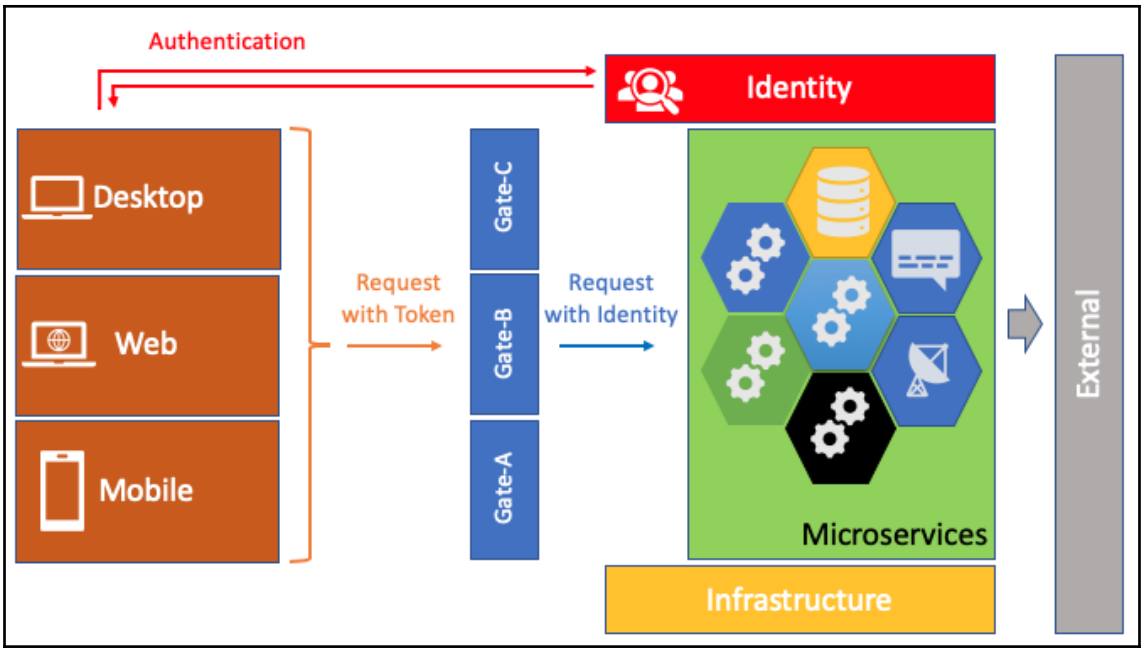

Browse
Installed
Updates 2
NuGet Package Manager: HandsOnCoreWeb
caching.redis
Include prerelease
Package source: nuget.org
MetroERP.Caching.Redis by AlexXie, 1.93K downloads
v2.1.0
Description
Microsoft.Extensions.Caching.Redis by Microsoft, 8.39M downloac
v2.2.0
Distributed cache implementation of Microsoft.Extensions.Caching.Distributed.IDistributedCache using Redis.
Dywham.Commons.Providers.Caching.Redis by Dywham, 626 dowr
v1.0.5
Package Description
Each package is licensed to you by its owner. NuGet is not responsible for, nor does it grant any licenses to, third-party packages.
Do not show this again
Microsoft.Extensions.Caching.Redis
Version: Latest stable 2.2.0
Install
Options
Description
Distributed cache implementation of Microsoft.Extensions.Caching.Distributed.IDistributedCache using Redis.
This package was built from the source code at https://github.com/aspnet/Extensions/tree/9bc79b2f25a3724376d7af19617c33749a30ea3a
Version: 2.2.0

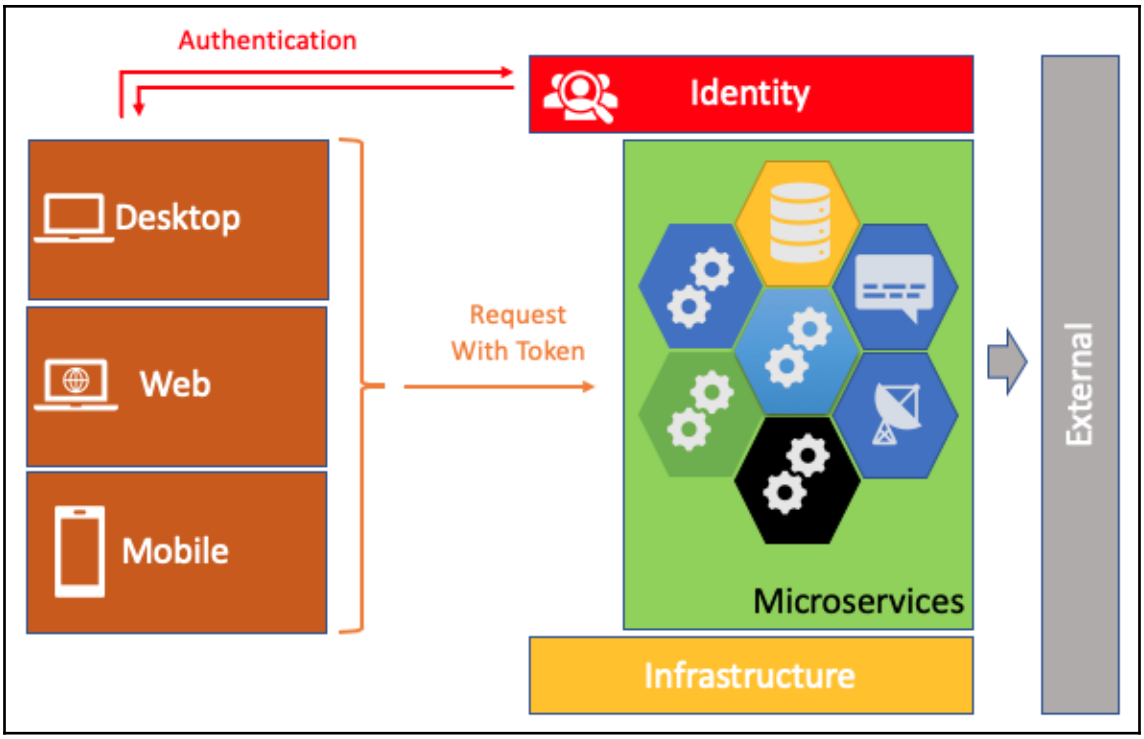

Pick a publish target
App Service
App Service Linux
Container Registry
Azure Virtual Machines
IIS, FTP, etc
Folder
Get additional publishing targets
Azure App Service
Fully managed, and highly scalable cloud environment
Create New
Select Existing
Advanced...
Import Profile...
Create Profile
Cancel

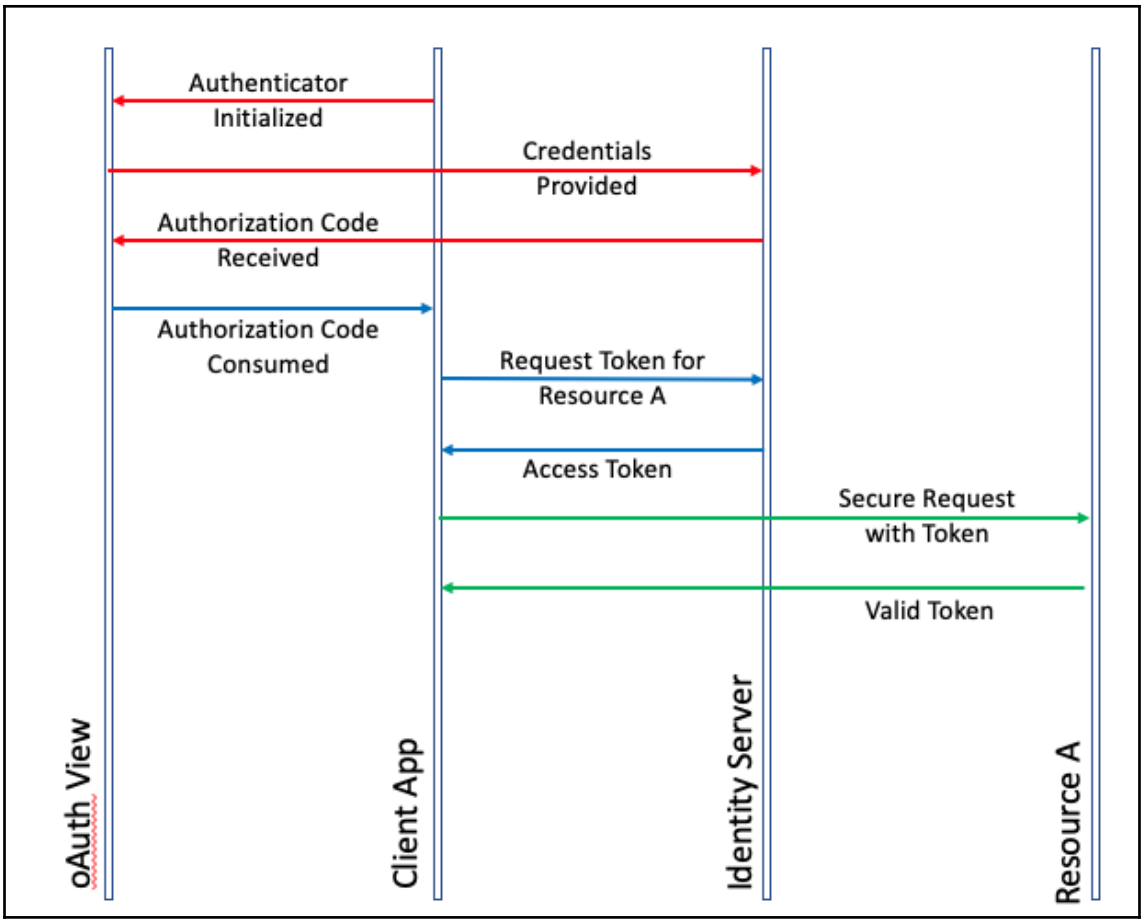

Create App Service
Host your web and mobile applications, REST APIs, and more in Azure
Microsoft account
can_bilgin@hotmail.com
App Name
NetCoreUserApi-Dev
Subscription
Visual Studio Enterprise with MSDN
Resource Group
HandsOnCrossPlatform-MSDN (centralus)
New...
Hosting Plan
NetCoreWebUsersApi20190330084814Plan* (Central US, S1
New...
Application Insights
None
Explore additional Azure services
Create a SQL Database
Create a storage account
Clicking the Create button will create the following Azure resources
Hosting Plan - NetCoreWebUsersApi201903300848...
App Service - NetCoreUserApi-Dev
Export...
Create
Cancel

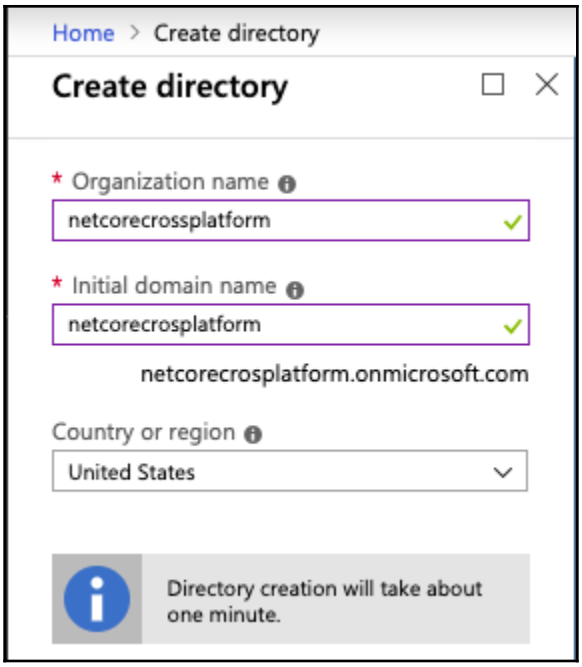

Area...
New from Template
New Item...
Existing Item... Shift+Alt+A
New Scaffolded Item...
New Folder
Container Orchestrator Support
Docker Support
Application Insights Telemetry...
Client-Side Library...
Reference...
Connected Service
Class... Shift+Alt+C
Add
Manage NuGet Packages...
Manage Client-Side Libraries...
Manage User Secrets
Set as StartUp Project
Debug
Source Control
Cut Ctrl+X
Paste Ctrl+V
Remove Del
Rename
Unload Project
Find Code Issues

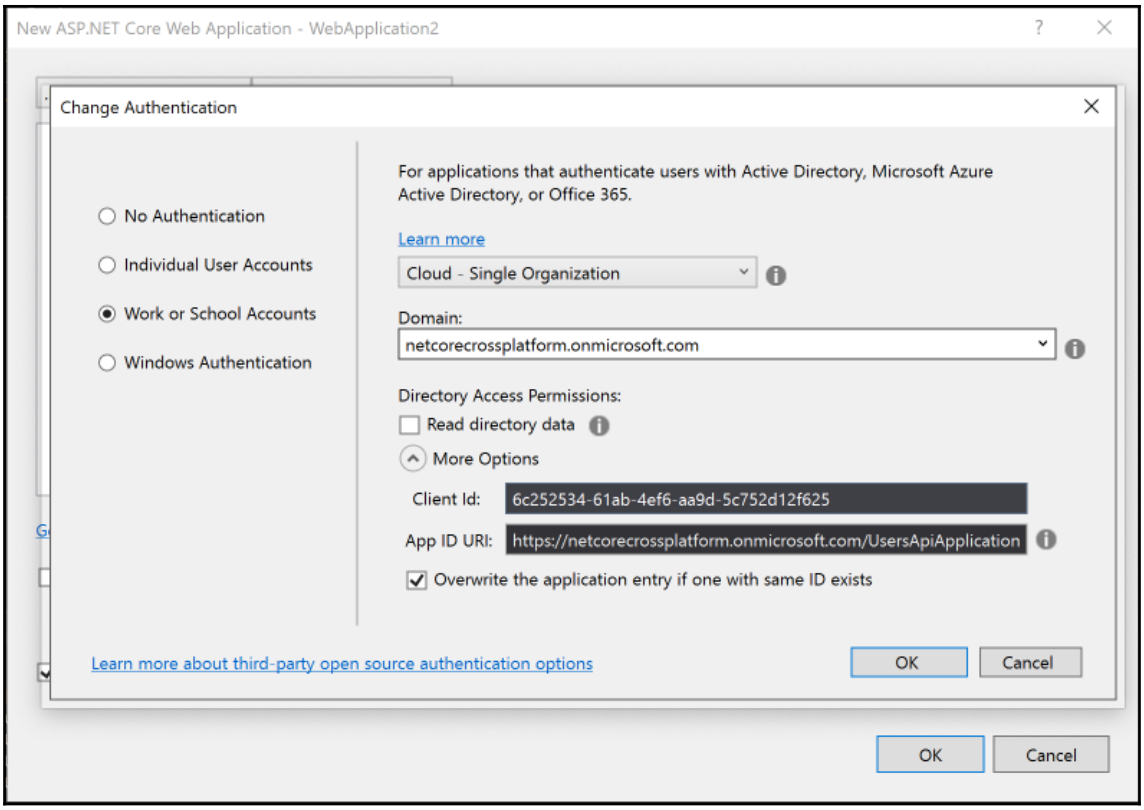

Debug
Any CPU
NetCore.Web.UsersApi
Docker
launchSettings.json
NetCore.Web.UsersApi
Dockerfile
Address.cs
UsersController.cs
Program.cs
Schema: http://json.schemastore.org/launchsettings.json
{
"iisSettings": ...,
"$schema": "http://json.schemastore.org/launchsettings.json",
"profiles": {
"IIS Express": ...,
"NetCore.Web.UsersApi": ...,
"Docker": {
"commandName": "Docker",
"launchBrowser": true,
"launchUrl": "{Scheme}://{ServiceHost}:{ServicePort}/api/values"
}
}
}

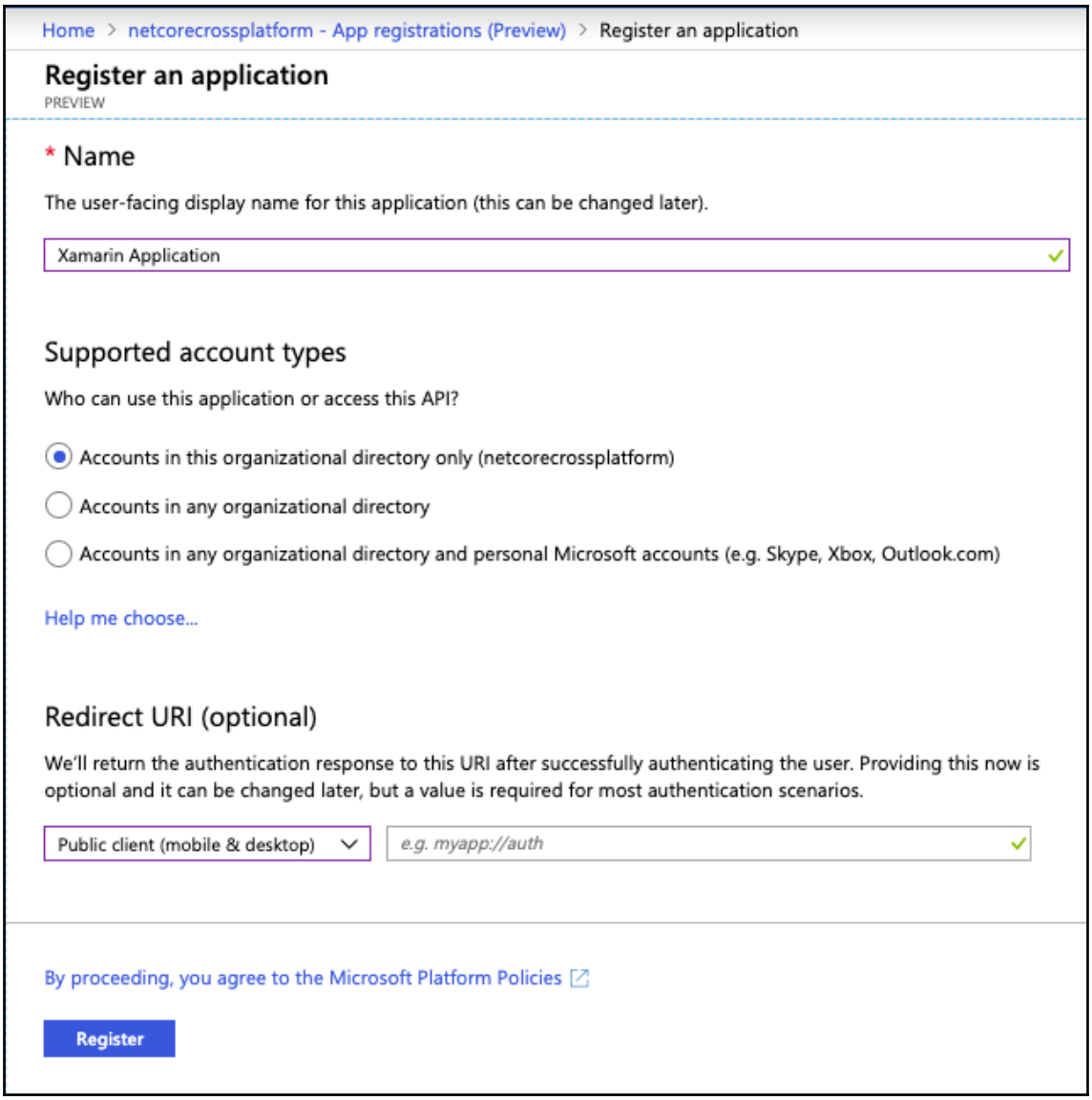

Authentication
Identity
Desktop
Web
Mobile
Request
with Token
Gate-C
Gate-B
Gate-A
Request
with Identity
Microservices
Infrastructure
External

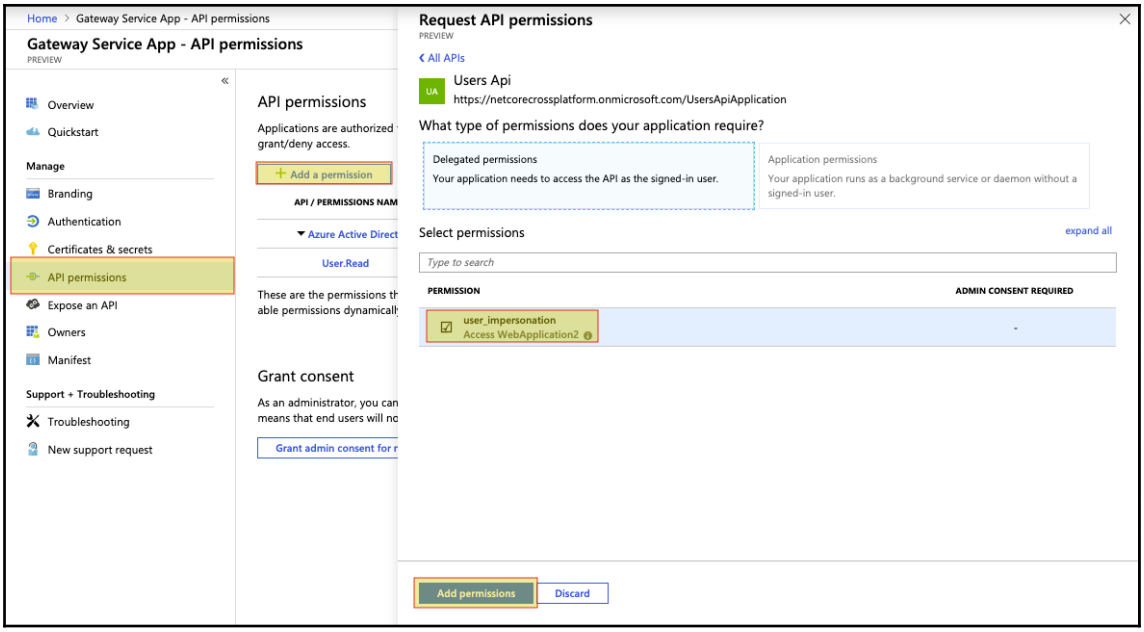

Authentication
Identity
Desktop
Web
Mobile
Request
With Token
Microservices
Infrastructure
External


Authenticator
Initialized
Credentials
Provided
Authorization Code
Received
Authorization Code
Consumed
Request Token for
Resource A
Access Token
Secure Request
with Token
Valid Token
oAuth View
Client App
Identity Server
Resource A

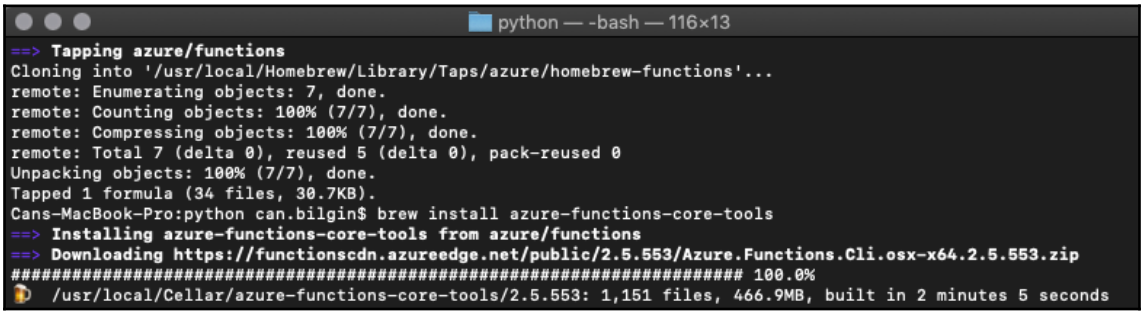

Home > Create directory
Create directory
* Organization name
netcorecrossplatform
* Initial domain name
netcorecrosplatform
netcorecrosplatform.onmicrosoft.com
Country or region
United States
Directory creation will take about one minute.

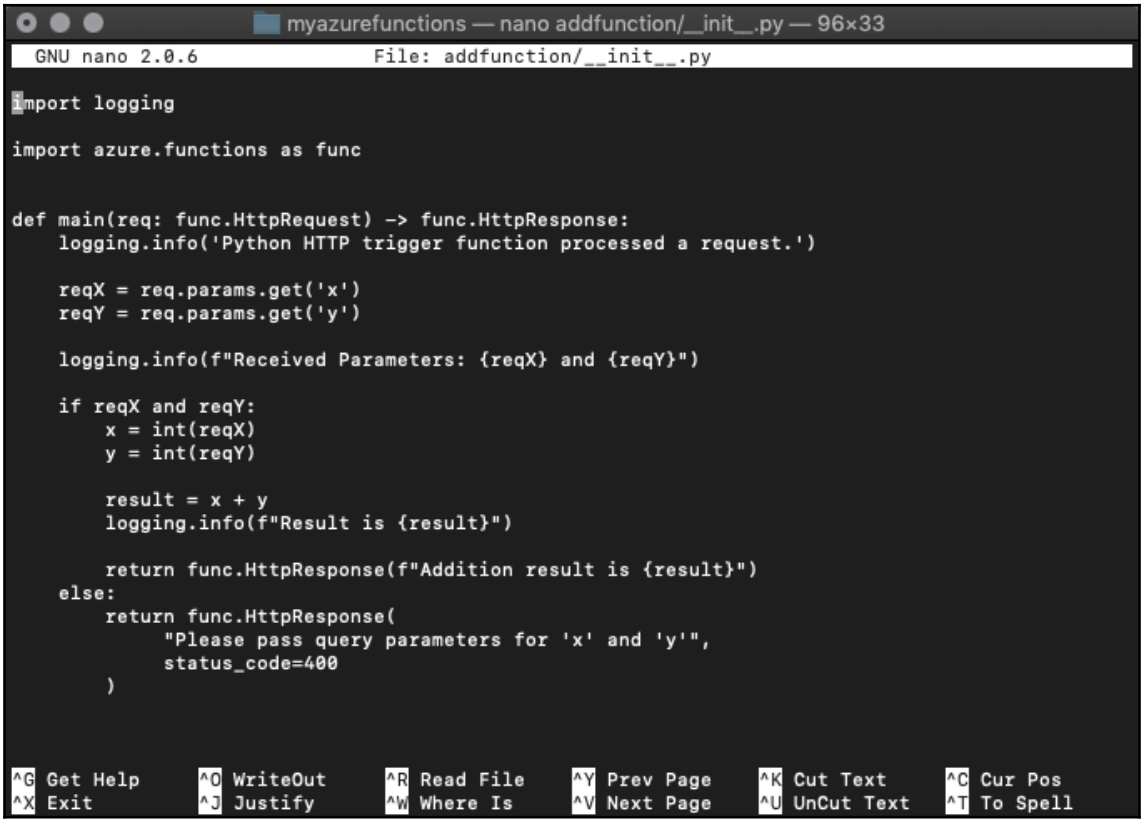

New ASP.NET Core Web Application - WebApplication2
Change Authentication
No Authentication
Individual User Accounts
Work or School Accounts
Windows Authentication
For applications that authenticate users with Active Directory, Microsoft Azure Active Directory, or Office 365.
Learn more
Cloud - Single Organization
Domain:
netcorecrossplatform.onmicrosoft.com
Directory Access Permissions:
Read directory data
More Options
Client Id:
6c252534-61ab-4ef6-aa9d-5c752d12f625
App ID URI:
https://netcorecrossplatform.onmicrosoft.com/UsersApiApplication
Overwrite the application entry if one with same ID exists
Learn more about third-party open source authentication options
OK
Cancel
OK
Cancel

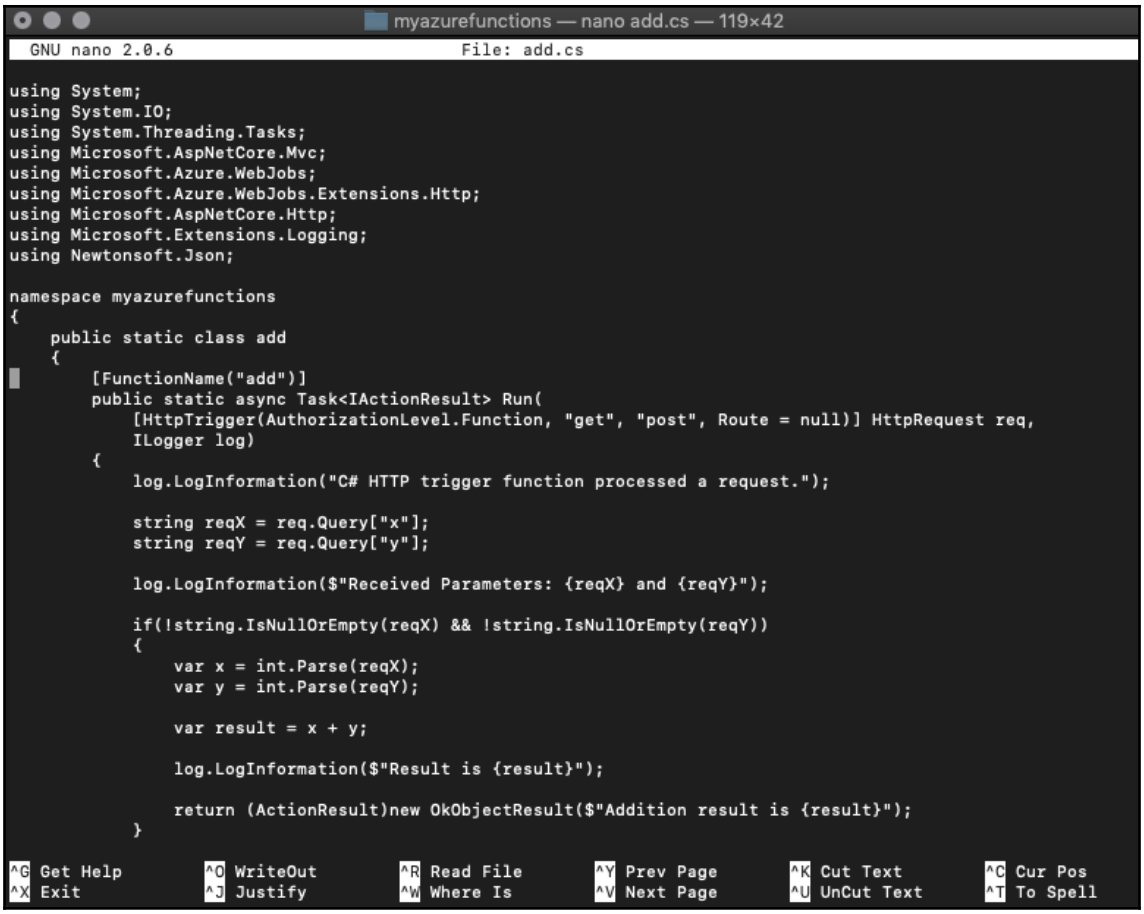

Home > netcorecrossplatform - App registrations (Preview) > Register an application
Register an application
PREVIEW
* Name
The user-facing display name for this application (this can be changed later).
Xamarin Application
Supported account types
Who can use this application or access this API?
Accounts in this organizational directory only (netcorecrossplatform)
Accounts in any organizational directory
Accounts in any organizational directory and personal Microsoft accounts (e.g. Skype, Xbox, Outlook.com)
Help me choose...
Redirect URI (optional)
We'll return the authentication response to this URI after successfully authenticating the user. Providing this now is optional and it can be changed later, but a value is required for most authentication scenarios.
Public client (mobile & desktop)
e.g. myapp://auth
By proceeding, you agree to the Microsoft Platform Policies
Register

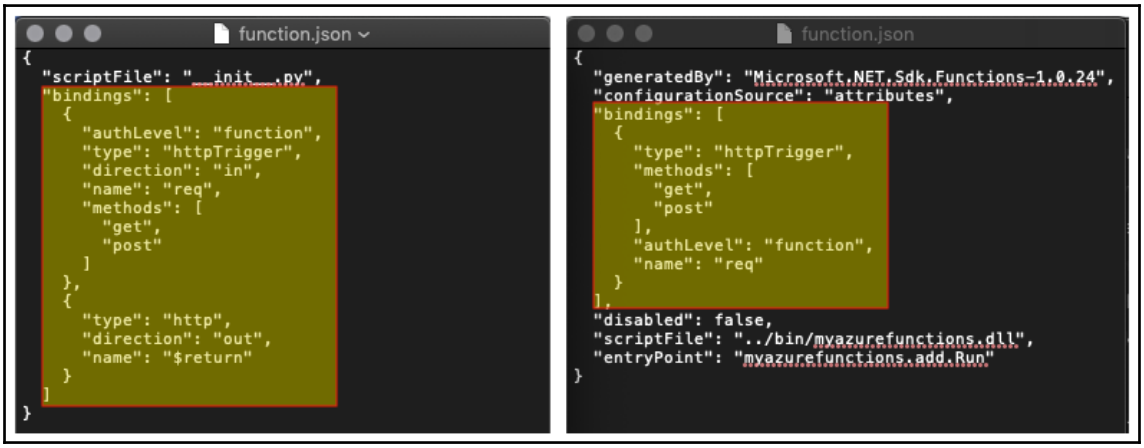

Home > Gateway Service App - API permissions
Gateway Service App - API permissions
PREVIEW
Overview
Quickstart
Manage
Branding
Authentication
Certificates & secrets
API permissions
Expose an API
Owners
Manifest
Support + Troubleshooting
Troubleshooting
New support request
API permissions
Applications are authorized
grant/deny access.
Add a permission
API / PERMISSIONS NAM
Azure Active Direct
User.Read
These are the permissions th
able permissions dynamicall
Grant consent
As an administrator, you can
means that end users will no
Grant admin consent for
Request API permissions
PREVIEW
All APIs
UA
Users Api
https://netcorecrossplatform.onmicrosoft.com/UsersApiApplication
What type of permissions does your application require?
Delegated permissions
Your application needs to access the API as the signed-in user.
Application permissions
Your application runs as a background service or daemon without a signed-in user.
Select permissions
expand all
Type to search
PERMISSION
ADMIN CONSENT REQUIRED
user_impersonation
Access WebApplication2
-
Add permissions
Discard

Chapter 10: 10.Using .NET Core for Azure Serverless

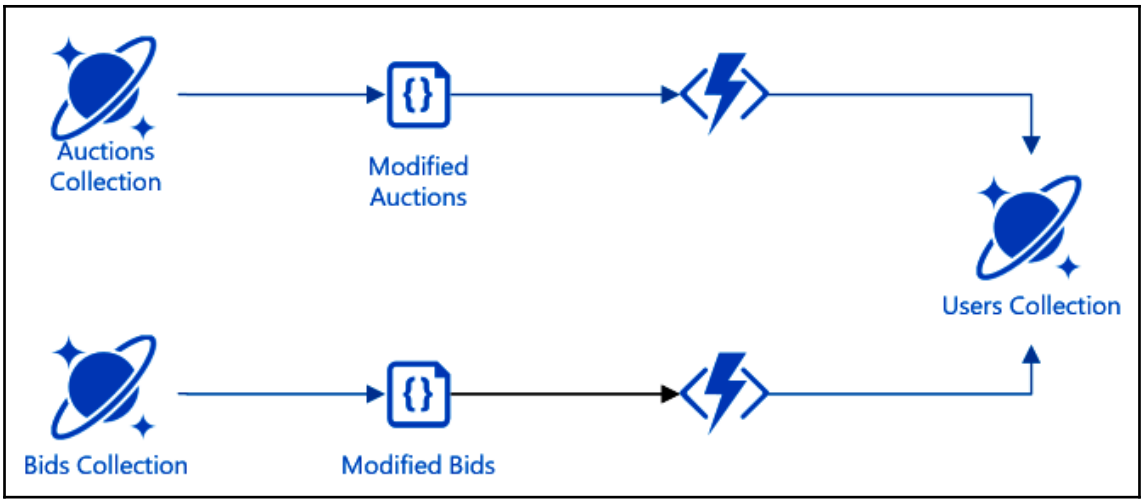


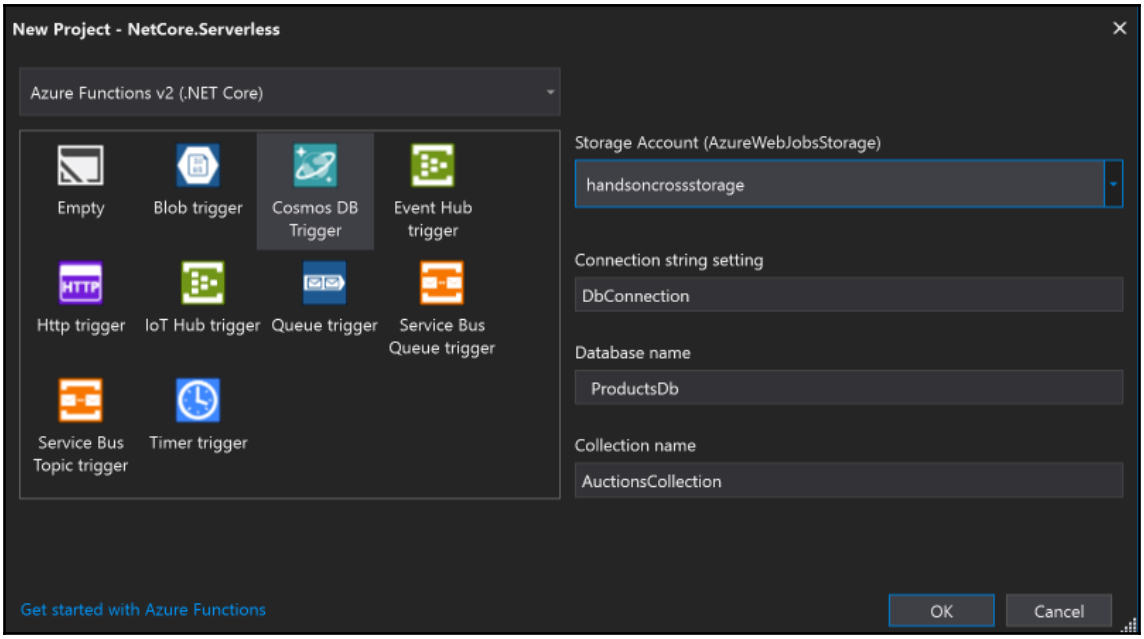


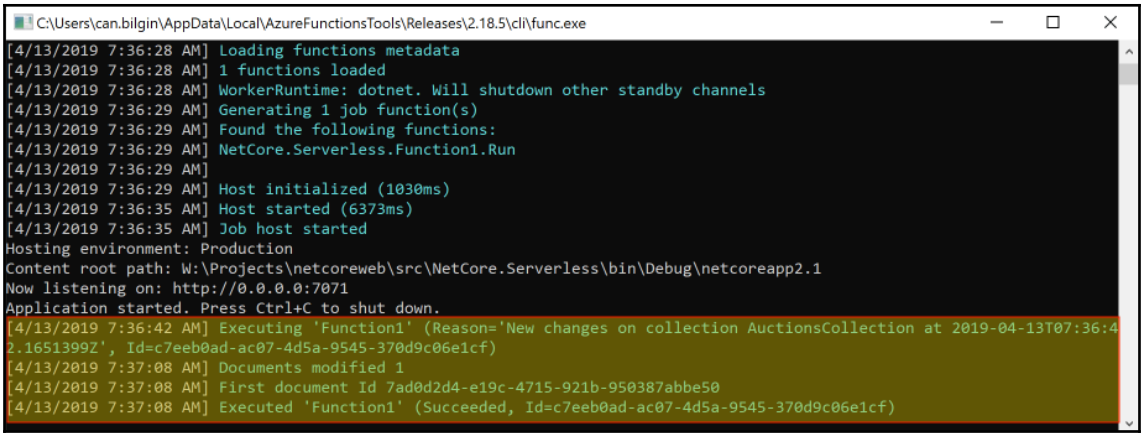

myazurefunctions — nano add.cs — 119×42
GNU nano 2.0.6 File: add.cs
using System;
using System.IO;
using System.Threading.Tasks;
using Microsoft.AspNetCore.Mvc;
using Microsoft.Azure.WebJobs;
using Microsoft.Azure.WebJobs.Extensions.Http;
using Microsoft.AspNetCore.Http;
using Microsoft.Extensions.Logging;
using Newtonsoft.Json;
namespace myazurefunctions
{
public static class add
{
[FunctionName("add")]
public static async Task<IActionResult> Run(
[HttpTrigger(AuthorizationLevel.Function, "get", "post", Route = null)] HttpRequest req,
ILogger log)
{
log.LogInformation("C# HTTP trigger function processed a request.");
string reqX = req.Query["x"];
string reqY = req.Query["y"];
log.LogInformation($"Received Parameters: {reqX} and {reqY}");
if(!string.IsNullOrEmpty(reqX) && !string.IsNullOrEmpty(reqY))
{
var x = int.Parse(reqX);
var y = int.Parse(reqY);
var result = x + y;
log.LogInformation($"Result is {result}");
return (ActionResult)new OkObjectResult($"Addition result is {result}");
}
^G Get Help ^O WriteOut ^R Read File ^Y Prev Page ^K Cut Text ^C Cur Pos
^X Exit ^J Justify ^W Where Is ^V Next Page ^U UnCut Text ^T To Spell

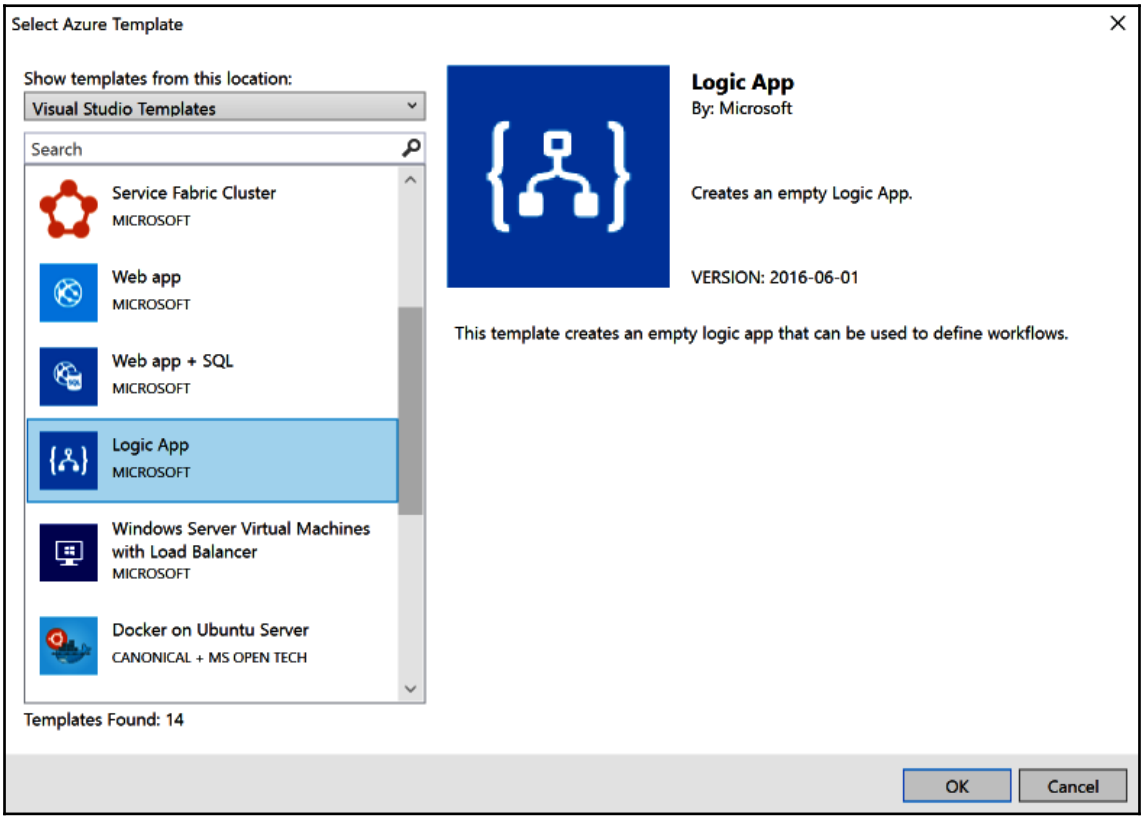

function.json
{
"scriptFile": "__init__.py",
"bindings": [
{
"authLevel": "function",
"type": "httpTrigger",
"direction": "in",
"name": "req",
"methods": [
"get",
"post"
]
},
{
"type": "http",
"direction": "out",
"name": "$return"
}
]
}
function.json
{
"generatedBy": "Microsoft.NET.Sdk.Functions-1.0.24",
"configurationSource": "attributes",
"bindings": [
{
"type": "httpTrigger",
"methods": [
"get",
"post"
],
"authLevel": "function",
"name": "req"
}
],
"disabled": false,
"scriptFile": "../bin/myazurefunctions.dll",
"entryPoint": "myazurefunctions.add.Run"
}

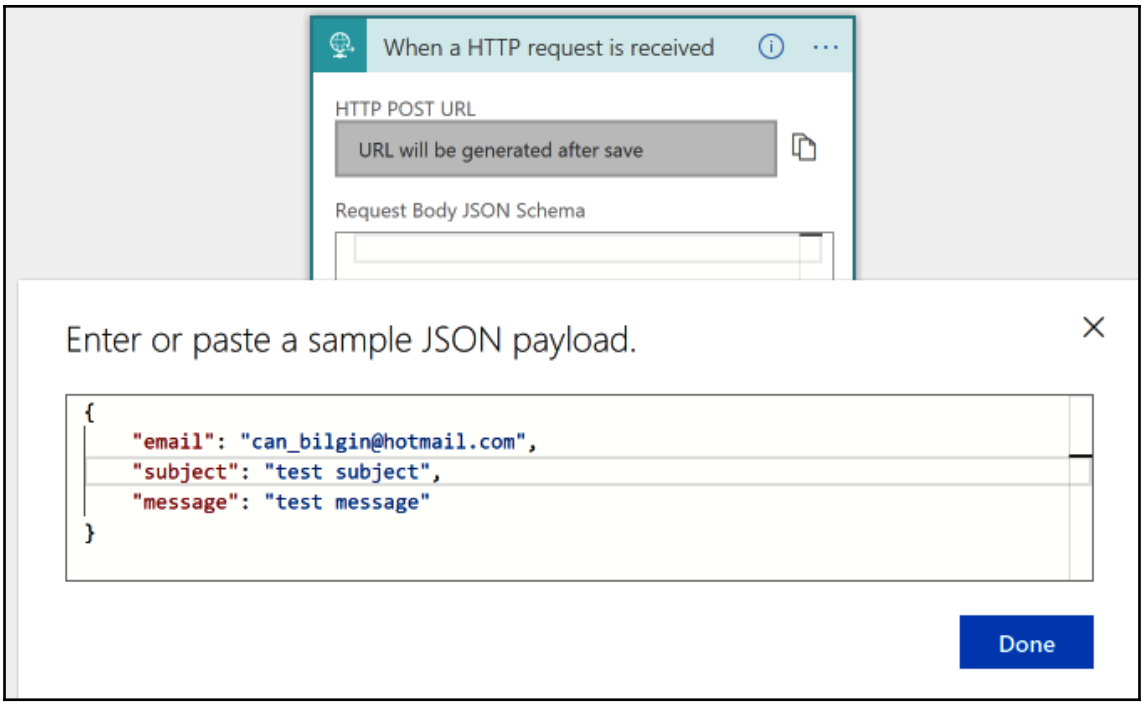
Type	Trigger	Input	Output
Blob storage	✓	✓	✓
Cosmos DB	✓	✓	✓
Event grid	✓		
Event hubs	✓		✓
Http and Webhooks	✓	✓	✓
Microsoft graph OneDrive files		✓	✓
Microsoft graph Outlook email			✓
Microsoft graph events	✓	✓	✓
Queue storage	✓		✓
SendGrid			✓
Service bus	✓		✓
SignalR		✓	✓
Table storage		✓	✓
Timer	✓		
Twilio			✓

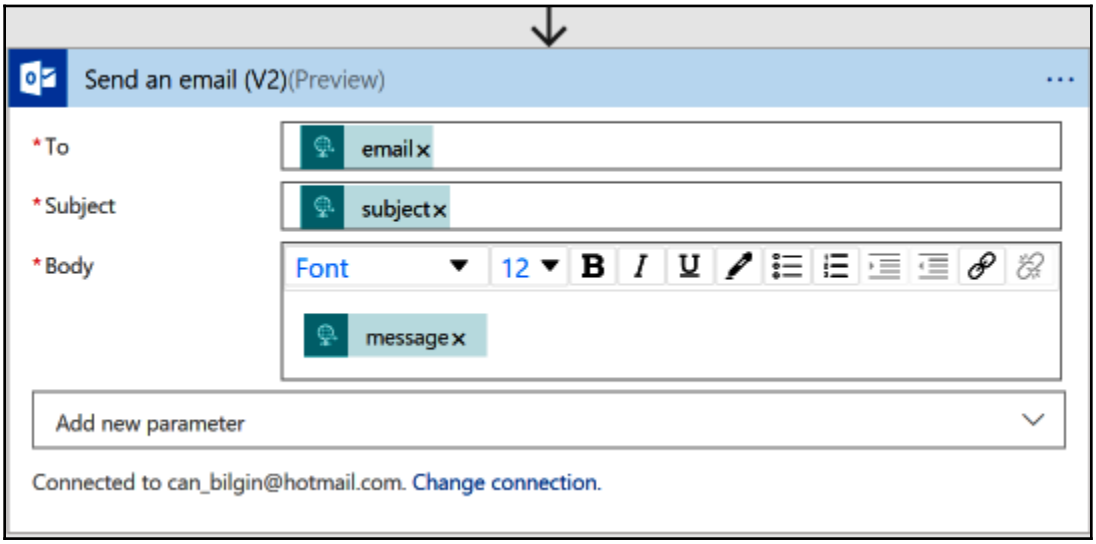

Auctions Collection
Modified Auctions
Users Collection
Bids Collection
Modified Bids

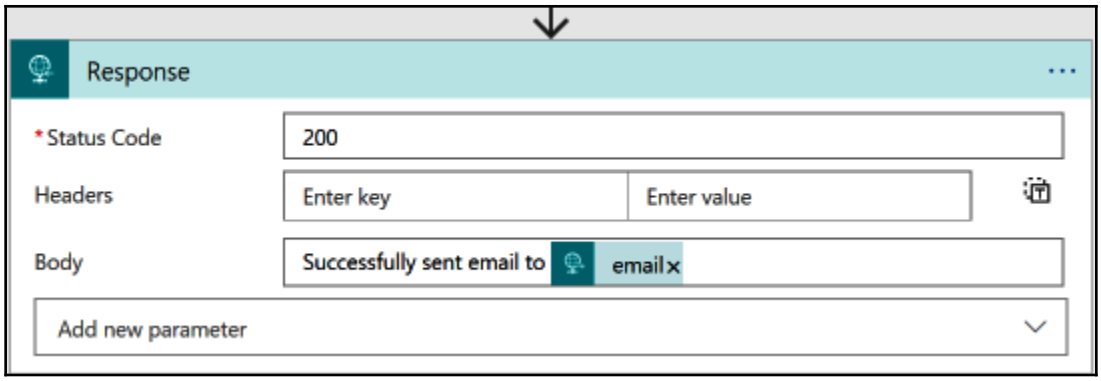

New Project - NetCore.Serverless
Azure Functions v2 (.NET Core)
Empty
Blob trigger
Cosmos DB Trigger
Event Hub trigger
Http trigger
IoT Hub trigger
Queue trigger
Service Bus Queue trigger
Service Bus Topic trigger
Timer trigger
Storage Account (AzureWebJobsStorage)
handsoncrossstorage
Connection string setting
DbConnection
Database name
ProductsDb
Collection name
AuctionsCollection
Get started with Azure Functions
OK
Cancel

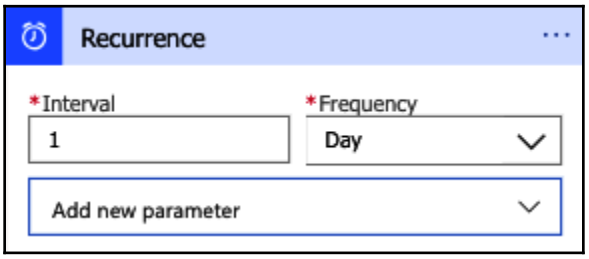

C:\Users\can.bilgin\AppData\Local\AzureFunctionsTools\Releases\2.18.5\cli\func.exe
[4/13/2019 7:36:28 AM] Loading functions metadata
[4/13/2019 7:36:28 AM] 1 functions loaded
[4/13/2019 7:36:28 AM] WorkerRuntime: dotnet. Will shutdown other standby channels
[4/13/2019 7:36:29 AM] Generating 1 job function(s)
[4/13/2019 7:36:29 AM] Found the following functions:
[4/13/2019 7:36:29 AM] NetCore.Serverless.Function1.Run
[4/13/2019 7:36:29 AM]
[4/13/2019 7:36:29 AM] Host initialized (1030ms)
[4/13/2019 7:36:35 AM] Host started (6373ms)
[4/13/2019 7:36:35 AM] Job host started
Hosting environment: Production
Content root path: W:\Projects\netcoreweb\src\NetCore.Serverless\bin\Debug\netcoreapp2.1
Now listening on: http://0.0.0.0:7071
Application started. Press Ctrl+C to shut down.
[4/13/2019 7:36:42 AM] Executing 'Function1' (Reason='New changes on collection AuctionsCollection at 2019-04-13T07:36:42.1651399Z', Id=c7eeb0ad-ac07-4d5a-9545-370d9c06e1cf)
[4/13/2019 7:37:08 AM] Documents modified 1
[4/13/2019 7:37:08 AM] First document Id 7ad0d2d4-e19c-4715-921b-950387abbe50
[4/13/2019 7:37:08 AM] Executed 'Function1' (Succeeded, Id=c7eeb0ad-ac07-4d5a-9545-370d9c06e1cf)

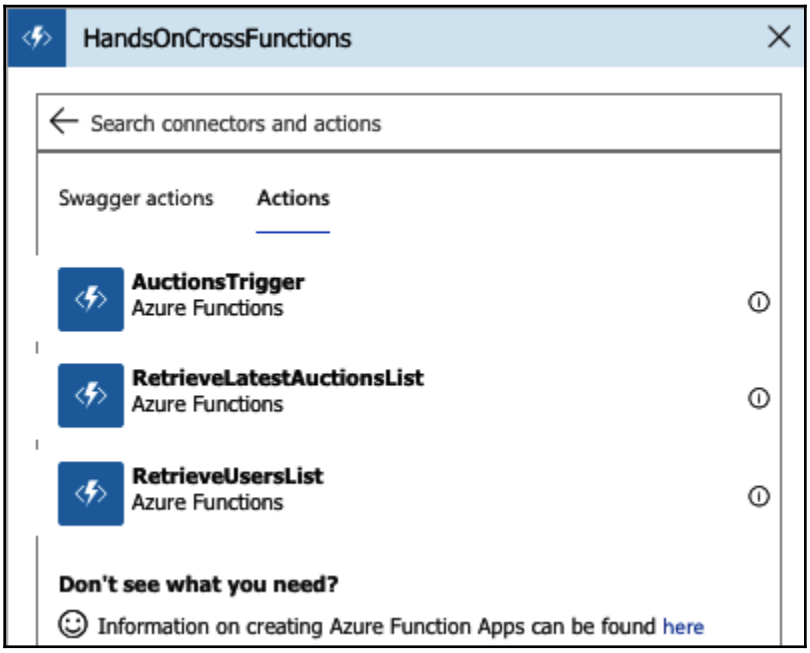

Select Azure Template
Show templates from this location:
Visual Studio Templates
Search
Service Fabric Cluster
MICROSOFT
Web app
MICROSOFT
Web app + SQL
MICROSOFT
Logic App
MICROSOFT
Windows Server Virtual Machines with Load Balancer
MICROSOFT
Docker on Ubuntu Server
CANONICAL + MS OPEN TECH
Templates Found: 14
Logic App
By: Microsoft
Creates an empty Logic App.
VERSION: 2016-06-01
This template creates an empty logic app that can be used to define workflows.
OK
Cancel

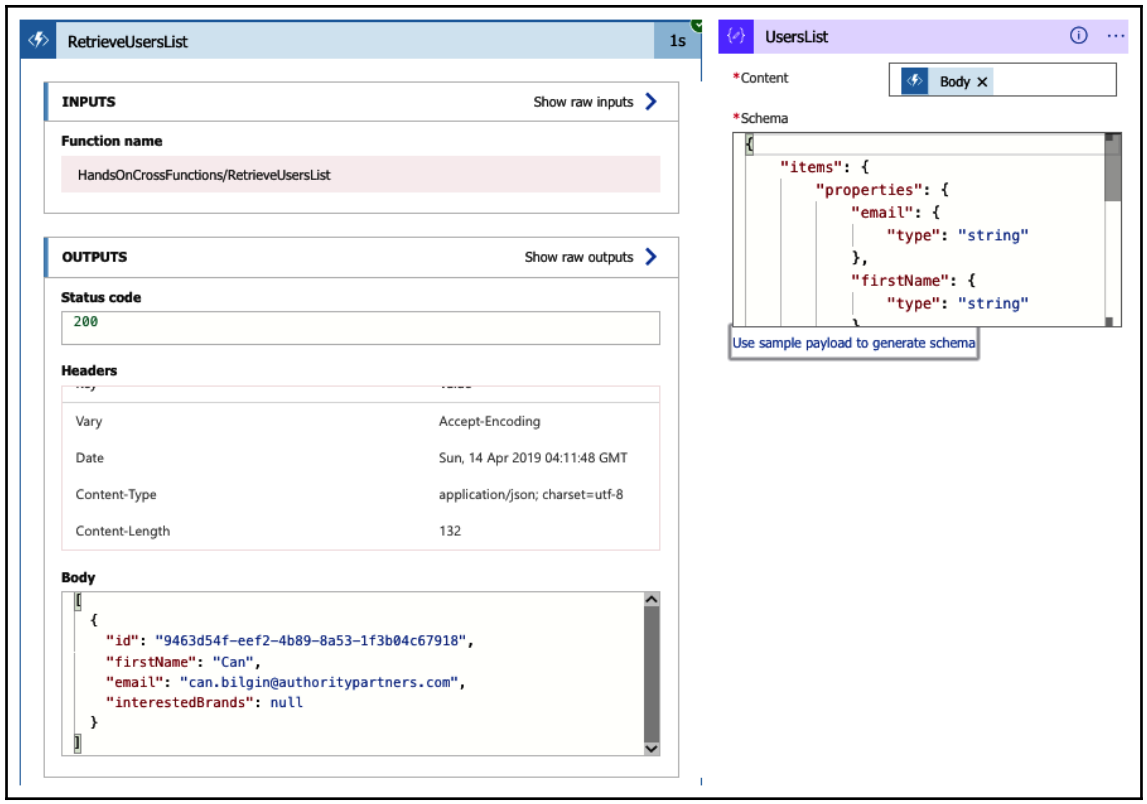

When a HTTP request is received
HTTP POST URL
URL will be generated after save
Request Body JSON Schema
Enter or paste a sample JSON payload.
{
"email": "can_bilgin@hotmail.com",
"subject": "test subject",
"message": "test message"
}
Done

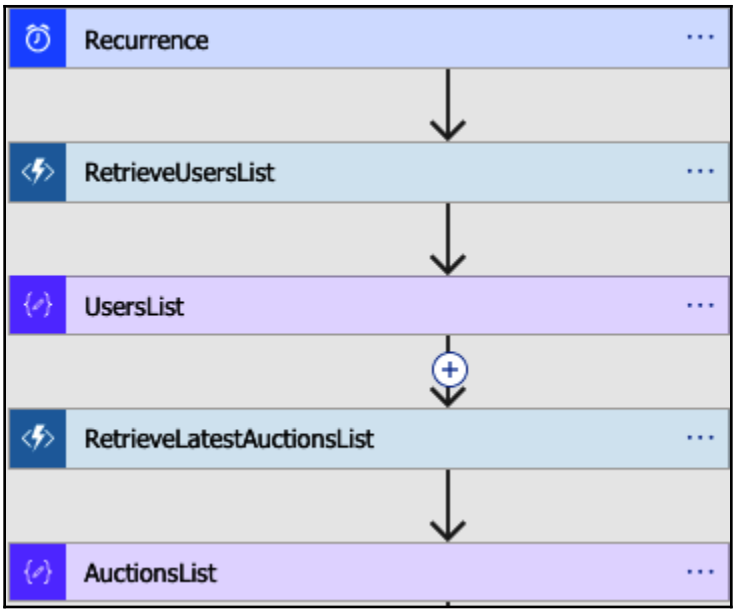

Send an email (V2)(Preview)
*To
email
*Subject
subject
*Body
Font
12
message
Add new parameter
Connected to can_bilgin@hotmail.com. Change connection.

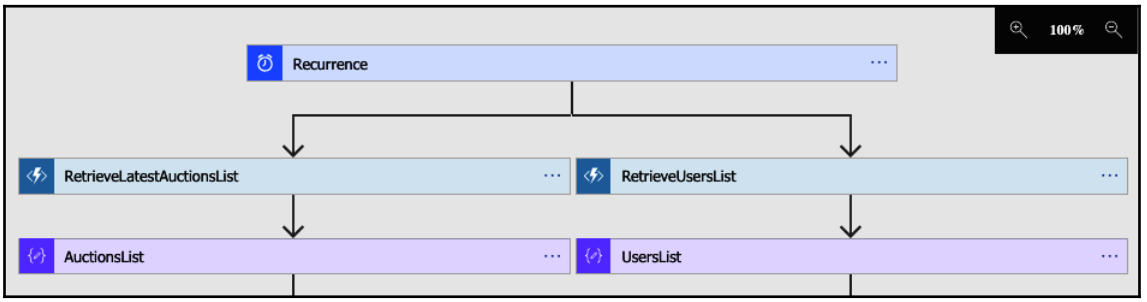

Response
*Status Code
200
Headers
Enter key
Enter value
Body
Successfully sent email to
email
Add new parameter

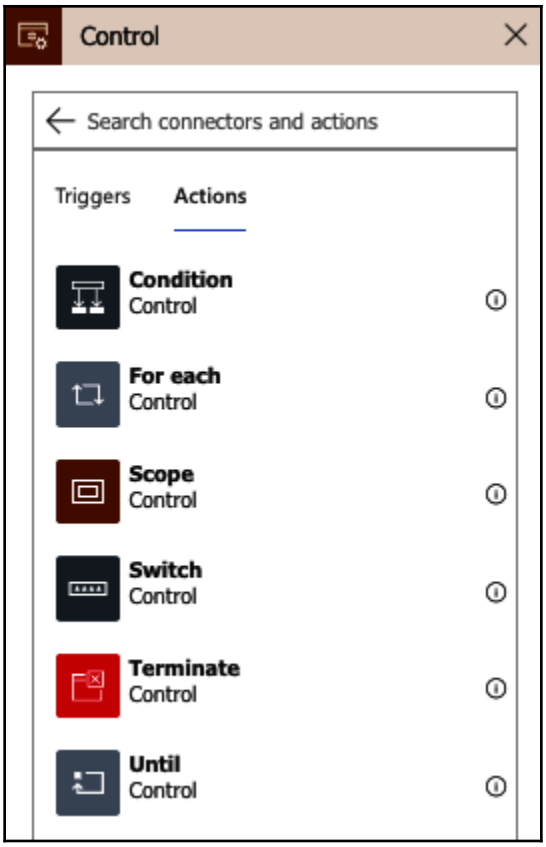

Recurrence
*Interval
1
*Frequency
Day
Add new parameter

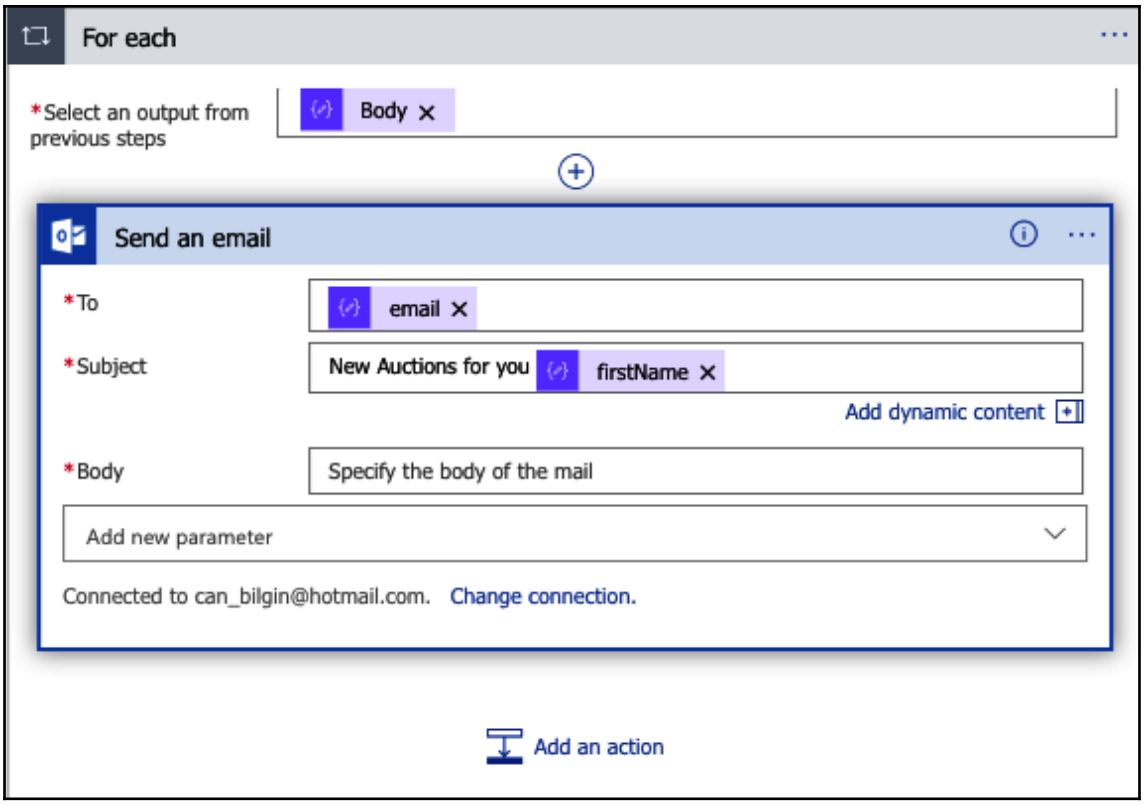

HandsOnCrossFunctions
Search connectors and actions
Swagger actions
Actions
AuctionsTrigger
Azure Functions
RetrieveLatestAuctionsList
Azure Functions
RetrieveUsersList
Azure Functions
Don't see what you need?
Information on creating Azure Function Apps can be found here

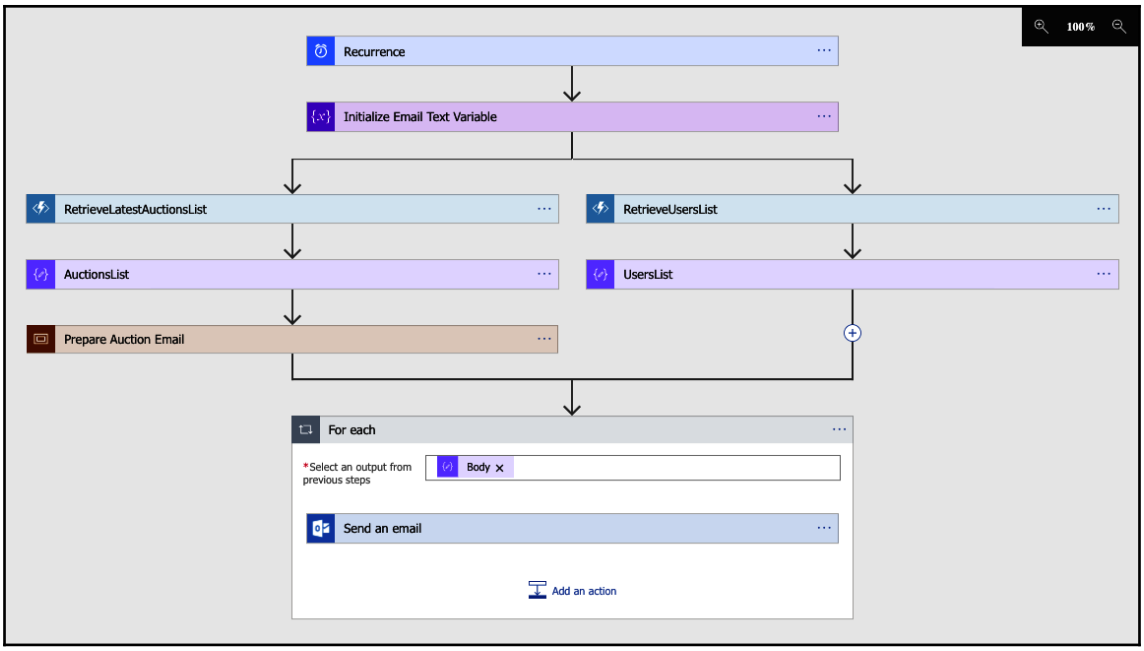

RetrieveUsersList
1s
INPUTS
Show raw inputs
Function name
HandsOnCrossFunctions/RetrieveUsersList
OUTPUTS
Show raw outputs
Status code
200
Headers
Vary
Accept-Encoding
Date
Sun, 14 Apr 2019 04:11:48 GMT
Content-Type
application/json; charset=utf-8
Content-Length
132
Body
[
{
"id": "9463d54f-eef2-4b89-8a53-1f3b04c67918",
"firstName": "Can",
"email": "can.bilgin@authoritypartners.com",
"interestedBrands": null
}
]
UsersList
*Content
Body
*Schema
{
"items": {
"properties": {
"email": {
"type": "string"
},
"firstName": {
"type": "string"
Use sample payload to generate schema

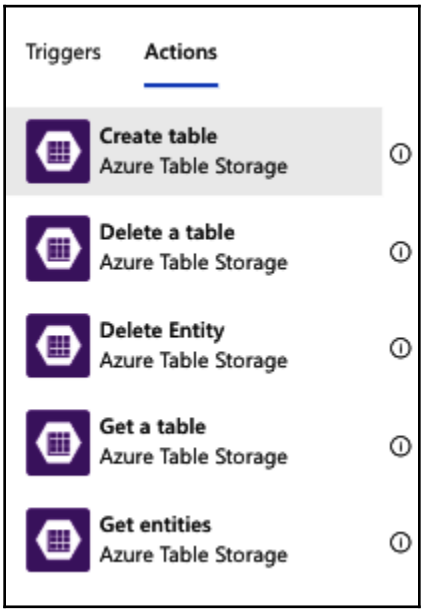

Recurrence
RetrieveUsersList
UsersList
RetrieveLatestAuctionsList
AuctionsList


100%
Recurrence
RetrieveLatestAuctionsList
RetrieveUsersList
AuctionsList
UsersList

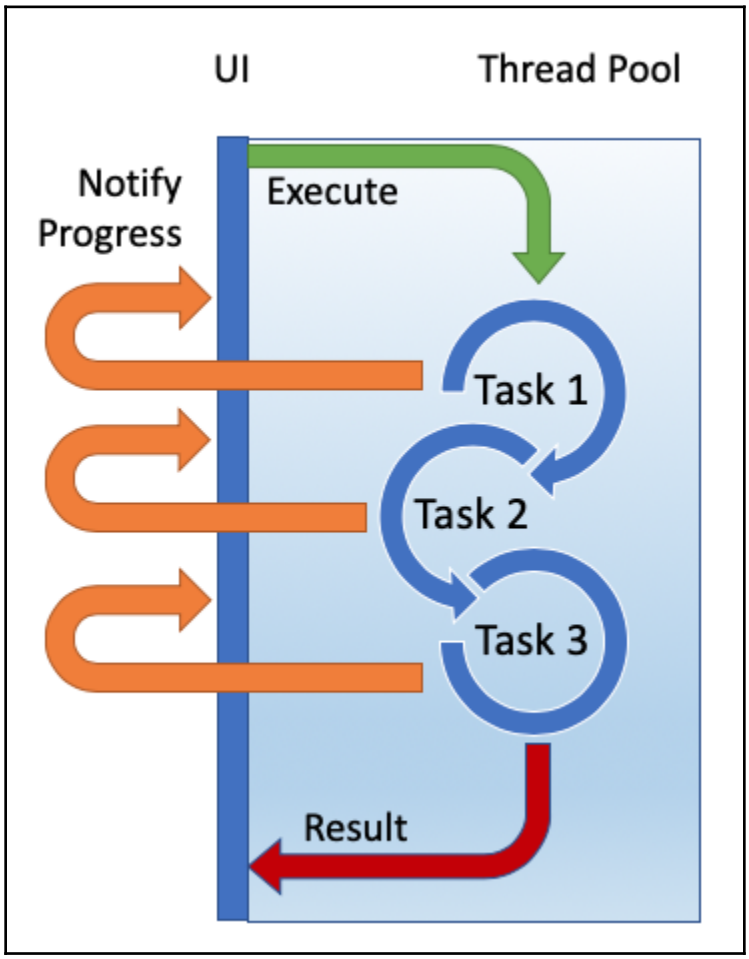

Control
Search connectors and actions
Triggers
Actions
Condition
Control
For each
Control
Scope
Control
Switch
Control
Terminate
Control
Until
Control

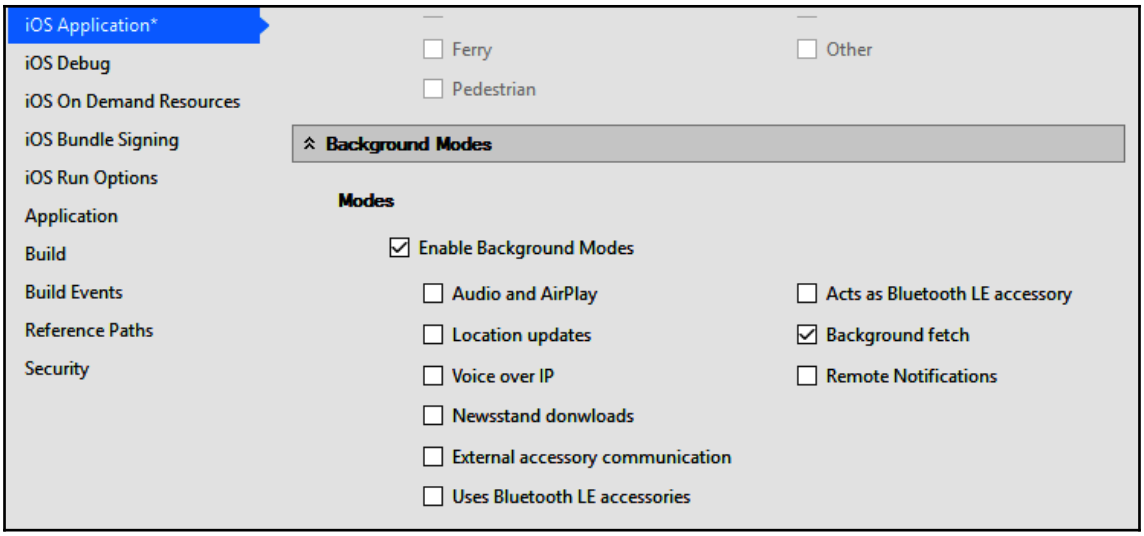

For each
*Select an output from previous steps
Body
Send an email
*To
email
*Subject
New Auctions for you
firstName
Add dynamic content
*Body
Specify the body of the mail
Add new parameter
Connected to can_bilgin@hotmail.com.
Change connection.
Add an action


100%
Recurrence
Initialize Email Text Variable
RetrieveLatestAuctionsList
RetrieveUsersList
AuctionsList
UsersList
Prepare Auction Email
For each
*Select an output from previous steps
Body
Send an email
Add an action

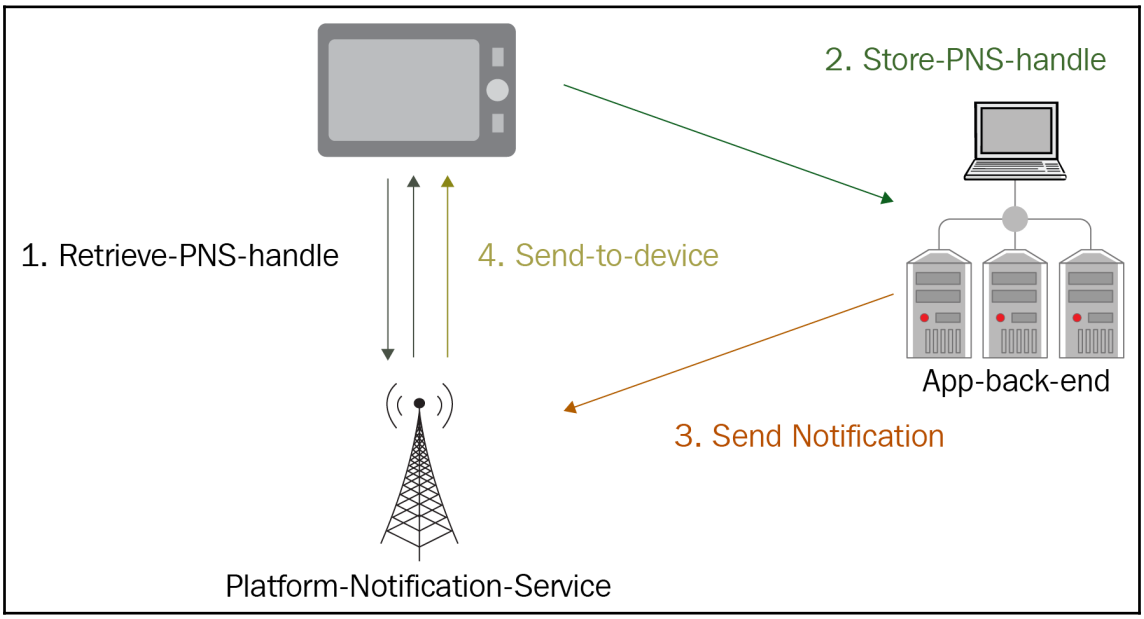

Triggers
Actions
Create table
Azure Table Storage
Delete a table
Azure Table Storage
Delete Entity
Azure Table Storage
Get a table
Azure Table Storage
Get entities
Azure Table Storage

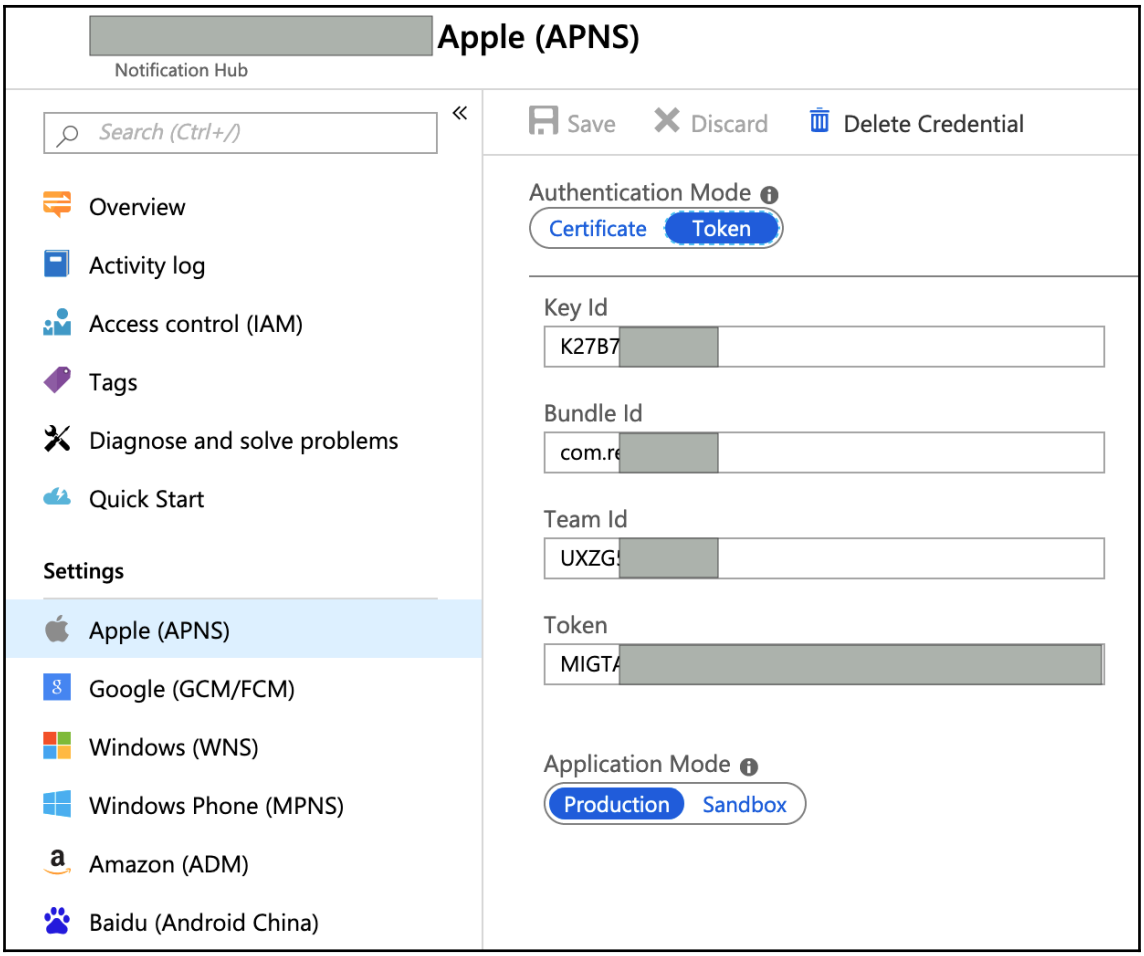
Chapter 11: 11.Fluid Applications with Asynchronous Patterns

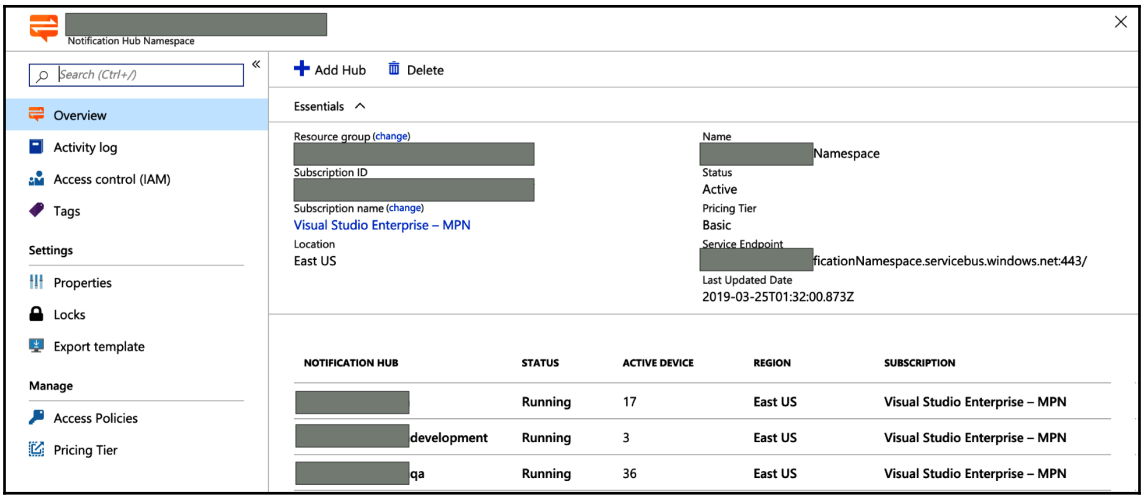


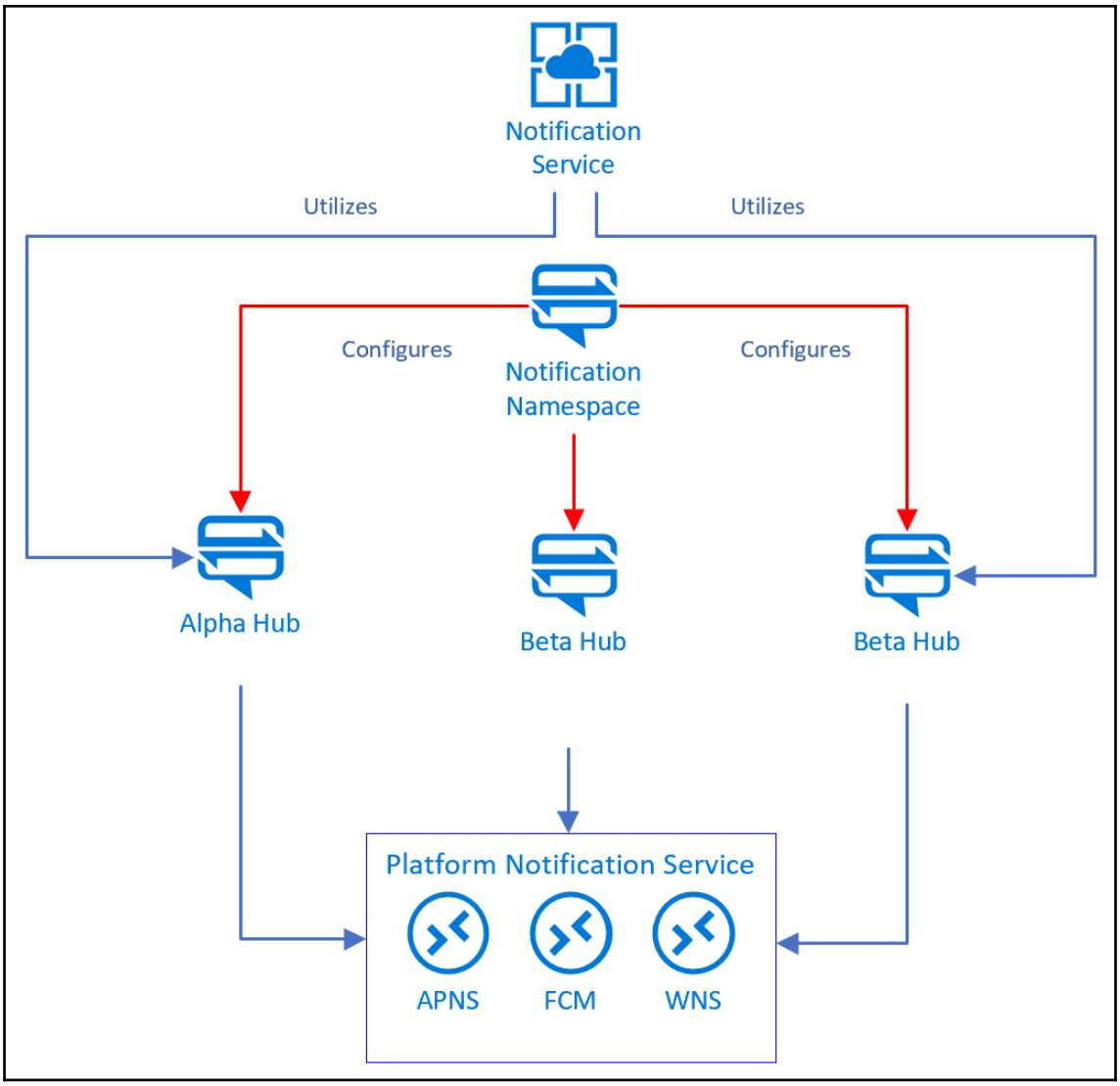

iOS Application*
iOS Debug
iOS On Demand Resources
iOS Bundle Signing
iOS Run Options
Application
Build
Build Events
Reference Paths
Security
Ferry
Other
Pedestrian
Background Modes
Modes
Enable Background Modes
Audio and AirPlay
Acts as Bluetooth LE accessory
Location updates
Background fetch
Voice over IP
Remote Notifications
Newsstand donwloads
External accessory communication
Uses Bluetooth LE accessories

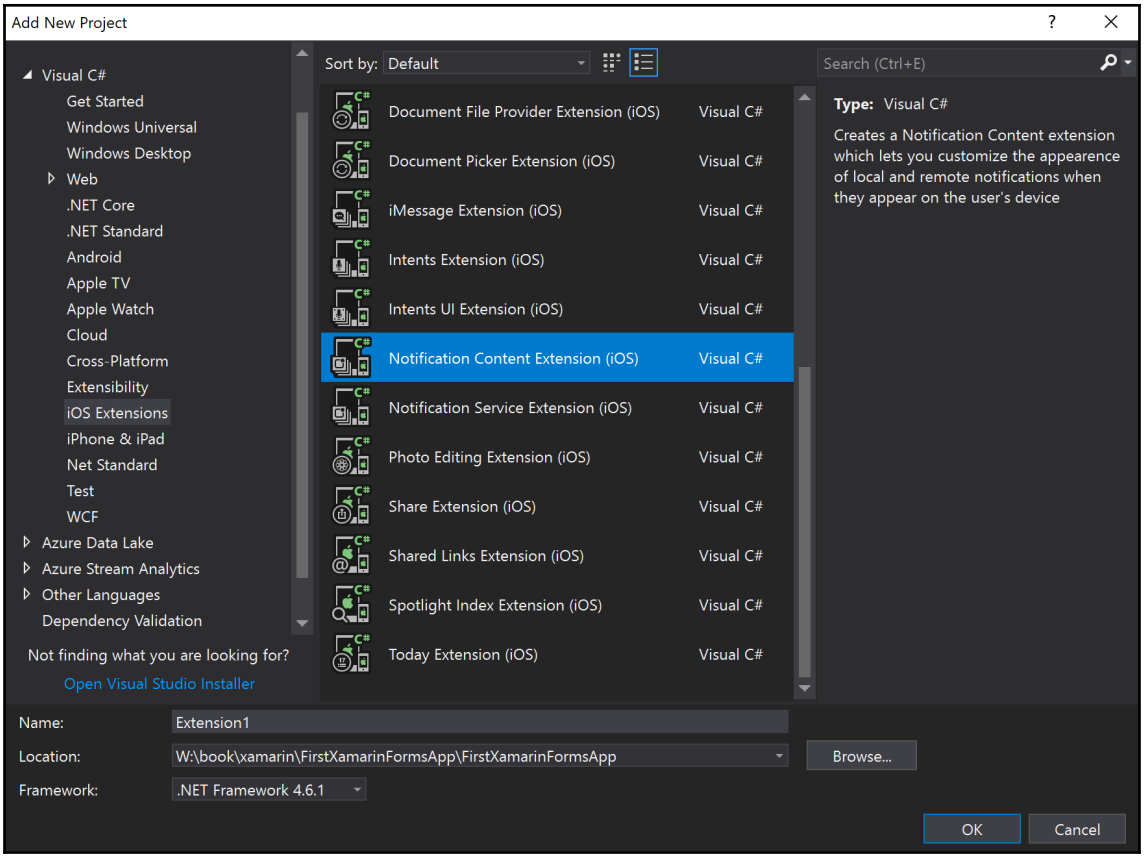
Chapter 13: 13.Engaging Users with Notifications and the Graph API



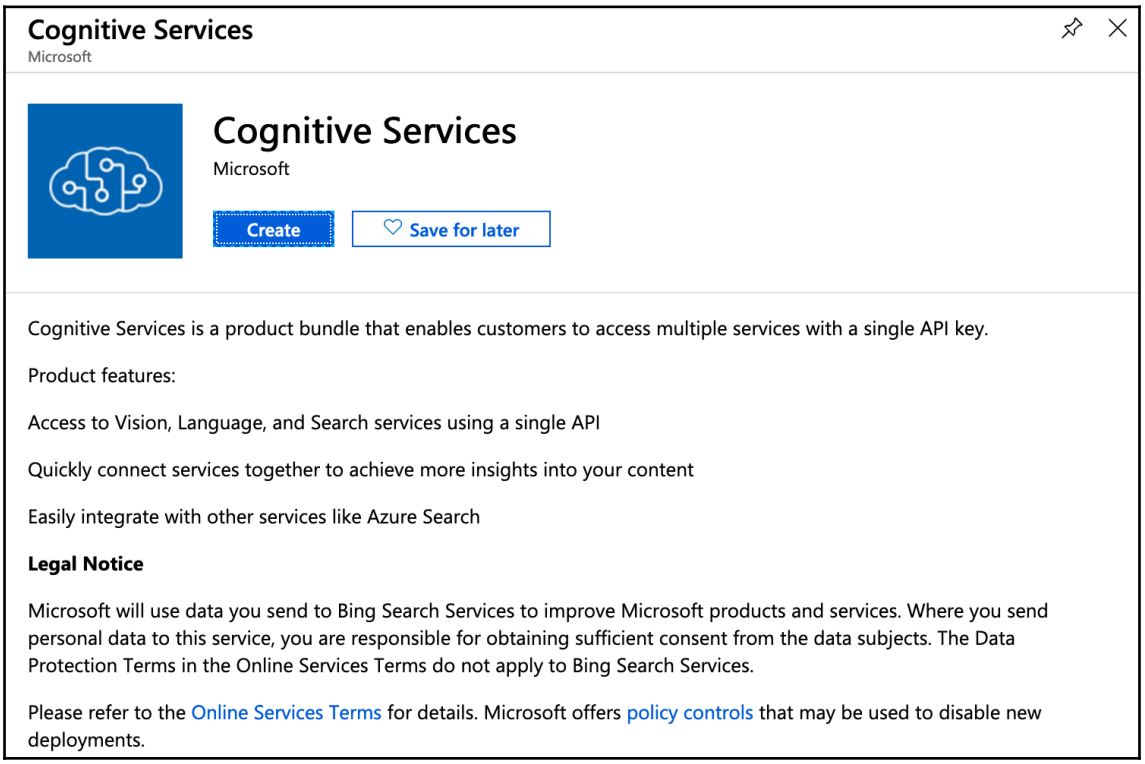

Apple (APNS)
Notification Hub
Search (Ctrl+/)
Overview
Activity log
Access control (IAM)
Tags
Diagnose and solve problems
Quick Start
Settings
Apple (APNS)
Google (GCM/FCM)
Windows (WNS)
Windows Phone (MPNS)
Amazon (ADM)
Baidu (Android China)
Save
Discard
Delete Credential
Authentication Mode
Certificate
Token
Key Id
K27B7
Bundle Id
com.re
Team Id
UXZG
Token
MIGTA
Application Mode
Production
Sandbox


[redacted]
Notification Hub Namespace
Search (Ctrl+/)
Overview
Activity log
Access control (IAM)
Tags
Settings
Properties
Locks
Export template
Manage
Access Policies
Pricing Tier
Add Hub
Delete
Essentials
Resource group (change)
[redacted]
Subscription ID
[redacted]
Subscription name (change)
Visual Studio Enterprise – MPN
Location
East US
Name
[redacted]Namespace
Status
Active
Pricing Tier
Basic
Service Endpoint
[redacted]ficationNamespace.servicebus.windows.net:443/
Last Updated Date
2019-03-25T01:32:00.873Z
NOTIFICATION HUB
STATUS
ACTIVE DEVICE
REGION
SUBSCRIPTION
[redacted]
Running
17
East US
Visual Studio Enterprise – MPN
[redacted]development
Running
3
East US
Visual Studio Enterprise – MPN
[redacted]qa
Running
36
East US
Visual Studio Enterprise – MPN


Notification Service
Utilizes
Utilizes
Configures
Notification Namespace
Configures
Alpha Hub
Beta Hub
Beta Hub
Platform Notification Service
APNS
FCM
WNS


Add New Project
Visual C#
Get Started
Windows Universal
Windows Desktop
Web
.NET Core
.NET Standard
Android
Apple TV
Apple Watch
Cloud
Cross-Platform
Extensibility
iOS Extensions
iPhone & iPad
Net Standard
Test
WCF
Azure Data Lake
Azure Stream Analytics
Other Languages
Dependency Validation
Not finding what you are looking for?
Open Visual Studio Installer
Sort by: Default
Search (Ctrl+E)
Document File Provider Extension (iOS) Visual C#
Document Picker Extension (iOS) Visual C#
iMessage Extension (iOS) Visual C#
Intents Extension (iOS) Visual C#
Intents UI Extension (iOS) Visual C#
Notification Content Extension (iOS) Visual C#
Notification Service Extension (iOS) Visual C#
Photo Editing Extension (iOS) Visual C#
Share Extension (iOS) Visual C#
Shared Links Extension (iOS) Visual C#
Spotlight Index Extension (iOS) Visual C#
Today Extension (iOS) Visual C#
Type: Visual C#
Creates a Notification Content extension which lets you customize the appearence of local and remote notifications when they appear on the user's device
Name: Extension1
Location: W:\book\xamarin\FirstXamarinFormsApp\FirstXamarinFormsApp
Browse...
Framework: .NET Framework 4.6.1
OK
Cancel

Chapter 14: 14.Introducing Cognitive Services



Create new app

Name (Required)

Auctions

Culture (Required)

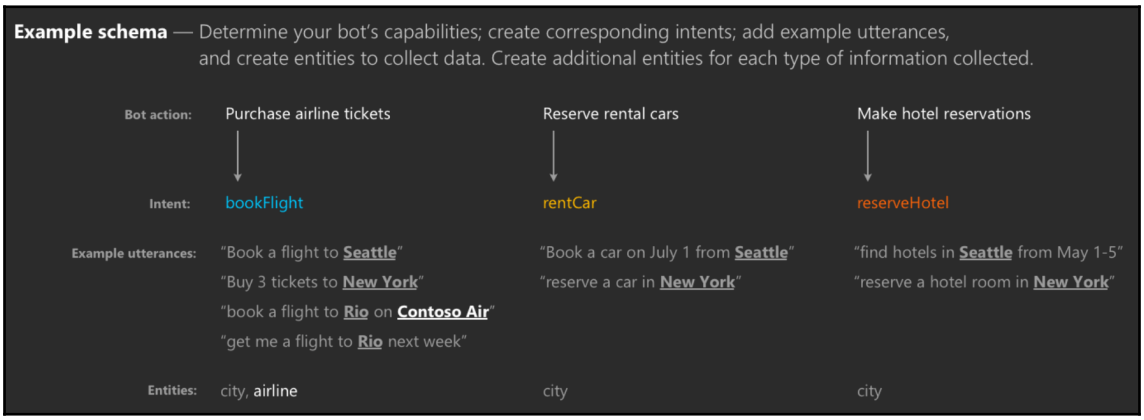
English

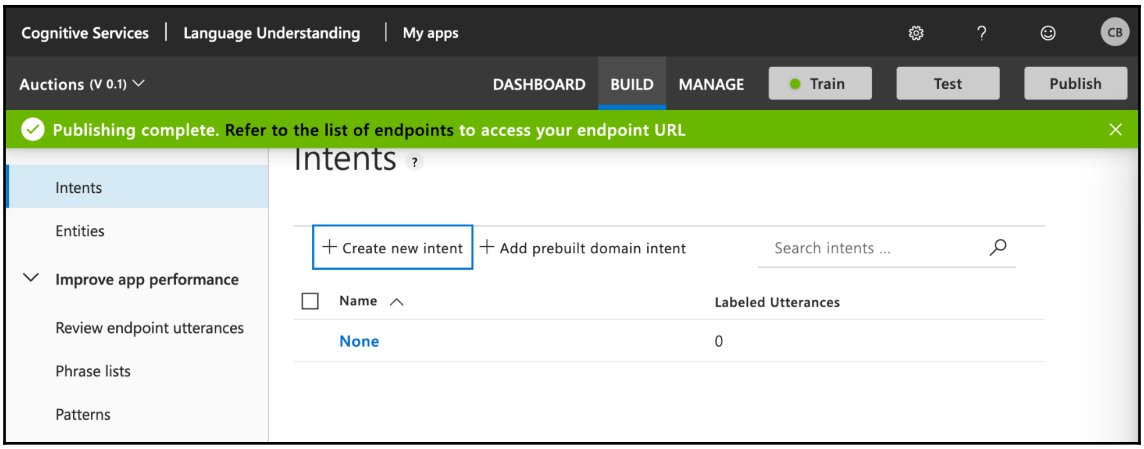
** Culture is the language that your app understands and speaks, not the interface language.

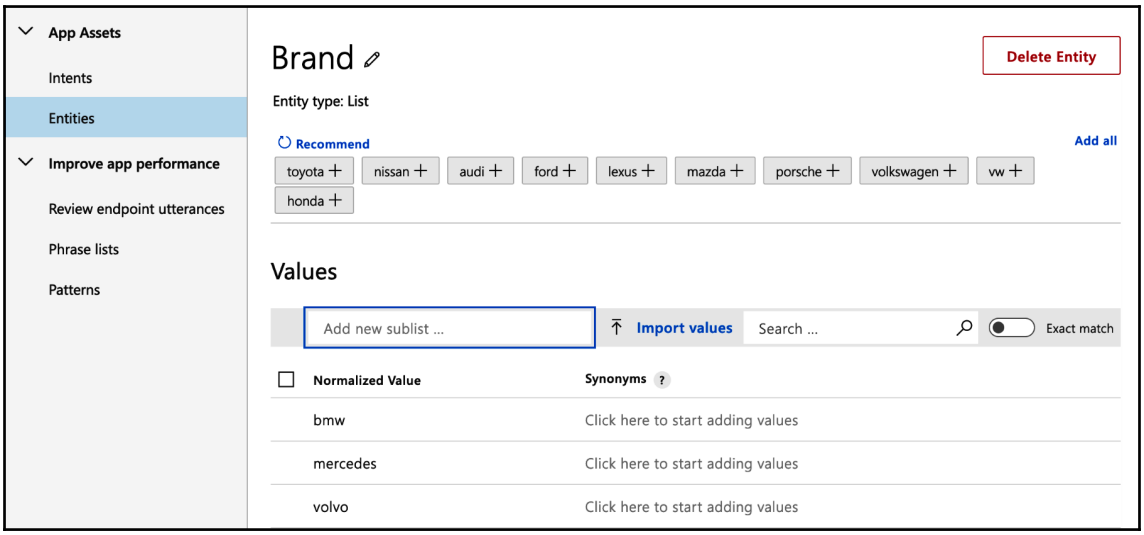
Description

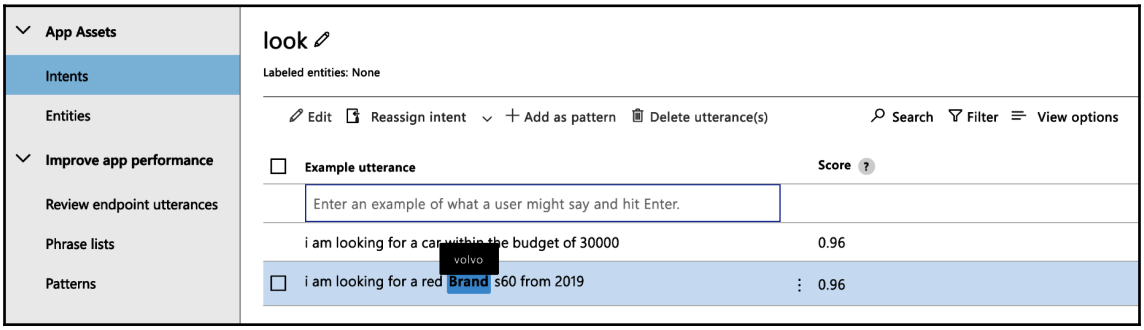
Vehicle Auctioning Application

Done Cancel




Cognitive Services | Language Understanding | My apps
CB
Auctions (V 0.1)
DASHBOARD
BUILD
MANAGE
Train
Test
Publish
Publishing complete. Refer to the list of endpoints to access your endpoint URL
Intents
Entities
Improve app performance
Review endpoint utterances
Phrase lists
Patterns
Intents
Create new intent
Add prebuilt domain intent
Search intents ...
Name
Labeled Utterances
None
0


App Assets
Intents
Entities
Improve app performance
Review endpoint utterances
Phrase lists
Patterns
Brand
Delete Entity
Entity type: List
Recommend
Add all
toyota
nissan
audi
ford
lexus
mazda
porsche
volkswagen
vw
honda
Values
Add new sublist ...
Import values
Search ...
Exact match
Normalized Value
Synonyms
bmw
Click here to start adding values
mercedes
Click here to start adding values
volvo
Click here to start adding values


App Assets
Intents
Entities
Improve app performance
Review endpoint utterances
Phrase lists
Patterns
look
Labeled entities: None
Edit
Reassign intent
Add as pattern
Delete utterance(s)
Search
Filter
View options
Example utterance
Score
Enter an example of what a user might say and hit Enter.
i am looking for a car within the budget of 30000
0.96
volvo
i am looking for a red Brand s60 from 2019
0.96

Test

Start over | Batch testing panel

Type a test utterance

i am looking for a red volvo s60 from 2018

look (0.933) Inspect

Current: (V 0.1)

Compare with published

i am looking for a red volvo s60 from 2018

Top scoring intent

look (0.933) Edit

Entities

Text	Entity
"red"	color
"volvo"	Brand

Top matched pattern(s)

No matched patterns

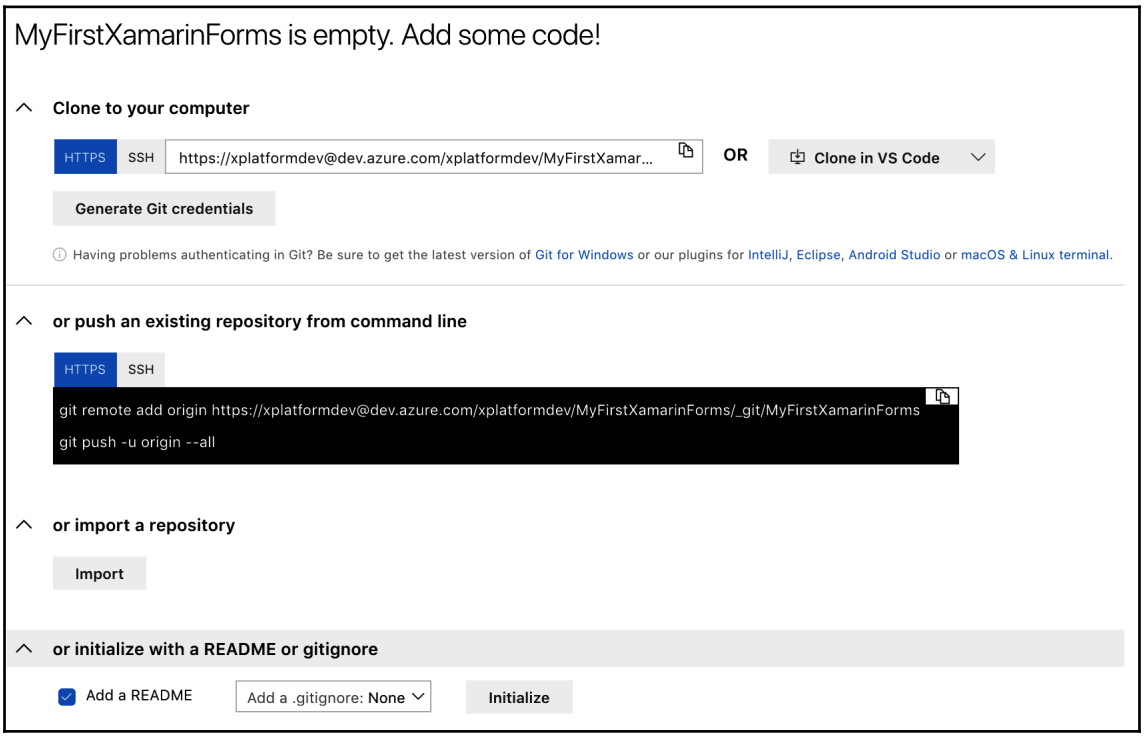
Sentiment

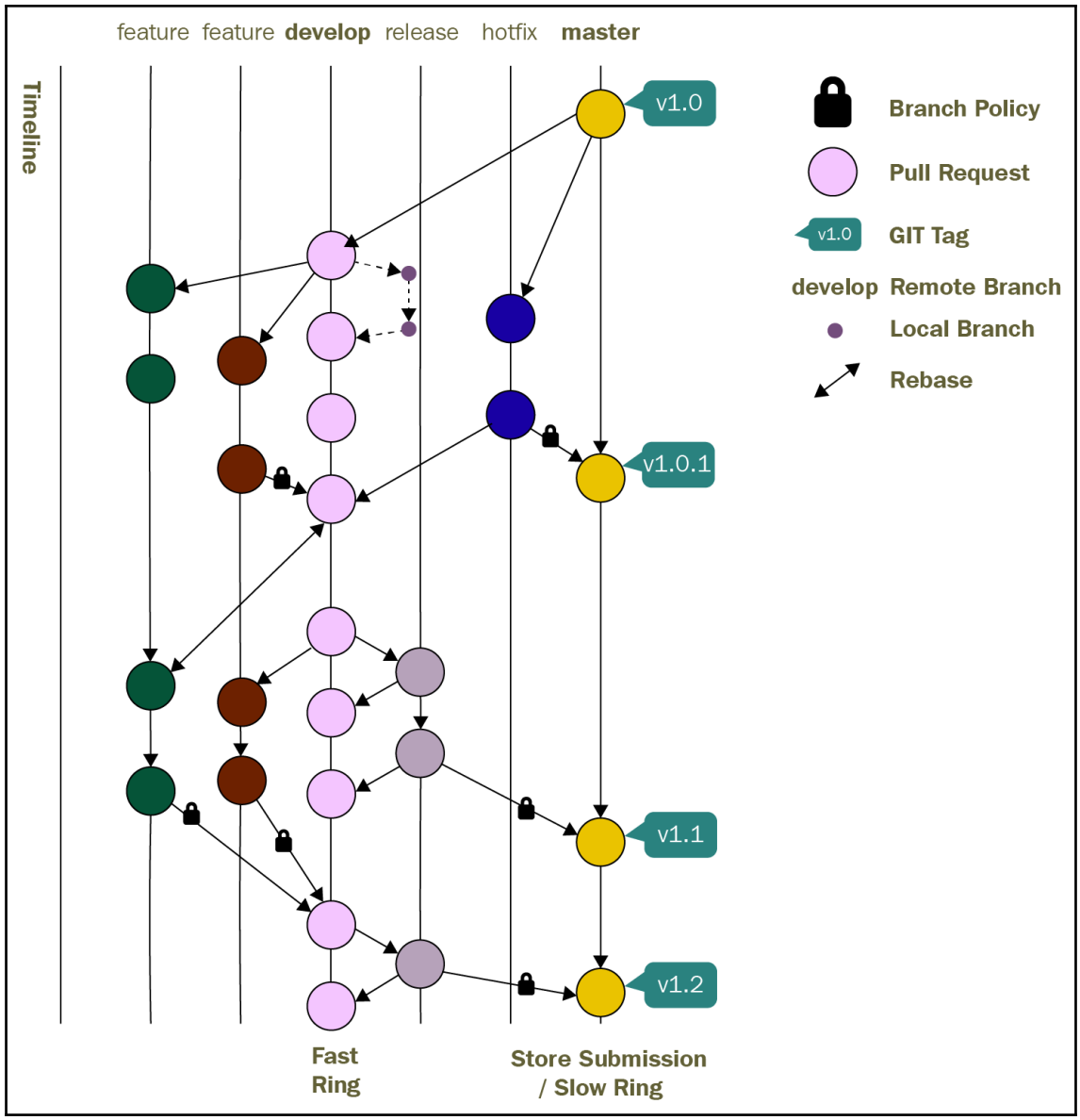
Enable sentiment analysis to get sentiment score

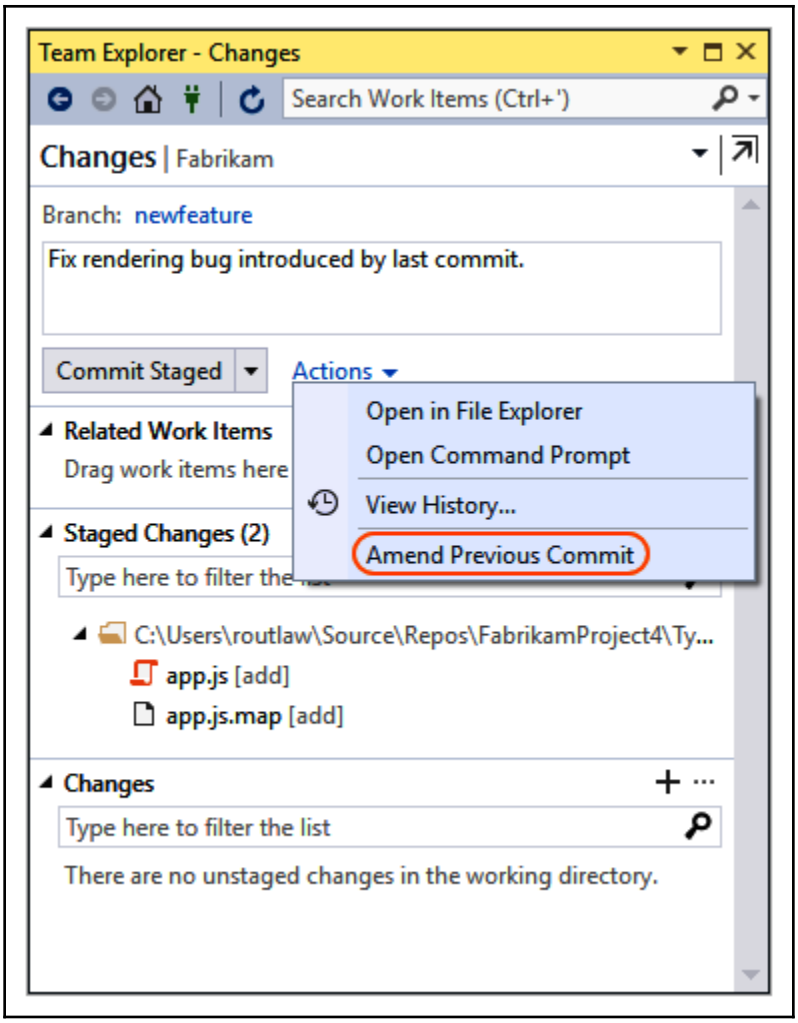
Objects [{ "rectangle": { "x": 542, "y": 115, "w": 1397, "h": 765 }, "object": "car", "parent": { "object": "Land vehicle", "parent": { "object": "Vehicle", "confidence": 0.914 }, "confidence": 0.914 }, "confidence": 0.909 }]

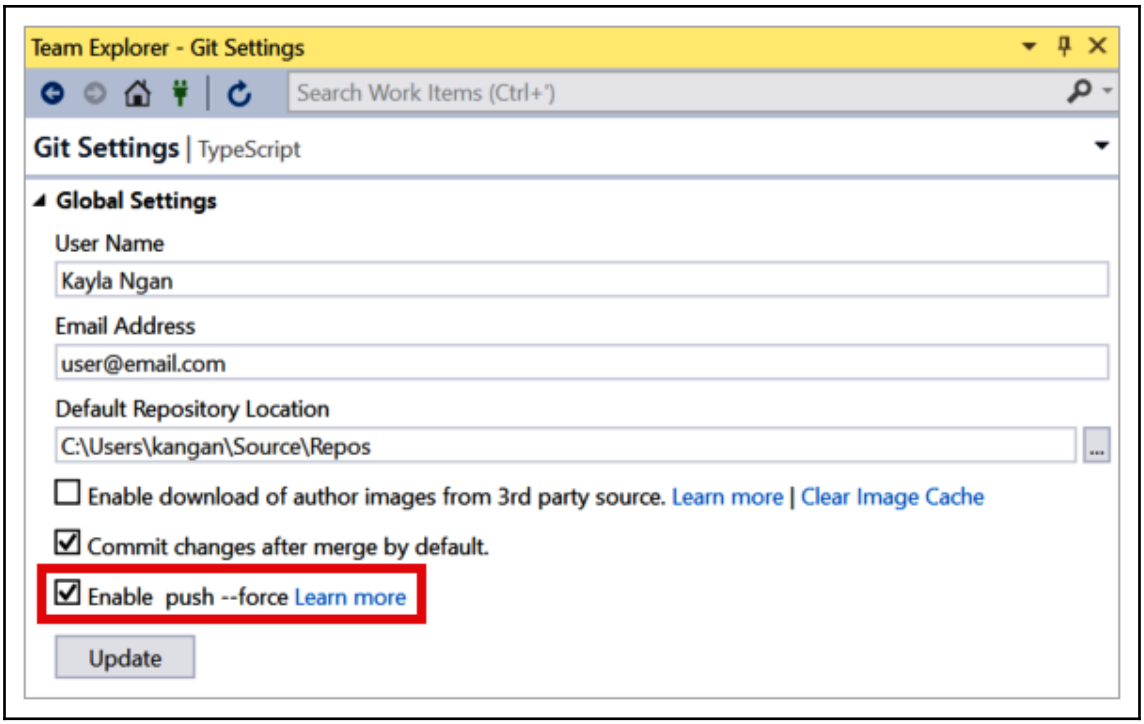
Tags [{ "name": "outdoor", "confidence": 0.998841 }, { "name": "car", "confidence": 0.998357356 }, { "name": "road", "confidence": 0.9949555 }, { "name": "tree", "confidence": 0.9877573 }, { "name": "blue", "confidence": 0.9813743 }, { "name": "grass", "confidence": 0.968876243 }, { "name": "vehicle", "confidence": 0.9148866 }, { "name": "land vehicle", "confidence": 0.8881643 }, { "name": "transport", "confidence": 0.7687348 }, { "name": "full-size car", "confidence": 0.7539416 }, { "name": "wheel", "confidence": 0.708732 }, { "name": "ford", "confidence": 0.608252943 }, { "name": "subaru", "confidence": 0.518539 }, { "name": "mid-size car", "confidence": 0.506383657 }]

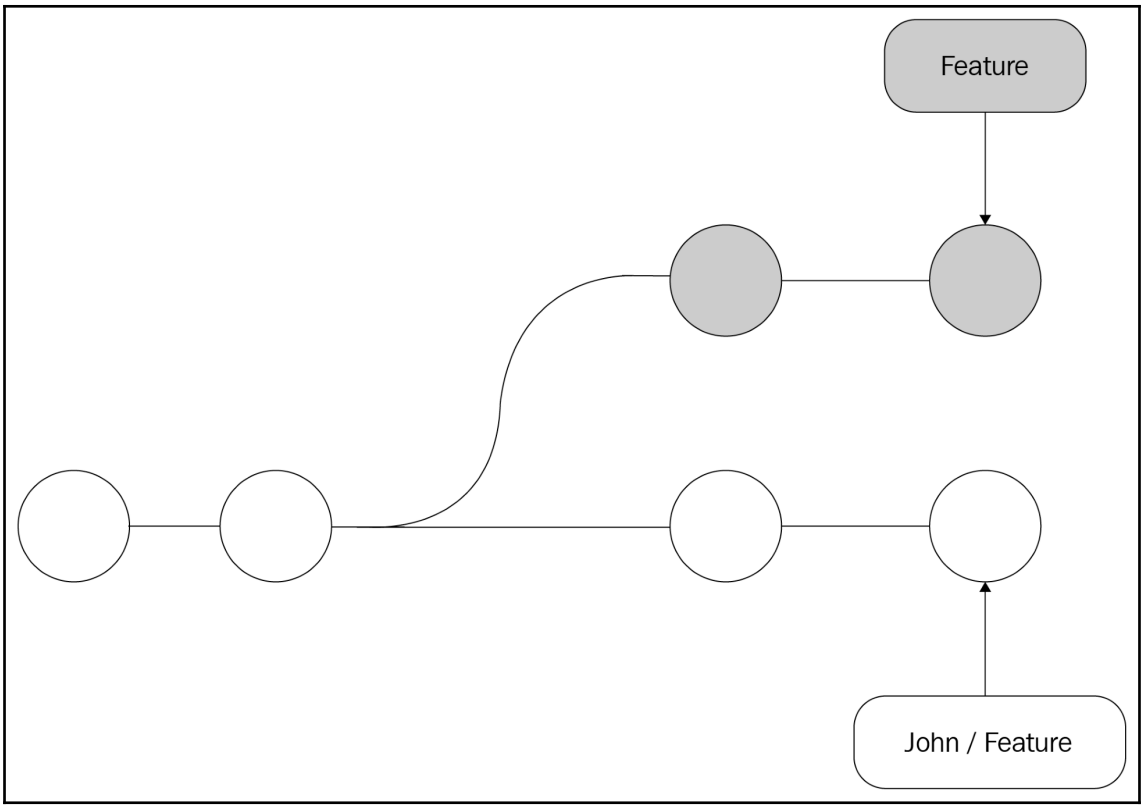
Chapter 15: 15.Azure DevOps and Visual Studio App Center

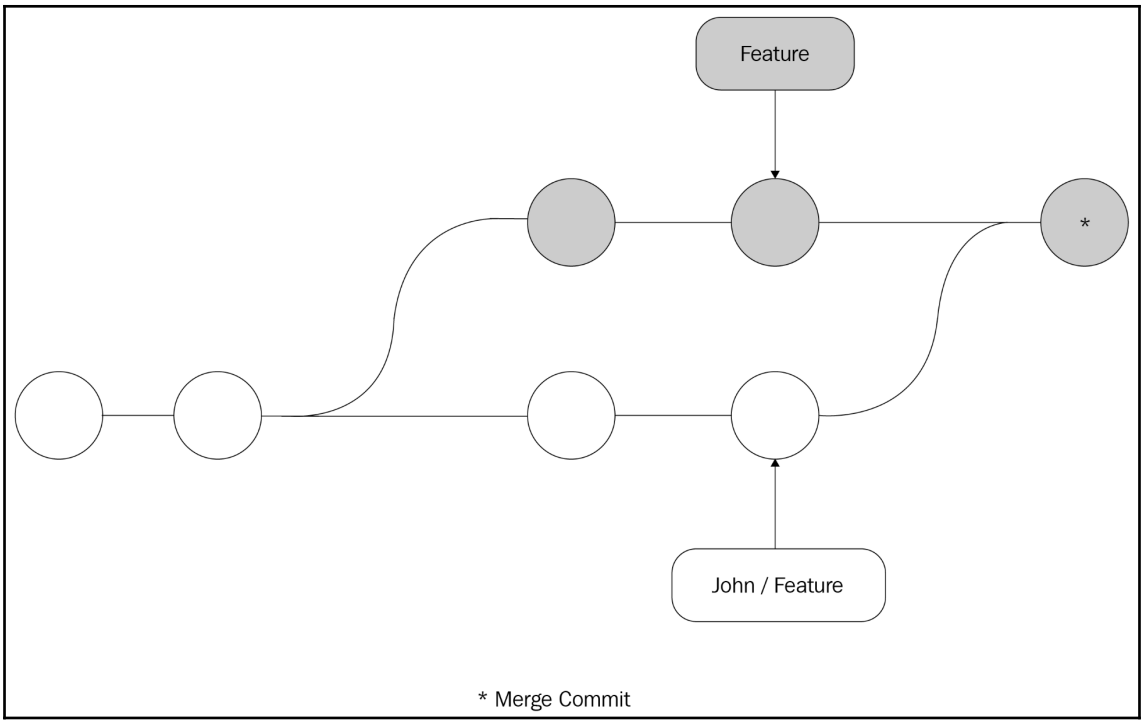


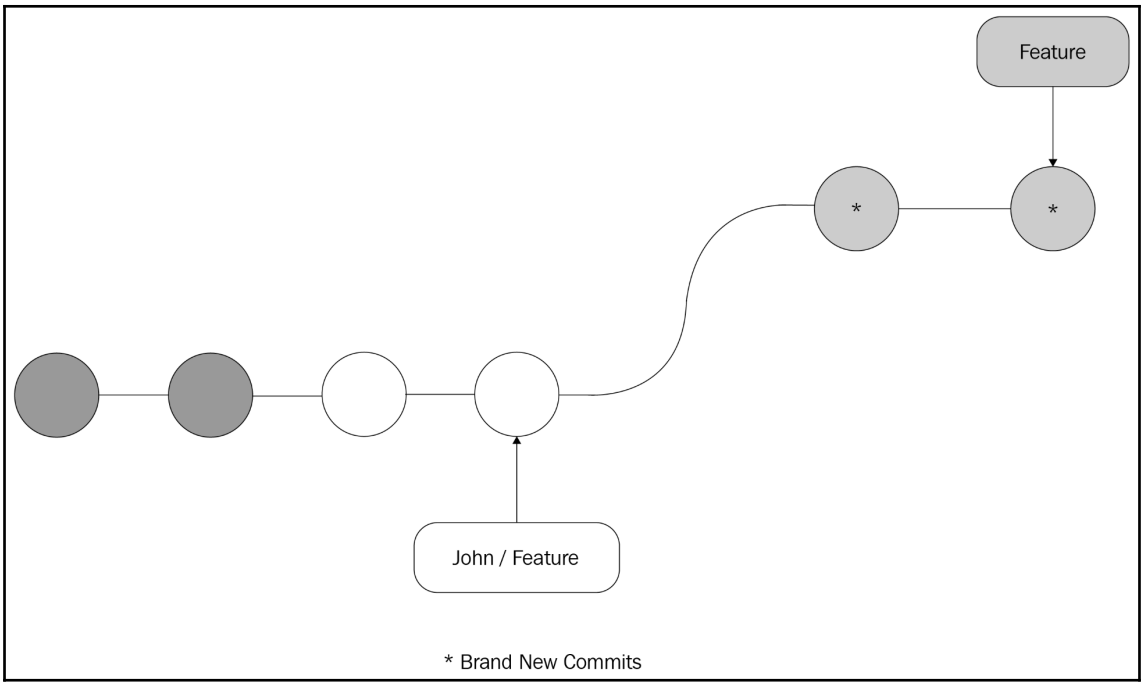

feature
feature
develop
release
hotfix
master
Timeline
v1.0
v1.0.1
v1.1
v1.2
Fast
Ring
Store Submission
/ Slow Ring
Branch Policy
Pull Request
v1.0
GIT Tag
develop
Remote Branch
Local Branch
Rebase

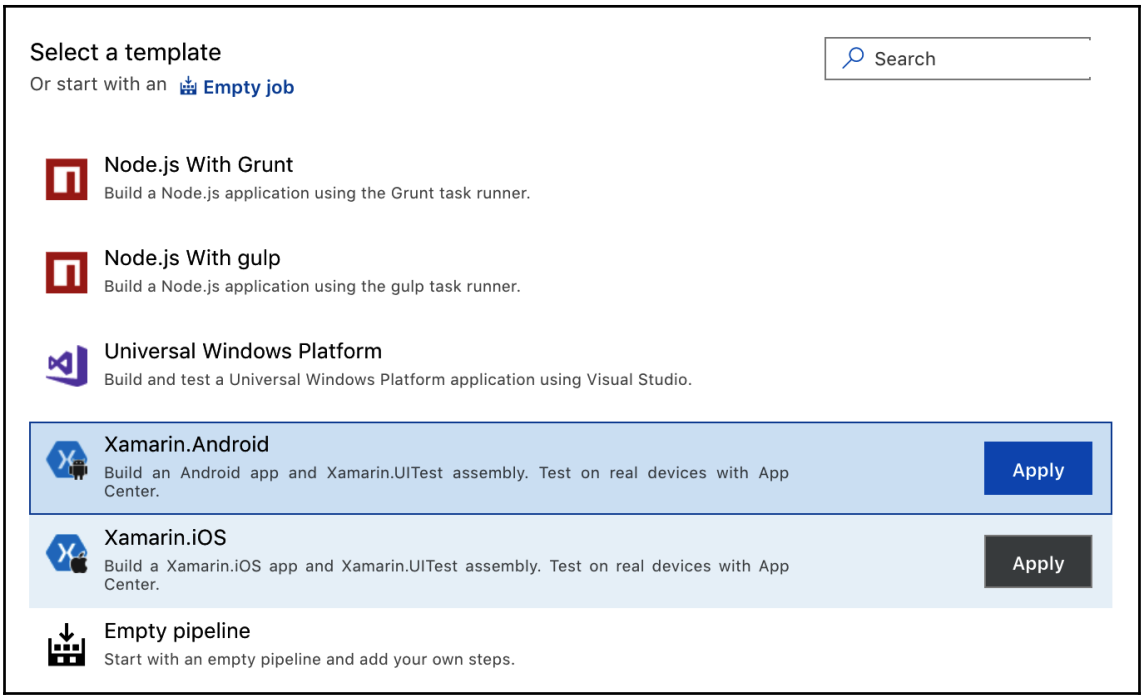

Team Explorer - Changes
Search Work Items (Ctrl+')
Changes | Fabrikam
Branch: newfeature
Fix rendering bug introduced by last commit.
Commit Staged
Actions
Open in File Explorer
Open Command Prompt
View History...
Amend Previous Commit
Related Work Items
Drag work items here
Staged Changes (2)
Type here to filter the
C:\Users\routlaw\Source\Repos\FabrikamProject4\Ty...
app.js [add]
app.js.map [add]
Changes
Type here to filter the list
There are no unstaged changes in the working directory.

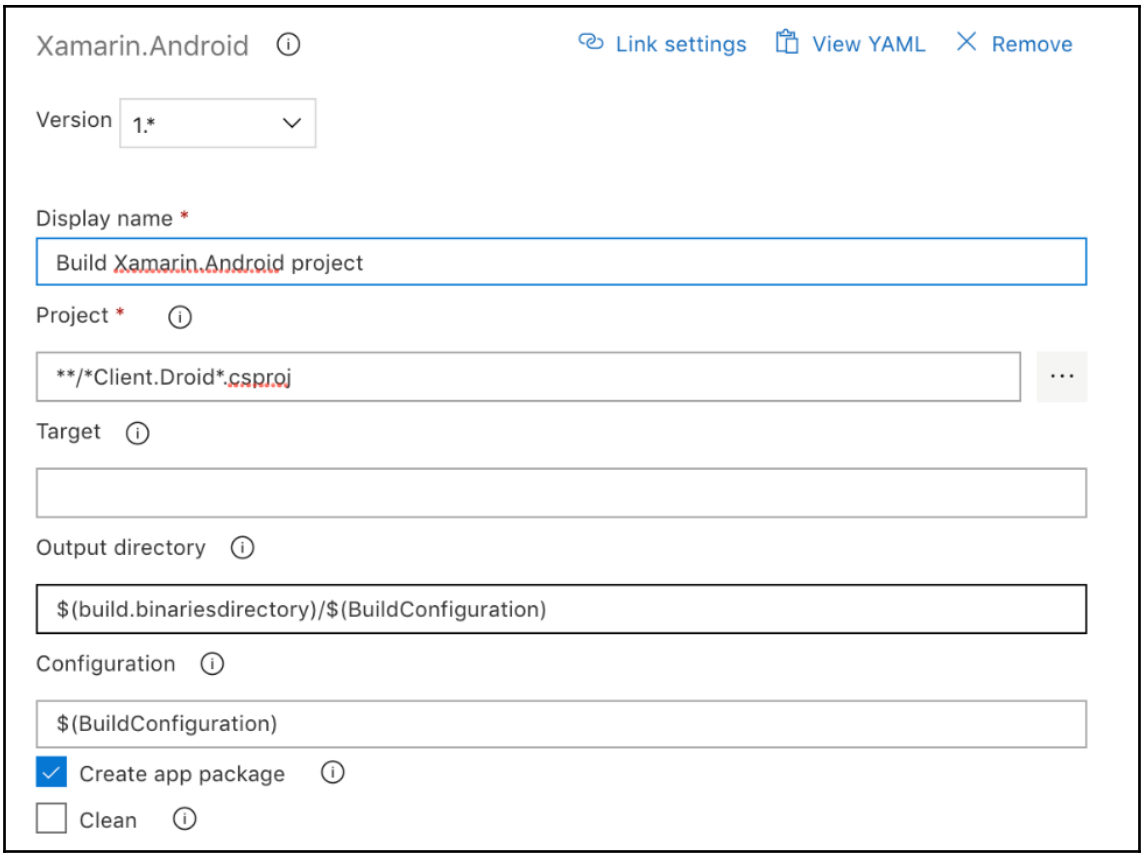

Team Explorer - Git Settings
Search Work Items (Ctrl+')
Git Settings | TypeScript
Global Settings
User Name
Kayla Ngan
Email Address
user@email.com
Default Repository Location
C:\Users\kangan\Source\Repos
Enable download of author images from 3rd party source. Learn more | Clear Image Cache
Commit changes after merge by default.
Enable push --force Learn more
Update

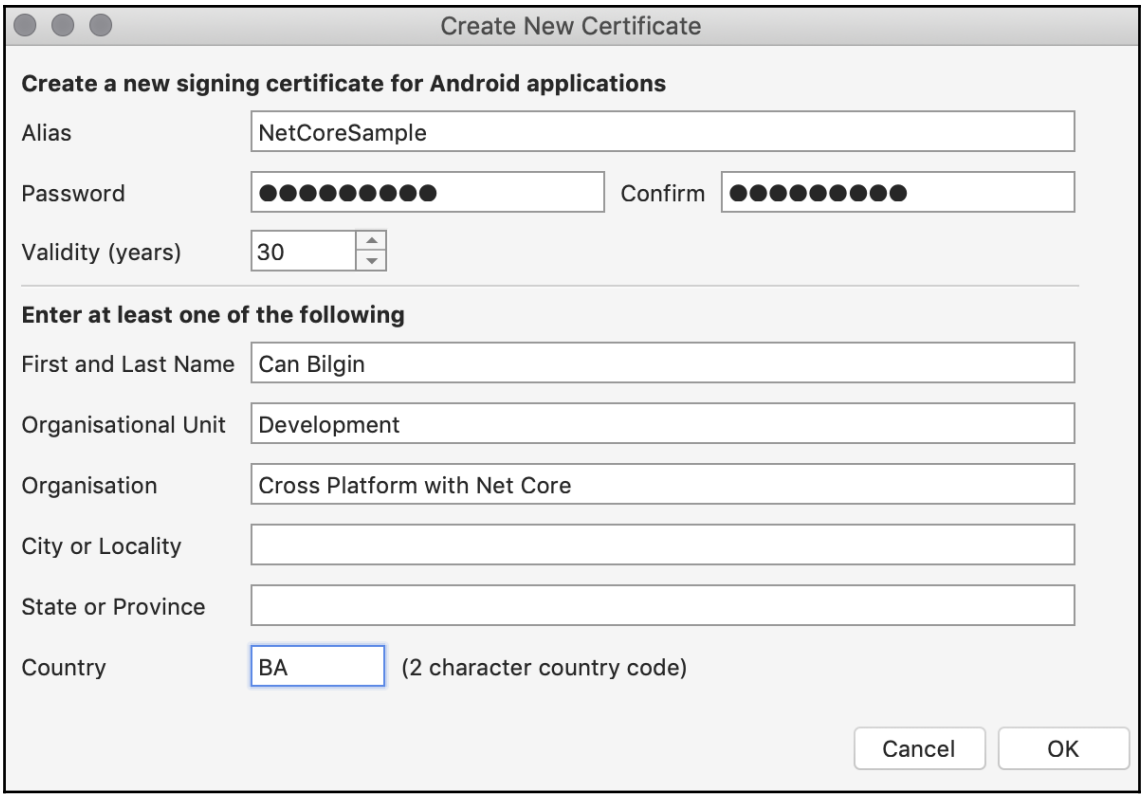

Feature
John / Feature

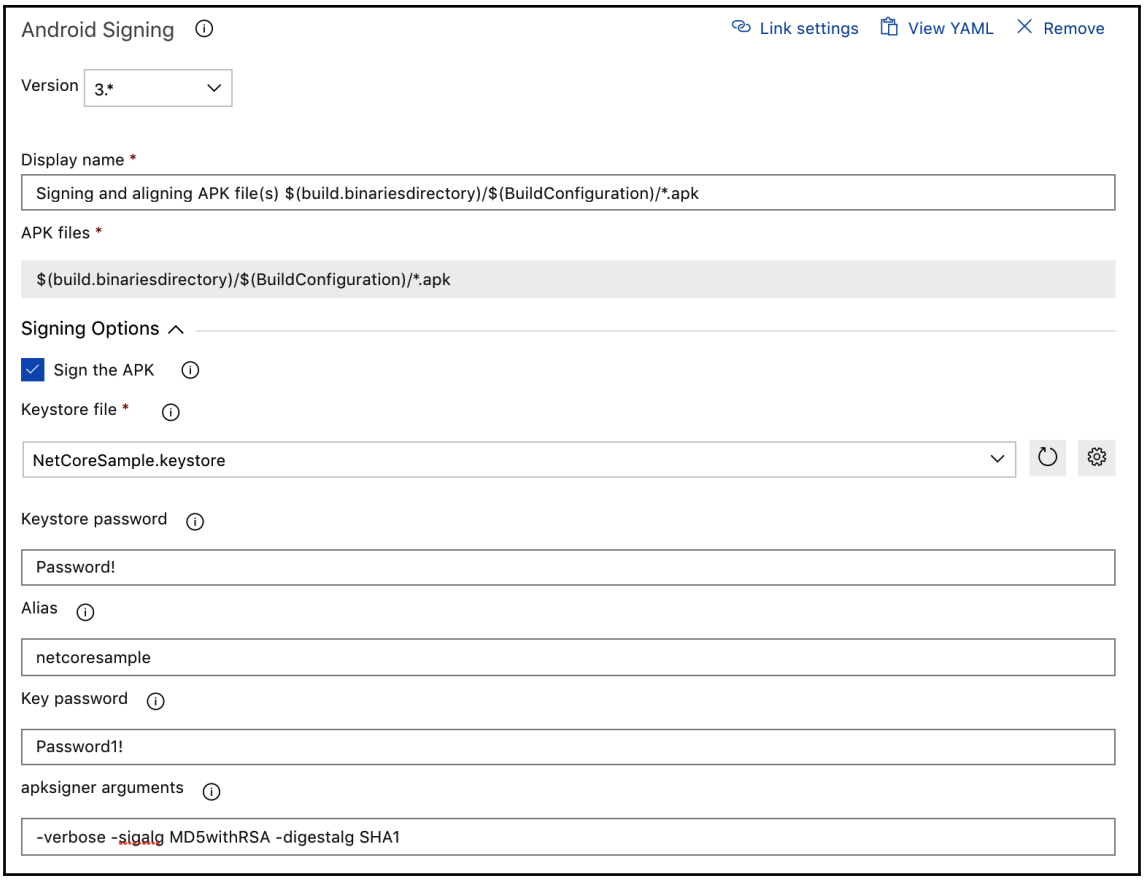

Feature
*
John / Feature
* Merge Commit

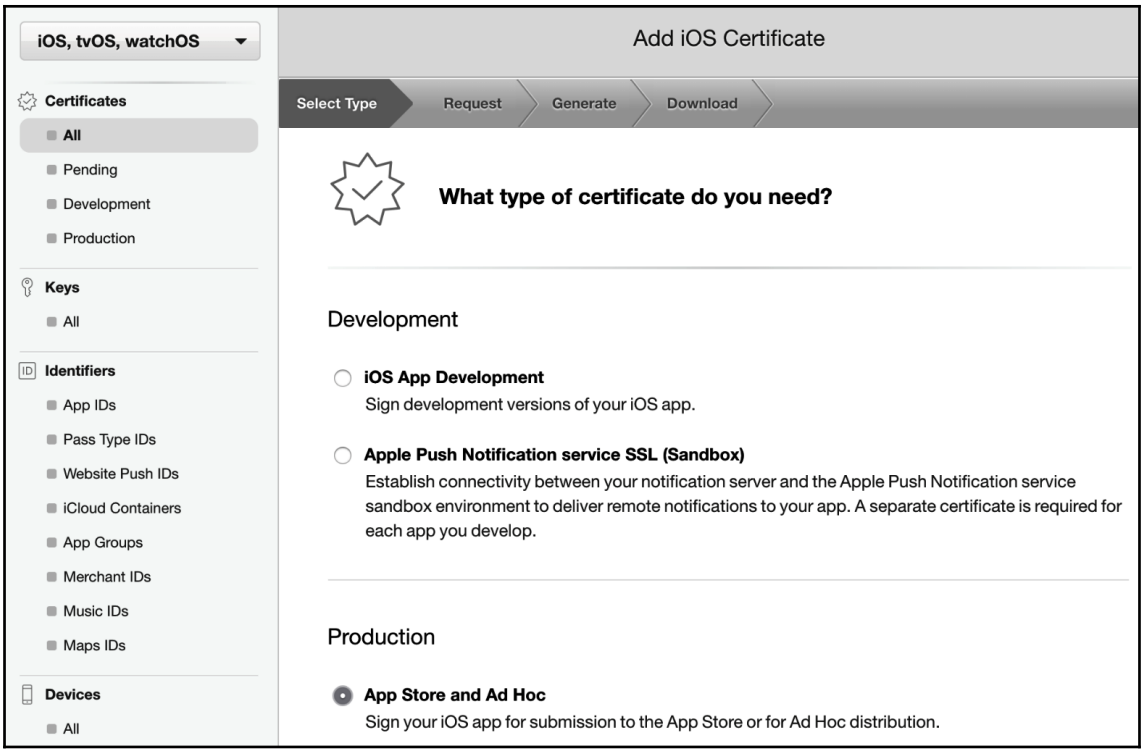

Feature
*
*
John / Feature
* Brand New Commits

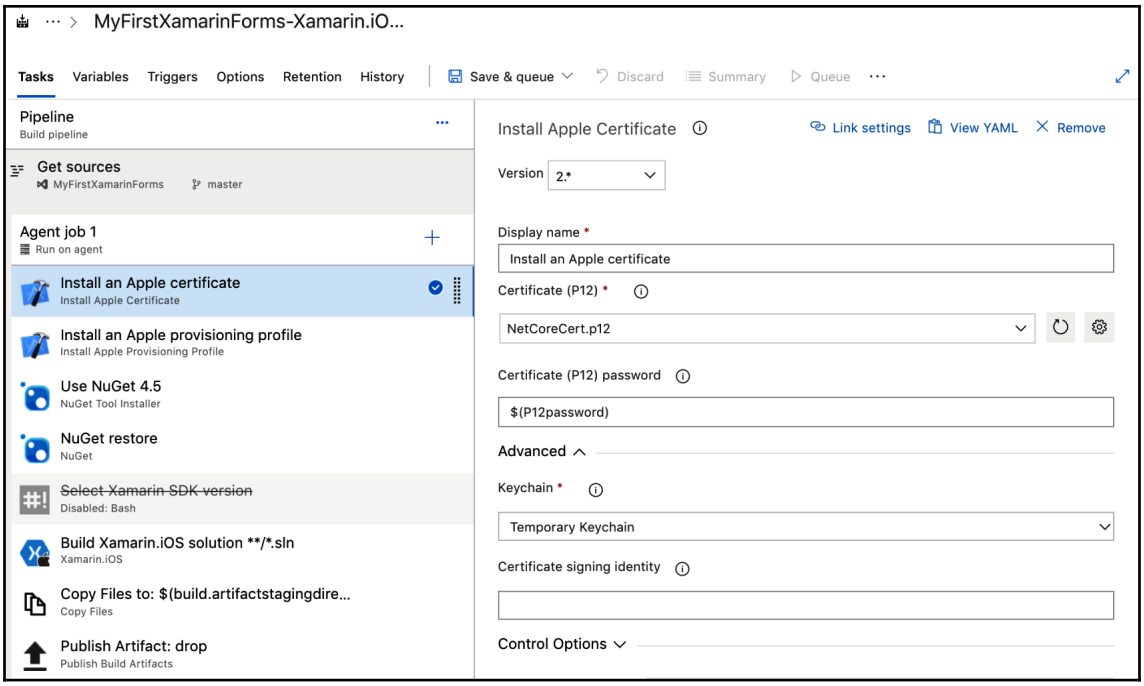

Select a template
Or start with an Empty job
Search
Node.js With Grunt
Build a Node.js application using the Grunt task runner.
Node.js With gulp
Build a Node.js application using the gulp task runner.
Universal Windows Platform
Build and test a Universal Windows Platform application using Visual Studio.
Xamarin.Android
Build an Android app and Xamarin.UITest assembly. Test on real devices with App Center.
Apply
Xamarin.iOS
Build a Xamarin.iOS app and Xamarin.UITest assembly. Test on real devices with App Center.
Apply
Empty pipeline
Start with an empty pipeline and add your own steps.

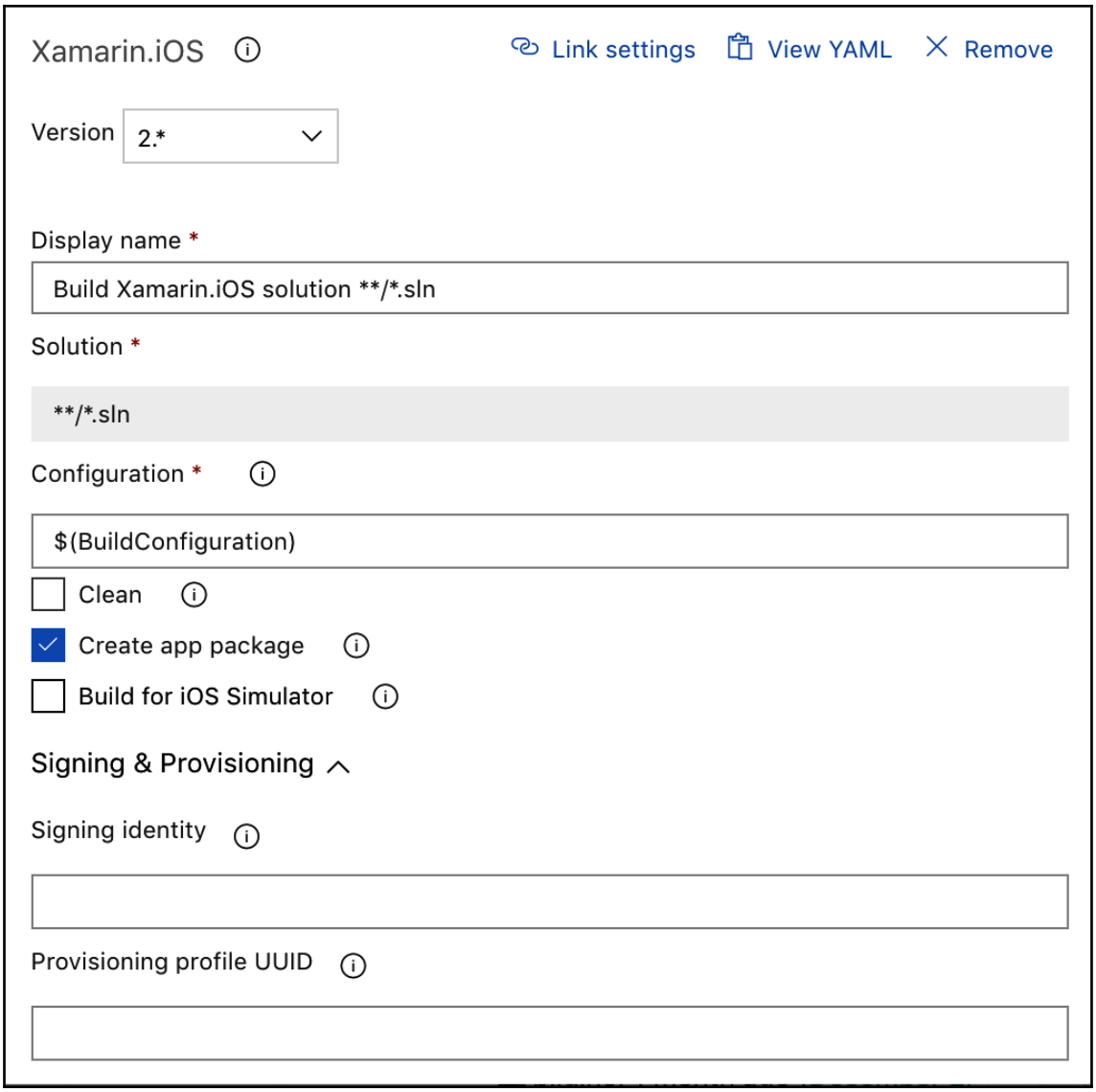

Xamarin.Android
Link settings
View YAML
Remove
Version
1.*
Display name *
Build Xamarin.Android project
Project *
**/*Client.Droid*.csproj
Target
Output directory
$(build.binariesdirectory)/$(BuildConfiguration)
Configuration
$(BuildConfiguration)
Create app package
Clean

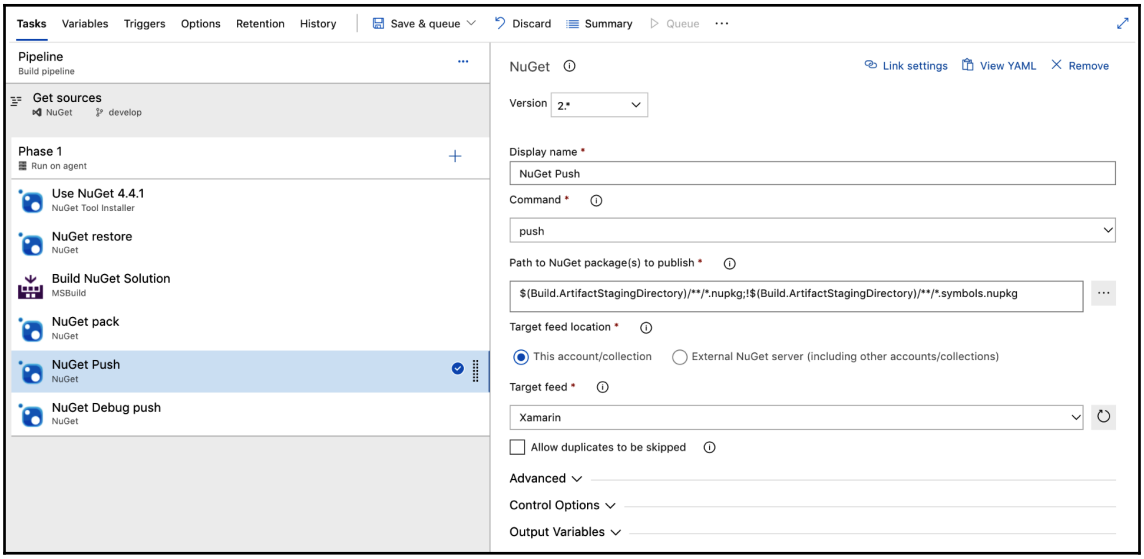

Create New Certificate
Create a new signing certificate for Android applications
Alias
NetCoreSample
Password
Confirm
Validity (years)
30
Enter at least one of the following
First and Last Name
Can Bilgin
Organisational Unit
Development
Organisation
Cross Platform with Net Core
City or Locality
State or Province
Country
BA
(2 character country code)
Cancel
OK

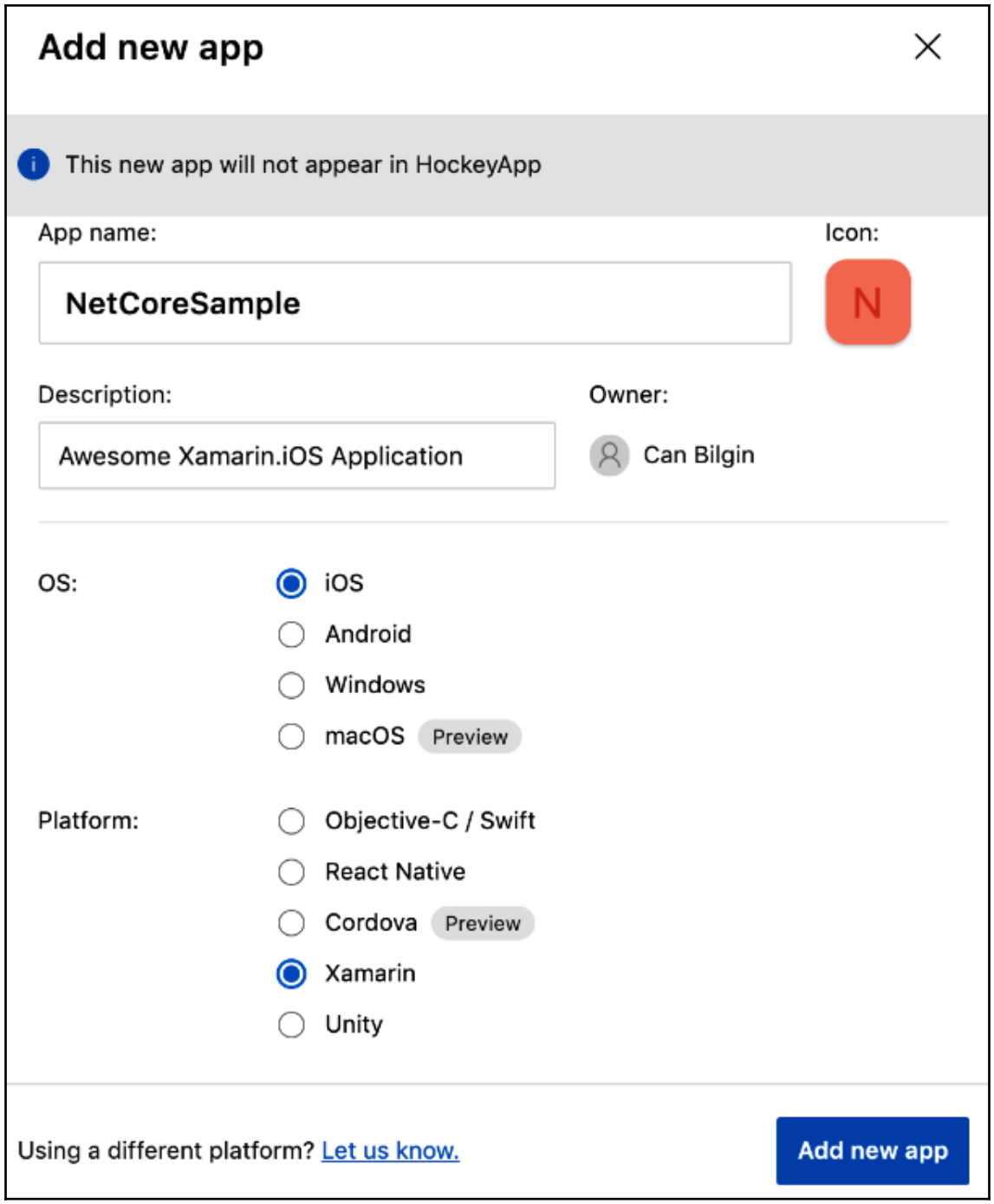

Android Signing
Link settings
View YAML
Remove
Version
3.*
Display name *
Signing and aligning APK file(s) $(build.binariesdirectory)/$(BuildConfiguration)/*.apk
APK files *
$(build.binariesdirectory)/$(BuildConfiguration)/*.apk
Signing Options
Sign the APK
Keystore file *
NetCoreSample.keystore
Keystore password
Password!
Alias
netcoresample
Key password
Password1!
apksigner arguments
-verbose -sigalg MD5withRSA -digestalg SHA1

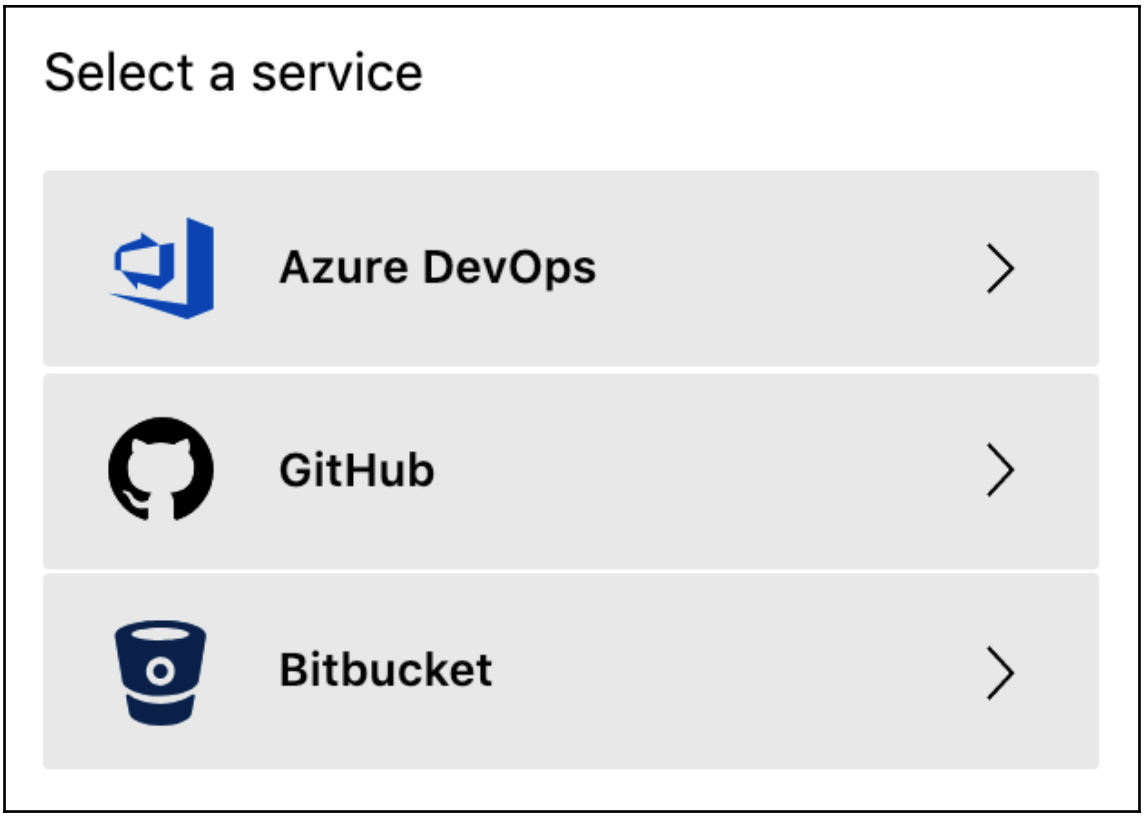

iOS, tvOS, watchOS
Certificates
All
Pending
Development
Production
Keys
All
Identifiers
App IDs
Pass Type IDs
Website Push IDs
iCloud Containers
App Groups
Merchant IDs
Music IDs
Maps IDs
Devices
All
Add iOS Certificate
Select Type
Request
Generate
Download
What type of certificate do you need?
Development
iOS App Development
Sign development versions of your iOS app.
Apple Push Notification service SSL (Sandbox)
Establish connectivity between your notification server and the Apple Push Notification service sandbox environment to deliver remote notifications to your app. A separate certificate is required for each app you develop.
Production
App Store and Ad Hoc
Sign your iOS app for submission to the App Store or for Ad Hoc distribution.

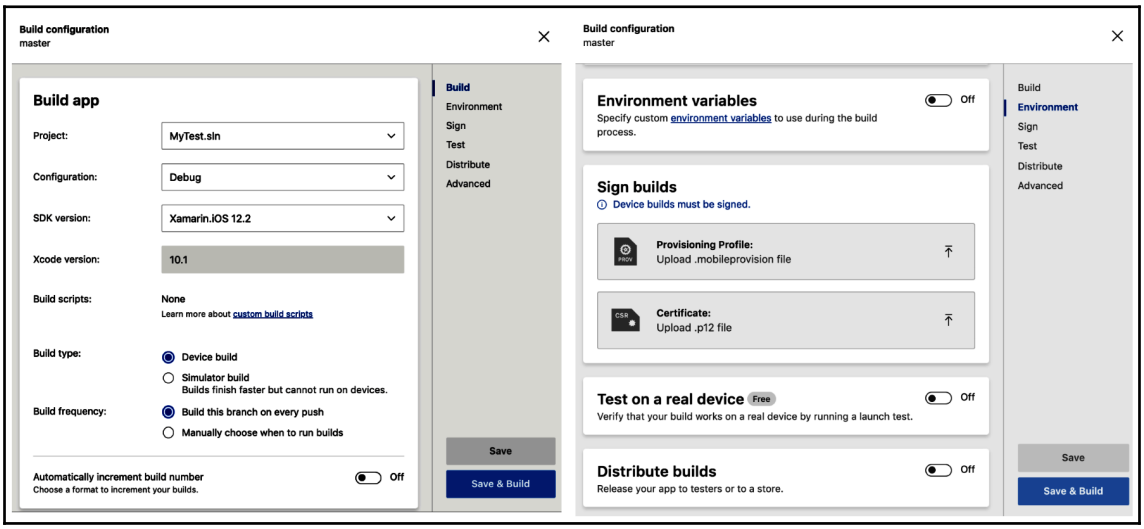

MyFirstXamarinForms-Xamarin.iO...
Tasks
Variables
Triggers
Options
Retention
History
Save & queue
Discard
Summary
Queue
Pipeline
Build pipeline
Get sources
MyFirstXamarinForms
master
Agent job 1
Run on agent
Install an Apple certificate
Install Apple Certificate
Install an Apple provisioning profile
Install Apple Provisioning Profile
Use NuGet 4.5
NuGet Tool Installer
NuGet restore
NuGet
Select Xamarin SDK version
Disabled: Bash
Build Xamarin.iOS solution **/*.sln
Xamarin.iOS
Copy Files to: $(build.artifactstagingdire...
Copy Files
Publish Artifact: drop
Publish Build Artifacts
Install Apple Certificate
Link settings
View YAML
Remove
Version
2.*
Display name *
Install an Apple certificate
Certificate (P12) *
NetCoreCert.p12
Certificate (P12) password
$(P12password)
Advanced
Keychain *
Temporary Keychain
Certificate signing identity
Control Options

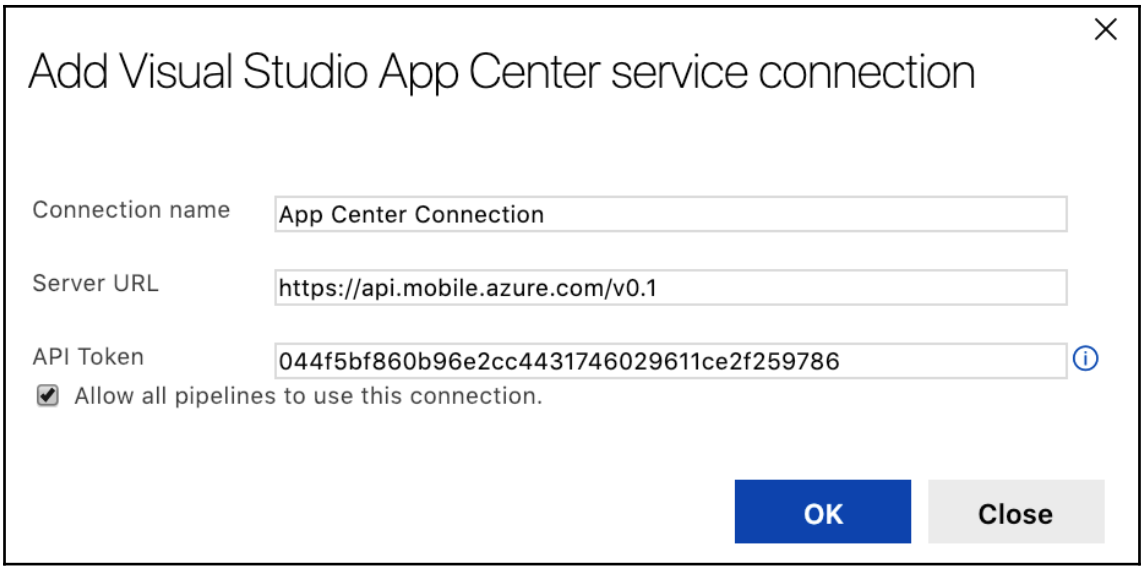

Xamarin.iOS
Link settings
View YAML
Remove
Version
2.*
Display name *
Build Xamarin.iOS solution **/*.sln
Solution *
**/*.sln
Configuration *
$(BuildConfiguration)
Clean
Create app package
Build for iOS Simulator
Signing & Provisioning
Signing identity
Provisioning profile UUID

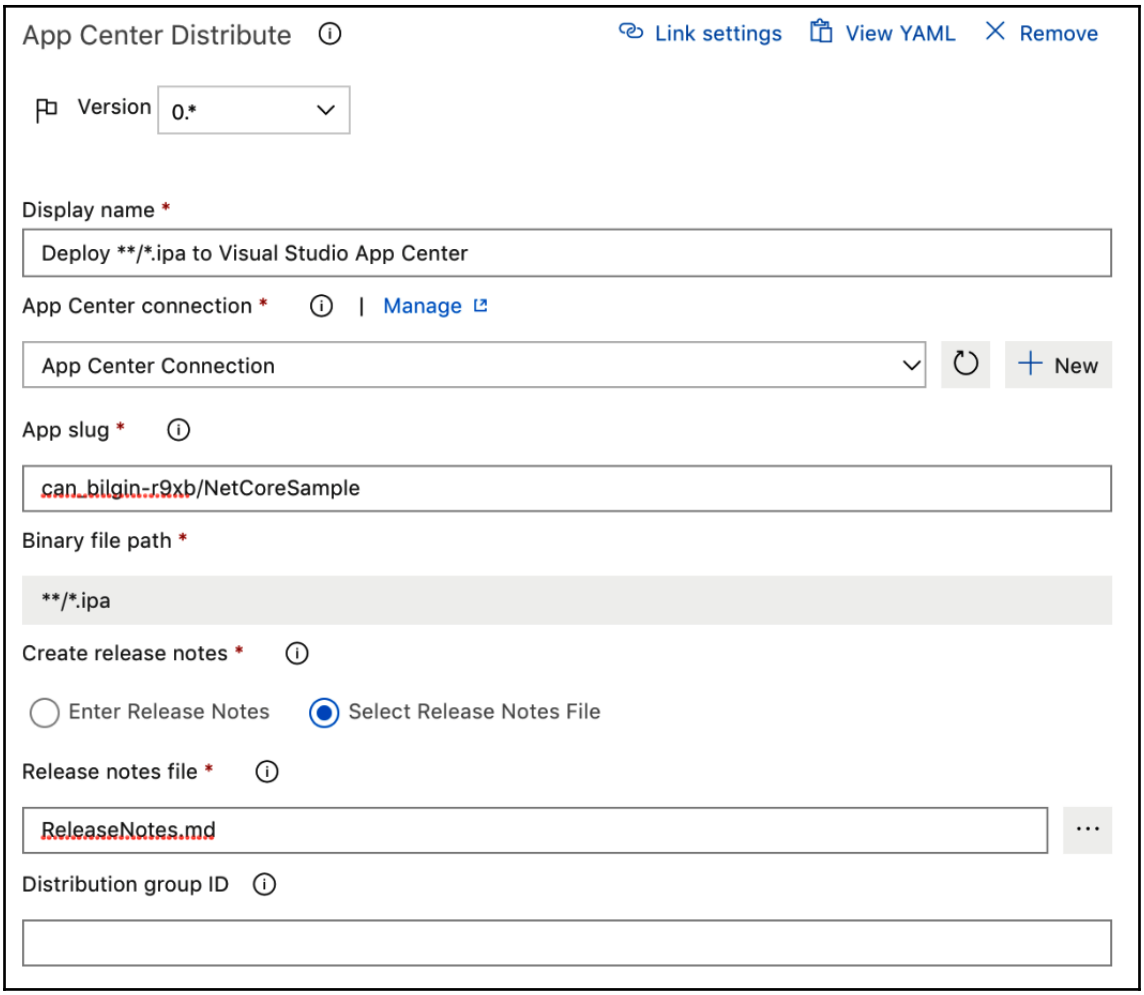

Tasks
Variables
Triggers
Options
Retention
History
Save & queue
Discard
Summary
Queue
Pipeline
Build pipeline
Get sources
NuGet
develop
Phase 1
Run on agent
Use NuGet 4.4.1
NuGet Tool Installer
NuGet restore
NuGet
Build NuGet Solution
MSBuild
NuGet pack
NuGet
NuGet Push
NuGet
NuGet Debug push
NuGet
NuGet
Link settings
View YAML
Remove
Version
2.*
Display name *
NuGet Push
Command *
push
Path to NuGet package(s) to publish *
$(Build.ArtifactStagingDirectory)/**/*.nupkg;!$(Build.ArtifactStagingDirectory)/**/*.symbols.nupkg
Target feed location *
This account/collection
External NuGet server (including other accounts/collections)
Target feed *
Xamarin
Allow duplicates to be skipped
Advanced
Control Options
Output Variables

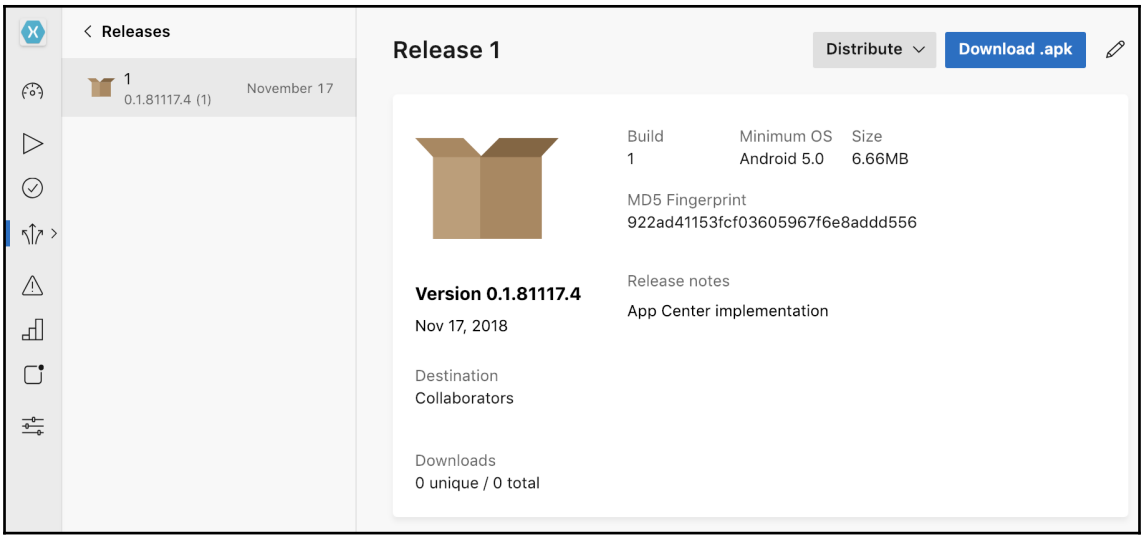

Add new app
This new app will not appear in HockeyApp
App name:
NetCoreSample
Icon:
N
Description:
Awesome Xamarin.iOS Application
Owner:
Can Bilgin
OS:
iOS
Android
Windows
macOS
Preview
Platform:
Objective-C / Swift
React Native
Cordova
Preview
Xamarin
Unity
Using a different platform? Let us know.
Add new app

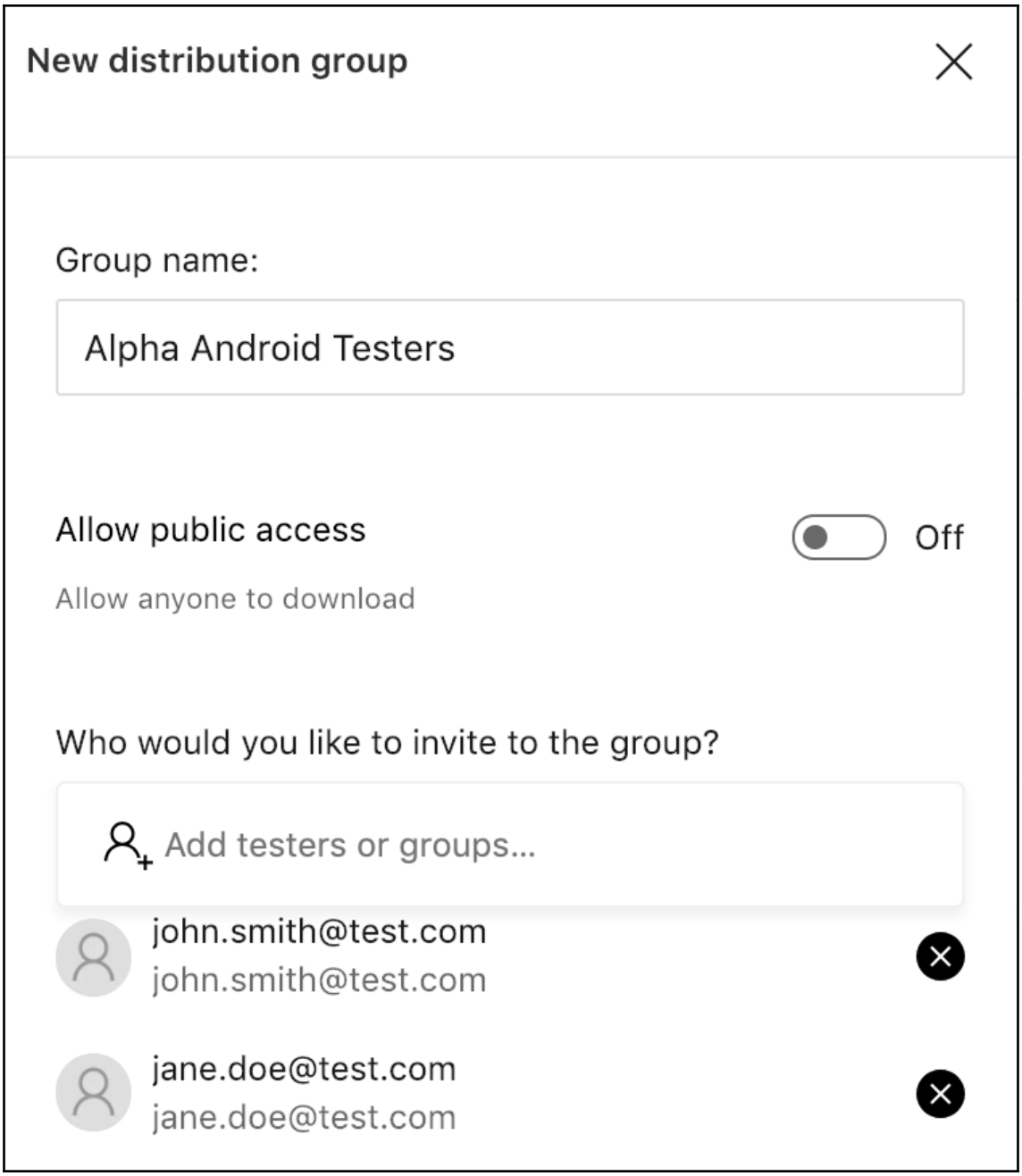

Select a service
Azure DevOps
GitHub
Bitbucket

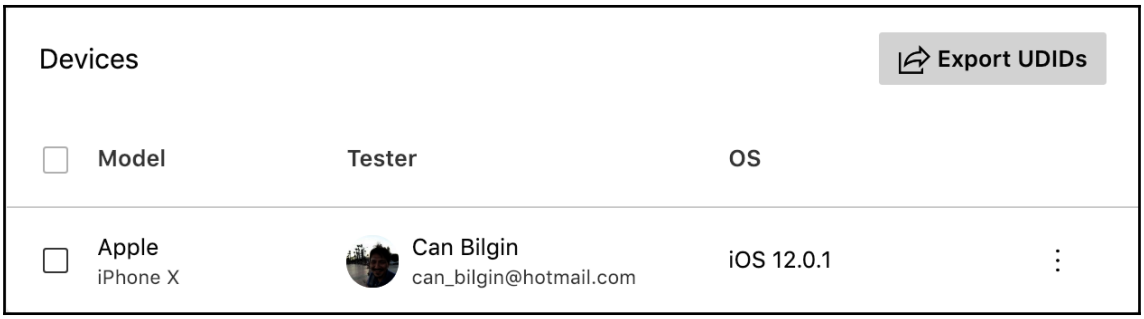

Build configuration
master
Build app
Project:
MyTest.sln
Configuration:
Debug
SDK version:
Xamarin.iOS 12.2
Xcode version:
10.1
Build scripts:
None
Learn more about custom build scripts
Build type:
Device build
Simulator build
Builds finish faster but cannot run on devices.
Build frequency:
Build this branch on every push
Manually choose when to run builds
Automatically increment build number
Choose a format to increment your builds.
Off
Build
Environment
Sign
Test
Distribute
Advanced
Save
Save & Build
Build configuration
master
Environment variables
Specify custom environment variables to use during the build process.
Off
Sign builds
Device builds must be signed.
Provisioning Profile:
Upload .mobileprovision file
Certificate:
Upload .p12 file
Test on a real device
Free
Verify that your build works on a real device by running a launch test.
Off
Distribute builds
Release your app to testers or to a store.
Off
Build
Environment
Sign
Test
Distribute
Advanced
Save
Save & Build

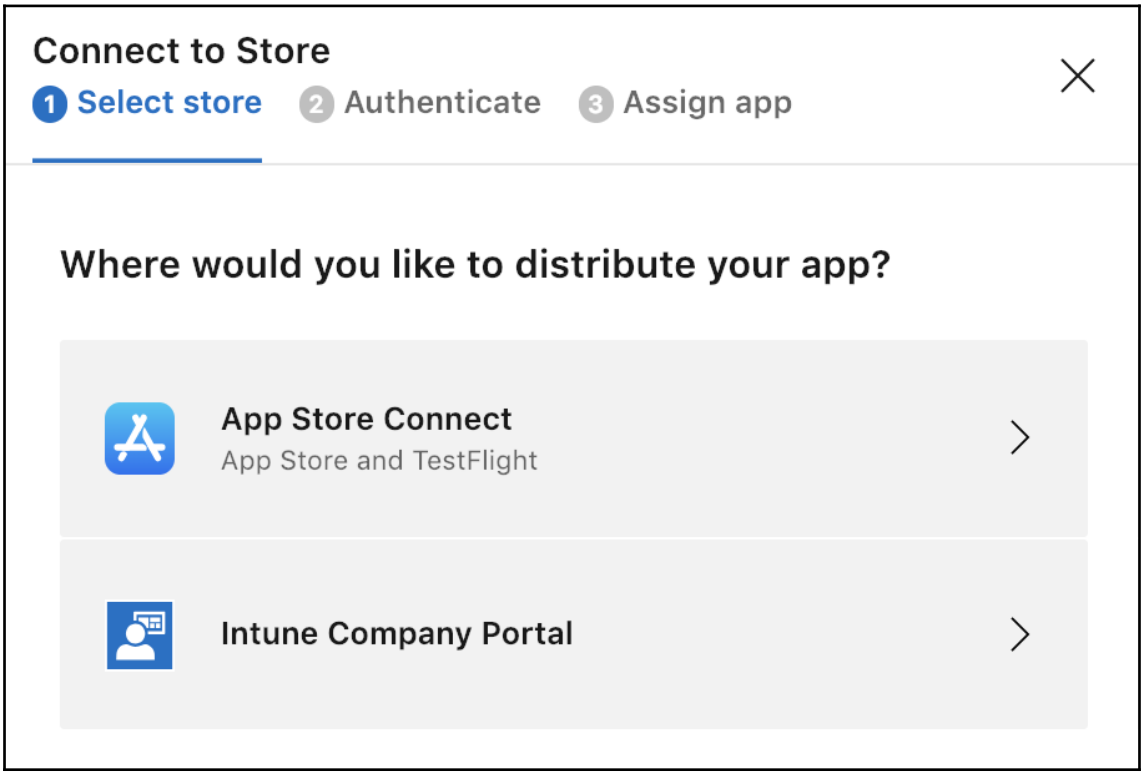

Add Visual Studio App Center service connection
Connection name
App Center Connection
Server URL
https://api.mobile.azure.com/v0.1
API Token
044f5bf860b96e2cc4431746029611ce2f259786
Allow all pipelines to use this connection.
OK
Close

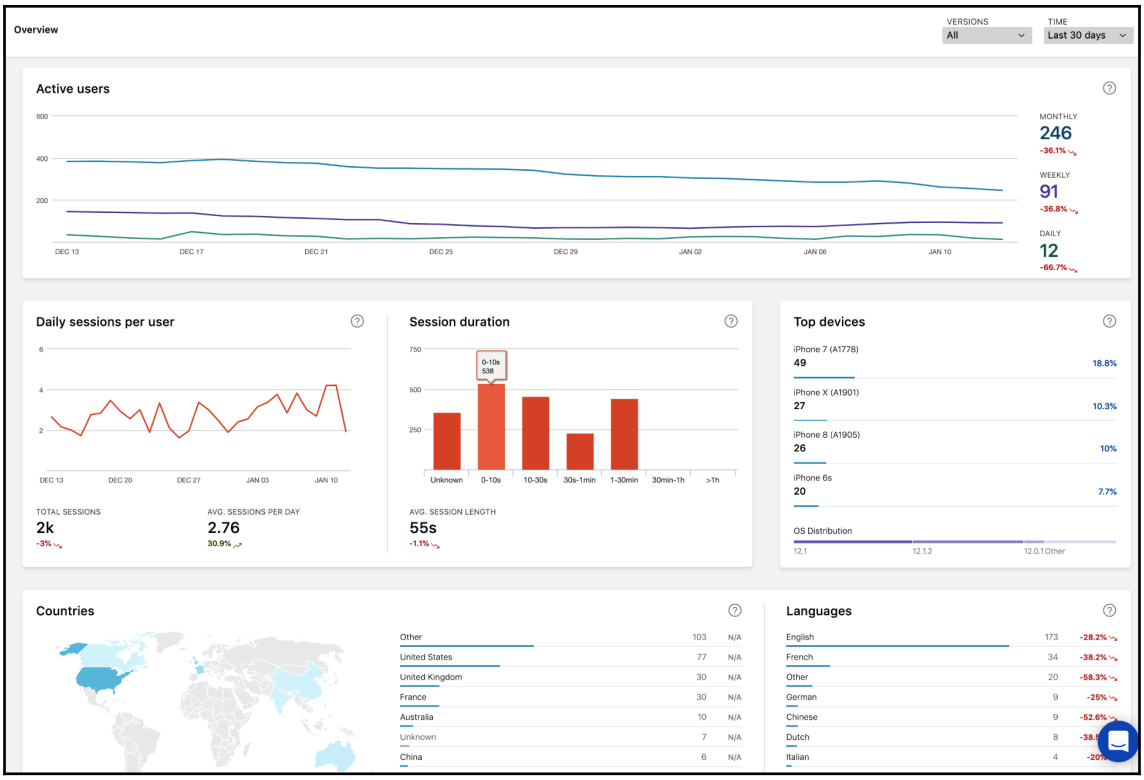

App Center Distribute
Link settings
View YAML
Remove
Version
0.*
Display name *
Deploy **/*.ipa to Visual Studio App Center
App Center connection *
Manage
App Center Connection
New
App slug *
can_bilgin-r9xb/NetCoreSample
Binary file path *
**/*.ipa
Create release notes *
Enter Release Notes
Select Release Notes File
Release notes file *
ReleaseNotes.md
Distribution group ID


Releases
1
0.1.81117.4 (1)
November 17
Release 1
Distribute
Download .apk
Build
1
Minimum OS
Android 5.0
Size
6.66MB
MD5 Fingerprint
922ad41153fcf03605967f6e8addd556
Version 0.1.81117.4
Nov 17, 2018
Release notes
App Center implementation
Destination
Collaborators
Downloads
0 unique / 0 total

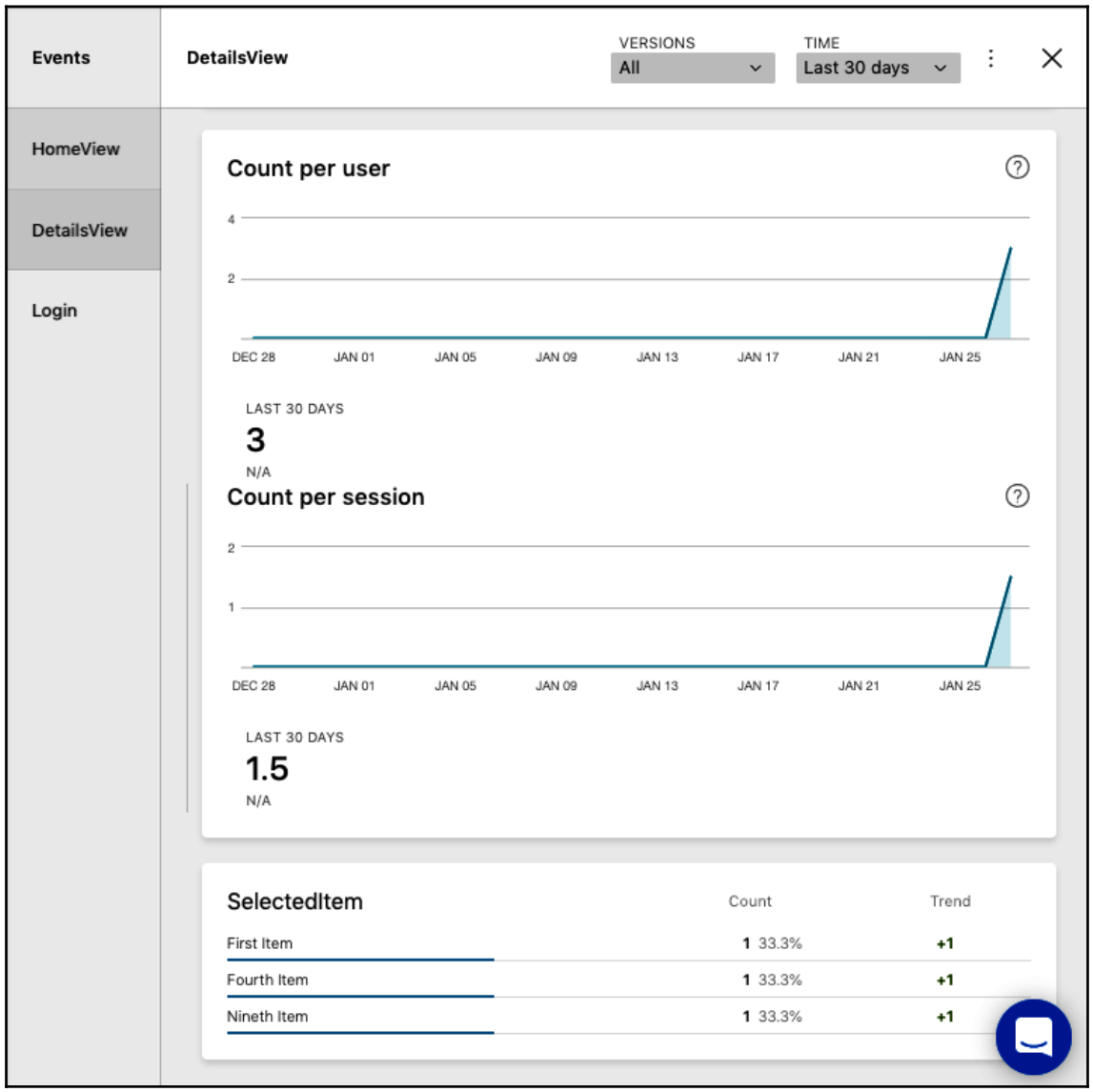

New distribution group
Group name:
Alpha Android Testers
Allow public access
Off
Allow anyone to download
Who would you like to invite to the group?
Add testers or groups...
john.smith@test.com
john.smith@test.com
jane.doe@test.com
jane.doe@test.com

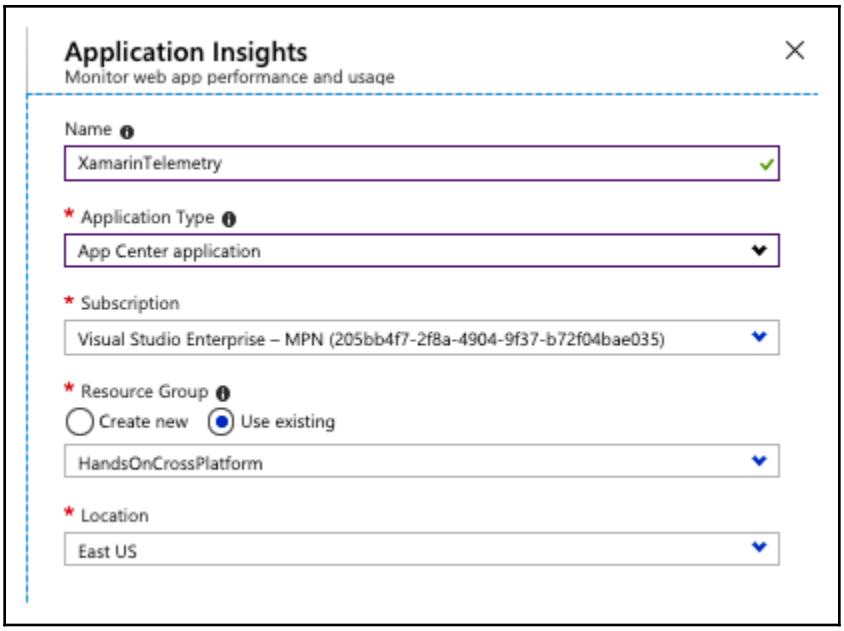

Devices
Export UDIDs
Model
Tester
OS
Apple
iPhone X
Can Bilgin
can_bilgin@hotmail.com
iOS 12.0.1

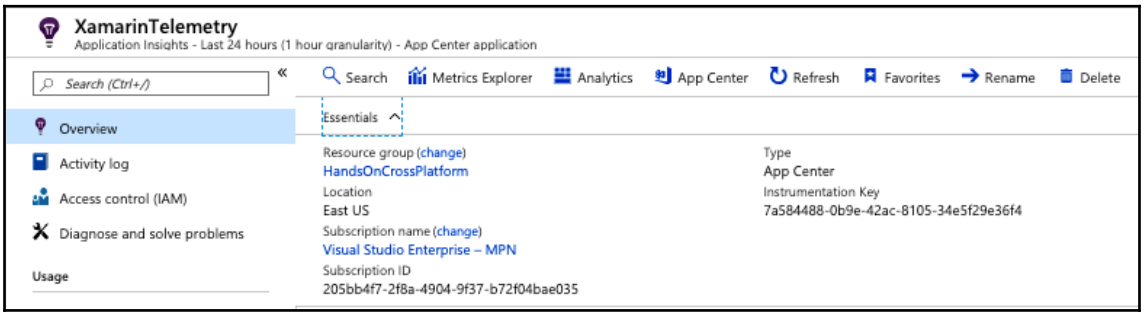

Connect to Store
1 Select store
2 Authenticate
3 Assign app
Where would you like to distribute your app?
App Store Connect
App Store and TestFlight
Intune Company Portal

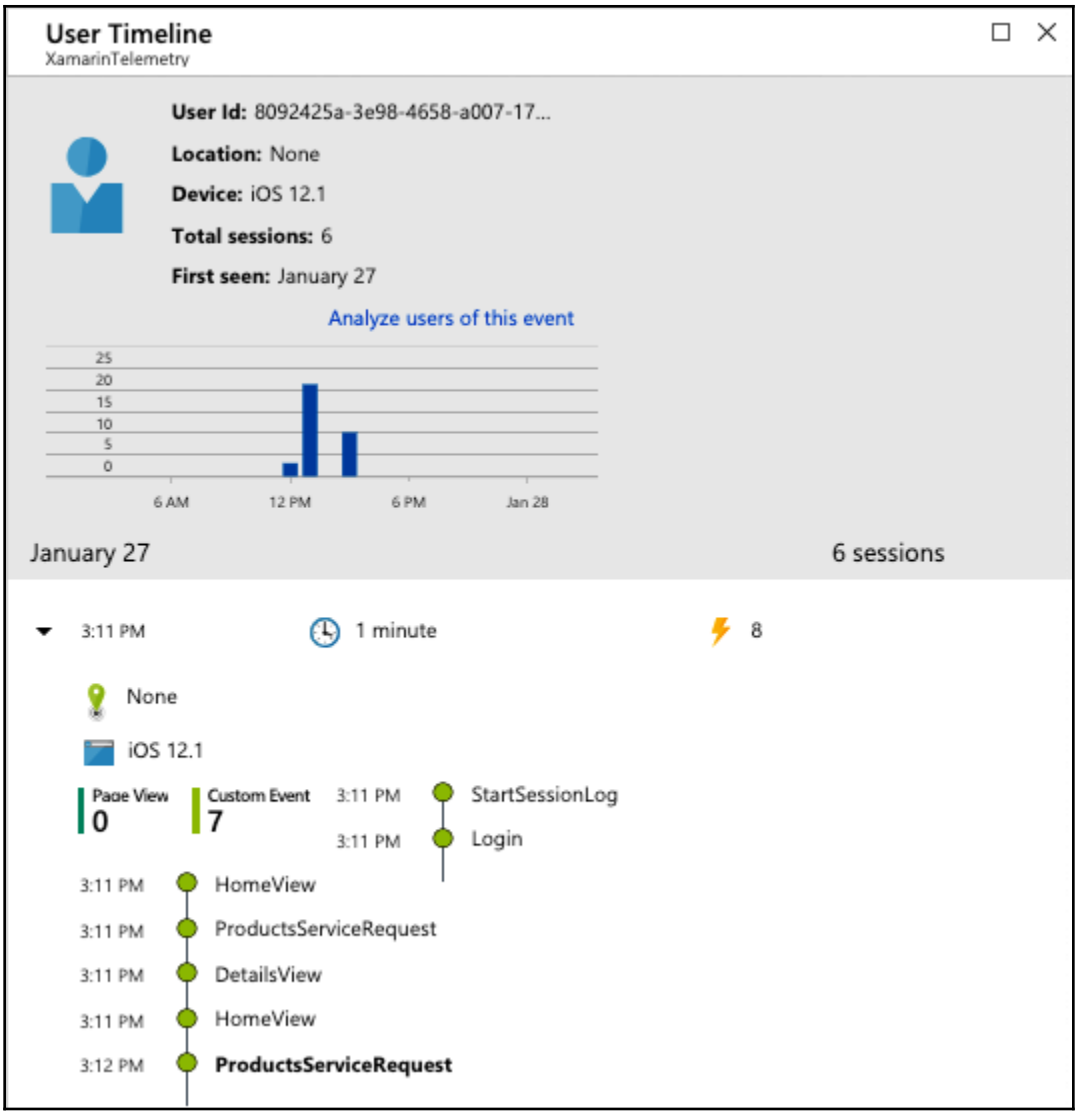

Overview
VERSIONS
All
TIME
Last 30 days
Active users
600
400
200
DEC 13
DEC 17
DEC 21
DEC 25
DEC 29
JAN 02
JAN 06
JAN 10
MONTHLY
246
-36.1%
WEEKLY
91
-36.8%
DAILY
12
-66.7%
Daily sessions per user
6
4
2
DEC 13
DEC 20
DEC 27
JAN 03
JAN 10
TOTAL SESSIONS
2k
-3%
AVG. SESSIONS PER DAY
2.76
30.9%
Session duration
750
500
250
0-10s
538
Unknown
0-10s
10-30s
30s-1min
1-30min
30min-1h
>1h
AVG. SESSION LENGTH
55s
-1.1%
Top devices
iPhone 7 (A1778)
49
18.8%
iPhone X (A1901)
27
10.3%
iPhone 8 (A1905)
26
10%
iPhone 6s
20
7.7%
OS Distribution
12.1
12.1.2
12.0.1 Other
Countries
Other 103 N/A
United States 77 N/A
United Kingdom 30 N/A
France 30 N/A
Australia 10 N/A
Unknown 7 N/A
China 6 N/A
Languages
English 173 -28.2%
French 34 -38.2%
Other 20 -58.3%
German 9 -25%
Chinese 9 -52.6%
Dutch 8 -38.5%
Italian 4 -20%

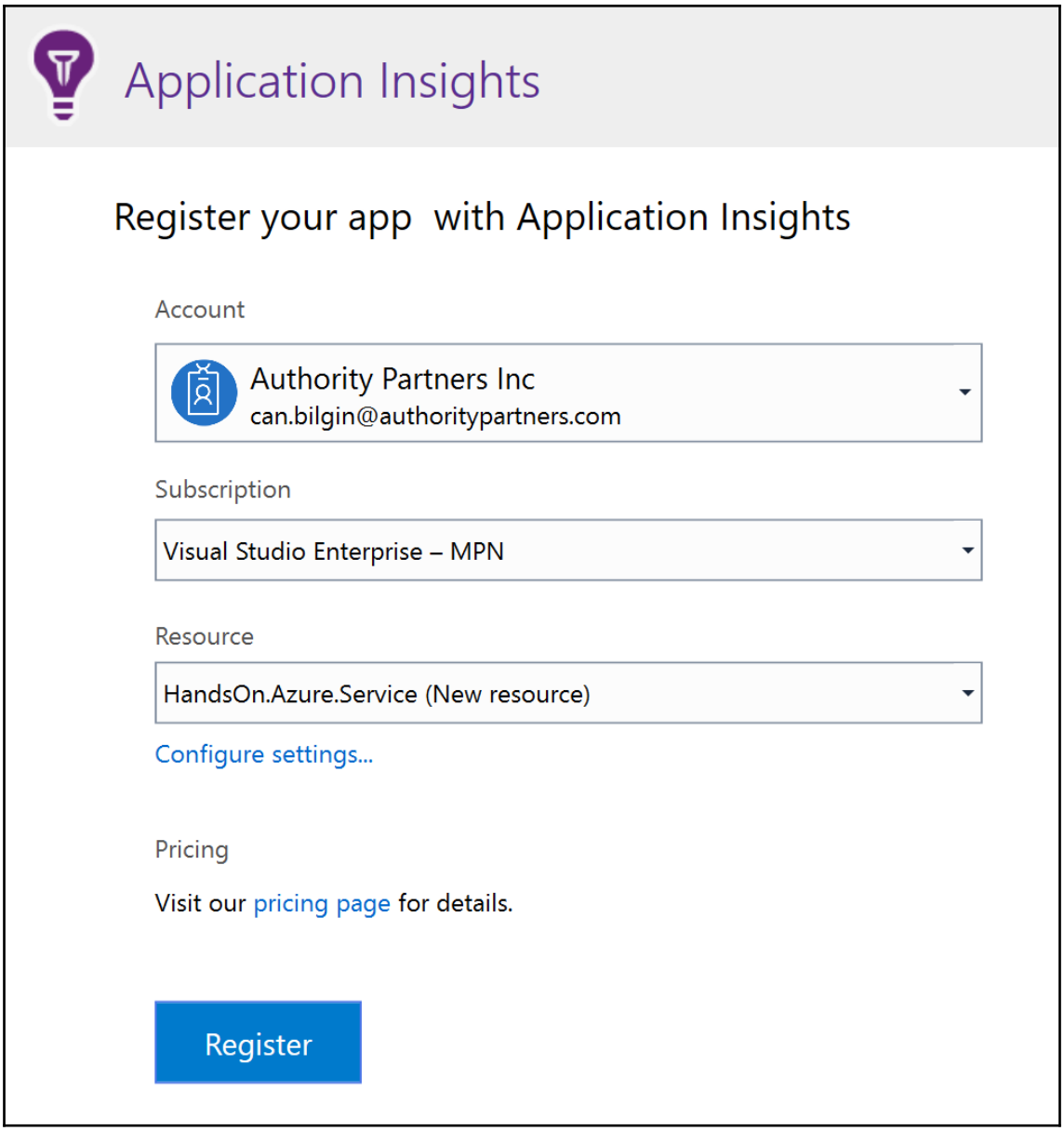
Chapter 16: 16.Application Telemetry with Application Insights

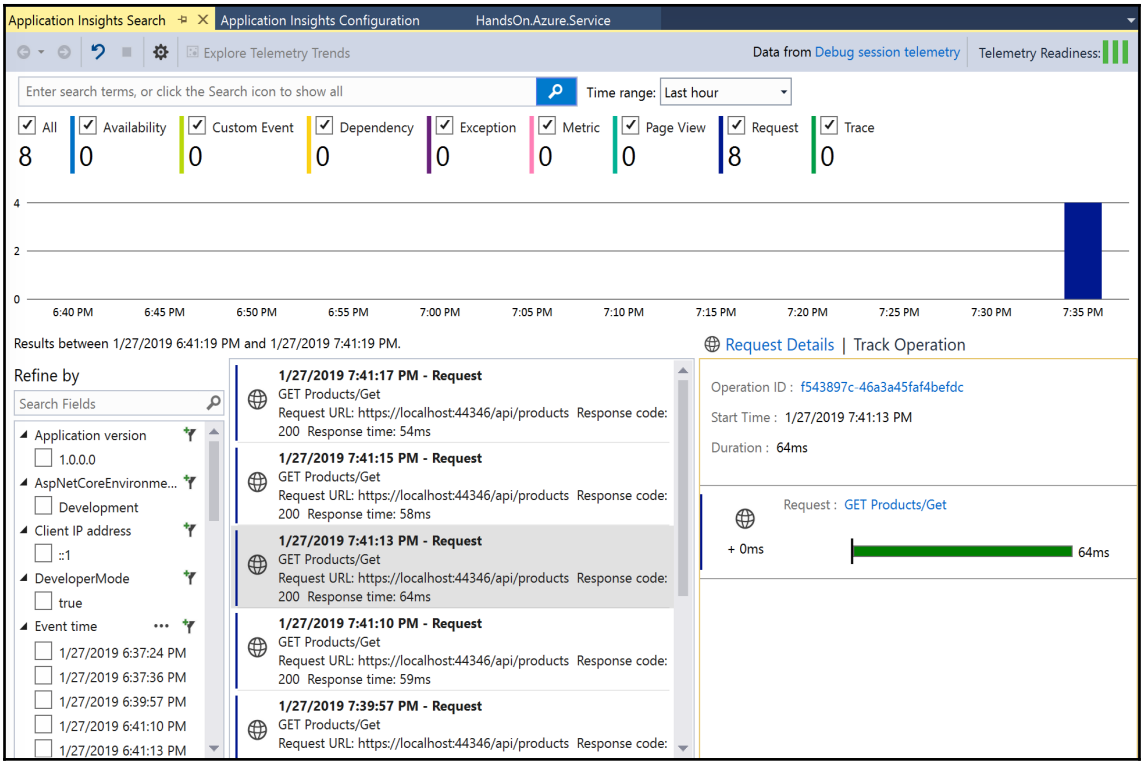



Application Insights
Monitor web app performance and usage
Name
XamarinTelemetry
* Application Type
App Center application
* Subscription
Visual Studio Enterprise – MPN (205bb4f7-2f8a-4904-9f37-b72f04bae035)
* Resource Group
Create new
Use existing
HandsOnCrossPlatform
* Location
East US

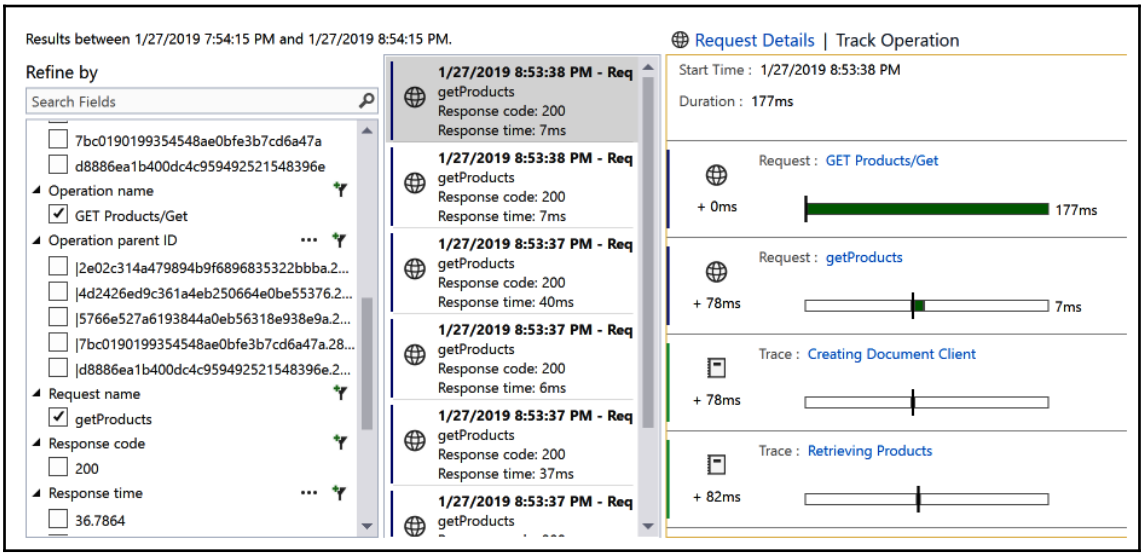

XamarinTelemetry
Application Insights - Last 24 hours (1 hour granularity) - App Center application
Search (Ctrl+/)
Overview
Activity log
Access control (IAM)
Diagnose and solve problems
Usage
Search
Metrics Explorer
Analytics
App Center
Refresh
Favorites
Rename
Delete
Essentials
Resource group (change)
HandsOnCrossPlatform
Location
East US
Subscription name (change)
Visual Studio Enterprise – MPN
Subscription ID
205bb4f7-2f8a-4904-9f37-b72f04bae035
Type
App Center
Instrumentation Key
7a584488-0b9e-42ac-8105-34e5f29e36f4

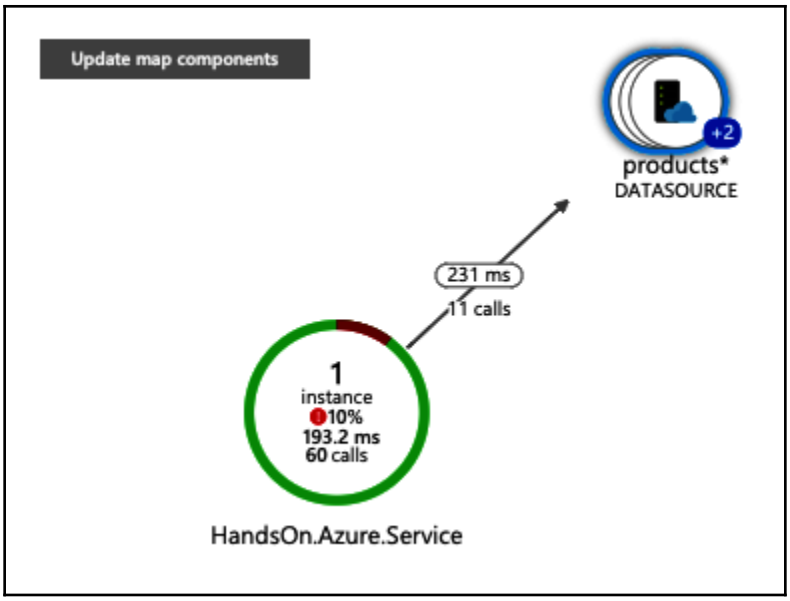

User Timeline
XamarinTelemetry
User Id: 8092425a-3e98-4658-a007-17...
Location: None
Device: iOS 12.1
Total sessions: 6
First seen: January 27
Analyze users of this event
25
20
15
10
5
0
6 AM
12 PM
6 PM
Jan 28
January 27
6 sessions
3:11 PM
1 minute
8
None
iOS 12.1
Page View
0
Custom Event
7
3:11 PM
StartSessionLog
3:11 PM
Login
3:11 PM
HomeView
3:11 PM
ProductsServiceRequest
3:11 PM
DetailsView
3:11 PM
HomeView
3:12 PM
ProductsServiceRequest


Application Insights
Register your app with Application Insights
Account
Authority Partners Inc
can.bilgin@authoritypartners.com
Subscription
Visual Studio Enterprise – MPN
Resource
HandsOn.Azure.Service (New resource)
Configure settings...
Pricing
Visit our pricing page for details.
Register


Application Insights Search
Application Insights Configuration
HandsOn.Azure.Service
Explore Telemetry Trends
Data from Debug session telemetry
Telemetry Readiness:
Enter search terms, or click the Search icon to show all
Time range: Last hour
All 8
Availability 0
Custom Event 0
Dependency 0
Exception 0
Metric 0
Page View 0
Request 8
Trace 0
4
2
0
6:40 PM
6:45 PM
6:50 PM
6:55 PM
7:00 PM
7:05 PM
7:10 PM
7:15 PM
7:20 PM
7:25 PM
7:30 PM
7:35 PM
Results between 1/27/2019 6:41:19 PM and 1/27/2019 7:41:19 PM.
Request Details | Track Operation
Refine by
Search Fields
Application version
1.0.0.0
AspNetCoreEnvironme...
Development
Client IP address
::1
DeveloperMode
true
Event time
1/27/2019 6:37:24 PM
1/27/2019 6:37:36 PM
1/27/2019 6:39:57 PM
1/27/2019 6:41:10 PM
1/27/2019 6:41:13 PM
1/27/2019 7:41:17 PM - Request
GET Products/Get
Request URL: https://localhost:44346/api/products Response code: 200 Response time: 54ms
1/27/2019 7:41:15 PM - Request
GET Products/Get
Request URL: https://localhost:44346/api/products Response code: 200 Response time: 58ms
1/27/2019 7:41:13 PM - Request
GET Products/Get
Request URL: https://localhost:44346/api/products Response code: 200 Response time: 64ms
1/27/2019 7:41:10 PM - Request
GET Products/Get
Request URL: https://localhost:44346/api/products Response code: 200 Response time: 59ms
1/27/2019 7:39:57 PM - Request
GET Products/Get
Request URL: https://localhost:44346/api/products Response code:
Operation ID : f543897c-46a3a45faf4befdc
Start Time : 1/27/2019 7:41:13 PM
Duration : 64ms
Request : GET Products/Get
+ 0ms
64ms

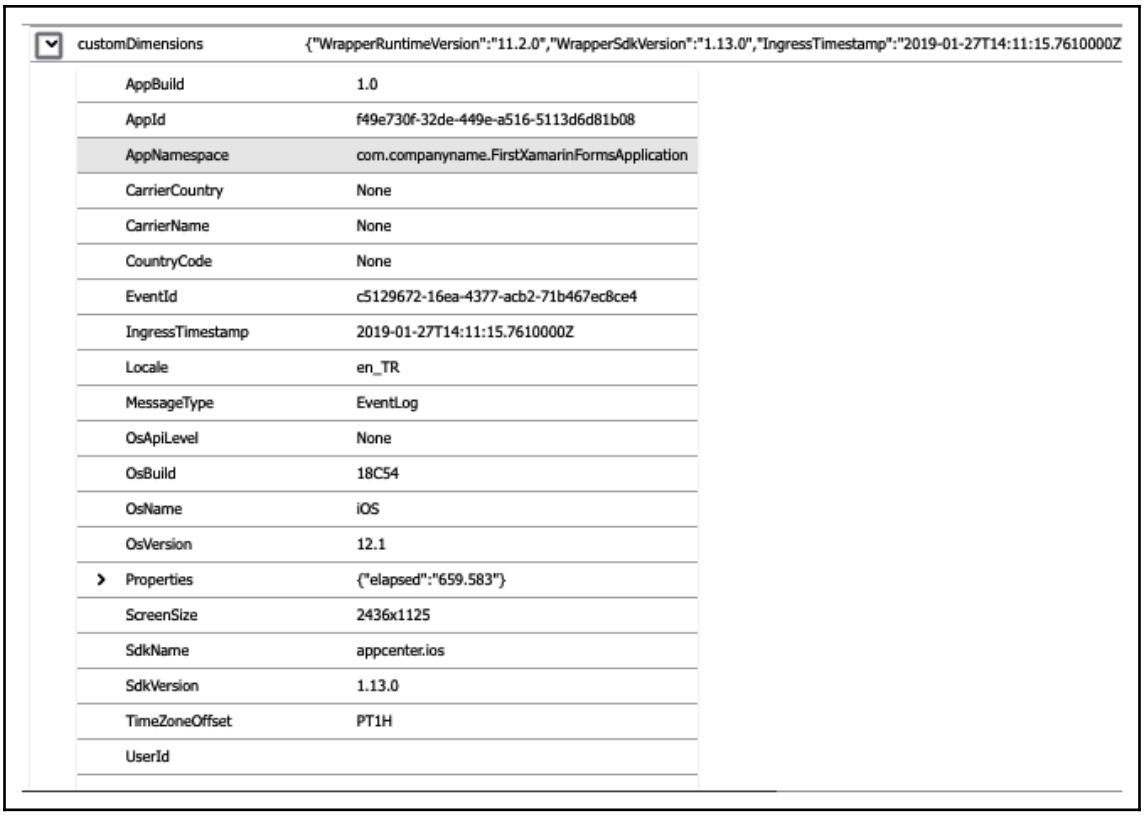
Home > Resource groups > HandsOnCrossPlatform > HandsOn.Azure.Service > Live Metrics Stream
Live Metrics Stream
HandsOn.Azure.Service
1 servers online
Go Live
Pin
Open in Analytics
Learn more
Feedback
Incoming Requests
Request Rate
Request Duration
Request Failure Rate
Outgoing Requests
Dependency Call Rate
Dependency Call Duration
Dependency Call Failure Rate
Overall Health
Commited Memory
CPU Total (%)
Exception Rate
Collecting CPU, memory and performance metrics is not supported in .NET Core SDK
Collecting CPU, memory and performance metrics is not supported in .NET Core SDK
Servers
Select columns
SERVER NAME
REQUESTS
REQUESTS FAILED
CPU TOTAL
COMMITTED MEM...
CANBILGIND788
2.5/sec
1.4/sec
N/A
N/A
Sample Telemetry
To view details please select a document from the above list


Results between 1/27/2019 7:54:15 PM and 1/27/2019 8:54:15 PM.
Refine by
Search Fields
Operation name
GET Products/Get
Operation parent ID
Request name
getProducts
Response code
200
Response time
36.7864
1/27/2019 8:53:38 PM - Req
getProducts
Response code: 200
Response time: 7ms
1/27/2019 8:53:37 PM - Req
Response time: 40ms
Response time: 6ms
Response time: 37ms
Request Details | Track Operation
Start Time : 1/27/2019 8:53:38 PM
Duration : 177ms
Request : GET Products/Get
+ 0ms
177ms
Request : getProducts
+ 78ms
7ms
Trace : Creating Document Client
Trace : Retrieving Products
+ 82ms

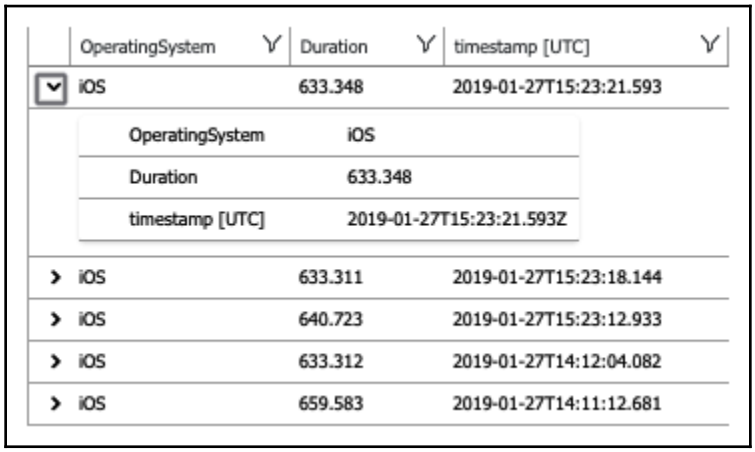


2019-01-27T14:11:12.681	ProductsServiceRequest	customEvent	{"WrapperRuntimeVersion":"11.2.0","WrapperSdkVersion":"1.13.0","In...

timestamp [UTC]	2019-01-27T14:11:12.681Z
name	ProductsServiceRequest
itemType	customEvent
customDimensions	{"WrapperRuntimeVersion":"11.2.0","WrapperSdkVersion":"1.13.0","IngressTimestamp":"2019-01-27T14:11:15.7610000Z"
operation_Id	0f6745b0-fa9c-4995-9a1f-f43b8009d577
operation_ParentId	0f6745b0-fa9c-4995-9a1f-f43b8009d577
session_Id	7b106777-f07c-4312-9b53-5f2930c101db
user_Id	8092425a-3e98-4658-a007-176b36504c7a
application_Version	1.0
client_Type	x86_64
client_Model	Apple
client_OS	iOS 12.1
client_IP	0.0.0.0
client_CountryOrRegion	None
appId	8f1b0388-ee97-4a76-b972-cedc497720a3
appName	XamarinTelemetry
iKey	7a584488-0b9e-42ac-8105-34e5f29e36f4
sdkVersion	appcenter.ios:1.13.0
itemId	6b7430f4-2247-11e9-93ab-ef6cd06591d6
itemCount	1

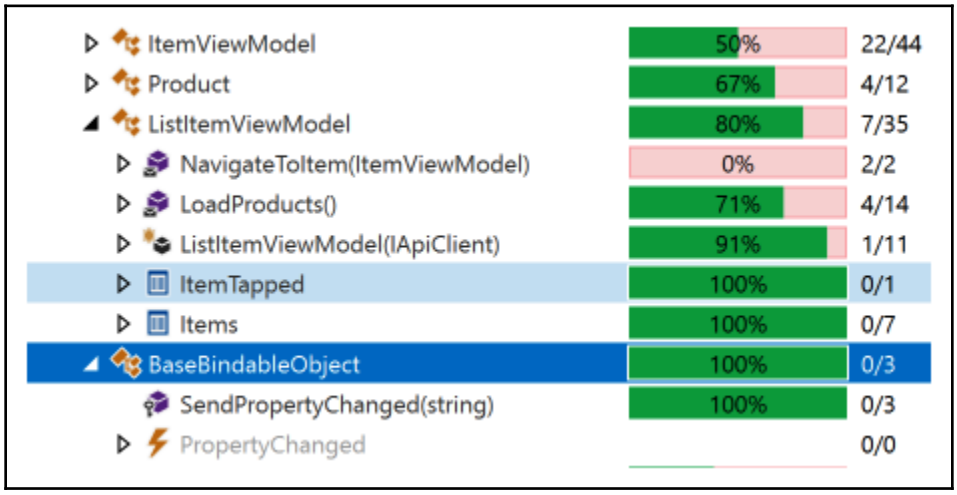


customDimensions	{"WrapperRuntimeVersion":"11.2.0","WrapperSdkVersion":"1.13.0","IngressTimestamp":"2019-01-27T14:11:15.7610000Z
AppBuild	1.0
AppId	f49e730f-32de-449e-a516-5113d6d81b08
AppNamespace	com.companyname.FirstXamarinFormsApplication
CarrierCountry	None
CarrierName	None
CountryCode	None
EventId	c5129672-16ea-4377-acb2-71b467ec8ce4
IngressTimestamp	2019-01-27T14:11:15.7610000Z
Locale	en_TR
MessageType	EventLog
OsApiLevel	None
OsBuild	18C54
OsName	iOS
OsVersion	12.1
Properties	{"elapsed":"659.583"}
ScreenSize	2436x1125
SdkName	appcenter.ios
SdkVersion	1.13.0
TimeZoneOffset	PT1H
UserId	

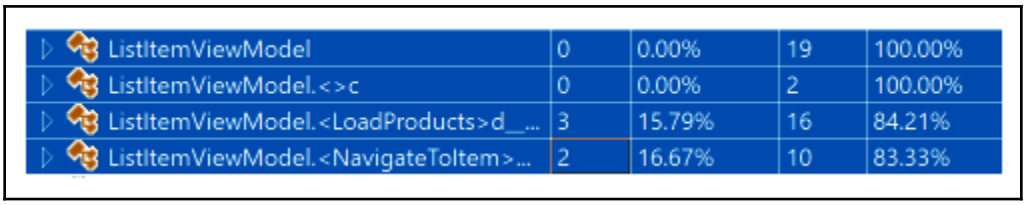


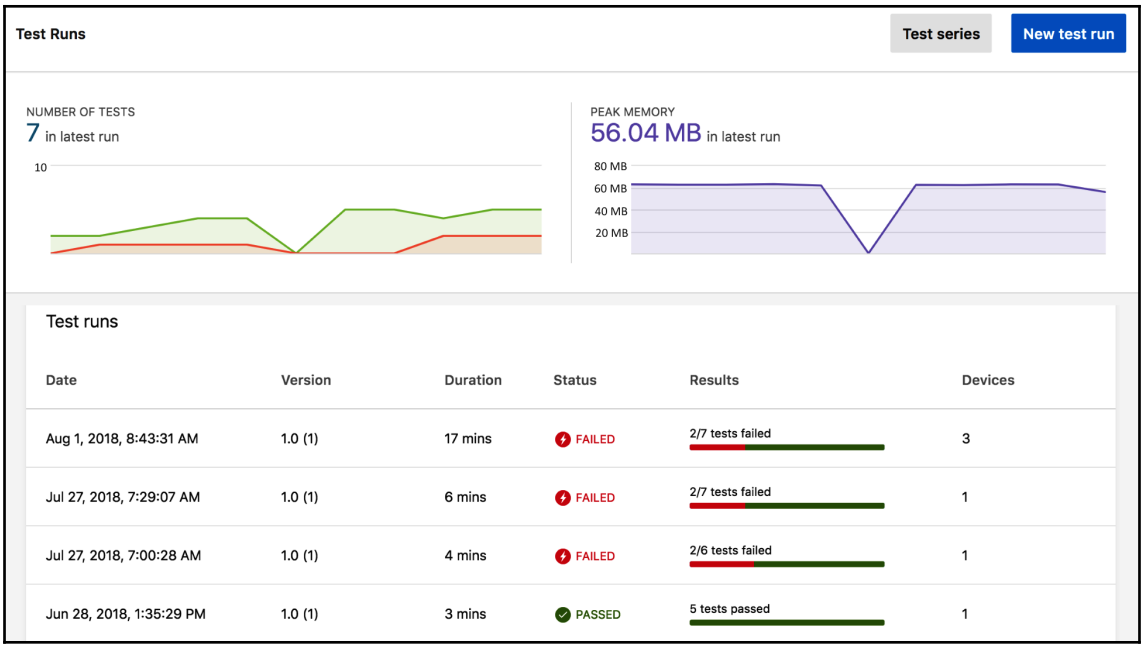
OperatingSystem	Duration	timestamp [UTC]
iOS	633.348	2019-01-27T15:23:21.593
OperatingSystem	iOS	
Duration	633.348	
timestamp [UTC]	2019-01-27T15:23:21.593Z	
iOS	633.311	2019-01-27T15:23:18.144
iOS	640.723	2019-01-27T15:23:12.933
iOS	633.312	2019-01-27T14:12:04.082
iOS	659.583	2019-01-27T14:11:12.681

Chapter 17: 17.Automated Testing

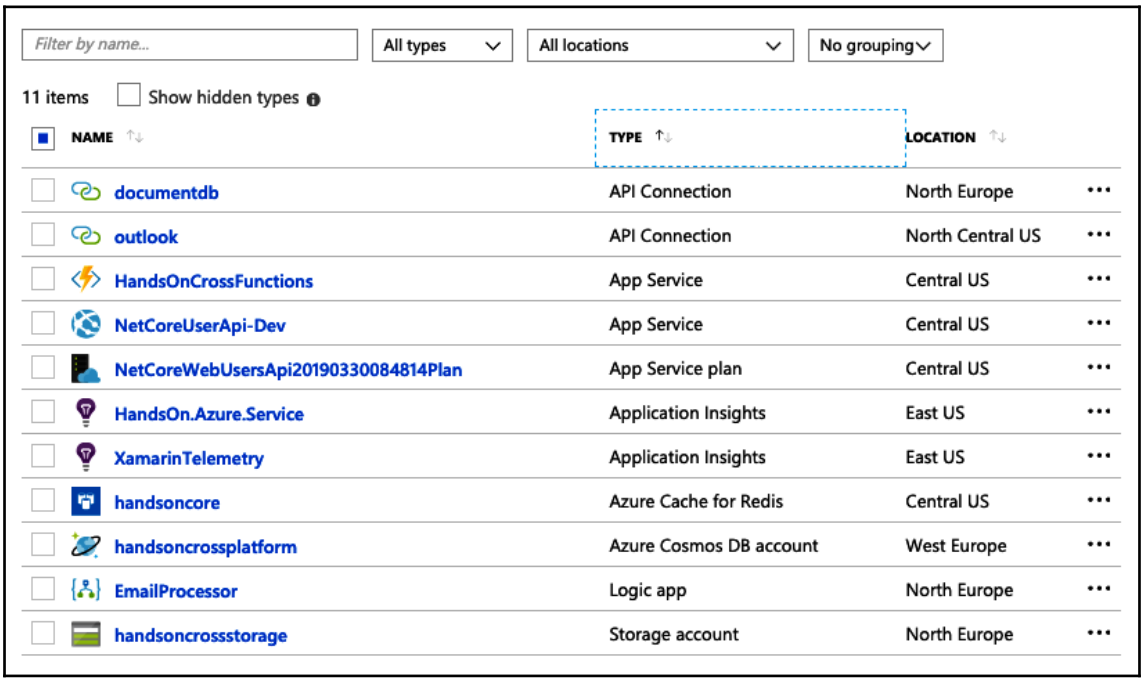


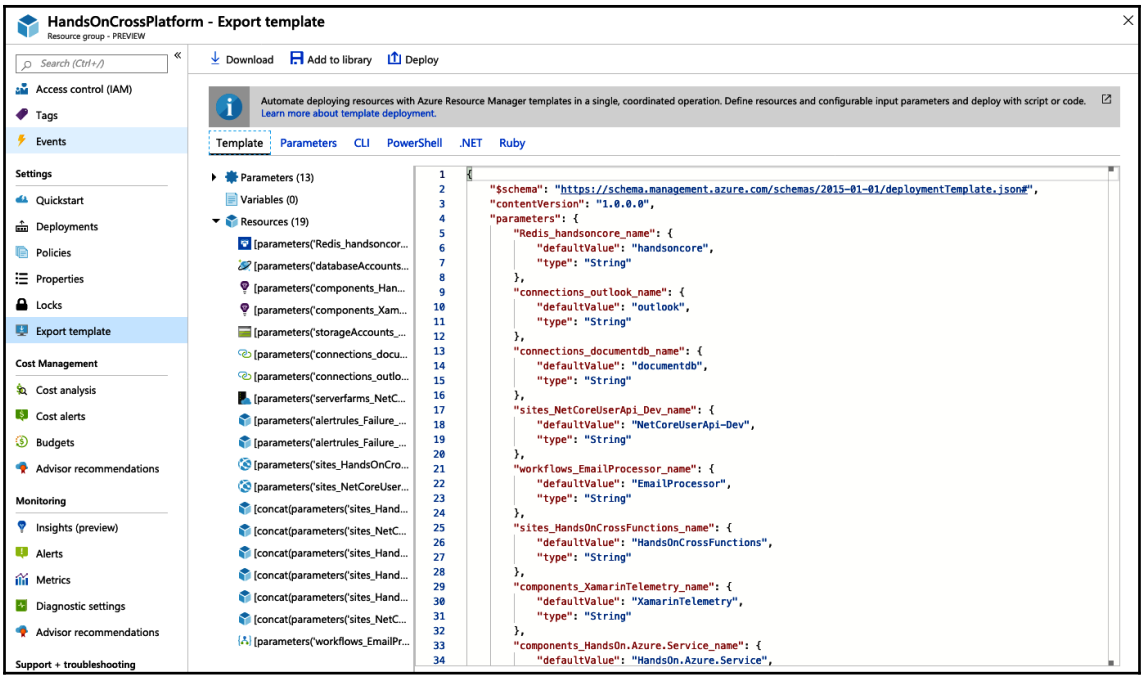

```
W:\book\xamarin\DesignChapter\FirstXamarinFormsApplication.Client.Tests>dotnet test --collect "Code Coverage"
W:\book\xamarin\DesignChapter\FirstXamarinFormsApplication.Client.Tests\FirstXamarinFormsApplication.Client.Tests.csproj
  : warning NU1603: Castle.Core 4.0.0 depends on System.ComponentModel.TypeConverter (>= 4.0.1) but System.ComponentModel
.TypeConverter 4.0.1 was not found. An approximate best match of System.ComponentModel.TypeConverter 4.1.0 was resolved.

Build started, please wait...
W:\book\xamarin\DesignChapter\FirstXamarinFormsApplication.Client.Tests\FirstXamarinFormsApplication.Client.Tests.csproj
  : warning NU1603: Castle.Core 4.0.0 depends on System.ComponentModel.TypeConverter (>= 4.0.1) but System.ComponentModel
.TypeConverter 4.0.1 was not found. An approximate best match of System.ComponentModel.TypeConverter 4.1.0 was resolved.

Build completed.

Test run for W:\book\xamarin\DesignChapter\FirstXamarinFormsApplication.Client.Tests\bin\Debug\netcoreapp2.1\FirstXamari
nFormsApplication.Client.Tests.dll(.NETCoreApp,Version=v2.1)
Microsoft (R) Test Execution Command Line Tool Version 15.8.0
Copyright (c) Microsoft Corporation.  All rights reserved.

Starting test execution, please wait...

Attachments:
  W:\book\xamarin\DesignChapter\FirstXamarinFormsApplication.Client.Tests\TestResults\e7bf0a95-5564-41c6-b919-9967f32397
59\can.bilgin_CANBILGIND788_2019-02-11.19_51_39.coverage

Total tests: 3. Passed: 3. Failed: 0. Skipped: 0.
Test Run Successful.
Test execution time: 3.8336 Seconds
```

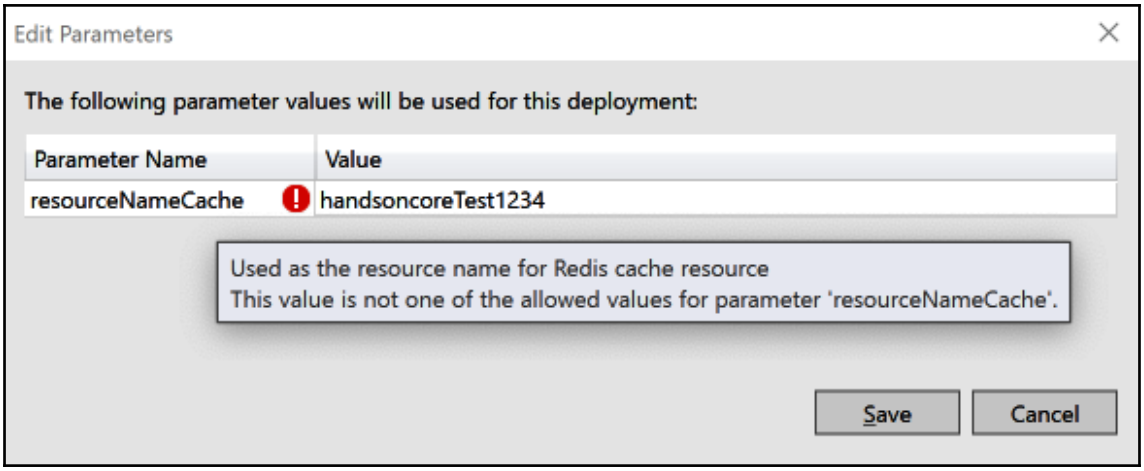


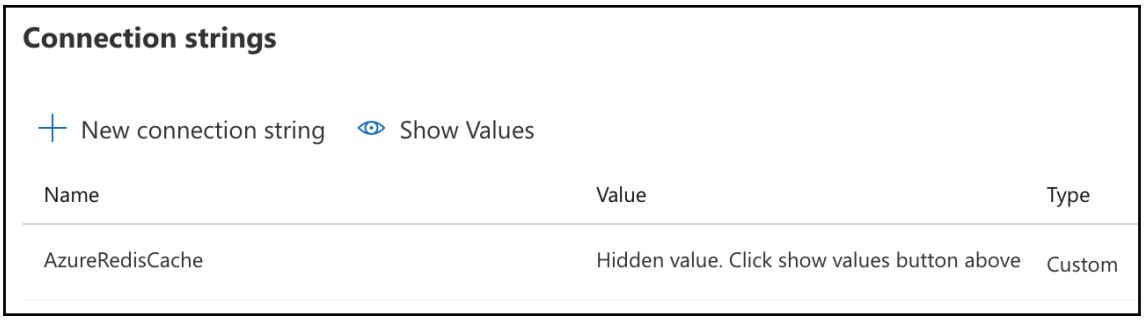

Test Runs
Test series
New test run
NUMBER OF TESTS
7 in latest run
10
PEAK MEMORY
56.04 MB in latest run
80 MB
60 MB
40 MB
20 MB
Test runs
Date
Version
Duration
Status
Results
Devices
Aug 1, 2018, 8:43:31 AM
1.0 (1)
17 mins
FAILED
2/7 tests failed
3
Jul 27, 2018, 7:29:07 AM
1.0 (1)
6 mins
FAILED
2/7 tests failed
1
Jul 27, 2018, 7:00:28 AM
1.0 (1)
4 mins
FAILED
2/6 tests failed
1
Jun 28, 2018, 1:35:29 PM
1.0 (1)
3 mins
PASSED
5 tests passed
1

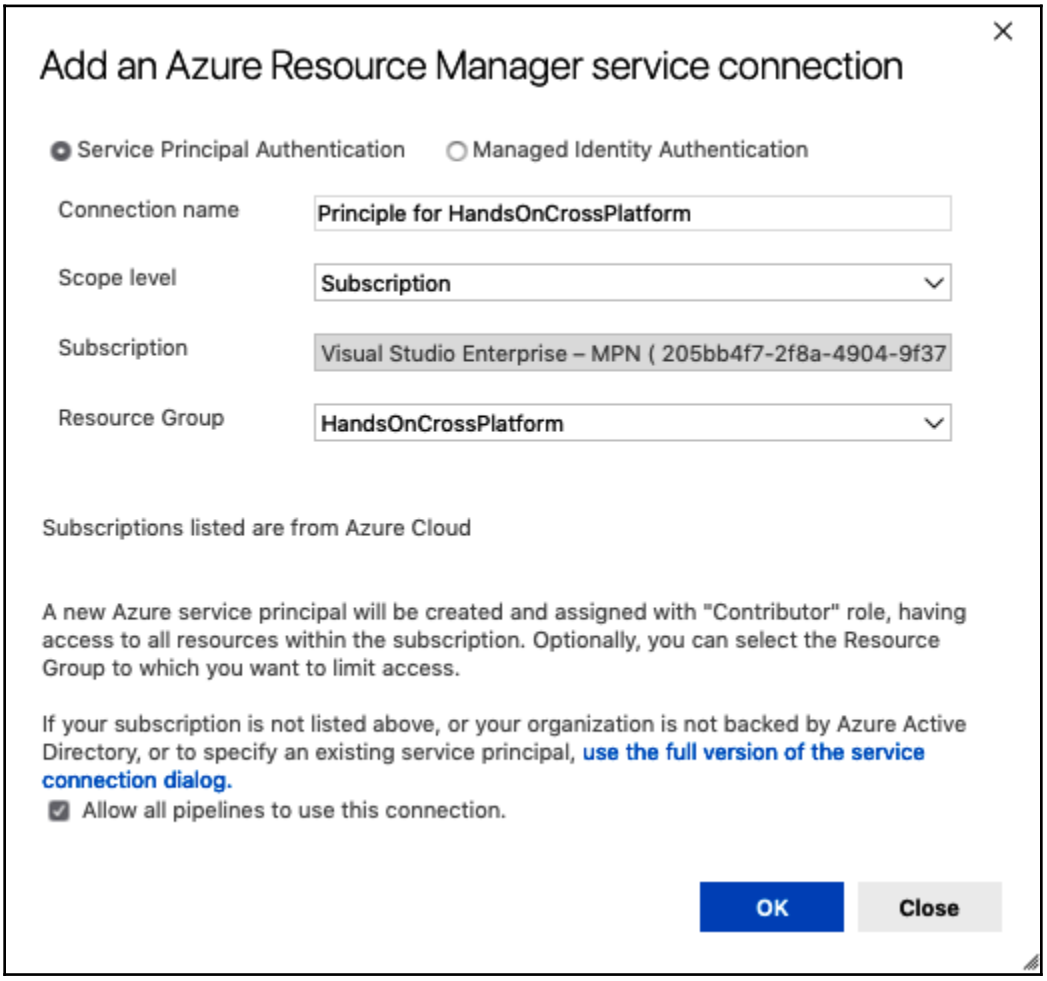
Chapter 18: 18.Deploying Azure Modules

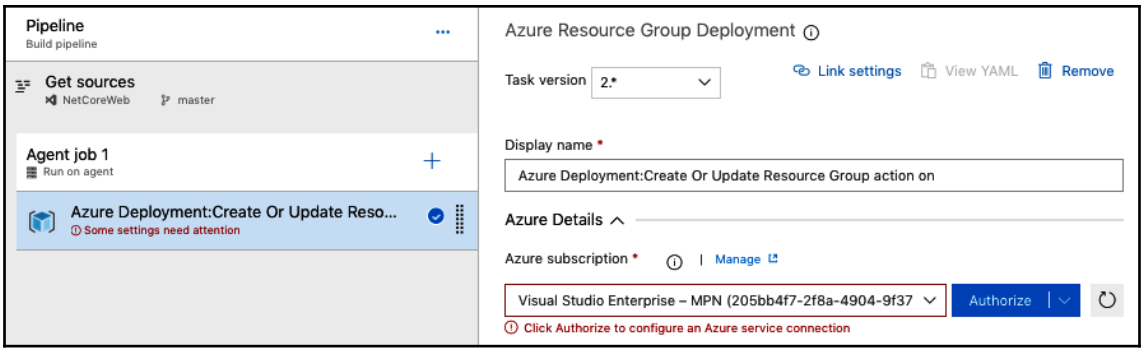


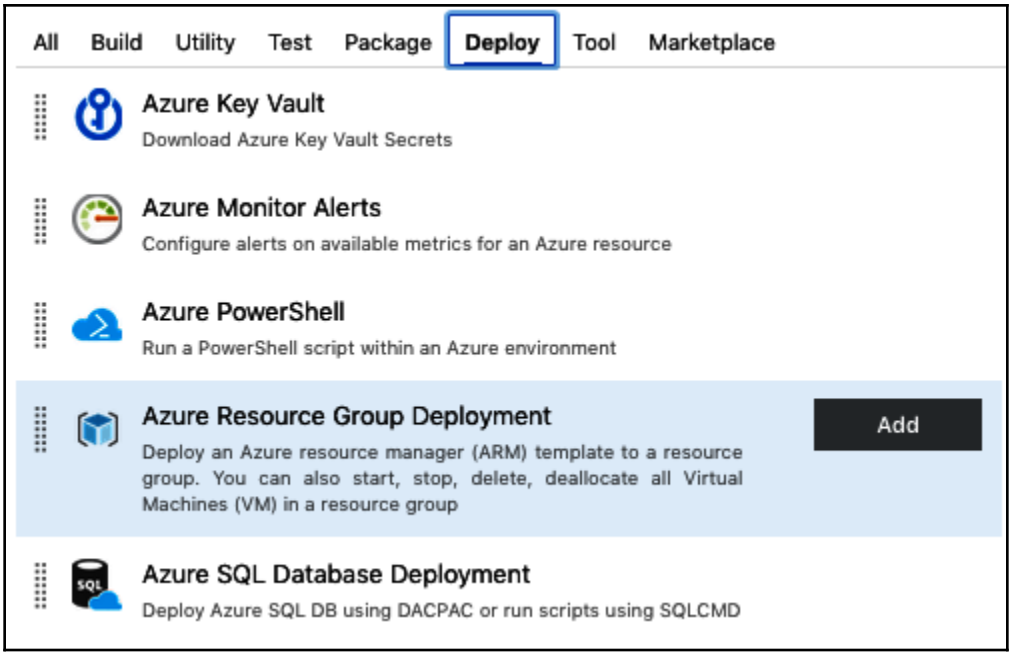

HandsOnCrossPlatform - Export template
Resource group - PREVIEW
Search (Ctrl+/)
Access control (IAM)
Tags
Events
Settings
Quickstart
Deployments
Policies
Properties
Locks
Export template
Cost Management
Cost analysis
Cost alerts
Budgets
Advisor recommendations
Monitoring
Insights (preview)
Alerts
Metrics
Diagnostic settings
Advisor recommendations
Support + troubleshooting
Download
Add to library
Deploy
Automate deploying resources with Azure Resource Manager templates in a single, coordinated operation. Define resources and configurable input parameters and deploy with script or code.
Learn more about template deployment.
Template
Parameters
CLI
PowerShell
.NET
Ruby
Parameters (13)
Variables (0)
Resources (19)
{
"$schema": "https://schema.management.azure.com/schemas/2015-01-01/deploymentTemplate.json#",
"contentVersion": "1.0.0.0",
"parameters": {
"Redis_handsoncore_name": {
"defaultValue": "handsoncore",
"type": "String"
},
"connections_outlook_name": {
"defaultValue": "outlook",
"type": "String"
},
"connections_documentdb_name": {
"defaultValue": "documentdb",
"type": "String"
},
"sites_NetCoreUserApi_Dev_name": {
"defaultValue": "NetCoreUserApi-Dev",
"type": "String"
},
"workflows_EmailProcessor_name": {
"defaultValue": "EmailProcessor",
"type": "String"
},
"sites_HandsOnCrossFunctions_name": {
"defaultValue": "HandsOnCrossFunctions",
"type": "String"
},
"components_XamarinTelemetry_name": {
"defaultValue": "XamarinTelemetry",
"type": "String"
},
"components_HandsOn.Azure.Service_name": {
"defaultValue": "HandsOn.Azure.Service",

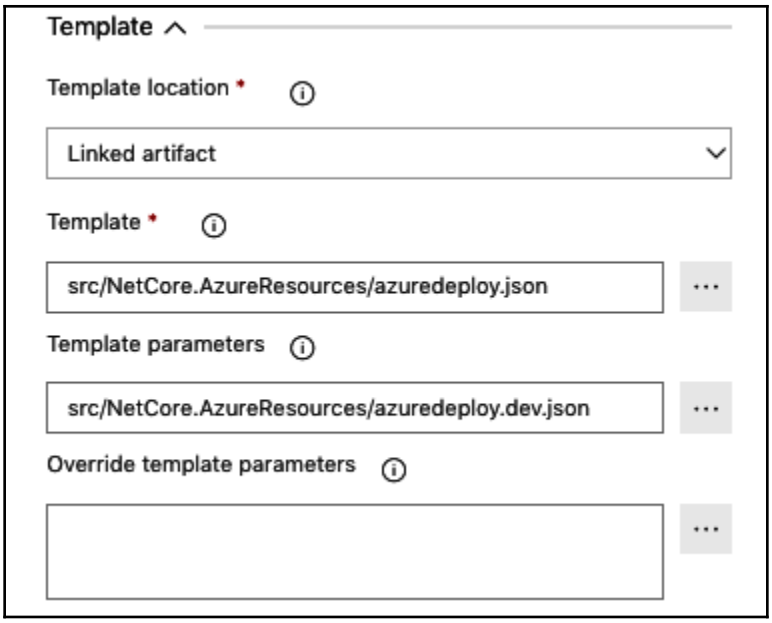

Edit Parameters
The following parameter values will be used for this deployment:
Parameter Name
Value
resourceNameCache
handsoncoreTest1234
Used as the resource name for Redis cache resource
This value is not one of the allowed values for parameter 'resourceNameCache'.
Save
Cancel

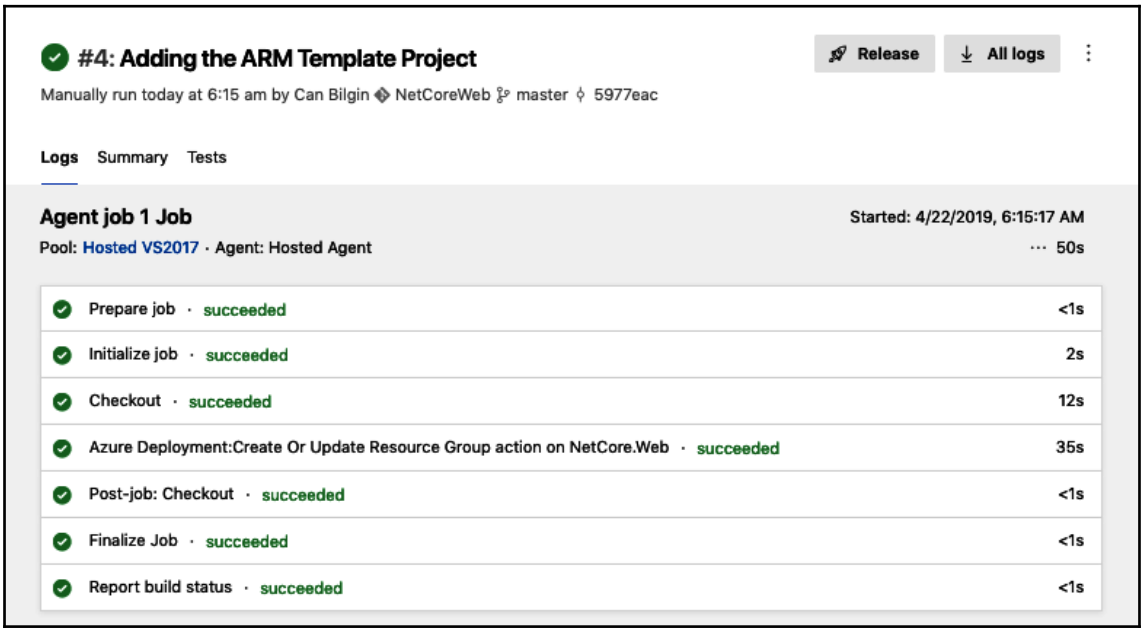

Connection strings
New connection string
Show Values
Name
Value
Type
AzureRedisCache
Hidden value. Click show values button above
Custom

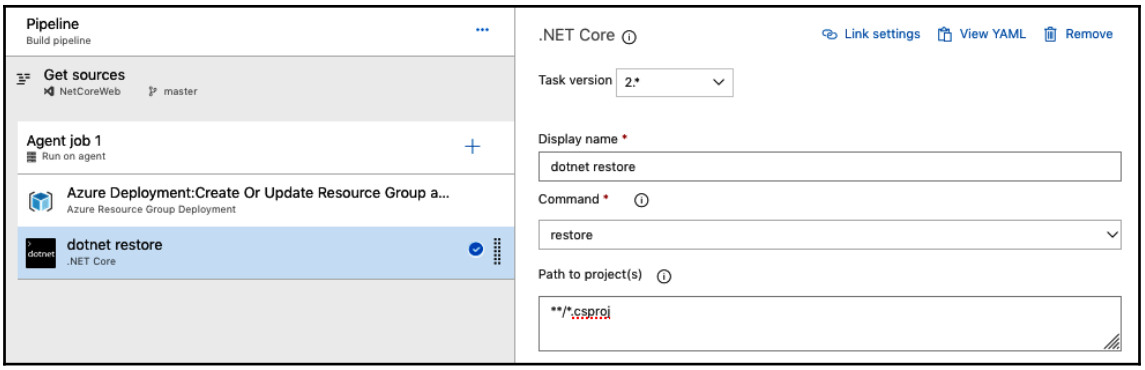

Add an Azure Resource Manager service connection
Service Principal Authentication
Managed Identity Authentication
Connection name
Principle for HandsOnCrossPlatform
Scope level
Subscription
Subscription
Visual Studio Enterprise – MPN (205bb4f7-2f8a-4904-9f37
Resource Group
HandsOnCrossPlatform
Subscriptions listed are from Azure Cloud
A new Azure service principal will be created and assigned with "Contributor" role, having access to all resources within the subscription. Optionally, you can select the Resource Group to which you want to limit access.
If your subscription is not listed above, or your organization is not backed by Azure Active Directory, or to specify an existing service principal, use the full version of the service connection dialog.
Allow all pipelines to use this connection.
OK
Close

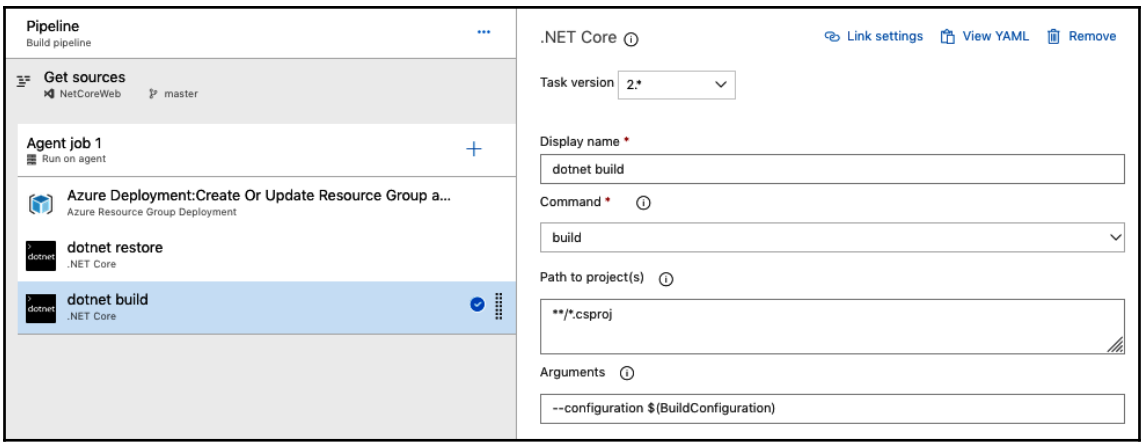

Pipeline
Build pipeline
Get sources
NetCoreWeb
master
Agent job 1
Run on agent
Azure Deployment:Create Or Update Reso...
Some settings need attention
Azure Resource Group Deployment
Task version
2.*
Link settings
View YAML
Remove
Display name *
Azure Deployment:Create Or Update Resource Group action on
Azure Details
Azure subscription *
Manage
Visual Studio Enterprise – MPN (205bb4f7-2f8a-4904-9f37
Authorize
Click Authorize to configure an Azure service connection

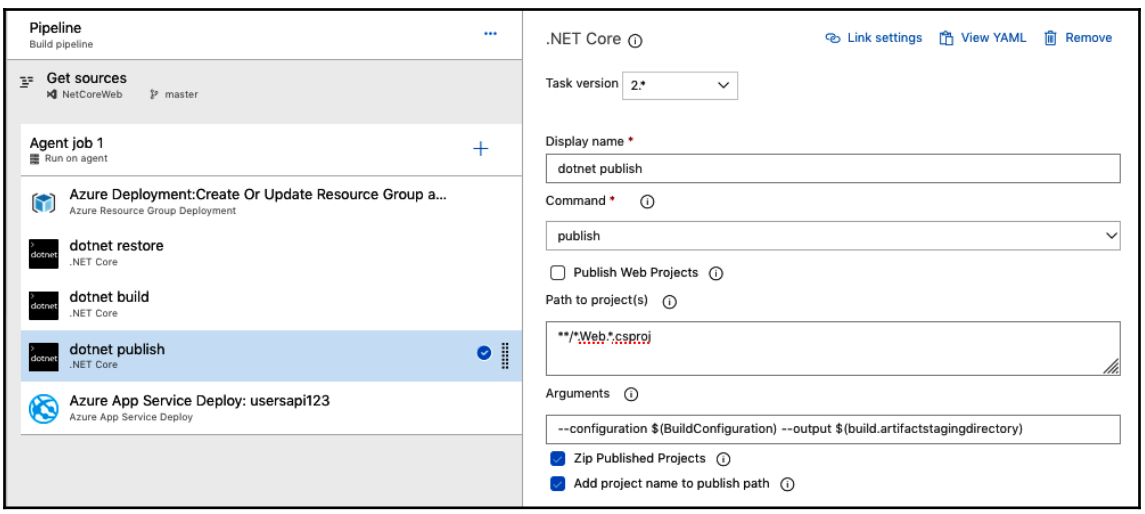

All
Build
Utility
Test
Package
Deploy
Tool
Marketplace
Azure Key Vault
Download Azure Key Vault Secrets
Azure Monitor Alerts
Configure alerts on available metrics for an Azure resource
Azure PowerShell
Run a PowerShell script within an Azure environment
Azure Resource Group Deployment
Deploy an Azure resource manager (ARM) template to a resource group. You can also start, stop, delete, deallocate all Virtual Machines (VM) in a resource group
Add
Azure SQL Database Deployment
Deploy Azure SQL DB using DACPAC or run scripts using SQLCMD

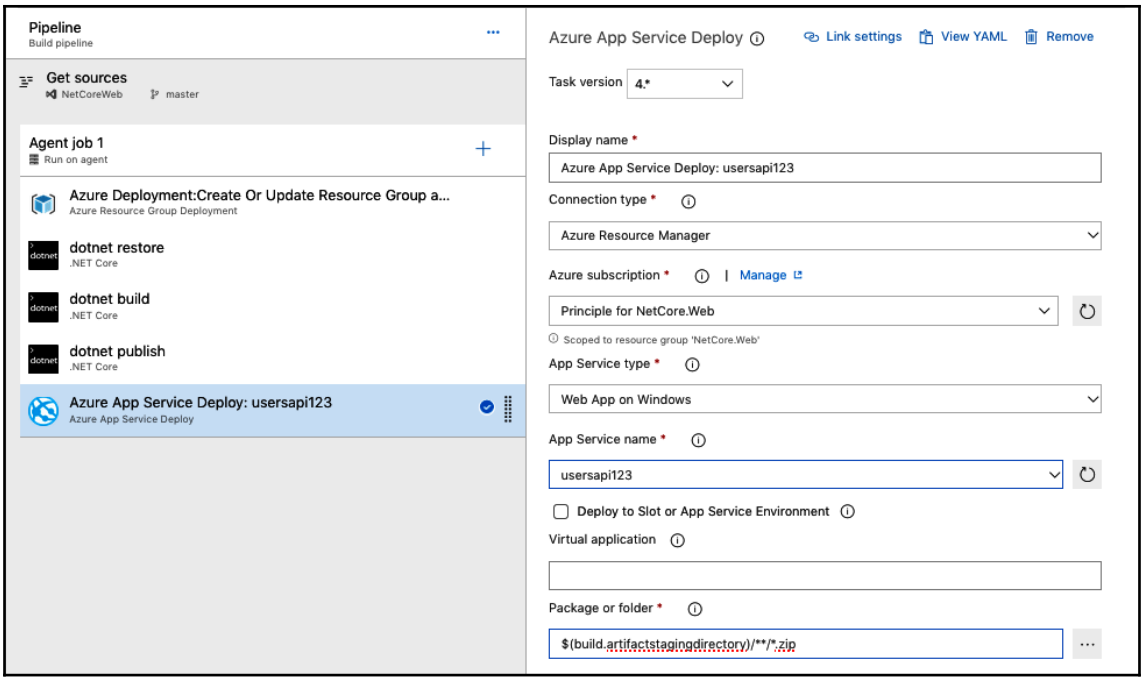

Template
Template location *
Linked artifact
Template *
src/NetCore.AzureResources/azuredeploy.json
Template parameters
src/NetCore.AzureResources/azuredeploy.dev.json
Override template parameters

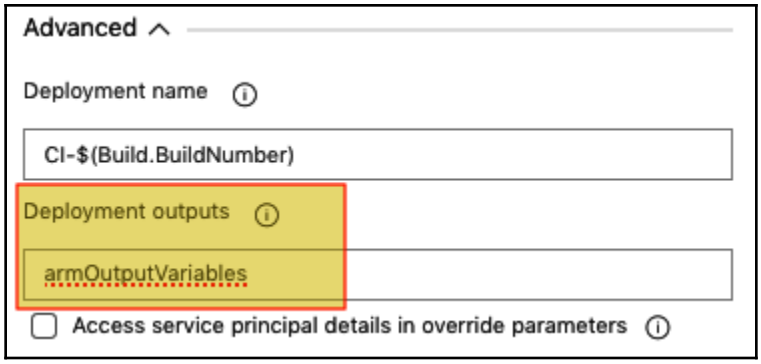

#4: Adding the ARM Template Project
Release
All logs
Manually run today at 6:15 am by Can Bilgin NetCoreWeb master 5977eac
Logs
Summary
Tests
Agent job 1 Job
Started: 4/22/2019, 6:15:17 AM
Pool: Hosted VS2017 · Agent: Hosted Agent
50s
Prepare job · succeeded <1s
Initialize job · succeeded 2s
Checkout · succeeded 12s
Azure Deployment:Create Or Update Resource Group action on NetCore.Web · succeeded 35s
Post-job: Checkout · succeeded <1s
Finalize Job · succeeded <1s
Report build status · succeeded <1s


Pipeline
Build pipeline
Get sources
NetCoreWeb
master
Agent job 1
Run on agent
Azure Deployment:Create Or Update Resource Group a...
Azure Resource Group Deployment
dotnet restore
.NET Core
.NET Core
Link settings
View YAML
Remove
Task version
2.*
Display name *
dotnet restore
Command *
restore
Path to project(s)
**/*.csproj

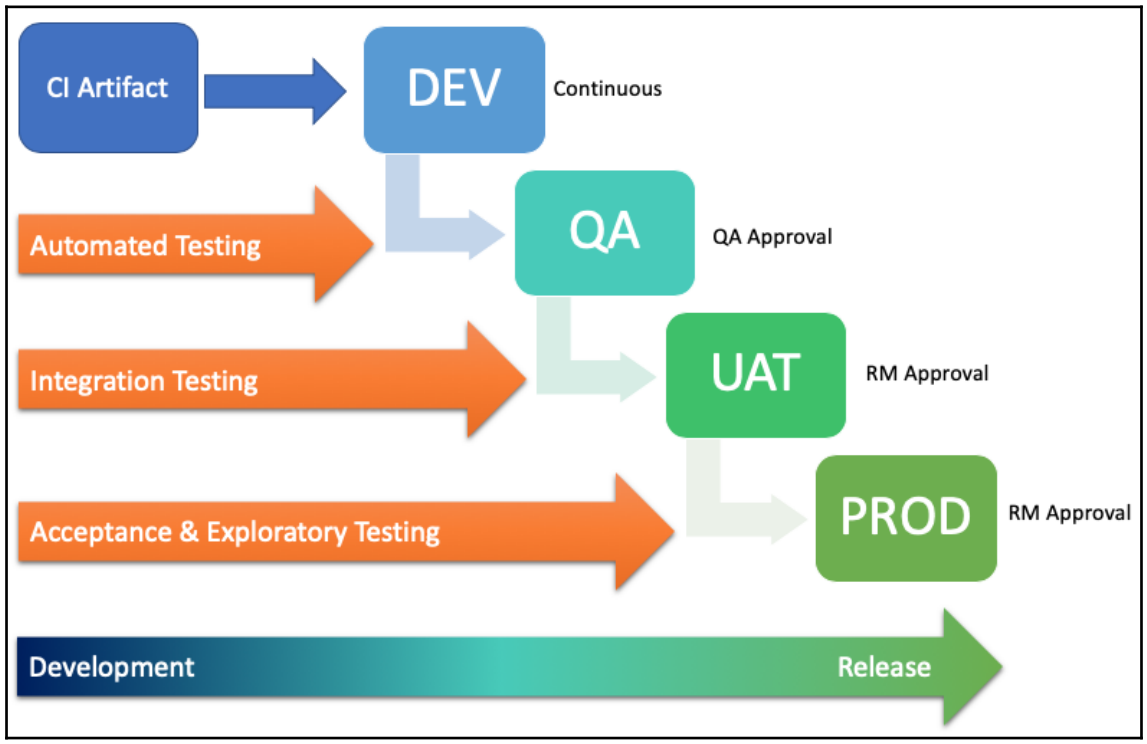

Pipeline
Build pipeline
Get sources
NetCoreWeb
master
Agent job 1
Run on agent
Azure Deployment:Create Or Update Resource Group a...
Azure Resource Group Deployment
dotnet restore
.NET Core
dotnet build
.NET Core
.NET Core
Link settings
View YAML
Remove
Task version
2.*
Display name *
dotnet build
Command *
build
Path to project(s)
**/*.csproj
Arguments
--configuration $(BuildConfiguration)

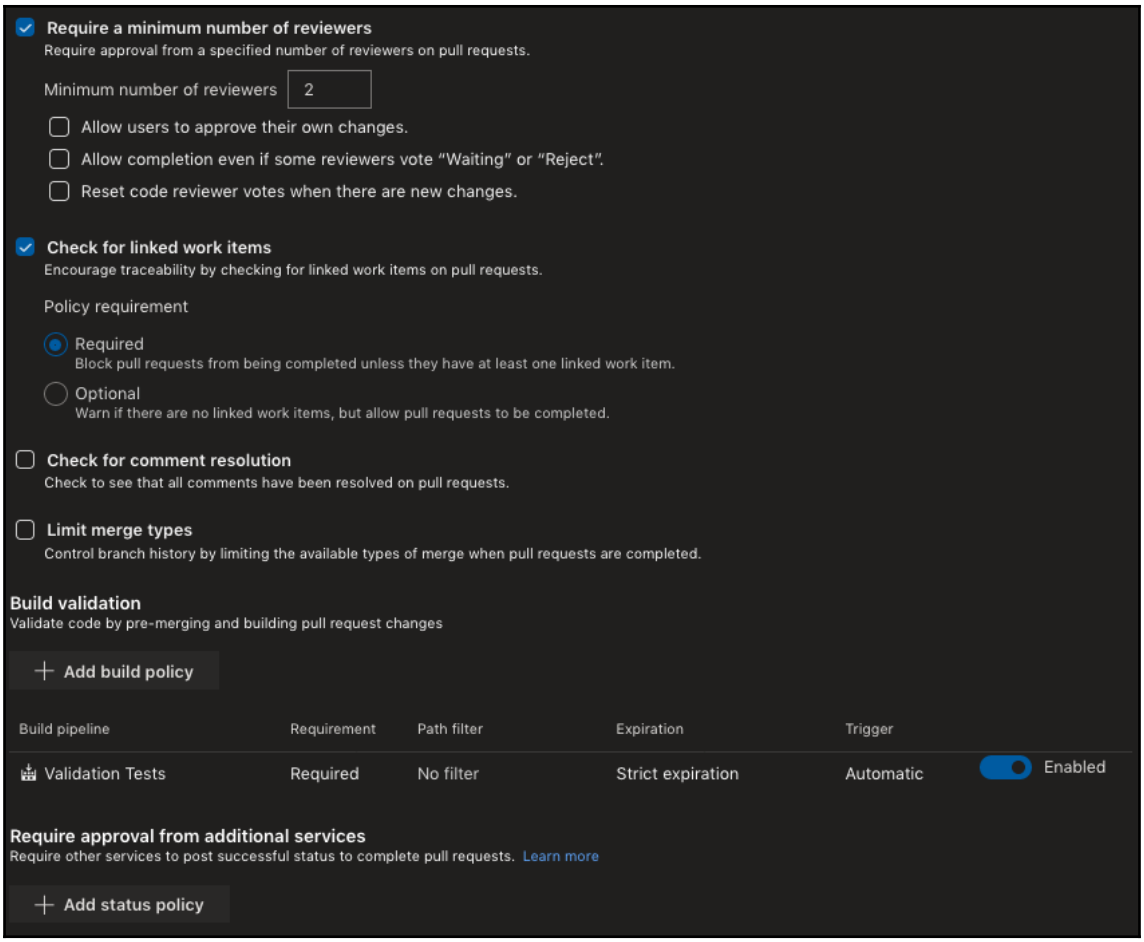

Pipeline
Build pipeline
Get sources
NetCoreWeb
master
Agent job 1
Run on agent
Azure Deployment:Create Or Update Resource Group a...
Azure Resource Group Deployment
dotnet restore
.NET Core
dotnet build
.NET Core
dotnet publish
.NET Core
Azure App Service Deploy: usersapi123
Azure App Service Deploy
.NET Core
Link settings
View YAML
Remove
Task version
2.*
Display name *
dotnet publish
Command *
publish
Publish Web Projects
Path to project(s)
**/*.Web.*.csproj
Arguments
--configuration $(BuildConfiguration) --output $(build.artifactstagingdirectory)
Zip Published Projects
Add project name to publish path

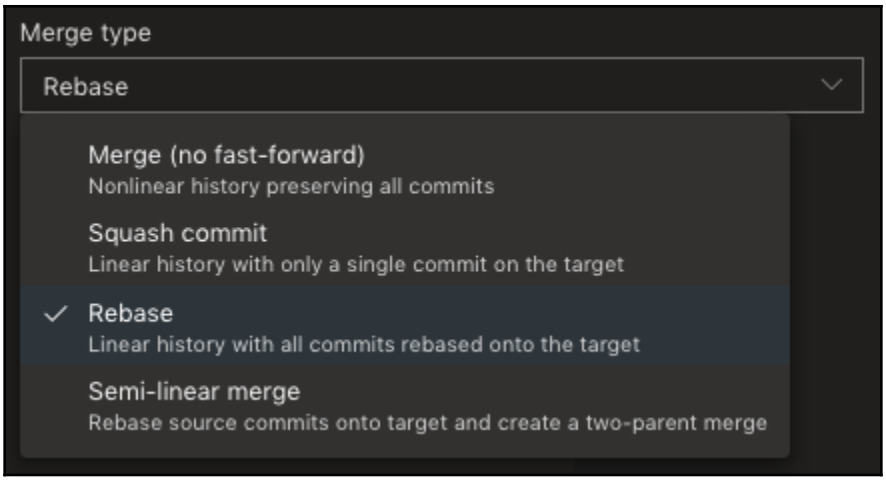

Pipeline
Build pipeline
Get sources
NetCoreWeb
master
Agent job 1
Run on agent
Azure Deployment:Create Or Update Resource Group a...
Azure Resource Group Deployment
dotnet restore
.NET Core
dotnet build
.NET Core
dotnet publish
.NET Core
Azure App Service Deploy: usersapi123
Azure App Service Deploy
Azure App Service Deploy
Link settings
View YAML
Remove
Task version
4.*
Display name *
Azure App Service Deploy: usersapi123
Connection type *
Azure Resource Manager
Azure subscription *
Manage
Principle for NetCore.Web
Scoped to resource group 'NetCore.Web'
App Service type *
Web App on Windows
App Service name *
usersapi123
Deploy to Slot or App Service Environment
Virtual application
Package or folder *
$(build.artifactstagingdirectory)/**/*.zip

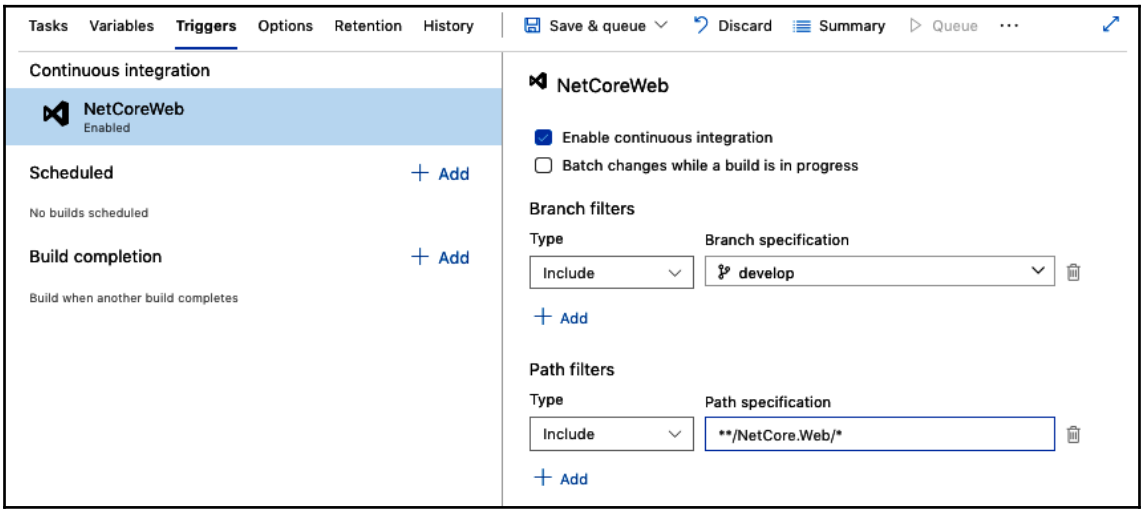

Advanced
Deployment name
CI-$(Build.BuildNumber)
Deployment outputs
armOutputVariables
Access service principal details in override parameters

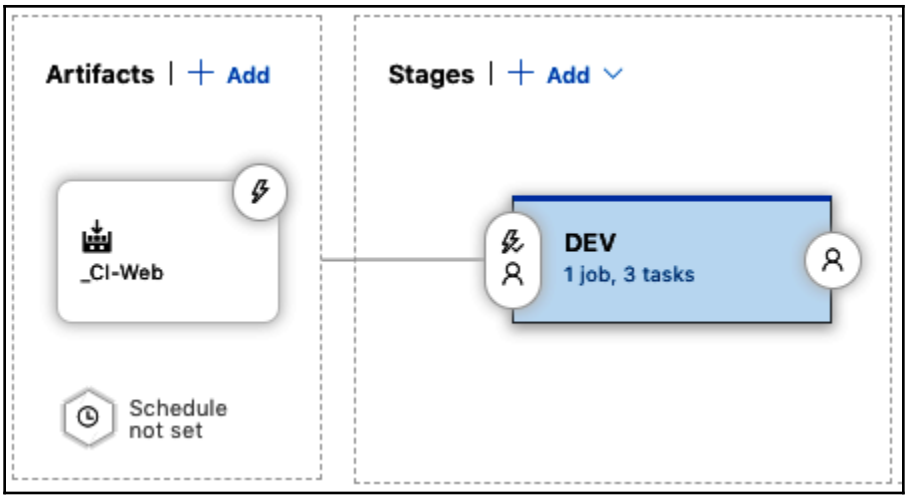
Chapter 19: 19.CI/CD with Azure DevOps

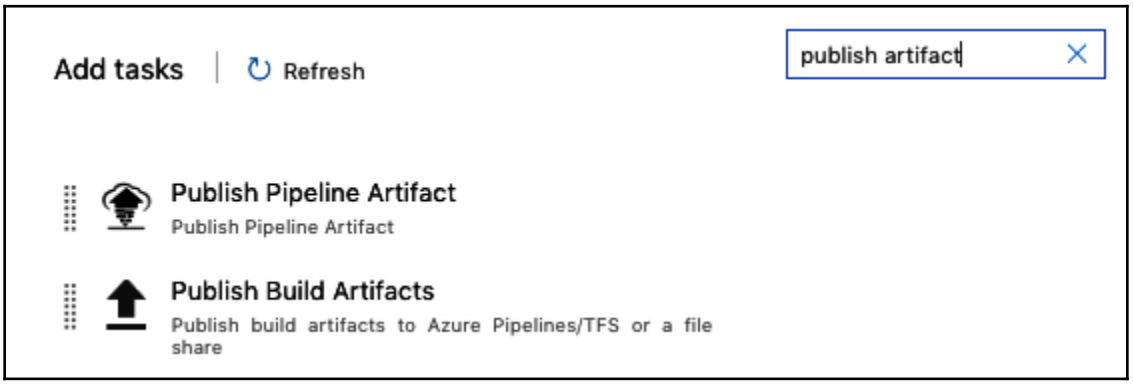


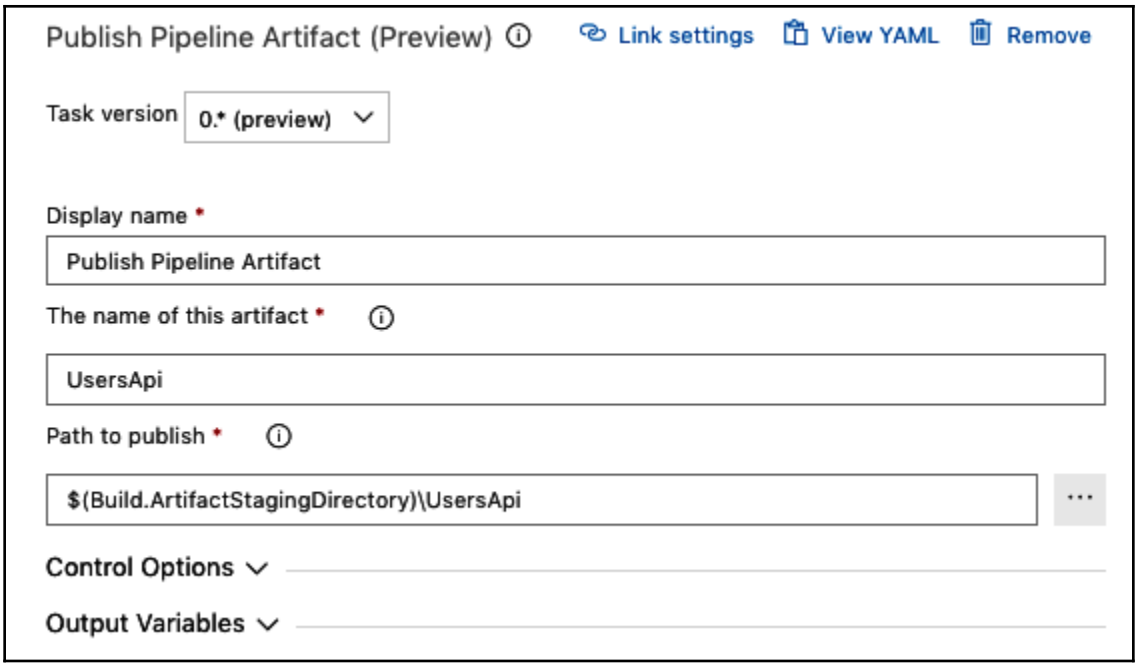

Require a minimum number of reviewers
Require approval from a specified number of reviewers on pull requests.
Minimum number of reviewers
2
Allow users to approve their own changes.
Allow completion even if some reviewers vote "Waiting" or "Reject".
Reset code reviewer votes when there are new changes.
Check for linked work items
Encourage traceability by checking for linked work items on pull requests.
Policy requirement
Required
Block pull requests from being completed unless they have at least one linked work item.
Optional
Warn if there are no linked work items, but allow pull requests to be completed.
Check for comment resolution
Check to see that all comments have been resolved on pull requests.
Limit merge types
Control branch history by limiting the available types of merge when pull requests are completed.
Build validation
Validate code by pre-merging and building pull request changes
Add build policy
Build pipeline
Requirement
Path filter
Expiration
Trigger
Validation Tests
Required
No filter
Strict expiration
Automatic
Enabled
Require approval from additional services
Require other services to post successful status to complete pull requests.
Learn more
Add status policy

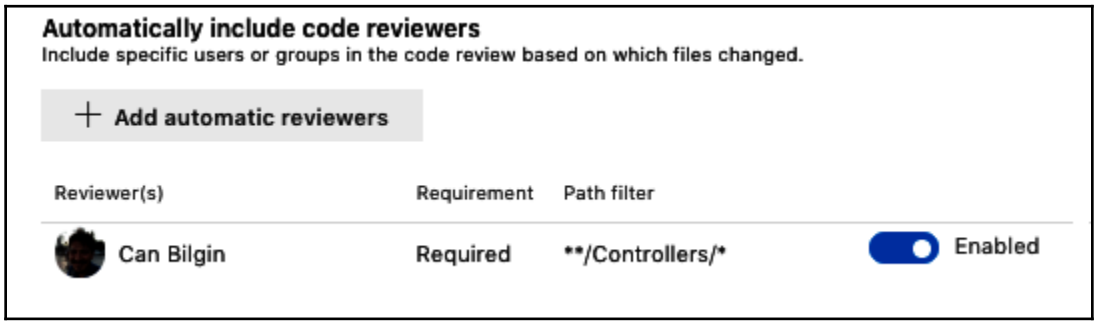

Merge type
Rebase
Merge (no fast-forward)
Nonlinear history preserving all commits
Squash commit
Linear history with only a single commit on the target
Rebase
Linear history with all commits rebased onto the target
Semi-linear merge
Rebase source commits onto target and create a two-parent merge

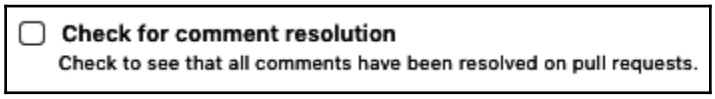

Tasks
Variables
Triggers
Options
Retention
History
Save & queue
Discard
Summary
Queue
Continuous integration
NetCoreWeb
Enabled
Scheduled
Add
No builds scheduled
Build completion
Add
Build when another build completes
NetCoreWeb
Enable continuous integration
Batch changes while a build is in progress
Branch filters
Type
Branch specification
Include
develop
Add
Path filters
Type
Path specification
Include
**/NetCore.Web/*
Add

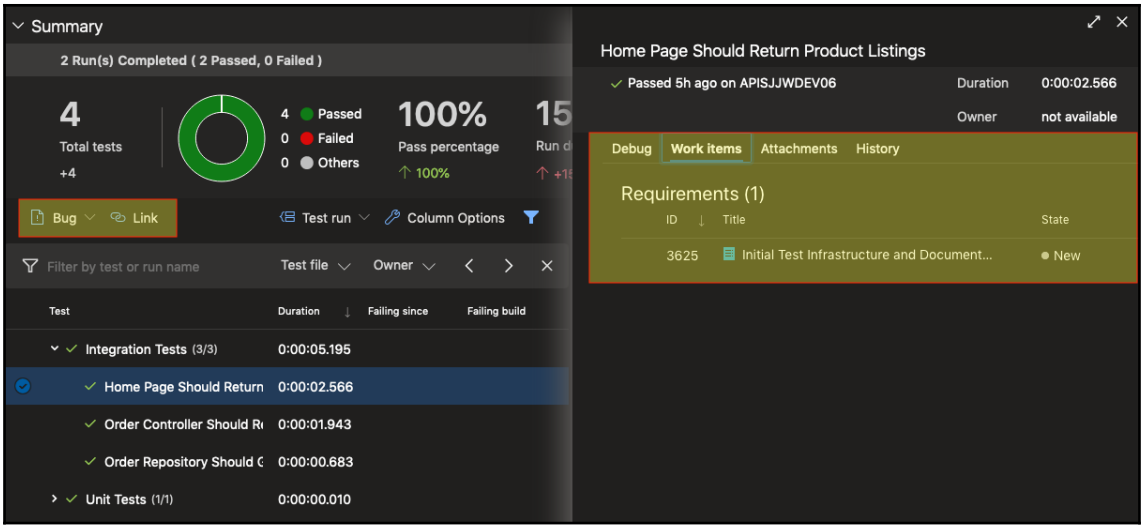

Artifacts | + Add
Stages | + Add
_CI-Web
DEV
1 job, 3 tasks
Schedule not set

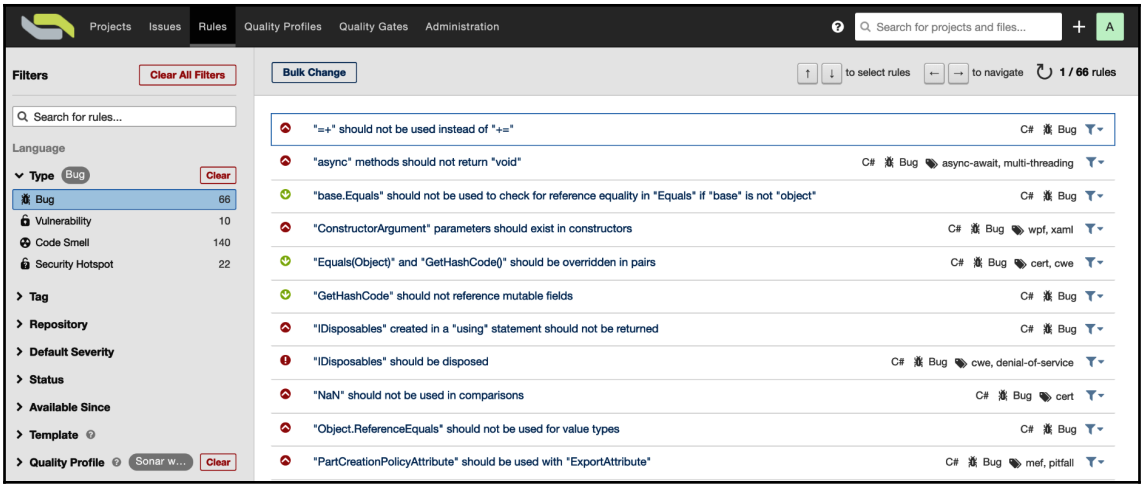

Add tasks
Refresh
publish artifact
Publish Pipeline Artifact
Publish Pipeline Artifact
Publish Build Artifacts
Publish build artifacts to Azure Pipelines/TFS or a file share


Publish Pipeline Artifact (Preview)
Link settings
View YAML
Remove
Task version
0.* (preview)
Display name *
Publish Pipeline Artifact
The name of this artifact *
UsersApi
Path to publish *
$(Build.ArtifactStagingDirectory)\UsersApi
Control Options
Output Variables

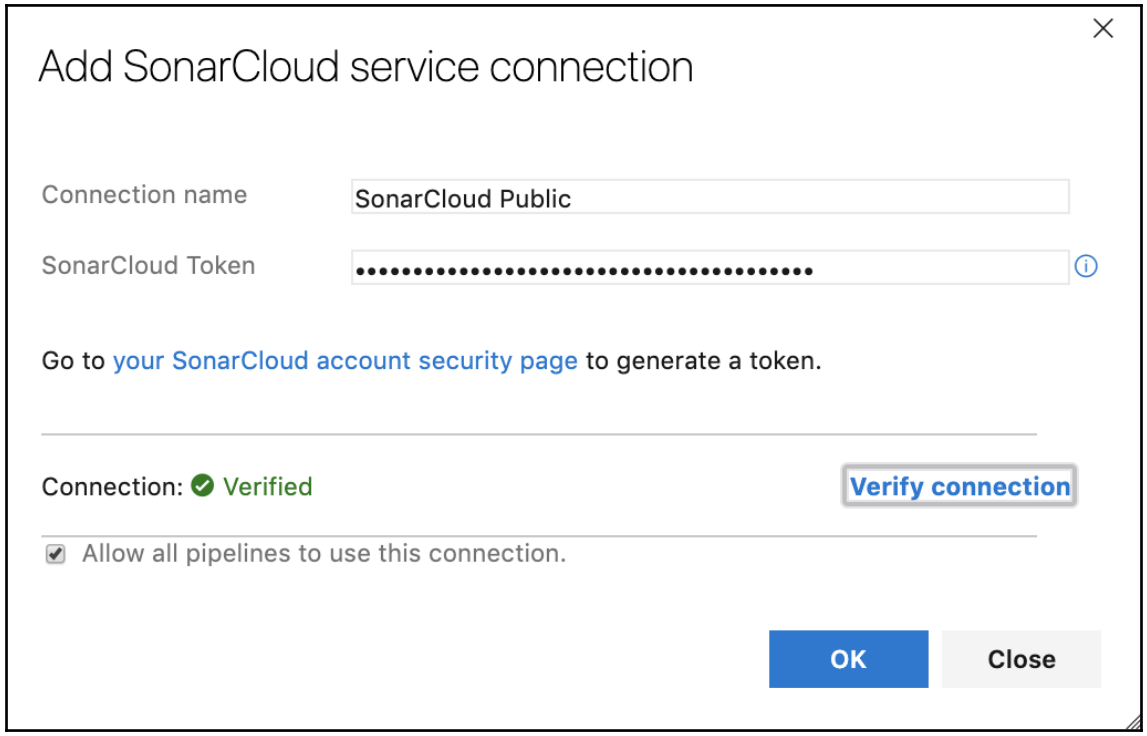

Automatically include code reviewers
Include specific users or groups in the code review based on which files changed.
Add automatic reviewers
Reviewer(s)
Requirement
Path filter
Can Bilgin
Required
**/Controllers/*
Enabled

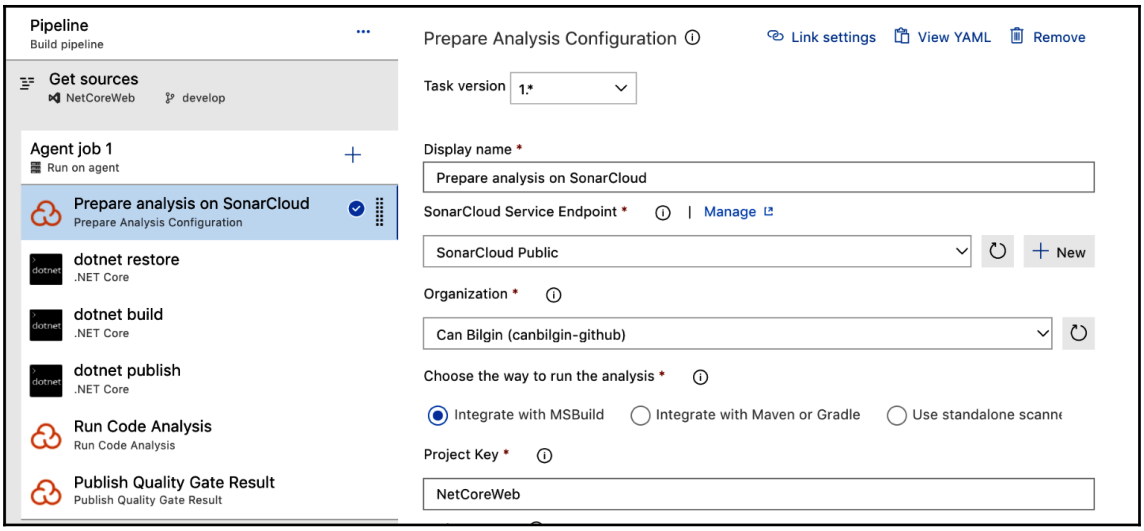

Check for comment resolution
Check to see that all comments have been resolved on pull requests.

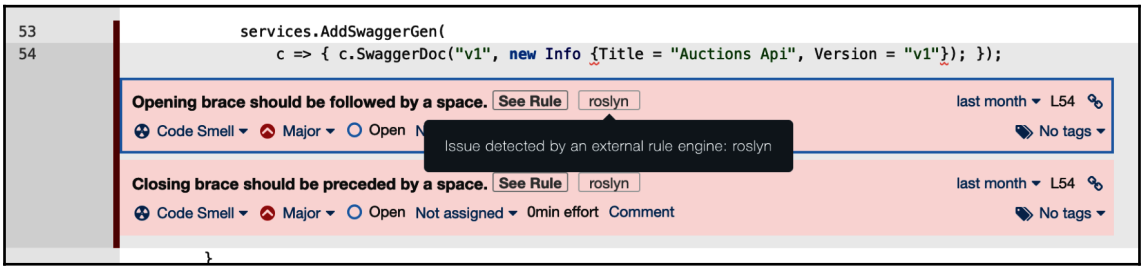

Summary
2 Run(s) Completed (2 Passed, 0 Failed)
4
Total tests
+4
4 Passed
0 Failed
0 Others
100%
Pass percentage
100%
Bug
Link
Test run
Column Options
Filter by test or run name
Test file
Owner
Test
Duration
Failing since
Failing build
Integration Tests (3/3) 0:00:05.195
Home Page Should Return 0:00:02.566
Order Controller Should R 0:00:01.943
Order Repository Should C 0:00:00.683
Unit Tests (1/1) 0:00:00.010
Home Page Should Return Product Listings
Passed 5h ago on APISJJWDEV06
Duration 0:00:02.566
Owner not available
Debug
Work items
Attachments
History
Requirements (1)
ID
Title
State
3625
Initial Test Infrastructure and Document...
New

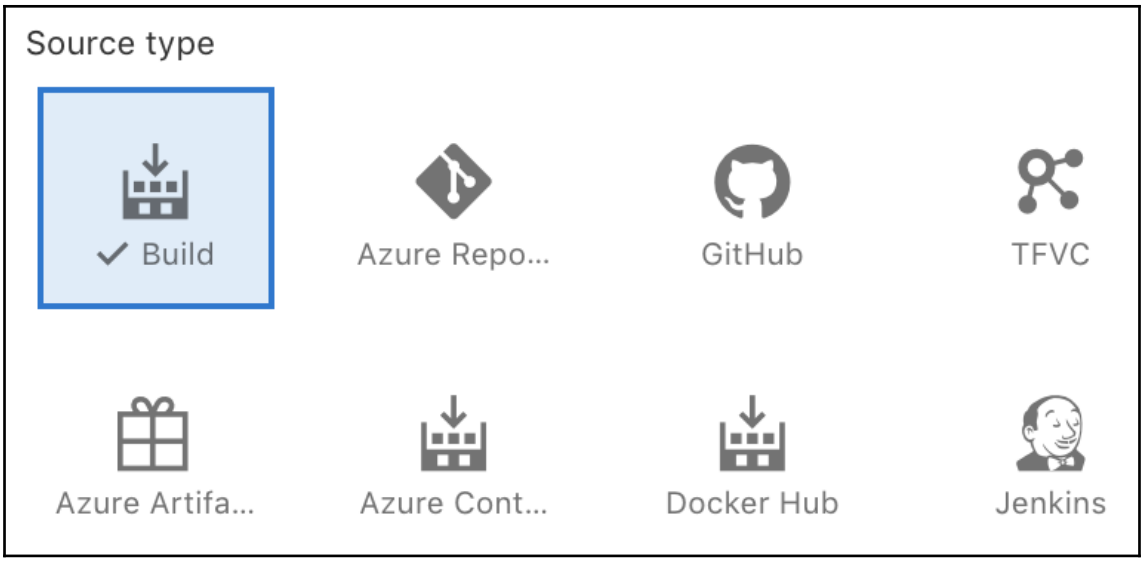

Projects
Issues
Rules
Quality Profiles
Quality Gates
Administration
Search for projects and files...
Filters
Clear All Filters
Bulk Change
to select rules
to navigate
1 / 66 rules
Search for rules...
Language
Type
Bug
Clear
Bug 66
Vulnerability 10
Code Smell 140
Security Hotspot 22
Tag
Repository
Default Severity
Status
Available Since
Template
Quality Profile
Sonar w...
"=+" should not be used instead of "+="
"async" methods should not return "void"
"base.Equals" should not be used to check for reference equality in "Equals" if "base" is not "object"
"ConstructorArgument" parameters should exist in constructors
"Equals(Object)" and "GetHashCode()" should be overridden in pairs
"GetHashCode" should not reference mutable fields
"IDisposables" created in a "using" statement should not be returned
"IDisposables" should be disposed
"NaN" should not be used in comparisons
"Object.ReferenceEquals" should not be used for value types
"PartCreationPolicyAttribute" should be used with "ExportAttribute"

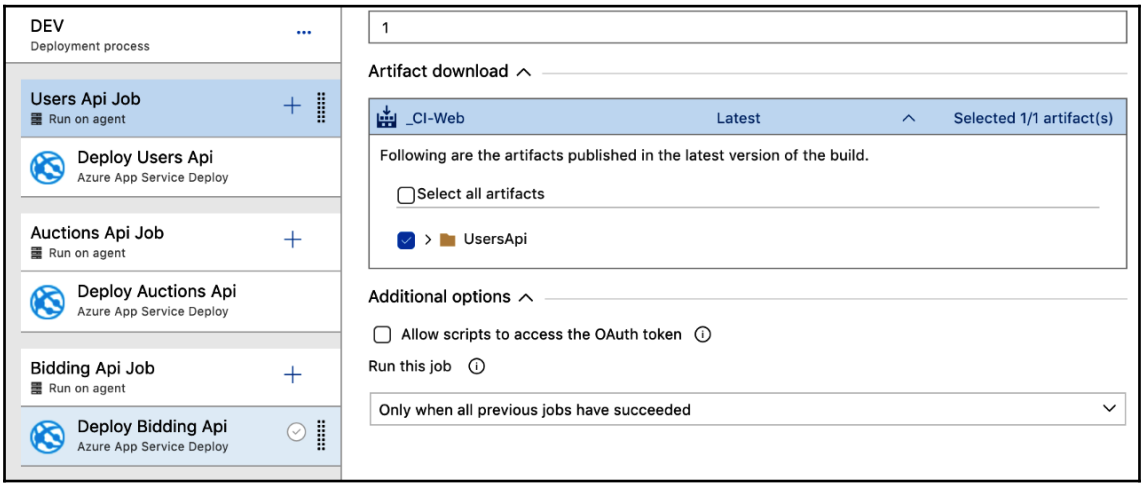
Metric	Operator	Error
Coverage on New Code	is less than	80.0%
Duplicated Lines on New Code (%)	is greater than	3.0%
Maintainability Rating on New Code	is worse than	A
Reliability Rating on New Code	is worse than	A
Security Rating on New Code	is worse than	A

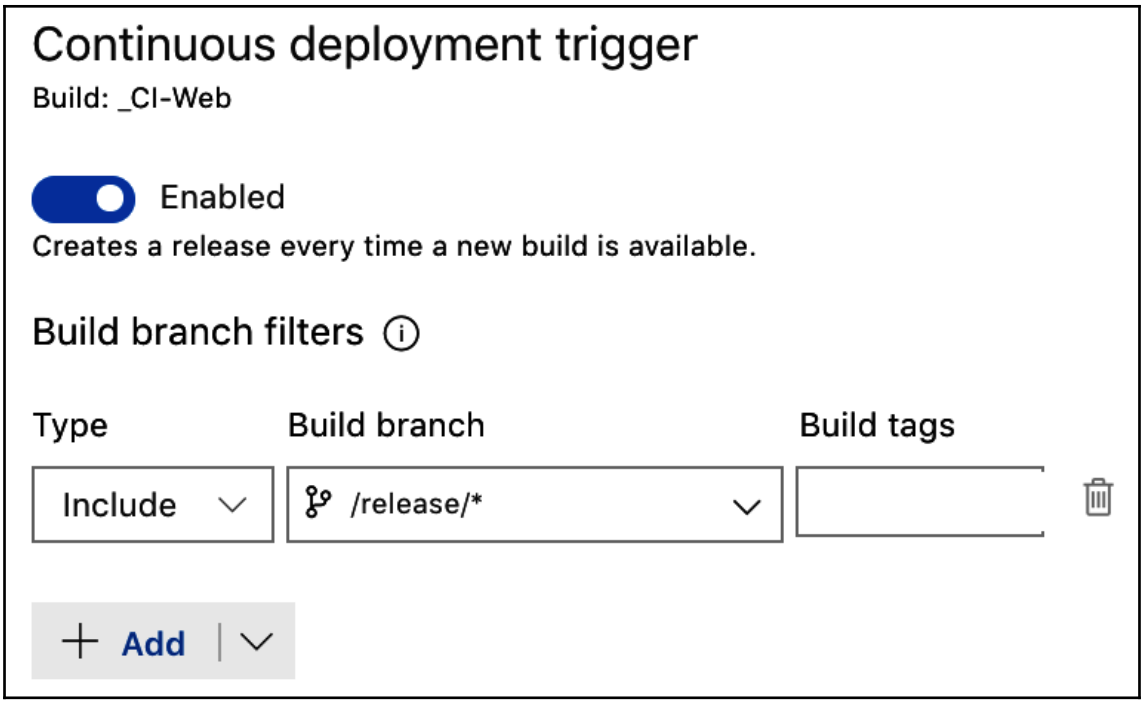


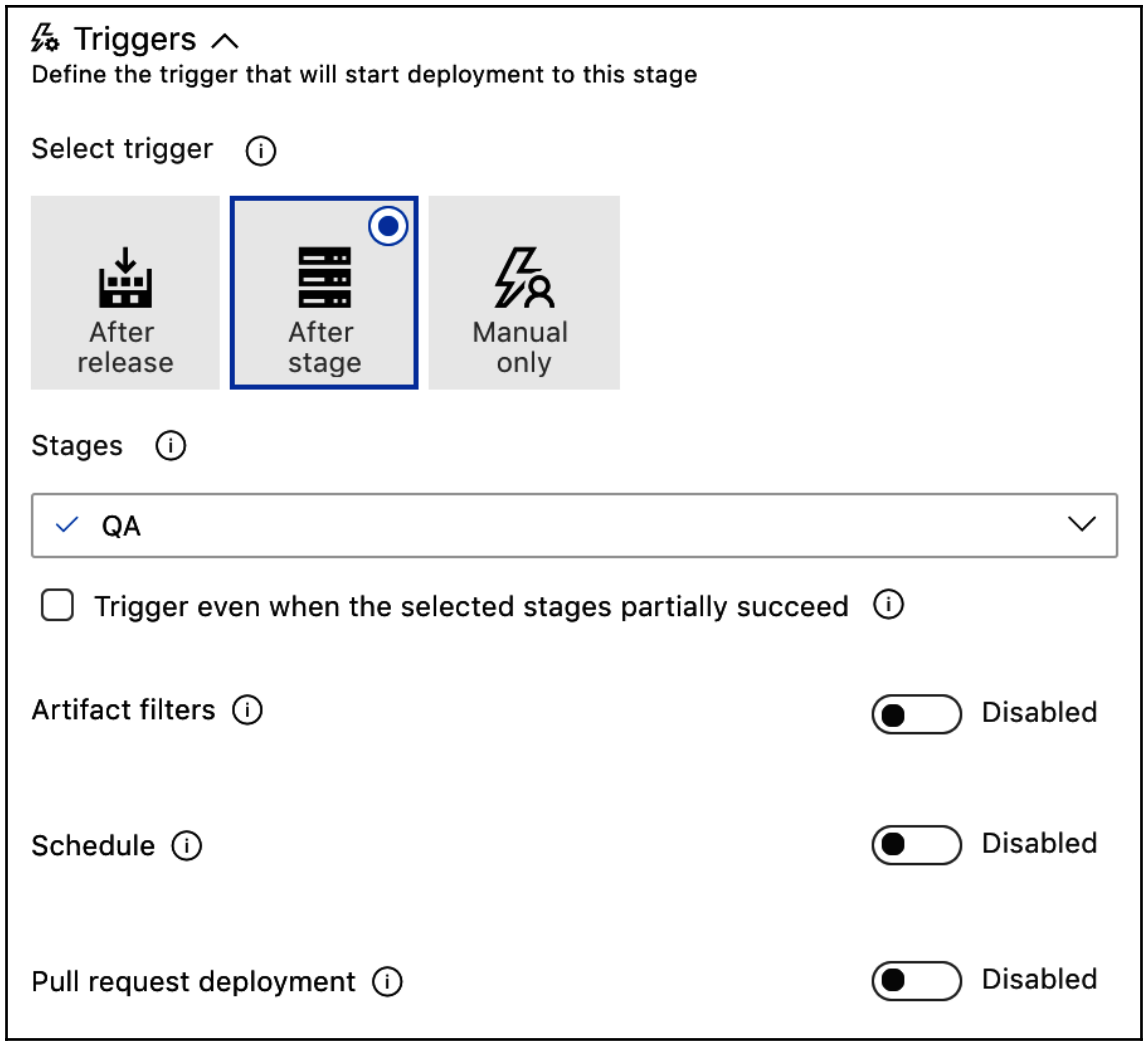

Pipeline
Build pipeline
Get sources
NetCoreWeb
develop
Agent job 1
Run on agent
Prepare analysis on SonarCloud
Prepare Analysis Configuration
dotnet restore
.NET Core
dotnet build
.NET Core
dotnet publish
.NET Core
Run Code Analysis
Run Code Analysis
Publish Quality Gate Result
Publish Quality Gate Result
Prepare Analysis Configuration
Link settings
View YAML
Remove
Task version
1.*
Display name *
Prepare analysis on SonarCloud
SonarCloud Service Endpoint *
Manage
SonarCloud Public
New
Organization *
Can Bilgin (canbilgin-github)
Choose the way to run the analysis *
Integrate with MSBuild
Integrate with Maven or Gradle
Use standalone scanne
Project Key *
NetCoreWeb

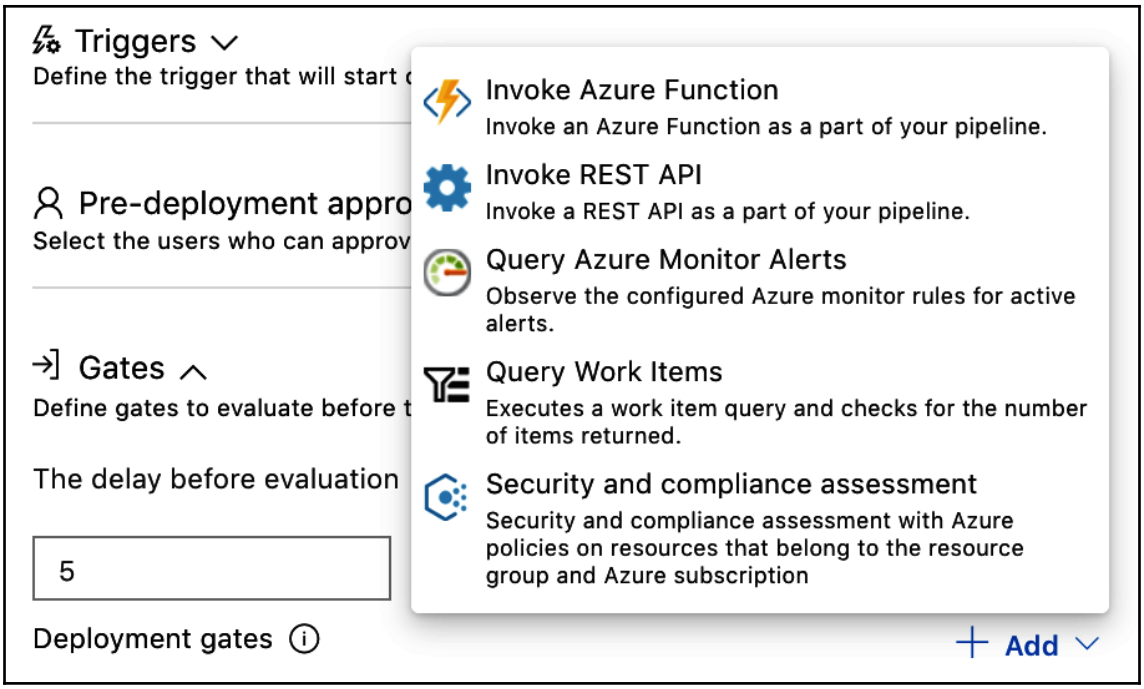

53
54
services.AddSwaggerGen(
c => { c.SwaggerDoc("v1", new Info {Title = "Auctions Api", Version = "v1"}); });
Opening brace should be followed by a space.
See Rule
roslyn
last month
L54
Code Smell
Major
Open
No tags
Issue detected by an external rule engine: roslyn
Closing brace should be preceded by a space.
See Rule
roslyn
last month
L54
Code Smell
Major
Open
Not assigned
0min effort
Comment
No tags
}

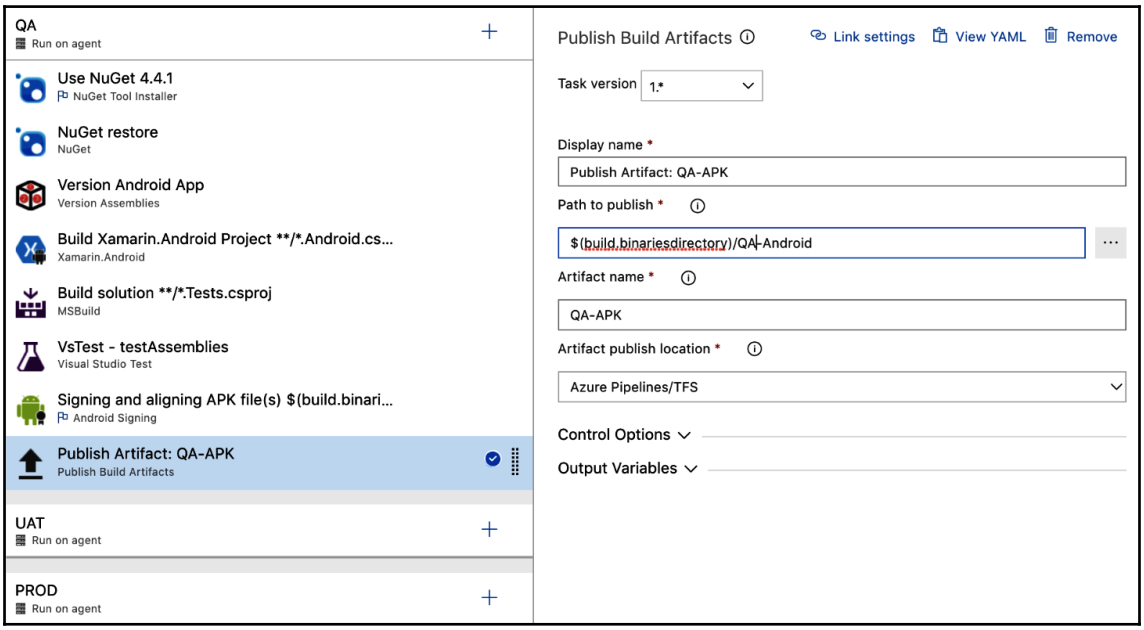

Source type
Build
Azure Repo...
GitHub
TFVC
Azure Artifa...
Azure Cont...
Docker Hub
Jenkins

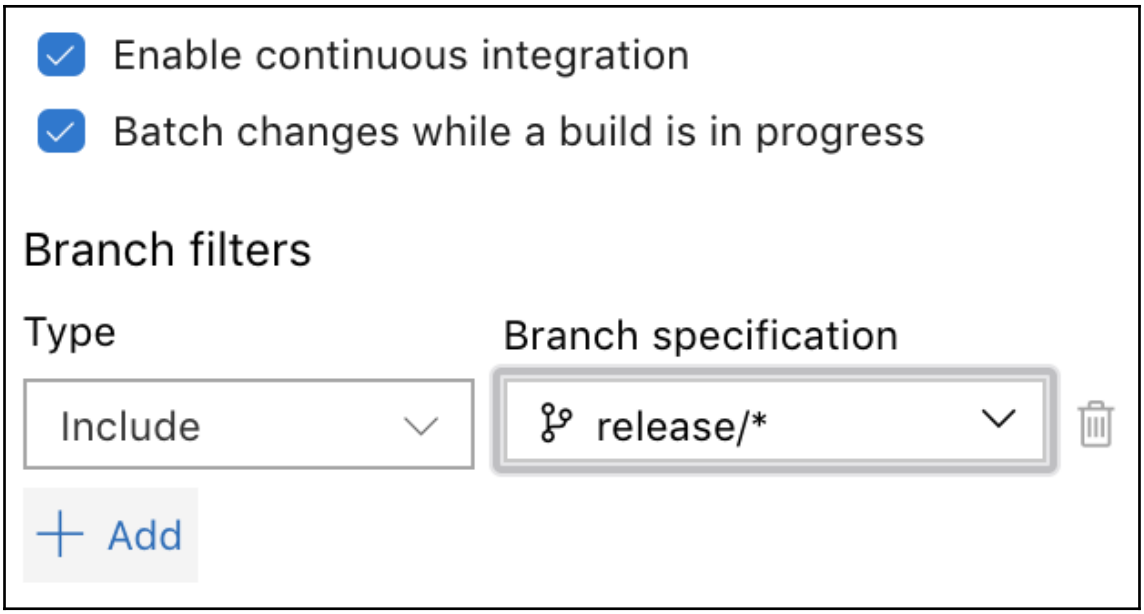

DEV
Deployment process
Users Api Job
Run on agent
Deploy Users Api
Azure App Service Deploy
Auctions Api Job
Run on agent
Deploy Auctions Api
Azure App Service Deploy
Bidding Api Job
Run on agent
Deploy Bidding Api
Azure App Service Deploy
1
Artifact download
_CI-Web
Latest
Selected 1/1 artifact(s)
Following are the artifacts published in the latest version of the build.
Select all artifacts
UsersApi
Additional options
Allow scripts to access the OAuth token
Run this job
Only when all previous jobs have succeeded

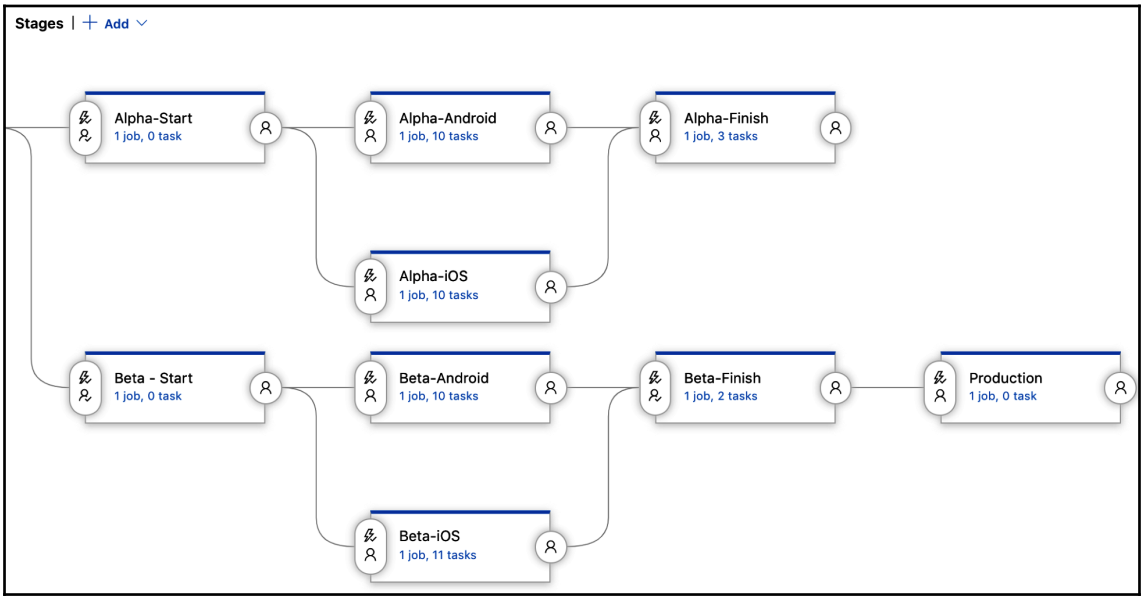

Continuous deployment trigger
Build: _CI-Web
Enabled
Creates a release every time a new build is available.
Build branch filters
Type
Build branch
Build tags
Include
/release/*
Add

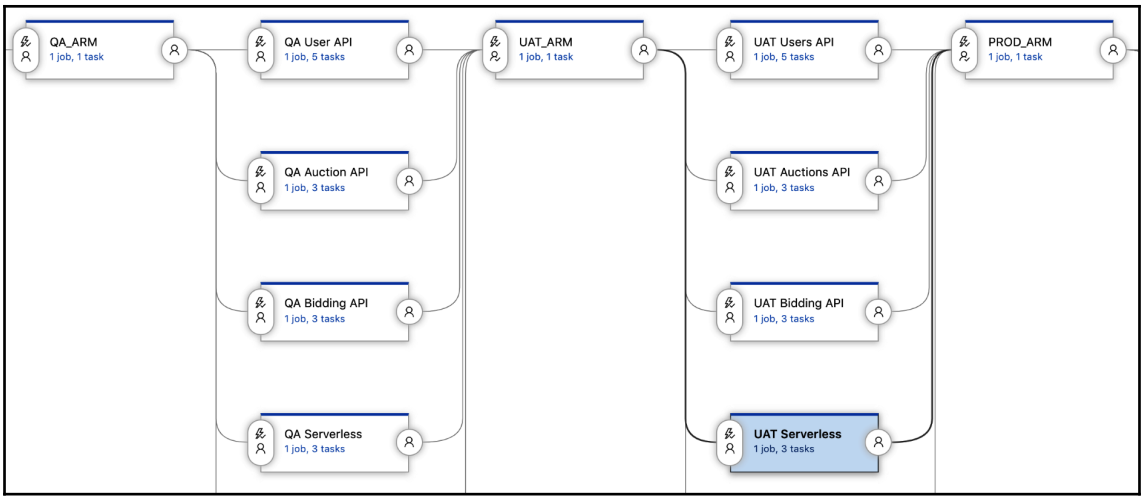

Triggers
Define the trigger that will start deployment to this stage
Select trigger
After release
After stage
Manual only
Stages
QA
Trigger even when the selected stages partially succeed
Artifact filters
Disabled
Schedule
Disabled
Pull request deployment
Disabled


Triggers
Define the trigger that will start
Pre-deployment appro
Select the users who can approv
Gates
Define gates to evaluate before t
The delay before evaluation
5
Deployment gates
Invoke Azure Function
Invoke an Azure Function as a part of your pipeline.
Invoke REST API
Invoke a REST API as a part of your pipeline.
Query Azure Monitor Alerts
Observe the configured Azure monitor rules for active alerts.
Query Work Items
Executes a work item query and checks for the number of items returned.
Security and compliance assessment
Security and compliance assessment with Azure policies on resources that belong to the resource group and Azure subscription
Add


QA
Run on agent
Use NuGet 4.4.1
NuGet Tool Installer
NuGet restore
NuGet
Version Android App
Version Assemblies
Build Xamarin.Android Project **/*.Android.cs...
Xamarin.Android
Build solution **/*.Tests.csproj
MSBuild
VsTest - testAssemblies
Visual Studio Test
Signing and aligning APK file(s) $(build.binari...
Android Signing
Publish Artifact: QA-APK
Publish Build Artifacts
UAT
Run on agent
PROD
Run on agent
Publish Build Artifacts
Link settings
View YAML
Remove
Task version
1.*
Display name *
Publish Artifact: QA-APK
Path to publish *
$(build.binariesdirectory)/QA-Android
Artifact name *
QA-APK
Artifact publish location *
Azure Pipelines/TFS
Control Options
Output Variables


Enable continuous integration
Batch changes while a build is in progress
Branch filters
Type
Branch specification
Include
release/*
Add


Stages
Add
Alpha-Start
1 job, 0 task
Alpha-Android
1 job, 10 tasks
Alpha-Finish
1 job, 3 tasks
Alpha-iOS
1 job, 10 tasks
Beta - Start
1 job, 0 task
Beta-Android
1 job, 10 tasks
Beta-Finish
1 job, 2 tasks
Production
1 job, 0 task
Beta-iOS
1 job, 11 tasks


QA_ARM
1 job, 1 task
QA User API
1 job, 5 tasks
QA Auction API
1 job, 3 tasks
QA Bidding API
1 job, 3 tasks
QA Serverless
1 job, 3 tasks
UAT_ARM
1 job, 1 task
UAT Users API
1 job, 5 tasks
UAT Auctions API
1 job, 3 tasks
UAT Bidding API
1 job, 3 tasks
UAT Serverless
1 job, 3 tasks
PROD_ARM
1 job, 1 task