



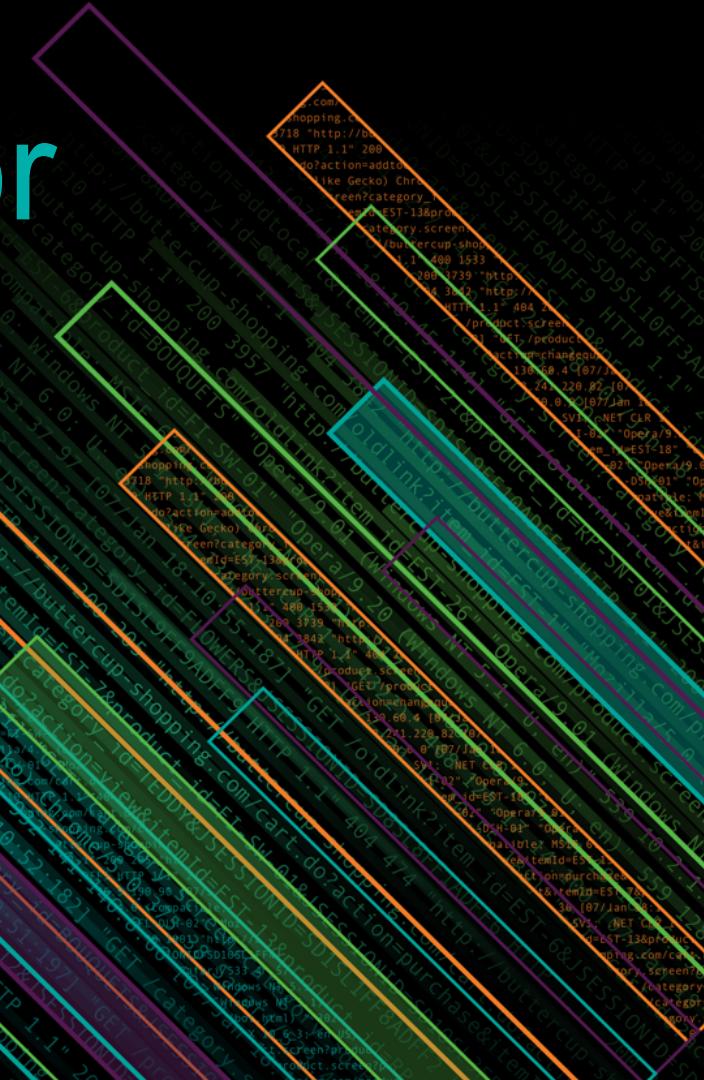
splunk>

Splunking the Mainframe for Real-Time Insights at Erie Insurance

Susan Fassette | Erie Insurance

John Reda | Syncsort Inc.

October 2, 2018



Forward-Looking Statements

During the course of this presentation, we may make forward-looking statements regarding future events or the expected performance of the company. We caution you that such statements reflect our current expectations and estimates based on factors currently known to us and that actual events or results could differ materially. For important factors that may cause actual results to differ from those contained in our forward-looking statements, please review our filings with the SEC.

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Our Speakers



SUSAN FASSETTE

Senior IT Analyst, Erie Insurance



JOHN REDA

VP R&D, Syncsort Inc.

Erie Insurance



Above all in SERVICE® – since 1925

- ▶ Fortune 500 Company
- ▶ 93 Years in business
- ▶ Provides property and casualty insurance in 12 states with 5.8 million policies in force
- ▶ 5,500+ Employees
- ▶ Headquarters located in Erie PA
- ▶ System of Record is an IBM z13 mainframe running z/OS
- ▶ 3,300 MIPS on General Purpose Processors and 8,000 MIPS on zIIP
- ▶ Until recently had the standard set of monitors and tools to keep things running smoothly

Introducing Syncsort

Global leader in
Big Iron to Big Data

Big Iron to Big Data is a fast-growing market segment composed of solutions that optimize traditional data systems and deliver mission-critical data from these systems to next-generation analytic environments.



Headquarters: Pearl River, NY

U.S. LOCATIONS

- Burlington, MA; Irvine, CA;
Oakbrook Terrace, IL; Rochester, MN

GLOBAL PRESENCE

- U.K., France, Germany, Netherlands,
Israel, Hong Kong & Japan

Why Move to a New Monitoring System?

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Session A - [24 x 80]
File Edit View Communication Actions Window Help
Menu Utilities Compilers Options Status Help
ISPF Primary Option Menu
Option ==> tso LISTCAT ENTRIES(SCT.SISBASE.AAFILE) all

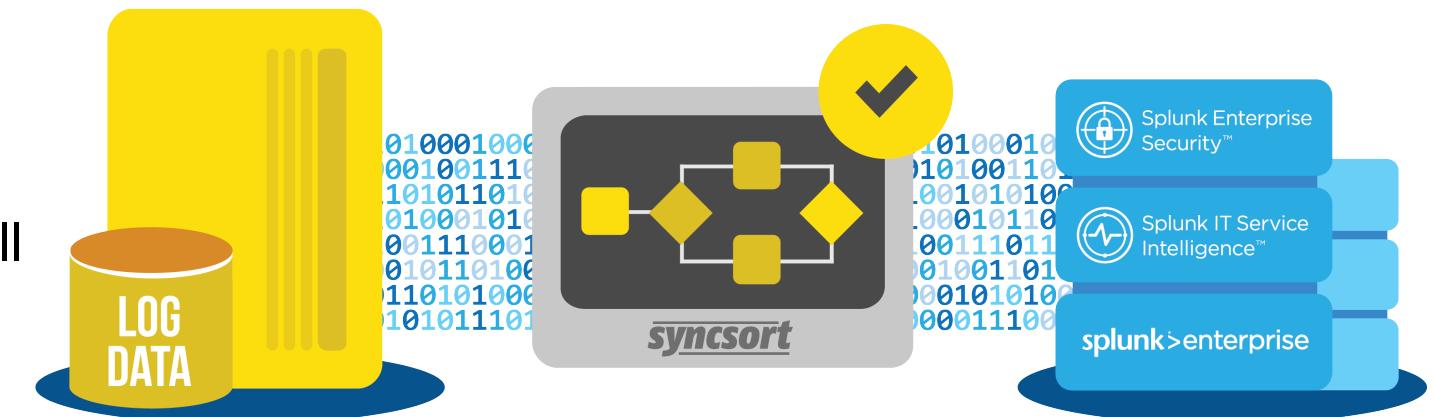
0 Settings Terminal and user parameters User ID . : IBMUSER
1 View Display source data or listings Time. . . : 13:52
2 Edit Create or change source data Terminal. : 3278
3 Utilities Perform utility functions Screen. . : 1
4 Foreground Interactive language processing Language. : ENGLISH
5 Batch Submit job for language processing Appl ID . : ISR
6 Command Enter TSO or Workstation commands TSO logon : ISPFPROC
7 Dialog Test Perform dialog testing TSO prefix:
8 LM Facility Library administrator functions System ID : P390
9 IBM Products IBM program development products MVS acct. : ACCT#
10 SCLM SW Configuration Library Manager Release . : ISPF 4.8
11 Workplace ISPF Object/Action Workplace
M More Additional IBM Products

CLUSTER ----- SCT.SISBASE.AAFILE
IN-CAT --- CATALOG.OS390.MASTER
HISTORY
DATASET-OWNER-----(NULL) CREATION-----2000.306
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Traditional Mainframe “Green Screen” display

Splunk's integrated approach to Big Data analytics on machine data from all platforms including IBM mainframes.



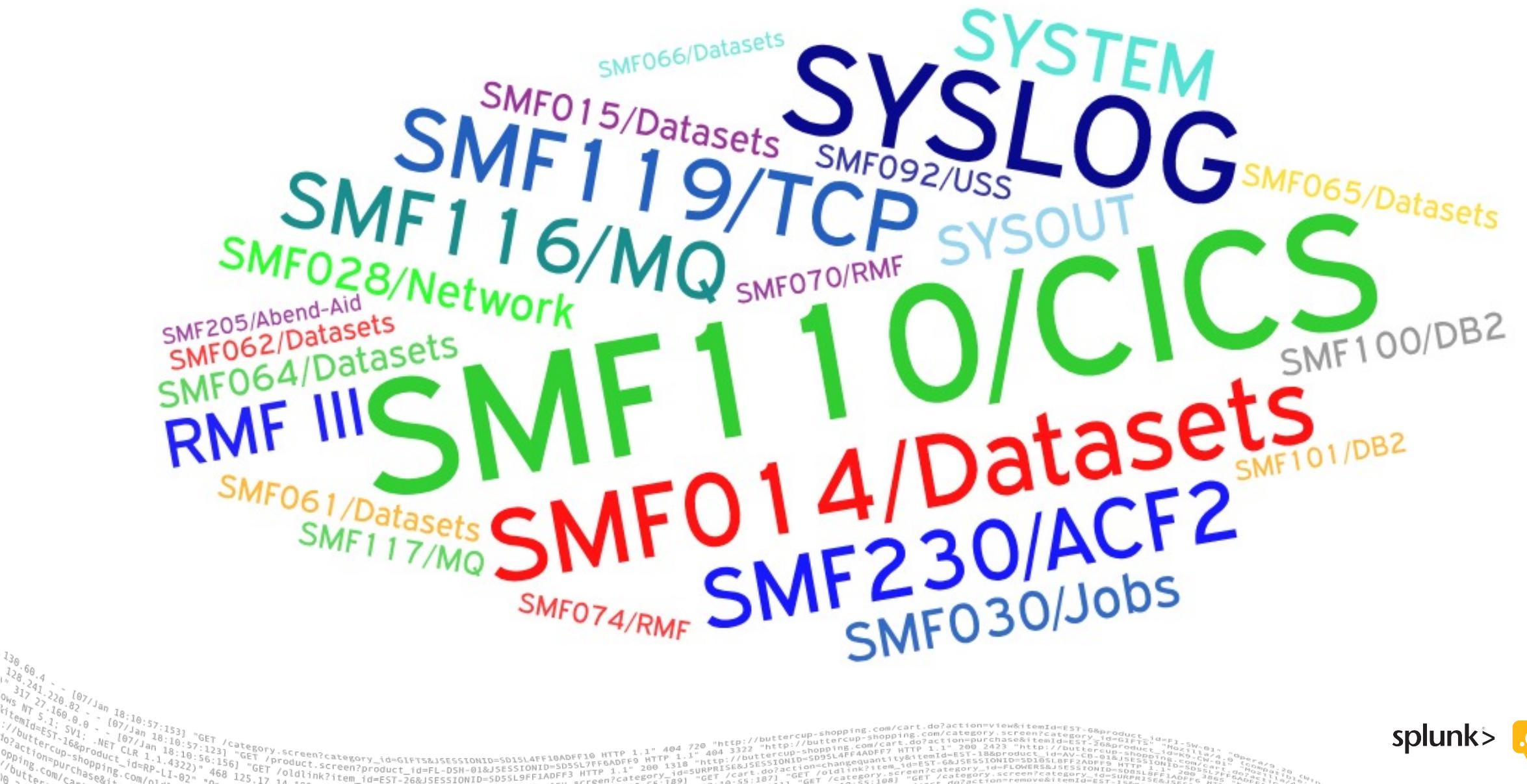
Advantages to Using Splunk

- ▶ Speed of getting analytics into the hands of people who need it
- ▶ More people can get access to the analytics
- ▶ Better visualizations
- ▶ Ability to unplug existing monitors
- ▶ Able to Support with next gen employees

Acceptance of analytics continues to grow as more people become exposed to what is possible.



Data Sources



Ironstream[®] - Sheds Light On ERIE's Mainframe Operational Data

Dashboards

SYSLOG User Lookup Record Types in Splunk

Sub-menus

Processor	Batch Jobs, STCs, TSO	Datasets	Applications / Services	CICS
Databases	Message Broker	MQ Series	Performance Testing	Operators
ACF2 Reporting	ACF2 Rules / Profiles	Connectivity	Summary Trending	Exceptions
zVM	ADABAS	Indesca	USS	

CPU GP / zIIP and 4HrRA

Interval: Peak vs NonPeak or All: LPAR:

Last 4 hours 15 Minutes All All Hide Filters

Edit Export ...

Avg GP CPU% Used by LPAR						Avg zIIP% Used by LPAR						MSU Capacity by LPAR						Processor Information			
LPAR	Avg_GP	MaxGP	Weight	#CPs	PctGp	LPAR	Avg_zIIP	MaxzIIP	Weight	#zIIPs	Pc	LPAR	Avg4Hr	Max4Hr	LPARCap	GroupCap	SerialNum	MachMSUs	CPsOnline	zIIPsOnline	
MVSNP	25.67	46.7	32	4		MVSNP	10.94	35.5	32	7		MVSNP	80	111	275	349	E2F07	412	6	7	
MVSPR	25.54	33.3	65	5		MVSPR	3.72	9.4	65	7		MVSPR	94	111	349	349					
MVSST	1.66	9.0	3	2		MVSST	0.88	15.3	3	2		MVSST	6	9	137	349					
AvgGP	52.87		100			AvgzIIP	15.54		100			AvgMSUs	180								

Mainframe GP CPU % Used by LPAR

zIIP CPU % by LPAR

MSU 4-Hour Rolling Avg

Tasks Waiting on CPU

Broker Flowstats / Nodestats / PctzLIP / CICS / EEH

LPAR: PR Choose Time Period Peak vs NonPeak or All Hrs: Environment: Select a message flow: Select Execution Group: Edit Export ...

Last 60 minutes All All PM_PolicyInquiry_PCD... *

Submit

[Hide Filters](#)

SMFID	Broker	MsgFlow	Execgrp
1D81	MQS2BRK	PM_PolicyInquiry_PCDs_MF	PRO1TRN2

Summary Metrics by MsgFlow for Time Period Chosen

sDatetime	eDatetime	Service	CICS_Tran	SecsDur	Tot_Msgs	Avg_CPU	Tot_CpuSecs	Avg_MIPS	Avg_Resp	Threads	Max_Thrd	Sum_Errs
2018-08-17 08:08	2018-08-17 09:08	PolicyInquiryPCDS	-	3600	350	0.045	15.59	5.0	1.089	15	0	20

Messages Processed

_time	# Messages
8:00 AM Fri Aug 17 2018	0
8:15 AM	~60
8:30 AM	~65
8:45 AM	~105
9:00 AM	~100

MIPS Consumed

_time	# MIPS
8:00 AM Fri Aug 17 2018	0
8:15 AM	~4.0
8:30 AM	~4.0
8:45 AM	~6.0
9:00 AM	~6.0

Broker Error Handling Messages

	ErrorTimeStamp	BrokerExecutionGroup	MessageFlow	RequestId	ChannelId	ChannelName	VendorId	ExternalReferenceType	ExternalReference	ErrorSource
1	2018-08-17T09:11:53.711271	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_adc30d27-1e11-4ecd-ae32-0de3b6de28b4	SFLT	SFLT	N/A	PolicyNumber		PM_PolicyInquiry_PCDS_
2	2018-08-17T09:11:42.034140	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_87e20145-5b1d-45b8-9de1-19b95b557f94	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
3	2018-08-17T09:11:41.028598	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_b296ec8e-90f9-445a-9310-1193ac4df56d	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
4	2018-08-17T09:11:40.240031	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_c909469c-6080-4a52-98e5-b0a90059cac7	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
5	2018-08-17T09:11:38.626275	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_7ea3a153-aa46-4326-9933-4996350f5218	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
6	2018-08-17T09:11:36.427479	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_54008054-87dc-419e-b6d3-1fe1151b98df	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
7	2018-08-17T09:11:34.798920	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_27f9768f-cc02-41a6-b03b-75284053a905	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_
8	2018-08-17T09:11:15.986251	PRO1TRN2	PM_PolicyInquiry_PCDS_MF	_b4df799e-4a95-418c-b906-0016ea77869	GWCC	ECC	GWCC	PolicyNumber	N/A	PM_PolicyInquiry_PCDS_

Ironstream® - Unix System Services Activity by (Subtype)

File Activity (1)

Mounts (5 and 6)

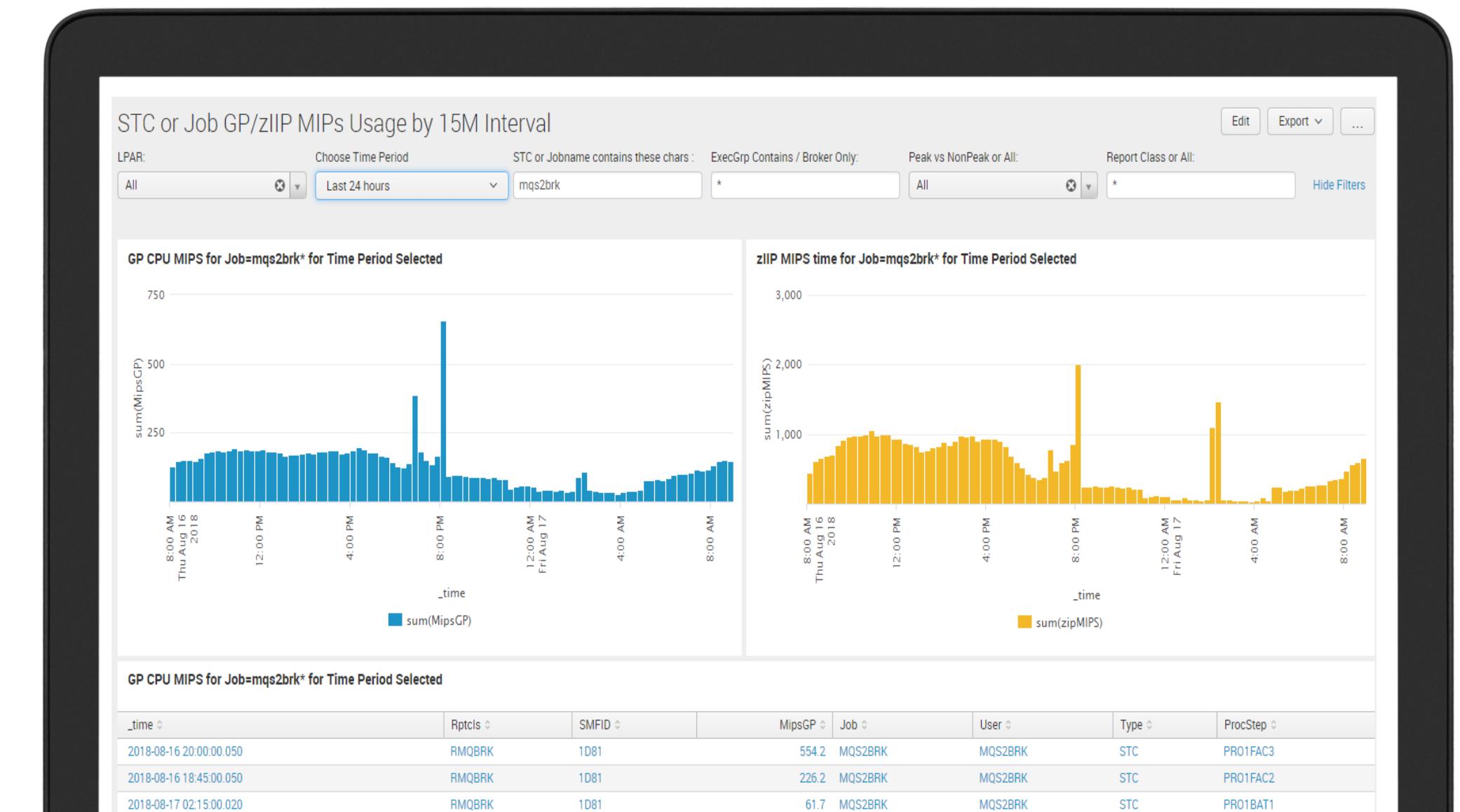
Closed Activity (11)

MMAP Process (12)

MMAP Remove (13)

Deletes/Renames (14)

Attribute Changes (15)



Batch Exceptions

Job contains % Change CPUMins Threshold OR % Change ElapsMins Threshold

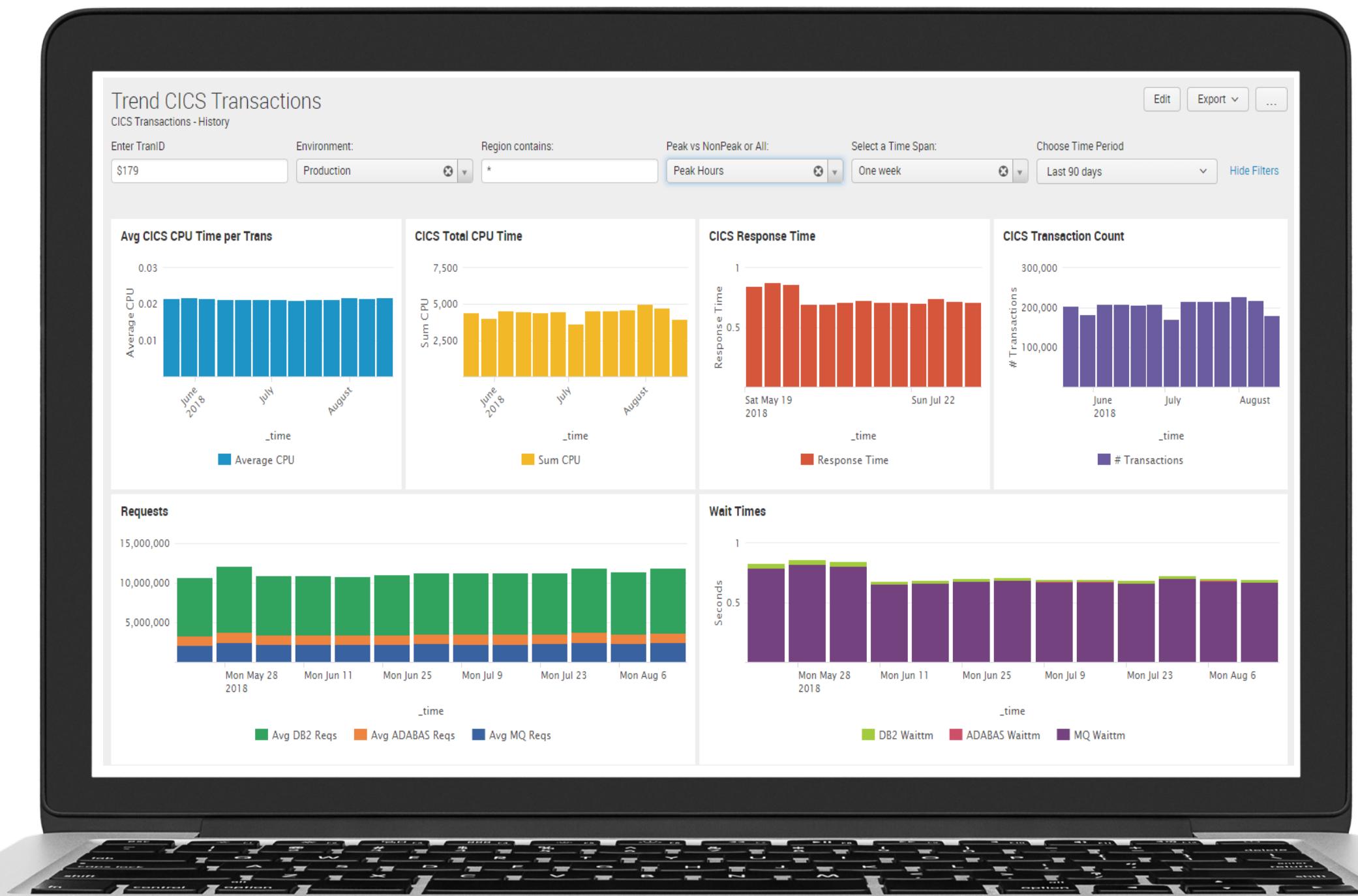
*	200	200
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cur_date	day	Job	Past_CpuMins	Cur_CpuMins	pct_chg_CPUMins	Past_ElapsMins	Cur_ElapsMins	pct_chg_ElapsMins	Past_JobsRun	Cur_JobsRun
2018-08-16	thursday	EPMS208D	2.688	9.847	266 %	3.3	11.3	248 %	4	1

Trend Production Batch Jobs

Choose Time Period Supply Jobname : Select a Time Span:

_time	AvgStime	AvgEtime	TotCpuMins	TotElapsMins	#JobsRun	#Abends
2018-08-16	0.03	0.20	9.85	11.3	1	0
2018-08-15	0.05	0.22	10.06	11.5	1	0
2018-08-14	0.02	0.20	10.08	11.7	1	0
2018-08-10	11.60	11.77	19.56	20.8	2	0
2018-08-09	0.02	0.18	8.88	9.5	1	0
2018-08-08	0.02	0.16	7.92	9.3	1	0
2018-08-07	0.02	0.15	6.99	7.8	1	0
2018-08-03	11.62	11.67	6.02	7.4	2	0
2018-08-02	0.02	0.05	1.57	1.8	1	0
2018-08-01	0.01	0.05	1.65	2.8	1	0
2018-07-31	0.02	0.03	0.78	1.9	1	0
2018-07-27	11.63	11.64	0.23	1.4	2	0
2018-07-26	0.02	0.02	0.16	1.2	1	0
2018-07-25	0.02	0.02	0.17	1.2	1	0
2018-07-24	0.02	0.02	0.18	1.3	1	0
2018-07-20	11.59	11.60	0.24	1.2	2	0
2018-07-19	0.02	0.02	0.15	0.5	1	0
2018-07-18	0.04	0.04	0.16	0.4	1	0



Mainframe RT User Access

Choose Time Period Users to include Users to exclude Dashboard name contains

Previous month All None * Hide Filters

Edit Export ...

Dashboard Views/Time Period	Unique Dashboards Viewed/Time Period	Unique Visitors/Time Period	Avg Dashboard Views/Business Day
1,556 Total dashboard views per time period	130 Total unique dashboards viewed per time period	108 Unique visitors per time period	74 Average dashboard views per business day

Total Views by Day

This line chart displays the daily count of total views and unique views over a month. The Y-axis represents the number of views, ranging from 0 to 200. The X-axis shows dates from July 2 to July 31. The blue line represents 'Total Views' and the yellow line represents 'Unique Views'. Both series show significant fluctuations, with peaks around July 3, 16, and 26, and troughs around July 4, 7, 21, and 29.

Date	Total Views	Unique Views
07/02	150	50
07/03	150	50
07/04	20	40
07/05	100	40
07/06	50	40
07/07	20	30
07/08	10	10
07/09	80	40
07/10	80	40
07/11	90	45
07/12	110	50
07/13	80	45
07/14	100	50
07/15	150	55
07/16	120	55
07/17	70	40
07/18	60	35
07/19	80	40
07/20	80	40
07/21	20	10
07/22	50	40
07/23	70	45
07/24	60	40
07/25	70	40
07/26	90	50
07/27	80	45
07/28	70	40
07/29	20	30
07/30	80	45
07/31	70	40

— Total Views — Unique Views

Menu Views by Day

This line chart displays the daily count of total views and unique views for menu items over a month. The Y-axis represents the number of views, ranging from 0 to 200. The X-axis shows dates from July 2 to July 31. The blue line represents 'Total Views' and the yellow line represents 'Unique Views'. Both series show significant fluctuations, with peaks around July 3, 16, and 26, and troughs around July 4, 7, 21, and 29.

Date	Total Views	Unique Views
07/02	180	60
07/03	180	60
07/04	20	40
07/05	100	50
07/06	60	40
07/07	20	30
07/08	10	10
07/09	100	40
07/10	100	40
07/11	110	45
07/12	140	50
07/13	100	45
07/14	120	50
07/15	20	10
07/16	150	55
07/17	80	40
07/18	60	35
07/19	80	40
07/20	70	35
07/21	20	10
07/22	80	40
07/23	60	35
07/24	70	35
07/25	60	35
07/26	100	50
07/27	80	40
07/28	20	30
07/29	80	40
07/30	70	35
07/31	80	40

— Total Views — Unique Views

Q&A

Susan Fassette | Erie Insurance
John Reda | Syncsort Inc.

Thank You

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in the .conf18 mobile app

