Microsoft Mobile DevOps
Overview

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Mobile development

This is Martin...
Martin is working on an app.
The „Manual“ pipeline

F5 and go.
Going bigger
Challenges

Continuous Integration
- Multiple platforms, signing

Testing
- Multiple devices and form factors

Distribution
- Beta testing

Monitoring
- Feedback
- Crash reports
“DevOps” pipeline

Repository → Build → Automated Testing

Code

Engagement → Monitoring → Distribution
Solutions

Continuous Integration = Visual Studio Team Services

Testing = Xamarin Test Cloud

Distribution and Monitoring = HockeyApp
User Interface Testing

UI testing can be hard...
Needs to be automated
Difficult parallelization
Xamarin
Xamarin.UiTest
Xamarin Test Cloud
Xamarin.UITest

Testing framework
Based on NUnit
Using C#
Cross-platform
Can be used locally
public void LoginWithTwitter()
{
    Query CancelFeedbackButton = x => x.Marked("Cancel");
    Query SellItemButton;
    Query TwitterButton = x => x.Marked("Twitter");
    Query AddItemButton;

    if (this.platform == Platform.Android)
    {
        SellItemButton = x => x.Class("AppCompatTextView").Text("SELL AN ITEM");
        AddItemButton = x => x.Class("AppCompatButton").Marked("ADD ITEM");
    }
    else
    {
        SellItemButton = x => x.Class("UIButton").Marked("SELL AN ITEM");
        AddItemButton = x => x.Class("UIButton").Marked("ADD ITEM");
    }

    // Dismiss feedback.
    app.WaitForElement(CancelFeedbackButton);
    app.Screenshot("Feedback request shown");
    app.Tap(CancelFeedbackButton);
    app.Screenshot("Feedback dismissed");

    // Tap "Sell an item"
    app.Tap(SellItemButton);
    app.WaitForElement(TwitterButton);
    app.Screenshot("Twitter shown");

    // Tap Twitter
    app.Tap(TwitterButton);
    app.WaitForElement(c => c.Css("input#username_or_email"));
    app.Screenshot("Login screen shown");

    // Login
    app.EnterText(c => c.Css("input#username_or_email"), "");
    app.Tap(c => c.Css("input#password"));
    app.EnterText(c => c.Css("input#password"), "");
    app.DismissKeyboard();
    app.WaitForElement(c => c.Css("input#allow"));
    app.Tap(c => c.Css("input#allow"));

    Thread.Sleep(2000);
    var challengeQuery = app.Query(c => c.Css("input#challenge_response"));
    if (challengeQuery.Any())
    {
        app.Screenshot("Email challenge");
        app.EnterText(c => c.Css("input#challenge_response"), "");
        app.DismissKeyboard();
    }
Demo
Going bigger... again
iOS Fragmentation? It does exist!

Form factors

iOS 9 features

iPhone 6s series only

Multi Tasking
Only select iPads

Apple pencil
iPad Pro only

3D Touch
iPhone 6s series only

iPod touch

iPhones

iPods
Xamarin Test Cloud

Test your app on 2406 devices

Platform
- Android: 1225
- iOS: 1181

Form factor
- Phone: 168
- Tablet: 44

Operating System
- iOS 9: 476
- KitKat (4.4): 472
- iOS 8: 439
- Jelly Bean (4.1, 4.2, 4.3): 329

Devices:
- ASUS Memo Pad
  - Jelly Bean 4.1.1
- ASUS Transformer Pad
  - Jelly Bean 4.1.1
- Acer Iconia A1-830
  - Jelly Bean 4.2.2
- Acer Iconia Tab A1
  - Jelly Bean 4.2.2
- Acer Liquid E2
  - Jelly Bean 4.2.2
- Alcatel Onetouch Idol 2
  - Jelly Bean 4.2.2
- Amazon Fire Phone
  - Jelly Bean 4.2.2
- Amazon Kindle Fire (2nd Generation)
  - Ice Cream Sandwich 4.0.3
Testing apps – the Xamarin Test Cloud way

- 2000+ physical devices
- consistent, scalable and accurate tests
- simultaneous testing
- device wipe after each test run

https://testcloud.xamarin.com
Demo
Distribution, crashes, analytics

„The app suddenly disappeared.“
„I’m getting strange errors.“
„That button should go somewhere else.“

=> HockeyApp
Demo
“DevOps” pipeline

Visual Studio Team Services
Build definition with XTC & HockeyApp
Visual Studio Mobile Center

- Build
- Test
- Push Notifications
- A/B Testing
- Crash Reporting
- Remote Config.
- Identity
- Live Update
- Analytics
- Storage
- Tables

Mission control for mobile apps
Demo
Wrap up

Mobile DevOps is like a puzzle
Microsoft has all the pieces
Visual Studio Team Services puts them in place
Microsoft Mobile DevOps Overview

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