Transactional Analytics Delivers Greater Visibility with End-to-End Monitoring - HPE AppPulse Trace
May 25, 2016

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Hewlett Packard Enterprise

Hosted By

Jim Copio
Carolinas Chapter Leader
BSM SIG Leader

Today's Speakers

Eric Odell
AppPulse - Sr. Product Marketing
Manager
Hewlett Packard Enterprise

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APM Sr. Technical Marketing
Manager
Hewlett Packard Enterprise

Udi Shagal
AppPulse Product Manager
Hewlett Packard Enterprise

Housekeeping

- This "LIVE" session is being recorded
  Recordings are available to all Vivit members

- Session Q&A:
  Please type questions in the Questions Pane

Webinar Control Panel

Toggle View Window between Full screen/window mode.
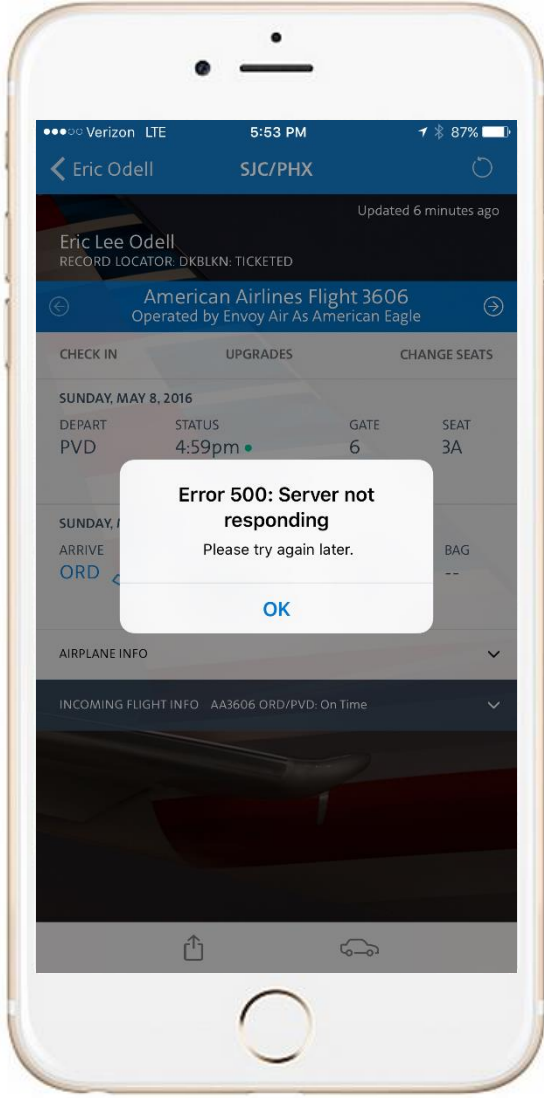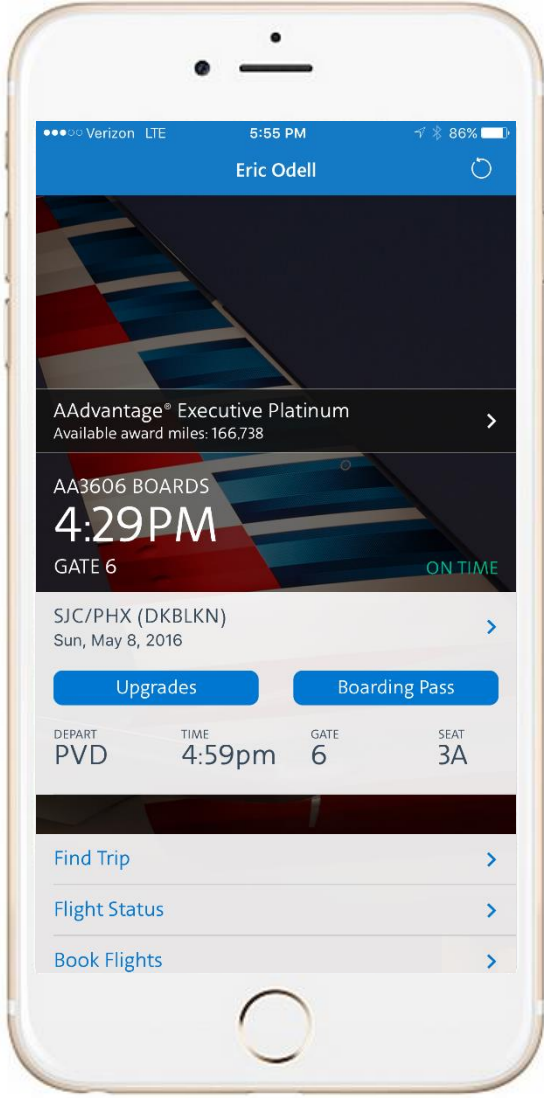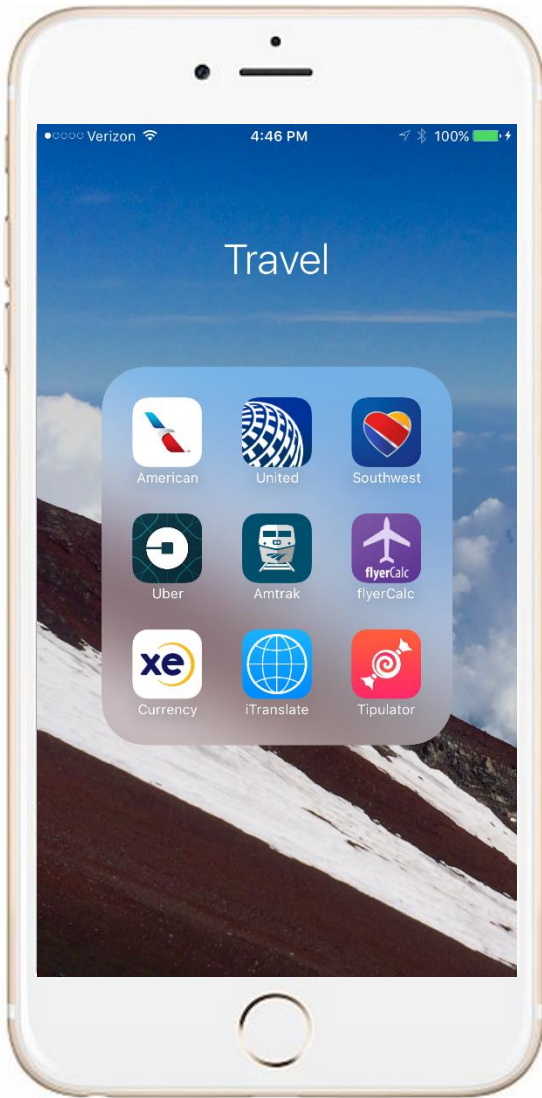
Questions

Stop Flying Blind

Transactional analytics delivers greater visibility with end-to-end monitoring

Eric Odell, Sr. Product Marketing Mgr
Udi Shagal, Sr. Product Manager
Dan Iuster, Sr. Technical Marketing Mgr.

When good applications go bad…

Your company's day in the spotlight

CITY A.M.
— BUSINESS WITH PERSONALITY —

The British Airways website suffers technical glitch leaving people unable to book flights or check in

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Rising user expectations – How annoying can it be?

Jenny McCarthy · 2 days 20 hours ago
· · Chrome 46.0 on Windows
I have been unable to open american airlines web page for 24 hours? Is it reported as down?

Herb Doller · 2 March 2016 - 14:02
· · Firefox 44.0 on Windows
"Our system is having trouble. Please try again or come back later." was down yesterday ...

Elizabeth Raney Burman · 15 May 2016 - 20:35   👍 0
· · Safari 9.1 on Mac
I can't get to any AA page today. Couldn't get online last week either. I use Firefox for Mac. Note: AA lost a sale from me last week b/c of this. TOday I'm just trying to find out when my husband's plane will arrive. This is a fairly royal pain, and I am not a great fan of AA in the first place...

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The cost of poor performing applications

ComputerWeekly.com

**Poor application performance costs
1 in 3 enterprises over £1m per year**

UK survey finds only 10% IT organizations have
necessary performance testing & monitoring in place

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Users expect the world of your apps – Better give it to them
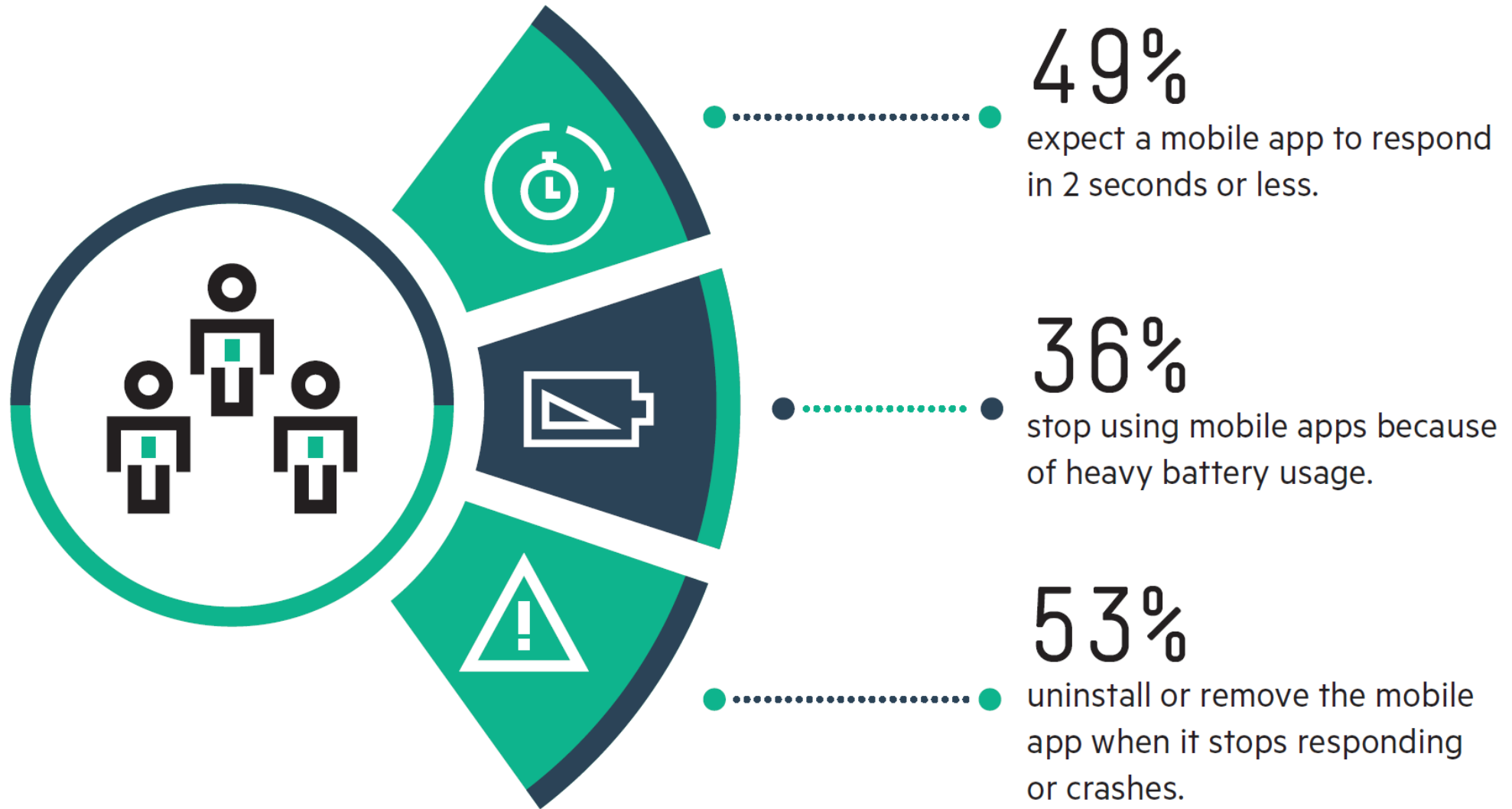
Rising user expectations

80% Will abandon apps after only three attempts or less

69% Say poor application issues give lower opinion of company that created

Hewlett Packard Enterprise

Give users a great experience – or they'll give you the finger

49%
expect a mobile app to respond in 2 seconds or less.

36%
stop using mobile apps because of heavy battery usage.

53%
uninstall or remove the mobile app when it stops responding or crashes.

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13

Your company's day in the spotlight

500 Internal Server Error

Sorry, something went wrong.

A team of highly trained monkeys has been dispatched to deal with this situation.

If you see them, show them this information:

INDEPENDENT

YouTube down: users shown '500 Internal Server Error' while trying to access Google's video sharing site

Hans van de Bruggen
@verbiate

Youtube is down? Oof.

9:41 AM - 28 Oct 2015

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# Bad user experience is no longer an option

- – How do you know what your real users are experiencing?

- – How can you avoid customer attrition due to poor user experience?

- – How can you protect your company brand and revenue?

- – How can you find root cause quickly and reduce MTTR?

- – How can you stop investing expensive resources in troubleshooting application problems?

- – How can you protect YOUR job?

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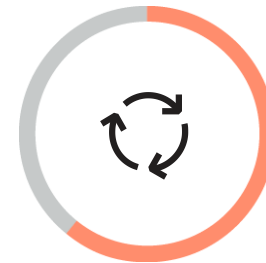# Do you have the right tools?
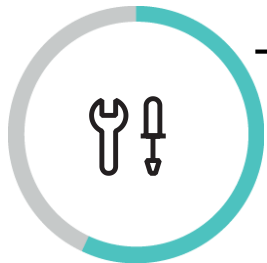
57% of DevOps teams lack Application Performance Monitoring (APM) tools featuring user experience dashboards
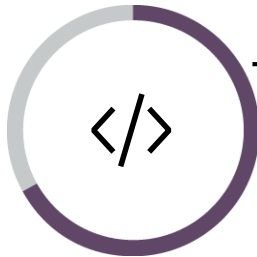
67% have no insight into the line of code that caused an error, slow performance or a crash

61% of developers are blind to the end-to-end process of monitoring the user experience

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Do you have the right tools?

What's wrong with today's APM tools?

Core products that don't cooperate.
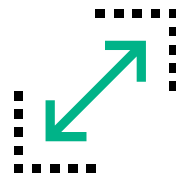
Limited in their functionality.

No drill-down to the root cause of problems.

Who needs what?

IT Ops:
"I want to find and fix app issues before my users do."
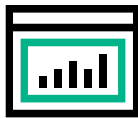
Business:
"I have to achieve a 5-star rating for my mobile app."

DevOps:
"I need visibility to the root cause from user action to the line of code"

Introducing HPE AppPulse Suite for User Experience Transformation

Unified Experience

End-to-End Visibility

Built for DevOps

Integrated with Ops Bridge and APM

Synthetic Monitoring	Real User Monitoring	Application Performance Management	Transaction Analytics	Powered by HPE Vertica

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Introducing a smarter solution

Proactive, continuous, real-time synthetic monitoring.

HPE AppPulse Active

Track end-to-end transaction flow through all service tiers; Isolate problems to the line of code.

Measure the user experience of mobile apps.

HPE AppPulse Suite

HPE AppPulse Mobile

HPE AppPulse Trace

Integrated | Complementary | End-to-end
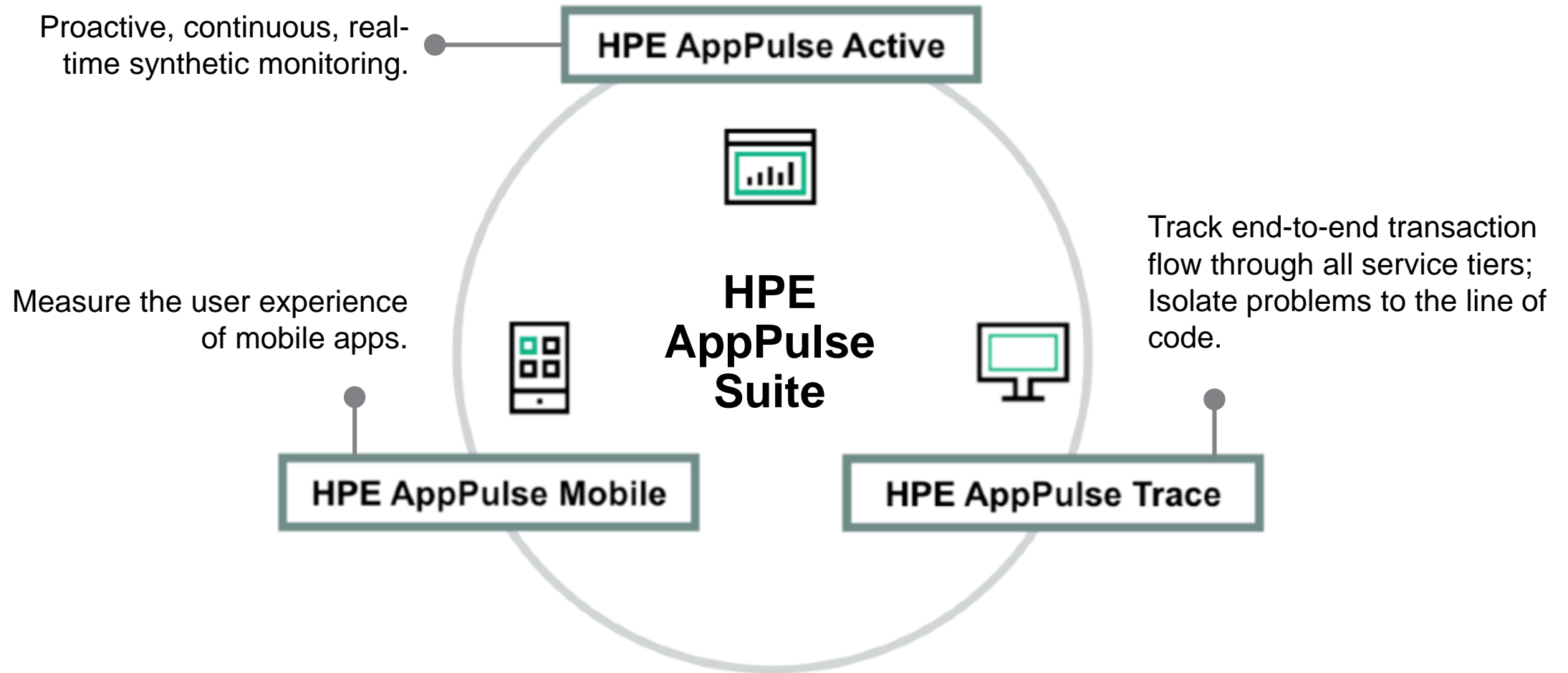
AppPulse Monitoring Architecture

Monitoring Architecture

Monitoring Architecture

AppPulse MOBILE

AppPulse ACTIVE

AppPulse TRACE

HPE SiteScope

Hewlett Packard
Enterprise

Monitoring Architecture

On Premise

AppPulse

Vertica

Open API

Reports and Alerts

Events

Metrics

HPE Operations Bridge
Or APM

HPE SiteScope

SQL
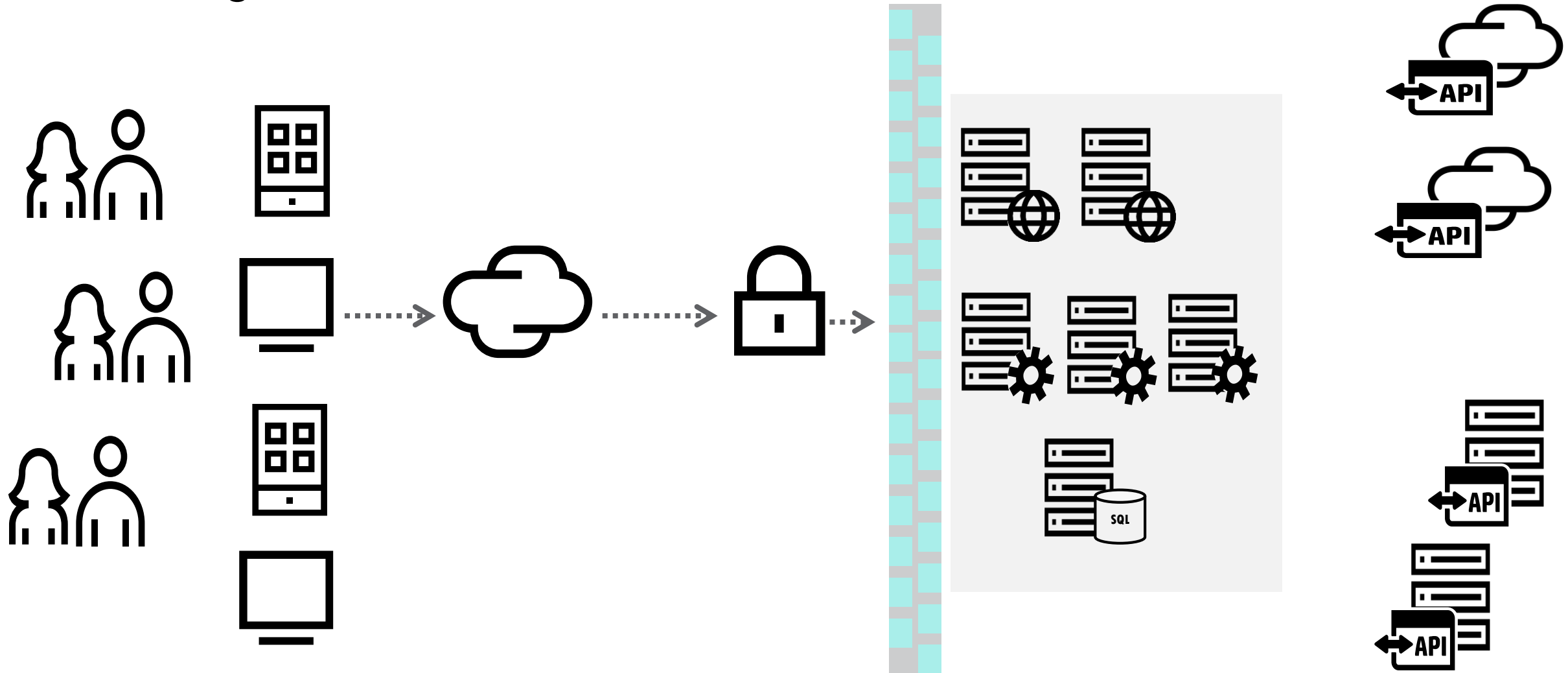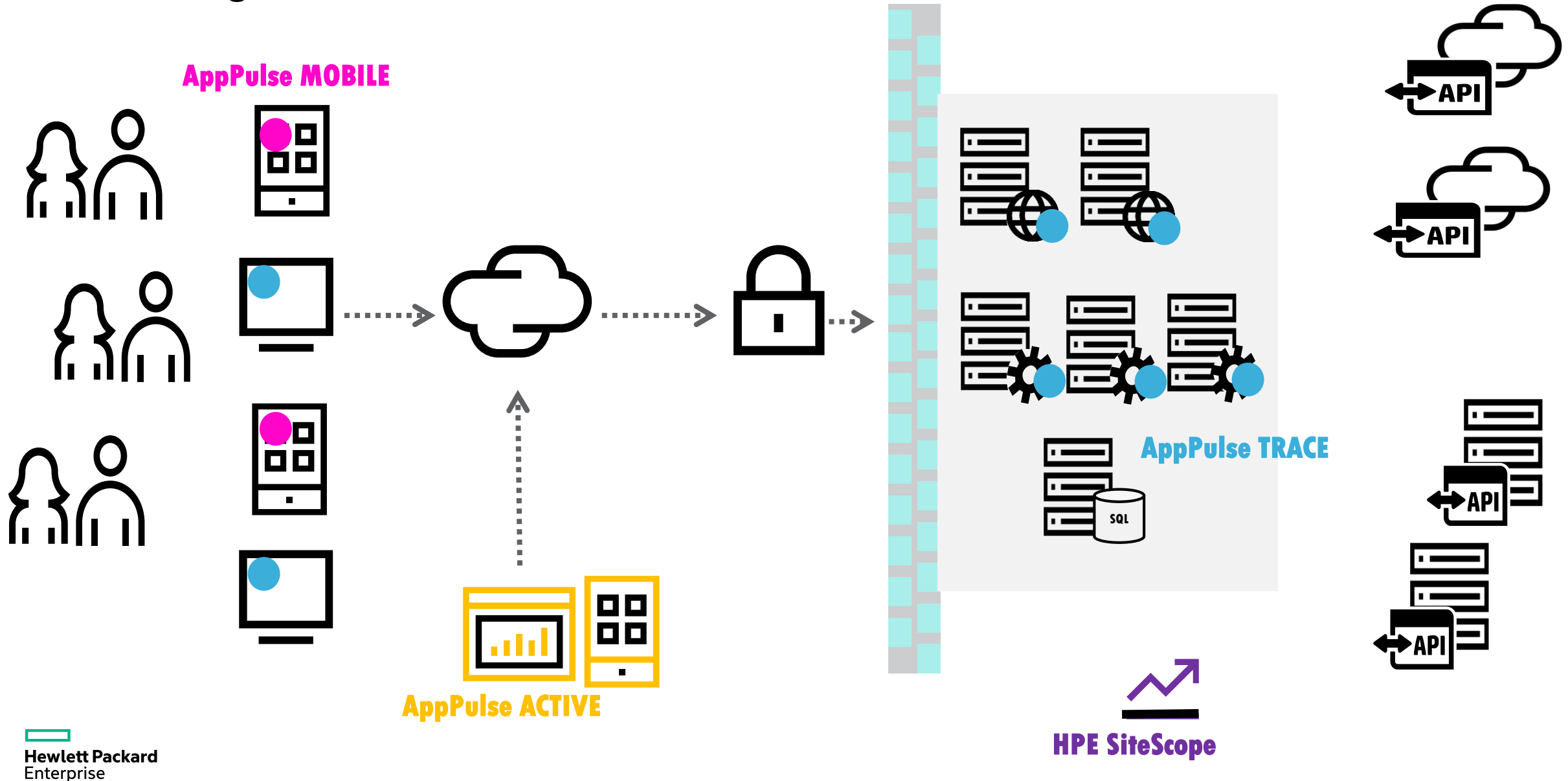
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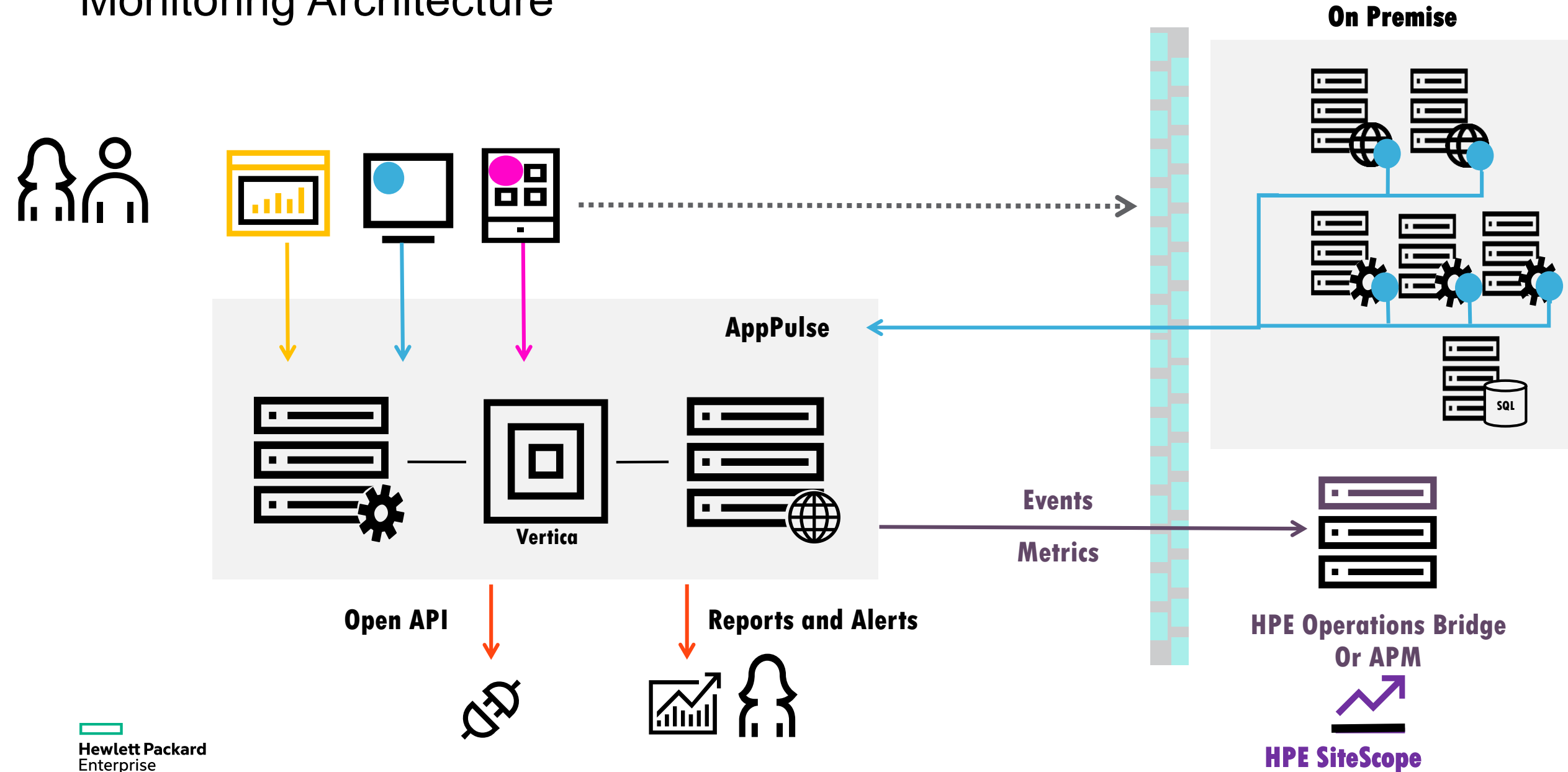
General Availability of AppPulse Trace
Real User Monitoring & Transaction Tracing

Quick Setup

Trace 360

Web Pages and AJAX

Tx Log Analytics

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Enterprise
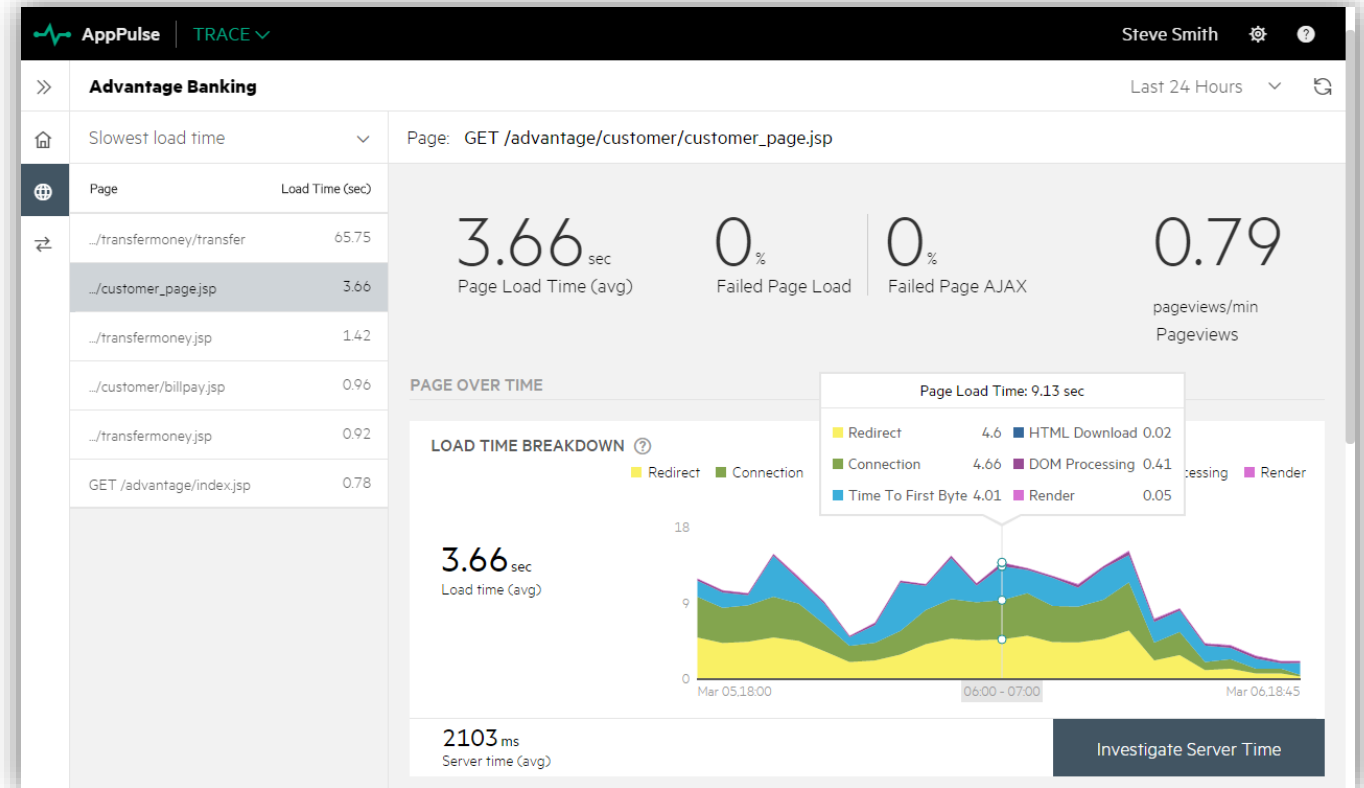
AppPulse Trace
Real User Monitoring and Transaction visibility

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Mobile App Troubleshooting Using the AppPulse Suite
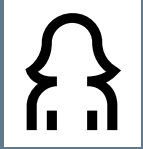
Lara S.
_____

Android Developer
Online Banking Engineering

Jim W.
_____

Summer Intern
Corporate IT

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Applications (5)   Last 24 Hours ⌄   ↻

Demo

👤 2268

Advantage Mobile Banking

🙂 Fair   📊 2.8 Sec.   ⚡ 308

👤 5

Advantage Mobile Banking (PoC)

🙂 Fair   📊 1.6 Sec.   ⚡ 1

👤 14

AMB - PoC

😊 Good   📊 0.4 Sec.   ⚡ 0

👤 142

HPE Discover app

☹ Poor   📊 0.3 Sec.   ⚡ 1

👤 3

HPE Discover app

😊 Good   📊 --   ⚡ 0

Advantage Mobile Banking Android | FunDex

😐 FunDex 81   👤 2343 Users   Last 24 Hours ⌄   All versions ⌄   ↻

FUNDEX OVERVIEW

81
Average FunDex Score
What's this?

0   Fair   100

FunDex Trend
100

50

0
May 23, 17:00   May 24, 17:40

IMPROVE YOUR FUNDEX

UI PERFORMANCE

📊 **5**
Points lost

5 Pts Slow UI
16.8% actions over 2.0 sec.

0 Pts Slow Launch
0% launches over 4.0 sec.

More on UI Performance

STABILITY

⚡ **12**
Points lost

10 Pts Crashes
13.4% users with crashes

2 Pts Errors ⍰
1.2% failed action hits

More on Stability

RESOURCES

🖥 **2**
Points lost

1 Pts Heavy Battery Usage
0.36% battery / min. (Good: < 0.5% / min.)

1 Pts Heavy Cellular Data Usage ⍰
338.3KB / min. (Good: < 300KB / min.)

More on Resources

APP VERSIONS

App Version ⇕	FunDex Score		Total Users

COMMUNITY

29

« Advantage Mobile Banking Android | Stability   😊 FunDex 81   👤 2343 Users   Last 24 Hours ∨   All versions ∨   ↻

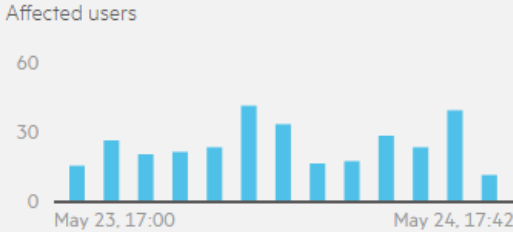**Home**

USER EXPERIENCE

😊 FunDex

📈 UI Performance

⚡ Stability

Overview

Crashes

Errors

🖥 Resources

APP USAGE

🔗 User Behavior

👤 Engagement

📍 World View

STABILITY OVERVIEW

313
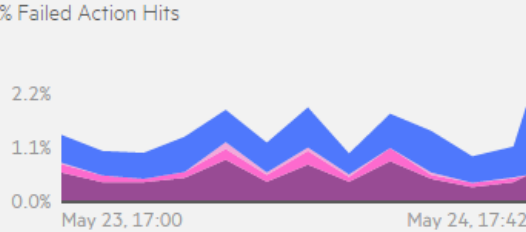Users with Crashes

Affected users

60

30

0
May 23, 17:00   May 24, 17:42

1.2 %
Failed Action Hits ❓

% Failed Action Hits

2.2%

1.1%

0.0%
May 23, 17:00   May 24, 17:42

CRASHES

ACTIONS WITH MOST CRASHES

Users with Crashes ⇅	Screen	Action	Crashes	App Versions	
220	Check Deposit	Tap the *Scan* button	220	3.6	›
11	Help	Tap the *Call for support* button	11	3.4	›
3	Accounts	Select item from the *left_drawer* list	3	3.4	›

CRASHES ON APP LAUNCH

79
Affected Users

›

CRASHES NOT LINKED TO ACTIONS

No Crashes

AFFECTED USERS

4 Latest Versions

v3.6 ▬▬▬▬▬▬▬▬ 44.2%

LATEST VERSION- V3.6

622
Users

App Pulse

Money Transfer | Tap the *Transfer* button

Submit Defect   Share   View Error List

#1 **Failed Action**
May 24, 17:28

3.6
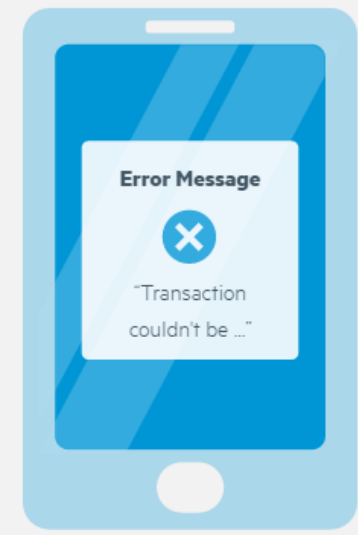App Version

4.2.1
OS

Sony Xperia S
Device

ERROR DETAILS

Error Message ?

"Transaction couldn't be completed. Internal server error"

Failed HTTP requests

HTTP response code 500:

http://amb.hpswdemoportal.com/Advantage/Customer/FraudPrevention

⇄ Trace Server Error

Error Message

✖

"Transaction
couldn't be ..."

1 2 3 4 5 6 7 8 9 10 ... 20

31
Next Hit →

← Back

Transaction: GET /Advantage/Customer/FraudPrevention

Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms
Server Time

1
Exceptions

500
HTTP Status

LOG   EXCEPTIONS   CODE

Transaction Timeline

1k

Self Time (ms)

0

Timeline (ms)
2237

Operations Flow

OPERATION NAME	SELF TIME (ms) ?	TOTAL TIME (ms)	TOTAL CONTRIBUTION (%)
⌄ /Advantage/Customer/FraudPrevention	623	2237	
SQL SQL query to SQL Server advantage database on 172.16.239.198:1433	1001	1001	
/FraudCheckService/FraudAssessment (not traced)	612	612	

32

← Back

Go to Transaction Over Time

Transaction: GET /Advantage/Customer/FraudPrevention

Failed Call

May 24, 05:28:16

Operation name: **SQL query to SQL Server advantage database on 172.16.239.198:1433**
Host: **172.16.239.198**
Technology: **SQL**
Self time: **1001.176 ms**
Total time: **1001.176 ms**

1
Exceptions

500
HTTP Status

LOG EXCEPTIONS CODE

Tran

1001 ms

1k

Self Time (ms)

0

15

1016

Timeline (ms)

Operations Flow

OPERATION NAME	SELF TIME (ms) ⍰	TOTAL TIME (ms)	TOTAL CONTRIBUTION (%)
⌄ ⊗ /Advantage/Customer/FraudPrevention	623	2237	
SQL ⬤ SQL query to SQL Server advantage database on 172.16.239.198:1433	1001	1001	
⬤ /FraudCheckService/FraudAssessment (not traced)	612	612	

← Back   **Go to Transaction Over Time**

Transaction: GET /Advantage/Customer/FraudPrevention

Failed Call

May 24, 05:28:16

Operation name:	**SQL query to SQL Server advantage database on 172.16.239.198:1433**
Host:	**172.16.239.198**
Technology:	**SQL**
Self time:	**1001.176 ms**
Total time:	**1001.176 ms**

1
Exceptions

500
HTTP Status

LOG EXCEPTIONS CODE

Tran

1001 ms

1k

Self Time (ms)

0

15   1016   Timeline (ms)

← Back to Operation Flow

Operation: **SQL query to SQL Server advantage database on 172.16.239.198:1433**   1001ms

Query: {call calculate_fraud_score (? ,

?,

?,

?)}

34

← Back   Transaction: GET /Advantage/Customer/FraudPrevention   Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms	1	500
Server Time	Exceptions	HTTP Status

LOG | EXCEPTIONS | CODE

Transaction Timeline

Operations Flow

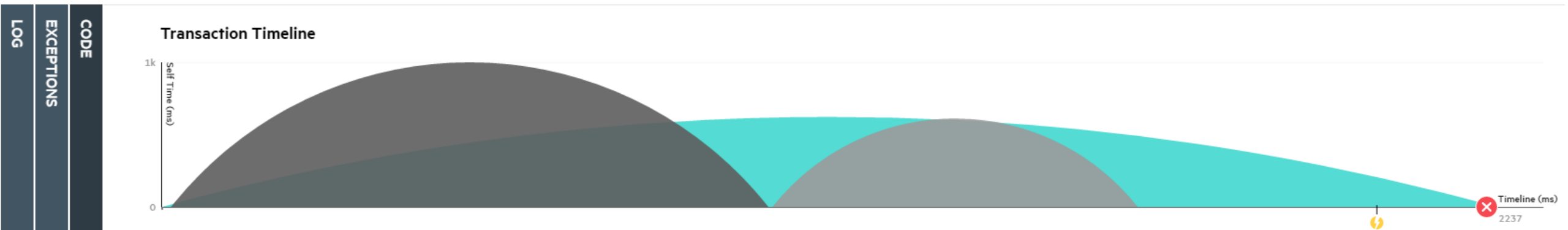| OPERATION NAME	SELF TIME (ms) ❓	TOTAL TIME (ms)	TOTAL CONTRIBUTION (%)
⌄ ⊗ /Advantage/Customer/FraudPrevention	623	2237	▬▬▬▬▬▬▬▬▬▬
SQL query to SQL Server advantage database on 172.16.239.198:1433	1001	1001	▬▬▬▬▬
/FraudCheckService/FraudAssessment (not traced)	612	612	▬▬▬

35

← Back

Transaction: GET /Advantage/Customer/FraudPrevention

Failed Call
May 24, 05:28:16

2237 ms
Server Time

1
Exceptions

500
HTTP Status

LOG EXCEPTIONS CODE

Transaction Timeline

← Back to Operation Flow

Operation: **/Advantage/Customer/FraudPrevention** 623ms

METHOD NAME	SELF TIME (ms) ⑦	TOTAL TIME (ms)	TOTAL CONTRIBUTION (%)	EXCEPTION
⌄ ⊗ /Advantage/Customer/FraudPrevention	0	2237		
⌄ AuthenticatorBase.invoke()	201	2236		
⌄ MoneyLaundryCheck.inquireInvolvedParties()	101	2035		ExternalServiceException
⌄ MoneyLaundryCheck.assessFraudProbability()	0	1021		
⌄ MoneyLaundryCheck.getFraudScore()	20	1021		
SQL query to SQL Server advantage database on 172.16.239.198:1433	1001	1001		
⌄ CloseableHttpClient.execute()	0	612		
Call to /FraudCheckService/FraudAssessment not traced	612	612		

36

← Back   Transaction: GET /Advantage/Customer/FraudPrevention   Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms	1	500
Server Time	Exceptions	HTTP Status

LOG · EXCEPTIONS · CODE

Transaction Timeline

← Back to Operation Flow

Operation: /Advantage/Customer/FraudPrevention   623ms

Exception

Type: com.advantage.online.exceptions.ExternalServiceException

Message: External request ended with error. HTTP response code: 503, Service unavailable.

Method: MoneyLaundryCheck.inquireInvolvedParties()

METHOD NAME	SEL...		
⊗ /Advantage/Customer/FraudPrevention			
⌄ AuthenticatorBase.invoke()	201	2236	
⌄ MoneyLaundryCheck.inquireInvolvedParties()	101	2035	ExternalServiceException
⌄ MoneyLaundryCheck.assessFraudProbability()	0	1021	
⌄ MoneyLaundryCheck.getFraudScore()	20	1021	
SQL query to SQL Server advantage database on 172.16.239.198:1433	1001	1001	
⌄ CloseableHttpClient.execute()	0	612	
Call to /FraudCheckService/FraudAssessment not traced	612	612	

← Back   Transaction: GET /Advantage/Customer/FraudPrevention   Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms
Server Time

1
Exceptions

500
HTTP Status

Operation	⬤ /Advantage/Customer/FraudPrevention
Type	com.advantage.online.exceptions.ExternalServiceException
Message	External request ended with error. HTTP response code: 503, Service unavailable.
Stack trace	com.advantage.online.exceptions.ExternalServiceException: External request ended with error. HTTP response code: 503, Service unavailable.
	at com.advantage.online.MoneyLaundryCheck.inquireInvolvedParties(MoneyLaundryCheck.java:103)
	at com.advantage.online.MoneyLaundryCheck.doGet(MoneyLaundryCheck.java:50)...

Show more

App Pulse ⚙ ❓

← Back
Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms
Server Time

1
Exceptions

500
HTTP Status

LOG **EXCEPTIONS**

CODE

Operation	/Advantage/Customer/FraudPrevention
Type	com.advantage.online.exceptions.ExternalServiceException
Message	External request ended with error. HTTP response code: 503, Service unavailable.

Stack trace

```
com.advantage.online.exceptions.ExternalServiceException: External request ended with error. HTTP response code: 503, Service unavailable.
        at com.advantage.online.MoneyLaundryCheck.inquireInvolvedParties(MoneyLaundryCheck.java:103)
        at com.advantage.online.MoneyLaundryCheck.doGet(MoneyLaundryCheck.java:50)
        at javax.servlet.http.HttpServlet.service(HttpServlet.java:624)
        at javax.servlet.http.HttpServlet.service(HttpServlet.java:731)
        at org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:303)
        at org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208)
        at org.apache.tomcat.websocket.server.WsFilter.doFilter(WsFilter.java:52)
        at org.apache.catalina.core.ApplicationFilterChain.internalDoFilter(ApplicationFilterChain.java:241)
        at org.apache.catalina.core.ApplicationFilterChain.doFilter(ApplicationFilterChain.java:208)
        at org.apache.catalina.core.StandardWrapperValve.invoke(StandardWrapperValve.java:220)
        at org.apache.catalina.core.StandardContextValve.invoke(StandardContextValve.java:122)
        at org.apache.catalina.authenticator.AuthenticatorBase.invoke(AuthenticatorBase.java:505)
        at org.apache.catalina.core.StandardHostValve.invoke(StandardHostValve.java:169)
        at org.apache.catalina.valves.ErrorReportValve.invoke(ErrorReportValve.java:103)
        at org.apache.catalina.valves.AccessLogValve.invoke(AccessLogValve.java:956)
        at org.apache.catalina.core.StandardEngineValve.invoke(StandardEngineValve.java:116)
        at org.apache.catalina.connector.CoyoteAdapter.service(CoyoteAdapter.java:436)
        at org.apache.coyote.http11.AbstractHttp11Processor.process(AbstractHttp11Processor.java:1078)
        at org.apache.coyote.AbstractProtocol$AbstractConnectionHandler.process(AbstractProtocol.java:625)
        at org.apache.tomcat.util.net.JIoEndpoint$SocketProcessor.run(JIoEndpoint.java:316)
        at java.util.concurrent.ThreadPoolExecutor.runWorker(ThreadPoolExecutor.java:1142)
        at java.util.concurrent.ThreadPoolExecutor$Worker.run(ThreadPoolExecutor.java:617)
        at org.apache.tomcat.util.threads.TaskThread$WrappingRunnable.run(TaskThread.java:61)
        at java.lang.Thread.run(Thread.java:745)
```

Show less

39

← Back   Transaction: GET /Advantage/Customer/FraudPrevention   Go to Transaction Over Time

Failed Call
May 24, 05:28:16

2237 ms
Server Time

1
Exceptions

500
HTTP Status

May 24, 2016 5:28:16.228 PM INFO (com.advantage.online.MoneyLaundryCheck) Going to inquire involved parties

May 24, 2016 5:28:16.237 PM INFO (com.advantage.online.MoneyLaundryCheck) Going to calculate fraud score

May 24, 2016 5:28:17.244 PM INFO (com.advantage.online.MoneyLaundryCheck) FraudScore is :200

May 24, 2016 5:28:17.250 PM INFO (com.advantage.online.MoneyLaundryCheck) Going to check fraud externally.

May 24, 2016 5:28:17.250 PM INFO (com.advantage.online.MoneyLaundryCheck) Internal fraud check has passed successfully. Internal fraud score= 200

⚠ May 24, 2016 5:28:18.263 PM WARN (com.advantage.online.MoneyLaundryCheck) External request ended with error. HTTP response code: 503, Service unavailable.

May 24, 2016 5:28:18.463 PM INFO (com.advantage.online.MoneyLaundryCheck) Going to check with secondary provider.

❌ May 24, 2016 5:28:18.464 PM ERROR (com.advantage.online.MoneyLaundryCheck) Secondary provider configuration is invalid, missing Authentication Token parameter.

❌ May 24, 2016 5:28:18.464 PM ERROR (com.advantage.online.MoneyLaundryCheck) Internal Server Error. Failed to calculate score
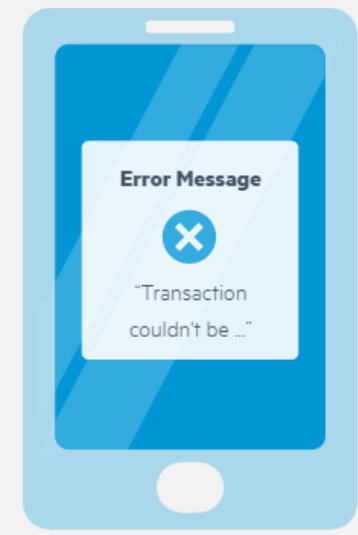
40

← Back   Money Transfer | Tap the *Transfer* button   🐞 Submit Defect   ⧉ Share   View Error List

#1 **Failed Action**   **3.6**   **4.2.1**   **Sony Xperia S**
        May 24, 17:28   App Version   OS   Device

ERROR DETAILS

🖼️ **Error Message** ❓

"Transaction couldn't be completed. Internal server error"

🌐 **Failed HTTP requests**

HTTP response code 500:

http://amb.hpswdemoportal.com/Advantage/Customer/FraudPrevention

⇄ Trace Server Error

⇄ 1   ⇄ 2   ⇄ 3   ⇄ 4   ⇄ 5   ⇄ 6   ⇄ 7   ⇄ 8   ⇄ 9   ⇄ 10   ...   ⇄ 20

41
Next Hit →

Submit Defect   ✕

Project Name: MyProject   Issue Type: Bug   Priority: 3-Medium ⌄

Summary

> Failed user action: "Advantage Mobile Banking" (Android) | Screen: "Money Transfer" | Action: "Tap the Transfer button"

Description

> Error Message:
>   "Transaction couldn't be completed. Internal server error"
>
> Failed HTTP requests:
>   1. Error Code: 500
>   URL: http://amb.hpswdemoportal.com/Advantage/Customer/FraudPrevention
>
> ---
> HPE AppPulse Mobile:
> https://apppulse-mobile.saas.hpe.com/apmappsServer/index.html?TENANTID=290068994#/reports/stability/errors(

Environment

> App Version: 3.6
> OS: 4.2.1
> Device: Sony Xperia S

Cancel   Submit

AppPulse Suite benefits summary

Comprehensive SaaS APM solution

Proactively identify app issues before users do

Identify which performance and stability issues are impacting real app users

Correlate issues from user experience, to application execution, to its underlying infrastructure

Net result: Continuous assessment and continuous improvement of both the application and the UX.

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Real customers, real results.

"Performance data mined in HPE AppPulse helped us build better apps for our users."

"HPE AppPulse took us from a low-star to a 5-star app in less than a month"

"Slowdowns directly impacted our revenue. HPE AppPulse traced transactions E2E to resolve problems fast!"

"We used AppPulse to identify a slowness, diagnose the problem and resolve it. Reducing Tx load time from 20s to 2s"

And many more…

Get started with HPE AppPulse Suite

See for yourself!
Arrange a personalized demo at your earliest convenience

Get the details
Visit
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for more information.

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