



EXTENSIONS (Mx)

FORTIFIED ANDROID™ FOR THE ENTERPRISE



WHAT IS **Mx**?

Extensions (Mx) by Zebra is a new layer of features that infuses standard Android with the features you need to take advantage of Android devices in your business.

INFUSING STANDARD ANDROID WITH:

- ENTERPRISE-CLASS SECURITY
- ENTERPRISE-CLASS MANAGEABILITY
- ENTERPRISE-CLASS DATA CAPTURE
- ENTERPRISE-CLASS WIRELESS CONNECTIVITY

WHAT IS Mx?

Mx: ENABLING THE CREATION OF THE TRULY ENTERPRISE-CLASS ANDROID DEVICE.

ANDROID — NOW THE MOST POPULAR MOBILE OPERATING SYSTEM IN THE WORLD...

Android has taken the world by storm, currently the operating system of choice in nearly 75 percent of the world's consumer smartphones. Now, Android-based devices are crossing over from the consumer world to the enterprise, driven by the operating system's simplicity and flexibility. With its contemporary user interface (UI) and support for touch input and gesturing, enterprises are now free to design application screens that make every step in a workflow as intuitive as possible. The result is a new class of business applications that is every bit as easy to use and engaging as today's consumer applications, meeting the expectations of today's workers — and virtually eliminate the need for training.

...LACKING IN THE FEATURE SET YOU NEED IN YOUR ENTERPRISE...

Zebra recognized the value Android could bring to the enterprise — but there was one major hurdle to clear before embarking on the creation of enterprise-class mobile computers based on Android: the Android operating system was built for the consumer world. Even though Android is constantly evolving and integrating new enterprise-class features, it still falls short of the features required in the enterprise.

...UNTIL NOW.

Extensions (Mx) was created to address this issue. Mx adds a layer of features on top of the standard Android operating system — features that enable the creation of Android-based mobile computers that are truly enterprise-ready. Mx infuses Zebra Android-based mobile computers with a complete enterprise feature set — features that are missing in mobile devices that run standard Android: robust enterprise-class security and manageability, enterprise-class data capture features and business-class Wi-Fi connections that provide workers with a superior wireless experience.

WHAT Mx IS NOT

While Mx includes platform features, it is not a proprietary version of Android that would give IT cause for concern, nor does it reduce any functionality in Android or create application compatibility issues.

Mx platform features come at no cost and are pre-installed on all of our Android devices. With Mx, you are always in charge — you decide which optional features you want to activate, and when.

And since Mx features are typically deployed through your current mobile device management (MDM) solution, implementing Mx couldn't be easier. With Mx, you're in complete control of your Zebra Android-based mobile computers, minimizing risk and maximizing value.

IT IS NOT A PROPRIETARY VERSION OF ANDROID

IT DOES NOT REDUCE ANDROID'S FUNCTIONALITY.

IT DOES NOT CREATE COMPATIBILITY ISSUES.

IT DOESN'T COST YOU A THING.

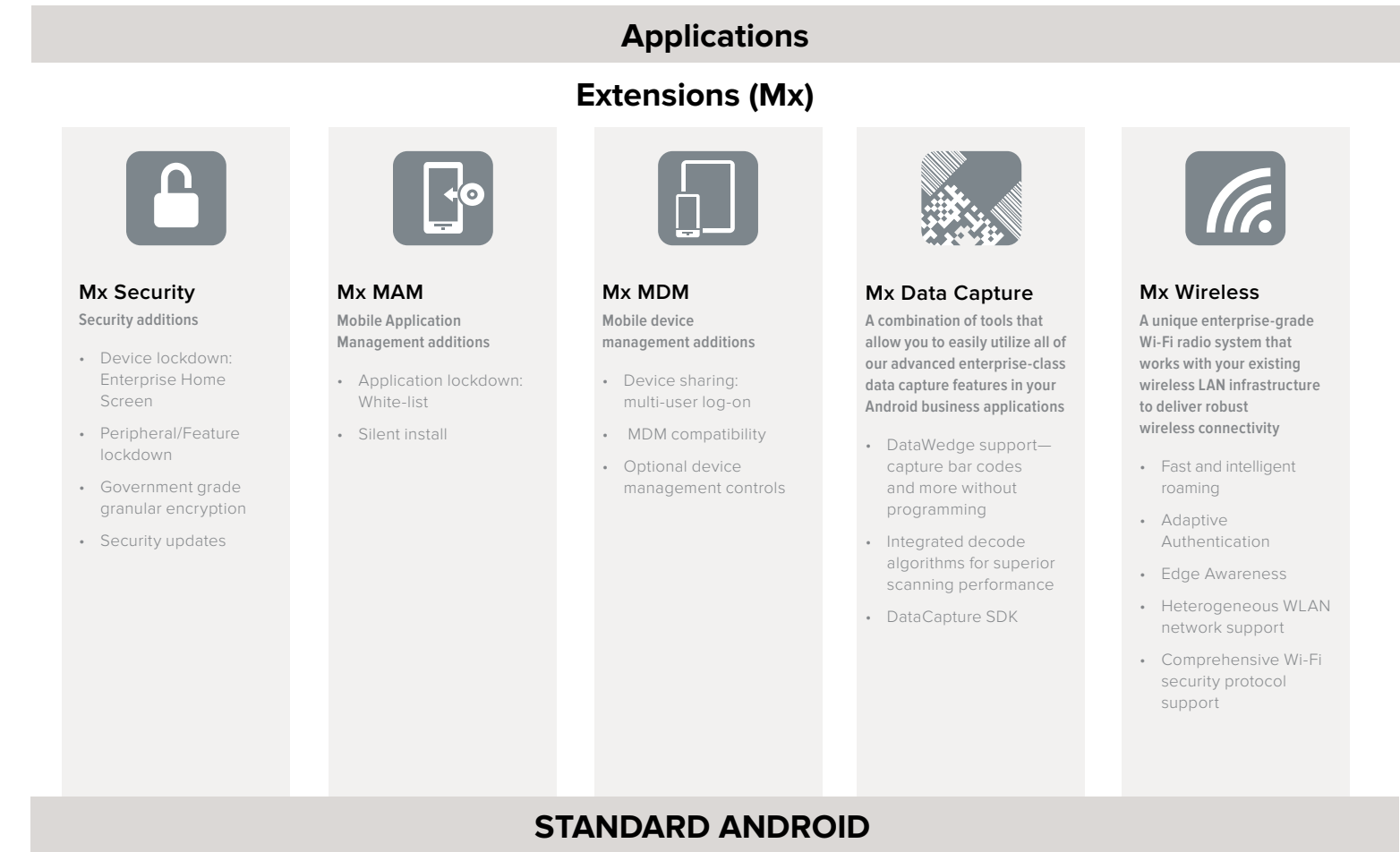
IT DOESN'T TAKE OVER —YOU DECIDE IF AND WHEN TO ACTIVATE FEATURES.

IT DOESN'T REQUIRE INSTALLATION —IT IS PRE-INSTALLED AND READY TO GO.

Mx. ALL THE ENTERPRISE FEATURES YOU NEED IN ANDROID. DELIVERED.

Mx OVERVIEW

There are five classes of Mx features that are layered in between the standard Android operating system and your applications.





YOU GET ALL THE **ADVANTAGES** OF THE ANDROID YOU WANT—WITH THE **SECURITY** YOUR ENTERPRISE NEEDS.

DEVICE LOCKDOWN WITH AN ENTERPRISE HOME SCREEN

Many users only need to access one line-of-business application. With this feature, when workers turn on their mobile computer, it will automatically launch and lock into that application. Since users are unable to exit, the Enterprise Home Screen effectively creates a single-purpose mobile computer that protects productivity and secures corporate data by preventing access to other business applications, or downloading of personal social networking or game applications. And since you have the flexibility to allow users to exit the application, the Enterprise Home Screen can also provide workers with the convenience of instant access to their most used application every time they power up their mobile computer.

PERIPHERAL AND FEATURE LOCKDOWN

The mobile computer you purchase may have features that pose security risks, but off-the-shelf Android doesn't provide a means to disable those features. For example, you may want to disable the USB port to eliminate the possibility of a user copying sensitive data on to a USB stick — or loading an unapproved application that could contain malware. This feature gives you complete control over the feature set your workers can access, allowing you to restrict user access to peripheral interfaces such as USB and Bluetooth, as well as device features such as GPS and near field communication (NFC).

GOVERNMENT GRADE GRANULAR DATA ENCRYPTION

Data encryption is not only crucial in order to protect corporate data, in numerous industries it is a requirement. For example, Payment Card Industry (PCI) regulations require protection for sensitive customer payment card information, and the Health Insurance Portability and Accountability Act (HIPAA) U.S. government mandate requires proper protection of personal patient healthcare information.

The latest versions of standard Android now provide basic encryption features — you can choose to encrypt the entire internal drive as well as any installed SD card. Mx builds on this feature to improve flexibility and protect device performance by allowing you to select the data you want to encrypt. You simply create encrypted file systems that appear as folders — everything in the folders is automatically protected with government-grade AES 256 encryption. The advantage? Since only sensitive data is encrypted, the impact encryption often has on device performance is minimized.

Another key difference is the generation and management of the encryption keys. With standard Android, keys are generated and secured directly on the mobile device, eliminating the ability to move the SD card to another device — a major inconvenience if a user needs to swap devices or give data to a supervisor or other worker. Mx provides best IT practices for encryption key management — keys are generated and provisioned in a centralized location. The result? Unlike standard Android, the SD card can be moved to another device — with the press of a few buttons, IT can easily and remotely provision the new device with the proper encryption keys required for access.



Mx SECURITY UPDATES

When the Android Open Source Community releases a security patch, how do you know it is available? And how can you make sure that patch is deployed in a timely manner to help prevent security breaches? Until today, enterprises and consumers alike have been dependent upon the cellular carrier to test, certify and distribute the patch. But for the enterprise customer, time is of the essence — enterprises need to plug any security weaknesses the moment a patch is available.

That's why Zebra created a dedicated internal team responsible for a process known as DARN – Discovery, Assessment, Remediation and Notification. This team monitors all reported Android security issues and their related patches. Depending upon the priority of the patch, it is either made available immediately or in an Mx maintenance release. Customers with products under warranty or who have purchased Zebra's Service from the Start support program for their Android-based Zebra mobile computer will receive notification via email whenever a patch is available. A link in the email allows the enterprise to instantly download the new Android Mx image, complete with the patch. The updated image can then be instantly deployed to all mobile devices via a compatible Mobile Device Management (MDM) application.

HOW DOES Mx IMPROVE SECURITY?

You can lock users into a single application. You can lock users out of specific device features — such as USB or Bluetooth. You can select the files you want to protect with government grade encryption, helping ensure that the security your need doesn't come at the cost of device performance. And since encryption keys are centrally managed, you have the flexibility to move SD cards to other devices when needed.

Mx Mobile Application Management (MAM)



WITH **Mx**, YOU COMPLETELY **CONTROL** WHICH APPLICATIONS CAN BE INSTALLED, AS WELL AS THE APPLICATION **UPDATE** PROCESS.

APPLICATION LOCKDOWN WITH WHITE-LISTING

White-listing allows you to control what applications can be downloaded and launched. Simply create a list of approved applications, known as a white list. Users will be unable to download or run applications that are not on the list. The opportunity for the installation of malicious or personal applications that could compromise data security and reduce employee productivity is eliminated.

SILENT INSTALL

With standard Android, you can use your existing MDM application to request an application install. However, users are alerted of the pending installations and have the power to accept or delay the install, making it difficult to enforce timely application and security updates. With Mx, you can install applications silently, without alerting users. And if the application update contains critical security patches or updated features, you can force the device to reboot once the installation is complete to instantly activate the updated software.



WITH Mx, YOU CONTROL WHAT APPLICATIONS USERS CAN ACCESS, WHAT APPLICATIONS USERS CAN DOWNLOAD, AND YOU TAKE BACK CONTROL OF THE APPLICATION INSTALL AND UPDATE PROCESS WITH SILENT INSTALL — USERS NO LONGER ARE PRESENTED WITH THE OPTION TO ACCEPT OR DECLINE AN UPDATE.

Mx Mobile Application Management (MAM)



WITH **Mx**, OUR ANDROID-BASED MOBILE COMPUTERS ARE **ALWAYS UNDER YOUR CONTROL**.

Mx allows you to extend the features in your current MDM to our Android-based mobile computers, as well as align your device management strategy to the way your business operates — in shifts.

DEVICE SHARING: MULTI-USER LOG-ON

If your business operates in shifts, different workers will utilize a single device — workers who may need access to different applications, with different data clearance levels. You need to be able to easily control what each user can access. Mx puts that control at your fingertips. Now, you can tie settings, applications and data access rights to user ID and password. So when workers log in, the device in their hands is instantly and automatically configured properly, protecting data security and integrity.

MDM COMPATIBILITY

Zebra is committed to providing the platform signing required to ensure compatibility with your existing Mobile Device Management (MDM) solution — including Zebra's Mobility Services Platform (MSP), SOTI MobiControl and AirWatch. This commitment ensures that Android has access to the lower level application interfaces required to support the feature set of your MDM, bringing end-to-end remote device management best practices to Zebra's Android-based mobile computer. Now, in addition to enterprise-class mobile devices with typical enterprise-class operating systems, IT can also remotely stage, update, troubleshoot, lock, wipe and monitor Zebra's Android-based mobile devices.

In addition, Mx options are designed to be deployed from your MDM to ensure mobile device management simplicity. The result is a single centralized pane of glass to manage all aspects of all of your mobile devices, regardless of whether the feature is provided through your MDM or is an Mx option.

OPTIONAL DEVICE MANAGEMENT CONTROLS

Mx offers two alternatives to deploying Mx features via an MDM: Zebra's Enterprise Administrative Utility (EAU) and XML Configuration Control. These alternatives are ideal for the following specific situations:

- Deployment of an Mx feature that is not supported by your MDM client
- Deployment of Mx features to a small number of users in an environment where an MDM is not deployed
- Deployment of a small pilot for testing purposes, prior to a full scale rollout



Complete advantage Enterprise Class Data Capture



WITH **Mx**, IT'S EASY TO TAKE COMPLETE ADVANTAGE OF ALL OF OUR ENTERPRISE-CLASS DATA CAPTURE FEATURES TO MAXIMIZE THE VALUE OF OUR **ANDROID-BASED MOBILE COMPUTERS**.

DATAWEDGE FOR EASY CAPTURE OF BAR CODES AND OTHER BASIC ENTERPRISE DATA — WITHOUT PROGRAMMING

In the enterprise, bar code scanning is a core capability that will be used day-in and day-out to improve business efficiency and task accuracy. But without native support, enabling enterprise-class bar code scanning with standard Android can be time-consuming and costly.

With Mx, your workers can be up and running and scanning bar codes in days, instead of weeks or months. Mx offers native support for DataWedge, an easy-to-use Zebra utility that enables the capture of bar code data from virtually any type of scanning technology — 1D laser, 1D linear imager, 2D imager and camera — as well as information from magnetic stripe readers. The Advanced Data Formatting (ADF) function allows you to extract and format the data in whatever format your application requires. For example, the first five characters captured may be entered into one field and the following six characters into a different field — or you may need to remove all blank spaces or add a special keystroke, such as Tab or Enter. Once the data is formatted correctly, it is converted into keystrokes and delivered to the application, where it is received just as if the data was typed on a keyboard. This complimentary utility can be downloaded at no charge from the Zebra website.

INTEGRATED SUPPORT FOR DECODE ALGORITHMS

With built-in support for Zebra's world-class decode algorithms, workers get the same first-time every-time bar code scanning performance for which Zebra

is known. Even if bar codes are poorly printed, dirty or damaged, our algorithms enable the successful first-pass scanning that keeps business moving and workers productive.

EASILY INTEGRATE COMPREHENSIVE DATA CAPTURE FUNCTIONS IN NATIVE ANDROID APPLICATIONS WITH OUR DATACAPTURE SDK

If you are creating native Android applications, we make it easy to take advantage of the advanced data capture features on our Android-based mobile computers. Our entire Android-based mobile device portfolio is fully compatible with the standard Android operating system, so developers can utilize standard and familiar Android development tools for the majority of the application development effort, such as Google's Android Software Development Kit (SDK). But the Android SDK does not cover all of the enterprise-class data capture features on our mobile computers, creating a potentially time-consuming and expensive development effort. To fill in those gaps and reduce development time and cost, we created the Zebra DataCapture SDK. Our DataCapture SDK incorporates a multitude of application programming interfaces (APIs) that makes it easy to integrate the enterprise data capture features on our Android-based mobile computers, whether the feature is native to the device (such as an integrated bar code scanner) or available through an attached accessory (such as a payment card reader).



Mx Wireless



Mx GIVES YOU **WIRED-STYLE DEPENDABLE WI-FI CONNECTIVITY, RIGHT TO THE VERY EDGE OF YOUR WIRELESS LAN.**

All Wi-Fi radios are not created equally. The consumer-grade radios in standard Android devices typically lack the features required to establish and maintain a robust wireless connection. In the enterprise, the resulting connectivity lapses can translate into dropped voice calls and the need to re-enter data, frustrating workers and reducing productivity. Mx Wireless addresses this issue with Fusion, an enterprise-grade Wi-Fi radio with a feature set that delivers wired-style quality of service in every inch of your managed WLAN network. The result? Your workers experience superior speed, throughput and dependability — even in managed heterogeneous WLAN network environments.

FAST AND INTELLIGENT PRE-EMPTIVE ROAMING

Since our Fusion Wi-Fi radio is network aware, roaming is more intelligent and efficient. When workers are on the move through your facility, our Wi-Fi radios are busy determining which access point will provide the best signal, and when to roam to that access point to prevent signal degradation.

ADAPTIVE AUTHENTICATION

With network awareness, our Fusion Wi-Fi radio can pre-authenticate users on all of your access points. Users can now roam freely between access points without requiring the processing time and power to constantly re-authenticate. Device processing time is reduced, improving battery cycle times, and roaming efficiency and the roaming experience are significantly improved.

EDGE AWARENESS

Maintaining service quality at the literal edge of your wireless network is always a challenge. The Fusion Wi-Fi radio recognizes when users have reached the

last access point and invokes a special feature set that protects the network connection and the user experience. The result? Productivity is preserved, even at the very edge of your WLAN.

HETEROGENEOUS WI-FI SUPPORT

The Fusion radio supports mixed architecture wireless LANs, ensuring that Mx Fusion features work, regardless of whether your WLAN includes only Zebra access points or other access points from other manufacturers.

COMPREHENSIVE WI-FI SECURITY SUPPORT

Our Fusion Wi-Fi radio is truly enterprise-class, with support for all of the latest Wi-Fi security protocols, including WPA, WPA2 (AES), CCXv4 and much more. As a result, your data is safe, even if your network contains access points with proprietary technology, such as Cisco. Comprehensive Wi-Fi security protocol support combines with optional Mx Security features to take data security on Zebra Android-based mobile computers to the next level.

WE PLEDGE A SOLID COMMITMENT TO **Mx**

As an industry leader in enterprise mobility, we are as committed to Mx as we are to the mobile computers and wireless infrastructure we manufacture. Today, there are over 30 Mx features, with over 50 more currently in development and a roadmap that reaches many years into the future. It's obvious that the Android operating system is here to stay — so is Mx. You can count on Mx to evolve and keep pace with standard Android, new mobile device requirements and new mobility trends.



**TAKE ADVANTAGE OF ANDROID IN YOUR ENTERPRISE WITH THE POWER OF MX.
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