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Build Your Edge





Zebra **Dev**Talks Community Day One day – Multiple Talks – Free to Attend





DevTalk Day – What's new in Mobility DNA



Darryn Campbell

SW Architect, Zebra Technologies 19th May 2021

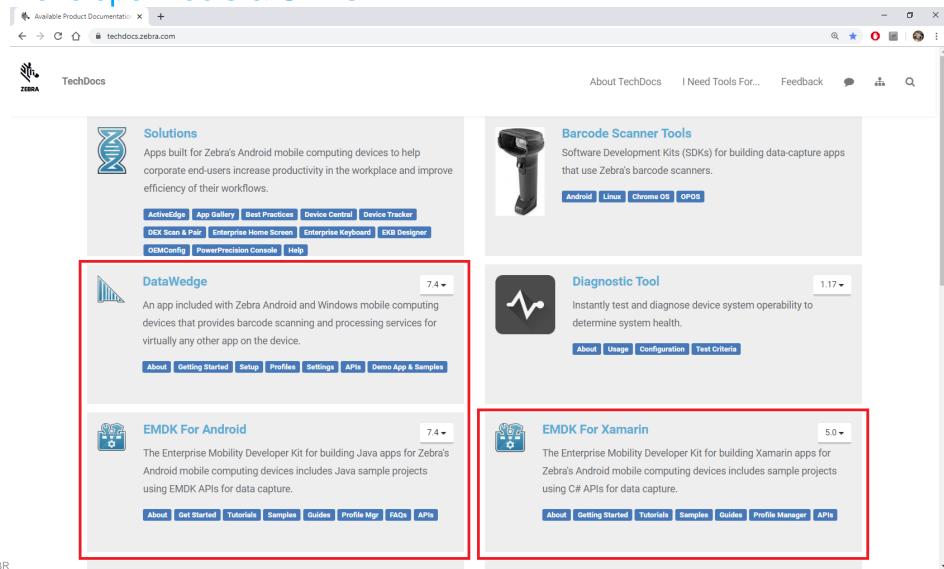
Agenda

- 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

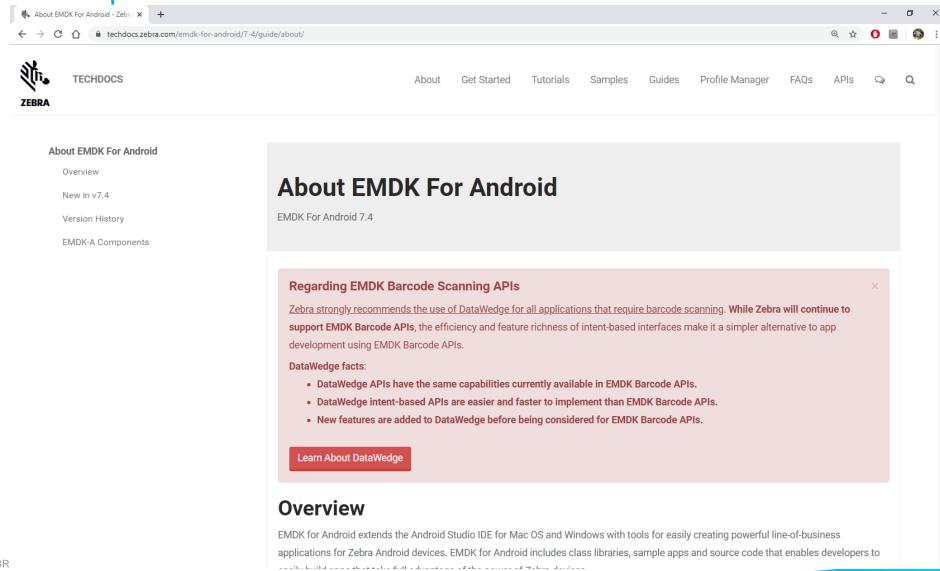
- Alert (Panic) button
- MX 10.2 Enhancements
- MX 10.1 Enhancements
- Bluetooth Scanner Notifications
- New DataWedge Features:
 - Wake up and Scan
 - Edge Detection / Full Document Capture
 - Signature Presence Detection
 - Use Multiple scanners interchangeably

Ways of Developing for Zebra Devices

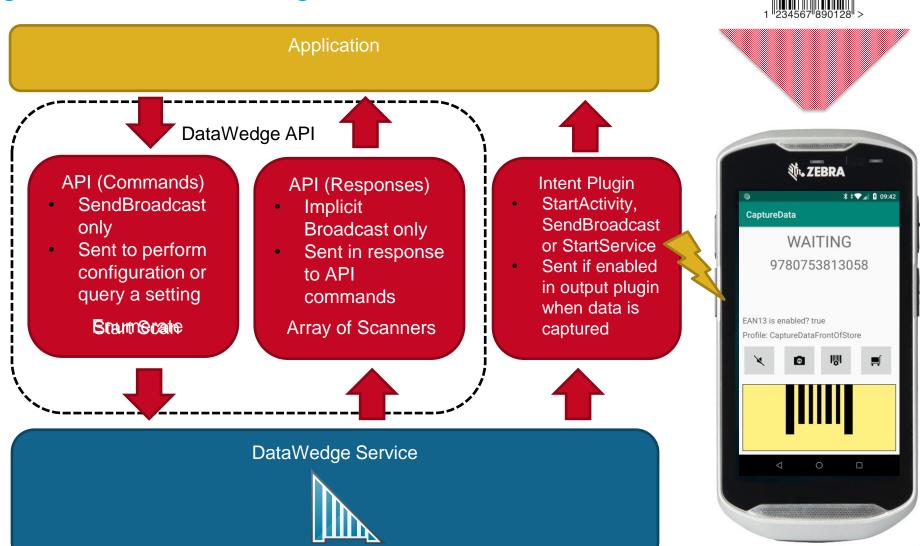
Developer Tools & SDKs



Developer Tools & SDKs

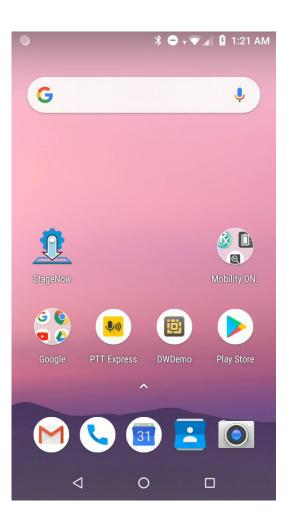


DataWedge and the DataWedge API



DataWedge and the DataWedge API

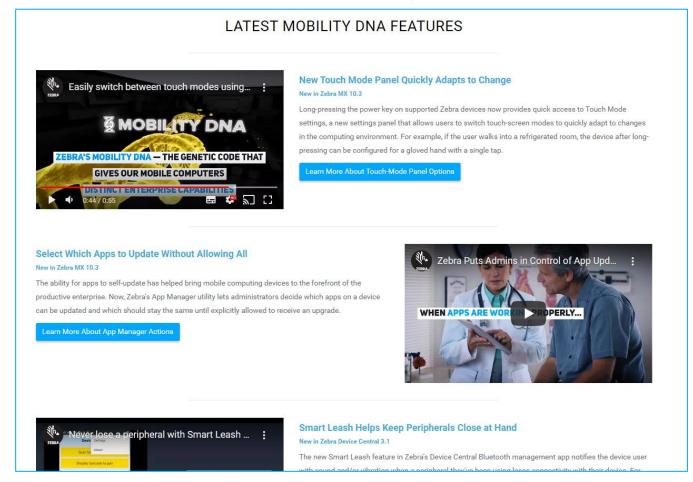
- Putting it together: DataWedge sample 'DataCapture1'
 - https://github.com/Zebra/samples-datawedge/tree/master/DataCapture1
 - https://techdocs.zebra.com/datawedge/latest/guide/samples/barcode1/
- Demo will:
 - Create profile & show this reflected in DataWedge
 - Configure scanner & show this reflected 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 <u>https://techdocs.zebra.com/datawedge/latest/guide/api/</u>



Mobility DNA Updates

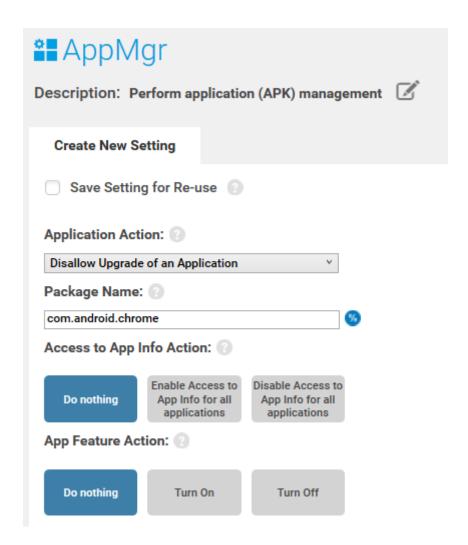
Overview

Techdocs: https://techdocs.zebra.com/mdna/ (list of what is new in Mobility DNA)



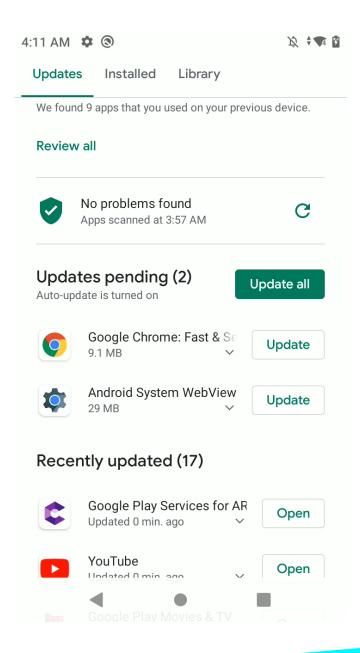
Prevent Play Store apps for Updating Automatically

- 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: https://youtu.be/H5GCqnjljjk



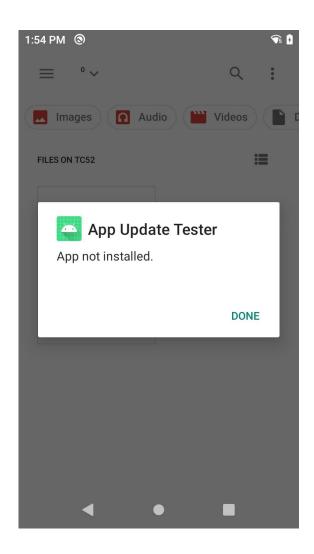
Prevent Play Store apps for Updating Automatically

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 SUCCEED** if updates are disabled through this new setting

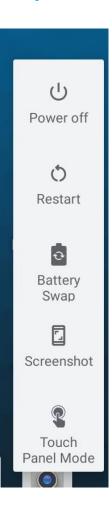


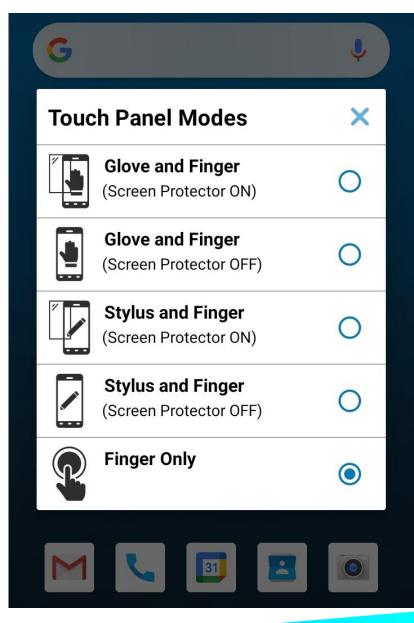
Configure the Touch Mode Panel from the Power Key

- New Feature of MX 10.3 (Available in StageNow 5.1)
- Docs: https://techdocs.zebra.com/mx/powerkeymgr/#touch-panel-showhide
- 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 user
- 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>:

MX 10.3 Enhancements

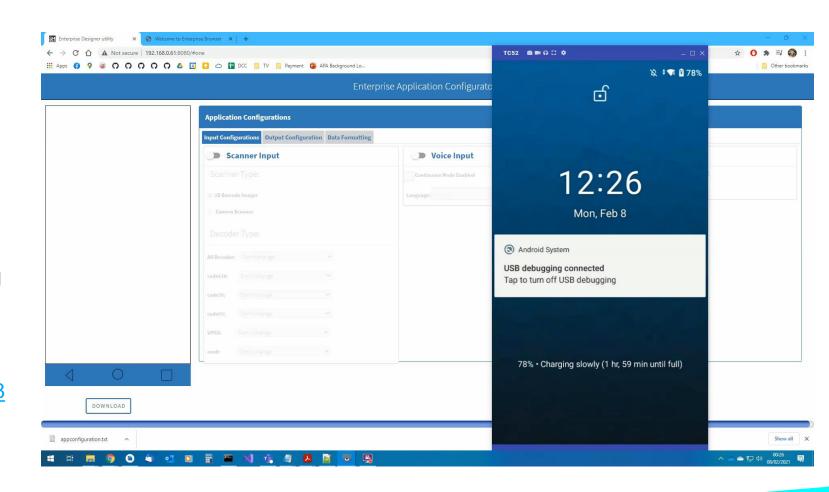
- Prevent applications from upgrading / downgrading
 - Teaser promo video: https://youtu.be/t7J8e2rVcMM
- Clear device Bluetooth pairings
- DHCPv6
- NFC logging
- Touch mode panel
 - Quickly switch between glove / stylus / finger / screen protector on or off
 - Teaser promo video: https://youtu.be/kRHkg0JGj_Q

Enterprise Browser: New Features in 3.0.6

- Docs: https://techdocs.zebra.com/enterprise-browser/3-0/guide/about/#newinv30
- 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 Web SQL Database API
- Licensing enhancements (https://techdocs.zebra.com/enterprise-browser/3-0/guide/licensing/):
 - 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.

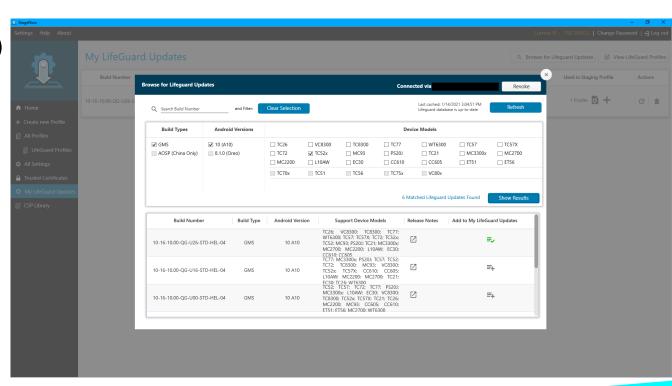
Enterprise Browser: Enterprise Application Configurator

- 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: https://youtu.be/hb-_4ETOU38



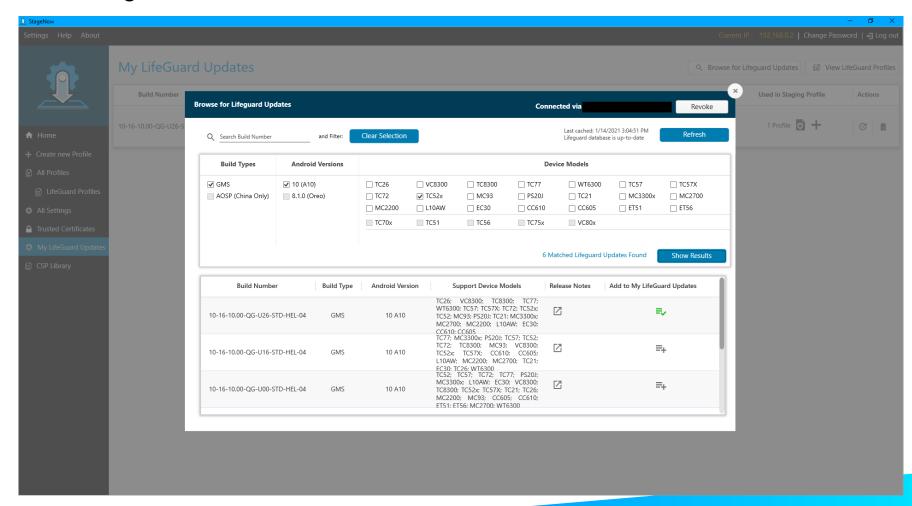
Stage Now 5.0: Smart Profiles (Lifeguard Update Integration)

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



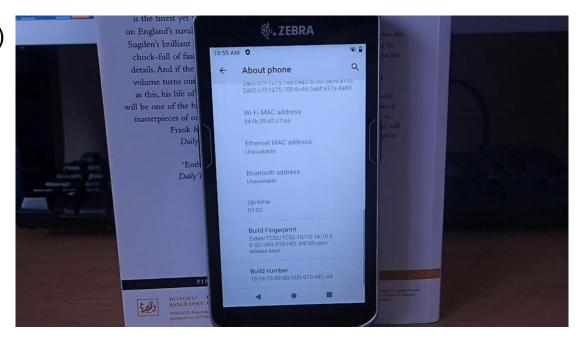
Stage Now 5.0: Smart Profiles (Lifeguard Update Integration)

Live Demo with Stage Now



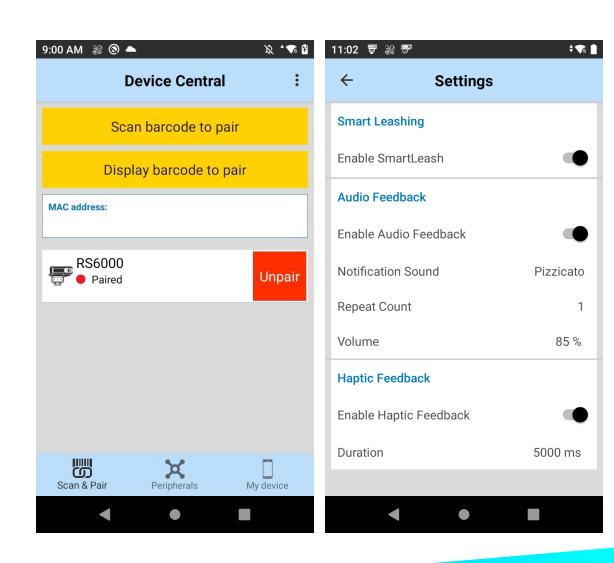
Stage Now 5.0: Smart Profiles (Lifeguard Update Integration)

- 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: https://youtu.be/WwF6lEbbZgY



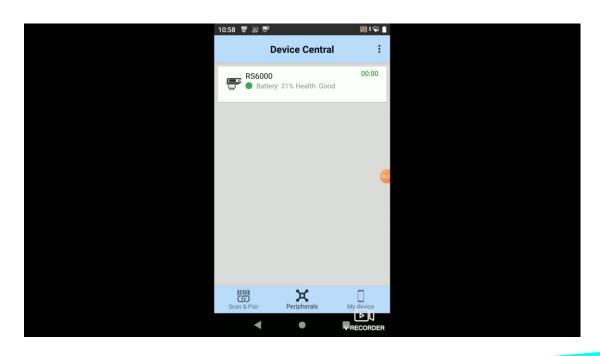
Device Central: Smart Leash

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



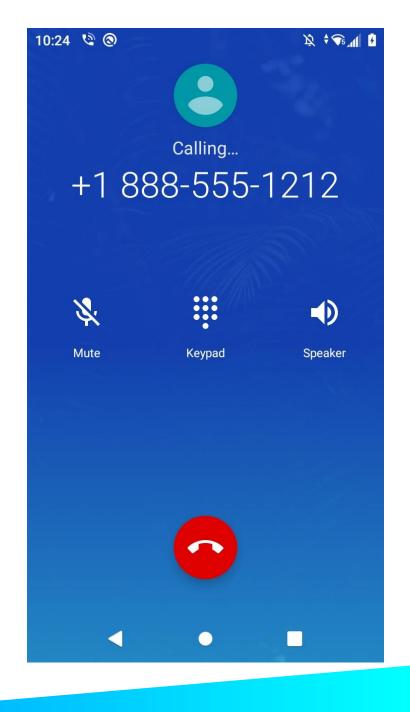
Device Central: Smart Leash

- 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: https://youtu.be/p1flfjS-C70



Alert (Panic) button

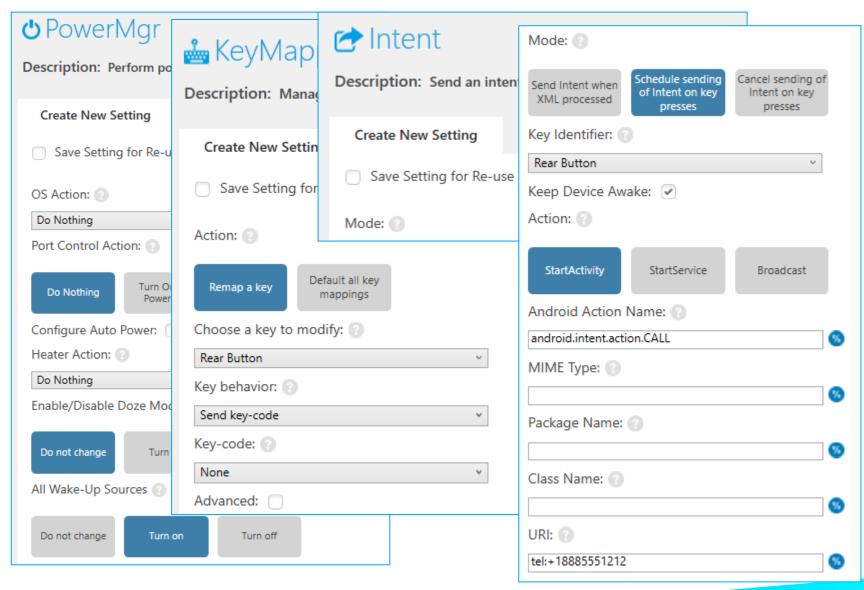
- New feature in MX 10.2
- Docs: https://techdocs.zebra.com/stagenow/latest/stagingprofiles/#alertbutton
- Designate a key to perform a specific action when it is longpressed.
- Use case: Discretely call for help with a single button action
- Screenshot shows rear button of a TC57 device configured to 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 wake-up source
- Remap the key to a key code
- Define the Intent to invoke when the key is long pressed
- YouTube video from docs team:

https://youtu.be/WcVL vjBBDmE



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

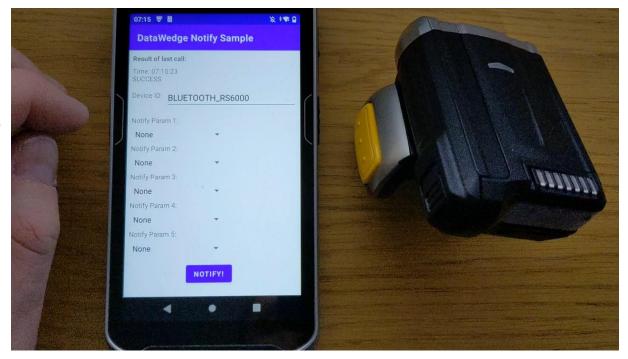
Bluetooth Scanner Notifications

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



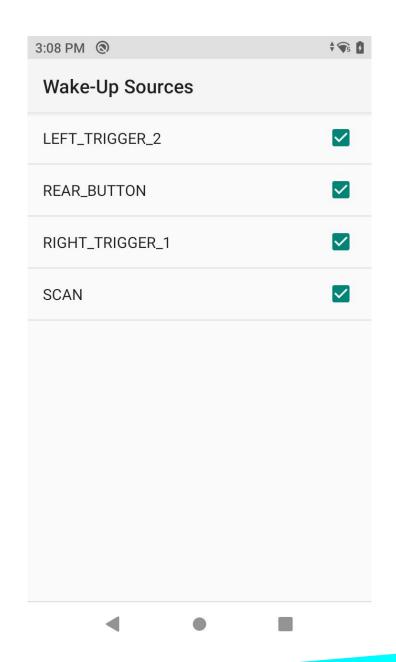
Bluetooth Scanner Notifications

- Demo
 - TC52 running unofficial sample app:
 https://github.com/darryncampbell/DataWedge-Notify-Sample
 - 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: https://youtu.be/9lAqXa-aLeA



New DataWedge Features: Wake up and Scan

- New feature in DataWedge 8.1
- Docs: Part of https://techdocs.zebra.com/datawedge/8-2/guide/input/barcode/#readerparams
- 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 Wake-up 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+

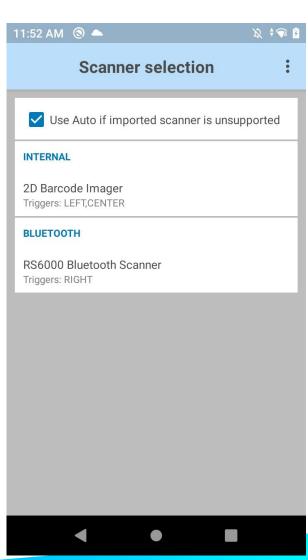
New DataWedge Features: Wake up and Scan

- 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: https://youtu.be/b0psXg80vlg



New DataWedge Features: Use Multiple Scanners Interchangeably

- New Feature in DataWedge 8.2
- Use different device triggers to trigger different scanners
- Docs: https://techdocs.zebra.com/datawedge/latest/guide/input/barcode/#scannerselection
- 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: https://youtu.be/zNU8FMjmKJ0



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: https://youtu.be/DI8pxsTJdtl
- 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: https://youtu.be/4vS5Y2q9Vkg

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: https://youtu.be/5Kr8h-Cke6k

Resources

- YouTube playlist of videos shown in this presentation: https://www.youtube.com/playlist?list=PLj8D9Diz5FBoJKn_LYX0pHOpBOeZJkmtF
- New Mobility DNA features: https://techdocs.zebra.com/mdna/
- All Mobility eXtensions: https://techdocs.zebra.com/mx/
- TechDocs: https://techdocs.zebra.com/



Questions?



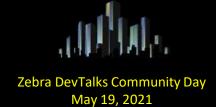
http://developer.zebra.com



Zebra Developer Community – LinkedIn Group



@ZebraDevs







BACKUP

COMMUNITY DEVELOP

SAVANNA DATA SERVICES



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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