IBM MaaS360 Technical Intro Office Hours



Ciaran DARCY

Client Success Manager

ciaran.darcy@ibm.com



Eamonn O'MAHONY
Technical Client Success Manager

Session 4 – 15th April 2020 – Apps





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Event announcement

Event: IBM Think Digital



Event: IBM Think Digital. *Event*

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Gain the insights you need now, from anywhere in the world.

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Featured



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Chief Executive Officer
IBM



Jim Whitehurst President IBM



Ginni Rometty *Executive Chairman*IBM



Amal Clooney
Barrister, Doughty
Street Chambers



Mayim Bialik Writer, Actress, Neuroscientist



Imogen Heap

Musician, Producer, Founder

Mycelia for Music



Hugh HerrMIT
Biomechatronics



Jane McGonigal
Director of Game
R&D, IFTF



Artist and Lecturer, MIT Sloan Leadership Ctr



Saška Mojsilović IBM Fellow, Co-Director of Science for Social Good



Dr. Jennifer EberhardtSocial Psychologist,
Author



Eben Novy-WilliamsSports Business Reporter,
Bloomberg News



Caterina Fake
Partner, Yes
VC



Ralph Clark
President and CEO,
ShotSpotter



Muriel Médard
Cecil H Green
Professor of EECS



Ken Goldberg
Roboticist
UC Berkeley



Robin Hauser
Director and Producer



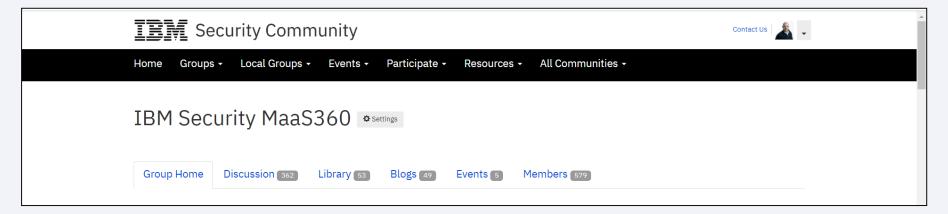
Riana Lynn
Founder and CEO,
Journey Foods



AGENDA: 15th April 2020

- 1. Technical Deep-Dive: Application deployment in MaaS360
- 2. Questions related to the topic
- 3. Q&A / Open Forum

Join us in the IBM Security Community!



https://community.ibm.com/security

- Ask questions, get answers
- Retrieve a copy of this presentation
- Also a recording of the session

Legend

Questions?

- We will stop at the end of each section for questions
- Please post your questions in the chat
- We will handle them at the end of each section

Best practice

- Lessons learned from customer experience
- And recommendations as best practice

Disambiguation

Sometimes the same term is used to describe a number of concepts – we will define each

ATTENTION

We draw your attention to some important points to note, in order to avoid mistakes

Application distribution and deployment

- MaaS360 App Catalog (portal)
- MaaS360 App Catalog (device)
- Types of apps supported
- App management and distribution
- App installs and upgrades
- Best practice for bulk app management
- Other app 'stuff': reporting, attributes, approvals
- App Dev/Deployment, App Approvals

ATTENTION: Open invitation to IBM Think Digital, 5th-6th May

Applications in MaaS360

Disambiguation

App Catalog (portal)

- Where: administrator console
- What: all apps added by administrator
- How: add / modify / delete apps, distribute to users/devices/groups

App Catalog (device)

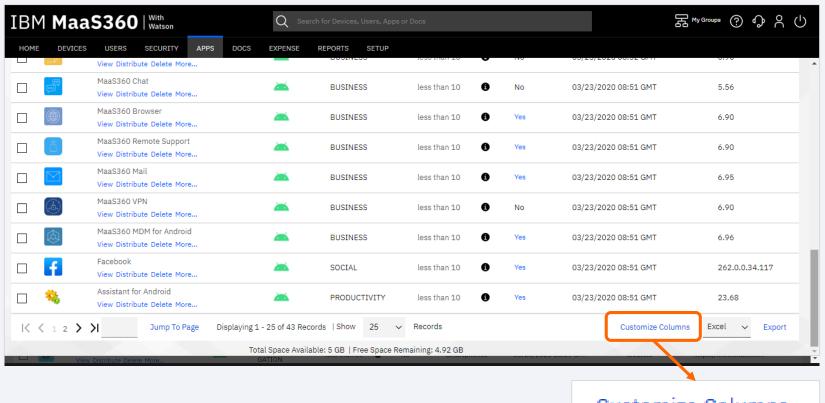
- Where: enrolled device > App Catalog app auto-installed
- What: displays all distributed apps
- How: display apps and help user to choose



MaaS360 App Catalog (portal)

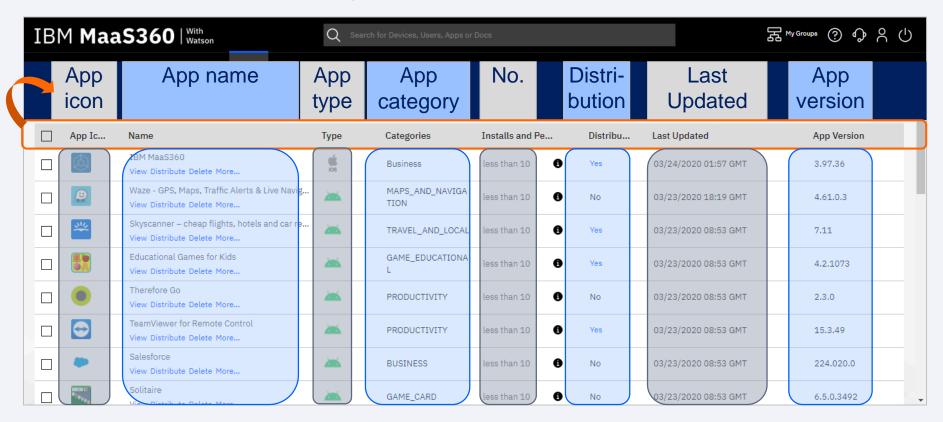
Questions?

App Catalog – information displayed



Customize Columns

MaaS360 App Catalog (portal)



MaaS360 App Catalog (device)

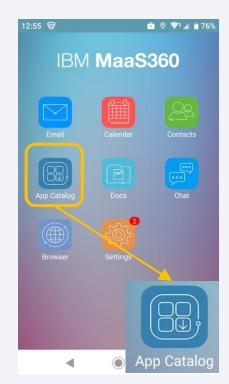
Questions?

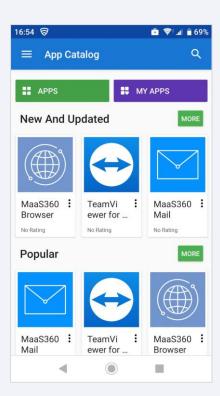
MaaS360 App Catalog (device)

- Automatically installed on an enrolled device
- Allows user to choose from a specially selected group of apps

Features:

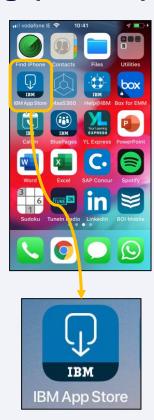
- Bundles
- Featured Apps
- My Apps

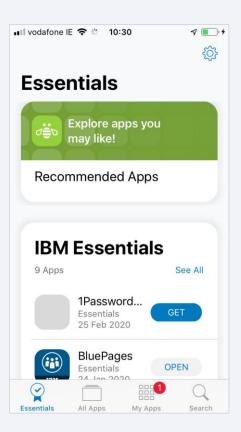




Branded Corporate App Catalog (device)

- Can use corporate logo
- Users can more easily identify
- Enable Branding / documentation: contact IBM MaaS360 Support

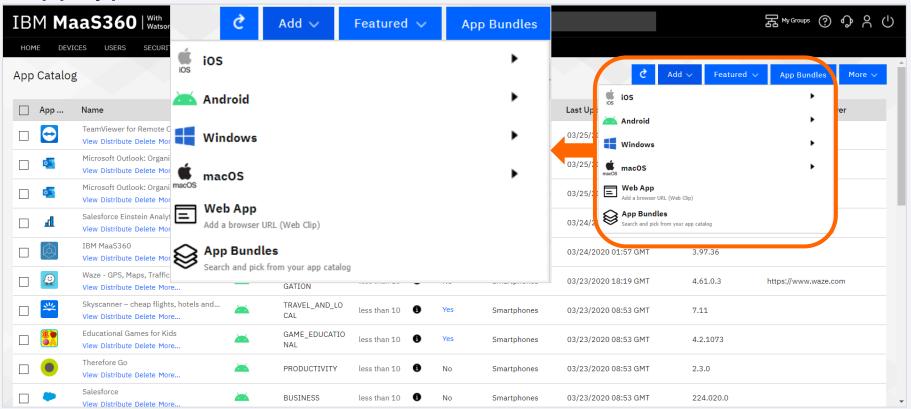




Types of applications supported

Questions?

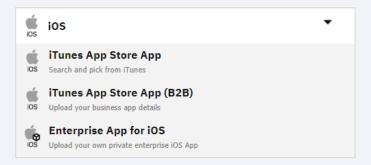
App types



App types

Туре	For		
iOS	iOS (iPhone / iPad)		
Android	Android (phones / tablets)		
Windows	Windows PC (some Windows 10 Mobile)		
MacOS	MacBook, iMac		
Web Apps	Web Apps (All) Shortcuts to web apps / pages		
App Bundles	App Bundles (All) Groups of apps for each platform		

iOS apps



iTunes App Store App

Store app, installed via App Store app (or App Catalog app) on device

- iTunes App Store App (B2B)

Managed via Apple Business Manager or Apple School Manager, then distributed through EMM

Enterprise App for iOS

In-house developed app with .IPA file

Needs to be digitally signed on Apple Platform

– needs Provisioning Profile

Android apps



Google Play App

Store app, installed via Play Store app on device

Enterprise App for Android

- Uses APK file in-house developed app
- Distribute in DA (Device Admin) or DO mode (not PO)
- Installed via APK file and not via Play Store

Private App for Android Enterprise

- Add through MaaS360 Catalog OR through Google Play
- Requires a Google Developer account
- Installed on device <u>via</u> Play Store

Webapp for Android Enterprise

- Shortcut to web application or web page
- Installed via App Catalog app on device

Disambiguation

	Android Enterprise	Enterprise app	App for Android Enterprise
Who uses the term	Google	IBM	Google
What is it	Approach to device management	Application developed in- house	Application to be distributed to Android Enterprise devices
Historical context	Previously known as Android for Work (Android 5/6)	Pre-dates Google's	
	Becomes Android Enterprise from Android 7	change of name	

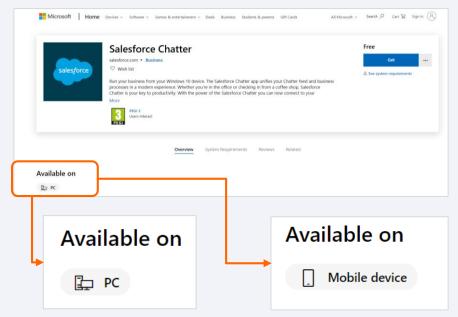
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Windows apps (1)

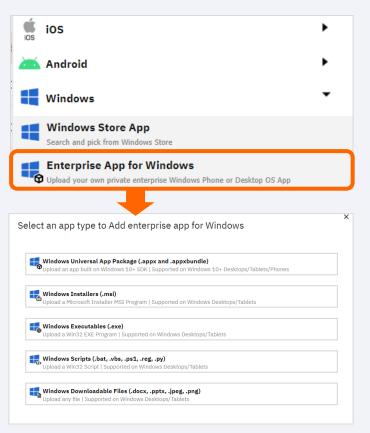


Windows Store App

Store app, installed via Windows Store app (or App Catalog app) on device



Windows apps (2)

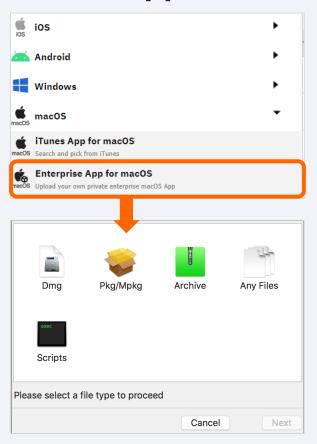


Enterprise App for Windows

- Universal App (Windows 10)
- Windows Installer (MSI)
- Windows Executable (EXE)
- Windows Scripts (BAT, VBS, PS1, REG, PY)
- Windows Downloadable Files (DOCX, PPTX, JPEG, PNG)

ATTENTION: Some of these file types may modify your system so please test thoroughly

MacOS apps



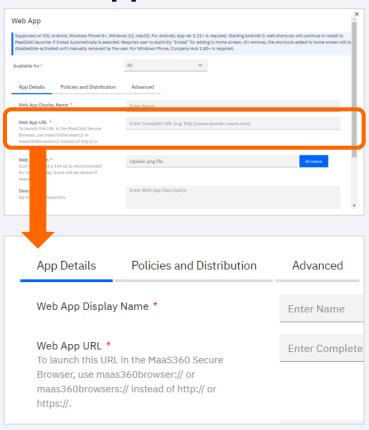
iTunes App for macOS

Store app

Enterprise App for macOS

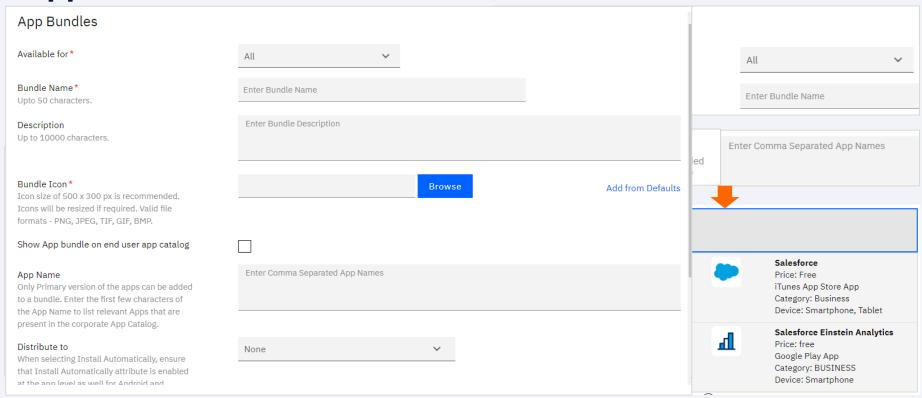
- Custom / in-house developed file
- Uses MaaS360 Packager to prepare for distribution
- Supported formats: DMG, PKG, Archives, Any Files and Scripts

Web App



- Similar to 'web clip' or 'shortcut'
- Link to a web page / web app
- Distributed via App Catalog
- Could also distribute via Shortcut (device policy)
- Can use icon
- Change prefix on URL to open MaaS360 Secure Browser
 - http:// > maas360browser://
 - https:// > maas360browsers://

App Bundles



https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_app_bundles.htm

App management and distribution

Questions?

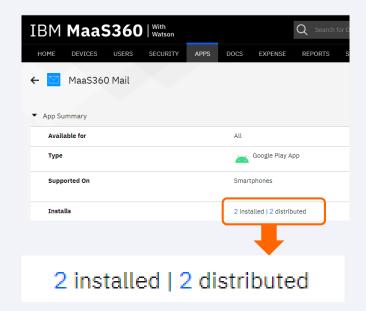
Managed / distributed app

Managed = by MaaS360 portal, Catalog

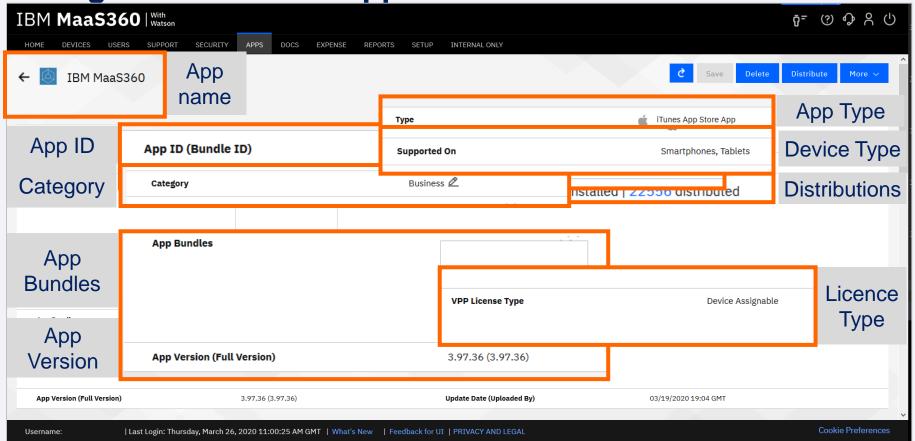
Distributed = 'pushed' to devices

Best practice: All MaaS360 apps should be managed and distributed

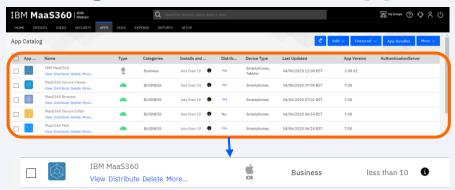
No. *installed* = devices with the app present No. *distributed* = devices to which the app has been pushed



Managed / distributed app

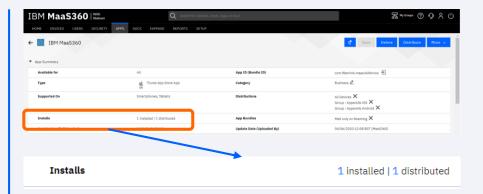


Managed / distributed app



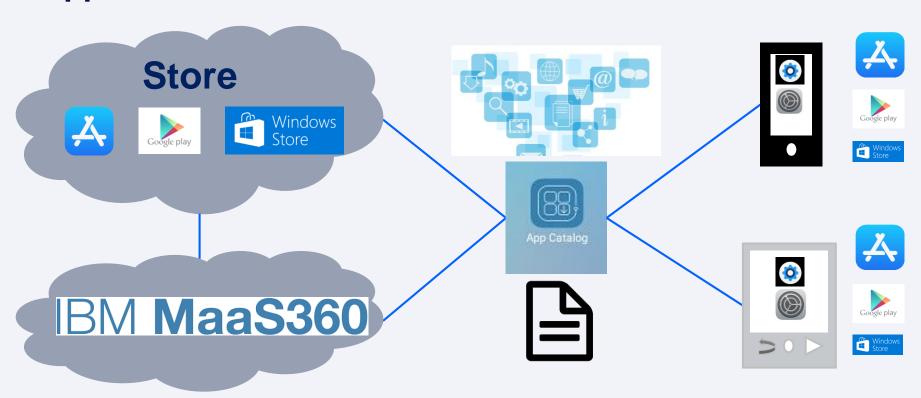
Q. How do we know an app is managed?

A. Because we can see it in the App Catalog on the portal (already added)



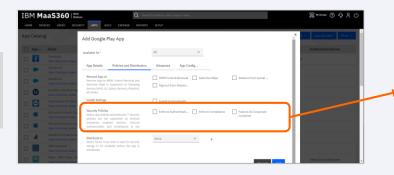
- Q. How do we know an app is distributed?
- A. Because we can see that it has been distributed ('pushed') to devices

App distribution



App distribution

During app addition

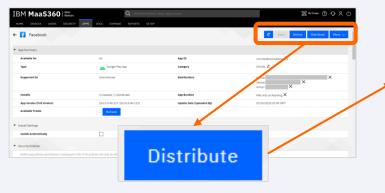


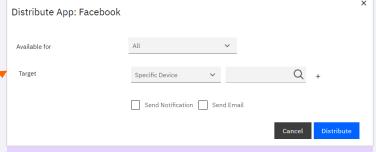
Same action, different window

None

Distribute to
Select 'None' if you wish to wait for security
ratings to be available before the app is
distributed

After app addition

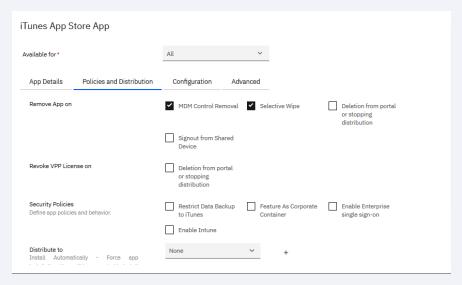




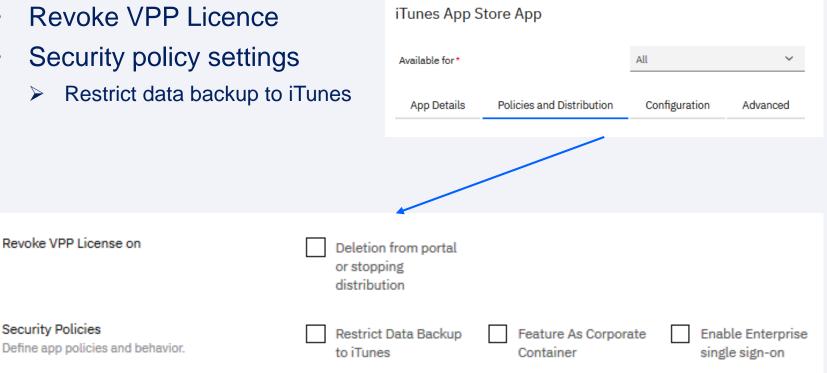
Best practice: Apps should usually be distributed to User groups

Distribution of app to devices

- Available for: user groups
- Remove App on
 - MDM Control Removal
 - Selective Wipe
 - Deletion from portal
 - Stopping distribution
 - Signout (shared device)
- Security policy
 - Restrict data backup
 - Feature as corporate container
 - Enable SSO

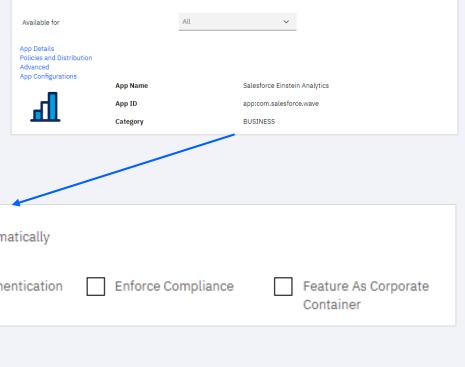


Distribution for iOS apps



Distribution for Android apps

- Install Automatically
- Security policies
 - Enforce authentication (user auth to access app)
 - Enforce compliance (no access)



Add Google Play App

App installs and upgrades

Questions?

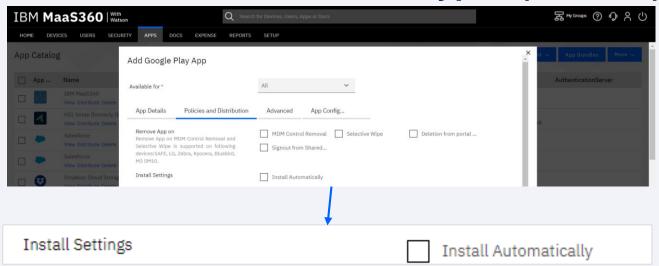
'Silent' / forced installation types

- Apps can sometimes be installed without requiring user intervention
- Terms used: force installation, silent installation, unattended installation
- Only possible for certain types of device / enrollment / apps

'Silent' / forced installation types (iOS / Windows)

Silent installation possible	User intervention required
iOS: Supervised mode (App Config / DEP)	iOS: Normal mode
 Enterprise App for Windows Universal App (Windows 10) > Install Automatically Windows Installer (MSI), Windows Executable (EXE), Windows Scripts (BAT, VBS, PS1, REG, PY) > Silent Installation Windows Downloadable Files (DOCX, PPTX, JPEG, PNG) > Instant Download (no installation required) 	Windows Store App Windows Enterprise apps: APPX and APPXBUNDLE formats

'Silent' / forced installation types (Android)



Silent installation possible	User intervention required
 All Android Enterprise devices (PO and DO mode) DA mode devices: Samsung SAFE, LG (to Android 9.0), Zebra, Kyocera (to Android 8.0), Bluebird, M3 SM10. 	All other Android devices in Device Administrator mode (up to Android 9)

App Upgrades

Upgrading store apps

- Upgrades are controlled by device platform and store app
- Auto-updates may be possible
- See silent install scenarios (previous slide)
 - iOS: Settings > iTunes & App Store > Automatic Downloads > Apps
 - Android: Play Store > Settings > Update apps (Any n/w, WiFi only, None)
 - Windows Store: Settings > App Updates > Update Apps Automatically

Upgrading non-store (file) apps

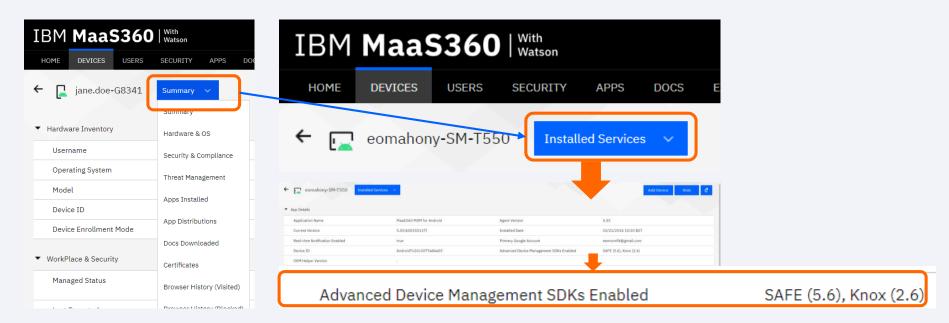
- The admin must upload new file versions to the MaaS360 Catalog
- Updates to apps will distribute as previous version (existing distribution)
- To verify updates, check in App Catalog or perform Advanced Search or use Reports

Best practice for bulk app management

Questions?

Simplicity

- One simple message: What you're looking for can be found on a sample device
- Always start with a device which has what you're looking for
- Use this device to identify devices in future (groups, rules, alerts)



Manage your App Catalog effectively

1.Manage in bulkDistribute to groups and in bundles

2. Act in bulk

Monitor app
install and
version status

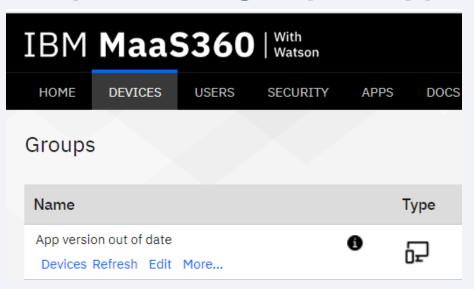
3. Reduce effort
Use silent
installation where
possible

4. Control app usageUse whitelisting,
blacklisting, compliance

- Plan to distribute to groups
- Set up your groups
- Ensure that new group additions 'get' the existing distribution
- Alert Centre (home page)
- Reports
- Compliance rules

- Review device types and enrollment types
- Plan to use enrollment types which support automated app installation
- Whitelisting: apps that should be installed
- Blacklisting: apps that shouldn't be installed
- Required list: apps that must be installed

Sample device group for apps

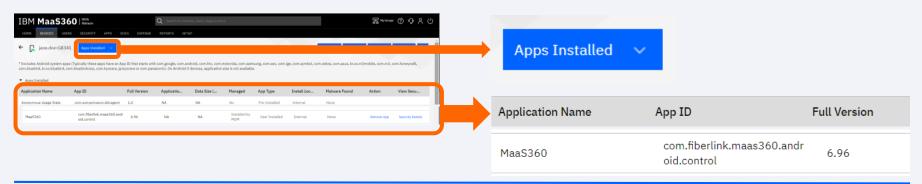


- Create a device group which identifies specific apps etc
- Use this group to distribute policies to and compliance rules for change actions

Search for apps

1. Find the app name and version that you are searching for

(Device > Apps Installed – App name OR App ID and Full version



- 2. Note down or copy values
- 3. Devices > Advanced Search

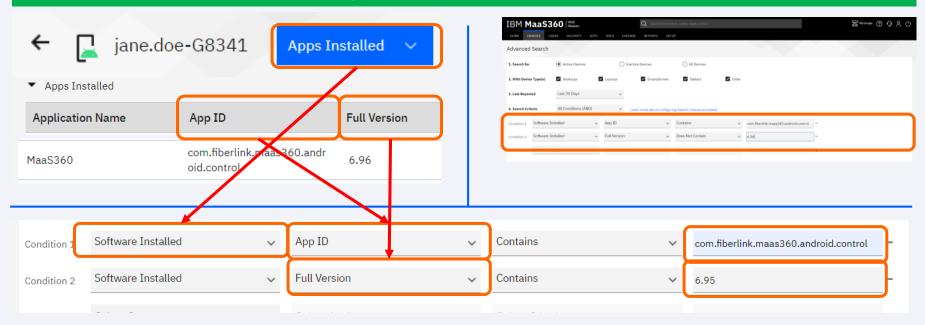


Sample Search for App ID + Version

Best practice

How can you be sure that your search information is correct?

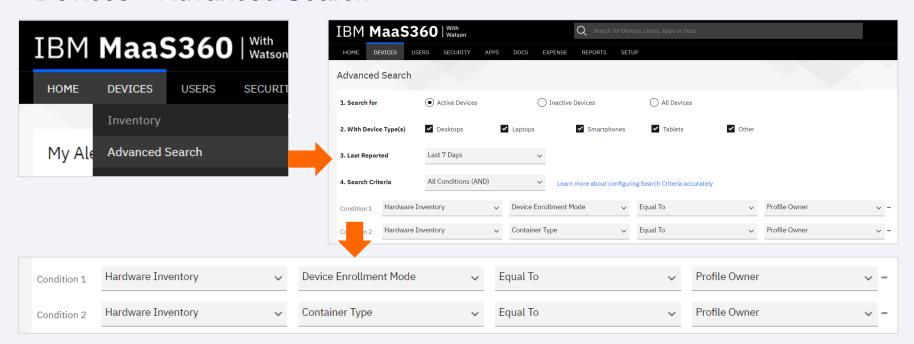
- Go to a sample device with the target information, and copy it into a text file



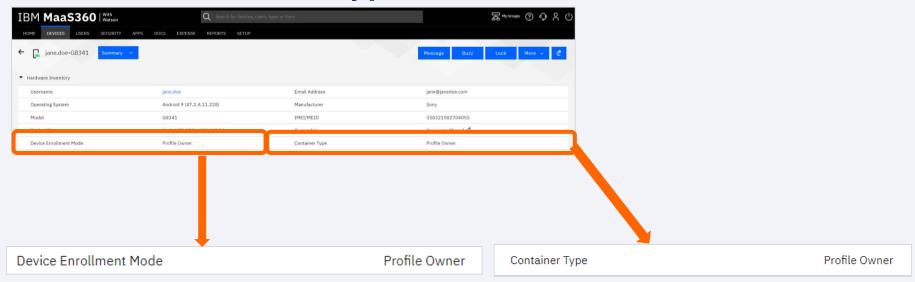
Searching for devices by enrollment / container type

Search for multiple devices

- Devices > Advanced Search



How do I know what type of Enrollment has been used?



Release 10.77 (end March 2020)

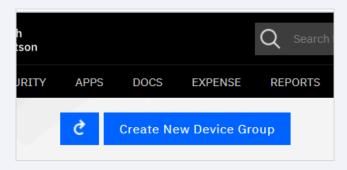
These fields have changed, please review your device group definitions:

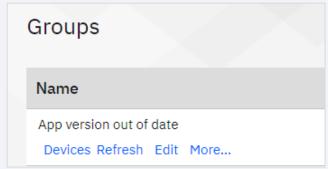
https://www.securitylearningacademy.com/mod/book/view.php?id=23773&chapterid=1818

Devices > Advanced Search – uses (1)

1. Search for devices, Create Device Group

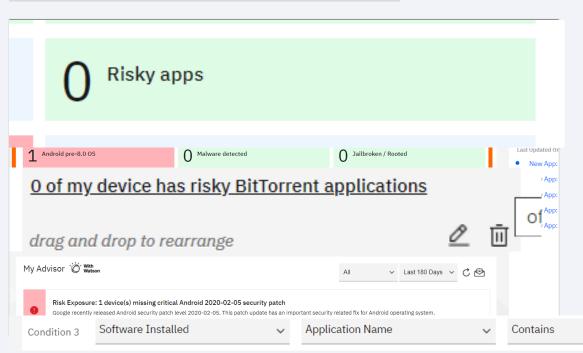
- Devices > Advanced Search
- Enter search criteria
- Click Search
- Create New Device Group
- Device group available for distributions:
 - > Apps
 - Policies
 - Compliance rules





Devices > Advanced Search – uses (2)

2. Create Alert on Home page

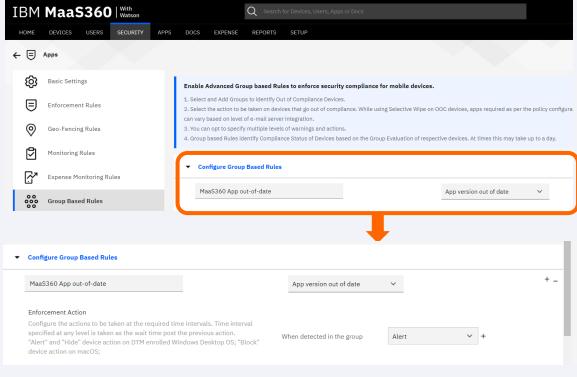


- Use existing tiles or create new ones
- Use device information to define the devices that should be identified
- The Alert will show and if configured as Security, will turn red once devices are out of compliance

bittorrent

Devices > Advanced Search – uses (3)

Create Group-based compliance rule



- Security > Compliance Rules
- Open an existing compliance rule

OR

- Create new one
- Choose 'Group-based rules' (2nd last option)
- Not available: please contact Support to have it enabled
- Title Group Action

App 'listing'

1. Whitelisting

Apps that should be installed

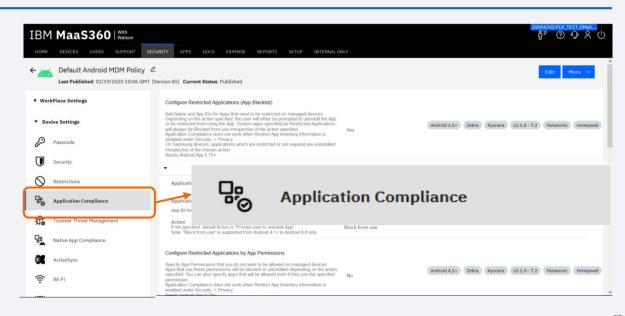
2. Blacklisting

Apps that *shouldn't* be installed

3. Required list

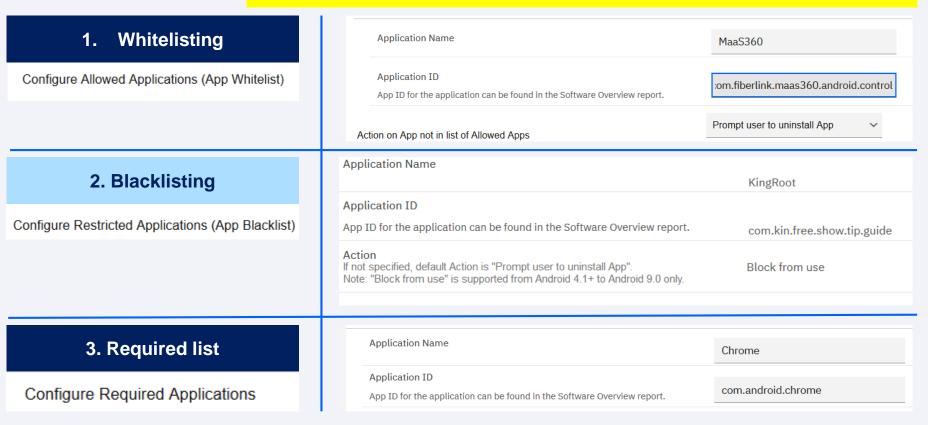
Apps that *must* be installed

- Settings found in Device policies > App Compliance
- Corrective action depends on ability to install apps silently



App 'listing'

ATTENTION: Please use a combination of App Compliance settings and Compliance rules to ensure best practice for app management

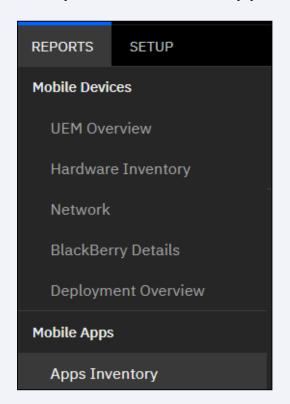


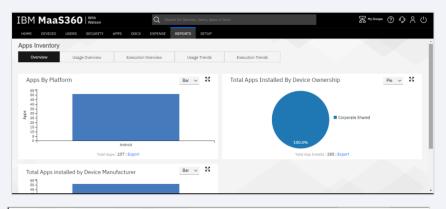
Other 'app stuff'

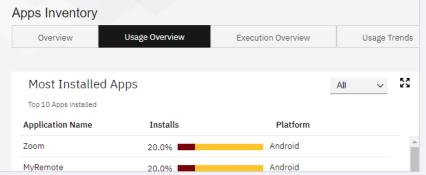
Questions?

Reporting

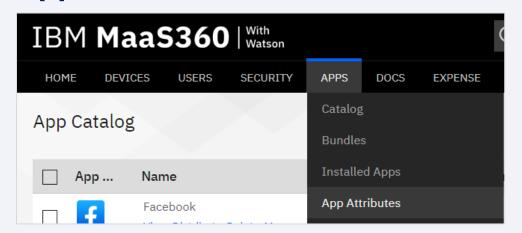
- Reports > Mobile Apps > Apps Inventory

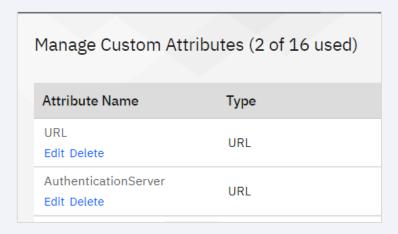






App attributes



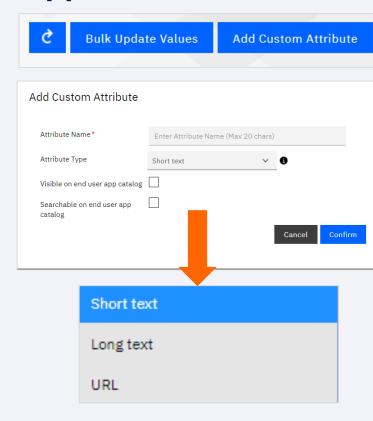


Configure your applications using fields which are pre-populated

- Create new custom attributes.
- Values added to each new app as required

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/concepts/pag_users_attributes.htm

App attributes: Create new



Apps > App Attributes > Add Custom Attribute

- Attribute Name
- Attribute Type:

×

- Short text
- Long text
- > URL
- Visible on end user app catalog
- Searchable on end user app catalog

Once created, this field can be configured for each app (before distribution)

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/concepts/pag_users_attributes.htm

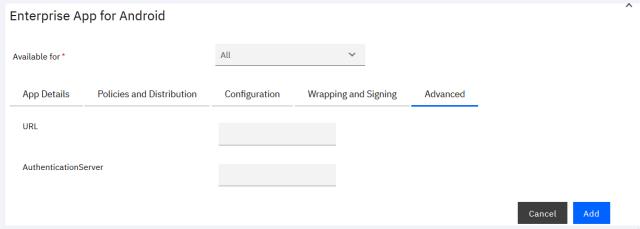
Using Custom App Attributes



Configure your apps using these fields:

- Create new custom attributes
- Choose values for these fields or allow users or admins to populate them
- Populate for individual apps or in bulk

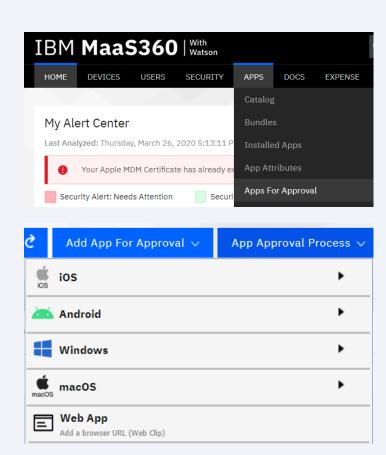
- Add new app
- Add values for custom (attribute) fields



App Approvals



- Ensures good app version control
- Prevents mistaken distribution of apps
- Different Administrator roles:
 App Approver, Read Only ...
- Very useful for organisations with 3rd party development
- Menu: Apps > Apps for Approval (not available > contact Support)



App Approvals

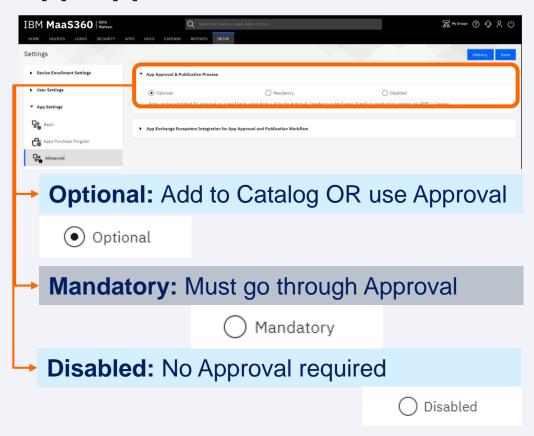
Add new App Approval Process

- Create steps needed to approve an app
- Consider who will test app, who will review...

Add App for Approval

- Add app
- Use App Approval process
- Final approval will promote to Catalog for distribution

App Approvals



Choose when apps need approval

 Settings > App Settings > Advanced

ATTENTION

In order to access App Approval workflows, administrator users must be modified to give them permissions (see Appendix)

App Development and Deployment

Questions?

Deploying Enterprise apps with MaaS360

ios



Add 🗸





Platform

File type

Digital app signature

Developer account required?

iOS

IPA

Enterprise App for iOS

Upload your own private enterprise iOS App

Code signing certificate + Provisioning profile

Yes – Apple Developer account

Android

Enterprise App for Android

Upload your own private enterprise Android App

APK

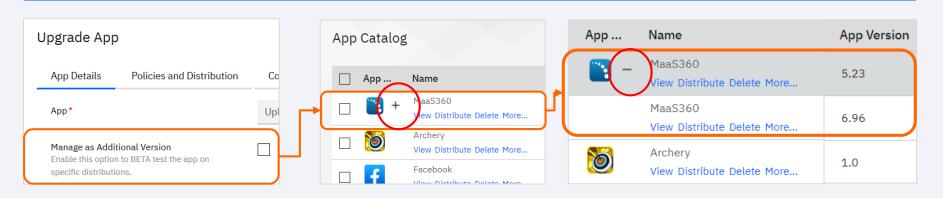
Keystore + password

Yes – Google **Developer Account** Windows (Universal)

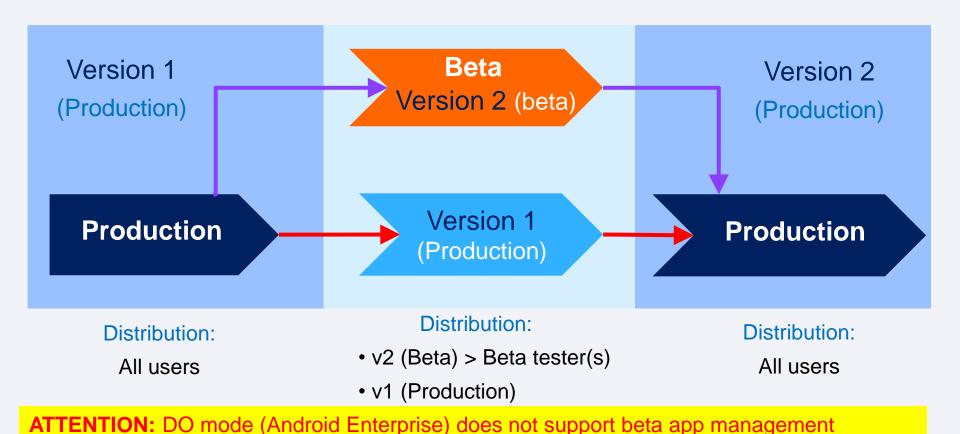
APPX

Managing beta app versions

- 1. Upload initial file (IPA, APK)
- 2. Choose Upgrade option from app
- 3. Choose "Manage as Additional Version"



Production – Beta – Production



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Deploy, Wrap, SDK?

- Add app to Catalog
- Configure and distribute

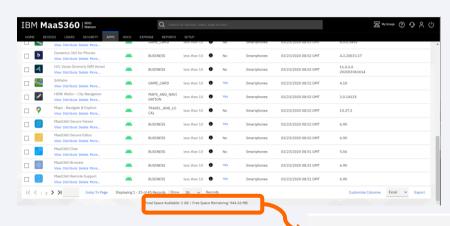
- 1. Add app to Catalog
- 2. Configure WP Policy and distribute
- 1. Add MaaS360 SDK code to app code
- Add app file to Catalog
- 3. Configure WP policy and distribute

Approach	Deploy	Wrap	SDK
App protection required?	No	Yes	Yes
Containerisation required	No	Yes	Yes
Store app	Yes	No (except for SDK app partners)	
Configuration required	No	Yes	Yes
Additional code required	No	No	Yes
Licence considerations	No	Yes	Yes

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/dev_source/references/dev_enterprise_app_choose.htm

App file storage

- Enterprise (custom) apps in file format, use storage space
- Storage limit default is 1GB
- Additional storage can be purchased
- Contact your Client Success Manager or Sales representative



Total Space Available: 1 GB | Free Space Remaining: 944.26 MB

IEM

Questions?





Next session: 21st May (Provisional) – MaaS360 Portal configuration

Thank you

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IEM

Appendix

Do's and Don'ts for testing apps

Do's

- Do use a Sandbox (testing portal) if possible contact CSM / Sales rep
- Do distribute your beta app:
 - As an Additional Version upgrade
 - To a reduced set of users / devices
- Do create a dummy/generic or testing user
- Do set up test environments (data servers, authentication systems)
- Do get feedback from beta tests and modify before rolling out
- Do keep a spreadsheet of changes and version control
- Do consider using App Approval process

Dont's

- As much as possible don't mix testing and production environments / systems
- Don't distribute your beta app to all production users
- Don't enroll your testing device to a production user

Document links

iOS

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_itunes.htm https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_itunes_b2b.htm https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_ios_enterprise.htm

Android

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Windows

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_windows_enterprise.htm https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_windows_exe.htm

macOS

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_macos_itunes.htm https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/tasks/pag_apps_add_macos_itunes.htm

App Catalog – Customize Columns

Column name	Details	
App icon	Icon to represent the app in Catalog (portal and device)	
App name	Name of app in Catalog (portal and device)	
Type	Type of app: Public (Store), Private / Enterprise, Web App	
Category	Categorise your apps for reporting and selection purposes	
Count (installs and upgrade pending)	Number of devices to which app has been distributed (pushed)	
Distributions	App 'push' to devices or users, or groups	
App Bundle	Group of apps to distribute together	
Enable Enterprise SSO	Has SSO been switched on for this app? (Will users authenticate via SSO into this app)	
Enable InTune	Have InTune integration features been used?	
Featured	Will this be featured in the (Device) App Catalog – show at top	
Approved for Android Enterprise	Have AE permissions been approved?	

App Catalog – Customize Columns

Column name	Details	
Provisioning Profile Expiry	For iOS and MacOS devices – custom (Enterprise) app requires provisioning profile which is an app signature for the Apple platform	
Device Type	Device platform used	
App ID (Bundle ID)	The ID of the bundle within which the app is distributed	
File name	App filename (where file has been uploaded to portal)	
Enterprise Rating	If users have rated the apps within the Corporate App Catalog (device app) then this will show on portal	
VPP Codes	For iOS and MacOS apps – Volume Purchase Program (Apple only)	
Last Updated	Date and time when app was last updated	
App version	Minor version	
Full Version	Full version	
Available for	If Departmentalisation has been used (Administrative Access Control) to restrict Administrator access, then which groups have access to app	
URL	Web address where app can be downloaded	
Authentication Server	App authentication server if appropriate	

Platform / manufacturer specifics











Platform	iOS	Samsung	Android Enterprise	Windows PC
Configuration mode	Supervised mode	Samsung SAFE Samsung KNOX	Device Owner, Profile Owner	Windows
Enrollment method	Apple Configurator (non-cloud) Apple DEP (cloud)	Any (KME supported but not necessary) > APK files only	DO mode enrollment PO mode enrollment	n/a (depends on individual app deployment)
Where to check	Device > Summary > Enrollment mode	Device > Installed Services	Device > Summary > Enrollment mode	Device > Summary > Enrollment mode
Configuration possible		 Force auto-install on all AE devices. DA mode: user intervention required up to And.9 Supported OEMs (non-AE): Samsung SAFE, LG(-> And.9), Zebra, Kyocera (-<and.8), bluebird,="" li="" m3="" sm10.<=""> </and.8),>		Unattended / Silent installation of apps

ATTENTION: Please read text below each policy setting to understand context

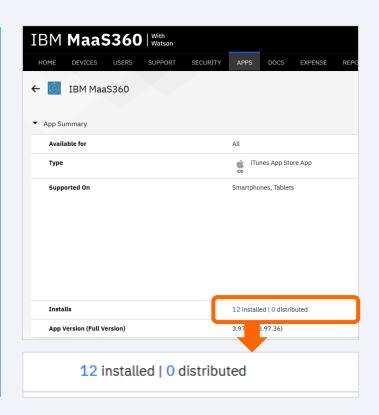
Allow device wide installation from unknown sources

Disabling this policy will take precedence over above two policies and will not allow installation of Non-Google play applications and will always enforce app verification even at profile level.

Managed / distributed app

Scenario

- App not previously added to MaaS360 App Catalog
- User already installed the app from store
- Admin now adds app to Catalog (managed app)
- User may get asked "Like to have this app managed?"
- Should follow the same principle as silent / nonsilent installation



Unblocking non-store apps on devices

- Your default policy settings may block non-store apps
- If this is the case you may need to modify your policy settings

Platform	iOS (Normal mode)	Android (DA mode)	Android Enterprise	Windows (Universal)
Section	Device Settings > Restrictions > Device Functionality		Android Enterprise Settings > Security > App Security	
Field / Setting	Allow Installing of Applications	Allow installation of non-Google Play applications	non-Google Play	1.Allow Developer Unlock 2.Allow installation of Non- Windows Store Apps

App installation settings in Device policy (Android)

Android device policy

Device Settings > Security > App Security

Setting	Comments	OS version	Enrollment
Allow installation of apps	User can install apps on device	5.0+	PO + DO
Allow installation of non-Play Store apps	User can install non-store apps	5.0+	PO + DO
Enforce App Verification	Check app	5.0+	DO
Allow uninstallation of apps	User can remove installed apps	5.0+	PO + DO
Allow device wide installation from unknown sources	Disabling this policy will take precedence over above two policies and will not allow installation of Non-Google play applications and will always enforce app verification even at profile level.	9.0+	PO
Allow apps control		5.0+	PO + DO
Default runtime permissions for apps		6.0+	PO + DO
Configure runtime apps permissions		6.0+	PO + DO
Allow System Apps to be Stopped		-	SAFE 4.0+
Allow Widgets		-	SAFE 3.0+
Allow Notifications		-	SAFE 3.0

https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/concepts/mdm_policy_gde_android_configure_security_policy.htm https://www.ibm.com/support/knowledgecenter/SS8H2S/com.ibm.mc.doc/pag_source/concepts/mdm_policy_gde_ae_block_unknown_sources.htm

Give App Approvals permissions to administrators

The following table lists the app approval workflow access rights (permissions) that are turned on by default for each preconfigured role:

Default Role	Access Rights	Allowed Action
Administrator	View App Approval Process	View app approval templates
Administrator - Level 2	View App Approval Process, Define App	Create and view app approval templates
	Approval Process	
App Approver	Manage App Approvals	Review app (Approve/Reject)
Help Desk	NA	NA
Read-Only	View App Approval Process	View app approval templates
Service Administrator	Define App Approval Process, View App	Create and view app approval templates
	Approval Process	

If the preconfigured roles do not meet the organization's requirements, MaaS360 allows administrators to create custom roles with predefined access rights. MaaS360 supports three access rights for app approval process.

Acess rights	Allowed Action
View App Approval Process	View app approval templates
Define App Approval Process	View and create app approval templates
Manage App Approvals	Review app (Approve/Reject)

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Logos

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