

# IBM Endpoint Manager for Mobile Devices

## Mobile Device Management

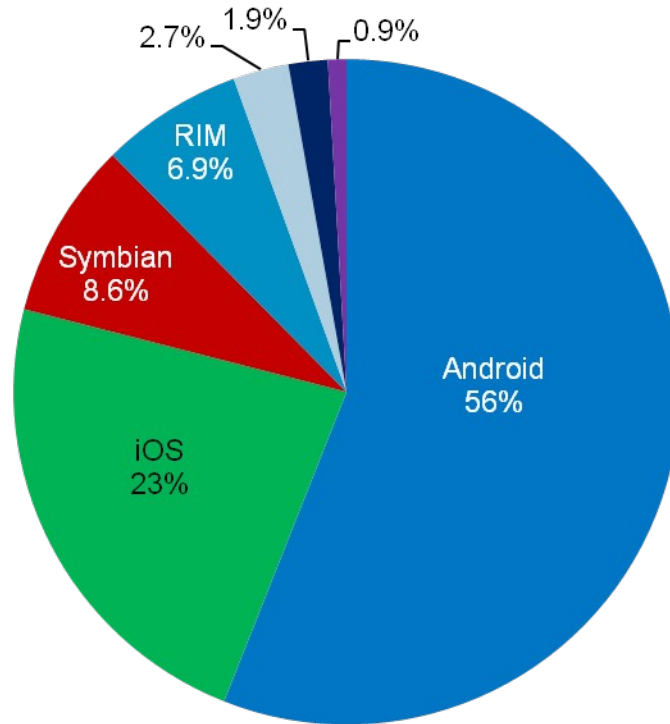


## Executive Summary

- Android and iOS devices have quickly penetrated the enterprise, bringing productivity gains, along with increased risk and cost
- IBM Endpoint Manager for Mobile Devices delivers strong MDM capabilities in an infrastructure that enables unified management of all enterprise devices – desktops, laptops, servers, smartphones, and tablets
- IBM is uniquely positioned to deliver end-to-end app and mobile device lifecycle management with Mobile Application Development Platform (MADP), Mobile Device Management (MDM), and Telecom Expense Management capabilities

# Android and iOS accounted for 79% of all smartphone shipments

Share of global Q1 2012 smartphone sales to end users, by OS



■ Android ■ iOS ■ Symbian ■ RIM ■ Bada ■ Microsoft ■ Others

Source: Gartner 2012; does not include media tablets

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

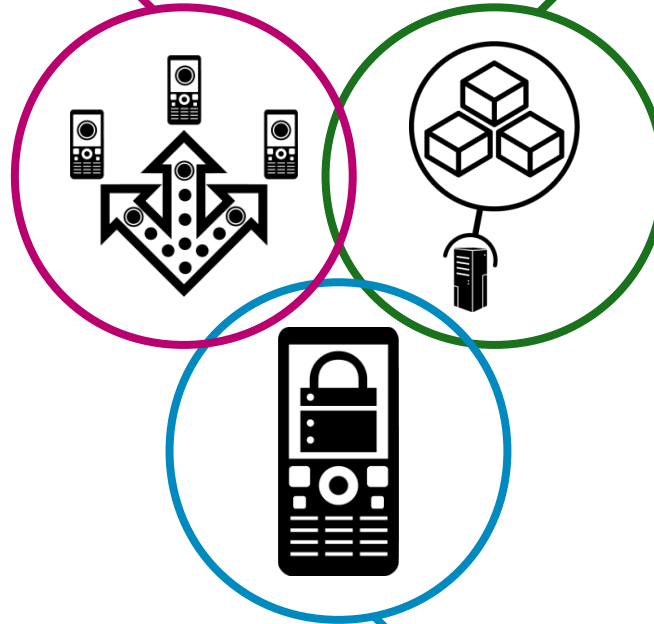
- ✘ Don't allow mobile devices because they are too hard to manage ✘
- ✘ Allow unmanaged and insecure mobile devices ✘
- ✔ Invest in tools to secure and manage devices ✔

# IBM is uniquely positioned to deliver end-to-end app and mobile device lifecycle management

## Extend & Transform

### Key Capabilities

- Strategy, planning and implementation
- Mobile-enabled solutions including analytics, commerce, and social business
- Mobile as a service



## Build & Connect

### Key Capabilities

- Mobile web, hybrid and native app development
- Enterprise data, service, and application integration
- Enterprise wireless networking

## Manage & Secure

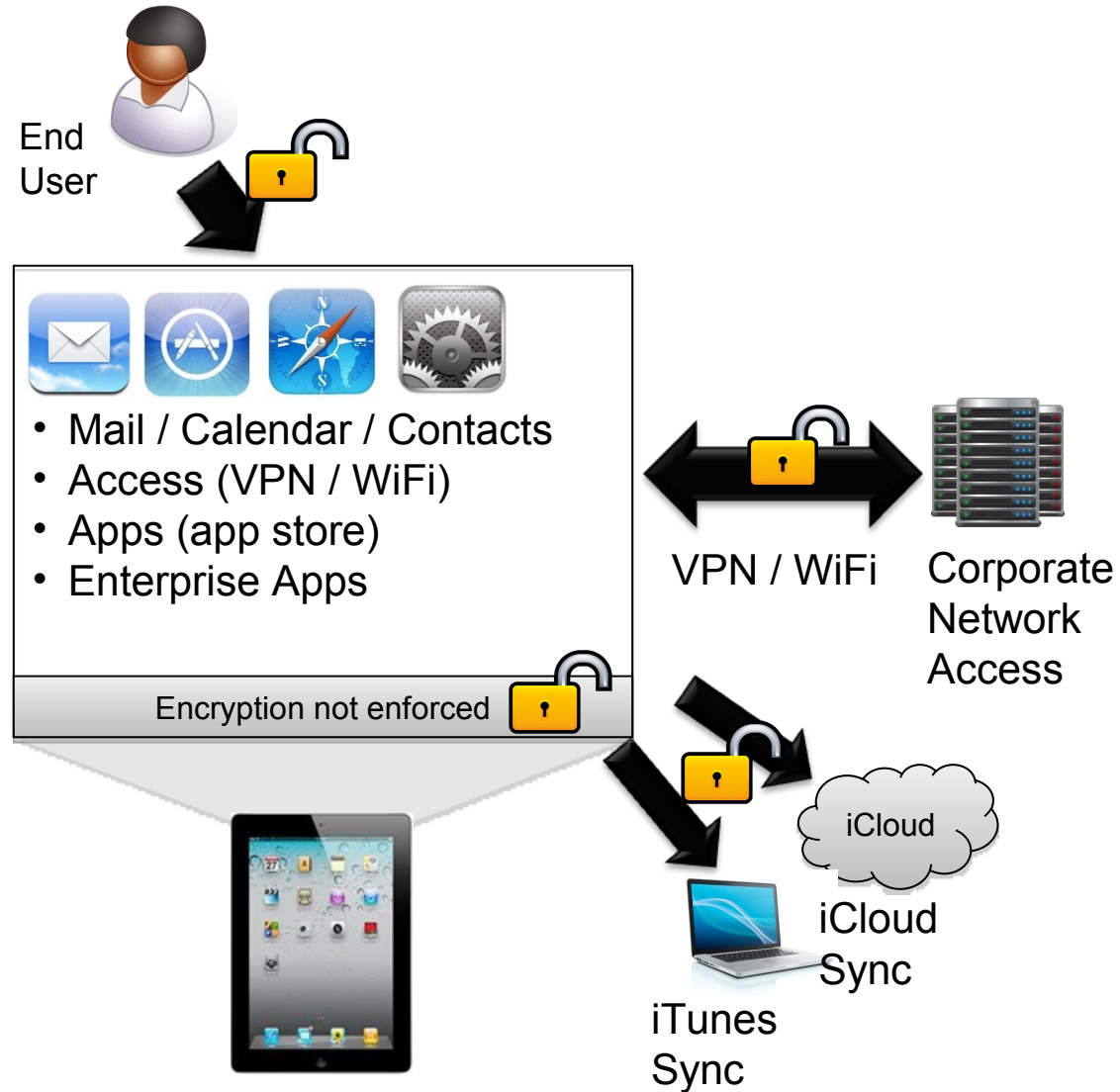
### Key Capabilities

- Mobile lifecycle management
- Device analytics and control
- Secure network communications & management

# Managing Mobile Devices – The Problem

## Security & Management Challenges

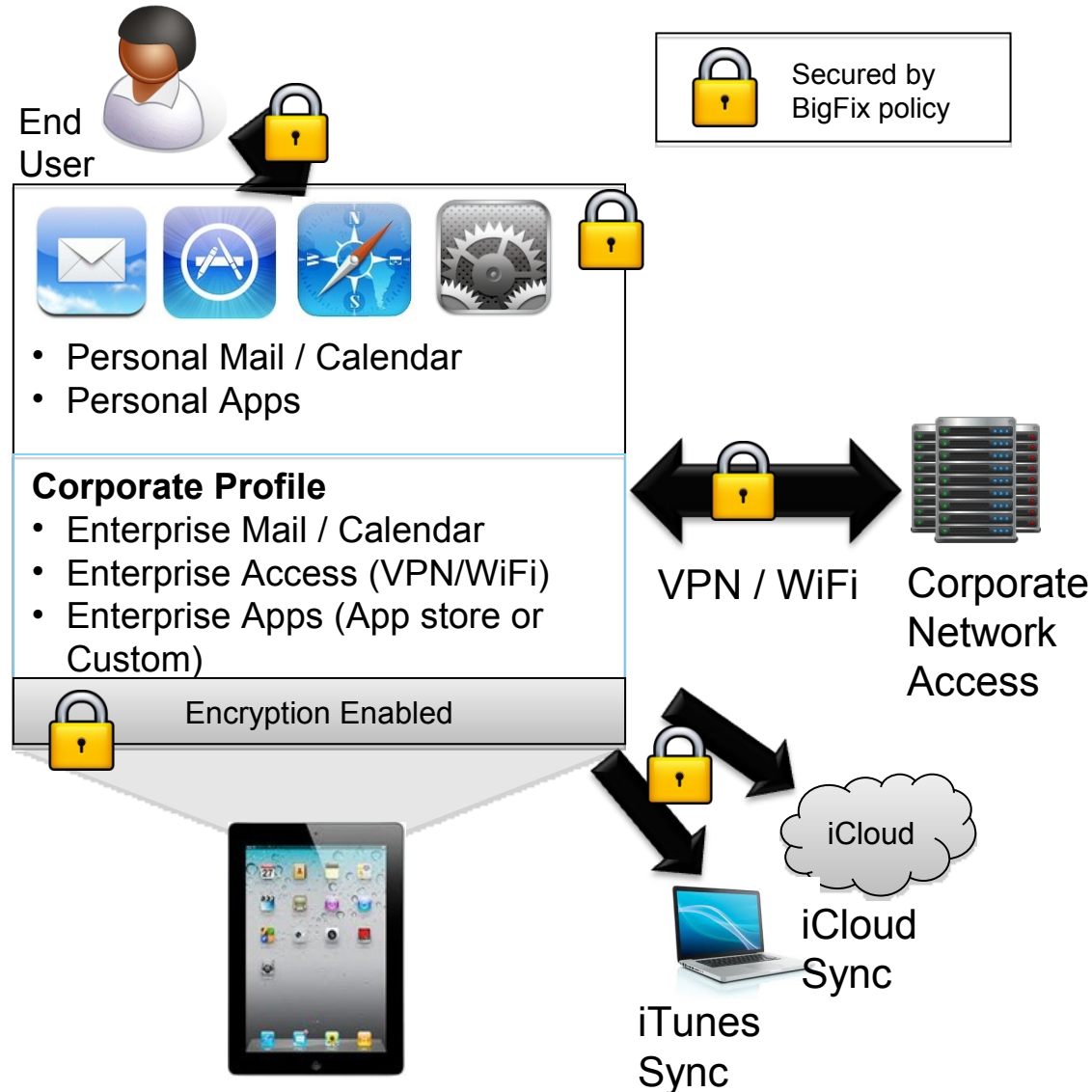
- Potential unauthorized access (lost, stolen)
- Disabled encryption
- Insecure devices connecting to network
- Corporate data leakage



# Managing Mobile Devices – The Solution

## Endpoint Manager for Mobile Devices

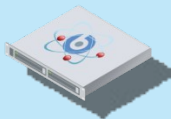
- Enable password policies
- Enable device encryption
- Force encrypted backup
- Disable iCloud sync
- Access to corporate email, apps, VPN, WiFi contingent on policy compliance!
- Selectively wipe corporate data if employee leaves company
- Fully wipe if lost or stolen



# PCs and mobile devices have many of the same management needs

## Traditional Endpoint Management

- OS provisioning
- Patching
- Power Mgmt



## Mobile Device Management

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





# IBM Endpoint Manager delivers a unified systems and security management solution for all enterprise devices



Unix / Linux Servers

Android / iOS / Symbian /  
Windows Phone devices

Windows & Mac  
Desktops/Laptops

Windows Mobile / Kiosks /  
POS devices

**Supporting more devices...**

**...and more capabilities.**

Device Inventory	Endpoint Protection	S/W Use Analysis	
Patch Mgmt	Power Mgmt	Security Config Mgmt	Mobile Device Mgmt
Configuration Mgmt	Remote Control	OS Deployment	

# Benefits of an Endpoint Manager based Approach to Mobile Device Management

- “Organizations...would prefer to **use the same tools across PCs, tablets and smartphones**, because it's increasingly the same people who support those device types”

– Gartner, *PCCLM Magic Quadrant, January 2011*

- Although at some level mobile is unique, **the devices are just another form of endpoints in your infrastructure**. This means whichever technologies you procure should have a road map for integration into your broader endpoint protection strategy.

– Forrester, *Market Overview: Mobile Security, Q4, 2011*

## Reduces Hardware & Administration Costs

- “Single pane” for mobile devices, laptops, desktops, and servers
- Single Endpoint Manager Server scales to 250,000+ devices
- Unified infrastructure/administration model reduces FTE requirements

## Fast Time-to-Value

- Enterprise-grade APIs enable integration with service desks, CMDBs, etc (Integrated Service Management)
- Cloud-based content delivery model allows for rapid updates with no software upgrade or installation required

# IBM Office of the CIO



## Extending Corporate Access

*“IBM's BYOD program “really is about supporting employees in the way they want to work. They will find the most appropriate tool to get their job done. I want to make sure I can enable them to do that, but in a way that safeguards the integrity of our business.”*

**Jeanette Horan, IBM CIO**

### Customer Needs

- Support BYOD for a variety of mobile platforms securely for a highly mobile population
- Scale to hundreds of thousands of devices

### Key Features & Outcomes

- 120,000 mobile devices, 80,000 personally owned, supported in months
- Integrated Lotus Traveler, IBM Connections, IBM Sametime, and IBM Endpoint Manager

# How does Endpoint Manager manage mobile devices?

- Agent-based Management

- Android via native BigFix agent
- iOS via Apple's MDM APIs



- Email-based management through Exchange and Lotus Traveler

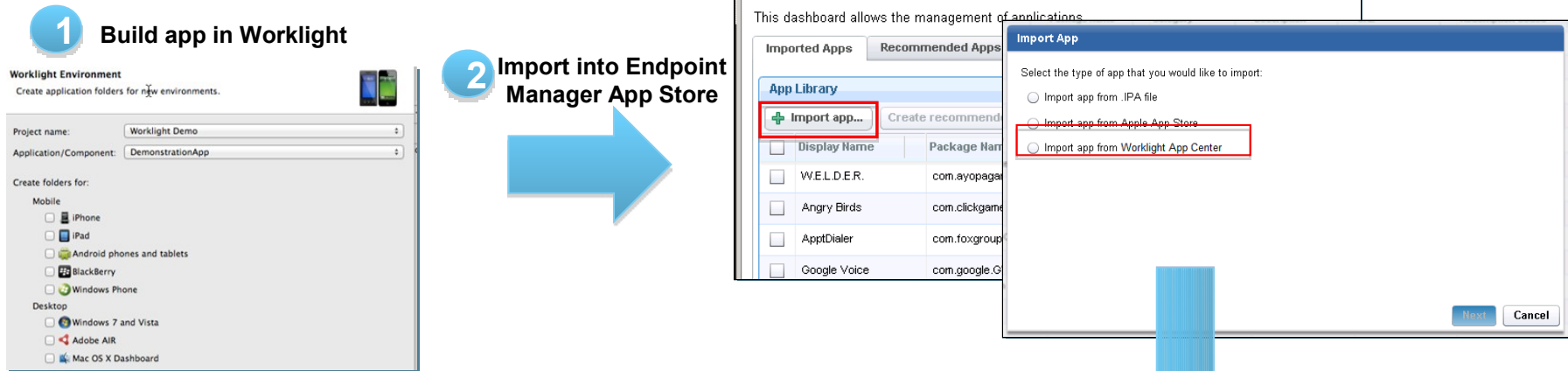
- Supported platforms: iOS, Android, Windows Phone, Windows Mobile, Symbian



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, clear passcode
End-User Services	Self-service portal, enterprise app store, authenticated enrollment (AD/LDAP)
Application Management	Application inventory, enterprise app store, whitelisting, blacklisting, Apple VPP
Policy & Security Management	Password policies, device encryption, jailbreak & root detection
Location Services	Track devices and locate on map
Enterprise Access Management	Configure email, VPN, and Wi-Fi; certificate management
Expense Management	Enable/disable voice and data roaming

# Mobile Foundation Potential Integration Scenario

## Streamlined App Deployment Workflow



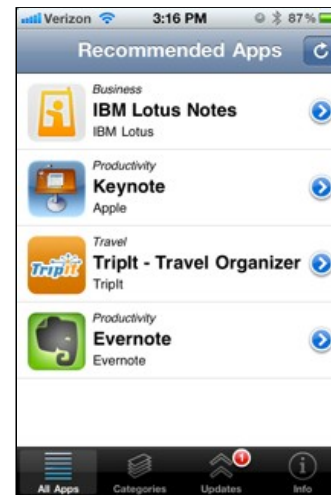
### Today

Endpoint Manager customers can import and distribute custom and 3<sup>rd</sup>-party Apple and Android apps via the Enterprise App Store

### Future

Endpoint Manager customers could **directly import and distribute Worklight-built apps** via Enterprise App Store, thereby improving workflow between Development and Operations

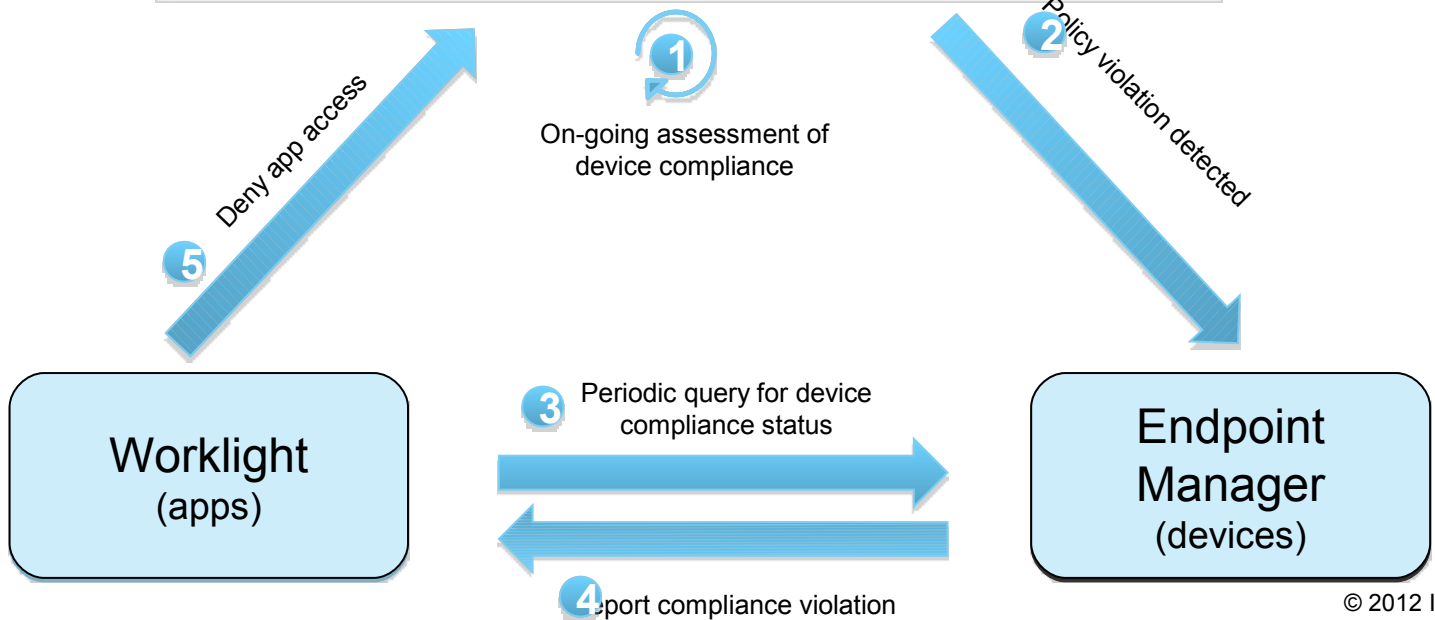
### 3 Distribute App to Employees



# Mobile Foundation Potential Integration Scenario

## Deny App Access

**Scenario**  
Device is out of compliance with policy  
→ Deny enterprise app access



# Electricity Provider



## Adding Mobile Devices Without Adding Infrastructure

*Serving 4.5 million customers in the southwestern region of the United States, this electric company of 25,000 employees is a leader in clean energy while exceeding reliability standards and keeping consumer costs below average. They are experiencing a migration from traditional endpoints to mobile devices.*

### Customer Needs

- Support 20,000+ mobile devices
- Corporate and employee-owned, many platforms and OS versions
- High availability for certain devices used in the field
- Adherence to Internal security policies, external regulations

### Key Features & Outcomes

- Scalability to 250,000 endpoints provides room to grow
- Added mobile devices to existing IEM deployment in days
- Ability to integrate with Maximo, Remedy
- Responsiveness and agility of product and product team

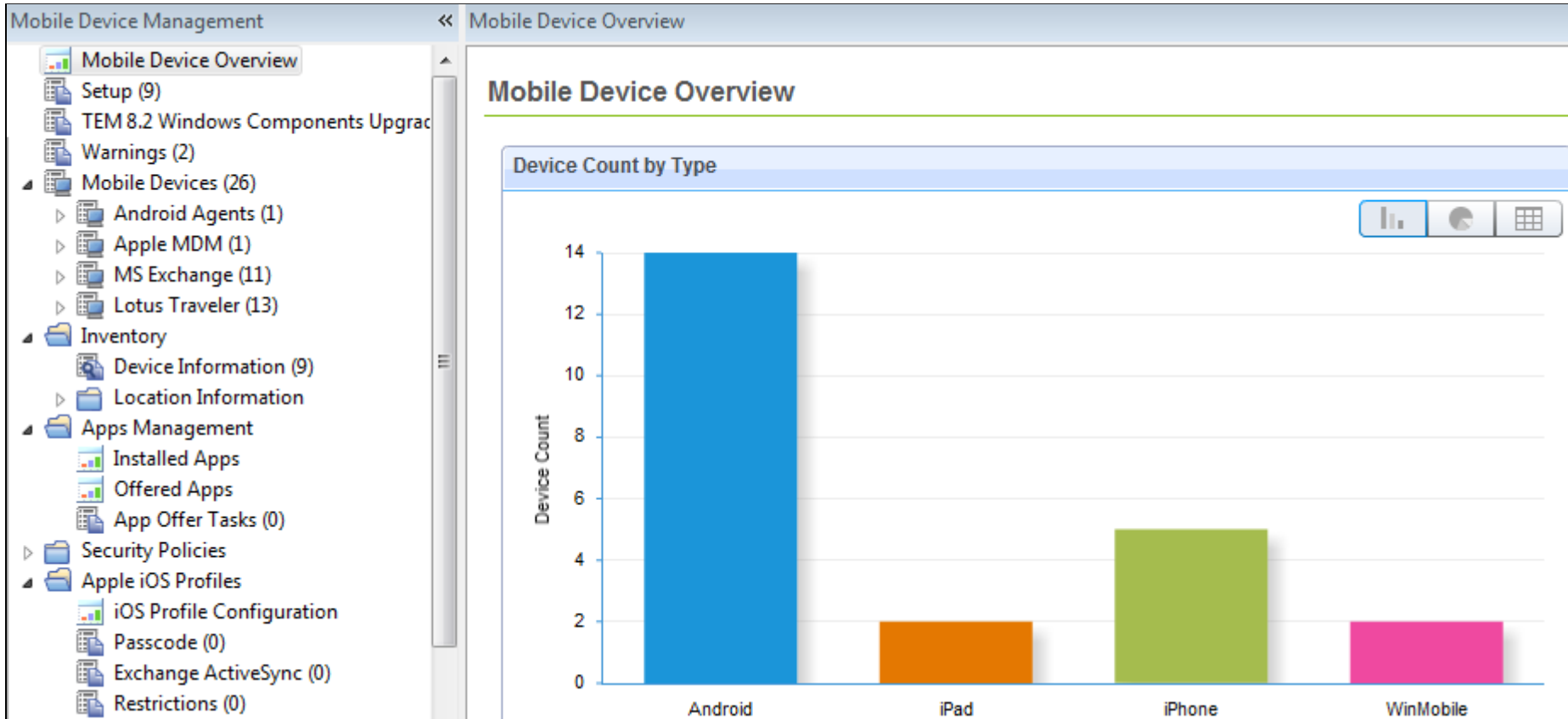
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# Appendix

# Endpoint Manager for Mobile Devices Dashboard



# A "Single Device View" enables administrators and helpdesk personnel to easily view device details and take required action



**Device Name**  
0000000000000000

**User Name**  
<none>

**Operating System**  
Android (2.3.3)

**Model**  
sdk

**⚠ This device has been rooted**

<b>Last Report Time</b>	Dec 01, 2011 12:32:14 PM
<b>Manufacturer</b>	unknown
<b>Carrier</b>	generic
<b>LastSyncTime</b>	n/a
<b>Phone Number</b>	n/a
<b>Agent Version</b>	8.2.867.0
<b>Data Source</b>	Native

Device Details
Management Commands
Security Info
Installed Apps

Name	
<a href="#">Device Wipe</a>	Apply
<a href="#">Clear Passcode</a>	Apply

View Device List

<b>Last Report Time</b>	6/25/2012 3:25:34 PM
<b>Manufacturer</b>	Apple
<b>Carrier</b>	n/a
<b>Phone Number</b>	n/a
<b>Agent Version</b>	8.2.11037.0
<b>Data Source</b>	Apple MDM

Device Details
Management Commands
iOS Profiles
Security Info

**Device Name**  
[nmakhani's iPad](#)

**User Name**  
nmakhani@us.ibm.com

**Operating System**  
iOS 5.1.0

**Model**  
iPad

**Location**  
*Location not Supported*

**Device Details - Android / Apple iOS**

**GUID / IMEI** n/a

**Serial Number** V5044H82

**Name** BigFix iPad

**Manufacturer** Apple

**Last Server Communication** Mon, 25 Jun 2012 15:25:34 -0700

**Authenticated User ID** n/a

**Model** iPad

**Device Ownership** Organization

**Phone Number** n/a

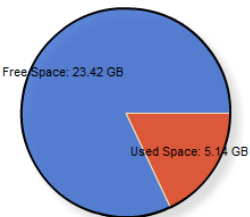
**UUID / UDID** 976e7dde31b9815f4f1d1a0acdbbcb7

**Carrier** n/a

**Model ID** MB293LL

**Locale/User Language** en

**Storage Information**



Free Space: 23.42 GB

Used Space: 5.14 GB

**Total Storage Space: 28.56 GB**

# A flexible enrollment process enables organizations to include a EULA and to collect critical device and employee data via customizable questions

**IBM. Mobile Device Enrollment**

## Enrollment Questions

Please answer the following questions

**Device ownership \***

- I own this device
- My organization owns this device

**Department**

Development

Full-time employee

Please explain why you want to be managed by MDM

are the awesome terms for this awesome MDM solution. It must be used for good and not for evil. Here are the awesome terms for this awesome MDM solution. It must be used for good and not for evil. Here are the awesome terms for this awesome MDM solution. It must be used for good and not for evil. Here are the awesome terms for this awesome MDM solution. It must be used for good and not for evil.

I agree

[Contact support](#)

Submit Cancel

Verizon 2:46 PM 92%

### Installing Profile



**IBM BigFix Profile...**  
IBM BigFix

Verified

Description: Install this profile to enroll for management by IBM BigFix.

Signed: IBM BigFix Profile Service


Received: Feb 9, 2012

Contains: Device enrollment challenge

**More Details** >

Verizon 2:47 PM 92%

### IBM Endpoint Manager

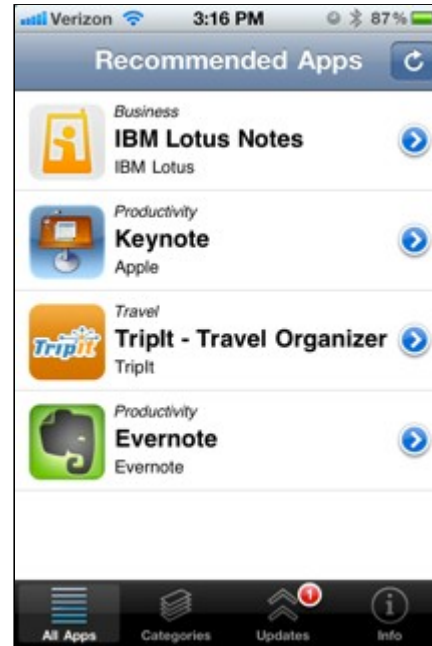
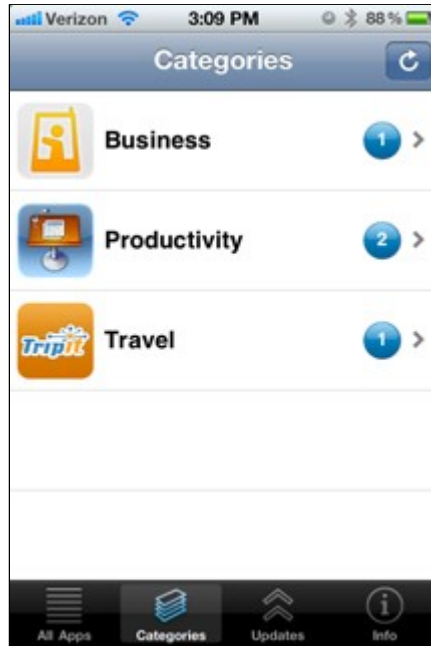
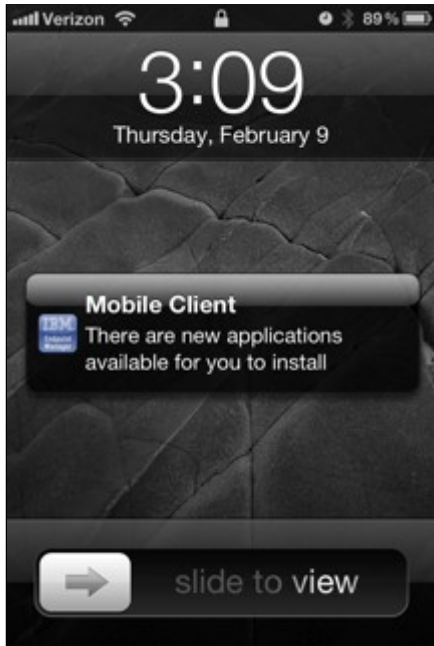


**There are no recommended apps available at this time.**

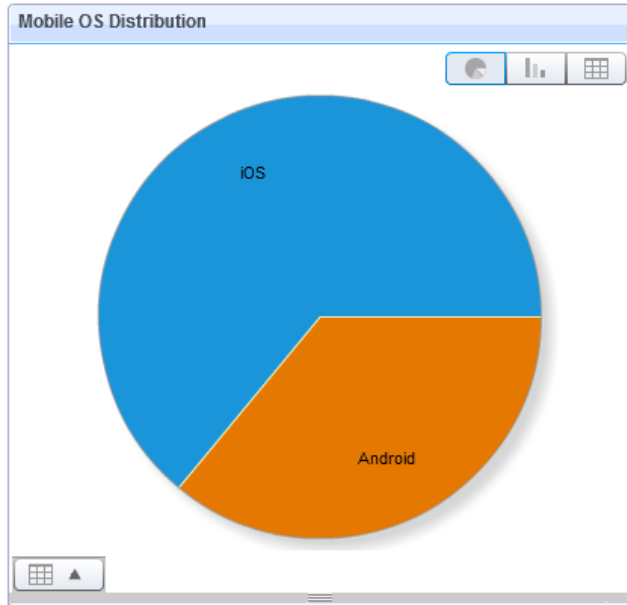
You will receive a notification when the administrator recommends new apps for you. You can also press the refresh button on the top of the screen to check for new apps.

All Apps Categories Updates Info

# Distribute apps using the Enterprise App Store

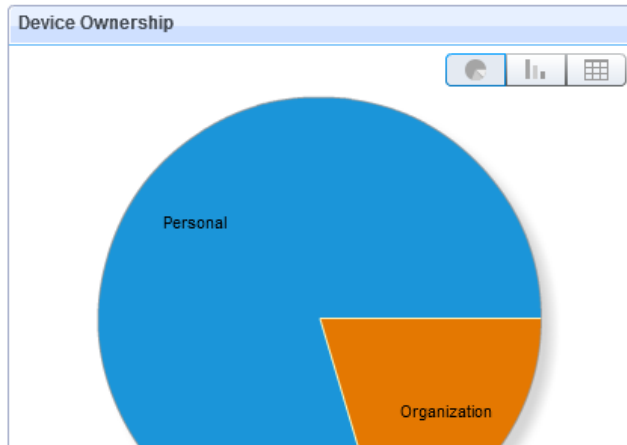


# Web reports provide at-a-glance mobile device deployment overviews



**Android Detail**

Version	Device Count	Manufacturer	Device Count
2.3.4	7	Samsung	6
2.3.3	4	HTC	5
4.0.2	3	Motorola	3
4.0.3	1	Unknown	3
3.2.1	1	Amazon	1
2.3.5	1		
2.2	1		



**iOS Detail**

Version	Device Count	Device Type	Device Count
5.1.0	10	iPhone 4	9
5.0.1	8	iPhone 4S	7
5.1.1	5	iPad	4
4.2.1	3	iPad 2 (WiFi)	3
4.3.5	2	iPhone 3GS	2
5.1	2	iPad 2 (GSM)	1
6.0.0	1	iPhone 4 (CDMA)	1
5.0.0	1	iPad (3rd Gen)	1

# A user-friendly iOS Profile Configuration Wizard exposes the configuration capabilities of Apple's MDM APIs

The screenshot displays three overlapping windows from the iOS Profile Configuration Wizard:

- Passcode:**
  - Allow simple value (Permit the use of repeating, ascending, and descending characters)
  - Require alphanumeric value (Require passcodes to contain at least one letter and one number)
  - Minimum password length (1-16, or 0 for none): 0
  - Minimum number of complex characters (1-16, or 0 for none): 0
  - Maximum passcode age (1-730 days, or 0 for none): 90
  - Auto-Lock (1-5 minutes for iPhone, or 2-180 minutes for iPad): 0
  - Passcode history (1-50 passcodes, or 0 for none): 4
  - Grace period for device lock: None
  - Maximum number of failed attempts (4-10): 10
- Restrictions:**
  - Device Functionality: Enable use of device features
  - Allow installing apps
  - Allow use of camera
  - Allow FaceTime
  - Allow screen capture
  - Allow automatic sync while roaming
  - Allow Siri
  - Allow Siri while device is locked
  - Allow voice dialing
  - Allow In-App Purchase
  - Force user to enter iTunes Store password
  - Allow multiplayer gaming
  - Allow adding Game Center friends
  - Applications: Enable access to applications on the device
  - Allow use of YouTube
- Exchange ActiveSync:**
  - Account Name: Name for the Exchange ActiveSync account
  - Exchange ActiveSync Host: Microsoft Exchange Server
  - Allow Move (Allow user to move messages from this account)
  - Use Only in Mail (Send outgoing mail from this account only from Mail app)
  - Use SSL (Send all communication through secure socket layer)
  - Use S/MIME (Send outgoing mail using S/MIME encryption)
  - Domain: Domain for the account
  - Auto-populate user and email fields

A Self-Service Portal empowers employees to locate lost devices and perform tasks such as lock, clear passcode, and device wipe

<b>Mobile Device Service Portal</b> <span style="float: right;">bkus@us.ibm.com <a href="#">Logout</a></span>			
Device Name	User Name	Operating System	Data Source
<a href="#">bkus's iPhone</a>	bkus@us.ibm.com	iOS 5.1.1	Apple MDM
<a href="#">bkus's ADR6400L</a>	bkus@us.ibm.com	Android 2.3.4	Native
<a href="#">bkus's iPad</a>	bkus@us.ibm.com	iOS 6.0.0	Apple MDM

Actions

Device Details

iOS Profiles

Apps

Security

Device Commands

Lock Screen

Show Command History

Clear Passcode

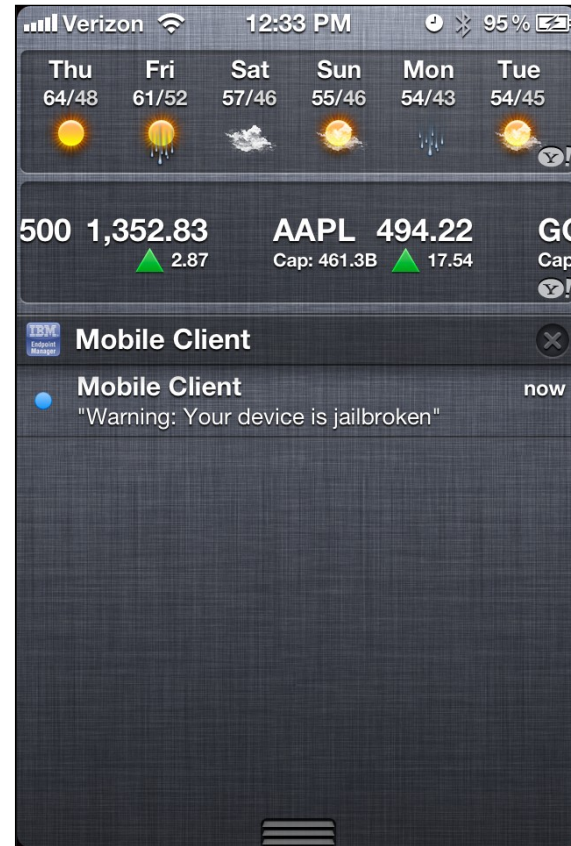
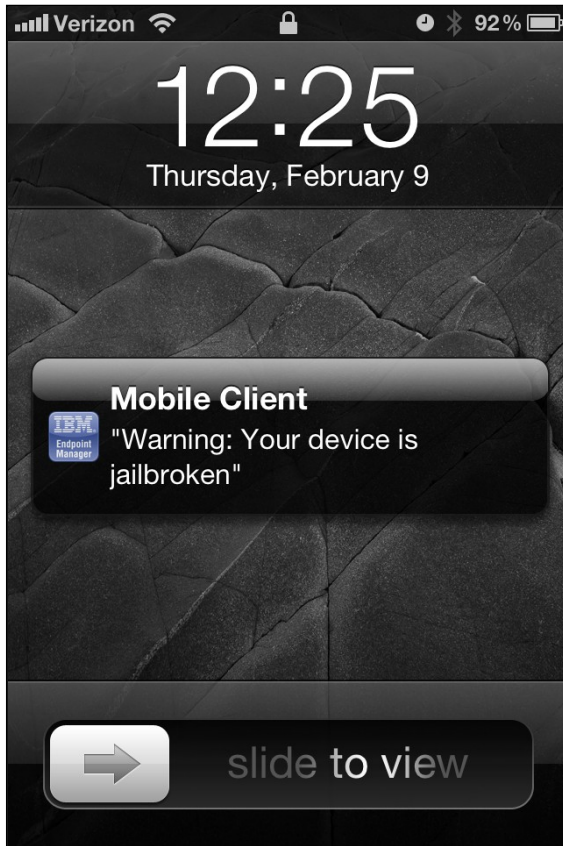
Show Command History

Device Wipe

Show Command History



# iOS Jailbreak Notification



# A unified report of password policies across all mobile OS' makes it easy for administrators to identify non-compliant devices

Analysis: Password Settings

View as list ▾

Computer Name	OS	Password Enabled	Password Compliant	Password Leng...	Require Alphan...	Ina
358920045232227	Android (2.3.3)	False	True	0	False	0
000000000000000	Android (2.3.3)	False	True	0	<undefined>	<u
FB61B6D5A0F74...	Android (2.3.4)	False	True	0	False	0
99000033060984	Android (2.3.4)	False	True	0	<undefined>	<u
99000052220657	Android (3.2.1)	False	True	0	<undefined>	<u
jnskala@us.ibm....	Android (4.0.1)	False	True	0	<undefined>	<u
Guille's iFoca	Apple iOS 4.3.5	True	True	8	True	30
Jim's iPad	Apple iOS 5.0.1	False	True	n/a	False	n/a
Ben's iPhone4	Apple iOS 5.0.1	True	True	8	True	5
Kelly Gibson's iP...	Apple iOS 5.0.1	True	True	4	False	5
Ben's iPad	Apple iOS 5.0.1	True	True	8	True	15
ApplJ3049UJXA90	iOS 4.3.3	False	False	n/a	False	n/a
ApplJ3049UJXA90	iOS 4.3.5	False	False	n/a	False	n/a
Appl7R049JM0A45	iOS 4.3.5	False	False	n/a	False	n/a
ApplV5051FERA90	iOS 4.3.5	False	False	n/a	False	n/a
ApplV5051FERA90	iOS 4.3.5	False	False	n/a	False	n/a
Appl7W05224EA45	iOS 4.3.5	False	False	n/a	False	n/a
Appl7R049JM0A45	iOS 4.3.5	False	False	n/a	False	n/a
Appl7W05224EA45	iOS 4.3.5	False	False	n/a	False	n/a

# View installed apps on Android and iOS devices

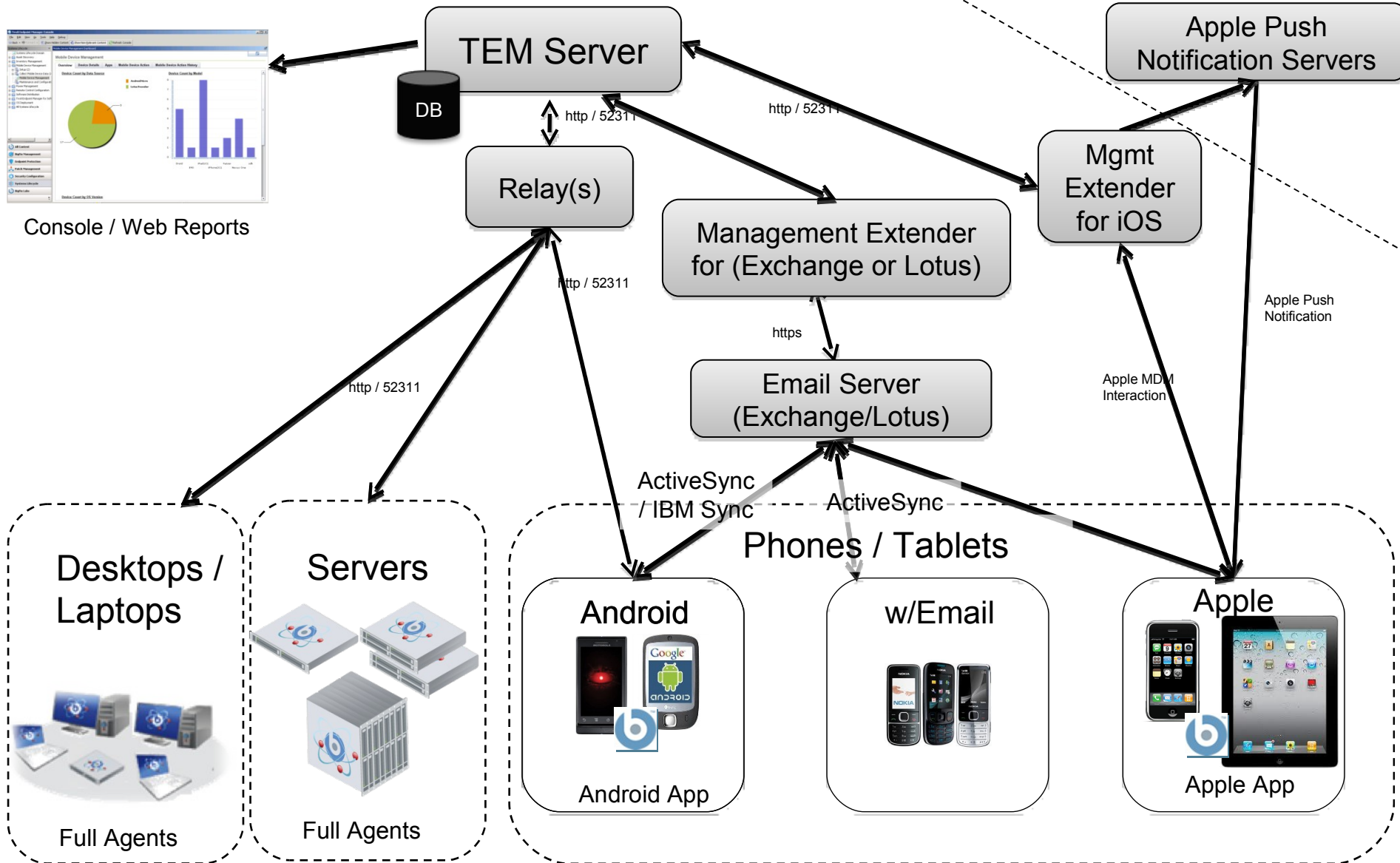
This dashboard lists the applications that are installed on managed devices.

**Apps List**

Tag checked as:

<input type="checkbox"/>	Display Name	Tag	1 ▲	Package Name	Description	Version	Computer Count
<input type="checkbox"/>	Dropbox	Blacklisted		com.getdropbox.Dropbox		1.4.2, 1.4.7, 1.5.1	<u>4</u>
<input type="checkbox"/>	XFINITY TV	Blacklisted		com.comcast.cim.xfinity		1.8.1	<u>1</u>
<input type="checkbox"/>	ApptDialer	Enterprise		com.foxgroupco.apptdia		3.2	<u>1</u>
<input type="checkbox"/>	Triplt - Travel Organizer	Enterprise		com.tripit.tripitmobile		2.5, 3.3.1	<u>2</u>
<input type="checkbox"/>	Mobile Client	Enterprise		com.ibm.tivoli.mobileclien		1.0.2, 8.2.11058, 8.2.110	<u>4</u>
<input type="checkbox"/>	Alfred			com.alfredmobile.alfred		0.6.8.5305	<u>1</u>
<input type="checkbox"/>	Trippy			com.trippy.delightful		1.0.44	<u>1</u>
<input type="checkbox"/>	IMDb			com.imdb.imdb		2.2, 2.6.1	<u>3</u>
<input type="checkbox"/>	Shazam			com.shazam.Shazam		345	<u>1</u>
<input type="checkbox"/>	Kindle			com.amazon.Lassen		n/a	<u>4</u>
<input type="checkbox"/>	Talkatone			im.talkme.talkmeim		1.4.1	<u>1</u>
<input type="checkbox"/>	Calculator Pro			com.apalon.calculatorpro		1.3	<u>1</u>
<input type="checkbox"/>	Flashlight			com.johnhaney.Flashligh		4.1	<u>1</u>
<input type="checkbox"/>	iBooks			com.apple.iBooks		335	<u>1</u>

# IBM Endpoint Manager for Mobile Devices Architecture



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