3rd Party JavaScript in Windows 8 Store Apps

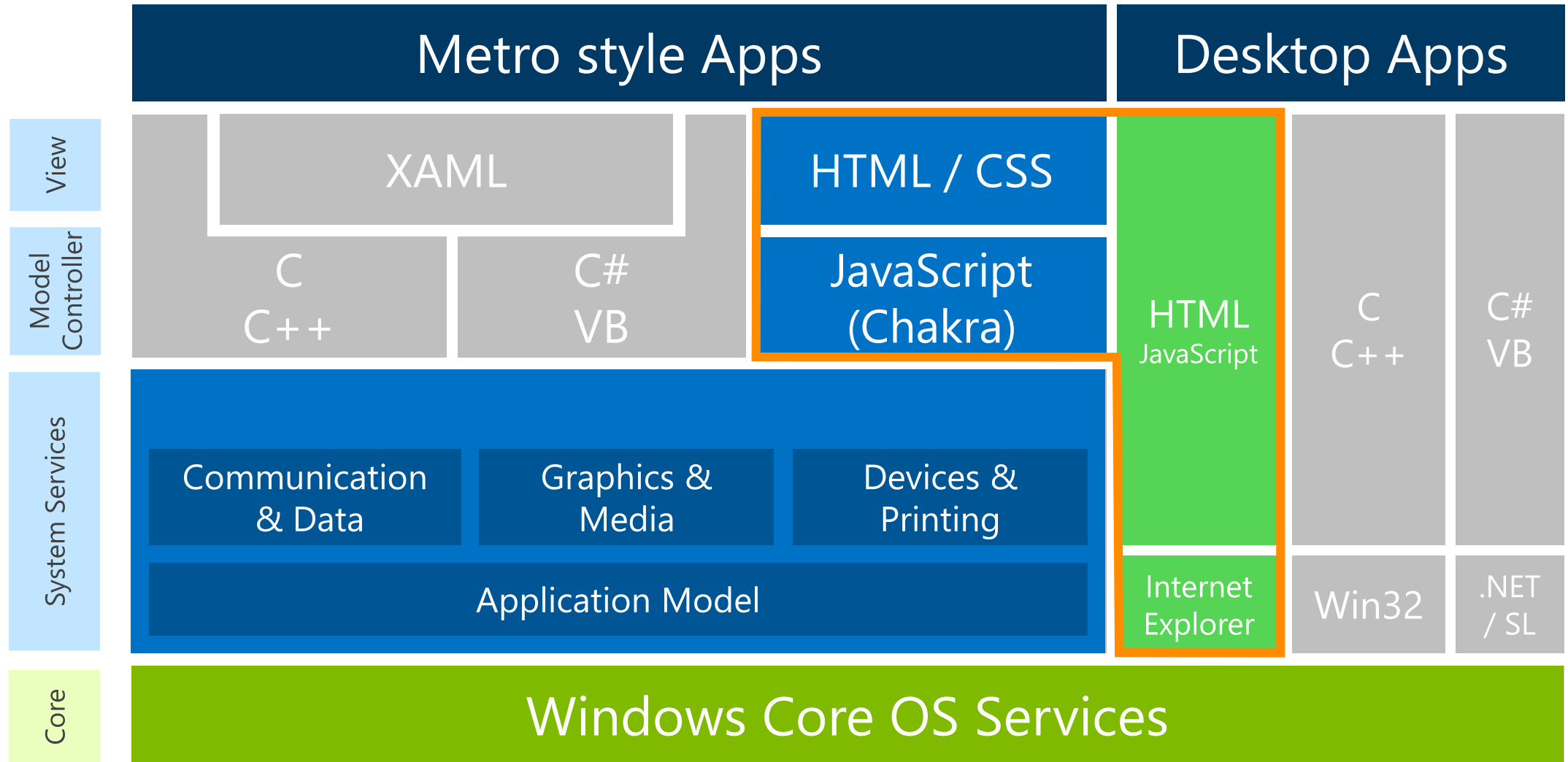@GregLevenhagen

greg.Levenhagen@devTreats.com
gregLevenhagen.com
linkedIn.com/in/gregLevenhagen
gitHub.com/gregLevenhagen

You can build amazing sites and ~~Metro~~ Windows Modern UI style apps with the Windows 8 web platform

Windows 8

	Metro style Apps				Desktop Apps		

View	XAML		HTML / CSS				
Model Controller	C C++	C# VB	JavaScript (Chakra)	HTML JavaScript		C C++	C# VB
System Services	Communication & Data	Graphics & Media	Devices & Printing				
	Application Model			Internet Explorer		Win32	.NET / SL
Core	Windows Core OS Services						

THE FUTURE IS LANDING

Illustration by: Will Phillips Jr.
January 2011

Windows 8 hardware-accelerated web platform

CSS 2D Transforms

CSS 3D Transforms

CSS Animations

CSS Backgrounds & Borders

CSS Color

CSS Flexbox

CSS Fonts

CSS Grid Alignment

CSS Hyphenation

CSS Image Values (Gradients)

CSS Media Queries

CSS multi-column Layout

CSS Namespaces

CSS OM Views

CSS Positioned Floats (Exclusions)

CSS Selectors

CSS Transitions

CSS Values and Units

Data URI

DOM Element Traversal

DOM HTML

DOM Level 3 Core

DOM Level 3 Events

DOM Style

DOM Traversal and Range

DOMParser and XMLSerializer

ECMAScript 5

File APIs

FormData

HTML5 Application Cache

HTML5 async

HTML5 Canvas

HTML5 Drag and drop

HTML5 Forms and Validation

HTML5 Geolocation

HTML5 History API

HTML5 Parser

HTML5 Sandbox

HTML5 Selection

HTML5 semantic elements

HTML5 video and audio

ICC Color Profiles

IndexedDB

Page Visibility

Pointer (Mouse, Pen, and Touch) Events

Selectors API Level 2

Filter Effects

SVG, standalone and in HTML

Timing callbacks

Web Messaging

Web Sockets

Web Workers

XHTML/XML

XMLHttpRequest (Level 2)

Popular CSS3 features in Windows 8

Transforms
2D & 3D transforms

Motion
Animations

Transitions

Layout
Grid

Flexbox

Graphics
Gradients

Filter Effects

Text-shadow

Content flow
Multi-column, hyphenation

Pagination

Position float

Windows hardware acceleration makes these beautiful and fast

Popular HTML5 features in Windows 8

Web Sockets

Web Workers

IndexedDB

Ecmascript 5

File API & Blobs

Geolocation

Audio tag

Video tag

Touch-first

Pointer events

Zoom regions

Snap Points

Forms

Validation

Input types

Spell checking

WinJS

WinDows Library for JavaScript (WinJS)
library for building Metro style apps using JavaScript

Make your apps look and feel great

Matches the Windows Metro design style

Controls for common user experiences

Designed for touch as well as traditional input

Scales across form factors

Build your apps fast and with high quality

Web technologies you're already familiar with

Modern patterns for responsive, reliable apps

Use interactive design tools

WinJS

Helpers for Namespaces, Constructor Definition

Promises

App Model

Navigation

Page & User controls

Data binding

Controls

Animations

Templates

Utilities

Default CSS Styles

Asynchronous programming is becoming the norm

FAIL

Async Helps me Run Well

Promises

- Object that is a promise for a later value
- Hook up to completion with then() method
  - then(completion, error, progress)
- then() returns another promise
- Implementation in base.js: WinJS.Promise

- Common.js promises/A spec
  - http://wiki.commonjs.org/wiki/Promises/A

Promise

```
// Object that is a promise for a later value

WinJS.xhr({
  url:"http://www.example.org/somedata.json"
}).then(function (response) {
    updateDisplay(
      JSON.parse(response.responseText));
}, function (ex) {
  reportXhrError(ex);
});
```

Prefer your own library?　　Go ahead!

· Adhere to the Metro UI and Windows personality

· Understand the webcontext & sandboxing model

· Mix & match works fine

Understanding Context

- Windows Store applications have two different <u>contexts</u> known as Local and Web.

- Download library/framework/etc and load it in the local context.

- …Otherwise, "app can't load remote web content in the local context."

jQuery, XHR and local context

- jQuery > v2.0 has built in support for Windows 8 Store Apps

- jQuery xhr does a cross-domain check (in > v1.6)
  - In local context, your origin is "ms-wwa://{something}"
  - Cross domain check fails
  - *Workarounds*
  - Use WinJS XHR
  - Tell jQuery to bypass the check
    - $.support.cors = true;
    - http://api.jquery.com/jQuery.support/

Host Enforcement

- Prevents potentially "bad" HTML from getting inserted
  - Script blocks, iframes, event handlers, etc.
- Kicks in when setting strings
  - innerHTML
  - outerHTML
  - setAdjacentHTML
- "data-" attributes in general are not on the allowed list
  - WinJS specific ones are ok

Host Enforcement ...We Don't Need No Stickin' Host Enforcement!

Can work around when needed:

- toStaticHTML method (removes all dynamic items from a string)
- Use DOM creation APIs
- Use WinJS.Utilities.setInnerHTMLUnsafe

```
WinJS.Utilities.setInnerHTMLUnsafe( $("#thatConf").get(0), response );
```

- Use execUnsafeLocalFunction

```
MSApp.execUnsafeLocalFunction(function () {
    $("#thatConf").html(response);
});
```

Who Needs Security, Right?

Do a security review if you bypass host enforcement!

jQuery and Unsafe Code

```
$("#form").append("<input name='foo' value='bar' />");
```

versus

```
$("<input>", { name: "foo", value: "bar" }).appendTo("#form");
```

Win8 & Web Sharing

```javascript
if (typeof WinJS !== "undefined" && WinJS.Utilities) {
    WinJS.Utilities.setInnerHTMLUnsafe($thatConf.get(0), response);
} else {
    $thatConf.html(response);
}
```

No More Same-Origin Issues

No need for Script tags, headers or proxy-ing on the server-side.

Bindings ...

- Manual
- One-Way
- Two-Way

If you know web technologies, you are ready to build amazing ~~Metro~~ Windows Modern UI style apps.

Resources

Tools

demo

WinJS

Aug 11-13, 2014

http://thatConference.com

Thank you! ...Questions?

🐦 @GregLevenhagen
✉ greg.Levenhagen@devTreats.com
gregLevenhagen.com
linkedIn.com/in/gregLevenhagen
gitHub.com/gregLevenhagen