

DEVICES BUILT BY US APPS BUILT BY YOU

BUILD ON THE PLATFORMS YOU KNOW ON DEVICES PURPOSE-BUILT FOR THE ENTERPRISE

Enterprise software development needs to be specialized; but developers need control and flexibility to customize solutions. As an Enterprise Developer, Zebra has your technical needs covered!



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ZEBRA DEVELOPER PORTAL

<http://developer.zebra.com>

DEVTALK:

Get Started Developing for Zebra Android Devices

Darryn Campbell

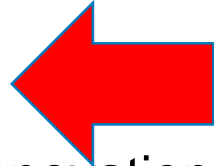
Software Architect, Zebra

4th December 2019

Get Started Developing for Zebra Android Devices

Agenda

- Zebra Android Devices
- Developer Tools & SDKs
- User Experience (Zebra Innovation Design)
- Configuration
- Application Distribution
- Resources



Get Started Developing for Zebra Android Devices

Zebra Android Devices



Get Started Developing for Zebra Android Devices

Developer Tools & SDKs

The screenshot displays the Zebra TechDocs website, which is a resource for developers working with Zebra Android devices. The page is organized into a grid of tool cards, each featuring an icon, a title, a brief description, and a set of navigation links. The cards are arranged in two columns. The left column includes cards for 'Solutions', 'DataWedge', 'EMDK For Android', 'Enterprise Browser', and 'MX'. The right column includes cards for 'Barcode Scanner Tools', 'Diagnostic Tool', 'EMDK For Xamarin', 'Link-OS SDK', and 'RFID'. Each card provides a clear overview of the tool's purpose and offers links to further resources like documentation, tutorials, and sample code. The website's header includes the Zebra logo, the 'TechDocs' title, and navigation links for 'About TechDocs', 'I Need Tools For...', 'Feedback', and a search function. The browser's address bar shows the URL 'techdocs.zebra.com'.

Available Product Documentation x +

techdocs.zebra.com

TechDocs

About TechDocs I Need Tools For... Feedback

Solutions

Apps built for Zebra's Android mobile computing devices to help corporate end-users increase productivity in the workplace and improve efficiency of their workflows.

ActiveEdge App Gallery Best Practices Device Central Device Tracker
DEX Scan & Pair Enterprise Home Screen Enterprise Keyboard EKB Designer
OEMConfig PowerPrecision Console Help

Barcode Scanner Tools

Software Development Kits (SDKs) for building data-capture apps that use Zebra's barcode scanners.

Android Linux Chrome OS OP08

DataWedge

7.4

An app included with Zebra Android and Windows mobile computing devices that provides barcode scanning and processing services for virtually any other app on the device.

About Getting Started Setup Profiles Settings APIs Demo App & Samples

EMDK For Android

7.4

The Enterprise Mobility Developer Kit for building Java apps for Zebra's Android mobile computing devices includes Java sample projects using EMDK APIs for data capture.

About Get Started Tutorials Samples Guides Profile Mgr FAQs APIs

EMDK For Xamarin

5.0

The Enterprise Mobility Developer Kit for building Xamarin apps for Zebra's Android mobile computing devices includes sample projects using C# APIs for data capture.

About Getting Started Tutorials Samples Guides Profile Manager APIs

Enterprise Browser

2.0

A platform for building apps that work with virtually any Zebra mobile computing device using standard web technologies such as HTML5, CSS3 and JavaScript.

About Getting Started Setup Tutorials Usage Guides Config.xml APIs

Link-OS SDK

2.15

The Link-OS SDK makes creating powerful printer apps simple and straightforward.

Android Android-BTLE Android-Card iOS PC-Java PC-Card-Java
PC-Card-.NET PC-.NET Web Services Xamarin Best Practices Samples

MX

Zebra's Mobility DNA - an added layer of enterprise-class security and manageability for Android devices.

About MX MX Features TC20/TC25 Features Which MX is installed?

RFID

Software development kits, guides, code samples and powerful tools to take full advantage of Zebra RFID readers.


About Getting Started About Xamarin Getting Started Xamarin
Support Portal RFID

Get Started Developing for Zebra Android Devices


Developer Tools & SDKs

Available Product Documentation

techdocs.zebra.com

TechDocs


About TechDocsI Need Tools For...Feedback



Solutions

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Barcode Scanner Tools

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AndroidLinuxChrome OSOPOS




DataWedge

7.4

An app included with Zebra Android and Windows mobile computing devices that provides barcode scanning and processing services for virtually any other app on the device.

AboutGetting StartedSetupProfilesSettingsAPIsDemo App & Samples




Diagnostic Tool

1.17

Instantly test and diagnose device system operability to determine system health.

AboutUsageConfigurationTest Criteria




EMDK For Android

7.4

The Enterprise Mobility Developer Kit for building Java apps for Zebra's Android mobile computing devices includes Java sample projects using EMDK APIs for data capture.

AboutGet StartedTutorialsSamplesGuidesProfile MgrFAQsAPIs



EMDK For Xamarin

5.0

The Enterprise Mobility Developer Kit for building Xamarin apps for Zebra's Android mobile computing devices includes sample projects using C# APIs for data capture.

AboutGet StartedTutorialsSamplesGuidesProfile ManagerAPIs

Get Started Developing for Zebra Android Devices

Developer Tools & SDKs

The screenshot displays the Zebra TechDocs website. The browser's address bar shows the URL `techdocs.zebra.com/emdk-for-android/7-4/guide/about/`. The page features a navigation menu with links to 'About', 'Get Started', 'Tutorials', 'Samples', 'Guides', 'Profile Manager', 'FAQs', and 'APIs'. On the left, a sidebar lists 'About EMDK For Android' with sub-links for 'Overview', 'New in v7.4', 'Version History', and 'EMDK-A Components'. The main content area is titled 'About EMDK For Android' with a subtitle 'EMDK For Android 7.4'. A prominent red callout box contains the following text:

Regarding EMDK Barcode Scanning APIs

Zebra strongly recommends the use of DataWedge for all applications that require barcode scanning. While Zebra will continue to support EMDK Barcode APIs, the efficiency and feature richness of intent-based interfaces make it a simpler alternative to app development using EMDK Barcode APIs.

DataWedge facts:

- DataWedge APIs have the same capabilities currently available in EMDK Barcode APIs.
- DataWedge intent-based APIs are easier and faster to implement than EMDK Barcode APIs.
- New features are added to DataWedge before being considered for EMDK Barcode APIs.

A button labeled 'Learn About DataWedge' is located at the bottom of the callout box.

Below the callout, the 'Overview' section begins with the text: 'EMDK for Android extends the Android Studio IDE for Mac OS and Windows with tools for easily creating powerful line-of-business applications for Zebra Android devices. EMDK for Android includes class libraries, sample apps and source code that enables developers to...'

Get Started Developing for Zebra Android Devices

DataWedge and the DataWedge API

- DataWedge is a service running on the device which:
 1. Receives data from an INPUT PLUGIN
 2. Processes that data via DATA FORMATTING (optional)
 3. Passes the data to an application via the OUTPUT PLUGIN
- DataWedge is configured depending on which application activity is in the foreground:
 - DATAWEDGE PROFILES configure how DataWedge should behave and are associated with an application activity
 - When your application activity comes to the FOREGROUND, the DataWedge configuration for that activity comes into effect.

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DataWedge and the DataWedge API

- DataWedge Plugins and formatting

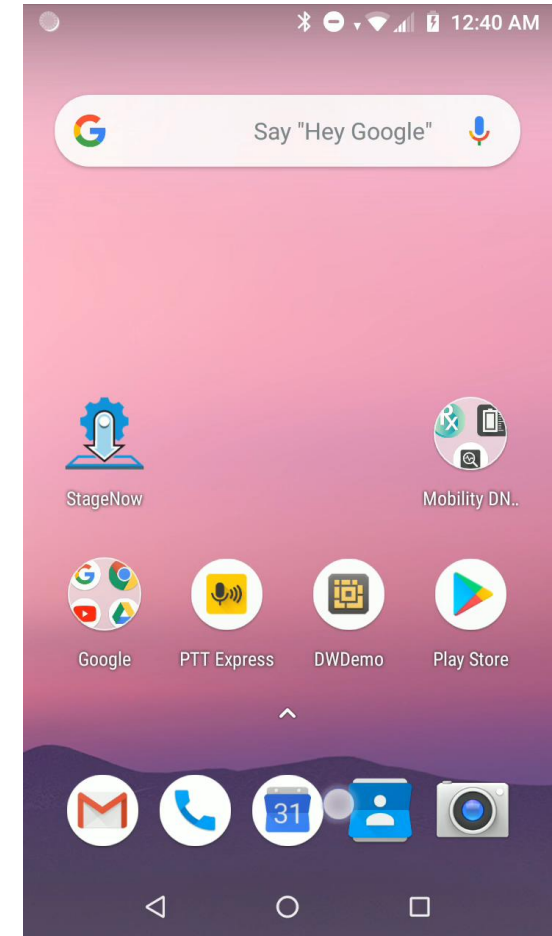
INPUT Plugins	Formatting	OUTPUT Plugins
Barcode	Basic Data Formatting	Android Intent
MSR	Advanced Data Formatting	Keystroke
RFID		Internet Protocol
Serial / USB		
Voice		

- More information available from <https://techdocs.zebra.com/datawedge/7-4/guide/profiles/>

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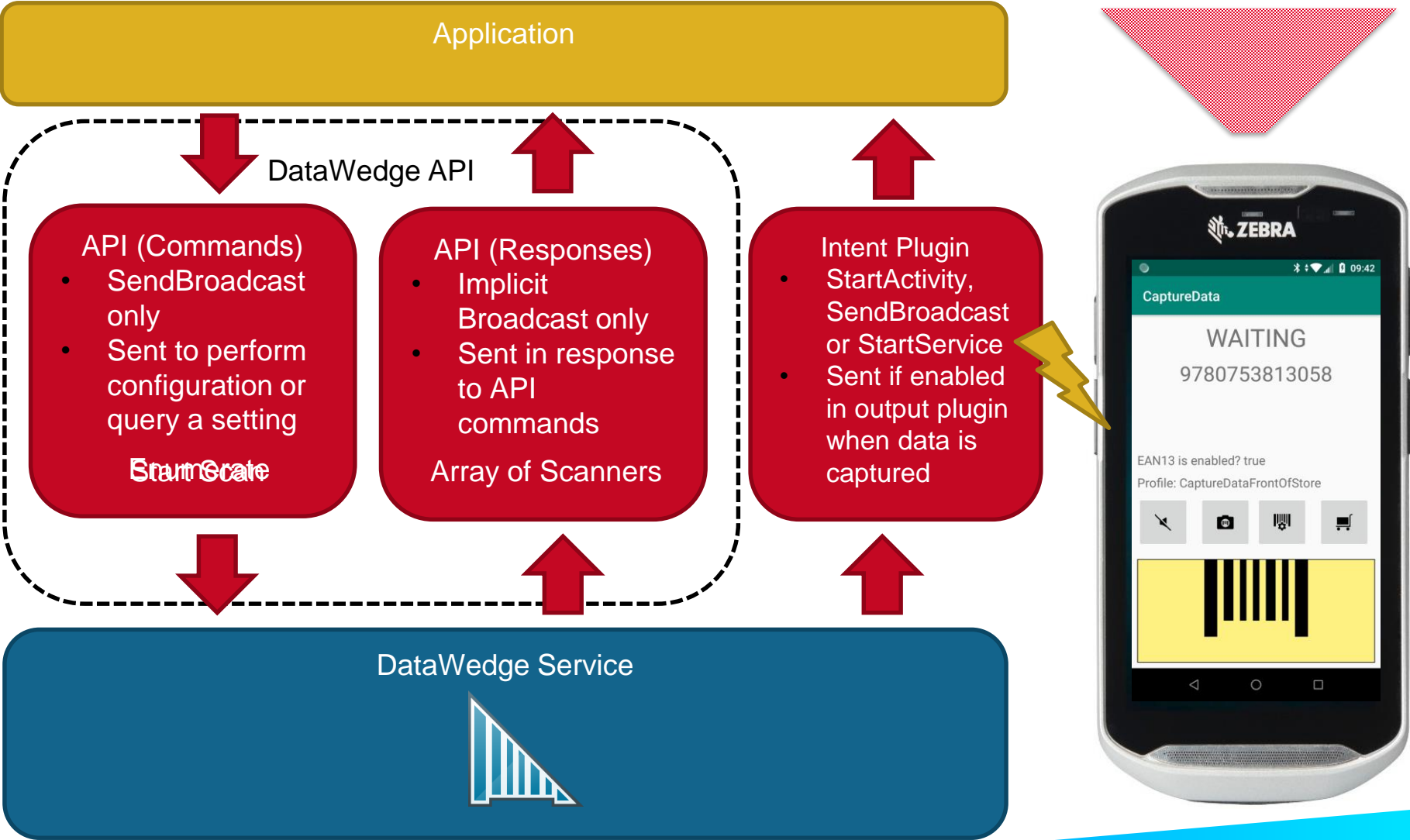
DataWedge and the DataWedge API

- Brief demo of configuring DataWedge
- Demo will:
 - Associate a predefined Profile with Chrome
 - Ensure the Barcode INPUT Plugin is enabled
 - Enable the CANPOSTAL Decoder
 - Ensure both the Keystroke and Intent OUTPUT Plugins are enabled
 - Specify the type of Intent to be a Broadcast Intent
- These settings will be applied whenever Chrome is in the foreground



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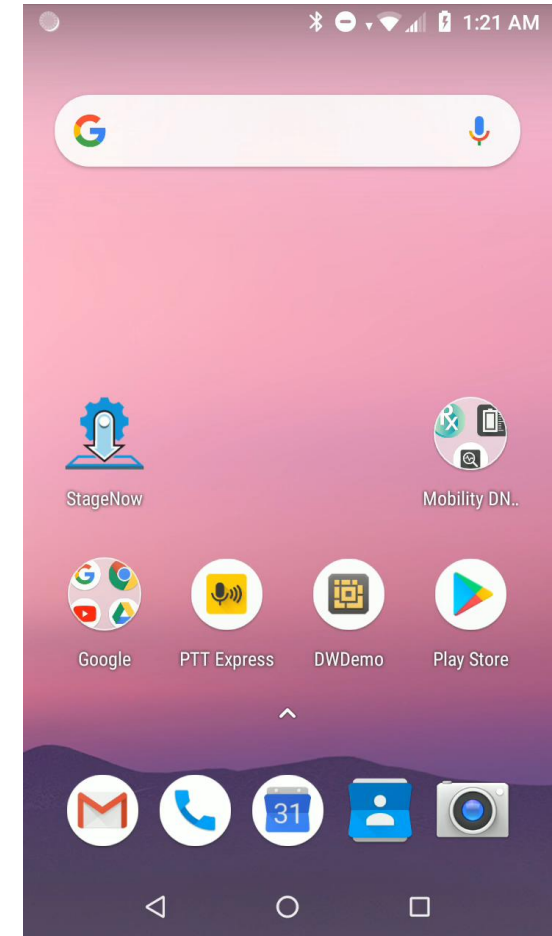
DataWedge and the DataWedge API



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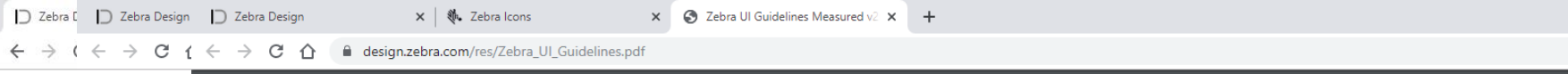
DataWedge and the DataWedge API

- Putting it together: DataWedge sample 'DataCapture1'
 - <https://github.com/Zebra/samples-datawedge/tree/master/DataCapture1>
 - <https://techdocs.zebra.com/datawedge/latest/guide/samples/barcode1/>
- Demo will:
 - Create profile & show this reflected in DataWedge
 - Configure scanner & show this reflected in DataWedge profile
 - Ensure the Barcode INPUT Plugin is enabled
 - Show a scanned barcode being received via Android Intent
 - Show the current DataWedge status (from the DW API)



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User Experience






Colors

User action is the essence of experience design. The emphasis on the primary actions with bold colors make core functionality immediately apparent and provide waypoints for the user.





Main colors

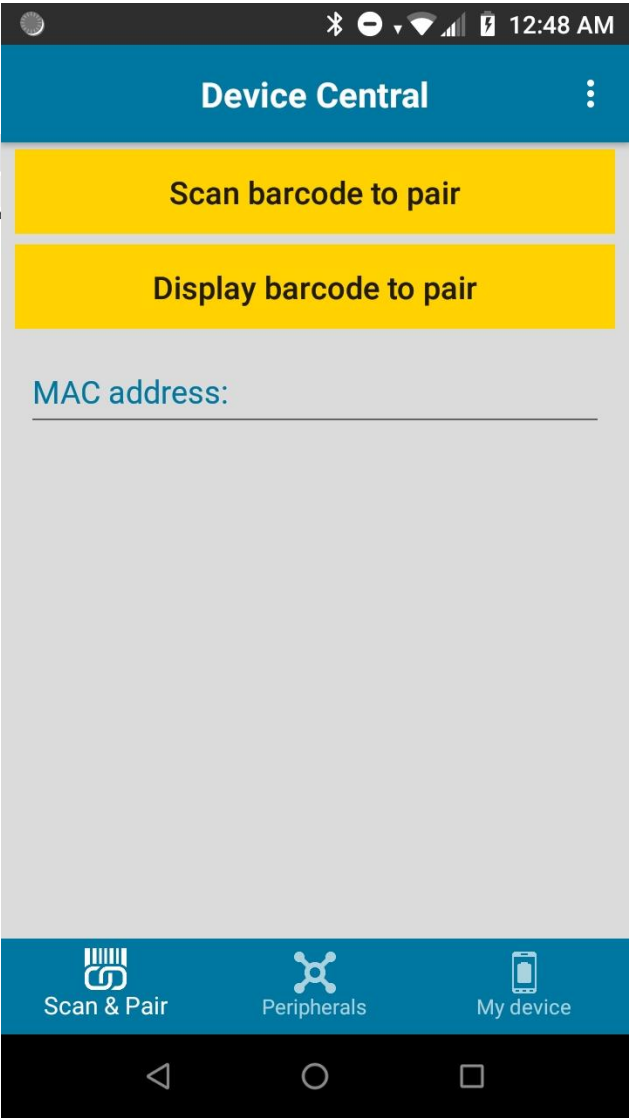
-  255, 210, 0
#FFD200
-  0, 124, 176
#007CB0
-  237, 28, 36
#ED1C24

Neutral colors

-  51, 62, 71
#333E47
-  126, 134, 140
#7E868C
-  219, 217, 214
#DBD9D6

Secondary colors

-  0, 180, 0
#00B400
-  0, 80, 30
#00501E
-  255, 128, 0
#FF8000
-  128, 0, 0



Get Started Developing for Zebra Android Devices

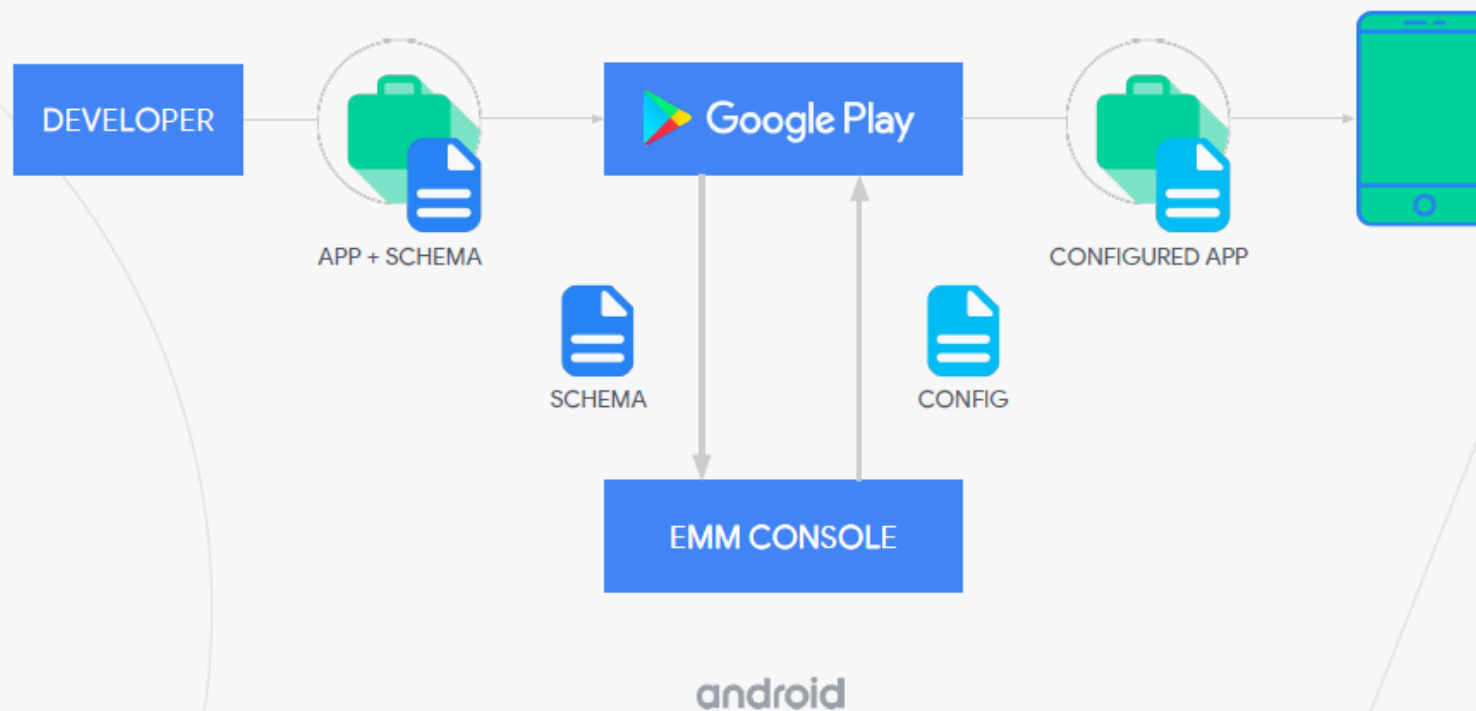
Configuration

- Managed Configurations (formally known as Application Restrictions)
- Industry standard model for application configuration. Google guide is at <https://developer.android.com/work/managed-configurations>
- Allows for an application agnostic way to configure your application from EMMs that support managed configurations.
 - Majority of devices in the Enterprise are managed by an EMM
- For testing without an EMM you can use the Android Management experience: <https://enterprise.google.com/u/0/android/experience/overview>

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Configuration

How does it work?



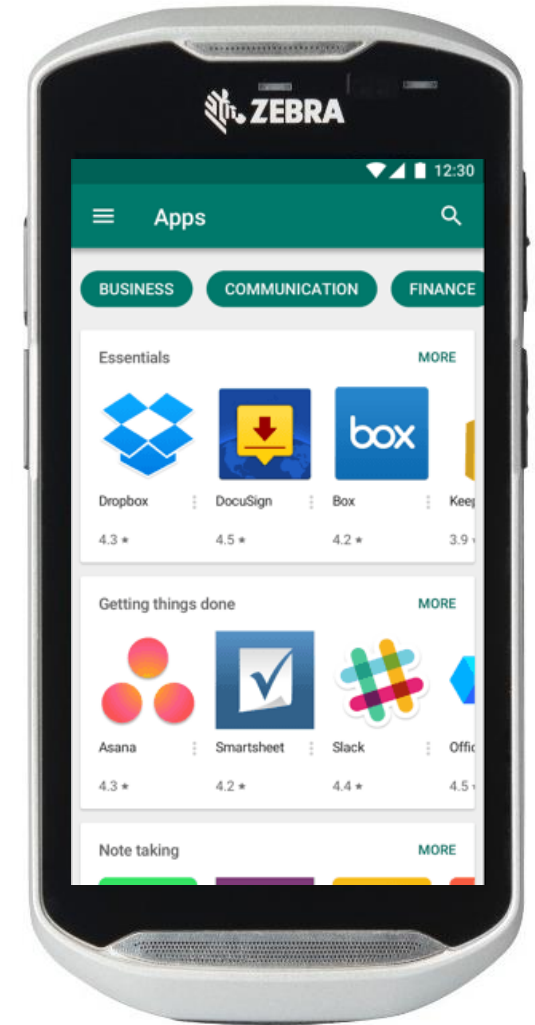
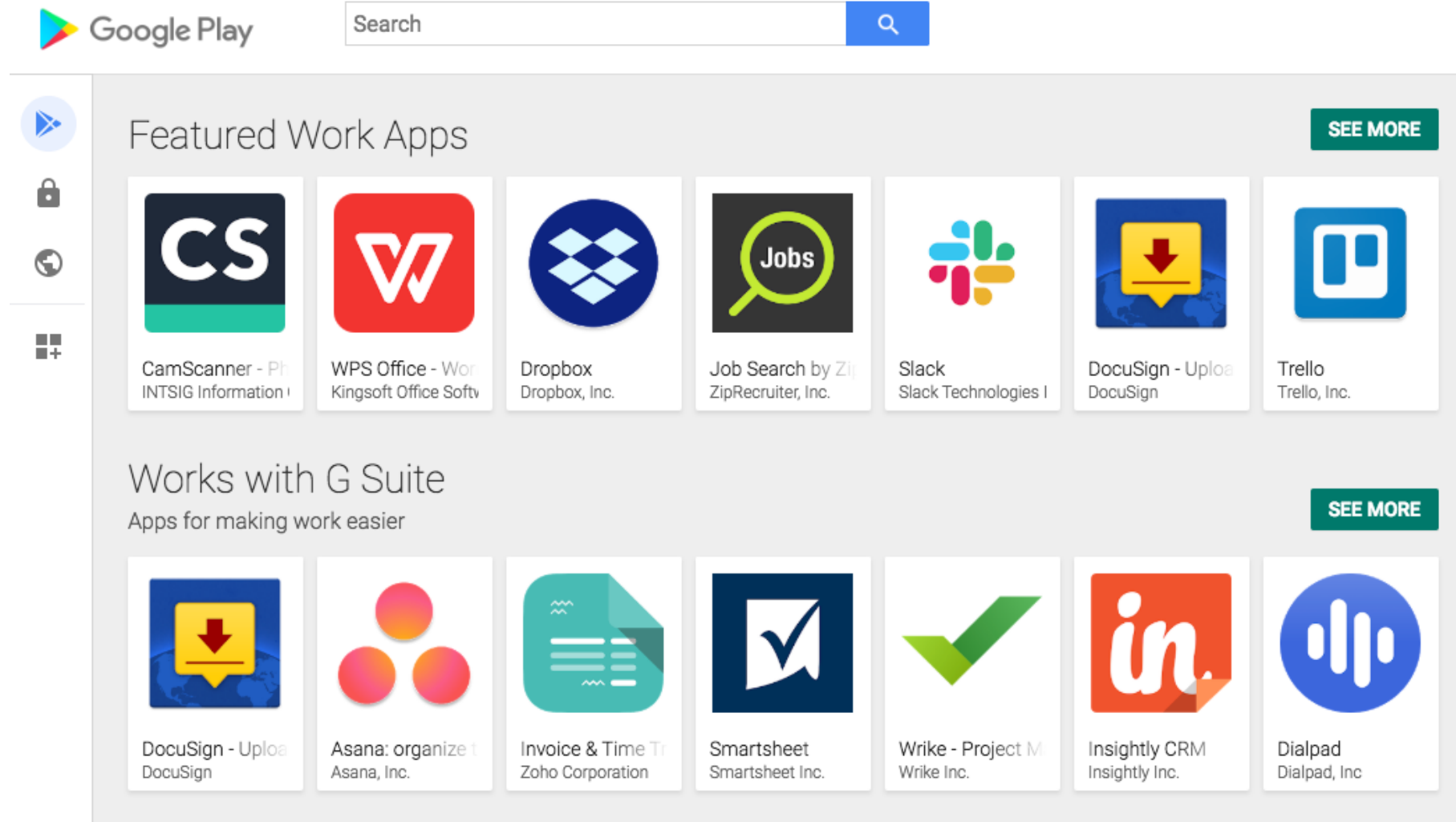
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Application Distribution

- Recent shift over the past couple of years towards the Managed Play Store for application distribution in the Enterprise.
- Curated subset of applications compared with the public Play Store. Applications can be automatically pushed and managed by the controlling EMM
- Ensure your application complies with Play Store policies:
 - User safety e.g. user privacy: <https://play.google.com/about/developer-content-policy/>
 - Targets recent API level: <https://support.google.com/googleplay/android-developer/answer/113469#targetsdk>
 - Is not flagged by Google as Potentially Harmful: <https://developers.google.com/android/play-protect/phacategories>

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Application Distribution



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Resources

- TechDocs: The landing page for technical documentation (APIs, Guides, Getting Started, Samples): <https://techdocs.zebra.com/>
- TechDocs: Overview of data capture options: <https://techdocs.zebra.com/help/>
- Latest DataWedge release: <https://techdocs.zebra.com/datawedge/latest/guide/about/>
- DataWedge Samples: <https://techdocs.zebra.com/datawedge/latest/guide/samples/>
- Zebra Design resources: <https://design.zebra.com/resources>
- Managed Configurations (Google Guide): <https://developer.android.com/work/managed-configurations>
- Managed Play Store: <https://play.google.com/work?hl=en>

Questions?

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