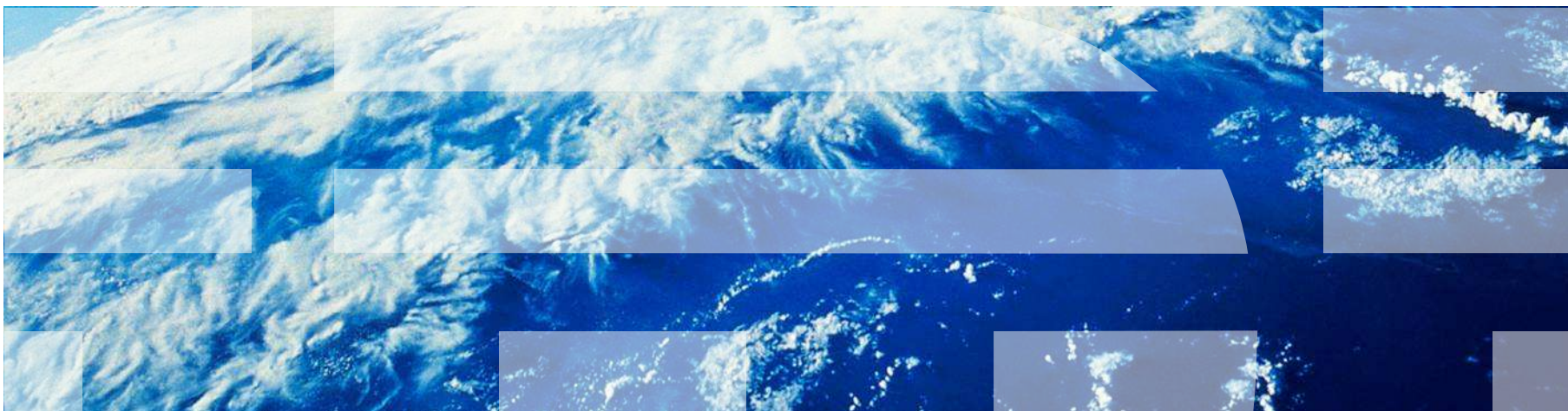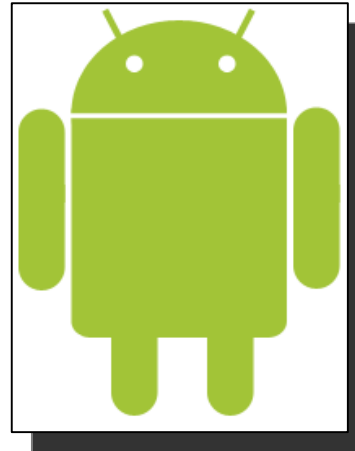# IBM Endpoint Manager for Mobile Devices
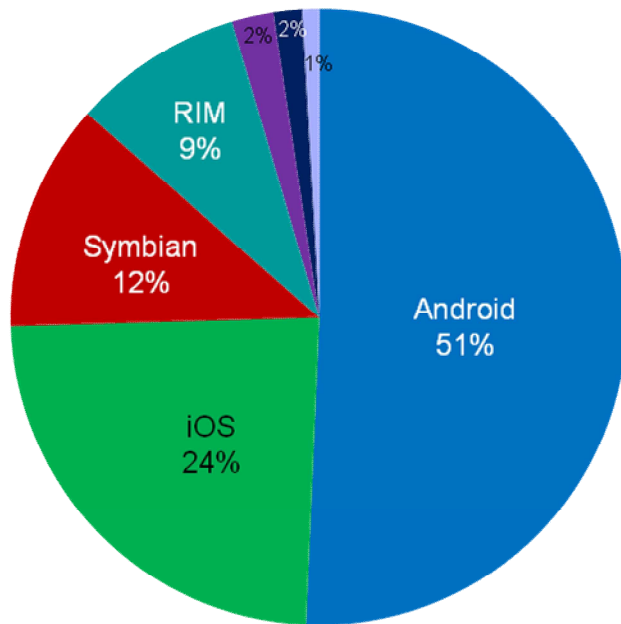
Built on BigFix technology

Google, Apple, and corporate employees are the big winners; Nokia, RIM, and IT departments are facing challenges

Share of global Q4 2011 smartphone sales to end users, by OS

RIM 9%

Symbian 12%

Android 51%

iOS 24%

2% 2% 1%

Legend: Android, iOS, Symbian, RIM, Bada, Microsoft, Others

Source: Gartner 2012; does not include media tablets

- Android and iOS accounted for 75% of all smartphone shipments

- Consumer-oriented devices from Apple and Google have quickly penetrated the enterprise, but remain largely unmanaged

Mobile Devices Create New IT Challenges

Mobile devices magnify existing challenges and also pose unique ones that significantly disrupt traditional management paradigms.

Traditional Mgmt Model	New Device Mgmt Paradigm
Enterprises provide all equipment	Employees bring personal devices (BYOD)
Small set of supported platforms / models	Many different manufacturers / models
IT initiates and manages upgrades	OS/app upgrades managed by carriers, OEMs, users
IT tightly controls apps and security	Users control their own devices

Options for IT departments
❌ Don't allow mobile devices because they are too hard to manage ❌
❌ Allow unmanaged and insecure mobile devices ❌
✅ Invest in tools to secure and manage devices ✅

Managing the paradigm shift with IBM Endpoint Manager

| Problem	Tivoli Endpoint Manager Solution
How to manage employee-owned vs. enterprise-owned assets?	Gives enterprises flexibility to use email-based mgmt (less intrusive) or sophisticated agent-based mgmt
How to deal with lost or stolen devices?	Password policy controls (pin length, timeout, wipe after failed login, etc.) and remote wipe
How to deal with sensitive corporate data on device?	Enable device encryption, selective wipe of corporate data when employees leave company
How to control IT cost explosion when dealing with so many devices?	"Single pane of glass" to manage all devices servers/desktops/laptops/mobile devices with shared infrastructure
How to handle rapidly changing devices / OSes / apps / user behavior?	Flexible Endpoint Manager platform with cloud-based Fixlet model for rapid updates and new solution delivery

IBM's Mobile Strategy

IBM Mobile Platform

Build mobile applications

Connect to, and **run** backend systems in support of mobile

Manage mobile devices and applications

Secure my mobile business
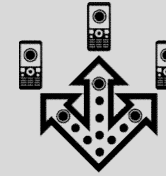
Extend existing business capabilities to mobile devices

Grow the business by creating new opportunities

IBM Endpoint Manager for Mobile Devices

IBM & Business Partner Confidential

Management capabilities vary greatly by mobile operating system, but one thing is consistent – the user is king

Management Function	Apple iOS		Google Android	
	Supported by Apple?	Notes	Supported by Google?	Notes
Selectively Wipe Mail / Calendar / Contacts	Yes	Standard part of Apple's MDM interface	Not natively, but with 3rd-party tools	Android doesn't have a native email client that supports selective wipe, so integration with 3rd-party email app clients (e.g., Lotus Traveler or NitroDesk Touchdown) is necessary
Forcibly Install Apps	No	iOS doesn't currently support forcible app install without user permission, so enterprise app store approach is needed.	No	Android doesn't currently support forcible app install without user permission, so enterprise app store approach is needed.
Forcibly Uninstall Apps	Yes (if installed using enterprise app store)	With iOS 5, apps (both public and private) provisioned via the enterprise app store can be uninstalled remotely without user intervention	No	Android doesn't currently support forcible app uninstall without user permission.
Configure Enterprise Connections (Email / VPN / Wi-Fi / etc)	Yes	Standard part of Apple's MDM interface	Not for "vanilla" Android	Manufacturers such as Motorola, Samsung, and Lenovo sometimes modify the Android OS to expose APIs that allow for enterprise connection configuration.

PCs and mobile devices have many of the same management needs

Traditional Endpoint Management

- OS provisioning
- Patching
- Power Mgmt
- Anti-Virus Mgmt

Mobile Device Management

- Device Wipe
- Location info
- Jailbreak/Root detection
- Enterprise App store
- Self-service portal

- Device inventory
- Security policy mgmt
- Application mgmt
- Device config (VPN/Email/Wifi)
- Encryption mgmt
- Roaming device support
- Integration with internal systems
- Scalable/Secure solution
- Easy-to-deploy
- Multiple OS support
- Consolidated infrastructure

- **Advanced management on iOS through Apple's MDM APIs***

- **Advanced management on Android through a BigFix agent**

- **Email-based management through Exchange (ActiveSync) and Lotus Traveler (IBMSync)**
  - iOS
  - Android
  - Windows Phone
  - Windows Mobile
  - Symbian

* Refer to Apple's MDM documentation to learn what functionality MDM vendors can take advantage of:
http://images.apple.com/iphone/business/docs/iOS_MDM.pdf

Functionality Overview

Category	Endpoint Manager Capabilities
Platform Support	Apple iOS, Google Android, Nokia Symbian, Windows Phone, Windows Mobile
Management Actions	Selective wipe, full wipe, deny email access, remote lock, user notification
Application Management	Application inventory, enterprise app store, whitelisting, blacklisting
Policy & Security Management	Password policies, device encryption, jailbreak & root detection
Location Services	Track devices and locate on map
Enterprise Access Management	Configuration of Email, VPN, Wi-fi

Feature	Advanced Management on Android and iOS		Email-based Mgmt for iOS, Android, Windows Phone 7, Symbian	
	Android Agent	Apple MDM APIs	Exchange	Lotus Traveler
Integration with Endpoint Manager/BigFix Platform				
"Single pane" for managing laptops, desktops, servers, mobile devices	Y	Y	Y	Y
Single infrastructure/administration model for managing all devices	Y	Y	Y	Y
Fixlet-based model for one-click addition of new solutions	Y	Y	Y	Y
Enterprise-grade APIs for integration with other systems (trouble-ticketing, CMDB, etc)	Y	Y	Y	Y
Enterprise-grade customization layer for extensibility (Fixlets, properties, actions, …)	Y	Y	Y	Y
Scalability to 250,000+ devices	Y	Y	Y	Y
Management over the corporate network, over-the-air (OTA), or on public internet	Y	Y	Y	Y
Command-line utility for self-service portal	Y	Y	Y	Y
Device Inventory				
Model / OS Version	Y	Y	Y	Y
Email User	Y	-	Y	Y
Last Connection Time	Y	Y	Y	Y
Device details (model, version, serial number, …)	Y	Y	-	-
HW info (firmware, memory, battery, screen, …)	Y	Y	-	-
OS details (version, build, …)	Y	Y	-	-
Location information (map device location)	Y	Y	-	-
Network details (carrier, IP, MAC address, ...)	Y	Y	-	-
Installed Apps (names, versions)	Y	Y	-	-
Phone number info		Y	-	-
Installed certificates		Y	-	-
Management Actions				
Wipe Complete Device	Y	Y	Y	Y
Deny Email Access (policy based)	-	Y	Y	Y
Selective Wipe (calendar/email/contacts)	-	Y	-	Y
Selective Wipe (SD cards)	Y			
Messaging user	Y	Y	-	-

Functional Details (2/2)

Feature	Advanced Management on Android and iOS		Email-based Mgmt for iOS, Android, Windows Phone 7, Symbian	
	Android Agent	Apple MDM APIs	Exchange	Lotus Traveler
Security Policies				
Set password policy (pw length, # attempts, pw complexity)	Y	Y	Y	Y
Prohibit non-complying devices from connecting (enforced by email)	-	-	Y	Y
Require Encryption	Y	Y	Y	Y
Disable Camera	Y	Y	Y	Y
Unlocked Device (jailbroken / rooted)	Y	Y	-	-
App Management				
Installed Apps Inventory	Y	Y	-	-
Offer App ("Recommended Enterprise Apps")	Y	Y	-	-
Blacklisted App Detection (server-side)	Y	Y	-	-
Blacklisted App Notification (agent-side)	Y	Y	-	-
Corrective Actions (all based on data to device)				
Messaging	Y	Y	-	-
Deprovision profile	-	Y	-	-
Deny email	-	Y	Y	Y
Remove VPN	-	Y	-	-
Device/App Configurations				
Mail (ActiveSync) & Wi-Fi	-	Y	-	-
VPN & LDAP	-	Y	-	-
Encryption	-	Y	-	-
Camera	-	Y	-	-
Screen Capture	-	Y	-	-
Distribute, install, revoke, remove and return status of 3rd-party certificates	-	Y	-	-

IBM Endpoint Manager for Mobile Devices Architecture

Console / Web Reports

TEM Server

DB

Apple Push Notification Servers

http / 52311

http / 52311

Relay(s)

Mgmt Extender for iOS

http / 52311

Management Extender for (Exchange or Lotus)

Apple Push Notification

http / 52311

https

Apple MDM Interaction

Email Server (Exchange/Lotus)

Desktops / Laptops

Servers

ActiveSync / IBM Sync

ActiveSync

Phones / Tablets

Android

w/Email

Apple

Full Agents

Full Agents

Android TEM App

Apple TEM App