

Mobile App Analytics

January 26th, 2016



Key to Winning in the Mobile App Economy

26 apps

On average, there's only 26 apps on any given smartphone phone

25%

If an app doesn't deliver, 25% of customers stop using it midway thru the transaction

3 sec's

In just 3 seconds 57% of your customers give up and moves elsewhere

End-user experience is the key!

*"Driven by the increasing significance of **mobile app** endpoints and dynamic Web technology, **end-user experience** monitoring is becoming **even more important** than it currently is **to enterprises.**"*

– Gartner | October 2014



'Mobile First' Challenges: Answer Key Questions!

Visualize, Understand Impact and be Proactive

Who is using our apps?

Where and **When** are they being used?

What are my users doing with our apps?

What is their experience like?

Can I **Help** users get more value?

CA Mobile App Analytics



The M.E.L.D. Strategy for stellar End-User Experience

Application mobile versus Site Web mobile

- Mobile
- End-to-end
- Lifecycle
- Deep visibility



Mobile App
Analytics

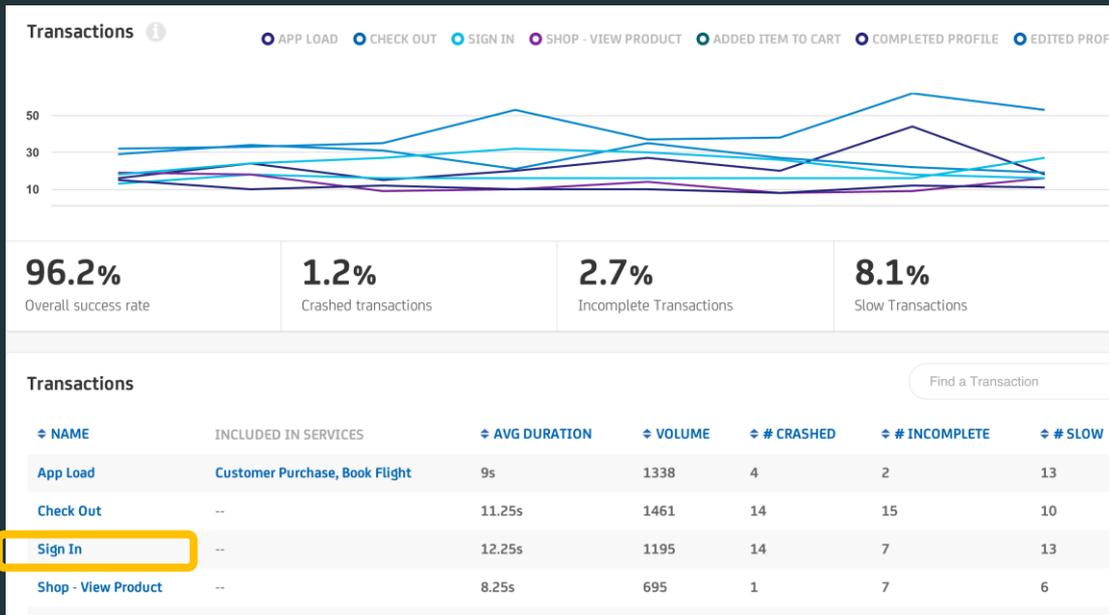


CA APM
CEM / Browser
Agent

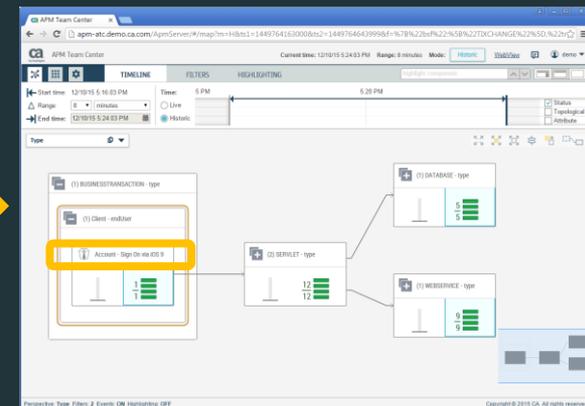
End-to-End Transaction Visibility

- Mobile
- End-to-end
- Lifecycle
- Deep visibility

CA MAA



CA APM



End-to-end view of business transactions from mobile to mainframe

Analytics at Every Stage of Mobile App Lifecycle

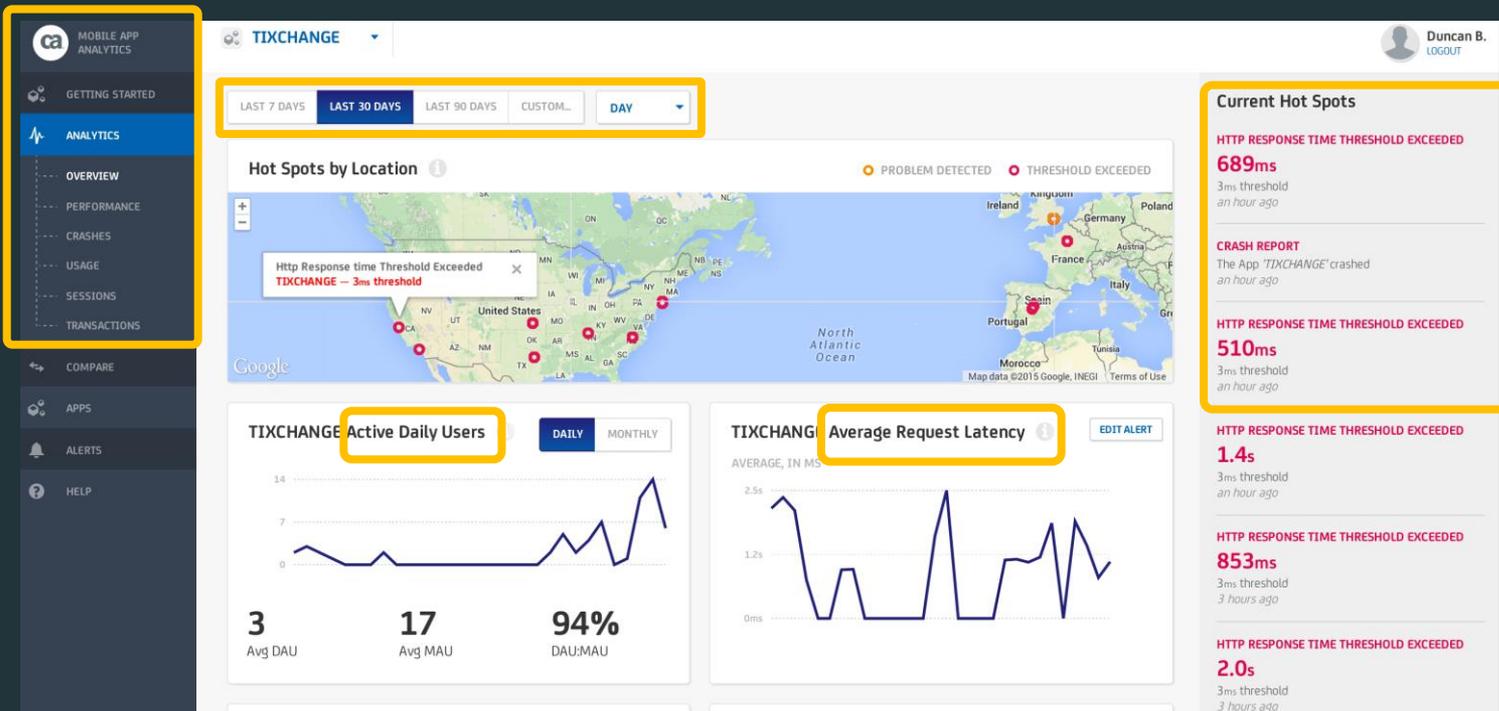
- Mobile
- End-to-end
- Lifecycle
- Deep visibility



Enabling 'CONTINUOUS DELIVERY' for your Mobile App Lifecycle

Deep Visibility into App Performance and Usage

- Mobile
- End-to-end
- Lifecycle
- Deep visibility



Deeper visibility = better app health & performance

CA MAA – Two Deployment Options



Cloud-based SaaS
offering



On-premise
behind the
corporate firewall

CA MAA Licensing - Two types of End Users

Consumer End-User

- File a claim
- Pay a bill
- Make a purchase

Business End-User

- Point of sale
- Service a customer
- Provision a new service

Be Up & Running with MAA

5 easy steps in 5 minutes!

1) SIGN UP

As a developer, go ahead and add an app after you signup

2) GET SDK

Add the lightweight CA MAA SDK for iOS and Android *(recommended)*

Or wrap your app with our Smart Containerization™ tool*

3) INITIALIZE

Follow steps you see on-screen to initialize

4) DEPLOY

Deploy the MAA integrated app to the field**

5) VOILA!

MAA will immediately start showing you insightful analytics

*App wrapper available only on Android

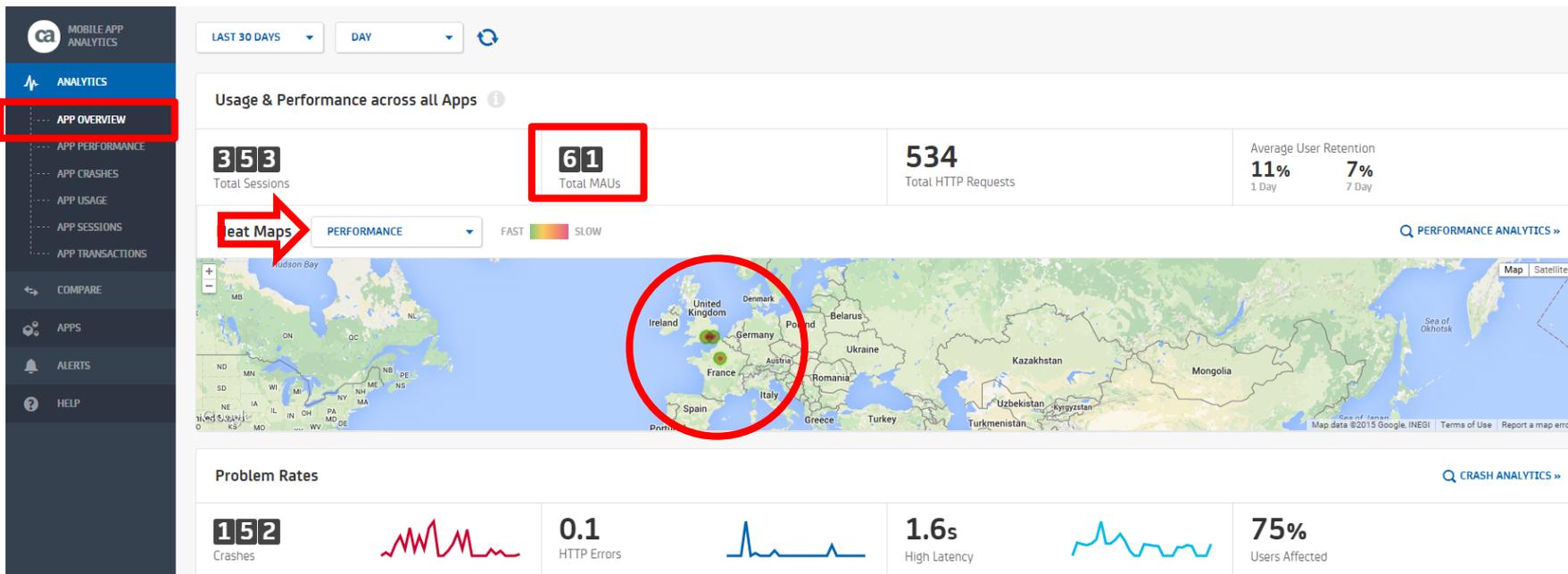
**Presumes the iOS App Store approval



THIS IS THE AGE OF THE
APPLICATION ECONOMY

AND IT'S ALL ABOUT THE
USERS

CA Technologies propose une solution d'Analytiques pour mobile



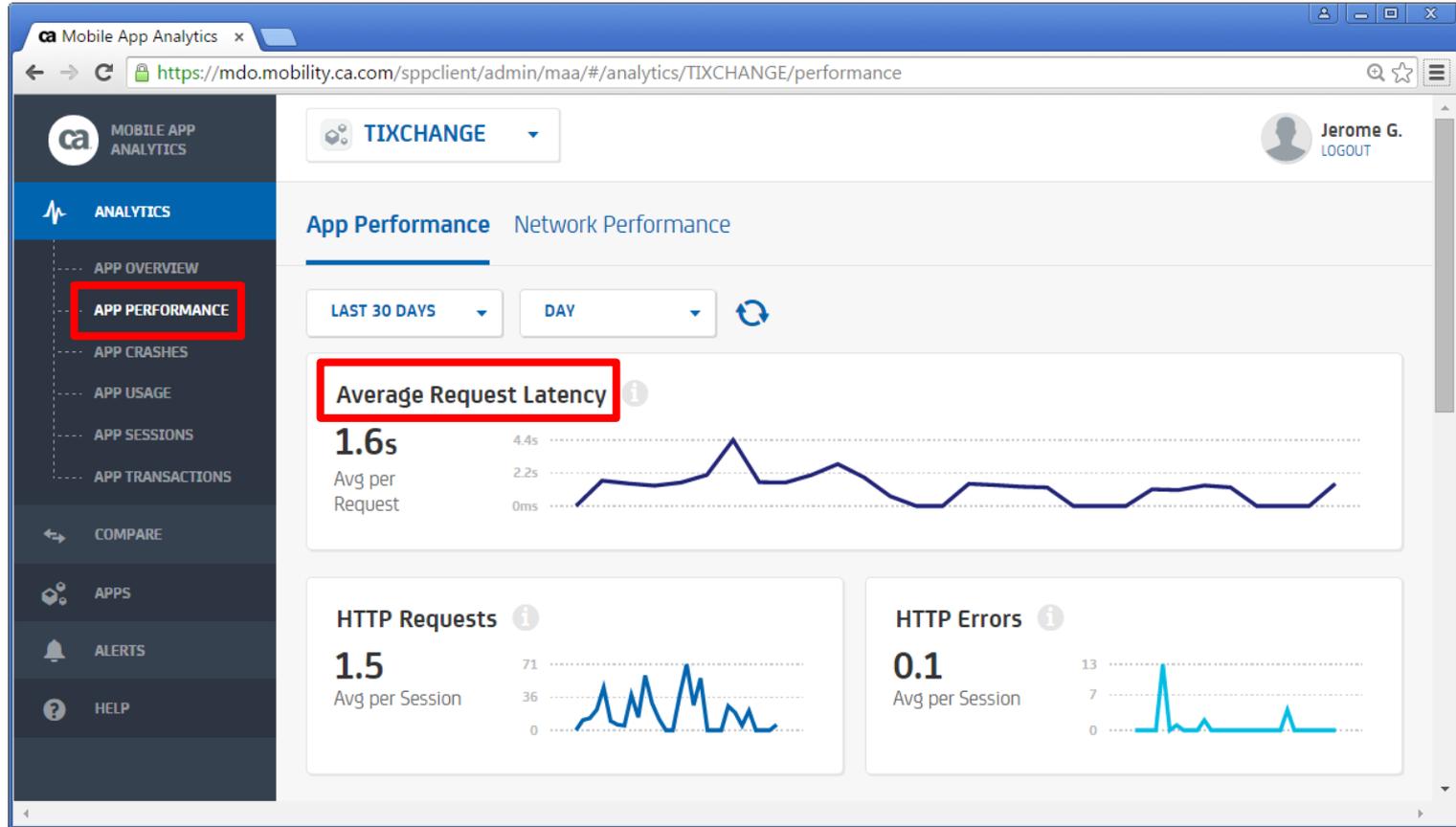
Quels sont les bénéfices ?

- Fournir des données visuelles avec une granularité géo (pays ou ville) pour analyser la performance, les problèmes et l'usage
- La représentation visuelle des données permet de détecter des modèles de dysfonctionnements

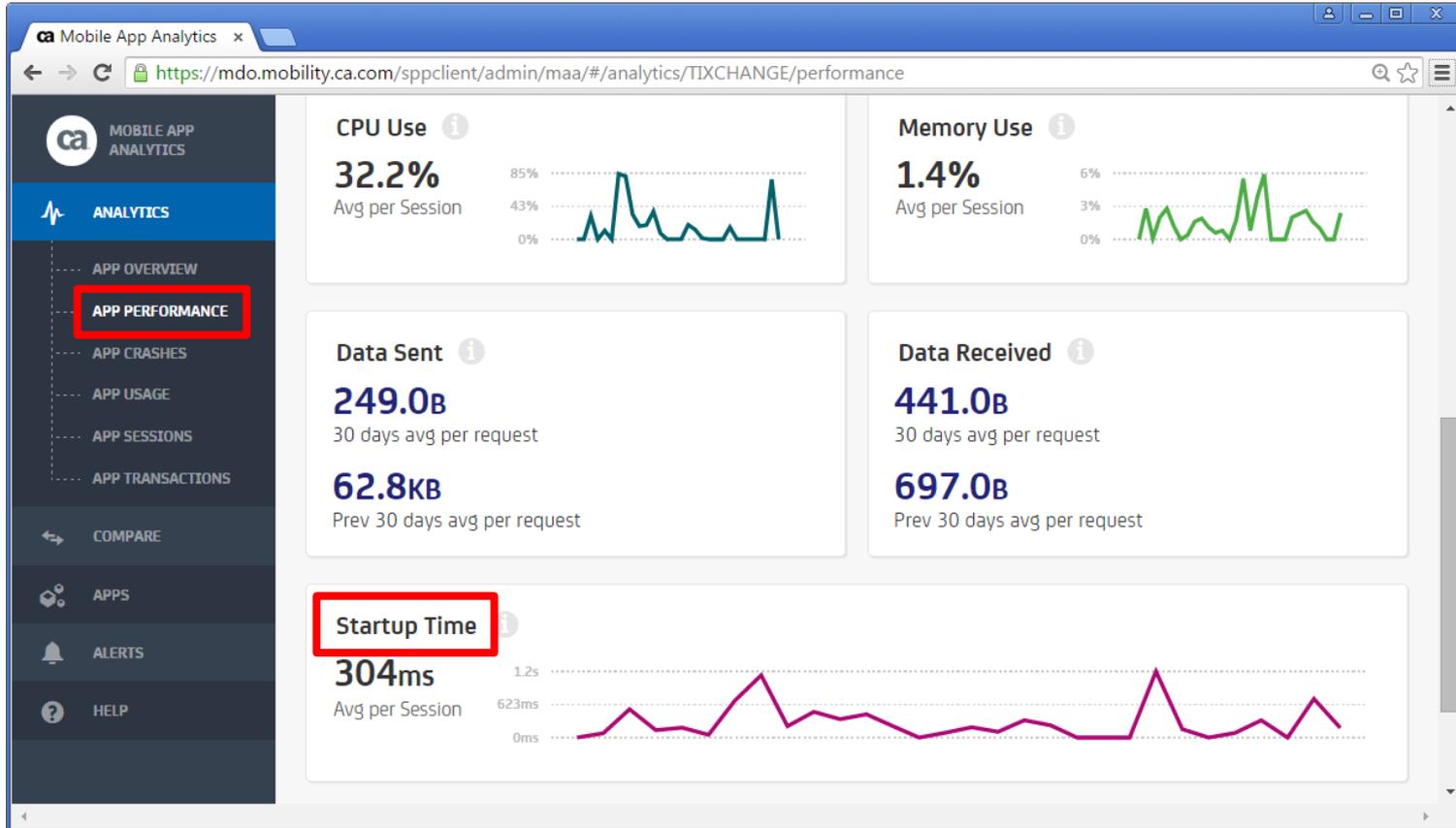
Pourquoi est-ce important ?

- Visualiser un point technique dans une zone géographique particulière
- Le propriétaire de l'application utilise ces données pour dérouler une campagne dans cette zone

Métriques de performances des applications



Métriques de performances des applications



Métriques de performances des applications

The screenshot displays the 'Network Performance' section of the Mobile App Analytics dashboard. The interface includes a sidebar with navigation options like 'APP PERFORMANCE' and 'APP OVERVIEW'. The main content area shows 'URL Ranking' and 'Problematic URLs' lists, along with a detailed 'Network Performance' table. A red box highlights the 'Network Performance' tab in the top navigation and the first row of the table, which shows a high request count and a significant failure rate for a specific URL.

URL Ranking

URL	REQUESTS
http://tlxchange.demo.ca.com:80/jtlxchange_web/shop/view...	232
http://tlxchange.demo.ca.com:80/jtlxchange_web/shop/ad...	161
http://tlxchange.demo.ca.com:80/jtlxchange_web/shop/sl...	103
http://192.168.157.167:7080/jtlxchange_web/shop/vlewP...	12

Problematic URLs

URL	FAILURE
http://tlxchange.demo.ca.com:8080/jtlxchange_web/shop/sl...	100%
http://camaa151:80/jtlxchange_web/shop/vlewProduct.shtr...	100%
http://tlxchange.demo.ca.com:80/jtlxchange_web/shop/vlew...	100%
http://192.168.157.167:7070/jtlxchange_web/shop/vlewPro...	100%

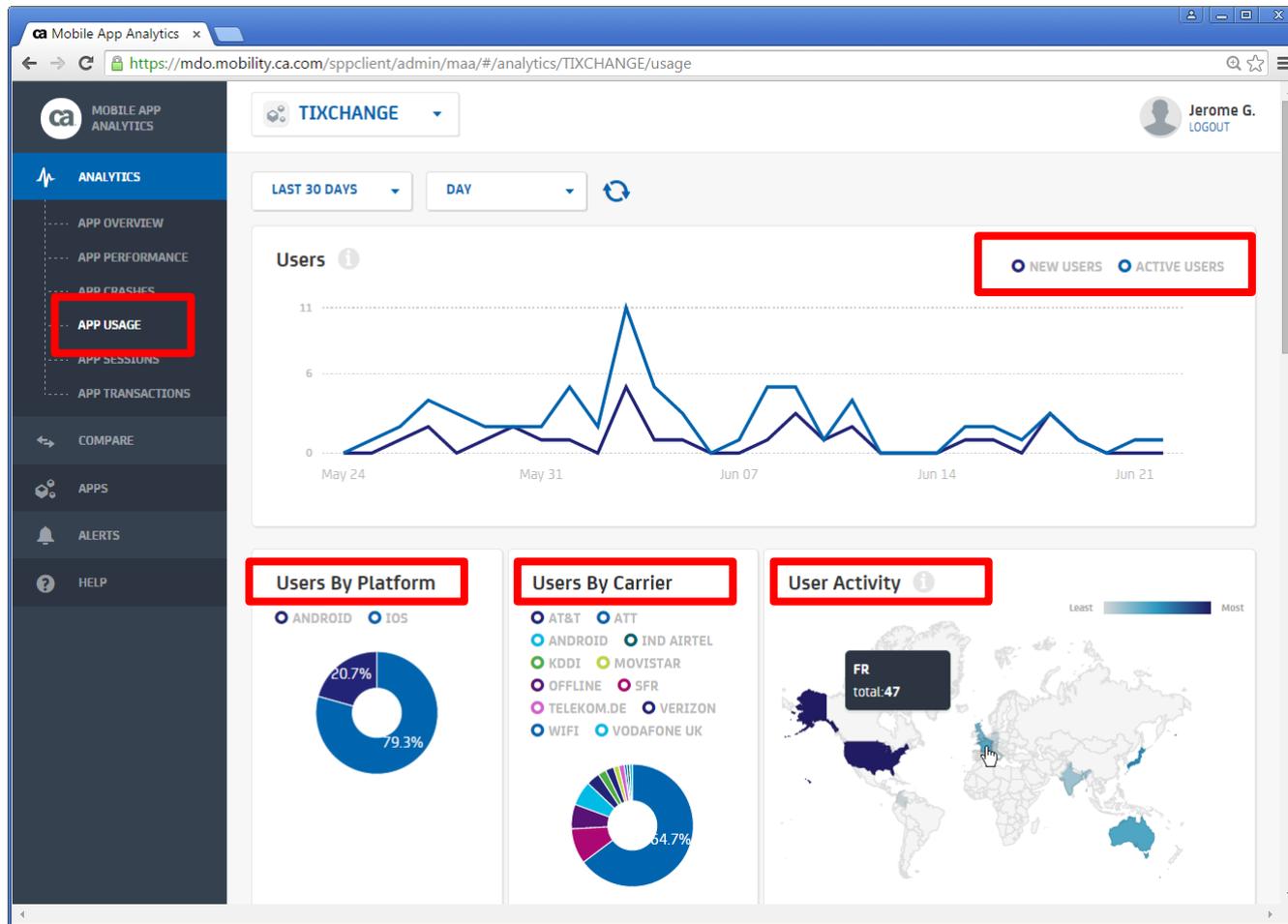
Network Performance

URL CONTAINS: [Search term]

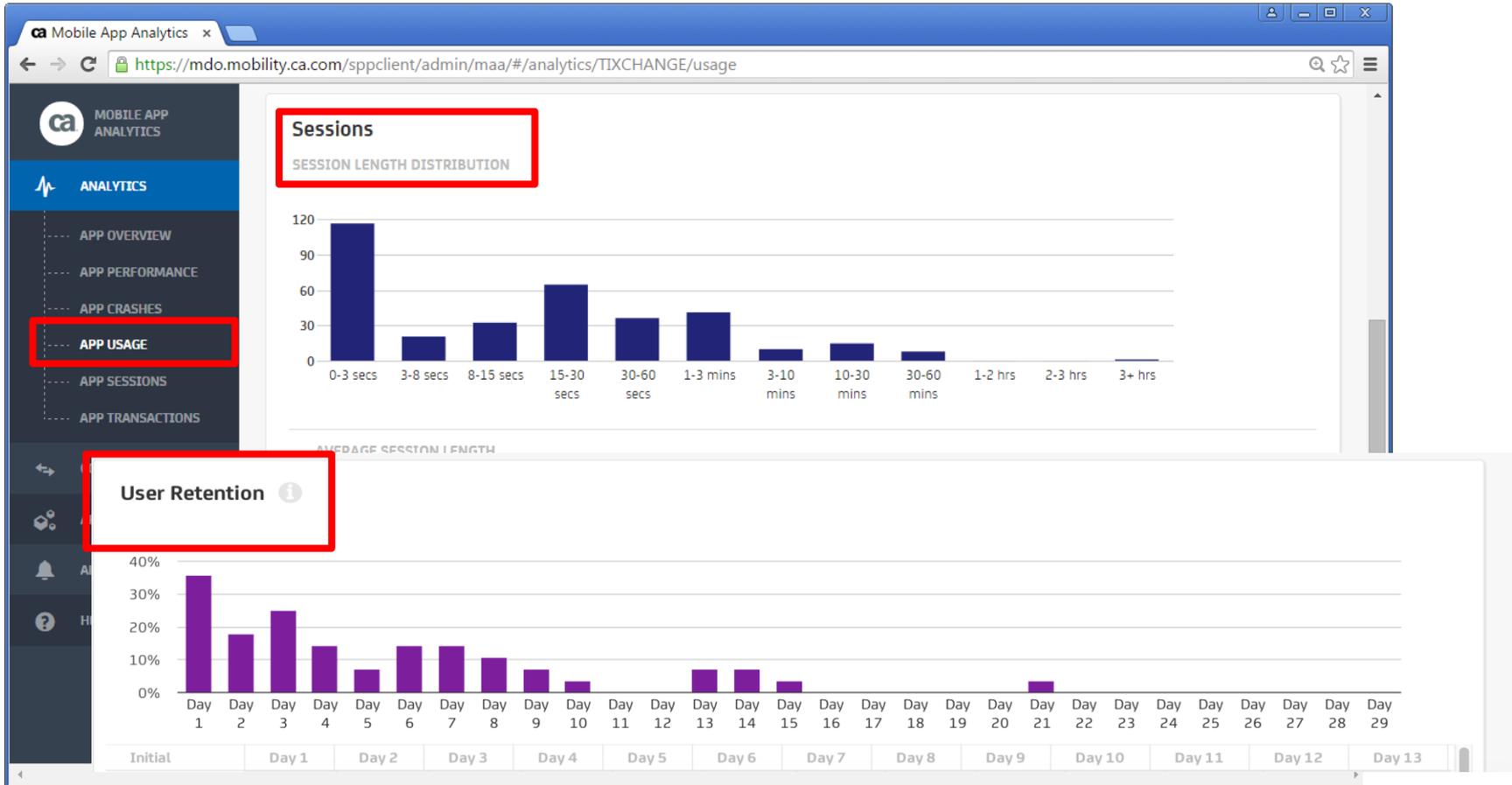
+ SEARCH BY ERROR CODE

URL	REQUESTS	FAILURE	AVG LATENCY	AVG DATA IN / OUT
tlxchange.demo.ca.com:80 /jtlxchange_web/shop/vlewProduct.shtml	232	0.9%	2.8s	690.0B / 558.0B
tlxchange.demo.ca.com:80 /jtlxchange_web/shop/signon.shtml	103	1%	830ms	220.0B / 0B/bytes
tlxchange.demo.ca.com:80 /jtlxchange_web/shop/aodItemToCart.shtml?jsessionid=0147E44F2094...	161	0%	654ms	269.0B / 0B/bytes
10.129.138.138:7080 /jtlxchange_web/shop/vlewProduct.shtml	4	0%	645ms	294.0B / 0B/bytes

Métriques d'utilisation des Applications



Métriques d'utilisation des Applications



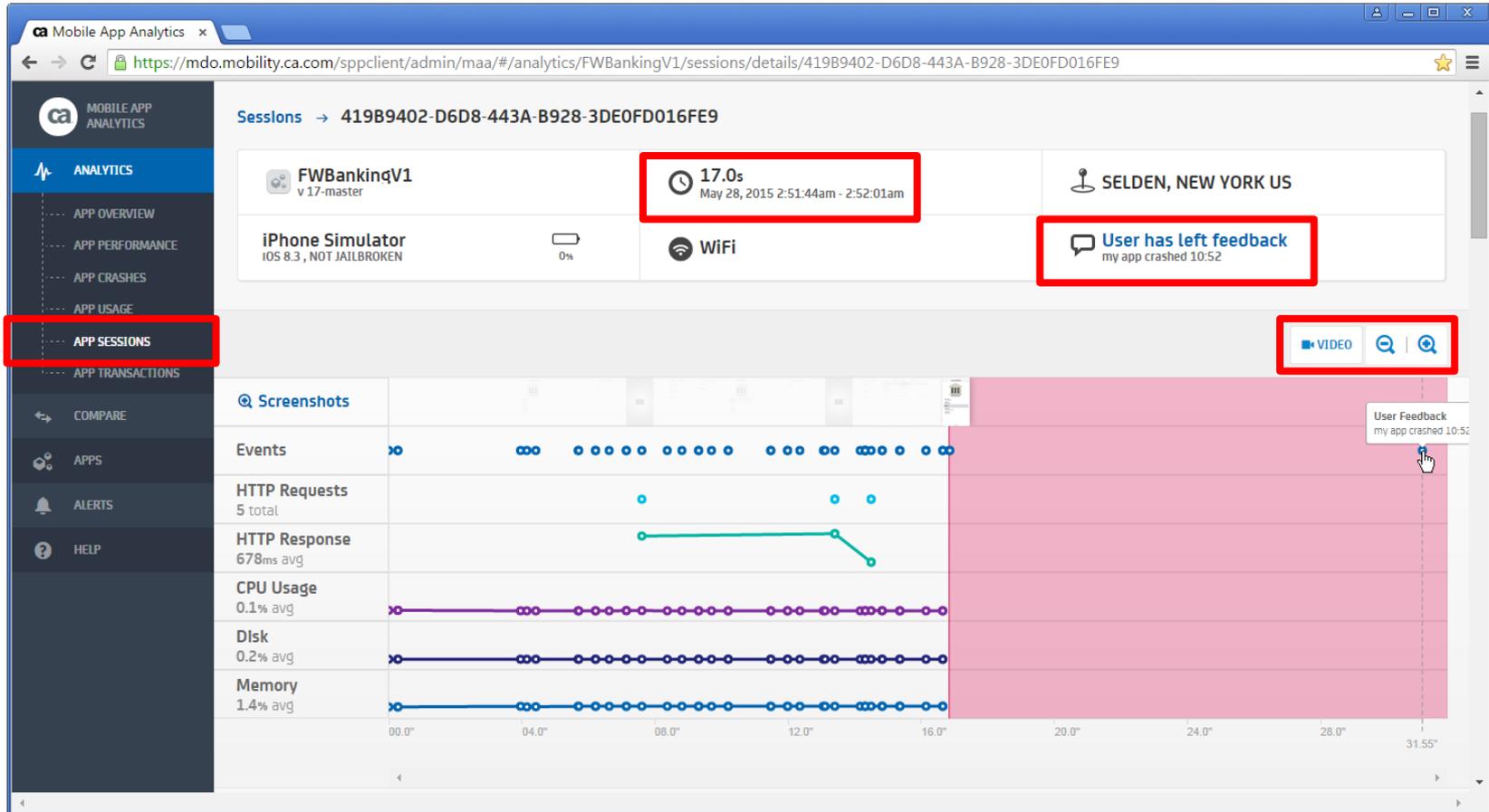
Analyse des sessions Utilisateurs

The screenshot displays the 'Mobile App Analytics' dashboard. The left sidebar contains navigation options: ANALYTICS, OVERVIEW, PERFORMANCE, CRASHES, USAGE, SESSIONS (highlighted with a red box), COMPARE, APPS, ALERTS, and HELP. The main content area shows a line graph of sessions over time, with a 'Sessions' filter box containing 'ALL', 'FLAGGED', and 'CRASHED' (highlighted with a red box). Below the graph is a 'Session List' table with columns for PROBLEMS?, LENGTH, APP, PLATFORM, APP VERSION, SESSION, and TIMESTAMP. The table lists several sessions, with 'CRASHED' and 'ALERTED' statuses highlighted in red and orange respectively.

Session List

PROBLEMS?	LENGTH	APP	PLATFORM	APP VERSION	SESSION	TIMESTAMP
CRASHED	34.7s	TIXCHANGE	IOS	0	F896AF0D-6C60-4684-B017-77A5E1FDDEA4	May 28, 2015 2:20:09pm
CRASHED	20.5s	TIXCHANGE	IOS	0	879CBB34-1039-4E70-8CE0-0830807F1595	May 28, 2015 2:20:46pm
CRASHED	1.6m	TIXCHANGE	IOS	0	638192DC-7B04-4B5A-94A2-B963E957A4D1	May 28, 2015 2:21:09pm
ALERTED	3.0m	TIXCHANGE	IOS	0	DC108FD3-1D80-4EB7-B5FD-5E787F1BAD15	May 28, 2015 2:23:01pm
ALERTED	1.1m	TIXCHANGE	IOS	0	C1C507EC-3964-433D-B985-D0BF91FC869F	May 28, 2015 8:18:05pm

Analyse détaillée d'une session Utilisateur



Analyse détaillée d'une session Utilisateur

The screenshot displays the Mobile App Analytics interface. The sidebar on the left contains the following navigation items: ANALYTICS, APP OVERVIEW, APP PERFORMANCE, APP CRASHES, APP USAGE, APP SESSIONS (highlighted with a red box), APP TRANSACTIONS, COMPARE, APPS, ALERTS, and HELP. The main content area shows a list of events for a specific session. The 'Transaction Start' event is highlighted with a red box. The detailed view on the right shows the following information:

View Did Appear

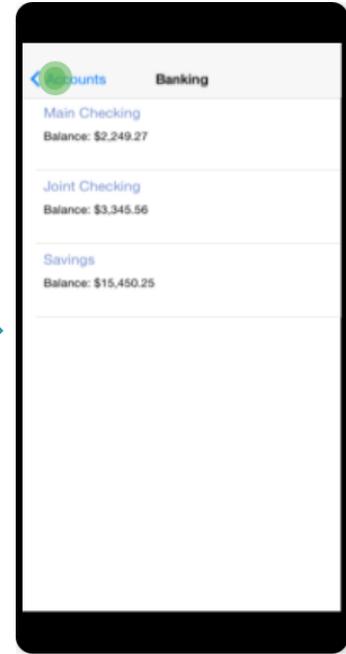
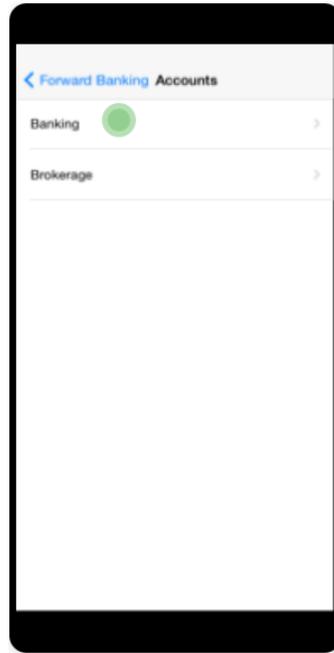
MEMORY USE	CPU USE	DISK USE
1.5%	0.1%	0.2%

Type : VIEW_EVENTS
Value : Forward_Bank.ProductDetailViewController
Service : Forward Bank
Transaction : Accounts
Transaction Start Time : May 28, 2015 4:51:49am

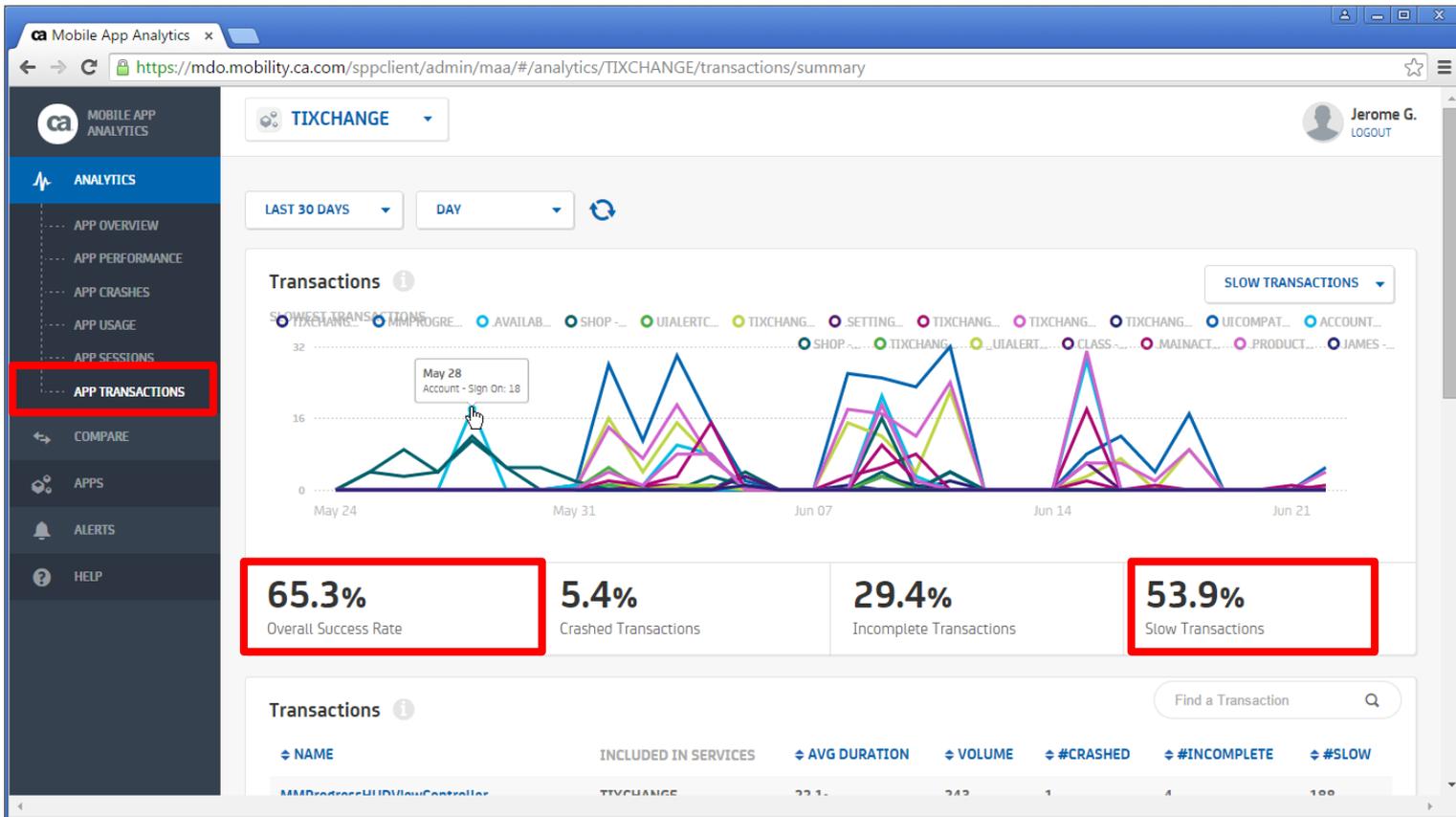
The detailed view also includes a screenshot of the mobile app interface showing a 'Processing' dialog box over a 'Banking' screen.

Event Type	Event Name	View Name	MEM	CPU	DISK	Duration
VIEW_TOUCH_EVENTS	Touch Ended	UITableViewLabel:Accounts	MEM	CPU	DISK	5.8s
TXN_EVENTS	Transaction Start	Accounts	MEM	CPU	DISK	5.9s
VIEW_EVENTS	View Did Disappear	Forward_Bank.HomeView	MEM	CPU	DISK	6.4s
VIEW_EVENTS	View Did Appear	Forward_Bank.ProductsVi	MEM	CPU	DISK	6.4s
VIEW_TOUCH_EVENTS	Touch Ended	Touch at x:121.5 y:89	MEM	CPU	DISK	6.8s
VIEW_EVENTS	View Did Disappear	Forward_Bank.ProductsVi	MEM	CPU	DISK	7.3s
VIEW_EVENTS	View Did Appear	Forward_Bank.ProductDet	MEM	CPU	DISK	7.3s
TXN_EVENTS	Transaction End	Accounts	MEM	CPU	DISK	7.7s
NETWORK	Http://192.168.253.176:7	Web/shop/viewproduct.si	MEM	CPU	DISK	7.7s
VIEW_EVENTS	View Did Appear	MMPProgressHUDViewCon	MEM	CPU	DISK	8.5s

Capture d'écran des actions Utilisateur



Analyse des transactions Utilisateurs



Analyse des transactions Utilisateurs

Transactions

-

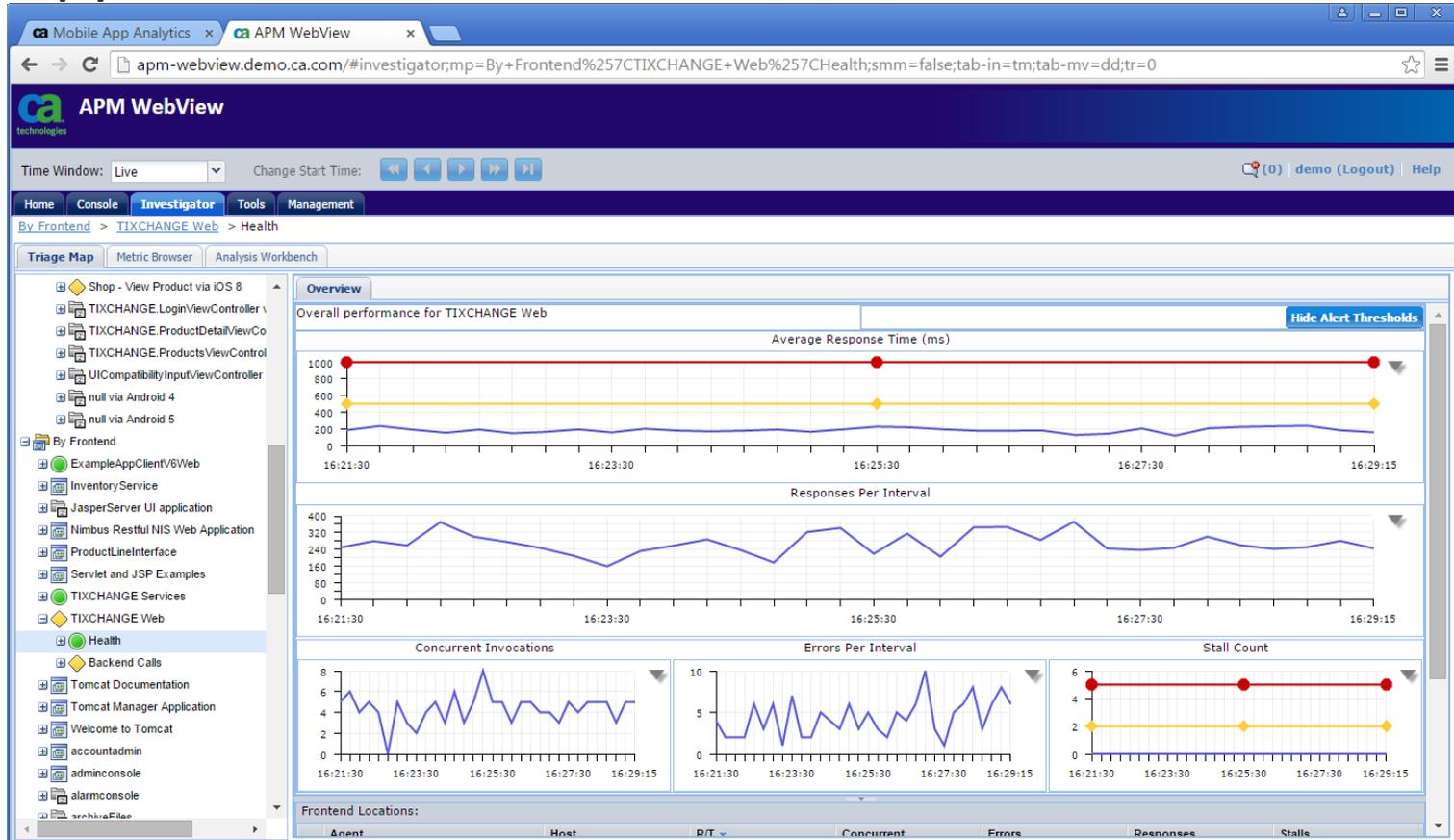


NAME	INCLUDED IN SERVICES	AVG DURATION	VOLUME	#CRASHED	#INCOMPLETE	#SLOW
Account - Sign On	TIXCHANGE	5.8s	94	14	61	12
Shop - View Product	TIXCHANGE	2.6s	66	1	0	64
JAMES - View Product	TIXCHANGE	1.4s	1	0	0	1
Shop - Add Item To Cart	TIXCHANGE,Shop	553ms	40	0	0	19
CLASS - View Product	TIXCHANGE	402ms	3	0	0	2

Analyse de bout-en-bout : du mobile jusqu'à la BDD

The screenshot displays the CA APM WebView interface. The browser address bar shows the URL: `apm-webview.demo.ca.com/#investigator;mp=By+Business+Service%257CTIXCHANGE%257CShop+-+View+Product+via+Android+4;smm=false;tab-in=tm;tab-mv=tm;tr=`. The interface includes a navigation menu with tabs for Home, Console, Investigator, Tools, and Management. The current view is the Investigator section, showing a breadcrumb trail: `By Business Service > TIXCHANGE > Shop - View Product ...`. The main area is titled "Overview" and contains a network diagram. The diagram shows a flow starting from a mobile device icon labeled "Shop - View Product via Android 4". An arrow points to a server icon labeled "TIXCHANGE Web". From the "TIXCHANGE Web" node, three arrows point to other components: a database icon labeled "System tixchange-db on port 3306", a server icon labeled "System localhost.localdomain on port 8080", and a database icon labeled "tixchange on tixchange-db-3306 (MySQL DB)". The "Shop - View Product via Android 4" node in the diagram is highlighted with a red rectangle. The interface also shows a "Triage Map" on the left with a list of application components, including "Shop - View Product via iOS 8" which is also highlighted with a red rectangle.

Analyse de la transaction mobile au sein des serveurs d'application



Analyse de la transaction mobile au sein des serveurs d'application

Status	Timestamp	Duration	Description
	06/22/15 16:17:46 GMT+200	3158	/jtixchange_web/shop/viewProduct.shtml
✘	06/22/15 16:20:15 GMT+200	248	/jtixchange_web/shop/viewOrder.shtml
✘	06/22/15 16:31:07 GMT+200	167	/jtixchange_web/shop/viewOrder.shtml
✘	06/22/15 16:26:58 GMT+200	166	/jtixchange_web/shop/viewOrder.shtml
✘	06/22/15 16:21:46 GMT+200	166	/jtixchange_web/shop/viewOrder.shtml

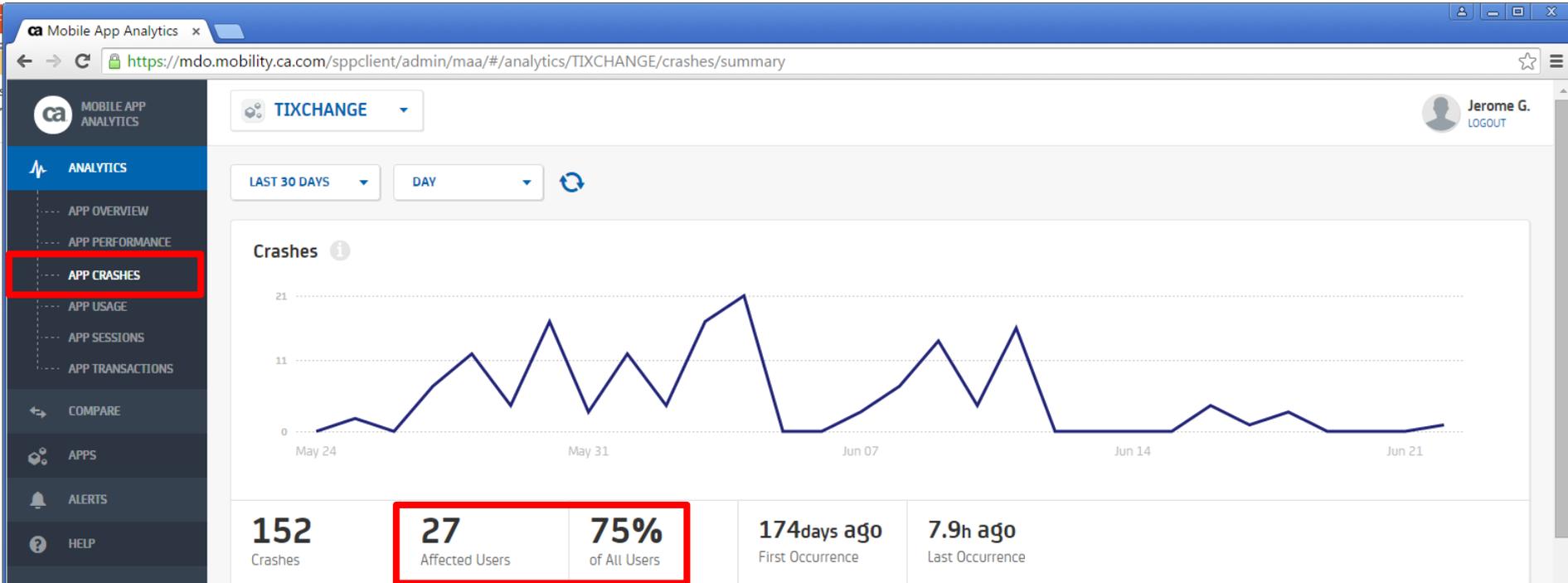
Summary View | Trace View | **Tree View**

Agent: *SuperDomain*|tixchange-web1|Tomcat|tixchange-web1
Timestamp: 2015 Jun 22 16:17:46
Duration: 3158 ms

- 100% - Frontends|Apps|TIXCHANGE Web|URLs|Default|service|jtixchange_web|shop/viewProduct.shtml 3158(ms)
- 100% - Servlets|ActionServlet|service|jtixchange_web/shop/viewProduct.shtml 3158(ms)
 - 100% - Struts|ViewProductActionHandler|execute 3157(ms)
 - 100% - jtixchange|Action|CatalogBean|viewProduct 3157(ms)
 - 3% - jtixchange|Service|CatalogService|getItemListByProduct 90(ms)
 - 96% - jtixchange|Service|CatalogService|getProduct 3035(ms)
 - 0% - Servlets|JspServlet|service 1(ms)

Server Port: 8080
Session ID: 02A41AAA7D6DC356D41AE97E211569FB
URL: /jtixchange_web/shop/viewProduct.shtml
URL Query: productId=MU-EL-01

Analyse des crashes



Analyse des crashes

Mobile App Analytics

https://mdo.mobility.ca.com/sppclient/admin/maa/#/analytics/TIXCHANGE/crashes/summary

Find Crashes

List of TIXCHANGE Crash Types

APPS	PLATFORM	COUNT	CRASH TYPE	% OF AFFECTED USERS	TOTAL AFFECTED USERS	FIRST OCCURRENCE	LAST OCCURRENCE
TIXCHANGE (v0)	IOS	72	SIGTRAP Unknown (Unknown:0)	100%	18	42days ago	7.6n ago
TIXCHANGE (v0-)	IOS	11	SIGILL Unknown (Unknown:0)	66%	6	161days ago	4days ago
TIXCHANGE (v15.1)	Android	17	android.content.ActivityNotFoundException android.app.Instrumentation (checkStartActivityResult:1761)	71%	5	84days ago	19days ago
TIXCHANGE (v0-HEAD)	IOS	7	SIGILL Unknown (Unknown:0)	50%	5	35days ago	19days ago
TIXCHANGE (v17-	IOS	6	SIGILL	100%	3	137days ago	19days ago

Analyse des crashes

The screenshot displays the Mobile App Analytics dashboard for the application 'TIXCHANGE'. The left sidebar contains navigation options, with 'APP CRASHES' highlighted. The main content area shows a 'Crash Report' for an 'android.content.ActivityNotFoundException'. A red box highlights the session ID: 25bb7072-4811-45f0-9fb3-b51b9373c7a8. Below the report, there are three summary cards: CPU Usage at 87%, Mem Usage at 0%, and Disk Space Used at 1%.

Application	Version	Crash Time	Location
TIXCHANGE	v15.1	1.6m Jun 03, 2015 11:58:38am - 12:00:18pm	MINTABIE, SOUTH AUSTRALIA

Device	Status	Feedback
sdk_phone_armv7 Android 5.0, NOT JAILBROKEN	Offline	No feedback

Metric	Value
CPU Usage	87%
Mem Usage	0%
Disk Space Used	1%

Analyse des crashes

Crashed

android.content.ActivityNotFoundException

USER_CRASH_DATE=2015-06-03T17:30:16.000+05:30

APP_VERSION_NAME=15.1

EXCEPTION_CAUSE=android.content.ActivityNotFoundException

EXCEPTION_CLASSNAME=android.app.Instrumentation

EXCEPTION_METHODNAME=checkStartActivityResult

EXCEPTION_LINENUMBER=1761

MEM=0.0

DISK=1.0

android.content.ActivityNotFoundException: Unable to find explicit activity class
{com.ca.tixchange/com.ca.tixchange.CrashActivity}; have you declared this activity in your
AndroidManifest.xml?

at android.app.Instrumentation.checkStartActivityResult(Instrumentation.java:1761)

at android.app.Instrumentation.execStartActivity(Instrumentation.java:1485)

at android.app.Activity.startActivityForResult(Activity.java:3736)

at android.app.Activity.startActivityForResult(Activity.java:3697)

at android.app.Activity.startActivity(Activity.java:4007)

at android.app.Activity.startActivity(Activity.java:3975)

at com.ca.tixchange.AvailableSeatsActivity.onOptionsItemSelected(AvailableSeatsActivity.java:265)

[Q 54 MORE](#)



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Intégration du SDK MAA

```
ViewController.swift
RESTHelloWorld | Build RESTHelloWorld: Succeeded | 04/06/15 at 22:05
RESTHelloWorld > RESTHelloWorld > ViewController.swift > fetchGreeting()

self.btnRefresh.enabled = false

[CAMDOReporter, sharedInstance].startApplicationTransaction("greeting", withServiceName:"HelloWorld")

// Specify the URL to call
let url = NSURL(string: "http://192.168.217.10:8100/greeting")
let request = NSURLRequest(URL: url!)
// We'll need this in a moment- when the HTTP request is complete
// we want to dispatch our code back to the Main queue so that we
// can update the UI
let q = NSOperationQueue.mainQueue()

// Change the text fields so the user knows something is happening
greetingContent.text = "Retrieving..."
greetingID.text = nil
// Change the colour of the Content text to a red colour
greetingContent.textColor = UIColor(red: 1.0, green: 0, blue: 0.2, alpha: 1.0)

// Issue the HTTP REST API call on a background thread.
// This is MANDATORY because we must not block the main thread
// while the network request is underway.
NSURLConnection.sendAsynchronousRequest(request, queue: q, completionHandler: {(response: NSURLResponse!,
data: NSData!, error: NSError!) -> Void in

// Check if we got anything at all?
if data != nil {
// And if we did, does it actually make any sense?
if data.length > 0 && error == nil {
// Turn it into a JSON object
let greeting = JSON(data: data, options: NSJSONReadingOptions.MutableContainers, error:
NSErrorPointer())
// Update the UI fields with the response from the API call
self.greetingID.text = greeting["id"].stringValue
self.greetingContent.text = greeting["content"].stringValue
// Change the content text field back to green
self.greetingContent.textColor = UIColor(red: 0, green: 1, blue: 0.3, alpha: 1)
// Re-enable the button as we are finished processing

[CAMDOReporter, sharedInstance].stopApplicationTransaction()
```

Appel du service REST

MAA : Début de la transaction

MAA : Fin de la transaction