

It's Not All Fun and Games: A BYOD Reality Check for Companies

A Mobile App Risk Assessment Report by

FLEXERA[®]
SOFTWARE



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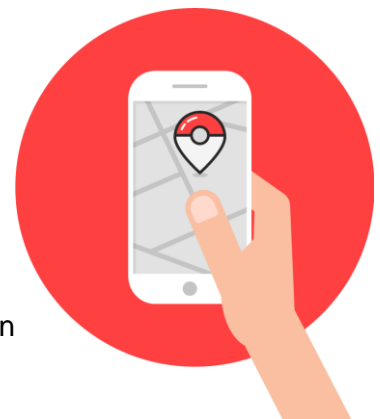
Introduction

To say the gaming industry is popular is a colossal understatement. According to IDC, the number of smartphone and tablet gamers should increase to more than 1.9 billion in 2020. Augmented reality, fueled most recently by the Pokémon GO sensation, and virtual reality gaming opportunities are really beginning to open up on mobile platforms. It is predicted that millions of mobile device users will be playing these types of games within just a few years.

The workplace is certainly not immune from the gaming phenomenon. Many employees spend time using Pokémon GO that taps into their mobile device's GPS to locate, capture, battle and train virtual Pokémon creatures who appear on the screen as if they were in the same real-world location as the player.

Beyond Pokémon GO, here are a few of the most popular ones:

- **Angry Birds** is a puzzle video game inspired by a sketch of stylized, wingless birds that combine fun and a comical style.
- **Bubble Shooter** is a mix of Tetris and Connect Four, with players destroying colored bubbles by connecting at least three bubbles of the same color.
- **Candy Crush** is a match-three puzzle game that switches adjacent candies to form rows of three of the same color, which are then cleared from the board.
- **Clash of Clans** allows players to build a village, develop an army and fight until their clan rules a village.



With the ubiquitous coexistence of business and personal apps, do games introduce additional downsides beyond employee distraction?

What about the apps employees are using on their corporate and Bring Your Own Device (BYOD) to stream content, get to the next elusive level and try out the latest and greatest




games? What data can they access? What device features can they interact with? Could they pose a potential security risk to organizations or violate their BYOD policies?

CIOs are very good about keeping track of the myriad enterprise applications running on their networks, understanding what those applications do and mitigating risks. Nearly all enterprises have standard [Application Readiness](#) processes to test applications and ensure their behavior is compatible with their systems. However, few organizations have extended those processes to include testing of mobile apps. According to a recent Flexera Software [report](#), 61 percent of organizations have not identified which mobile app behaviors they would deem risky. And 55 percent have not identified which mobile apps they would deem risky.

This begs the question – is a corporate CIO putting her organization at risk and reputation in jeopardy by failing to understand the behaviors of mobile apps employees are using that interact with corporate systems and data? In other words, could mobile games give CIOs a BYOD reality check?

We assessed almost 60 popular mobile games for potential BYOD risk to organizations:



100 Balls	Doodle Jump Free	Piano Tiles
Angry Birds	Drop Out	Pokémon GO
Angry Birds Rio	Eggs, Inc.	Quizduell
AR Defender 2	Episode – Choose Your Story	Rolling Sky
Baby Twins – Terrible Two	Farm Heroes	Slither.io
Batman: Arkham Underworld	Farm Heroes Saga	Snappy Bird: New Season
Bejeweled Classic	FIFA 16 Ultimate Team	Soccer Stars
Bubble Shooter	Game of War	Stack
Buddyman Run	Hand of God	Steps
Candy Crush	Happy Wheels	Subway Surfers
Clash of Clans	Harvest Swap	Talking Tom Gold Run
Clash of Kings	Hay Day	Temple Run
Clash Royale	Hungry Shark Evolution	Temple Run 2
Color Switch	Ingress	The Sims FreePlay
Cookie Jam	Jetpack Joyride	Walking Dead
Crossy Road	Kendall and Kylie	Words with Friends
CSR Racing 2	Micro Machines	Zynga Poker Classic –
Despicable Me: Minion Rush	Mobile Strike	Texas Holdem
Dictator: Emergence	Mr Jump	
Diner Dash	NBA Live Mobile	
Disney Emoji Blitz	PartyPoker	

We used [Flexera Software's AdminStudio Mac® and Mobile](#) to test these mobile games for risky behaviors, so that business have a better understanding into what can happen when personal apps and business data coexist.

AdminStudio Mobile tested these apps to determine whether they interact with an Apple iOS device's:



Ad Network	Camera	SMS
Address Book	In-app Purchasing	Social Networking
Bluetooth LE	Location Services & Tracking	Telephony
Calendar		

A description of what the test results mean and their potential risks to the enterprise can be found in the [Test Descriptions](#) section of this report. There are many apps not tested in this report that are available in public app stores that employees could download to their corporate-issued or BYOD phones. The results highlighted in today's report simply underscores the importance of knowing what those apps do and how they could interact with sensitive corporate data.

Test Result Highlights

Of the almost 60 popular Apple iOS apps tested:

- 73 percent connect to **Location Services & Tracking**.
- 68 percent connect to **Social Networking**.
- 58 percent connect to **Calendar Access**.
- 54 percent connect to **SMS**.



Test Results in Detail

Mobile App	Ad Networks	Address Book Access	Bluetooth LE	Calendar Access	Front- & Rear-Facing Cameras	In-App Purchasing	Location Services & Tracking	SMS	Social Networking	Telephony
100 Balls	✓	○	○	✓	○	✓	✓	✓	✓	✓
Angry Birds	✓	○	○	✓	○	✓	✓	✓	✓	✓
Angry Birds Rio	✓	○	○	✓	○	✓	✓	✓	✓	✓
AR Defender 2	✓	○	○	✓	✓	✓	✓	✓	○	✓
Baby Twins - Terrible Two	○	○	○	○	○	○	○	○	○	○
Batman - Arkham Underworld	✓	○	○	○	○	✓	✓	○	✓	○
Bejeweled Classic	✓	○	○	✓	○	✓	✓	○	✓	○
Bubble Shooter	✓	○	✓	✓	○	✓	✓	✓	✓	✓
Buddyman Run	✓	○	○	✓	○	✓	✓	○	✓	✓
Candy Crush	○	○	○	○	○	○	○	○	○	○
Clash of Clans	✓	○	○	✓	○	✓	✓	○	✓	✓
Clash of Kings	○	○	○	○	○	○	○	○	○	○
Clash Royale	✓	○	○	✓	○	✓	✓	○	✓	✓
Color Switch	✓	○	○	✓	○	✓	✓	○	✓	✓
Cookie Jam	○	○	○	○	○	○	○	○	○	○
Crossy Road	✓	○	○	✓	○	✓	✓	✓	✓	✓
CSR Racing 2	✓	✓	✓	✓	○	✓	✓	✓	✓	✓
Despicable Me: Minion Rush	✓	✓	○	✓	○	✓	✓	○	✓	✓
Dictator: Emergence	✓	○	✓	✓	○	✓	✓	○	✓	✓
Diner Dash	✓	○	○	✓	○	✓	✓	✓	✓	✓
Disney Emoji Blitz	✓	○	○	✓	○	✓	✓	✓	✓	✓
Doodle Jump Free	✓	○	○	✓	○	✓	✓	○	✓	✓
Drop Out	✓	○	○	✓	○	✓	○	✓	✓	✓
Egg, Inc.	✓	○	○	✓	○	✓	○	✓	✓	✓
Episode - Choose Your Story	○	○	○	○	○	○	○	○	○	○
Farm Heroes	○	○	○	○	○	○	✓	○	○	○
Farm Heroes Saga	✓	○	○	✓	○	✓	✓	○	✓	✓
FIFA 16 Ultimate Team	○	○	○	○	○	○	○	○	○	○
Game of War	✓	○	○	○	○	○	○	○	○	○
Hand of God	✓	○	○	✓	○	✓	✓	○	✓	✓
Happy Wheels	✓	○	✓	✓	○	✓	✓	○	✓	✓
Harvest Swap	✓	✓	○	✓	✓	✓	✓	○	✓	✓
Hay Day	✓	○	○	○	○	○	○	○	○	○
Hungry Shark Evolution	✓	○	○	✓	○	✓	✓	○	✓	✓
Ingress	✓	○	○	○	○	○	✓	○	○	○
Jetpack Joyride	✓	✓	○	✓	○	✓	✓	○	✓	✓
Kendall and Kylie	✓	○	○	○	○	○	○	○	○	○
Micro Machines	✓	○	○	○	○	○	○	○	○	○
Mobile Strike	✓	○	○	○	○	○	○	○	○	○
Mr. Jump	✓	○	○	○	○	○	○	○	○	○
NBA Live Mobile	✓	○	○	○	○	○	○	○	○	○
PartyPoker	✓	○	○	○	○	○	○	○	○	○
Piano Tiles	✓	○	○	○	○	○	○	○	○	○
Pokémon GO	✓	○	○	○	○	○	○	○	○	○
Quizduell	○	○	○	○	○	○	○	○	○	○
Rolling Sky	○	○	○	○	○	○	○	○	○	○
Slither.io	✓	○	○	○	○	○	○	○	○	○
Snappy Bird: New Season	✓	○	○	○	○	○	○	○	○	○
Soccer Stars	○	○	○	○	○	○	○	○	○	○
Stack	✓	○	○	○	○	○	○	○	○	○
Steps	✓	○	○	○	○	○	○	○	○	○
Subway Surfers	✓	○	○	○	○	○	○	○	○	○
Talking Tom Gold Run	○	○	○	○	○	○	○	○	○	○
Temple Run	✓	○	○	○	○	○	○	○	○	○
Temple Run 2	✓	○	○	○	○	○	○	○	○	○
The Sims FreePlay	○	○	○	○	○	○	○	○	○	○
Walking Dead	○	○	○	○	○	○	○	○	○	○
Words with Friends	○	○	○	○	○	○	○	○	○	○
Zynga Poker Classic - Texas Holdem	✓	○	○	○	○	○	○	○	○	○
Total Percentage	76%	7%	15%	58%	3%	76%	73%	54%	68%	75%



iOS Feature Use

This report lists the usage/requirement status of the selected iOS feature(s) for all iOS apps in the Application Catalog. To change the selected feature, or to select multiple features, click **Options** in the toolbar.

Legend

- Uses feature
- Does not use this feature



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Test Descriptions



Flexera Software AdminStudio Test: **Ad Networks**

What does this test result mean? The app is capable of displaying advertisements “in-app” and connecting to ad networks.

Potential risk to enterprises: Online ads frequently come from ad networks that supply code that developers use to insert advertisements into their apps. These ad networks could be vulnerable to hacking, thereby exposing the device and its data to illegal access by a malicious third party.



Flexera Software AdminStudio Test: **Address Book Access**

What does this test result mean? The app is able to access the device’s address book.

Potential risk to enterprises: Address books are important to advertisers. If an app is capable of addressing the device’s address book, that data could be used by the app developer or shared with third parties such as advertisers, which may violate an organization’s privacy, confidentiality or BYOD policies.



Flexera Software AdminStudio Test: **Bluetooth LE**

What does this test result mean? The app is capable of accessing the device’s Bluetooth phone features.

Potential risk to enterprises: Hackers with specific intent can potentially gain access to data being communicated by the device via Bluetooth communications. If the app in question is capable of accessing private, confidential or sensitive data on the device – and that device’s Bluetooth data has been hacked, this could cause a security risk for an organization.



Flexera Software AdminStudio Test: **Calendar Access**

What does this test result mean? The app is capable of accessing the device’s calendar and calendar functions.

Potential risk to enterprises: Similar to risks associated with apps that access the address book, data from a user’s device calendar could be accessed and used by the app developer or shared with third parties, such as advertisers. Given the private, confidential and/or sensitive nature of calendar content – giving apps access to this data may create unwanted security risk depending on the organization and its BYOD policies.





Flexera Software AdminStudio Test: **Front- & Rear-Facing Cameras**

What does this test result mean? The app can access all the device's camera features (including video).

Potential risk to enterprises: Some organizations – especially those operating in high-security environments such as governments, financial institutions, etc. – are extremely sensitive about restricting access to certain sites or locations where employees may take their devices. Accordingly those organizations may have policies limiting where/when/how an employee's device camera can be used. If a hacker or malicious third party is capable of hacking into the app – the device's camera could be compromised, potentially exposing confidential or sensitive information. If a mobile app is capable of accessing the device's camera – this may violate an organization's BYOD policy.



Flexera Software AdminStudio Test: **In-App Purchasing**

What does this test result mean? The App enables in-app purchasing.

Potential risk to enterprises: In-app purchasing capabilities could expose an organization to unwanted additional costs if the device is tied to a corporate credit card account. An organization might have other software licensing and compliance policies around app procurement that could also be circumvented by in-app purchasing.



Flexera Software AdminStudio Test: **Location Services & Tracking**

What does this test result mean? The app can access the device's GPS location services.

Potential risk to enterprises: Confidentiality and privacy concerns in many organizations would prohibit unapproved apps from tracking employee location information. Moreover, to advertisers, location is one of the most valuable things on a device, so many apps access this data solely to pass along to advertisers. Consequently many organizations restrict apps that can access location services on employer-issued or BYOD devices.



Flexera Software AdminStudio Test: **SMS**

What does this test result mean? The app can access the device's text functionality.

Potential risk to enterprises: Apps that can access the device's SMS functionality can potentially read text messages that are stored on the phone, or create text messages and send them to recipients – for instance contacts on the device (if the app can also access the contact list). This poses significant potential privacy concerns for corporate-issued or BYOD devices, given that confidential information could be contained in the text messages.





Flexera Software AdminStudio Test: **Social Networking**

What does this test result mean? The app can access and share data with social networking sites.

Potential risk to enterprises: Employer-issued and BYOD devices often contain confidential information that should not be shared in a social media setting. Apps able to access social media sites could potentially share confidential data. Likewise, a corporate or BYOD device that contains personal employee content could inadvertently share personal data to a corporate social media site linked to the device.



Flexera Software AdminStudio Test: **Telephony**

What does this test result mean? The app can access the device's phone function.

Potential risk to enterprises: There is a risk that an app accessing telephony features could call restricted phone numbers or "premium" phone numbers that, for instance charge high fees – such as per-minute calling charges. In some instances, organizations may want to restrict apps capable of accessing a device's telephony function.



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CIO'S
BEWARE:

● EMPLOYEES USE OF MOBILE GAMES
COULD VIOLATE ENTERPRISE BYOD
POLICIES & INTRODUCE RISK

OF THE ALMOST 60 POPULAR APPLE iOS APPS TESTED:



73%

including Angry Birds, AR Defender 2, Bejeweled Classic, Bubble Shooter, Clash of Clans, Clash Royale, Color Switch, Game of War, Mobile Strike, Pokémon GO and Slither, **support Location Services & Tracking.**

68%

including Angry Birds, Bejeweled Classic, Bubble Shooter, Clash of Clans, Clash Royale, Color Switch, Game of War, Mobile Strike and Slither, **support Social Networking.**



58%

including Angry Birds, Bejeweled Classic, Bubble Shooter, Clash of Clans, Clash Royale, Color Switch, and Slither, **support Calendar Access.**

54%

including Angry Birds, AR Defender 2, Bejeweled Classic, Bubble Shooter, Color Switch, and Slither, **support SMS.**



About Flexera Software

Flexera Software helps application producers and enterprises increase application usage and security, enhancing the value they derive from their software. Our software licensing, compliance, cyber security and installation solutions are essential to ensure continuous licensing compliance, optimized software investments, and to future-proof businesses against the risks and costs of constantly changing technology. A marketplace leader for more than 25 years, 80,000+ customers turn to Flexera Software as a trusted and neutral source of knowledge and expertise, and for the automation and intelligence designed into our products. For more information, please go to: www.flexerasoftware.com.



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