# Zebra Developers

**Build Your Edge** 

2021





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3-5 November 2021 | Madrid, Spain



# What's New in Mobility DNA

Darryn Campbell | SW Architect



- Ways of Developing for Zebra devices
- Prevent Play Store apps for Updating Automatically
- Touch Panel changes
- MX 10.4 Enhancements
- MX 10.3 Enhancements
- Enterprise Browser
  - Term based licensing
  - Enterprise Application Configurator
- Stage Now 5.0: Lifeguard Update Integration
- Device Central: Smart Leash

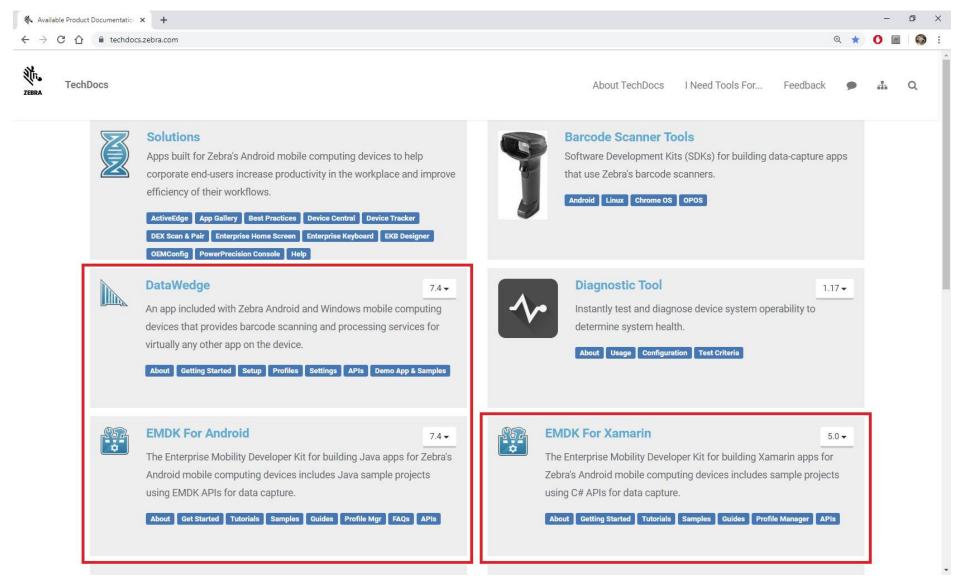
- Alert (Panic) button
- MX 10.2 Enhancements
- MX 10.1 Enhancements
- Bluetooth Scanner Notifications
- New DataWedge Features:
  - Wake up and Scan
  - Edge Detection / Full Document Capture
  - Signature Presence Detection
  - Use Multiple scanners interchangeably



# **Ways of Developing for Zebra Devices**

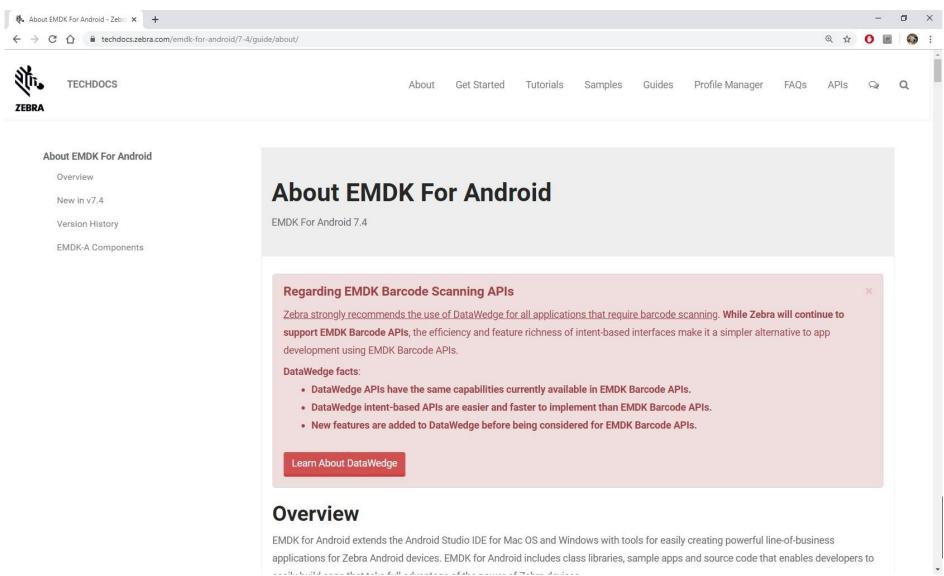


# DataWedge 101 Developer Tools & SDKs





# DataWedge 101 Developer Tools & SDKs

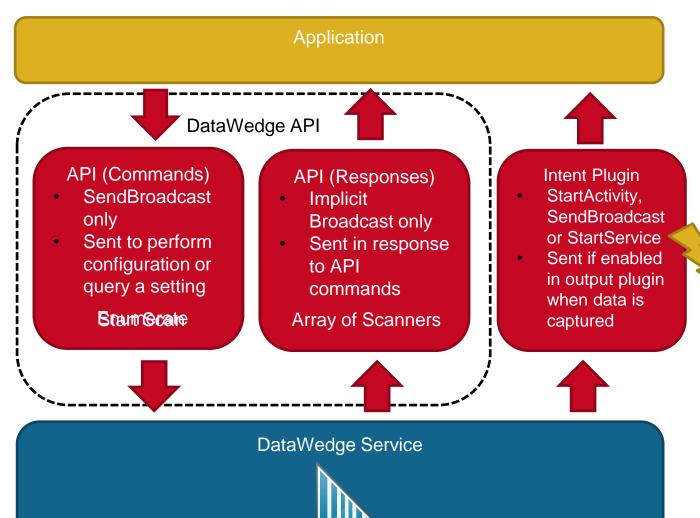


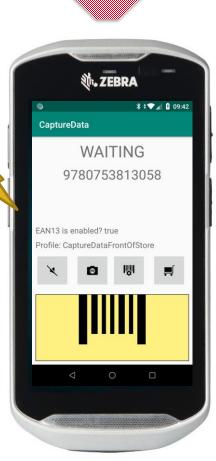


# **DataWedge 101**

## **DataWedge and the DataWedge API**





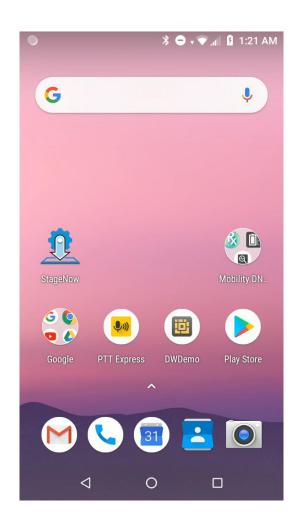




# **DataWedge 101**

#### 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)
- Full DataWedge API:
  - Available
     from <a href="https://techdocs.zebra.com/datawedge/latest/guide/api/">https://techdocs.zebra.com/datawedge/latest/guide/api/</a>





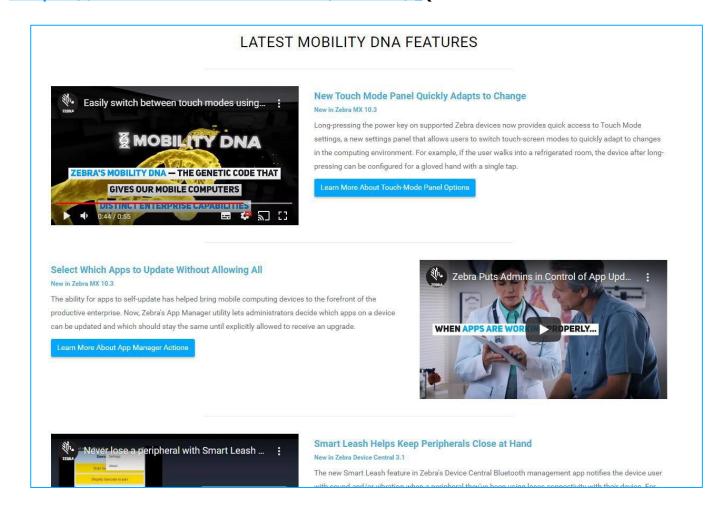
# **Mobility DNA Updates**



#### **Overview**

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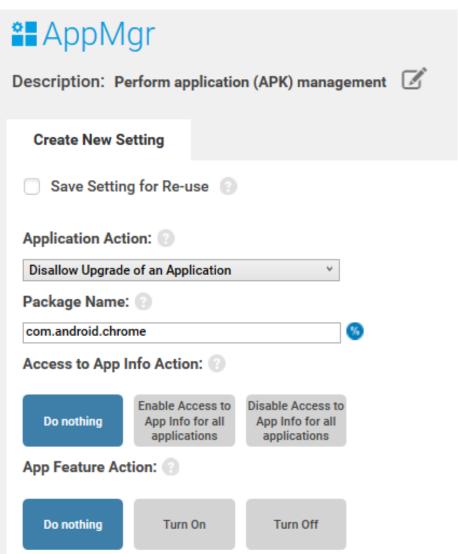
Techdocs: <a href="https://techdocs.zebra.com/mdna/">https://techdocs.zebra.com/mdna/</a> (list of what is new in Mobility DNA)





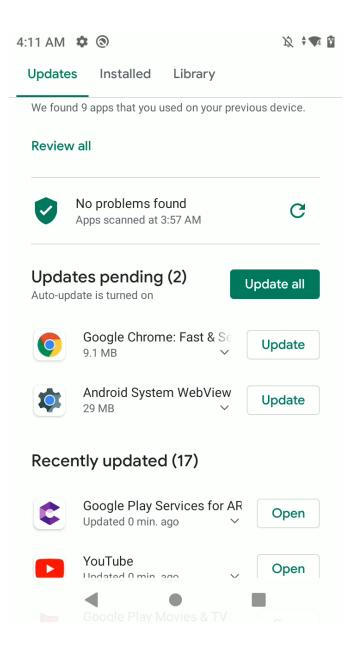
#### **Prevent Play Store apps for Updating Automatically**

- New Feature of MX 10.3 (Available in StageNow 5.1)
- DOCS: https://techdocs.zebra.com/mx/appmgr/#action
- Specify which application(s) are allowed or disallowed to update on the device.
- By default, all applications are allowed to update
- Primary use case is for apps installed from the Play Store
- Augments existing Play Store settings



#### **Prevent Play Store apps for Updating Automatically**

- Video Demo
  - Chrome has been prevented from updating
  - Play Store will download the app but installation will fail
  - The WebView is also prevented from updating in this example as it relies on the Chrome rendering engine
- YouTube Video: <a href="https://youtu.be/H5GCqnjlijk">https://youtu.be/H5GCqnjlijk</a>



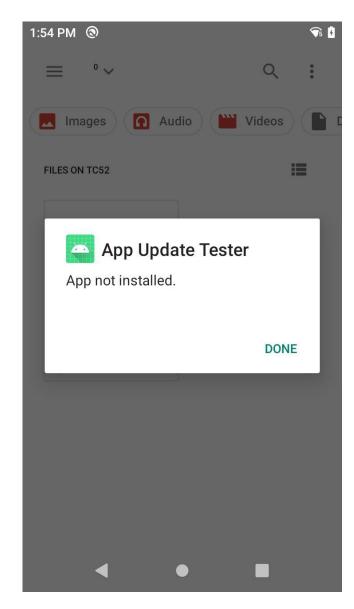
#### **Prevent Play Store apps for Updating Automatically**

#### Upgrade through AppManager:

- Use the AppManager 'Upgrade' action
- Upgrades through AppManager will **SUCCEED** regardless of this setting

#### Upgrade through Package Installer

- E.g. Download an .apk from Chrome and tap on it
- E.g. Send an Intent with the 'application/vnd.android.package-archive' type
- This scenario will **NOT SUCCED** if updates are disabled through this new setting

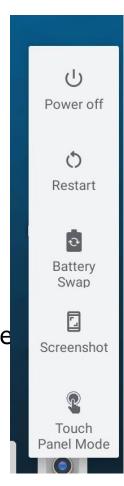


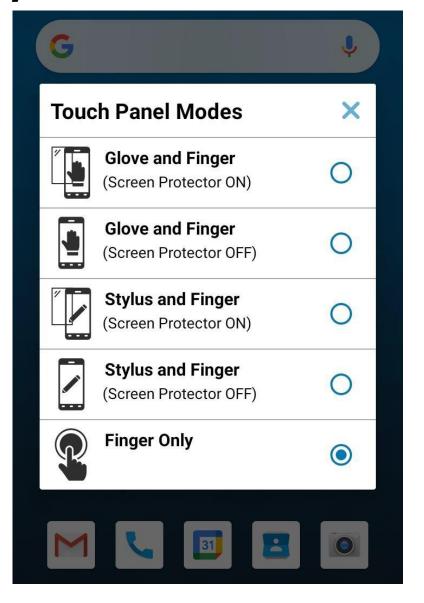
#### **Configure the Touch Mode Panel from the Power Key**

- New Feature of MX 10.3 (Available in StageNow 5.1)
- Docs: <a href="https://techdocs.zebra.com/mx/powerkeymgr/#touch-panel-showhide">https://techdocs.zebra.com/mx/powerkeymgr/#touch-panel-showhide</a>
- Enable quick access to the enhanced touch modes available on Zebra devices enabling the user to interact with a gloved hand or a stylus.
  - Affects the sensitivity of the display
  - Previously: These had to be configured by the admin or developer
  - Now: Full power over these options can be given to the use
- YouTube video from docs team:

https://youtu.be/kRHkg0JGj Q

Per docs: "Devices that support this option"







#### **MX 10.4 Enhancements**

- New keys added to the KeyMapping Manager
- USB Manager:
  - Choose how USB devices will connect by default (Charge only, MIDI, PTP, Tethering)
- Wireless manager:
  - Control whether Bluetooth Scanning is on or off
  - Control whether Wi-Fi Scanning is on or off
  - Control whether Location Service is on or off
- Grant an app MANAGE\_EXTERNAL\_STORAGE permission
  - Enables use of "all files access" permission
  - This does NOT circumvent the <u>Play Store policy around this permission</u>:



# **DevTalk - What's New in Mobility DNA MX 10.3 Enhancements**

- Prevent applications from upgrading / downgrading
  - Teaser promo video: <a href="https://youtu.be/t7J8e2rVcMM">https://youtu.be/t7J8e2rVcMM</a>
- Clear device Bluetooth pairings
- DHCPv6
- NFC logging
- Touch mode panel
  - Quickly switch between glove / stylus / finger / screen protector on or off
  - Teaser promo video: <a href="https://youtu.be/kRHkg0JGj">https://youtu.be/kRHkg0JGj</a> Q



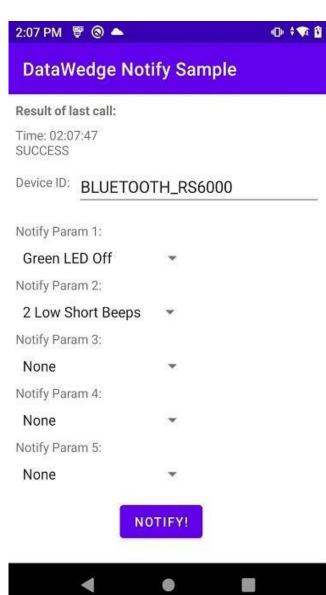
#### **Enterprise Browser: New Features in 3.0.6**

- Docs: <a href="https://techdocs.zebra.com/enterprise-browser/3-0/guide/about/#newinv30">https://techdocs.zebra.com/enterprise-browser/3-0/guide/about/#newinv30</a>
- New Device API:
  - Disable Android navigation bar
- New WebView API:
  - Enable / Disable "pinch to zoom"
- New Database API
  - Restored the previously removed API
  - Exposes on-device API to access SQLite database
  - Alternative to <u>Web SQL Database API</u>
- Licensing enhancements (<a href="https://techdocs.zebra.com/enterprise-browser/3-0/guide/licensing/">https://techdocs.zebra.com/enterprise-browser/3-0/guide/licensing/</a>):
  - Apply & activate licenses for itself and the MDNA bundle in a single step
  - Term-based licensing (1, 3 or 5 year terms). 90-day trial. Note: EB comes with 30-day trial out of the box.



#### **Bluetooth Scanner Notifications**

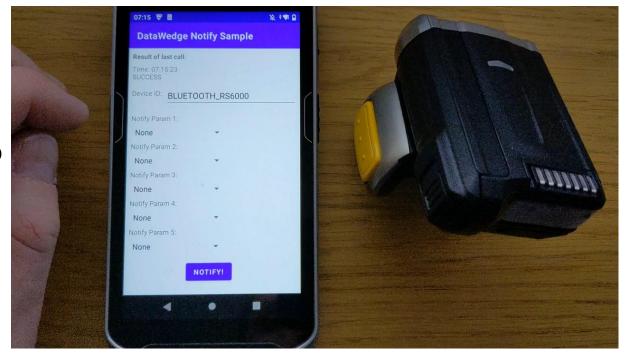
- New Intent-based API introduced in DataWedge 8.2
- Docs: <u>https://techdocs.zebra.com/datawedge/latest/guide/api/notify/</u>
- Allows programmatic control over the connected Bluetooth scanner's LEDs, beeper and vibrate function
- Supported scanners:
  - RS6000
  - RS5100
  - DS3678
- Replaces EMDK Notification API: <a href="https://techdocs.zebra.com/emdk-for-android/8-0/api/reference/com/symbol/emdk/notification/package-summary.html">https://techdocs.zebra.com/emdk-for-android/8-0/api/reference/com/symbol/emdk/notification/package-summary.html</a>
- Unofficial sample app: <a href="https://github.com/darryncampbell/DataWedge-Notify-Sample">https://github.com/darryncampbell/DataWedge-Notify-Sample</a>





#### **Bluetooth Scanner Notifications**

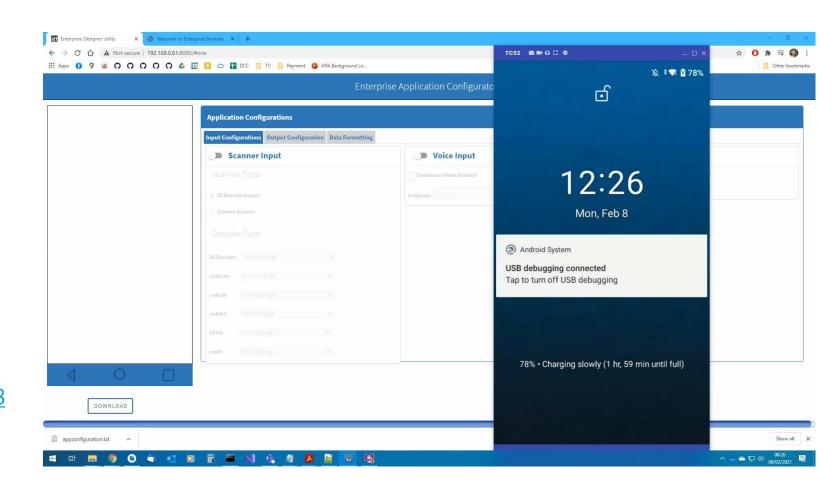
- Demo
  - TC52 running unofficial sample app:
     <a href="https://github.com/darryncampbell/DataWedge-Notify-Sample">https://github.com/darryncampbell/DataWedge-Notify-Sample</a>
  - Connected to RS6000
  - Sample written in Kotlin but API is Intent-based so largely language agnostic
  - Choose from pre-defined beeper sequences
  - Stack up to 5 notifications (one of which may be an LED command)
- YouTube: <a href="https://youtu.be/9lAqXa-aLeA">https://youtu.be/9lAqXa-aLeA</a>





## **Enterprise Browser: Enterprise Application Configurator**

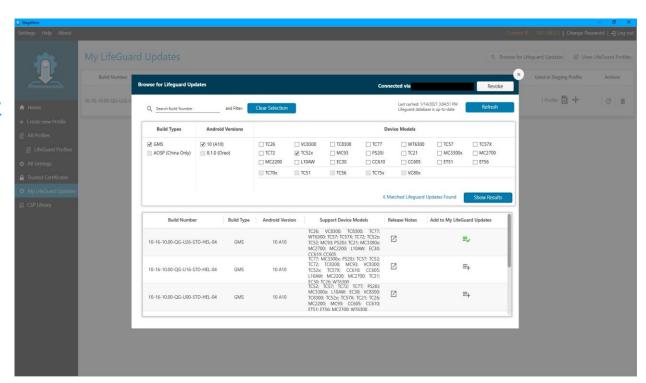
- Enhancement to the 'DOM Injection' concept
- Dom Injection:
  - Add enterprise features to your existing web app.
- EAC:
  - Add enterprise features to your existing web app without writing code.
- "Beta" release
- YouTube: <a href="https://youtu.be/hb-4ETOU38">https://youtu.be/hb-4ETOU38</a>





## **Stage Now 5.0: Smart Profiles (Lifeguard Updates)**

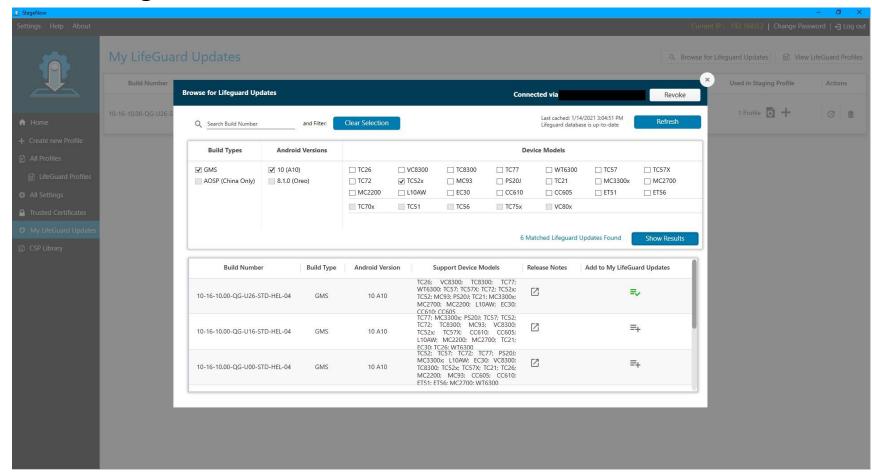
- New feature in StageNow 5.0
- Docs: <a href="https://techdocs.zebra.com/stagenow/5-0/smartprofile/">https://techdocs.zebra.com/stagenow/5-0/smartprofile/</a>
- View available updates for your device(s)
- Easily create profiles to update your device(s)
- Supports Android Oreo+





#### **Stage Now 5.0: Smart Profiles (Lifeguard Updates)**

Live Demo with Stage Now

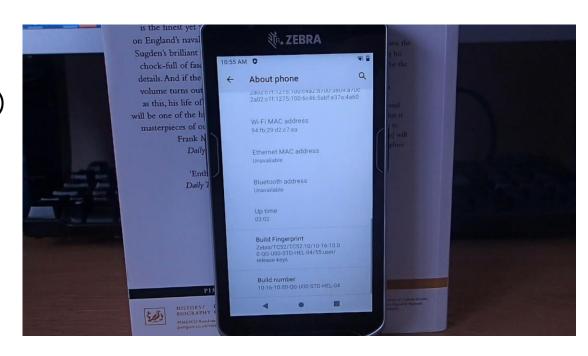




## **Stage Now 5.0: Smart Profiles (Lifeguard Updates)**

#### Video Demo:

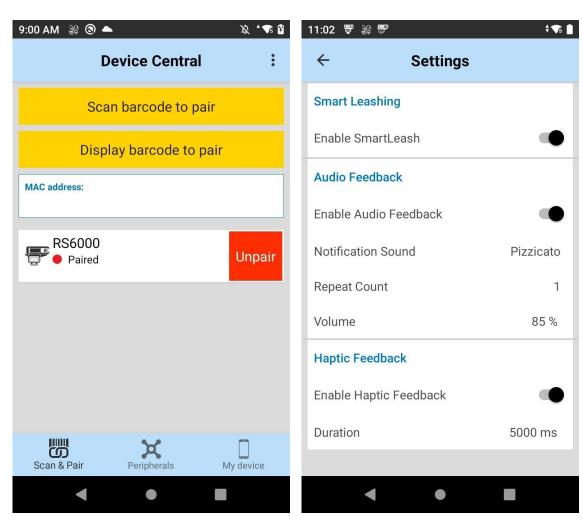
- TC52 updating to 10-16-10.00-GQ-U26-STD-HEL-04
- First updates to Baseline (full update)
- Then performs a delta update to LG26
- Downloads updates from StageNow client (same subnet)
- OS Update automatically applies
- Android system updates
- Device restarts
- System update installs
- Device starts update is applied.
- YouTube video: <a href="https://youtu.be/WwF6lEbbZgY">https://youtu.be/WwF6lEbbZgY</a>





#### **Device Central: Smart Leash**

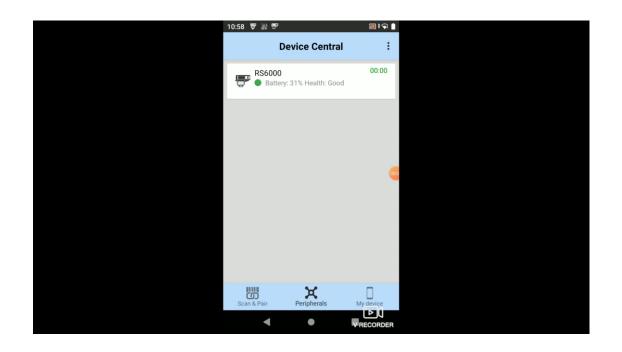
- New Feature of Device Central 3.1
- DOCS: <a href="https://techdocs.zebra.com/devicecentral/3-1/quide/usage/#smartleash">https://techdocs.zebra.com/devicecentral/3-1/quide/usage/#smartleash</a>
- Receive an alert when the device and connected peripheral move out of range





#### **Device Central: Smart Leash**

- Video Demo:
  - Screen recording of TC52 connected with RS6000
  - TC52 is taken out of range of RS6000 (about 20m)
  - Device emits an audio alert & vibrates when it is out of range
  - Device presents notification to user
  - Device is brought back in range of RS6000
  - Notification is cleared and RS600 reports as connected.
- YouTube video: <a href="https://youtu.be/p1fIfjS-C70">https://youtu.be/p1fIfjS-C70</a>





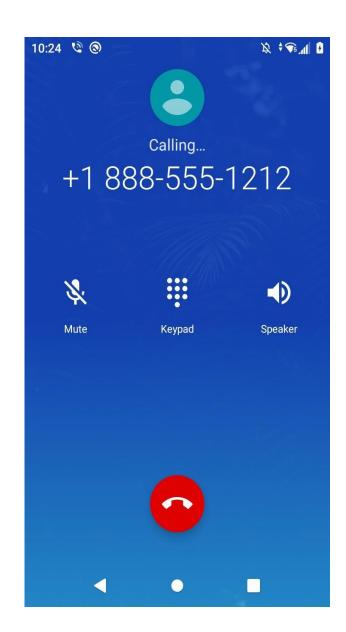
## **Alert (Panic) button**

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- New feature in MX 10.2
- Docs:

https://techdocs.zebra.com/stagenow/latest/stagingprofiles/#alertbutton

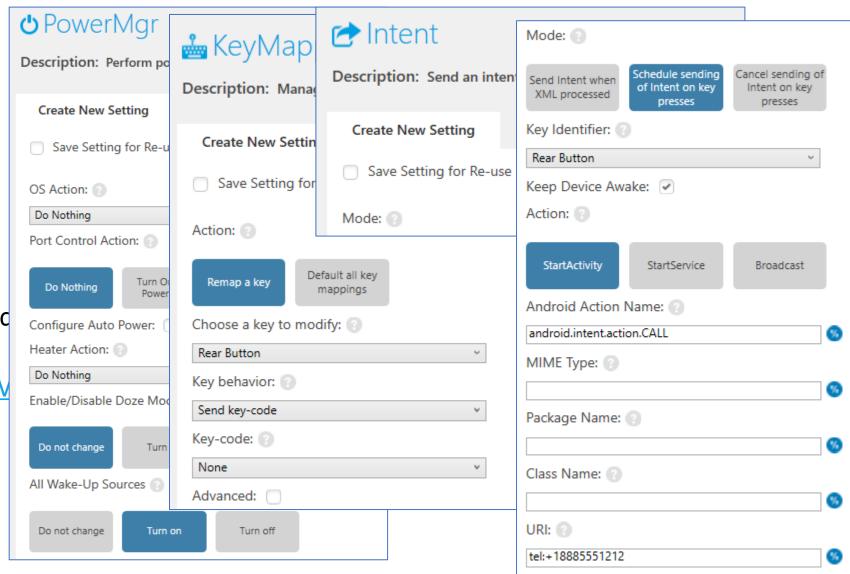
- Designate a key to perform a specific action when it is long- pressed.
- Use case: Discretely call for help with a single button action
- Screenshot shows rear button of a TC57 device configured to invoke Android intent:
  - Android.intent.action.CALL
  - URI: <u>tel:+18885551212</u>
  - This is the example in the documentation
  - Device is configured and button is long-pressed
  - Example is designed for WAN devices





## **Alert (Panic) button**

- 3 Steps:
- Specify button as a wakeup source
- Remap the key to a key code
- Define the Intent to invoke when the key is long pressec
- YouTube video from docs team: <a href="https://youtu.be/WcVvjBBDmE">https://youtu.be/WcVvjBBDmE</a>





#### **Alert (Panic) button**

- Demo on TC57
- Device configured to invoke Android intent:
  - Android.intent.action.CALL
  - URI: tel:+18885551212
  - This is the example in the documentation
  - Device is configured and button is long-pressed



Profile Name:AlertButton Barcode Type:PDF417

Minimum Compatible MX Version:10.2

Scan Barcodes with StageNow Client:





#### **MX 10.2 Enhancements**

- Beacon Manager use with Device Tracker to locate a device which has been switched off
- Keypad tone configuration
- Bluetooth Manager pairing enhancements (single peripheral type at a time, silent pairing rules)
- Smart Leash configuration
- Adaptive brightness
- Intent: Send an Intent when a key is pressed
- Alert button action
- Keep device awake

- Feature-based licensing
- Touch panel menu option
- 802.11k
- 802.11mc (Fine Time Measurement FTM)



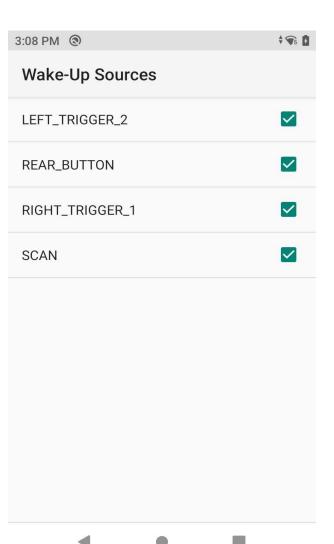
#### **MX 10.1 Enhancements**

- DataWedge "token" mechanism to restrict access to APIs
- Auto-rotation control
- EKB language selection
- File upload
- OS Streaming upload / download & authentication
- Battery saver control (off / on / automatic)
- RFID regional support: Ukraine, Morocco, Anguilla
- Show Battery percentage
- Worry-Free WiFi enhancements



#### New DataWedge Features: Wake up and Scan

- New feature in DataWedge 8.1
- <u>Docs: Part of</u>
   <a href="https://techdocs.zebra.com/datawedge/8-2/quide/input/barcode/#readerparams">https://techdocs.zebra.com/datawedge/8-2/quide/input/barcode/#readerparams</a>
- Enhancement to existing 'Wake-up sources feature'
- Used to trigger scanning when the device is in a suspended / screen-off state. No need to separately wake the device up.
- User presses the scanner: Device is woken up and starts scanning automatically
- Wakeup sources are configurable via Power Manager (or through device UI [Right])





#### New DataWedge Features: Wake up and Scan

• Wakeup sources are configurable via Power Manager [*Below*] (or through device UI)

#### Wake-up Key Identifier

Used to select an individual device button to allow or prevent the device from waking from power-saving modes when the button (if so equipped) is pressed. Use this parameter when selecting an Action using the <a href="Wake-up">Wake-up</a> Individual Action parameter.

Parm Name: Wake UpKeyldentifier

Option	Name	Description	Note	Requires
1	BUTTON_L1	Selects the button on the device's upper-left side.		MX: 9.2+
2	BUTTON_L2	Selects the button on the device's lower-left side.		MX: 9.2+
3	BUTTON_R1	Selects the button on the device's upper-right side.		MX: 9.2+
4	BUTTON_R2	Selects the button on the device's lower-right side.		MX: 9.2+
5	GUN_TRIGGER	Selects the button on the device's gun or grip trigger (if so equipped).		MX: 9.2+
6	REAR_BUTTON	Selects the button on the back or outward-facing side of the device (if so equipped).		MX: 9.2+
86	Custom	Allows use of a custom key identifier. See Custom Wake-up Key Identifier parameter.		MX: 9.2+





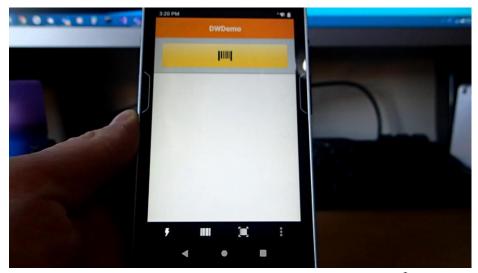
#### New DataWedge Features: Wake up and Scan

- Demo:
  - Pre-loaded DataWedge demo app
  - Without "Trigger Wakeup and Scan" reader param: Scanning does not happen with screen off

With "Trigger Wakeup and Scan" reader param: Device is woken up and scanning can

happen

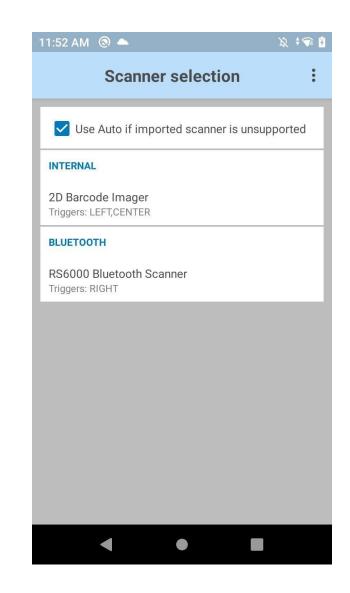
YouTube: <a href="https://youtu.be/b0psXq80vIq">https://youtu.be/b0psXq80vIq</a>





#### New DataWedge Features: Use Multiple Scanners Interchangeably

- Dana Tour Lage
- New Feature in DataWedge 8.2
- Use different device triggers to trigger different scanners
- Docs: <a href="https://techdocs.zebra.com/datawedge/latest/guide/input/barcode/#scannerselection">https://techdocs.zebra.com/datawedge/latest/guide/input/barcode/#scannerselection</a>
- Use case:
  - Have the left trigger use the imager and the right trigger use the camera
- Use case:
  - Control the Bluetooth scanner using a trigger on the Android device [Right]
- New "Scanner selection" menu is available under barcode input
  - Map hardware triggers to different scanners
- Not to be confused with scanner auto selection, whereby the internal imager will be automatically selected with a BT scanner disconnects.





#### New DataWedge Features: Use Multiple Scanners Interchangeably

- Demo
  - TC52 connected to RS6000 scanner
  - By default left trigger on TC52 will activate the RS6000 scanner
  - Scanner selection modified to associate left trigger with Internal imager

and RS6000 with right trigger

- Both triggers now control individual scanners
- DW Demo states the source of the scan
- [Original video brightness is quite low, sorry!]
- YouTube: <a href="https://youtu.be/zNU8FMjmKJ0">https://youtu.be/zNU8FMjmKJ0</a>





#### New DataWedge Features: NG SimulScan Document Capture

The following features enhance NG SimulScan Document capture. The ability to create custom templates is rolling out soon.

- Edge Detection / Full Documentation capture
  - Capture full page documents and crop to content. No longer rely on 'anchor barcodes'
  - https://techdocs.zebra.com/datawedge/latest/guide/input/barcode/#documentcapture
  - Feature teaser video: <a href="https://youtu.be/DI8pxsTJdtI">https://youtu.be/DI8pxsTJdtI</a>
- Signature presence detection
  - Detect whether a signature was present in a specified area
  - Note: This is not the signature decoder, this is the Signature area of a NG SimulScan document
  - https://techdocs.zebra.com/datawedge/latest/guide/programmers-guides/content-provider/#parameters
  - Feature teaser video: <a href="https://youtu.be/4vS5Y2q9Vkg">https://youtu.be/4vS5Y2q9Vkg</a>



#### New DataWedge Features: NG SimulScan Document Capture

The following features enhance NG SimulScan Document capture. The ability to create custom templates is rolling out soon.

- Read specific barcodes from multi-barcode form
  - Define criteria or pattern for barcodes to capture (e.g. length / symbology)
  - Coming early 2021
  - Feature teaser video: <a href="https://youtu.be/5Kr8h-Cke6k">https://youtu.be/5Kr8h-Cke6k</a>



#### Resources

- YouTube playlist of videos shown in this presentation:
   https://www.youtube.com/playlist?list=PLj8D9Diz5FBoJKn\_LYX0pHOpBOeZJkmtF
- New Mobility DNA features: <a href="https://techdocs.zebra.com/mdna/">https://techdocs.zebra.com/mdna/</a>
- All Mobility eXtensions: <a href="https://techdocs.zebra.com/mx/">https://techdocs.zebra.com/mx/</a>
- TechDocs: <a href="https://techdocs.zebra.com/">https://techdocs.zebra.com/</a>



# **Questions?**



https://developer.zebra.com



**Zebra Developers Community – LinkedIn Group** 



@ZebraDevs



https://github.com/ZebraDevs





3-5 November 2021 | Madrid, Spain