



Windows® Phone

Selling an Application

Session 14



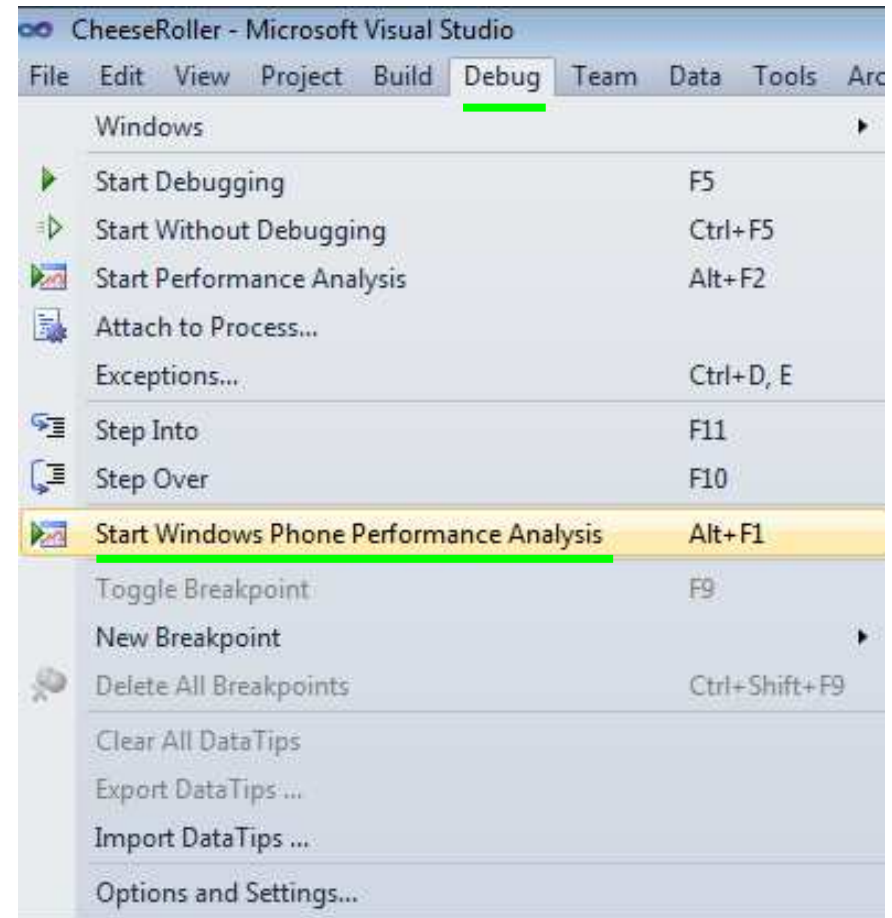
Topics

- Performance Analysis
- Creating an Application for Sale
- The Marketplace Testing Tool
- The Windows Phone Marketplace
- Advertising Supported Applications
- Optimising Your Sales
- What to do next

Performance Analysis

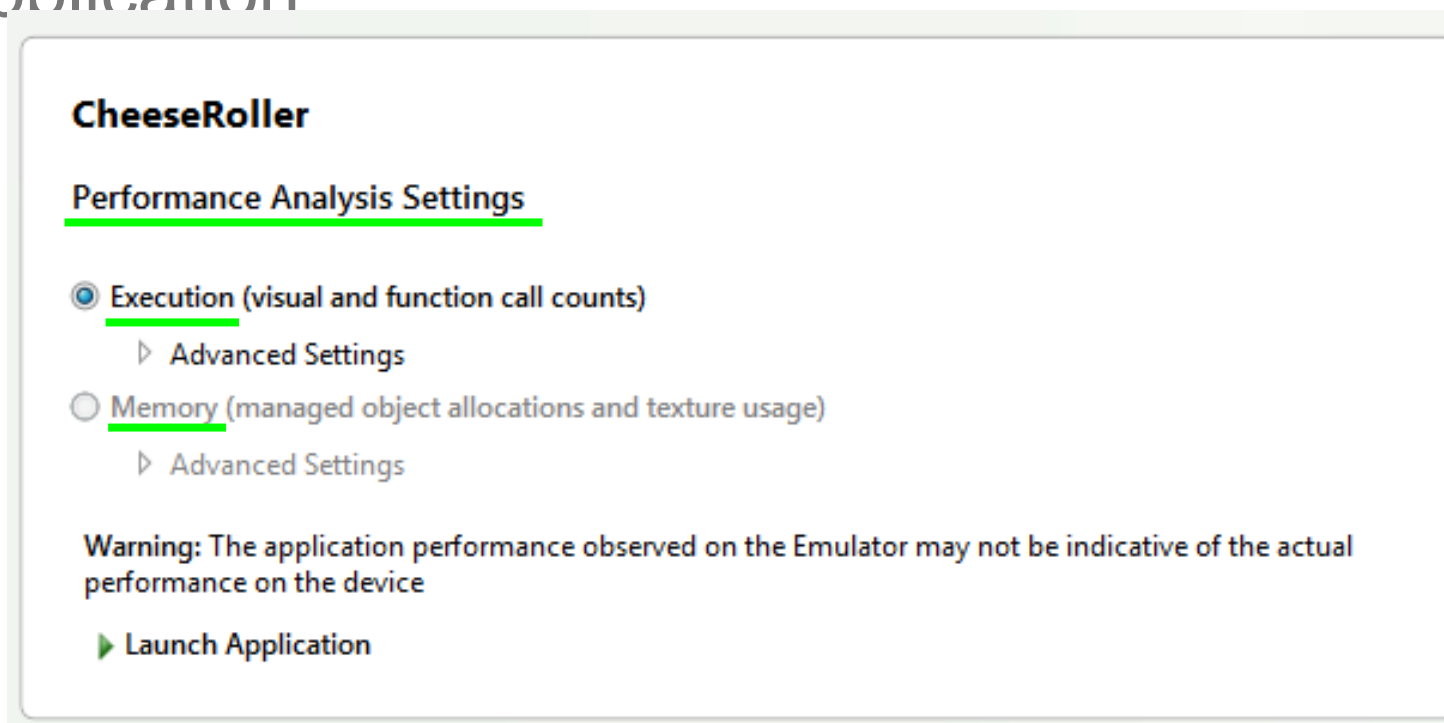
Starting Performance Analysis

- The performance analysis tool will tell you where your program is spending most of its time
- Then you can consider optimising those parts
- It is activated from the Debug menu



Performance Analysis Settings

- You can create and activate diagnostic settings that you can use and reuse as you develop the application



Analysis Data

- The analysis provides plenty of good data



Demo



Demo 1: Performance Testing

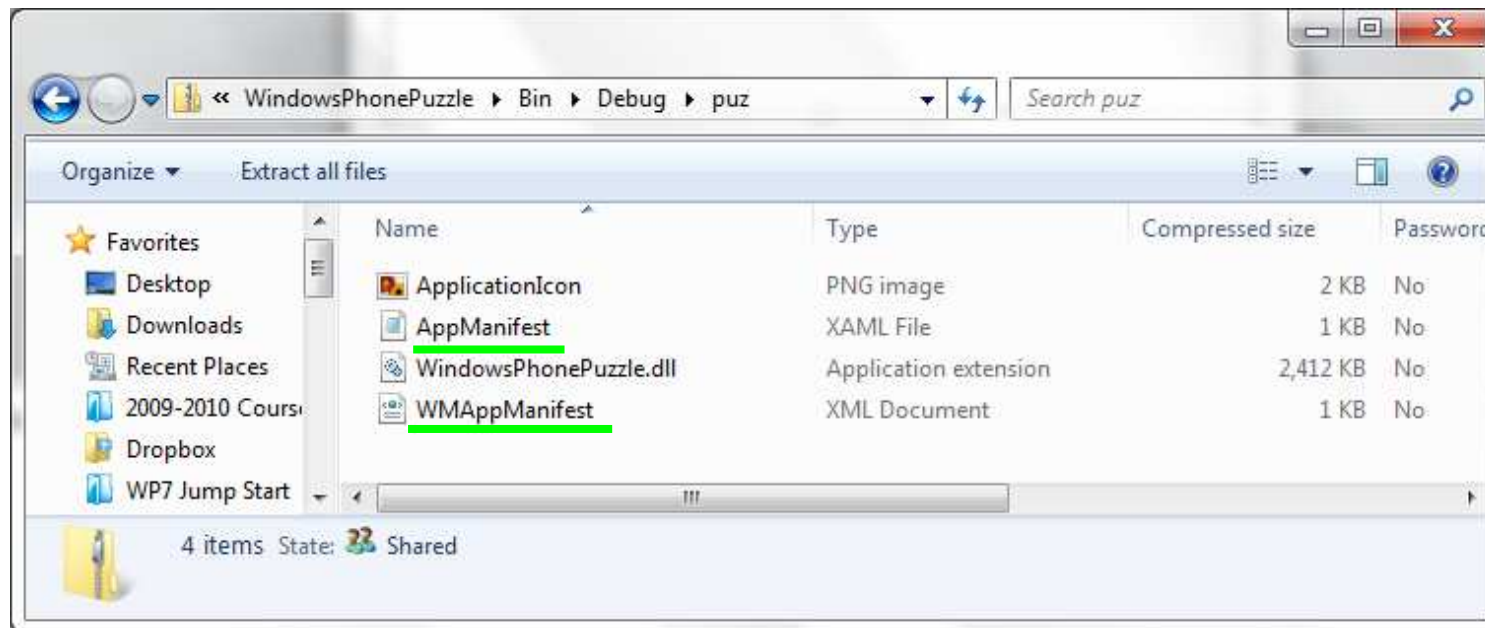
Creating an Application

The Windows Phone XAP file

- The XAP file brings together all the elements of your program application
- It is the item that is actually pushed onto the device when it is deployed
- The XAP file provides a common format for all Windows Phone apps & games
 - Declarative, manifest-based installation
 - Integrated into security model of phone
 - Tied to your developer identity

XAP File Anatomy

- The XAP file is actually a zip file
- It contains manifest files that describe the contents and the application



AppManifest File

```
<Deployment xmlns=
"http://schemas.microsoft.com/client/2007/deployment"
  xmlns:x="http://schemas.microsoft.com/winfx/2006/xaml"
  EntryPointAssembly="WindowsPhonePuzzle"
  EntryPointType="WindowsPhonePuzzle.App"
  RuntimeVersion="3.0.40624.0">
  <Deployment.Parts>
    <AssemblyPart x:Name="WindowsPhonePuzzle"
      Source="WindowsPhonePuzzle.dll" />
  </Deployment.Parts>
</Deployment>
```

- This file is built for you and identifies the components in the XAP file

WMAppManifest.xml

- The other manifest file is very important
 - It identifies the services that your application wishes to make use of
 - It also configures the application itself
- The Marketplace deployment mechanisms can use this to ensure that users know what an application is going to do
- An application that attempts to use a service which is not requested in the WMAppManifest will be rejected by the Marketplace validation process

WMAppManifest.xml Capabilities

```
<Capabilities>
  <Capability Name="ID_CAP_LOCATION"/>
  <Capability Name="ID_CAP_MEDIALIB"/>
  <Capability Name="ID_CAP_PHONEDIALER"/>
  <Capability Name="ID_CAP_PUSH_NOTIFICATION"/>
  <Capability Name="ID_CAP_SENSORS"/>
  <Capability Name="ID_CAP_WEBBROWSERCOMPONENT"/>
  <Capability Name="ID_CAP_ISV_CAMERA"/>
  <Capability Name="ID_CAP_CONTACTS"/>
  <Capability Name="ID_CAP_APPOINTMENTS"/>
</Capabilities>
```

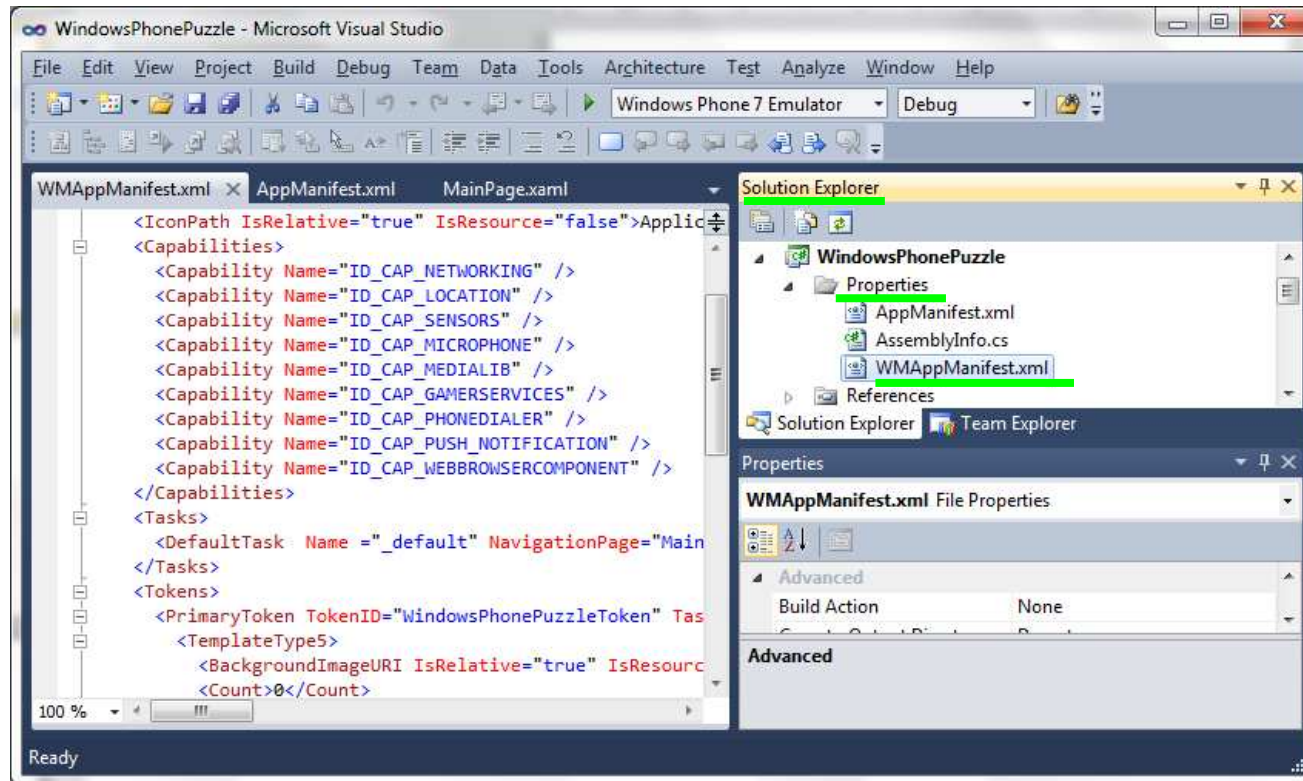
- The default file requests all capabilities
- However, an application should only ask for the ones it needs

WMAppManifest.xml Details

```
<App xmlns=""
  ProductID="{eb43b2c2-b7e9-4e5c-8aea-8047eb5e335f}"
  Title="FunkyCamera" RuntimeType="Silverlight"
  Version="1.0.0.0" Genre="apps.normal"
  Author="FunkyCamera author"
  Description="Sample description"
  Publisher="FunkyCamera">
```

- The file also tells the Marketplace about your program
 - What the application is called
 - What part of the phone it should be installed on
 - What resources it uses on the phone
- You need to edit this file so that it holds valid information about your program

Editing the manifest



- You can edit this file from Visual Studio
- It is in the Properties entry of the solution

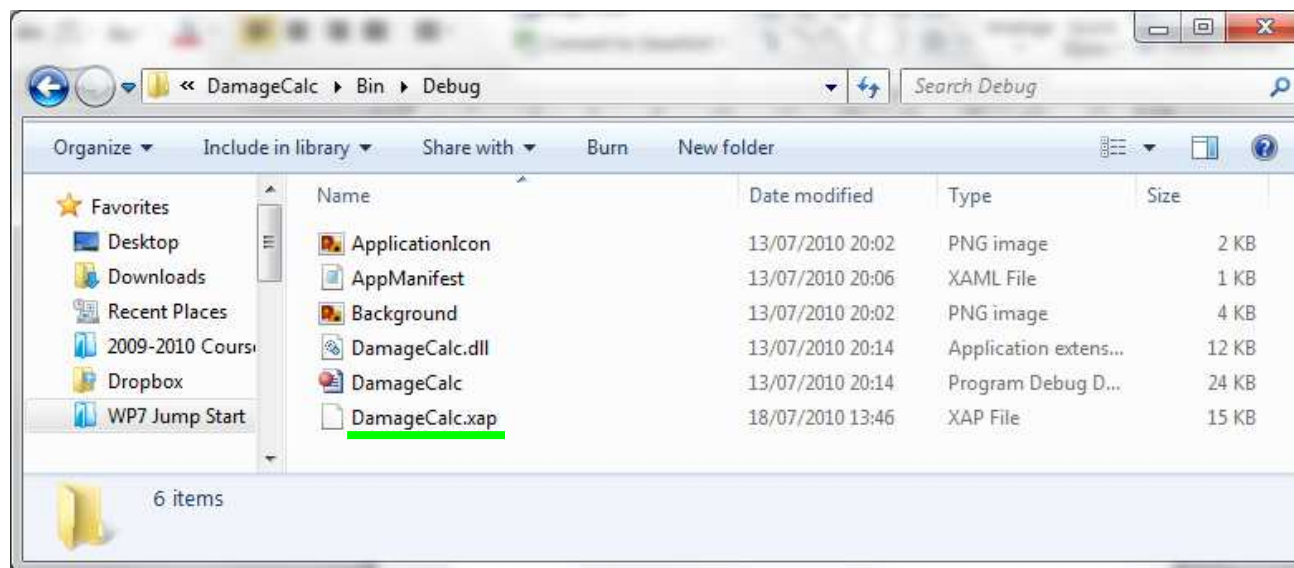
Making Application Artwork



- Windows Phone applications must be accompanied by tile images that are used to represent the program on the device
- You will need to prepare tiles in a selection of sizes
- Then you need to edit your project files to refer to these
- The Marketplace submission process will walk you through the preparation and upload of these elements

Finding your XAP

- If you want to find your XAP file it is held alongside your binaries
 - Remember to make a release build
- Rename it to ZIP if you want to look inside



XAP Rules

- A XAP file should not be more than 20Mb in size for Over the Air (OTA) distribution
- The limit for all files is 400Mb
- For full details of submission requirements and process description go here:

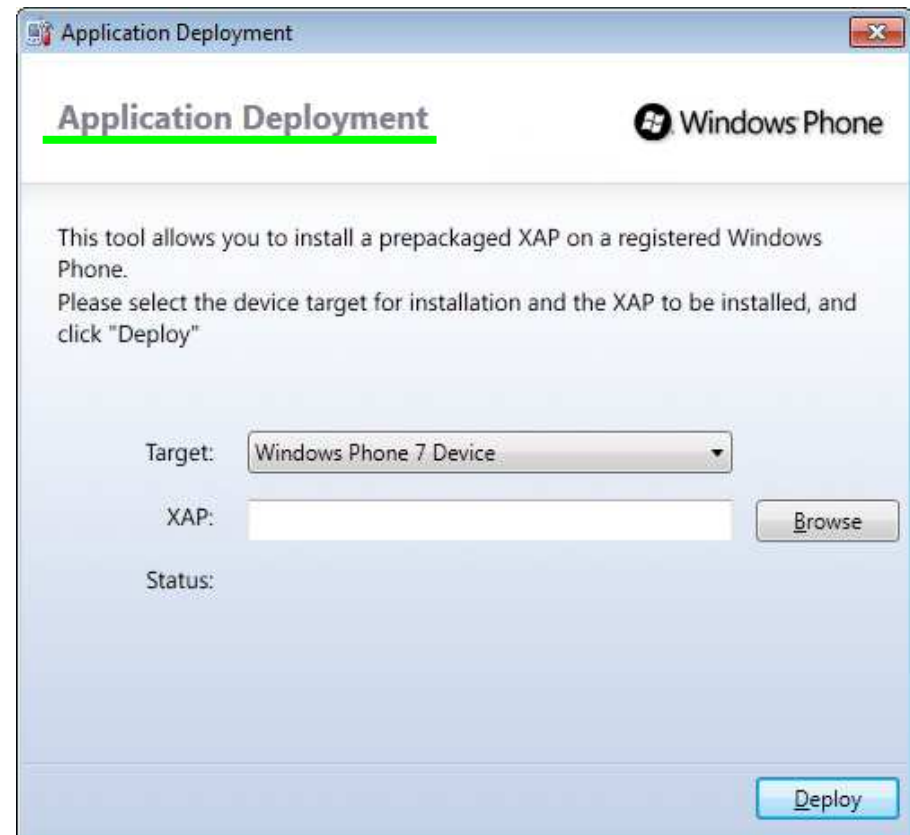
<http://msdn.microsoft.com/en-us/library/hh184843.aspx>

Sharing your XAP files

- If you want people to run try your app but you don't want to give them the source you can distribute the XAP file instead
- They can then load it onto a developer device or the emulator
- They would use the XAP Deployment tool to do this

Local Application Deployment

- You can deploy a XAP file directly onto an unlocked device, or the emulator by using the Application Deployment tool
 - Can deploy to the emulator or a device
- Distribute finished applications for test



Obfuscation

- If you send someone your XAP file they can use disassemblers and other programs to unpick your assemblies and find out how they work
 - They can also obtain all your assets (images and sounds)
- An obfuscator tool will change the layout and variable names in your code to make it harder to decode the way a program works
- It is unrealistic to rely on the phone security to protect your assets and program code as hardware is always vulnerable to direct attack

Adding Obfuscation

- There are a number of tools that will perform this obfuscation for you
- The Windows Phone Marketplace provides access to one from PreEmptive solutions that is worth a look
<http://www.preemptive.com/windowsphone7.html>
- You should add obfuscation to any program that you make available

The Windows Phone Marketplace

Marketplace Rules

- The Marketplace is the only way you can get executable content onto a phone
- Users can buy applications and deploy them onto their devices
- Developers can write applications and deploy them to their own devices for testing
 - Registered developers can use up to 3 devices
 - Student developers can use one device

Joining the Marketplace

- Register to be a member of the marketplace for \$99 per year
- Students can register for free via Dreamspark
- Registered developers can submit applications for approval in the marketplace
- Marketplace members have their identity validated when they join and are allocated a unique digital signature to sign their marketplace submissions
- Join at: <http://create.msdn.com>

Payment

- Developers can set a price for an application or give it away free
- Developers receive 70% of the price paid for the application
- Payment starts once the developer has earned up to \$200
- The payment is made by bank transfer
- All payments are from the USA, which can cause some issues
 - Very good support on the developers site and the Windows Phone Forums for this

Free and Paid Applications

- Developers are limited in the number of free applications they can make available
 - Only 100 (!) free apps per developer per year
 - Can publish further free applications at a extra cost of \$20 per application
- Developers can publish as many paid applications as they like

Applications for sale

- Applications can be free or paid
- Developers can also allow customers to use an application in “try before buy” mode
- Your application can determine which mode it is running in by calling a status API

Using Trial Mode

```
using Microsoft.Phone.Marketplace;  
LicenseInformation info = new LicenseInformation();  
if ( info.IsTrial() )  
{  
    // running in trial mode  
}
```

- It is easy for an application to determine whether it is running in Trial mode
 - But remember that a paid application with Trial Mode will not show up as free in the Marketplace
 - It might be more effective to also distribute a free “lite” version of your application

Advertising SDK

Adding Advertisements to Games

- Very easy to incorporate ads into XNA games
- Download the Ad-Control SDK
 - AdManager added as a game component – easy to retro-fit to an existing game
- Players can click through an advertisement to a web site or call the advertiser from within your game
 - Advertisements are specifically targeted at each player demographic
- You get 70% of the revenue



Microsoft pubCenter



Increase your revenue with Microsoft pubCenter

pubCenter uses advanced targeting and filtering to ensure highly relevant ads appear on your website and mobile application boosting content and increasing your overall yield. [Learn more.](#)

Application developers



Are you a Windows Phone developer?

Make more money by integrating ads into your Windows Phone applications. Take advantage of superior ad targeting, multiple purchase models, and leading resellers including Microsoft's sales force and large-scale Microsoft Advertising adCenter marketplace. [Learn more.](#)

Web publishers

Can I join the program?

We are currently in a pilot phase and focused on large publishers. If you are a brand-name publisher, publisher network or media company with over 200 million monthly page views and/or 50 million monthly search queries and would like to be a partner in our network, please contact us with your site description and statistics for further evaluation. Processing of requests may take up to 30 days. You may email us at: pubscreen@microsoft.com

Sign up for pubCenter

Preferred language

English (United Kingdom)

Sign up now

Sign in to pubCenter

Sign in with Windows Live ID

Sign in

To use Windows Live ID to sign in to pubCenter, first [link](#) your pubCenter user name to a Windows Live ID.

Sign in with pubCenter ID

User name

Password

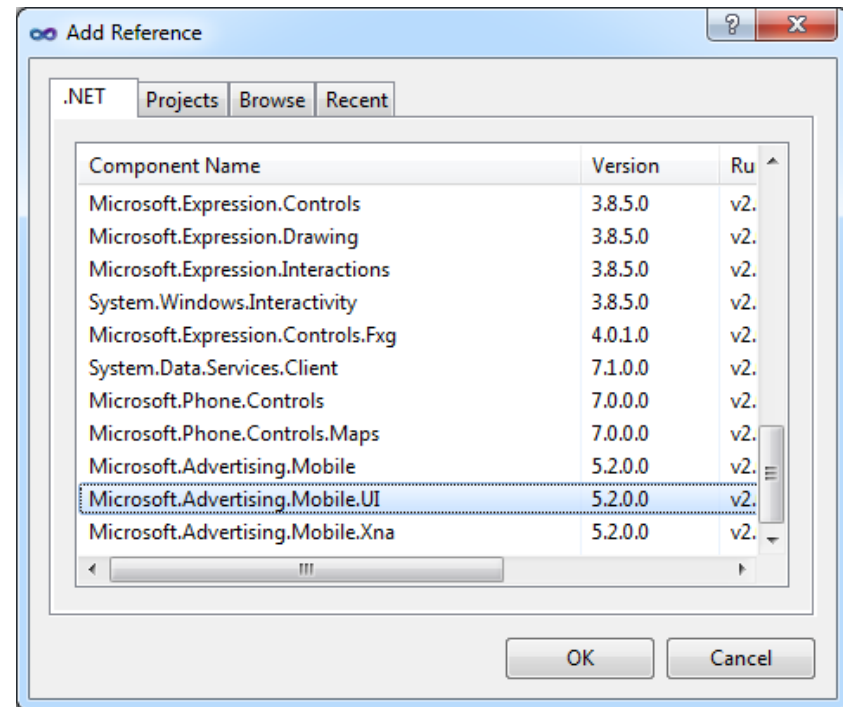
[Forgot your user name or password?](#)

Sign in

- Sign up here so that you can incorporate ads in your games
 - <http://pubcenter.microsoft.com>
- Find out more about Windows Phone Advertising
 - <http://advertising.microsoft.com/mobile-apps>

Advertising SDK

- The Advertising SDK is now part of the Windows Phone SDK
- Include a Silverlight Ad control in an application or an XNA Drawable Ad into a game
- This is very easy to do



Marketplace Submission

Application Validation

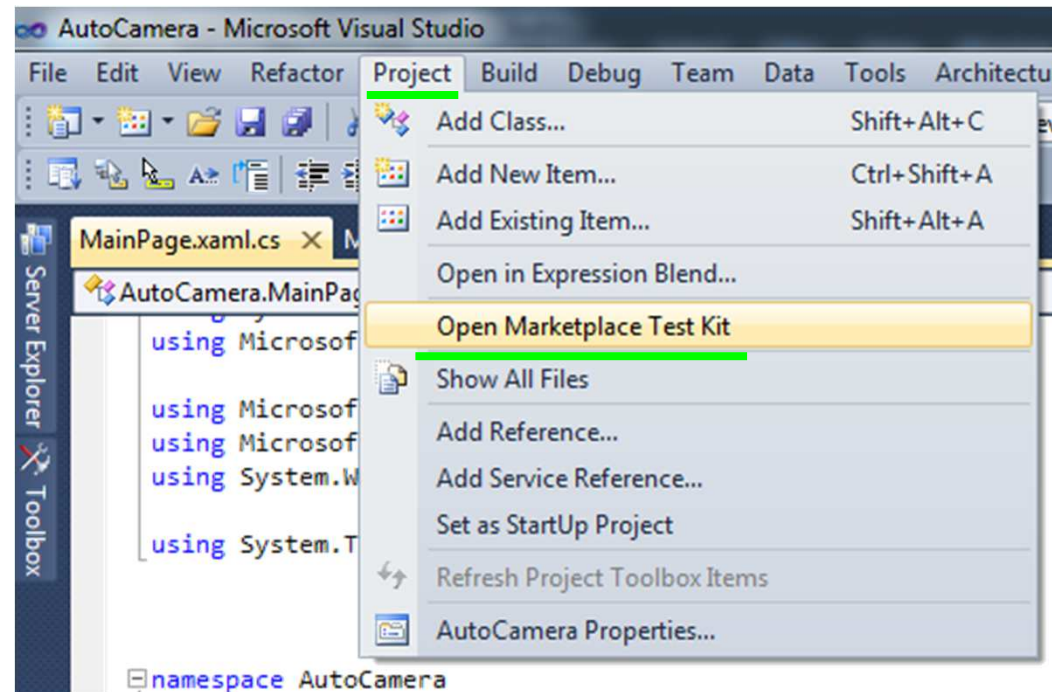
- When you submit your application for validation the system performs a number of automated tests
 - Checks if the application makes use of any capabilities that were not specified
 - Checks for any unmanaged or disallowed libraries
 - Ensures that all the required assets are provided
- Then the application is manually tested to ensure proper behaviour in a number of scenarios
 - Proper dormant/tombstone behaviour

Validation Results

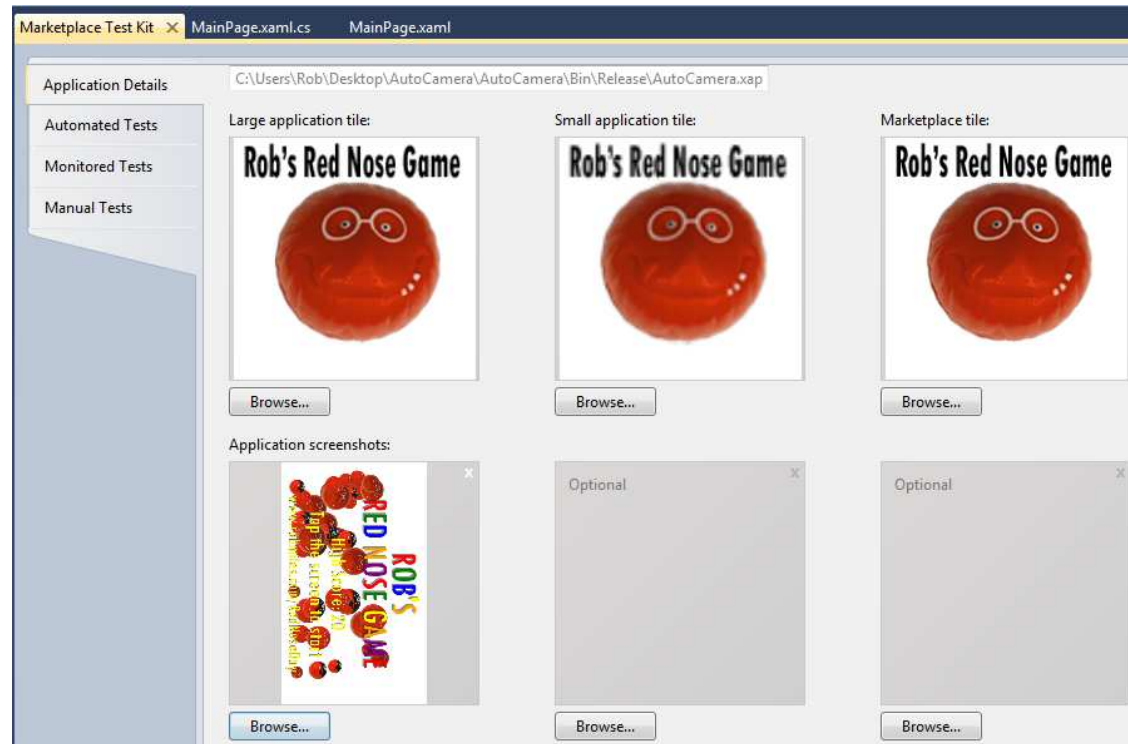
- The testing process takes a few days and generates a testing report that you can use to fix the problems
- This will include specific feedback on the issues that were identified
- When the application is resubmitted the retest will focus only on those parts of the application that have changed

The Marketplace Test Kit

- The Marketplace Test Kit lets you perform the same tests on your application before you submit it
- Vastly improves chances of the application passing first time



Testing Kit User Interface



- The test kit checks all aspects of the submission, including the required assets
- It also itemises the manual tests

Demo

Demo 2: Testing Kit

Run Tests		
Passed: 2 Failed: 2		
Result	Test Name	Test Description
✓ Passed	XAP Package Requirements	Validation of XAP file size and content files
✓ Passed	Capability Validation	Validation of application capabilities
✗ Failed	Iconography	Validation of Application Icons
✗ Failed	Screenshots	Validation of Screenshots

Private Beta Testing

- Apps can now be submitted for Private Beta testing
- You can send invitation emails to up to 100 testers who will receive a deep link to the beta application
- They have 90 days to test your application and give you feedback

submit an app!

Let's get started. Distribute your app by giving it a name and uploading the app package. You can also learn what to expect during this [submission and certification process](#).

*** Required fields**

*** App name for App Hub:**

CheeseLander II

App name only visible in App Hub

*** Distribute to:**

☐ Public Marketplace

☒ Private Beta Test. Learn more about [beta testing](#).

*** Browse to upload a file:**

Browse

Max size: 225 MB

Expected format: *.xap

*** App version number:**

1 . 0

Maximising Uptake

Application Uptake

- There are now quite a few applications in the marketplace
- But there is still plenty of scope for making a name (and some money) for yourself
- Here are some tips to help maximise the uptake of your applications

Design to Sell

- The icons that you use, and the description of your application, are crucial to attracting potential buyers
- Don't design the application icons and write the description the night before you put the program onto Marketplace
- These should be created and themed along with the product right from the start
- It is worth hiring proper designers to help with this

Target Different Localisations

- Windows Phone Marketplace is a worldwide operation
- There is considerable potential for selling foreign language versions
 - Yours could be the number one application in Germany
- Find out how to localise your applications here:
- <http://msdn.microsoft.com/en-us/hh336287>

Use App Connect

- You can tag your application so that a Bing search on the phone for relevant terms would cause your application to be listed among the search results
- You do this by editing the WMAppManifest.xml file and adding an Extras.xml file that links your application to the relevant “Quick Cards” displayed by search
 - There is support for multiple languages
- This could greatly improve the discoverability of an application

msdn.microsoft.com/en-us/library/hh202969.aspx

Provide a Free Version

- You can provide a Trial Version of a paid application
 - But this will not appear in the “Free” section of the Marketplace
- It might be better to produce a “Lite” or “Nagware” version of your application which is free
- An application that is free to use has much greater chance of being downloaded
- It is easy to give an application free trial behaviour and also access the Marketplace to “upsell” to the paid version
- Use this ability to ensure that users can get to run your program without paying anything

Release Upgrades

- Don't wait until your game is complete before releasing it
- Release the first level and then release upgrades as you produce more content
 - Gets you to market more quickly
 - Upgrades will move your application back to the top of the “newly arrived” list
- A very high percentage of the sales of an application are made in the first couple of weeks after release

Change Categories

- Many applications will fit in multiple categories
- A game can be both sport and puzzle
- So move categories and see how this affects the sales figures
- You can track your downloads from the Marketplace and see what the effect of such changes are

Encourage good feedback

- Good feedback is a strong sales motivator
- Ensure that it is easy to provide feedback directly from the application
- Provide good sales support so that users can easily report problems
 - The marketplace now tracks crashes, which can be useful
- Use the logging information from tools like Pre-Emptive to track usage patterns and detect problems

What to do next

Get Registered

- Register as a developer:
 - <http://create.msdn.com>
- Process walkthrough here:
 - http://create.msdn.com/home/about/developer_registration_walkthrough
- This can take a little while to complete, but it is stated and you can unlock phones and deploy applications while your application is progressing
- Students should go to dreamspark.com to get free developer registration

Get the Windows Phone SDK

- The Windows Phone SDK is a single installer that puts all the resources on your PC
 - Visual Studio
 - Emulator
 - Expression Blend
 - Unlocking Tools
 - Silverlight and XNA Templates
 - Advertising SDK

`create.msdn.com/en-us/home/getting_started`

Publish an Application or Game

- App Hub Forums

<http://forums.create.msdn.com/forums/>

- Application Submission Walkthrough

http://create.msdn.com/home/about/app_submission_walkthrough

- Application Certification Requirements

<http://msdn.microsoft.com/en-us/library/hh184843.aspx>

- App Hub FAQ

<http://create.msdn.com/en-US/home/faq>

Make Suggestions

- If you find something you don't like, or have an idea that could make things better, you can use the UserVoice forums to suggest things and vote on them
- The Windows Phone team really do read and respond to these suggestions, and quite a few have found their way into the device

wpdev.uservoice.com

Sliverlight Resources

- Windows Phone Silverlight, Development Quickstarts
<http://create.msdn.com/en-us/education/quickstarts>
- Royalty Free Icons
<http://thenounproject.com>
- Silverlight Resources
<http://silverlight.codeplex.com>
- Design toolbox
<http://www.microsoft.com/design/toolbox>
- Azure Toolkit
<http://watoolkitwp7.codeplex.com>

XNA Resources

- XNA Game Studio 4.0 on MSDN

<http://msdn.microsoft.com/en-us/library/bb200104.aspx>

- XNA Game Development Resource Page

<http://create.msdn.com/en-us/education/gamedevelopment>

- Sean Hargreaves Blog

<http://blogs.msdn.com/b/shawnhar/>

- Farseer Physics Engine

<http://farseerphysics.codeplex.com>

Make Stuff and Have Fun

- The Windows Phone platform is very powerful and very easy to develop for
- The “Mango” release adds lots of new features giving it lots of new potential
- If you already have C# and Visual Studio skills this is a great place to take them further
- If you are learning how to write .NET applications and games the Windows Phone is a great place to hone your skills and show off in the Marketplace

Review

- Windows Phone applications are distributed solely by from the Windows Marketplace
- Applications can be free or paid
- Developers get 70% of the price paid
- Applications are distributed as a single file that contains a manifest and capabilities required
- Only registered developers can upload applications for distribution and test programs on their phones
- An application test kit can be used to pre-test apps
- Developers can send test applications to beta-testers
- Applications can contain adverts