

Getting & Using CICS Integration Analytics

What, Why, and How

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Today's Presenter



HOSTBRIDGE
TECHNOLOGY

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About



HOSTBRIDGE[®]: The CICS API Co.
TECHNOLOGY

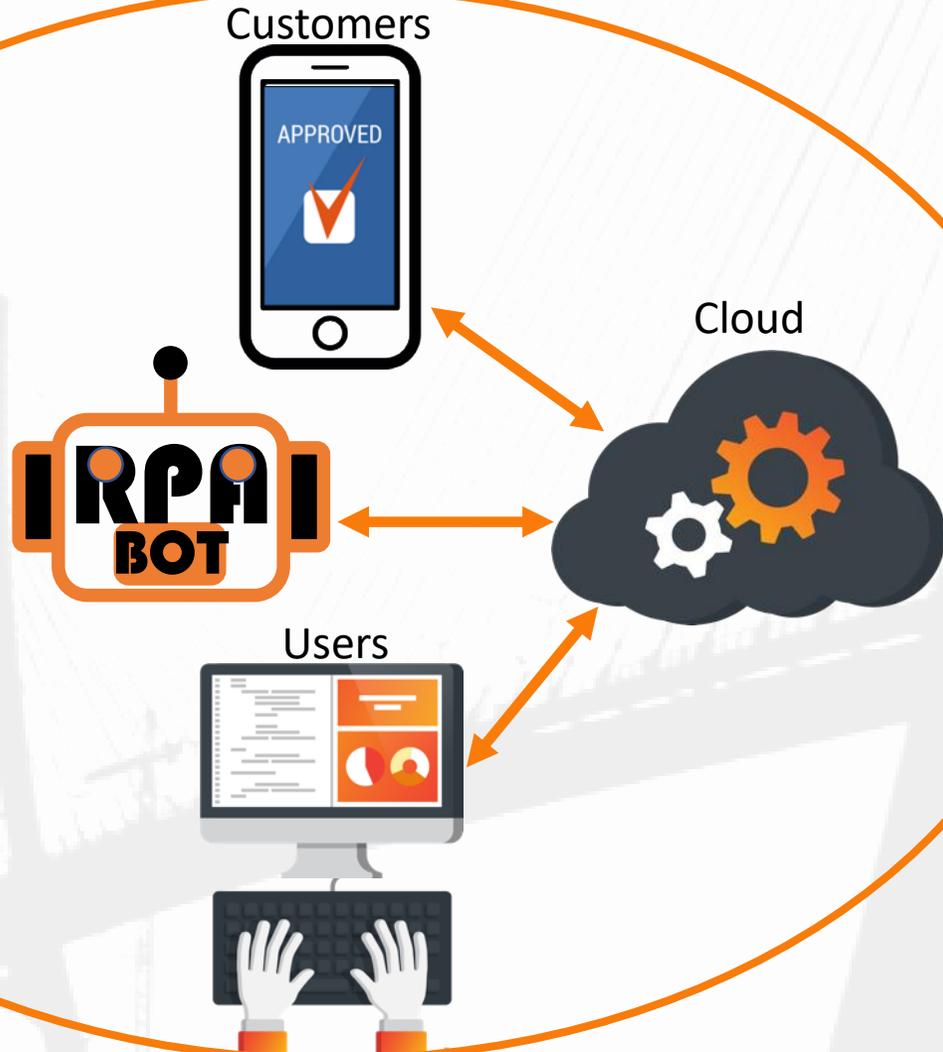
Software and expertise to make CICS apps available as callable services via APIs:

- No screen-scraping
- No host application changes
- High-performance, high-fidelity integrations
- Implemented using JavaScript (State of the Art)
- Complimentary to Z/OS Connect EE
- 100% zIIP Enabled

Proud sponsor of Virtual CICS User Group!

What are Integration Analytics?

Knowing how what's happening here...



IBM CICS

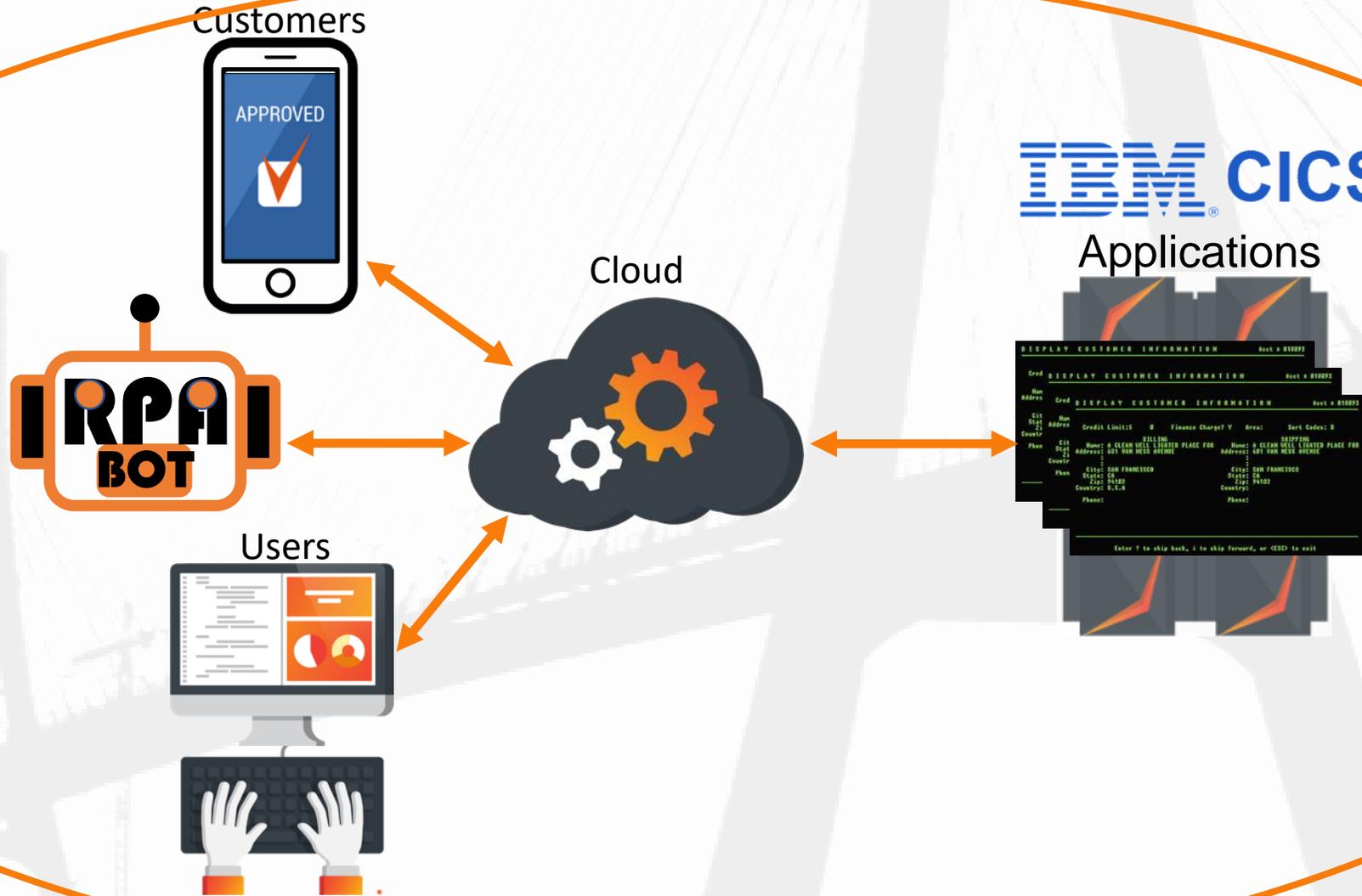
Applications

```
DISPLAY CUSTOMER INFORMATION Root # 810093
Cred
Man
Address
Cred DISPLAY CUSTOMER INFORMATION Root # 810093
Cred DISPLAY CUSTOMER INFORMATION Root # 810093
Cred
Clt Man
Plan Crt Name: A CLEAN WHEEL LOCKED PLAGE FOR Name: A CLEAN WHEEL LOCKED PLAGE FOR
Cred: 401 VAN NESS AVENUE address: 401 VAN NESS AVENUE
Cred: 5
Clt: SAN FRANCISCO Clt: SAN FRANCISCO
Plan: 16 Plan: 16
Cred: 94102 Cred: 94102
Phone: Phone:
Enter ? to skip back, ! to skip forward, or *END* to exit
```

...impacts what is happening here.

What are Integration Analytics?

Knowing how what's happening here...



...impacts what is happening here.

Integration Analytics

End-to-end transaction tracking.

See and understand (with precision) the interaction to know how off-host activity drives mainframe workload.

Why?

Why Integration Analytics?

Mainframes are participants in hybrid IT strategies.

Not all distributed apps are “good citizens” in their mainframe interactions.

Integration analytics let you:

- Identify the offenders to optimize or remediate
- Develop new, high-performing integrations

Use Case #1: Auto Insurer

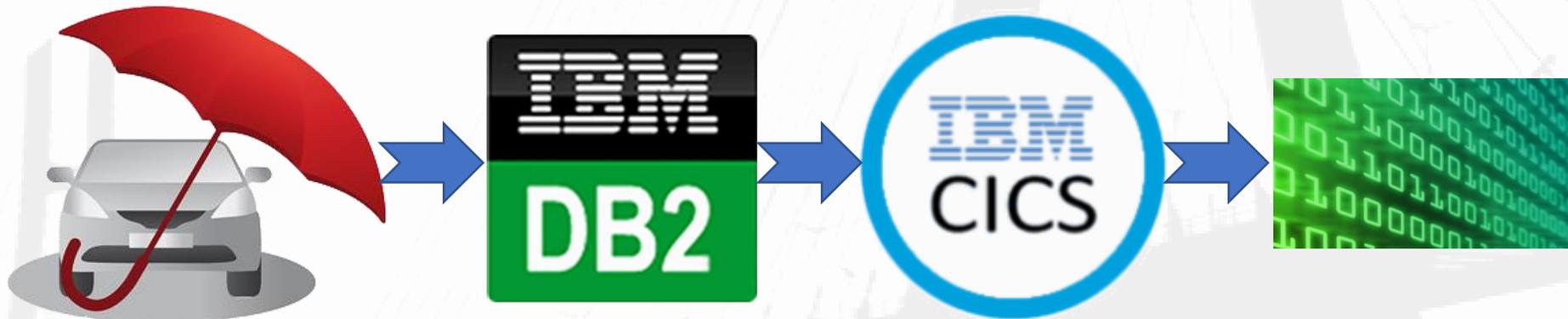


3rd party core CICS business applications:

- Routine business process – adding a vehicle to a policy – was spawning lots of mainframe activity
- Activity was hard to forecast, difficult to manage, and consuming cycles at an unexpected rate

Use Case #1: Auto Insurer

What integration analytics revealed:



Adding 1 vehicle to a policy spawned...

7K DB2 calls, in turn spawning...

14K CICS TCB switches, which triggered....

28 million unnecessary instructions!

Insurer used the findings to get ISV to change the application!

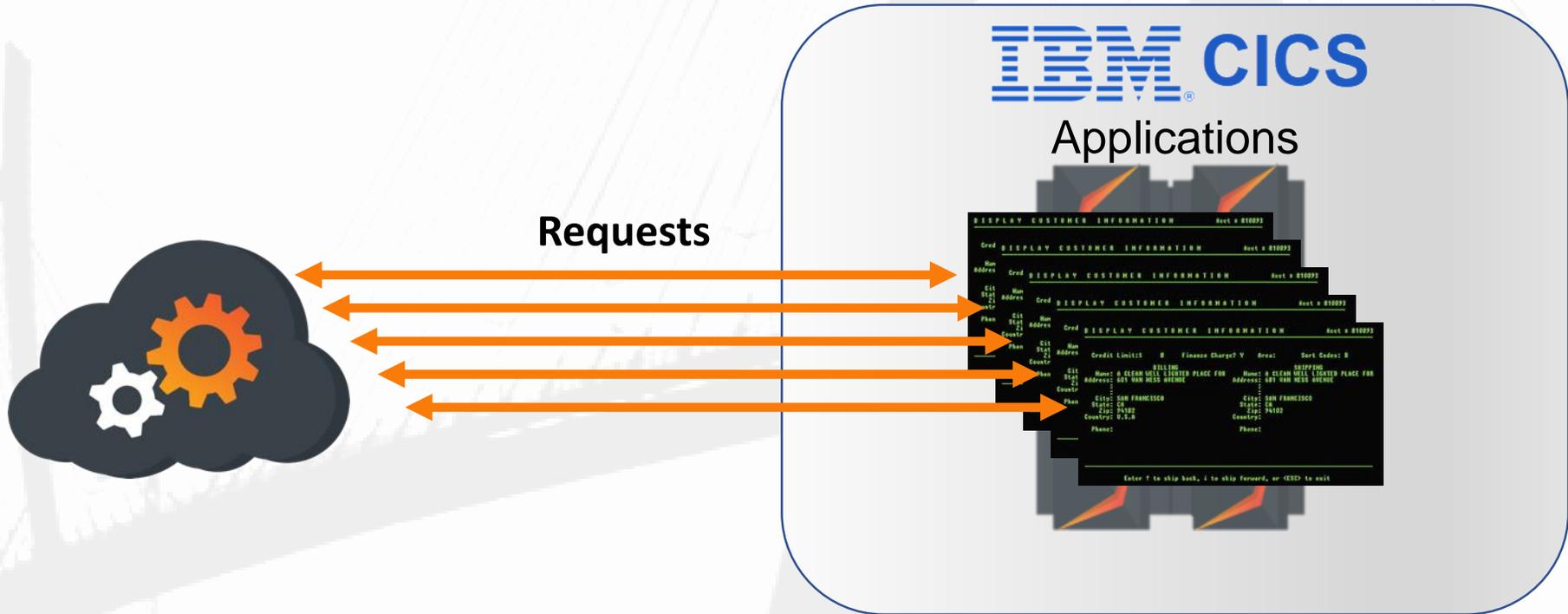
Use Case #2: Public Sector

Unexplained spikes in CICS workload:

- Increased processing costs
- Performance bottleneck
- Prevented other workload from processing in time

Use Case #2: Public Sector

What integration analytics revealed:

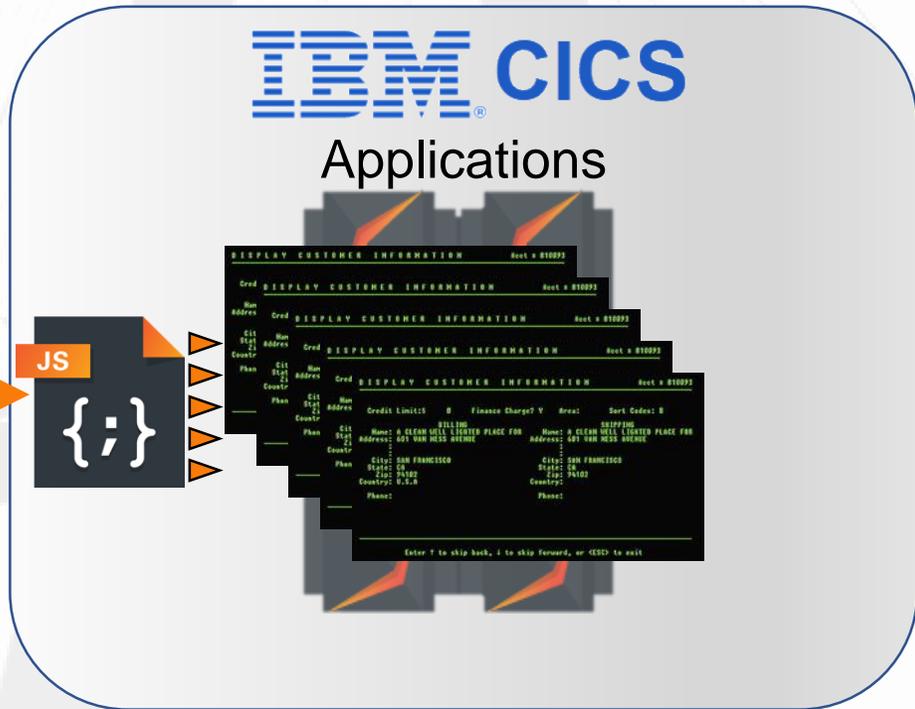


Use Case #2: Public Sector

What integration analytics recommended:

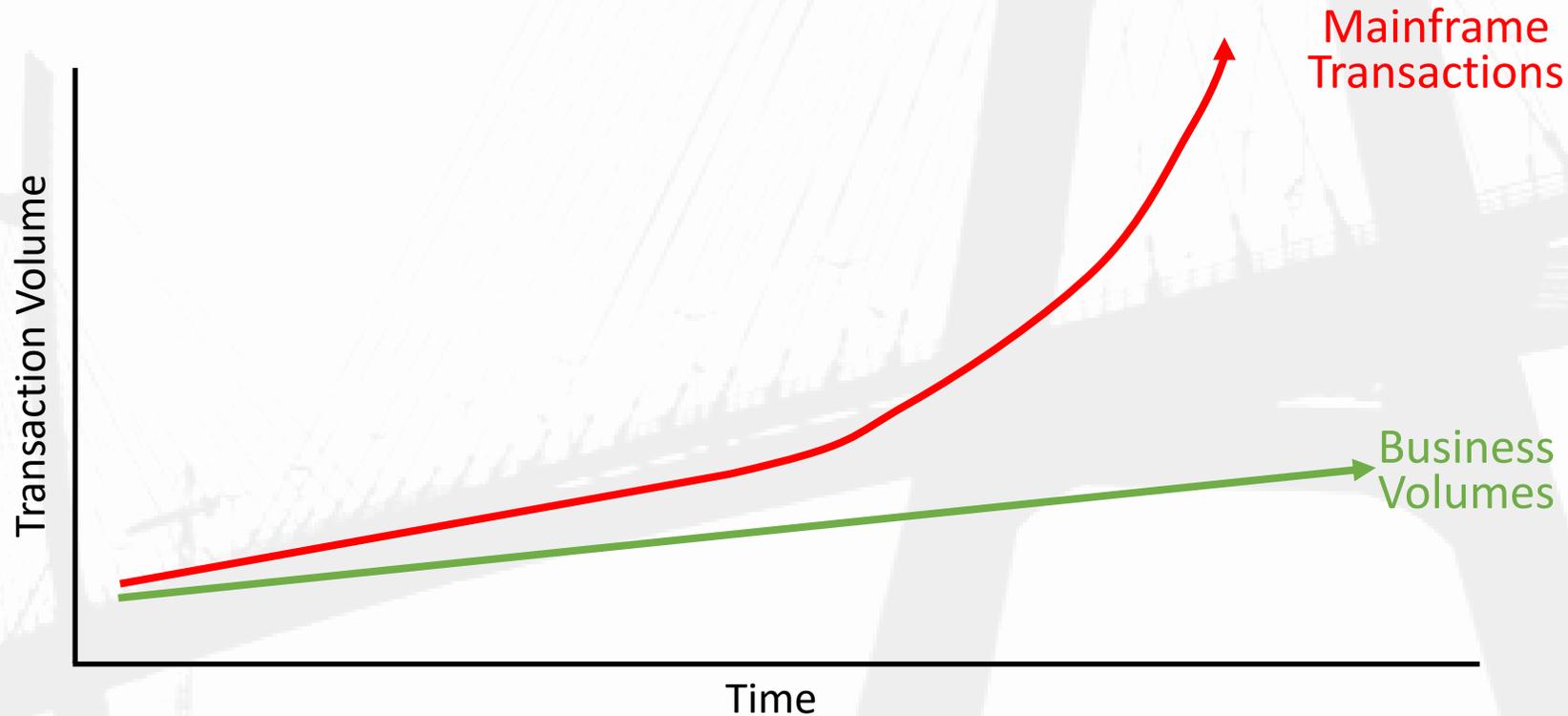


Request



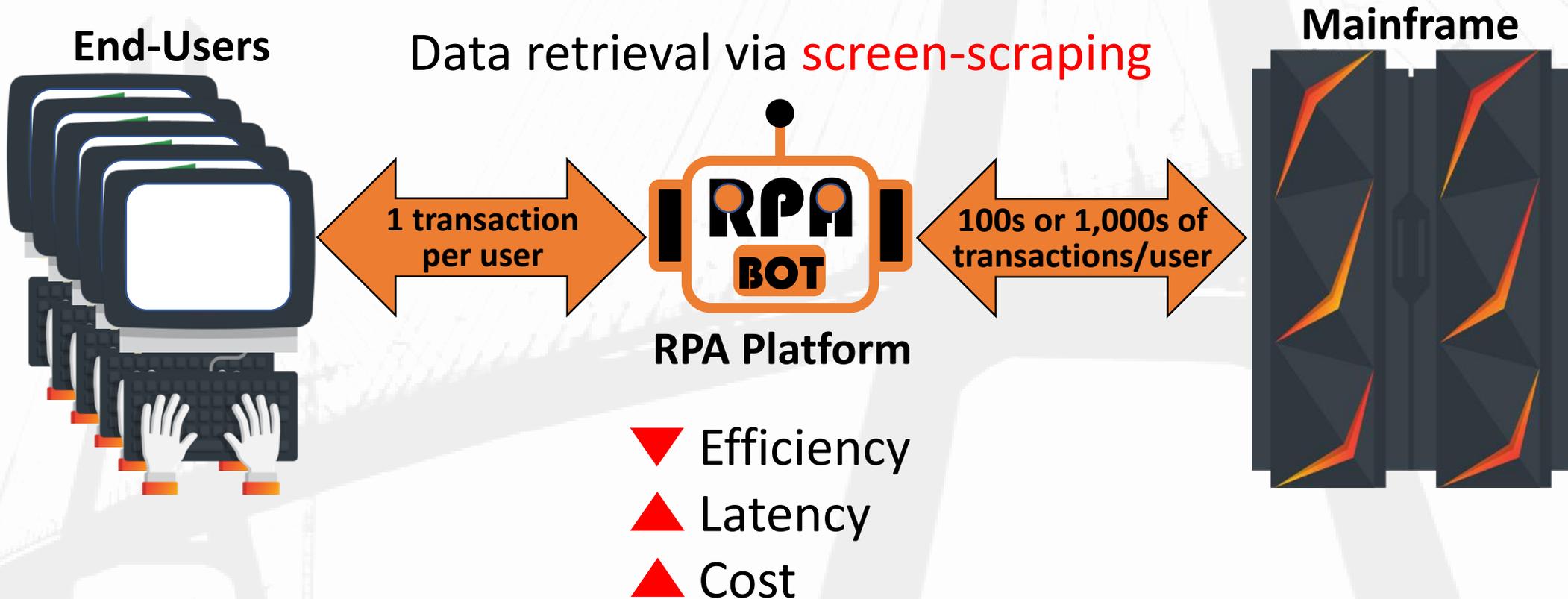
Use Case #3: Global Tech Supply Chain

Called in by client who was seeing this:



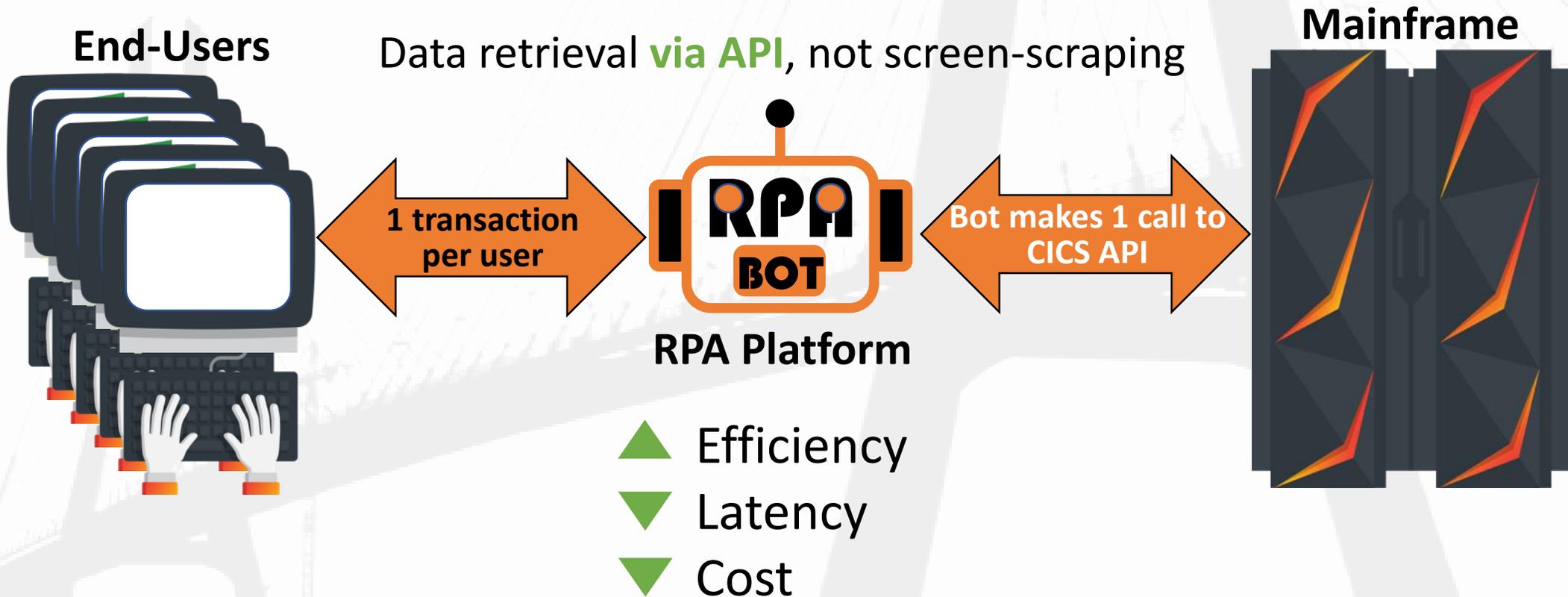
Use Case #3: Global Tech Supply Chain

What integration analytics revealed:



Use Case #3: Global Tech Supply Chain

What integration analytics recommended:

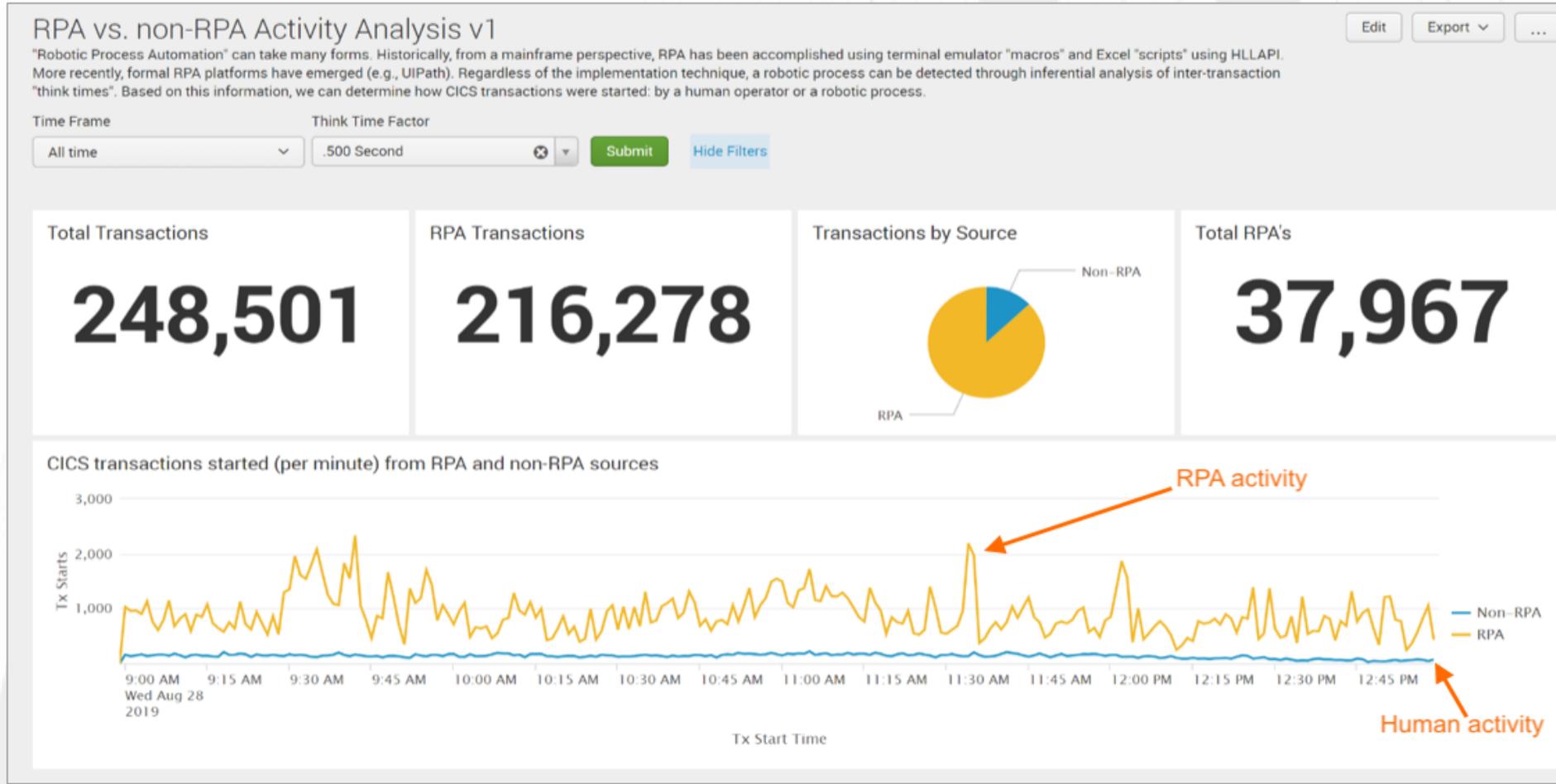


Enabling Integration Analytics

- Foundation: SMF 110 records
- Value Add: HostBridge Transaction Analytics Connector
 - Runs inside CICS
 - Leverages CICS Transaction Tracking infrastructure
 - Extracts origin data/metadata from external requests
 - Annotates SMF 110 records with additional “origin data”
- We deliver dashboards that perform analysis via Splunk

HostBridge is a **splunk > partner+**

Dashboard example



Dashboard example (cont.)

RPA DNA Analysis v3

An RPA's "DNA" is the sequence of CICS transactions that it starts. By analyzing the transaction sequence and repetition factors, and presenting it in a concise format, an application SME can determine what business process the end user is trying to achieve via the RPA. After consultation with the end user(s), the application SME can propose more efficient ways to perform the business process.

Edit
Export ▾
...

Time Frame

Think Time Factor

Transaction Count Minimum

Transaction Count Maximum

NETUOWPX

NETUOWPX

NETUOWPX

Anonomize

 Yes
 No

Submit
Hide Filters

Column Explanations

rpaTotal indicates the number of transactions started by that instance of an RPA. rpaStats shows the unique transaction names and the number of times they were used in the macro. The rpaDNA column is a list of the transactions started by the RPA, in order, along with the repetition factor. For example, if rpaDNA indicates "MENU, CTLG*6745" that means that the MENU transaction was run first, followed by 6,745 invocations of the CTLG transaction.

NETUOWPX	USERID	rpaSTART	rpaSTOP	rpaDuration	rpaTotal	rpaTps	rpaCPU (seconds)	rpaStats	rpaDNA
NETWK000.TERM2387	CICSNON	2019-08-28 09:28:59.256520	2019-08-28 09:38:58.329143	599.072623	6746	11.2607382	14.353615	CTLG=6745 MENU=1	MENU CTLG*6745
NETWK000.TERM2497	CICSNON	2019-08-28 11:01:31.121625	2019-08-28 11:12:10.107371	638.985746	4335	6.78418889	15.01098	MENU=1 ORDR=981 PRIC=3353	ORDR*981 MENU PRIC*3353
NETWK000.TERM2366	CICSNON	2019-08-28 11:33:51.934221	2019-08-28 11:35:52.019081	120.084860	3313	27.5888234	3.110658	AR13=97 ARBI=32 MDTB=405 MENU=140 OP=54 OR20=256 OR21=64 OR22=1026 ORCL=160 ORDR=238 OREO=192 ORRS=128 ORSR=224 XTL=297	XTL AR13*2 ARBI AR13 XTL*3 OR22*8 ORCL*5 OR22 OR20*8 OR22*23 OREO*6 OR21*2 ORDR*2 MENU ORRS*3

Dashboard example (cont.)

Someone has written a process that runs this sequence just to determine if “the mainframe is up”!

rpaSTART	rpaSTOP	distribApp	USERID	TOKEN	rpaDuration	rpaTotal	rpaTps	USRCPUT_tot	USRCPUT_max	USRCPUT_max (RPA Reqnum)	rpaDNA
2020-06-16 11:13:55.093998	2020-06-16 11:13:55.139394			3AF4D835	0.045396	4	88.11	4818	1276	1	F400+ENTER(#) CLEAR PF9 ENTER
2020-06-16 11:13:56.572552	2020-06-16 11:13:56.653828			A3F74735	0.081276	4	49.22	38837	34284	2	F400+ENTER CLEAR(#) PF9 ENTER
2020-06-16 11:13:59.471974	2020-06-16 11:13:59.560782			6820A835	0.088808	4	45.04	38914	34389	2	F400+ENTER CLEAR(#) PF9 DELETE_SESSION
2020-06-16 11:14:00.976331	2020-06-16 11:14:01.061396			D6CE8CB5	0.085065	4	47.02	38933	35028	2	F400+ENTER CLEAR(#) PF9 ENTER

Someone has written a process, running on a server, that logons to CICS, transitions to a screen, and presses the Enter key 200 times!

HB Base Request Chains Meeting Criteria

rpaSTART	rpaSTOP	distribApp	USERID	TOKEN	rpaDuration	rpaTotal	rpaTps	USRCPUT_tot	USRCPUT_max	USRCPUT_max (RPA Reqnum)	rpaDNA
2020-06-16 11:29:07.511427	2020-06-16 11:29:09.972990			60C6DE35	2.461563	204	82.87	277282	37532	2	F400+ENTER CLEAR(#) PF9 ENTER*200 DELETE_SESSION

Do you need Integration Analytics?

YES, if you have:

- Unexplained spikes in performance or workload
- No or limited visibility into what is driving CICS workload
- A need to identify inefficient applications/practices
- High/unexplained volume from screen-based apps
- It's been a long time since you looked “under the covers!”

Complete, end-to-end view of hybrid apps that include CICS.

Dip your toe into the Integration Analytics pool...

Send us some SMF 110 records!

- 1-2 hours of production data will do just fine
- We perform analysis and present dashboards to you via a web meeting

Onsite Option (if you have Splunk):

- HTAC available for installation/demo on your system
- We provide remote support to perform analysis and use dashboards

Ongoing:

- Services for dashboard building, analysis, and optimization consulting

Specific to RPA

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Guide to
Automation Anywhere[®]
Mainframe Integration

Terminal Emulation vs. RESTful HTTP Services

RPA bot

An Approach to Improve Reliability and Achieve Significant Performance Improvements

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Guide to
Blue Prism[®]
Mainframe Integration

Application Modeller vs. RESTful HTTP Services

blueprism

An Approach to Improve Reliability and Achieve Significant Performance Improvements

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elementBlue HOSTBRIDGE TECHNOLOGY

Guide to
UiPath[™]
Mainframe Integration

Terminal Sessions vs. RESTful HTTP Services

UiPath

An Approach to Improve Reliability and Achieve Significant Performance Improvements Over Current Methods

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<https://www.hostbridge.com/mainframe-rpa-resources/>

Discussion & Questions

Learn more:

<https://www.hostbridge.com/an-integration-analytics-primer/>

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