CNIT-133M
Mobile Web Dev w/ HTML, CSS & JS

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http://www.cdasilva.info/conferences.htm

Intel XDK

Intel XDK

- HTML5 development environment – develop, emulate, test-on-device, build apps

- Streamlined workflow – from design to app store

- Integrated design, test, and build tools

- Quick start samples and demos

- Intuitive tools to design responsive apps

- Available for free download from https://software.intel.com/en-us/html5/tools

Overview

- The Intel® XDK gives a comprehensive cross-platform development environment

- Build hybrid HTML5 apps for mobile phone and tablet devices.

- HTML5 apps not limited to smart web pages - you can package your HTML5 code and deploy it directly on a mobile device as a locally installed **hybrid mobile app**.

- Possibility of using the same distribution and monetization channels of native apps.

Accessing Native Capabilities Using Polyfills

- Polyfill – browser fallback, usually in JavaScript
- HTML5 apps installed in mobile devices need to access native hardware capabilities normally not exposed to the browsers
- Cordova and App Mobi APIs bridge that gap
- Intel XDK put together a portfolio of leading products such as AppMobi, Impact.js, Cordova, Ripple Emulator, Adobe Brackets, etc.
- The polyfills allow: take pictures, scan barcode, sign on to Oauth apps such as Facebook, access contacts, play media, access accelerometer

What is the workflow?
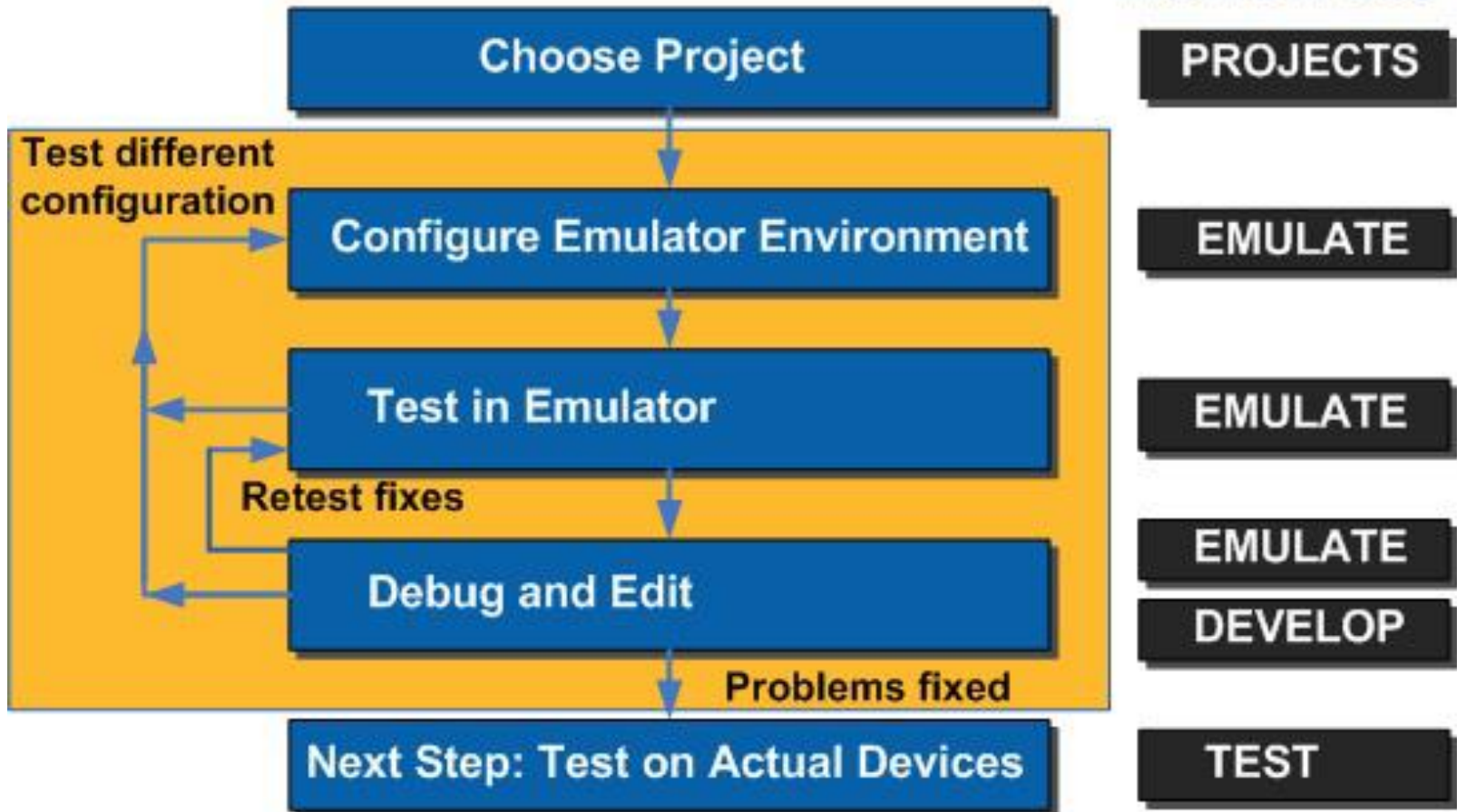
Installation

- Free but you need to create an Intel account
- Account used for wireless testing and build services

Using Intel XDK

- After you install the XDK, when you open it, you will get the following screen to login:
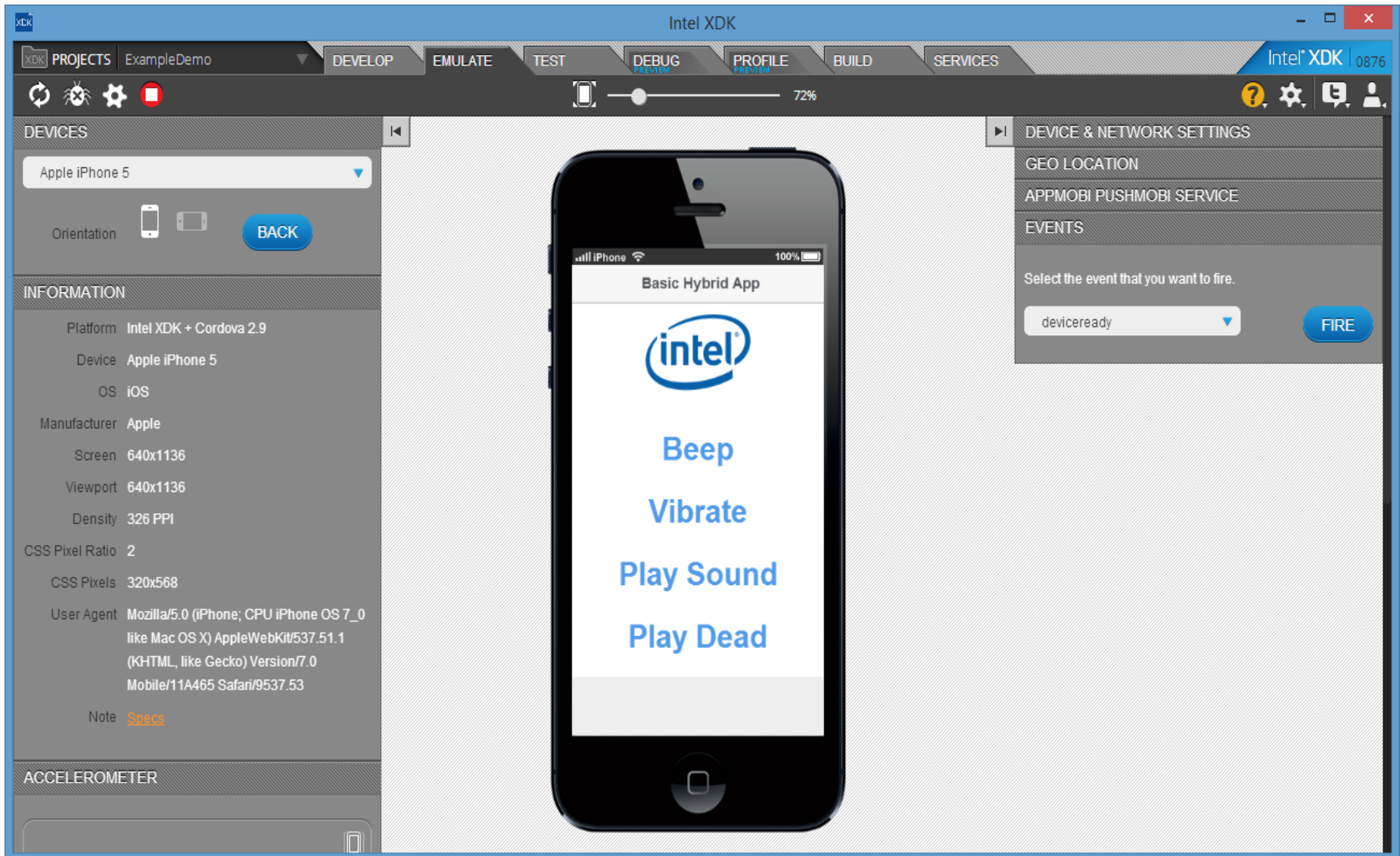
Using Intel XDK – cont.

The Tabs

- **Projects Tab** - change the active project, import an existing project or create a new project. Lists all projects created or imported by the tool. The currently active project is highlighted.

- **IMPORTANT!!!** The index.html file MUST be the main entry point of any HTML5 app

- **Develop Tab** – supports multiple views. Files can be edited using the built-in Brackets or your favorite editor. If you use the App Starter you will have access to a GUI layout editor

The Tabs – cont.

- **Emulate Tab** – to check the functionality and layout of your app using a mobile device simulator based on the Apache Ripple Emulator. Click the Debug button (bug icon) to open a built-in version of the Chrome Developer Tools (CDT)

- Tutorial - https://software.intel.com/en-us/html5/xdkdocs#514749

- More information about the Emulate Tab - https://software.intel.com/en-us/xdkbook/devemulator

The Tabs – cont.

- **Test Tab** – your app can be pushed to a real device via network. You can remotely debug your app using the weinre debug console (http://people.apache.org/~pmuellr/weinre/docs/latest/) This feature is facilitated after you install the App Preview application available for iPhone, Android, Windows

The Tabs – cont.

- **Debug Tab** – a developer preview (like the Test Tab). Uses the CDT for remote debugging (including full JavaScript debugging with breakpoints). Functions only with Android 4.x devices connected to your system via USB – more details at https://software.intel.com/en-us/html5/articles/using-the-debug-tab

- **Profile Tab** – to profile your app and identify hotspots in the JavaScript code – download the app to an Android 4.x device via USB; run the app and collect statistics about your code. A special application – App Analyzer – is used to enable profiling

The Tabs – cont.

- **Build Tab** – before deploying the app, you build it. It packages your app to be submitted to the appropriate app store. Builds are performed in the cloud.

- More information at https://software.intel.com/en-us/html5/article/using-the-build-tab

Projects Tab

- **IMPORTANT!!!** Deleting the project from from the project list does NOT delete the project files or directory from your system

- You can change the active project by simply selecting another one from the list of projects

- Open or Start a new Project in this tab

- **Start a New Project** – name, location and how the new project will be started – the name of the project will become the name of the folder where everything will be stored

- Back to main page of XDK using the left-arrow XDK logo
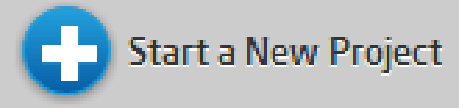
Projects Tab – cont.

- **IMPORT PROJECT OPTION:** Your project must contain an index.html file in the root level project directory. If you are importing a project from a previous version of the Intel® XDK be sure to select the 3.4.0/4.0.0 directory as your import location so that the proper directory structure exists for use in Intel XDK.

Develop Tab

- Full view of the files in your project directory.

- You can edit the code with the built-in Brackets or your favorite editor.

- Intel XDK automatically detects when files are changed (as the result of a save when using your external editor) and will prompt you if additional actions are required due to changes to project files.

- When you open an HTML file, the "**[CODE | DESIGN]**" buttons appear above the file project tree (if project was created with App Starter or Designer).

Emulate Tab

- To identify and fix some defects of your app
- **NOTES:**
  - The processor of your host system is likely faster than the processor of an actual device ➔ performance problems are typically not seen in the emulator.
  - HTML5 features may be implemented correctly on the up-to-date web run-time of your host system and not as correct on the web run-time on the actual device.
- There are two columns of palettes on each side of the emulated device – used to choose a device, settings, etc.
- More info at https://software.intel.com/en-us/node/514750

Creating first project

- Open Intel XDK
- Click **PROJECTS** tab and click **Start a New Project** button
- Click Work with a Demo ➜ various demos are displayed
- Click on the icon of **Basic Hybrid Application**
- Click on **Use This Demo** button
- Type a name for your project and choose the directory where the folder (with the name of your project) will be created and then click on the **Create** button
- A message will be shown and also an invitation for the Quick Tour – you can skip by clicking No Thanks
- The Project Tab will be shown – if needed, click on your project name to open it
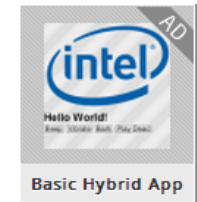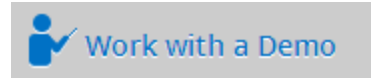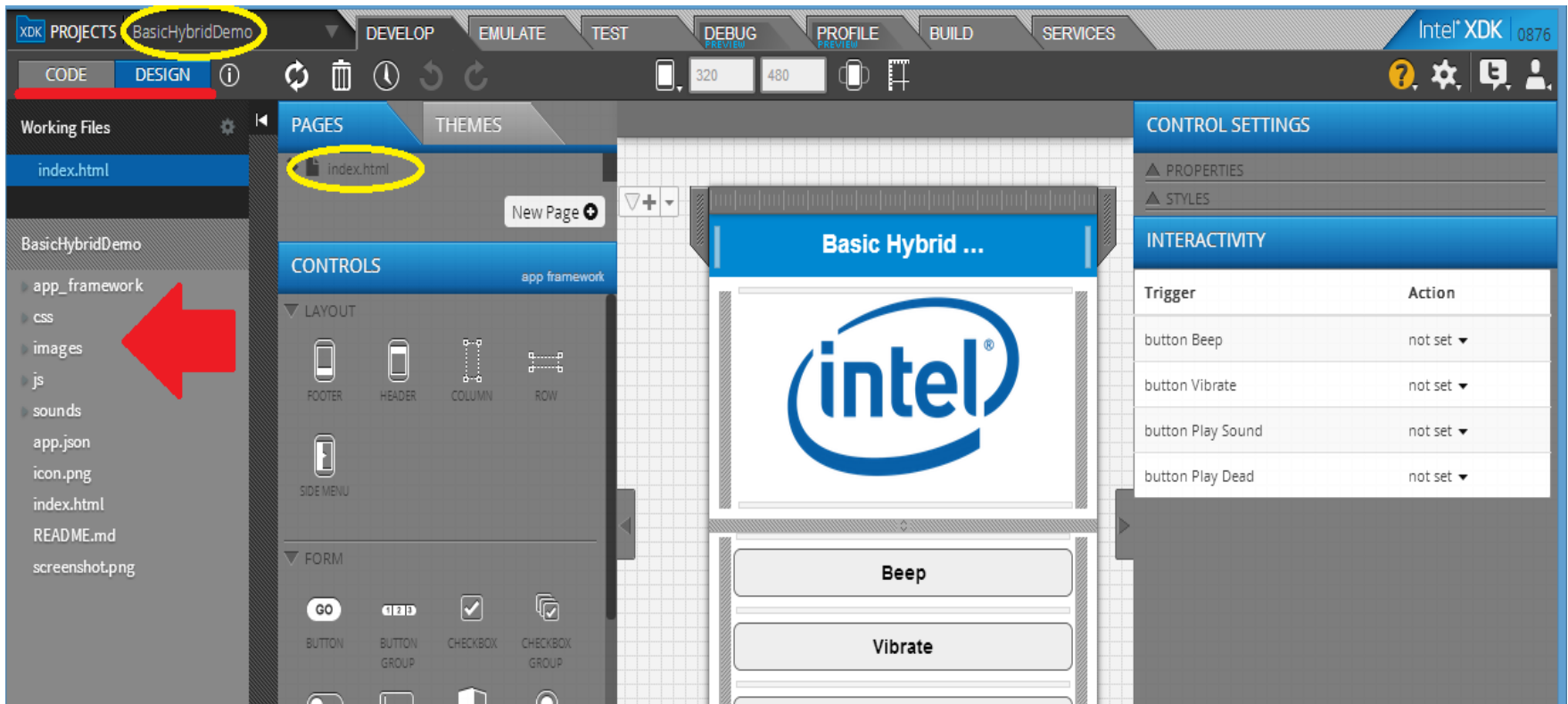
- In the yellow ellipses – project name and index.html (first page)

- Red arrow – the folders of the app – click the arrow to show/hide the files inside those folders

- Red line – mode you can view your code – you can click on **CODE** to see the written code – the picture is showing the **DESIGN** mode
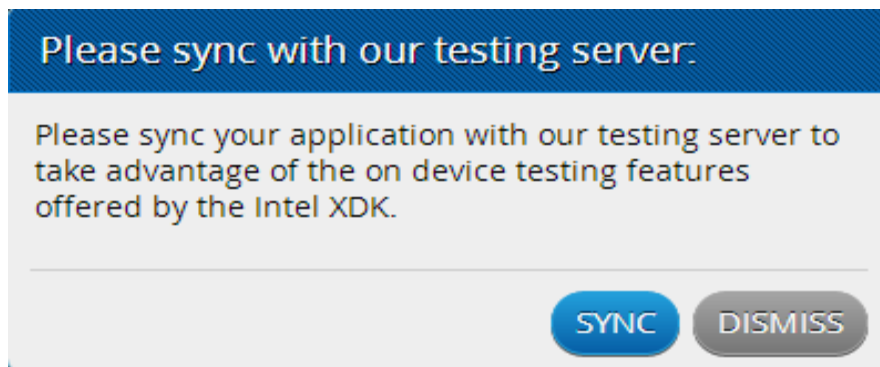
Continuing First Project…

- Go to the Emulate Tab to play around with it
  - Choose a different device – in the red arrow spot
  - Choose a different orientation
  - Yellow ellipsis – icons to reload, debug, settings, stop
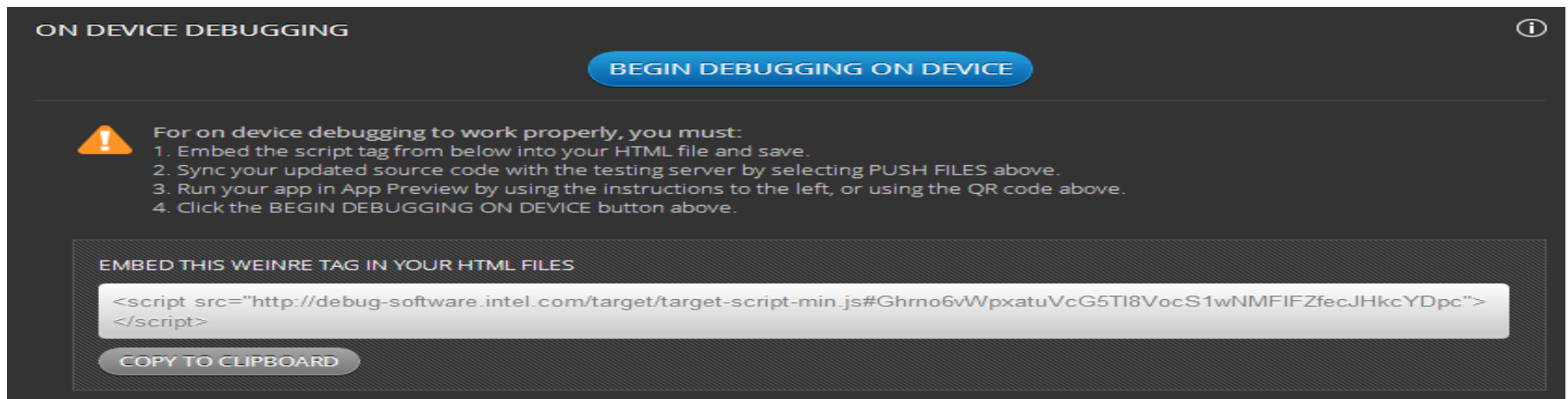 - Etc.

Test Tab

- Used with the Intel **App Preview** app – to test the app in a real device.

- Gives the user access to the on-device debugger allowing developers to see JavaScript messages generated by the app running on device.

- First step = install App Preview in the device

- Inside XDK – go to Test tab – you might see a pop up screen like the one shown below – click on **SYNC** button – you can achieve the same result clicking on the **PUSH FILES** green button

Please sync with our testing server.

Please sync your application with our testing server to take advantage of the on device testing features offered by the Intel XDK.

SYNC   DISMISS

PUSH FILES

Test Tab – cont.

- You can then use the QR code on the test page to launch App Preview **OR** you can follow the directions presented on the left side of the Test Tab screen

- Debugging:
  - Read the message that comes below the BEGIN DEBUGGING ON DEVICE button
  - Add the script tag to your HTML file
  - Push the app again to the cloud
  - Start debugging…

Debug Tab

- Deeper debugging feature than in Test Tab
- Only works with USB-connected Android 4.x devices in USB Debugging Mode (how to - http://www.phonearena.com/news/How-to-enable-USB-debugging-on-Android_id53909)
- You can develop HTML5 code in the Intel XDK and immediately test and debug your app remotely from within the Intel XDK while it runs on a USB-connected Android device.
- An Intel XDK component called *App Preview Crosswalk* is automatically downloaded and installed over the USB connection onto your Android device the first time you use this feature.
- App Preview Crosswalk enables remote debugging (via CDT) and JavaScript profiling. You can then set breakpoints in the code running on your Android device, inspect variables, single step through you code, etc.
- More details on requirements and how to set up a debugging session - https://software.intel.com/en-us/html5/xdkdocs#496098

Profile Tab

- To analyze the performance of the JavaScript in your app (hotspots)

- Only works with USB-connected Android 4.x devices in USB Debugging Mode

- An Intel XDK component called **App Analyzer** is automatically downloaded and installed over the USB connection onto your Android device the first time you use this feature. App Analyzer facilitates profiling your JavaScript code by remotely collecting execution time data from your app without creating and installing an executable image (an APK).

- For more information (requirements and how to profile your app) refer to https://software.intel.com/en-us/html5/xdkdocs#496099
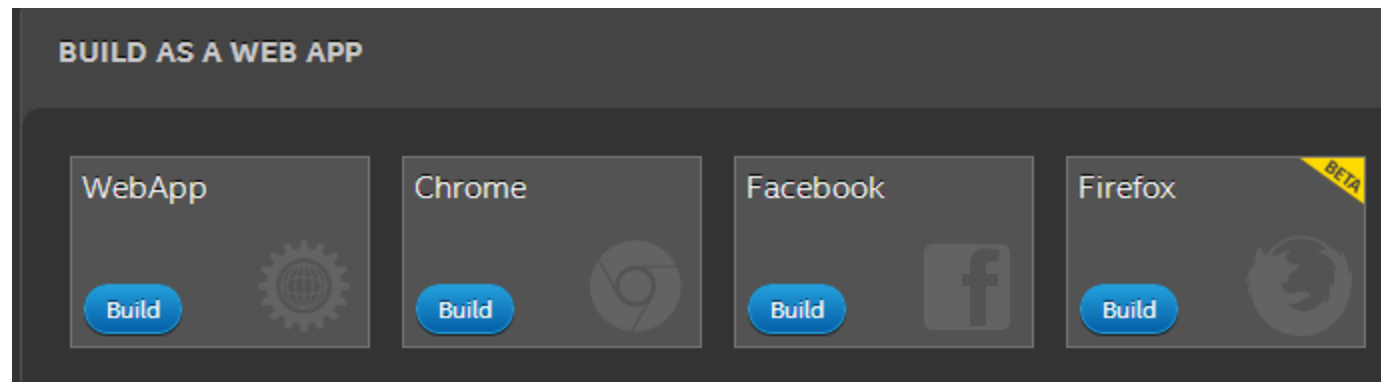
Finished testing, debugging…time to build! Build Tab

- Make packages suitable for submitting to a variety of app stores.

- Three builds available:
  - **Cordova Hybrid Model** – creates native apps based on the Cordova plug-in
  - **Mobile App** - creates a native app package suitable for submission to an app store for download and installation onto a mobile device
  - **Web App** - creates an HTML5 package suitable for submitting to web app stores or for placement on a web server

- **Build a Mobile App or Cordova App:**
  - Click on the Build button for each platform you want to target
  - It connects you to the build server and uploads your files to the Intel XDK build server.
  - Additional information may be necessary (app name, icon and splash screen images, any certificates to sign the app, etc.).
  - A developer's license may be required.

Finished testing, debugging…time to build! Build Tab – cont.

- **Build a Web App:**
  - Fewer targets available – less overhead to put an HTML5 app on the web
  - Mostly convenience builds that add manifest files and other support libraries to your app package.
  - Once you click the **BUILD** button, the process to build the package starts
  - For more details on how to build a Web App - https://software.intel.com/en-us/html5/articles/tut_build_chrome

Exercise

- Follow this tutorial - https://software.intel.com/en-us/html5/articles/intel-xdk-guided-tutorial-content