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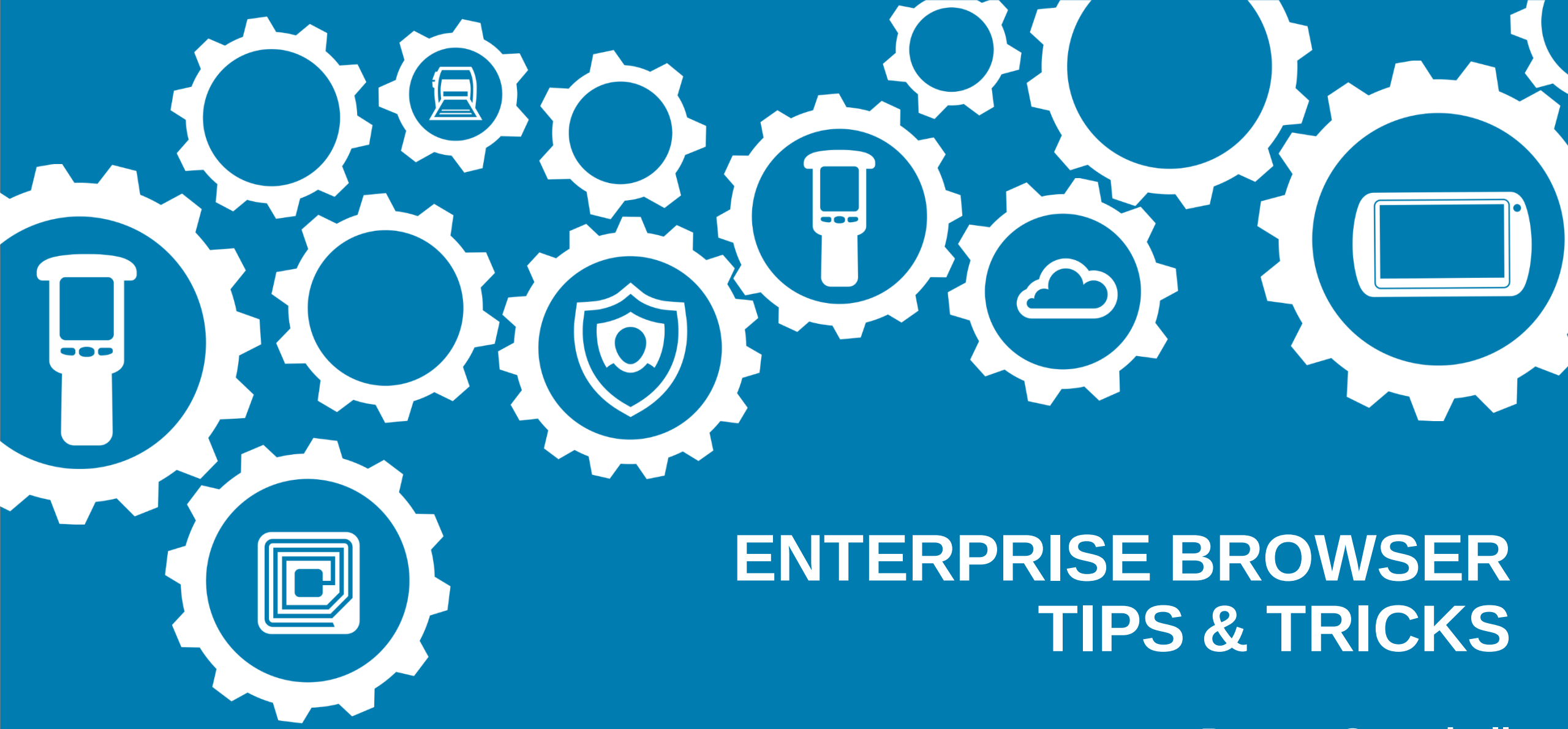

ENTERPRISE BROWSER TIPS & TRICKS

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Developer Session

Preface

EB Promo During Rho EOS Transition

- Rho is End of Sale **June 30th 2017**
- **Promotion**: Migrate to Enterprise Browser SW license free of charge with purchase of Enterprise Browser Software service support contract

Agenda

EB Tips & Tricks: A customer journey from PocketBrowser to Enterprise Browser

- The existing PocketBrowser application
- Moving to Android with Enterprise Browser
- DOM injection: Improving the look and feel
- DOM injection: Key remapping on a touchscreen device
- DataWedge integration with Enterprise Browser
- Controlling DataWedge from Enterprise Browser
- SimulScan integration with Enterprise Browser
- Enterprise Keyboard Integration

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OVERVIEW OF APPLICATION

Overview of Application

History

- Application was originally designed for PocketBrowser to scan barcodes and submit to a backend server
  - Scanning was done through DataWedge
  - PocketBrowser APIs were used for Key Capture to facilitate quick data entry

- Requirement: Application must not be changed.
- Requirement: Application must run on new Zebra Android devices with touch screens

Overview of Application

Application working on MC3190 CE6

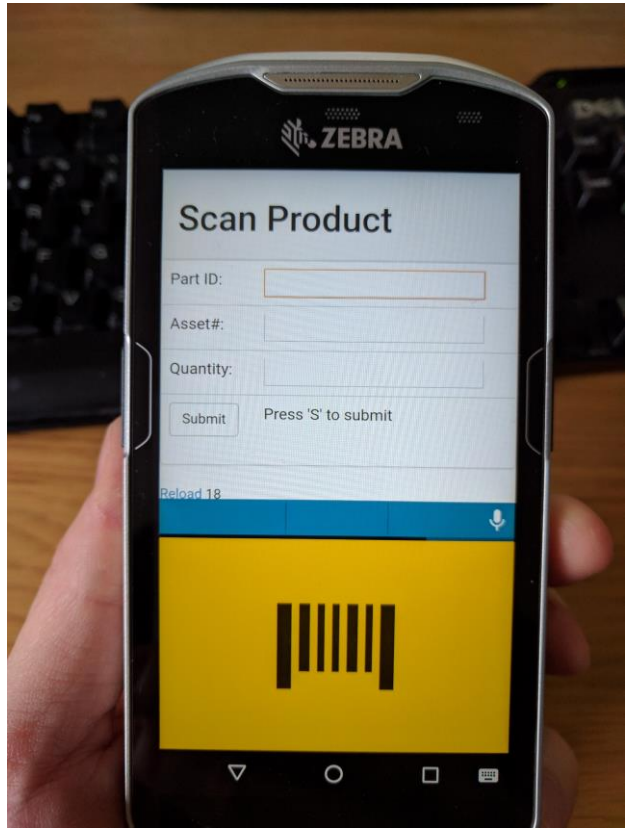
DEMO

Overview of Application

Goal

- Want a visually appealing application which works well on a touch screen and makes employees as efficient as possible

This Presentation

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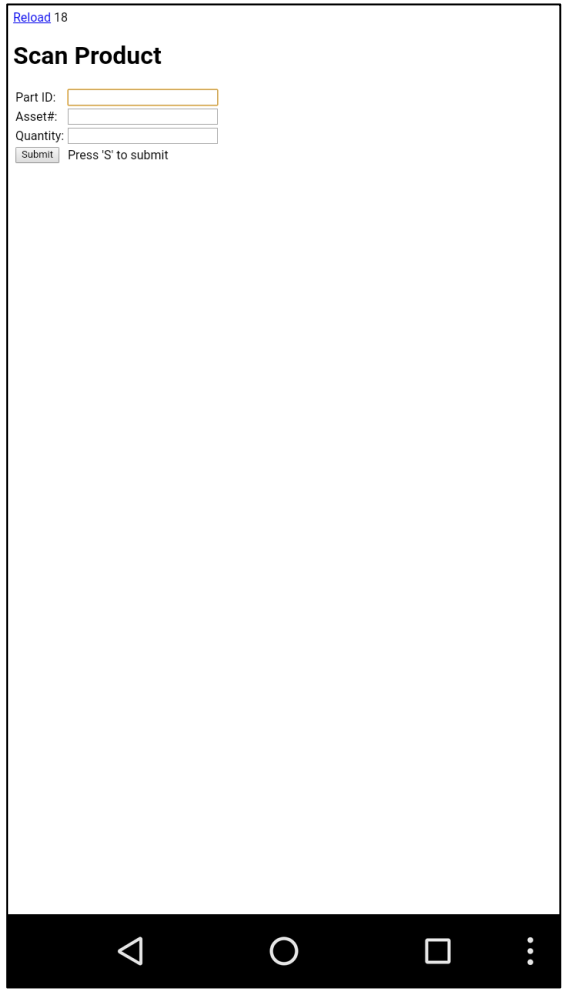
MODIFYING THE APPLICATION

Modifying the Application

Just run the existing application on an Android device

- It will work, but there are several problems:
  - Without a <Viewport> tag, the page is tiny
  - The page looks just as ugly as it did on CE
  - There is no hardware keyboard, the ‘S’ shortcut key will not work
  - Scanning is still done through DataWedge, received as keystrokes but we can do better
  - The form does not make use of input types since these were not recognized in Pocket IE. We can fix that.



Modifying the Application

Principle: DOM Injection

- Enterprise Browser allows us to inject HTML, CSS and Meta Tags onto the page after it has loaded (http://techdocs.zebra.com/enterprise-browser/1-6/guide/DOMinjection/)
- Config.xml:

```
<CustomDOMElements value="file://%INSTALLDIR%/filelist.txt"/>
```

- Filelist.txt:

```
<script src="./android/dom_inject/bootstrap-3.3.7-dist/js/jquery-3.2.0.js"
pages="*" />
<script src="./android/dom_inject/bootstrap-3.3.7-dist/js/bootstrap.js"
pages="*" />
<link rel="stylesheet" type="text/css" href="./android/dom_inject/bootstrap-
3.3.7-dist/css/bootstrap.min.css" pages="*"/>
```

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Modifying the Application

Adding Bootstrap

- DEMO
- Add ViewPort tag to pages:

```
var viewPortTag=document.createElement('meta');
viewPortTag.id="viewport";
viewPortTag.name = "viewport";
viewPortTag.content = "width=device-width, initial-scale=1";
document.getElementsByTagName('head')[0].appendChild(viewPortTag);
```

- Add attributes to elements so Bootstrap renders them properly:
  - Add panel divs, button attributes, labels for headings etc.

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Modifying the Application

Principle: Calling the EB API

- Any hardware keys we previously used in our application make no sense on a touch screen!
  - We could remap these on the terminal with the KeyMap manager but this is a presentation about Enterprise Browser.
- Again, make use of DOM injection to demonstrate that the Enterprise Browser API set can be used.
  - Need to inject ebapi-modules.js as well as a separate js file to invoke the API
  - EB namespace is now available

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Modifying the Application

Demo: Key Remapping

- DEMO
- New JavaScript calls injected into the DOM:
  - Ebapi-modules.js
  - `EB.KeyCapture.remapKey('0x19', '0x53')`
- This remaps the volume down key on our TC51 to an ‘S’ which is recognized by our existing application.
- Note: EB limitation when injecting DOM from server, order of injection cannot be guaranteed therefore do not call until EB namespace exists.

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Principle: Using DataWedge within Enterprise Browser

- What is DataWedge?
- Out of the box DataWedge will not work automatically with Enterprise Browser
- There are a few steps to perform:
  - Remove EB profile from DW as explained here: http://techdocs.zebra.com/enterprise-browser/1-6/guide/datawedge/
  - Set **`<UseDWForScanning value="1">`**. By default it is set to 0
  - Configure DataWedge on your device
    - To map exactly with our PocketBrowser application we should send data as keystrokes
- There are several downsides to sending data as keystrokes:
  - Scanner is enabled regardless of which page is shown
  - Text field MUST have focus to receive scanned data

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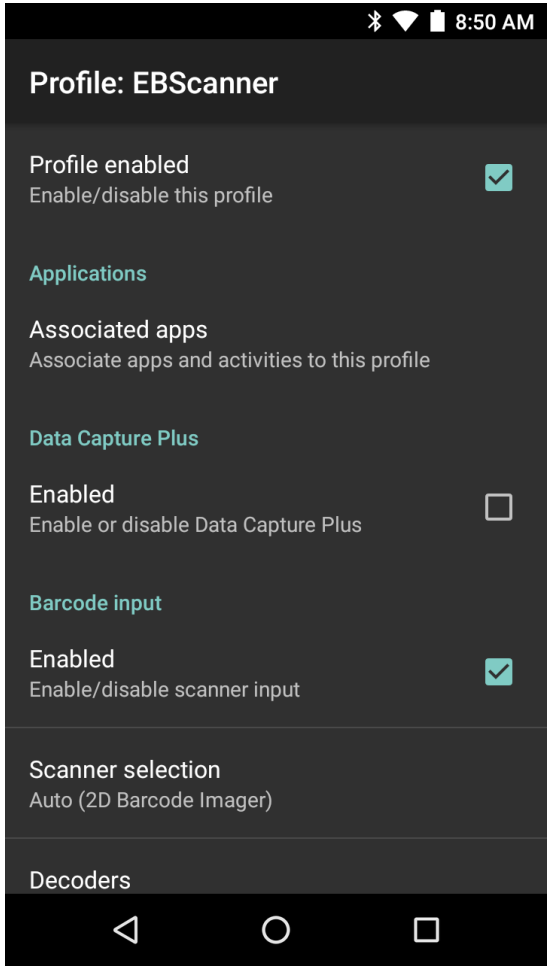
Modifying the Application

Demo: Using DataWedge within Enterprise Browser

- Demo
- Define profile that comes into effect when Enterprise Browser is visible
- This works the same as our application did under PocketBrowser on CE6 using DataWedge for CE.



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Modifying the Application

Principle: Making better use of DataWedge on Android

- DataWedge on Android can send data via Intents and we can receive these Intents within EB
- EB Configuration:

```
<IntentReceiver>

  <EnableReceiver value="1"/>

  <IntentAction value="com.zebra.ebprofilescan.ACTION"/>

  <IntentCategory value=""/>

</IntentReceiver>
```

- DataWedge exposes an Intent based API. We can use this to control various aspects of DataWedge such as the currently enabled profile

Modifying the Application

Demo: Receiving DataWedge Intents and Controlling DataWedge through the API

- DEMO
- DataWedge profile is configured to send intents
- Take action when an Intent (barcode) is received:

```
EB.Intent.startListening(
function(intent) {barcodeAsJson = intent.data;
alert(barcodeAsJson['com.symbol.datawedge.data_string']);});
```

- Enable or disable the scanner with the DW intent API depending on the page shown:

```
EB.Intent.send(
{'intentType':EB.Intent.BROADCAST,
'action':'com.symbol.datawedge.api.ACTION_SCANNERINPUTPLUGIN',
'data':{'com.symbol.datawedge.api.EXTRA_PARAMETER':'ENABLE_PLUGIN'}});
```

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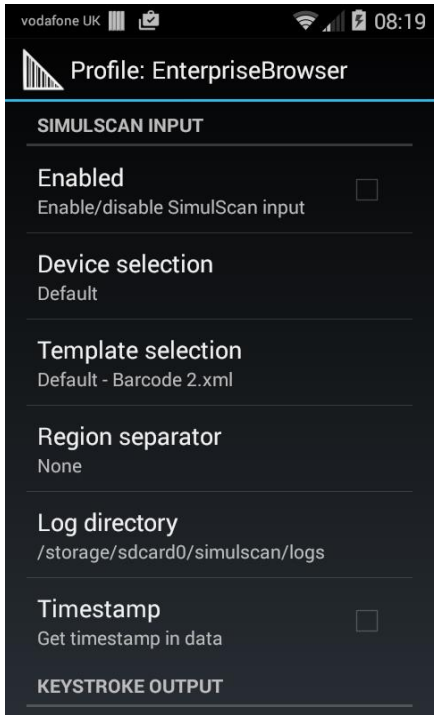
Modifying the Application

Principle: SimulScan

- SimulScan is part of Zebra's Mobility DNA and enables simultaneous capture of barcodes and images as well as optical character and mark recognition.
- More powerful functionality such as OCR / OMR requires a license but barcode capture can be used FOC
- SimulScan offers a DataWedge interface and an EMDK API (but no API in EB yet). We will be using the DataWedge interface
- You can define your own templates but several come pre-installed including a "2 barcode" template which we can use.



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Demo: SimulScan

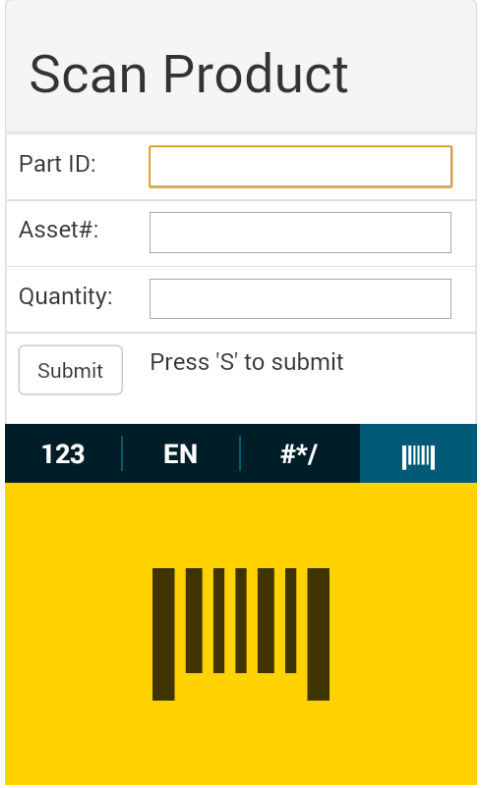
- DEMO
- Additional code in our application to check for a ‘SimulScan’ data capture:

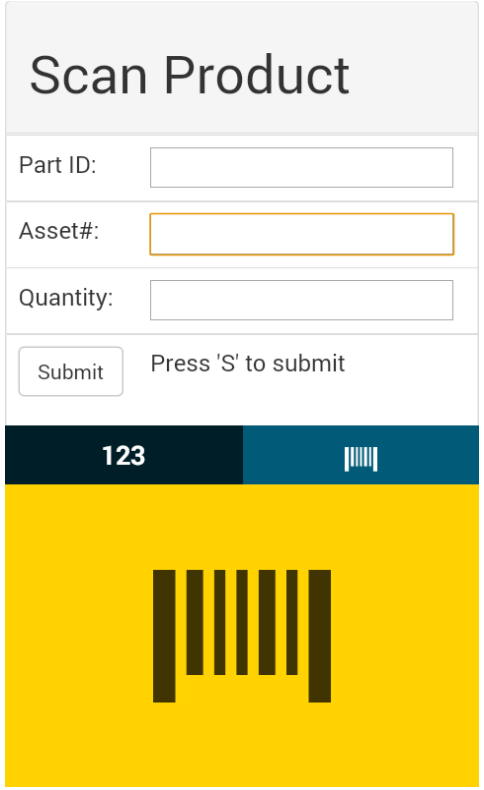
```
if (source == 'simulscan'){
    //  Handle SimulScan Data
    decodedRegions = barcodeJson['com.symbol.datawedge.simulscan_region_data'];
    barcode1 = decodedRegions[0];
    barcode1Data = barcode1['com.symbol.datawedge.simulscan_region_string_data'];
    barcode2 = decodedRegions[1];
    barcode2Data = barcode2['com.symbol.datawedge.simulscan_region_string_data'];
    receivedBarcode("" + barcode1Data);
    receivedBarcode("" + barcode2Data);}
```

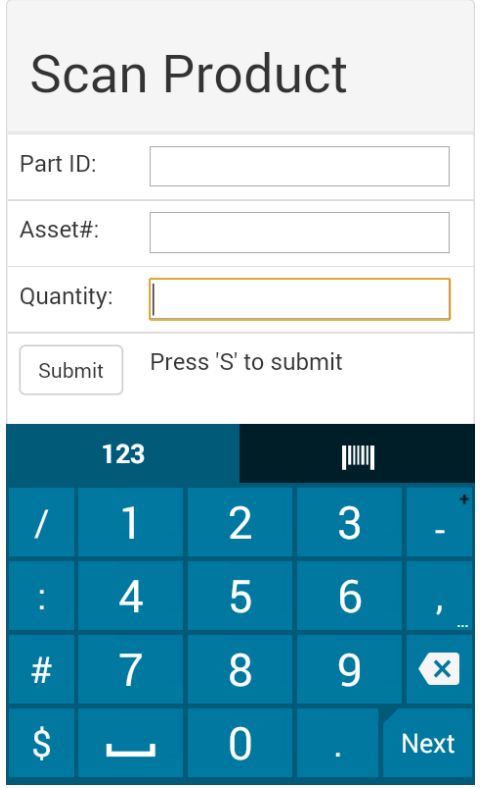
Modifying the Application

Principle: Enterprise Keyboard Integration

- Goal is to change the keyboard layout depending on the format of the text field
- Technology preview, this will be making its way into the product soon







Modifying the Application

Demo: Enterprise Keyboard Integration

- DEMO
- Engineering version of EKB installed for this demo
- DOM injection required to set “type” of input fields: text or number. “Z_method” can be used to denote a scan field
- Add eventlistener() to all input elements:
  - Show SIP through Enterprise Browser API: EB.Sip.show();
  - Open custom URI zebra://input?type=blah. This will be received by the Enterprise Keyboard and the layout changed accordingly.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