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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	MOIRP068+
		Application Number	
Title of Invention	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		
The application data sheet is part of the provisional or nonprovisional application for which it is being submitted. The following form contains the bibliographic data arranged in a format specified by the United States Patent and Trademark Office as outlined in 37 CFR 1.76. This document may be completed electronically and submitted to the Office in electronic format using the Electronic Filing System (EFS) or the document may be printed and included in a paper filed application.			

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☐ Portions or all of the application associated with this Application Data Sheet may fall under a Secrecy Order pursuant to 37 CFR 5.2 (Paper filers only. Applications that fall under Secrecy Order may not be filed electronically.)

Inventor Information:

Inventor	1				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Kumara	Das	Karunakaran			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
City	San Jose	State/Province	CA	Country of Residence	US	
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Address 2						
City	Mountain View	State/Province	CA			
Postal Code	94043	Country i	US			
Inventor	2				Remove	
Legal Name						
Prefix	Given Name	Middle Name	Family Name	Suffix		
	Vijay		Pawar			
Residence Information (Select One) ☒ US Residency ☐ Non US Residency ☐ Active US Military Service						
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All Inventors Must Be Listed - Additional Inventor Information blocks may be generated within this form by selecting the Add button.						

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For further information see 37 CFR 1.33(a).

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	MOIRP068+
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Customer Number	21912		
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Application Information:

Title of the Invention	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		
Attorney Docket Number	MOIRP068+	Small Entity Status Claimed	☐
Application Type	Nonprovisional		
Subject Matter	Utility		
Total Number of Drawing Sheets (if any)		Suggested Figure for Publication (if any)	

Filing By Reference:

Only complete this section when filing an application by reference under 35 U.S.C. 111(c) and 37 CFR 1.57(a). Do not complete this section if application papers including a specification and any drawings are being filed. Any domestic benefit or foreign priority information must be provided in the appropriate section(s) below (i.e., "Domestic Benefit/National Stage Information" and "Foreign Priority Information").

For the purposes of a filing date under 37 CFR 1.53(b), the description and any drawings of the present application are replaced by this reference to the previously filed application, subject to conditions and requirements of 37 CFR 1.57(a).

Application number of the previously filed application	Filing date (YYYY-MM-DD)	Intellectual Property Authority or Country

Publication Information:

☐ Request Early Publication (Fee required at time of Request 37 CFR 1.219)

☐ **Request Not to Publish.** I hereby request that the attached application not be published under 35 U.S.C. 122(b) and certify that the invention disclosed in the attached application **has not and will not** be the subject of an application filed in another country, or under a multilateral international agreement, that requires publication at eighteen months after filing.

Representative Information:

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Please Select One:	☒ Customer Number	☐ US Patent Practitioner	☐ Limited Recognition (37 CFR 11.9)
Customer Number	21912		

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	MOIRP068+
		Application Number	
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Domestic Benefit/National Stage Information:

This section allows for the applicant to either claim benefit under 35 U.S.C. 119(e), 120, 121, 365(c), or 386(c) or indicate National Stage entry from a PCT application. Providing benefit claim information in the Application Data Sheet constitutes the specific reference required by 35 U.S.C. 119(e) or 120, and 37 CFR 1.78.

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Prior Application Status		Remove	
Application Number	Continuity Type	Prior Application Number	Filing or 371(c) Date (YYYY-MM-DD)
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This section allows for the applicant to claim priority to a foreign application. Providing this information in the application data sheet constitutes the claim for priority as required by 35 U.S.C. 119(b) and 37 CFR 1.55. When priority is claimed to a foreign application that is eligible for retrieval under the priority document exchange program (PDX)ⁱ the information will be used by the Office to automatically attempt retrieval pursuant to 37 CFR 1.55(i)(1) and (2). Under the PDX program, applicant bears the ultimate responsibility for ensuring that a copy of the foreign application is received by the Office from the participating foreign intellectual property office, or a certified copy of the foreign priority application is filed, within the time period specified in 37 CFR 1.55(g)(1).

			Remove
Application Number	Country ⁱ	Filing Date (YYYY-MM-DD)	Access Code ⁱ (if applicable)
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Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications

This application (1) claims priority to or the benefit of an application filed before March 16, 2013 and (2) also contains, or contained at any time, a claim to a claimed invention that has an effective filing date on or after March 16, 2013. ☐ NOTE: By providing this statement under 37 CFR 1.55 or 1.78, this application, with a filing date on or after March 16, 2013, will be examined under the first inventor to file provisions of the AIA.
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		Application Number	
Title of Invention	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		

Authorization or Opt-Out of Authorization to Permit Access:

When this Application Data Sheet is properly signed and filed with the application, applicant has provided written authority to permit a participating foreign intellectual property (IP) office access to the instant application-as-filed (see paragraph A in subsection 1 below) and the European Patent Office (EPO) access to any search results from the instant application (see paragraph B in subsection 1 below).

Should applicant choose not to provide an authorization identified in subsection 1 below, applicant **must opt-out** of the authorization by checking the corresponding box A or B or both in subsection 2 below.

NOTE: This section of the Application Data Sheet is **ONLY** reviewed and processed with the **INITIAL** filing of an application. After the initial filing of an application, an Application Data Sheet cannot be used to provide or rescind authorization for access by a foreign IP office(s). Instead, Form PTO/SB/39 or PTO/SB/69 must be used as appropriate.

1. Authorization to Permit Access by a Foreign Intellectual Property Office(s)

A. Priority Document Exchange (PDX) - Unless box A in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the European Patent Office (EPO), the Japan Patent Office (JPO), the Korean Intellectual Property Office (KIPO), the State Intellectual Property Office of the People's Republic of China (SIPO), the World Intellectual Property Organization (WIPO), and any other foreign intellectual property office participating with the USPTO in a bilateral or multilateral priority document exchange agreement in which a foreign application claiming priority to the instant patent application is filed, access to: (1) the instant patent application-as-filed and its related bibliographic data, (2) any foreign or domestic application to which priority or benefit is claimed by the instant application and its related bibliographic data, and (3) the date of filing of this Authorization. See 37 CFR 1.14(h)(1).

B. Search Results from U.S. Application to EPO - Unless box B in subsection 2 (opt-out of authorization) is checked, the undersigned hereby **grants the USPTO authority** to provide the EPO access to the bibliographic data and search results from the instant patent application when a European patent application claiming priority to the instant patent application is filed. See 37 CFR 1.14(h)(2).

The applicant is reminded that the EPO's Rule 141(1) EPC (European Patent Convention) requires applicants to submit a copy of search results from the instant application without delay in a European patent application that claims priority to the instant application.

2. Opt-Out of Authorizations to Permit Access by a Foreign Intellectual Property Office(s)

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		Application Number	
Title of Invention	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		

Applicant Information:

Providing assignment information in this section does not substitute for compliance with any requirement of part 3 of Title 37 of CFR to have an assignment recorded by the Office.			
Applicant	1 Remove		
If the applicant is the inventor (or the remaining joint inventor or inventors under 37 CFR 1.45), this section should not be completed. The information to be provided in this section is the name and address of the legal representative who is the applicant under 37 CFR 1.43; or the name and address of the assignee, person to whom the inventor is under an obligation to assign the invention, or person who otherwise shows sufficient proprietary interest in the matter who is the applicant under 37 CFR 1.46. If the applicant is an applicant under 37 CFR 1.46 (assignee, person to whom the inventor is obligated to assign, or person who otherwise shows sufficient proprietary interest) together with one or more joint inventors, then the joint inventor or inventors who are also the applicant should be identified in this section. Clear			
Assignee	Legal Representative under 35 U.S.C. 117		Joint Inventor
☐ Person to whom the inventor is obligated to assign.		☐ Person who shows sufficient proprietary interest	
If applicant is the legal representative, indicate the authority to file the patent application, the inventor is:			
Name of the Deceased or Legally Incapacitated Inventor:			
If the Applicant is an Organization check here. ☒			
Organization Name	MOBILEIRON, INC.		
Mailing Address Information For Applicant:			
Address 1	415 East Middlefield Rd.		
Address 2			
City	Mountain View	State/Province	CA
Country	US	Postal Code	94043
Phone Number		Fax Number	
Email Address			
Additional Applicant Data may be generated within this form by selecting the Add button. Add			

Assignee Information including Non-Applicant Assignee Information:

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Application Data Sheet 37 CFR 1.76		Attorney Docket Number	MOIRP068+
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Assignee	1			
Complete this section if assignee information, including non-applicant assignee information, is desired to be included on the patent application publication. An assignee-applicant identified in the "Applicant Information" section will appear on the patent application publication as an applicant. For an assignee-applicant, complete this section only if identification as an assignee is also desired on the patent application publication.				
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Address 1				
Address 2				
City		State/Province		
Country ⁱ		Postal Code		
Phone Number		Fax Number		
Email Address				
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Signature:

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This Application Data Sheet **must** be signed by a patent practitioner if one or more of the applicants is a **juristic entity** (e.g., corporation or association). If the applicant is two or more joint inventors, this form must be signed by a patent practitioner, **all** joint inventors who are the applicant, or one or more joint inventor-applicants who have been given power of attorney (e.g., see USPTO Form PTO/AIA/81) on behalf of **all** joint inventor-applicants.

See 37 CFR 1.4(d) for the manner of making signatures and certifications.

Signature	/william j. james/		Date (YYYY-MM-DD)	2017-03-28
First Name	William J.	Last Name	James	Registration Number
				40661
Additional Signature may be generated within this form by selecting the Add button.				Add

Application Data Sheet 37 CFR 1.76		Attorney Docket Number	MOIRP068+
		Application Number	
Title of Invention	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		

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7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
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9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

PROVISIONAL APPLICATION FOR
UNITED STATES PATENT

**CORRELATING MOBILE DEVICE AND APP USAGE WITH
CLOUD SERVICE USAGE TO PROVIDE SECURITY**

By Inventors:

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Background:

Enterprises are moving to Cloud Service Providers (SPs) like Office365, Box, Salesforce, Slack etc. for their productivity, collaboration and business application workloads. Employees are now using Mobile Applications to access these Cloud services more than the traditional desktop browsers. This exposes sensitive enterprise data to these mobile apps. Unlike traditional desktops which are managed and typically owned by the corporate, mobile devices are typically BYOD. Even when the mobile device is managed by the Enterprise using an Enterprise Mobility Management (EMM) solution like that of MobileIron, the applications that the employee uses to access the Cloud Services may not be a "sanctioned" application. Most of the Cloud Services are exposing APIs for any developer to develop applications and there is an ecosystem of apps that are available with each of these services. Salesforce AppExchange™ is an example. This means that in addition to the "official" app from these cloud service providers, one can find a plethora of apps developed by any unknown individuals or vendor that are written against one or multiple of these cloud service providers in the AppStore (iTunes or Google Play). An employee may pick any of these apps which help him best for his productivity against the corporate managed account on these Cloud Service Providers. The Enterprise has no easy way to determine which apps are in use by which user and what data is being downloaded from the cloud service to the mobile devices. Further these unsanctioned apps can be exposing corporate data to 3rd party cloud services which puts the enterprise at a high risk.

There are existing solutions for desktop space provided by CASB (Cloud Access Security Broker) vendors. These however are targeted in identifying which clouds services are being used by the employees in an enterprise. They ignore the end point - specifically the mobile end points - in their discovery approach. Their focus is on the cloud service.

Description:

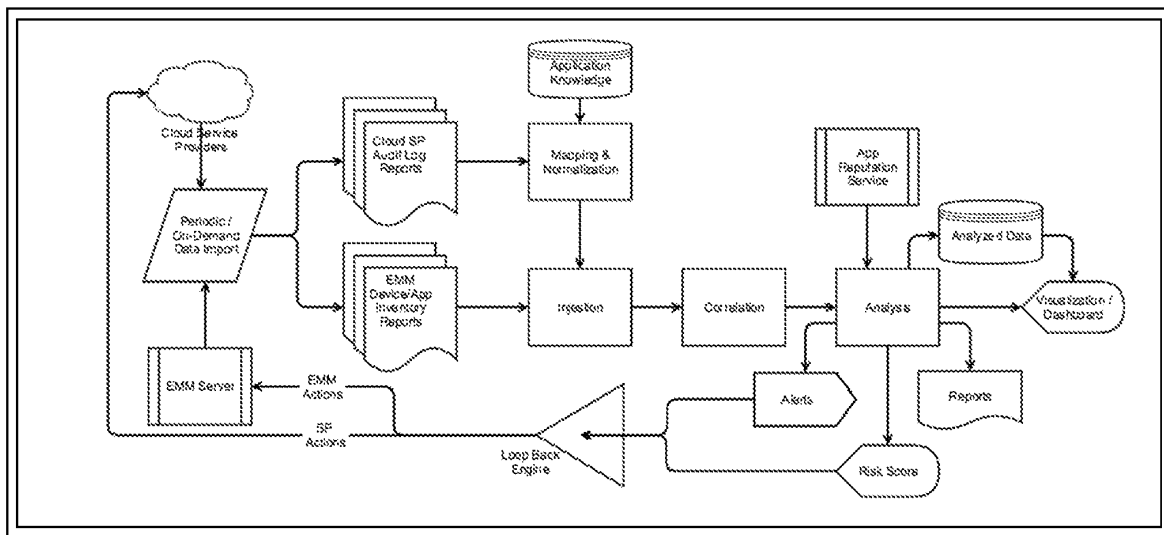
Techniques to discover and assess the risk to an enterprise or other data/asset owner of the use of cloud services are disclosed. In various embodiments, data about mobile devices and applications is collected from EMM logs and then compared and correlated with audit logs from Cloud Service Providers. The EMM logs/report in various embodiments carry a list of one or more of the following: devices managed by the EMM, the user using each device, the list of applications reported by the device, and which of those apps are managed and which are unmanaged. An unmanaged application in a managed device may retain corporate data even after the device is retired from EMM (like when an employee leaves the company). This is risk for the enterprise, just as an application in an unmanaged device can access and retain data.

Most enterprise class Cloud Service Providers give audit logs which contain information about who logged into the service using which application and from where and what time. The applications are typically identified by something called an OAuth Identifier. OAuth Identifiers are distributed by the SP to the application vendor. This is used by the SP to get "consent" from the user to allow the application to access the user's data. In some embodiments, a "knowledge database" of how these application identifiers are mapped to mobile (or other) applications (bundle-ids, for example) is built. This mapping may be used to correlated which mobile app on which device was used by which user to access the SP. In some embodiments, a 3rd party App

Reputation vendor may be used to classify the identified mobile apps into various categories to assess risk.

In some embodiments, a dashboard may be presented to the enterprise administrator based on the assessed risk (exposure of corporate data to unsanctioned apps/devices) for each of the service providers used by the enterprise.

Components in Various Embodiments



Workflow

A step by step work flow of techniques disclosed herein as implemented in some embodiments is explained below:

1. Admin configures the system to import reports/logs from EMM & Service providers
 1. This can be a manual process where they follow a guide to generate and download a report from EMM and the specific SP. Then they will upload these reports to the System.
 2. This can be an automated process where the admin sets up a schedule and credentials in the system to automatically download reports from EMM and specific SPs. The system will download the reports and feed into the "pipeline".
 3. A sample EMM Audit Log is attached as Appendix A for reference.
 4. A sample SP Log is shown below for reference:

Date / Time	User's Name	User's Email	IP Address	Action	Item / Name
-------------	-------------	--------------	------------	--------	-------------

2/16/17, 5:37 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Add login app	Box for iPhone
2/16/17, 5:37 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Login	vpawar@mobileiron.com
2/16/17, 5:32 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Login	vpawar@mobileiron.com
2/16/17, 5:32 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Add login app	Mac Chrome
2/16/17, 10:33 AM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Failed login	vpawar@mobileiron.com
2/21/17, 1:21 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Login	vpawar@mobileiron.com
2/21/17, 1:21 PM	Vijay Pawar	vpawar@mobileiron.com	198.61.62.10	Add login app	Mac Safari

2. When SP logs are uploaded, the "Mapping & Normalization" component uses the "Application Knowledge" data base to determine which application - mobile or desktop - was granted access to the SP and which user logged in. In some embodiments, this normalization is performed since different SPs provide information in non-standard ways and has varying content. This step will attempt to create a uniform data schema from the raw data.
 1. For example,
3. The "Ingestion" module uploads the data into some form of data base which can be used in a streaming or an offline query mode by the Correlation module. For this it can use a number of off-the-shelf tools like Apache Spark, Hadoop etc. The result of correlation is structured data which can be further analyzed.
4. Correlation modules uses the data ingested from EMM and SPs to link the two based on application identity and users. The EMM data may carry user identity, device identity, device disposition (managed/unmanaged), app identity and app disposition (managed/unmanaged) in addition to timestamps. The EMM data may also carry communication related audit logs from apps to service providers. Correlation module "joins" the data from these two sources and creates unified information ready for analysis and reporting.

5. Correlated Data can be analyzed as follows
 1. Derive the number of users who are using the SP using mobile apps vs. desktop apps
 2. Determine the leader board (popularity) of mobile apps
 3. By matching against an App Reputation service, determine the reputation score of these apps to identify malicious or suspicious apps
 4. Determine Apps which may use multiple SPs (e.g. read email and save attachment in a file share service)
 5. Determine Apps which are sanctioned (configured in EMM to be managed) vs. unsanctioned for each SP
 6. Determine the percentage of each App which are managed vs. unmanaged
 7. Determine the percentage of Users who are using a managed vs. unmanaged device to access an SP using an App
 8. Determine geographic distribution of unmanaged accesses from specific App/SP
 9. Compare across customers (tenants) in the same or different vertical/geography
 10. Compare across customers (tenants) using the same SP/MobileOS
 11. Generate an Alert when any of the above or a combination of the above matches certain conditions or exceeds a configured threshold
 12. Generate pre-canned/custom and periodic or on-demand or event-driven reports on any of a combination of the above parameters
 13. Provide a visualization of these data in a dashboard
6. Analyzed data is used in various embodiments to generate a "risk score" for the deployment - the score can be generated per SP or for the whole company based on following factors in various combinations
 1. Sensitivity of data in the SP that is subject to leak via the mobile App
 2. Reputation of the applications accessing the SP from Mobile devices
 3. Spread of sanctioned vs. unsanctioned apps accessing the SP
 4. Spread of unmanaged sanctioned app accessing the SP
 5. Spread of unmanaged devices (and hence users) accessing the SP
 6. Role of users accessing the SP using unsanctioned/unmanaged apps/devices
 7. Geographic location of the users/devices accessing the SP using unmanaged devices/apps
 8. Last access time
 9. Life of tokens issued by SP when granting access to users
 10. Type of device used and/or OS version
 11. Type of Industry/Vertical (e.g. in Education vs. Automotive may have different bias for exposure of information, apps may be different)
7. Based on the risk score ranges, generic or specific recommendations can be made for specific SPs
 1. A one-time risk analysis can be done with a free-trial account. This may or may not require an EMM license/report.
 2. Based on the risk score, a paid continuous risk assessment service can be bought by the customer
 3. A paid subscription to secure the service from leakage can be bought and risk score can be monitored to validate the ROI

8. The Loop Back Engine subscribes to the Alert events and calibrates itself based on the Risk Score on a per-SP basis. This engine can be programmed/configured to take actions based on specific Alerts to take remediation or mitigation actions by calling APIs into EMM or the SPs. For example:
 1. EMM can be configured to add a policy which can strengthen or relax device posture checks for specific users or groups or devices or location
 2. SPs can be configured to block users from specific locations, or reduce access level (read-only vs. read-write)
 3. Increase awareness by changing "Acceptable Usage Policy" or add/remove Notifications to specific users/groups

An Example Analysis

Consider an Enterprise with 1000 users, using 1500 mobile devices. They have 1000 devices under management across 700 users. They are using Box as a sanctioned SP for file sharing and collaboration services. The only sanctioned mobile App for Box is the native Box application.

Based on the logs collected from EMM, we find that:

1. 500 users under EMM have the official Box App
2. 100 users have an unsanctioned Box app "ShareVault" from a 3rd party vendor in 125 devices
3. 700 devices have the official Box app as a managed App and 300 have simply downloaded it from app store
4. 800 devices are iOS and 200 are Android (various versions)
5. There are 4 executive level users using the unsanctioned ShareVault application

Based on the logs collected from the Box SP logs, we find that:

1. 150 users not in EMM have used official Box app (most likely from an unmanaged mobile device)
2. 50 users not in EMM have used unsanctioned Box app "ShareVault" app (also most likely from an unmanaged mobile device)
3. 800 users have logged in from Desktop browsers
4. In the last month, the official Box app was used by North-American source IPs to login 300 times
5. In the last month, the official Box app was used by non-North-American source IPs to login 70 times
6. There are 5 executive level users (out of 10) using the unsanctioned ShareVault application

Assessing Risk score can be done based on a well understood model provided by OWASP.

Variable	Likelihood (provided by system)	Impact (provided by customer)	Comment
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User or Group	HIGH	HIGH	Over 20% of users using unsanctioned apps and devices. 50% of executive level users in that category. Hence Likelihood is HIGH. Impact is high due to high percentage of exec users.
Data in SP	HIGH	HIGH	High exposure to users and devices. Confidential data in Box.
User Location	LOW	LOW	< 20% access outside NA, medium exposure (Ignoring specific high risk regions in this example). For this corporate, location is not important.
Unmanaged App	HIGH	MEDIUM	> 20% of devices have official Box App as unmanaged - High Likelihood. The official App is considered secure, but it can be misused by uneducated user.
Unsanctioned App	HIGH	HIGH	> 15% of devices have unsanctioned ShareVault application - High Likelihood. High impact since the App itself is considered malicious.
Consolidated	HIGH	HIGH	

A HIGH Likelihood and HIGH Impact results in an overall CRITICAL Risk score.

Existing solutions are very cloud service and user focused assuming that all accesses happen through desktops and browsers. The solution disclosed herein is end-point and application focused and assesses risk based on multiple factors related to end point and application posture. In some embodiments, a loop back system ensures risk can be mitigated and user awareness is improved.

Application and end point focused risk score provides a perspective of how mobile applications pose threats to enterprise data in cloud services and also provide mobile specific risk assessment and remediation.

Device	{phoneNumber=PDA 2, uuid=5a39546c-7bc1-46b8-a95c-1386321d5302, platform=iOS}	{phoneNumber=PDA 2, uuid=5a39546c-7bc1-46b8-a95c-1386321d5302, platform=iOS}
Completed At	2017-02-21 22:51:55 +0000	2017-02-21 22:51:55 +0000
Object Name		
Object Id		
Logged At	2017-02-21 22:51:55 +0000	2017-02-21 22:51:55 +0000
Actor	{principal=testuser1522, miUserId=9003, email=}	{principal=testuser1522, miUserId=9003, email=}
Details	App Word 1.29 Installed	App Tunnel 2.1.0 Installed
Performed On	testuser1522 (iOS - PDA 2)	testuser1522 (iOS - PDA 2)
Action Date	2017-02-21 22:51:55 +0000	2017-02-21 22:51:55 +0000
Performed By	testuser1522	testuser1522
State	Success	Success
Action	Install App	Install App

App MARIO RUN 1.0.2 Installed	{principal=testuser1522, miUserId=9003, email=}	2017-02-21 22:51:55 +0000				{phoneNumber=PDA 2,ber=PDA 2,uid=5a39546c-7bc1-46b8-a95c-1386321d5302,platform=iOS}
testuser1522 (iOS - PDA 2)	{principal=testuser1522, miUserId=null, email=testuser1522}	2017-02-21 22:51:55 +0000	2017-02-22 00:52:02 +0000	iTunesStoreID=298844386;15,ManagementFlags=1,Name=Cisco WebEx Meetings	2017-02-22 00:52:02 +0000	{phoneNumber=PDA 2,ber=PDA 2,uid=5a39546c-7bc1-46b8-a95c-1386321d5302,platform=iOS 9.3}
2017-02-21 22:51:55 +0000	{principal=testuser1522, miUserId=null, email=testuser1522}	2017-02-22 00:52:02 +0000	2017-02-22 01:00:54 +0000	iTunesStoreID=290853822;10,ManagementFlags=1,Name=Box for iPhone and iPad	2017-02-22 01:00:54 +0000	{phoneNumber=PDA 2,ber=PDA 2,uid=5a39546c-7bc1-46b8-a95c-1386321d5302,platform=iOS 9.3}
testuser1522 (iOS 9.3 - PDA 2)	{principal=testuser1522, miUserId=null, email=testuser1522}	2017-02-22 01:00:54 +0000				
2017-02-22 01:00:54 +0000						
testuser1522						
Success						
Install App						

Appendix A – sample EMM Audit Log
Page 3 of 4

{phoneNumber=PDA 2, uuid=5a39546c-7bc1-46b8-a95c-1386321d5302, platform=iOS}	
2017-02-22 01:01:31 +0000	
2017-02-22 01:01:31 +0000	
{principal=testuser1522, miUserId=9003, email=}	
App WebEx 9.8.1 Installed	
testuser1522 (iOS - PDA 2)	
2017-02-22 01:01:31 +0000	
testuser1522	
Success	
Install App	

Electronic Patent Application Fee Transmittal				
Application Number:				
Filing Date:				
Title of Invention:		CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY		
First Named Inventor/Applicant Name:		Kumara Das Karunakaran		
Filer:		William James		
Attorney Docket Number:		MOIRP068+		
Filed as Large Entity				
Filing Fees for Provisional				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
PROVISIONAL APPLICATION FILING	1005	1	260	260
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Total in USD (\$)				260

Electronic Acknowledgement Receipt	
EFS ID:	28764738
Application Number:	62478081
International Application Number:	
Confirmation Number:	8681
Title of Invention:	CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO PROVIDE SECURITY
First Named Inventor/Applicant Name:	Kumara Das Karunakaran
Customer Number:	21912
Filer:	William James/Elaine Nguyen
Filer Authorized By:	William James
Attorney Docket Number:	MOIRP068+
Receipt Date:	29-MAR-2017
Filing Date:	
Time Stamp:	10:15:49
Application Type:	Provisional

Payment information:

Submitted with Payment	yes
Payment Type	DA
Payment was successfully received in RAM	\$260
RAM confirmation Number	032917INTEFSW00008664500685
Deposit Account	500685
Authorized User	Elaine Nguyen
The Director of the USPTO is hereby authorized to charge indicated fees and credit any overpayment as follows: 37 CFR 1.16 (National application filing, search, and examination fees) 37 CFR 1.17 (Patent application and reexamination processing fees)	

37 CFR 1.19 (Document supply fees)
37 CFR 1.20 (Post Issuance fees)
37 CFR 1.21 (Miscellaneous fees and charges)

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Application Data Sheet	MOIRP068Plus_ADS.pdf	1822957	no	8
			3b1720ac75f06d0faea5b061a90c176320c3b77c		

Warnings:

Information:

2	Specification	MOIRP068Plus_APP.pdf	767851	no	11
			950d28715ae738f181f1480c9ec4f24ff852cebb		

Warnings:

Information:

3	Fee Worksheet (SB06)	fee-info.pdf	29915	no	2
			9eb2f79b636032d089184ea94bdef4d6e239bdd8		

Warnings:

Information:

Total Files Size (in bytes):			2620723
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APPLICATION NUMBER	FILING or 371(c) DATE	GRP ART UNIT	FIL FEE REC'D	ATTY. DOCKET NO.	TOT CLAIMS	IND CLAIMS
62/478,081	03/29/2017		260	MOIRP068+		

CONFIRMATION NO. 8681
FILING RECEIPT

21912
VAN PELT, YI & JAMES LLP
10050 N. FOOTHILL BLVD #200
CUPERTINO, CA 95014



CC000000090526814

Date Mailed: 04/12/2017

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Inventor(s)

Kumara Das Karunakaran, San Jose, CA;
Vijay Pawar, Palo Alto, CA;

Applicant(s)

MOBILEIRON, INC., Mountain View, CA

Power of Attorney:

William James--40661

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Permission to Access Search Results: Yes

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The country code and number of your priority application, to be used for filing abroad under the Paris Convention, is **US 62/478,081**

Projected Publication Date: None, application is not eligible for pre-grant publication

Non-Publication Request: No

Early Publication Request: No

Title

CORRELATING MOBILE DEVICE AND APP USAGE WITH CLOUD SERVICE USAGE TO
PROVIDE SECURITY

Statement under 37 CFR 1.55 or 1.78 for AIA (First Inventor to File) Transition Applications: No

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Title 37, Code of Federal Regulations, 5.11 & 5.15

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APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
62/478,081			



Correspondence Address/Fee Address Change

The following fields have been set to Customer Number 181791 on 10/12/2021

- Correspondence Address
- Maintenance Fee Address

The address of record for Customer Number 181791 is:

181791
Van Pelt, Yi & James LLP and MOBILEIRON, INC.
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Cupertino, CA 95014

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page 1 of 1