Splunking Your Mobile Apps

Bill Emmett

Director, Solutions Marketing, Splunk

Jon Vlachogiannis

Director, Engineering, Splunk

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Agenda

- The Challenges of Monitoring Mobile Apps
- Introducing Splunk for Mobile Intelligence (Splunk MINT)
- Deploying Splunk MINT
  - Intro to SDKs
  - Getting Started
- Using Splunk MINT
  - Tracking application quality & and user engagement
  - “Mix and Match” other data sources

The Challenges of Delivering Mobile Apps

Form Factor, Platform, Interaction Style Variety

- OS and device-centric development
- Need to correlate devices, versions

Rapid App Dev Cycles, Break-Fix Needs

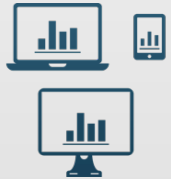
- New OS versions break apps
- Network issues are difficult to find and simulate
- Limited time to make changes and fixes

Infrastructure

- Plan for growth
- Solve infrastructure, API and app issues

Analytics

- Feature usage
- Monitor/analyze user behavior
- Deliver omni-channel analytics
- Mobile+web+desktop



Different Challenges for Different Roles

MOBILE APP DEVELOPERS

- How do I find the root cause of app crashes/poor performance?
- What were users doing when the issue happened?
- How do I get more insight into transaction paths?

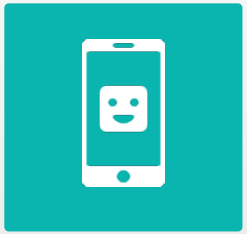
APP MANAGERS/ OPERATIONS

- Is the problem with the app, the network or the backend system?
- Do I have the right capacity in place to handle transaction volume?
- How does performance compare mobile vs. web vs. desktop?

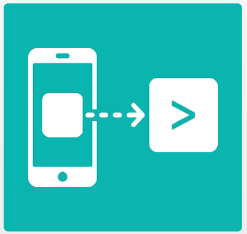
PRODUCT MANAGERS/ BUSINESS OWNERS

- How are customers using my app?
- Which features should I prioritize for future versions?
- How does customer behavior compare across channels?

Splunk for Mobile Intelligence



Deliver Better Performing, More Reliable Apps

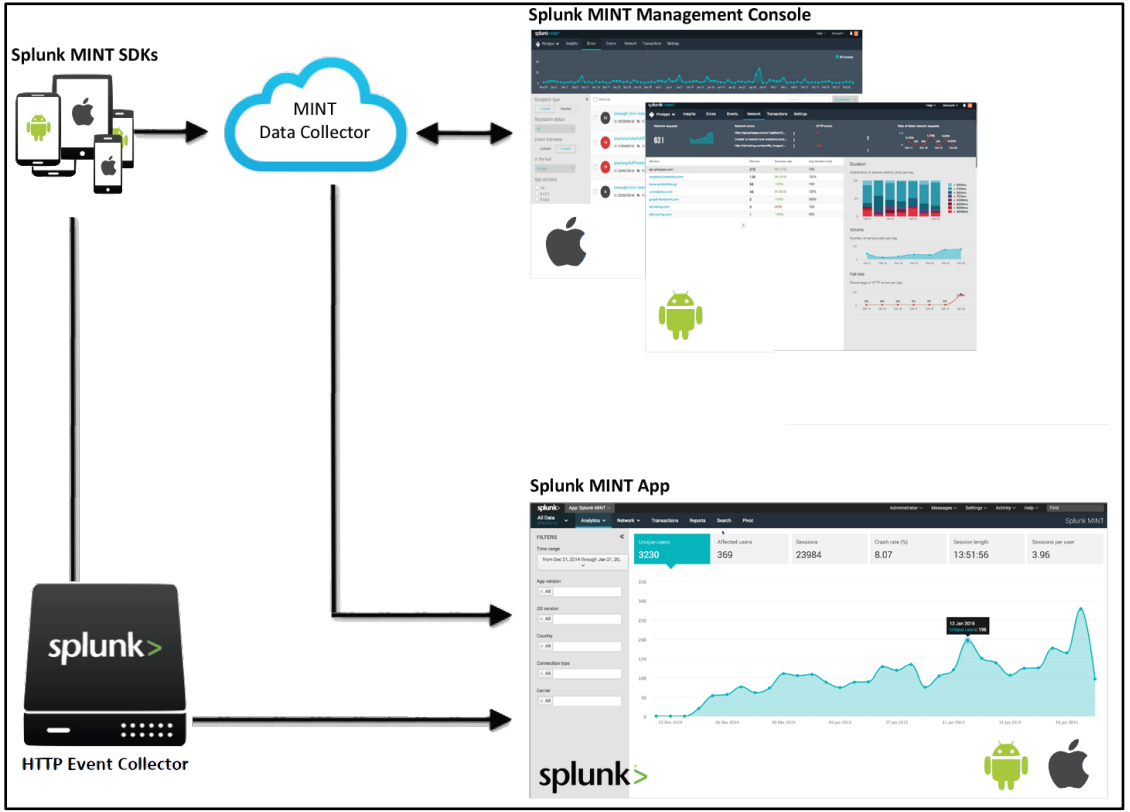


Achieve End-to-End Visibility

Deliver Real-Time Analytics

Splunk MINT Architecture

- Instrument apps with Splunk MINT SDKs
- Data can be delivered either via Splunk MINT Data Collector OR HTTP Event Collector (HEC)
- Splunk MINT app gives you a head start on dashboards and data model for mobile data



What is new in MINT?

iOS SDK New Features

HTTP Event Collector Support – Full On Prem MINT!

```
// Objective C - (BOOL) application:(UIApplication *)application didFinishLaunchingWithOptions:(NSDictionary *)launchOptions {
   [[Mint sharedInstance] initAndStartSessionWithHECUrl: url:@"HEC_URL" token:@"HEC_TOKEN"]; // ... return true;
}
```

Beware though that the MINT SDKs should send data to endpoint /services/collector**/mint**

iOS SDK New Features

Custom Timers

To track internal processes in your mobile app, you can create a high-precision timer that runs once and records the elapsed time, in nanoseconds.

Use the following methods to work with timers:

- To start a timer, use the **startTimerWithName:** method.
- To stop a timer, use the **stopTimerWithId:** method.

Is this feature faster on the new iOS?

```
index=mint timerName=Timer1 | stats avg(elapsedTime) by osVersion
```

iOS SDK New Features

View Memory Warnings

When a mobile app receives memory warnings, the MINT SDK for iOS reports memory information for the ViewController class that received the warning using the following fields:

- totalMemory
- usedMemory
- wiredMemory
- activeMemory
- inactiveMemory
- freeMemory
- purgableMemory

Do I still get memory warnings in my new release?

```
index=mint sourcetype="mint:memorywarning" | stats count by appVersionName
```

iOS SDK New Features

Trace Objective C Methods

If you are using Objective-C, you can log trace information on specific methods in your code to measure performance using the following macros:

- **MINT_METHOD_TRACE_START**: Starts the method trace.
- **MINT_METHOD_TRACE_STOP**: Stops the method trace.
- **MINT_NONARC_METHOD_TRACE_STOP**: Stops the method trace. Use this macro if you are not using ARC.

What are the slowest methods in my app?

```
index=mint sourcetype="mint:methodinvocation” | stats avg(elapsedTime) by method
```

Android SDK New Features

HTTP Event Collector – Full on Prem MINT!

```
Mint.initAndStartSessionHEC(MyActivity.this, "HEC_MINT_endpoint_URL", "YOUR_HEC_TOKEN");
```

Beware though that the MINT SDKs should send data to endpoint /services/collector**/mint**

Show me mobile data

index=mint

Android SDK New Features

New Instrumentation: Capture all HTTP calls

```
apply plugin: 'com.android.application'
apply plugin: 'com.splunk.mint.gradle.android.plugin'
…
buildscript {
  repositories {
    maven {
      url uri('mint-plugin-repo-5.1.0')
    } // Will need to add jcenter repo OR mavenCentral
  jcenter()
  mavenCentral() ...
} dependencies
   {
    classpath 'com.splunk:mint-gradle-android-plugin:5.1.0'
   }
}
```

Bonus

- OKHTTP support
- HTTP Methods
- Annotation are coming!

Show me ALL network data

index=mint sourcetype=network

Android SDK New Features

Custom Timers

```
String timer_id = Mint.timerStart("Timer1");

…

Mint.timerStop(timer_id);
```

Is that code block faster when batteryLevel higher?

```
index=mint timerName=Timer1 | avg(elapsedTime) by batteryLevel bins=10
```

Android SDK New Features

Track ANRs – ***Oh yes!***

Android devices display an **Application Not Responding** dialog box, or *ANR*, when an application cannot respond to user input. You can view a report of ANRs when they occur in your mobile app. Enable ANR reporting using the following **startANRMonitoring(***timeout*, *ignoreDebugger***)** method. For example:

```
Mint.startANRMonitoring(5000, true);
```

In what screen does my app stuck?

```
index=mint sourcetype=mint:error extraData.ANR=true | stats count by currentView
```

Introducing the ITSI EUM Module

See MINT data in correlation with other IT data

See Mobile & Datacenter together

Get the big picture using one tool

Steps for Getting Splunk MINT

- Get the SDKs
  - Android or iOS
  - Available at http://dev.splunk.com
- Register at http://mint.splunk.com
- Get an API key (one for each app) http://mint.splunk.com
- Get the Splunk MINT app from Splunkbase
- Use the bundled EUM module for Splunk ITSI

Some Best Practices to Remember

- Mobile Apps – get insight not only from your “back end”, but also from the perspective of the app
- Engagement – don’t just focus on performance data, look at usage trends in your mobile app
- Transactions – what are the most important transactions coming from your mobile app?
- Correlations – use correlations to tie transactions together

THANK YOU

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