



Open and Connected

Gaining Visibility and Insight Into Your IBM Z

Daniel Wiegand – Senior Offering Manager
IBM

October 2, 2019

Notices and disclaimers

© 2018 International Business Machines Corporation. No part of this document may be reproduced or transmitted in any form without written permission from IBM.

U.S. Government Users Restricted Rights — use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM.

Information in these presentations (including information relating to products that have not yet been announced by IBM) has been reviewed for accuracy as of the date of initial publication and could include unintentional technical or typographical errors. IBM shall have no responsibility to update this information. **This document is distributed “as is” without any warranty, either express or implied. In no event, shall IBM be liable for any damage arising from the use of this information, including but not limited to, loss of data, business interruption, loss of profit or loss of opportunity.** IBM products and services are warranted per the terms and conditions of the agreements under which they are provided.

IBM products are manufactured from new parts or new and used parts. In some cases, a product may not be new and may have been previously installed. Regardless, our warranty terms apply.”

Any statements regarding IBM's future direction, intent or product plans are subject to change or withdrawal without notice.

Performance data contained herein was generally obtained in a controlled, isolated environments. Customer examples are presented as illustrations of how those customers have used IBM products and the results they may have achieved. Actual performance, cost, savings or other results in other operating environments may vary.

References in this document to IBM products, programs, or services does not imply that IBM intends to make such products, programs or services available in all countries in which IBM operates or does business.

Workshops, sessions and associated materials may have been prepared by independent session speakers, and do not necessarily reflect the views of IBM. All materials and discussions are provided for informational purposes only, and are neither intended to, nor shall constitute legal or other guidance or advice to any individual participant or their specific situation.

It is the customer's responsibility to insure its own compliance with legal requirements and to obtain advice of competent legal counsel as to the identification and interpretation of any relevant laws and regulatory requirements that may affect the customer's business and any actions the customer may need to take to comply with such laws. IBM does not provide legal advice or represent or warrant that its services or products will ensure that the customer follows any law.

Notices and disclaimers continued

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products about this publication and cannot confirm the accuracy of performance, compatibility or any other claims related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products. IBM does not warrant the quality of any third-party products, or the ability of any such third-party products to interoperate with IBM's products. **IBM expressly disclaims all warranties, expressed or implied, including but not limited to, the implied warranties of merchantability and fitness for a purpose.**

The provision of the information contained herein is not intended to, and does not, grant any right or license under any IBM patents, copyrights, trademarks or other intellectual property right.

IBM, the IBM logo, ibm.com and [names of other referenced IBM products and services used in the presentation] are trademarks of International Business Machines Corporation, registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at "Copyright and trademark information" at: www.ibm.com/legal/copytrade.shtml.

130.60.4 - - [07/Jun 18:10:57:123] "GET /category.screen?category_id=GIFTS&SESSIONID=5D1SLAFF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FI-SW-01" "Mozilla/4.0 (compatible; MSNbot 1.0)"
128.241.220.82 - - [07/Jun 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&SESSIONID=5D5SL7FF6ADFF9 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=AV-CB-01&SESSIONID=5D1B5L8FF2ADFF9" "Opera/9.20 (Windows NT 5.1; SV1; .NET CLR 1.1.4322)"
317.27.160.0.0 - - [07/Jun 18:10:57:156] "GET /oldlink?item_id=EST-26&SESSIONID=5D5SL9FF1ADFF3 HTTP 1.1" 200 189 "GET /category.screen?category_id=FLOWERS&SESSIONID=5D5SL8FF1ADFF6" "Mozilla/4.0 (compatible; MSNbot 1.0)"
100.0.0.0 - - [07/Jun 18:10:57:187] "GET /category.screen?category_id=FLOWERS&SESSIONID=5D5SL8FF1ADFF6" "Mozilla/4.0 (compatible; MSNbot 1.0)"
100.0.0.0 - - [07/Jun 18:10:57:188] "GET /category.action=remove&itemId=EST-26&product_id=AV-CB-01&SESSIONID=5D1B5L8FF2ADFF9" "Opera/9.20 (Windows NT 5.1; SV1; .NET CLR 1.1.4322)"

The Digital Economy is forcing businesses to transform



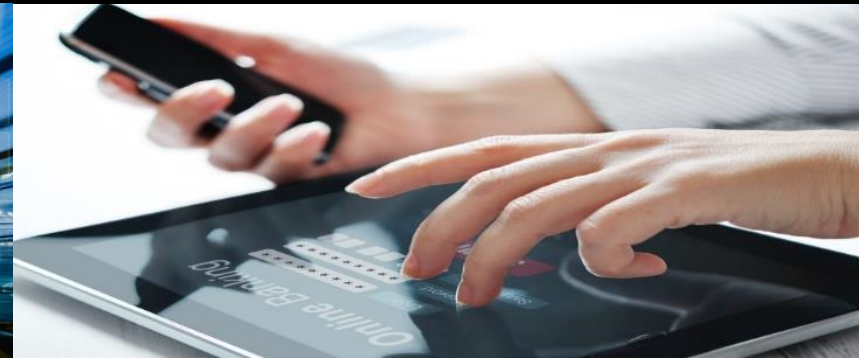
Explosion in transaction growth

*driven by mobility and the
Internet of Things*



IT- driven business agility

*for delivering service,
security, and efficiency*



Analytics is moving to real time

*to capture new
opportunities at the point
of impact*

The IBM Z Mainframe has a vital role in the Digital Economy

Mainframes process

30 billion business transactions per day

Mainframes enable

\$7.7 trillion in card payments annually

Mainframes run

68 Percent of the world's production workloads



130.60.4 - - [07/Jan 18:10:57:153] "GET /category.screen?category_id=GIFTS&JSESSIONID=SD1SLAFF10ADFF10 HTTP 1.1" 404 720 "http://buttercup-shopping.com/cart.do?action=view&itemId=EST-6&product_id=FI-SW-01" "Opera/9.20 (Win
128.241.220.82 - - [07/Jan 18:10:57:123] "GET /product.screen?product_id=FL-DSH-01&JSESSIONID=SD5SL7FF6ADFF9 HTTP 1.1" 404 3322 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-26&product_id=K9-CW-01" "Comod111 (Win
ows NT 5.1; SV1; .NET CLR 1.1.4322)" "GET /oldlink?item_id=EST-26&JSESSIONID=SD5SL9FF1ADFF3 HTTP 1.1" 200 1318 "http://buttercup-shopping.com/cart.do?action=changequantity&itemId=EST-1B&product_id=AV-CB-01&JSESSIONID=SD1B5L8FF2ADFF9 HTTP 1.1" 200 3865 "http://buttercup-shopping.com/cart.do?action=remove&itemId=EST-6&product_id=FI-SW-01" "Opera/9.20 (Win
itemId=EST-16&product_id=RP-LI-02)" 468 125.17 14.189 "GET /category.screen?category_id=FLOWERS&JSESSIONID=SD5SL8FF1ADFF6 HTTP 1.1" 200 3865 "http://buttercup-shopping.com/cart.do?action=purchase&itemId=EST-16&product_id=RP-LI-02" "Opera/9.20 (Win
buttercup-shopping.com/cart.do?action=purchase&itemId=EST-16&product_id=RP-LI-02" "Opera/9.20 (Win

A man in a white shirt is looking at a large screen displaying a green area chart. Another person is partially visible behind him, also looking at the screen. The man is holding a smartphone in his right hand. The screen shows a green area chart with a peak and a trough. The background is dark, and the lighting is focused on the screen and the man's face.

- IT is held accountable for **SLAs at a business application** level
- **Risk of outages** increases as the rate of change accelerates and operational complexity increases

- ## 2. Growth of hybrid cloud applications is increasing complexity – new layers of IT Systems built out on top of previous layers

- ### 3. IT Operation environment is increasingly strained

- Organizations face **skills issues** as they go through a generational shift

What is IT Operations Analytics?

IT operations analytics is an approach to:

- **Collecting IT data** from different sources,
- **Examining that data** in a broader context, and
- **Proactively identifying problems** in advance of their occurrence.



IBM IT Operations Analytics

Transport IBM Z Ops Data to where you need it

Provide Insights, Detect Anomalies and Curate Data

Use the platform of your choice



IBM Common Data Provider for z Systems

Efficiently stream
operational data
from 100+
sources in near
real-time to
multiple targets

IBM Z Operations Analytics

Reduce outages and their business impact, by detecting anomalies and identifying root cause via deep insights and intelligent searching of ops data

IBM Z Decision Support

Improve operational planning, cost management, and decision making through enterprise-wide system performance reporting, service-level management, and usage accounting

IT Operational Analytics platforms



IBM and Splunk Partnership for IBM Z

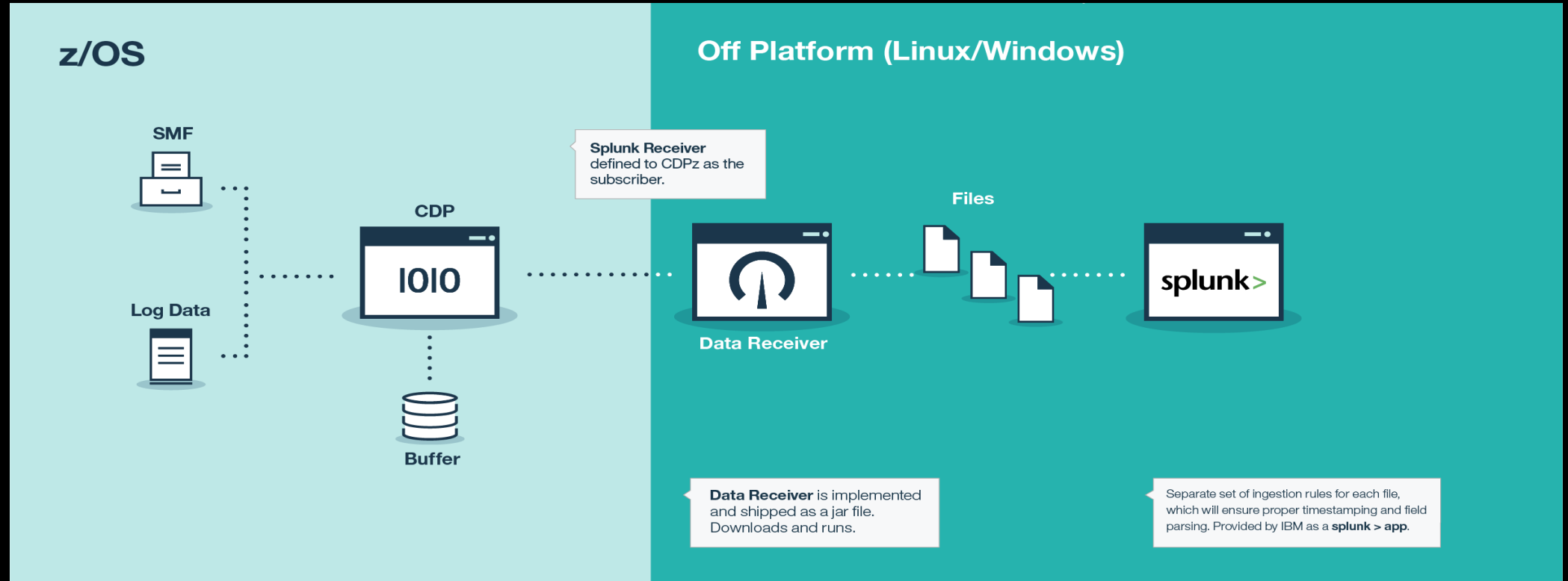
With IBM Common Data Provider for z Systems (CDPz) and Splunk clients can:



- Stream the ***widest range of SMF records and Z log data in “near real-time”***
- **Gain insight and eliminate blind spots in hybrid IT Operations**
- **Visualize impacts** across your infrastructure from **continuously delivering** applications and application enhancements
- **Maximize Splunk Investment** with ***advanced filtering***
- **Save money** with the CDPz’s **fixed pricing model** and **two vendor solution**



Accessing IBM Z data with IBM Common Data Provider

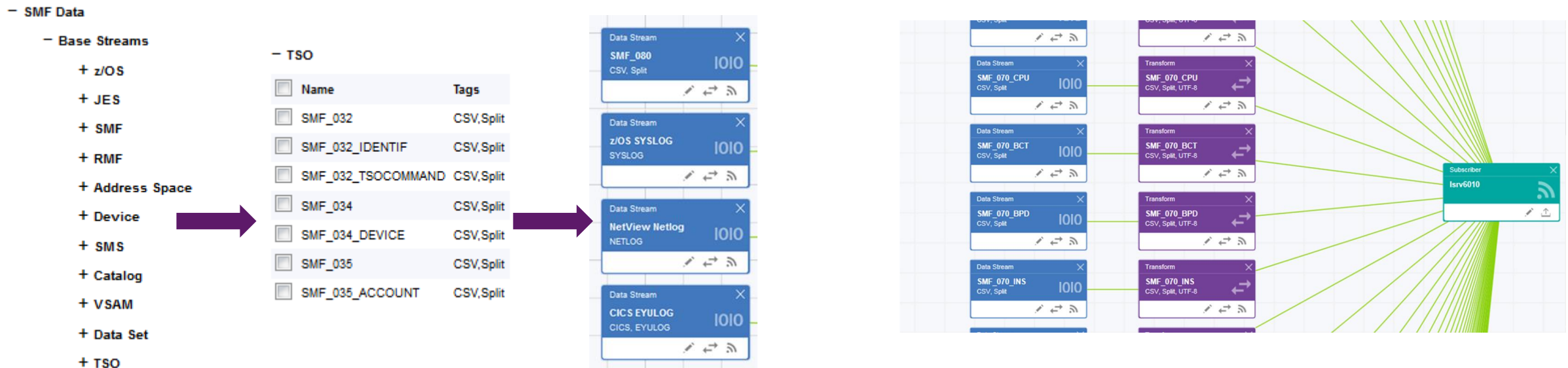


CDPz leverages simple configuration

CDPz leverages z/OSMF to provide users a simple to use graphical interface to select, filter, and send data to the required target(s)



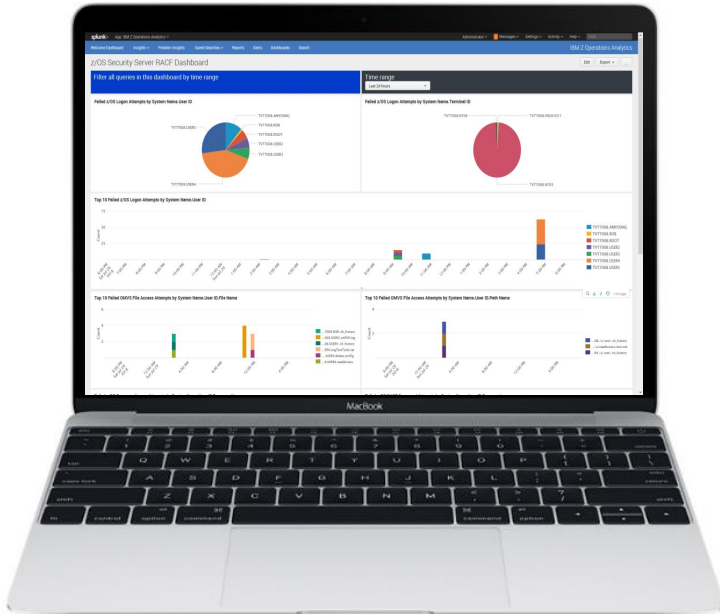
Just select the IBM Z SMF or Log data you need... Then add your date filters, target(s) and go!



What can we do with all this data?

Problem Analytics for your IBM Z

IBM Z Operations Analytics 3.2



- Expand domain expertise through domain-specific **out-of-the-box analysis, insights, and expert advice** including z/OS, WebSphere, DB2, CICS, IMS, MQ, Network, and Security
- **Included - Common Data Provider for z Systems** streams data in near real time to where you want to analyze your data
- **Reduce outages** by **proactively detecting operational anomalies** and notifying operations when they occur
- **Reduce time** required for root cause analysis by 60% with rapid data analysis and suggested actions
- **Eliminate trouble ticket queue hopping** with an **end-to-end view of the enterprise** and the reduction of blind spots

Rapid data analysis of large amounts of data

Visualize search results

Problem Insights speeds problem determination

Launch in context into logs

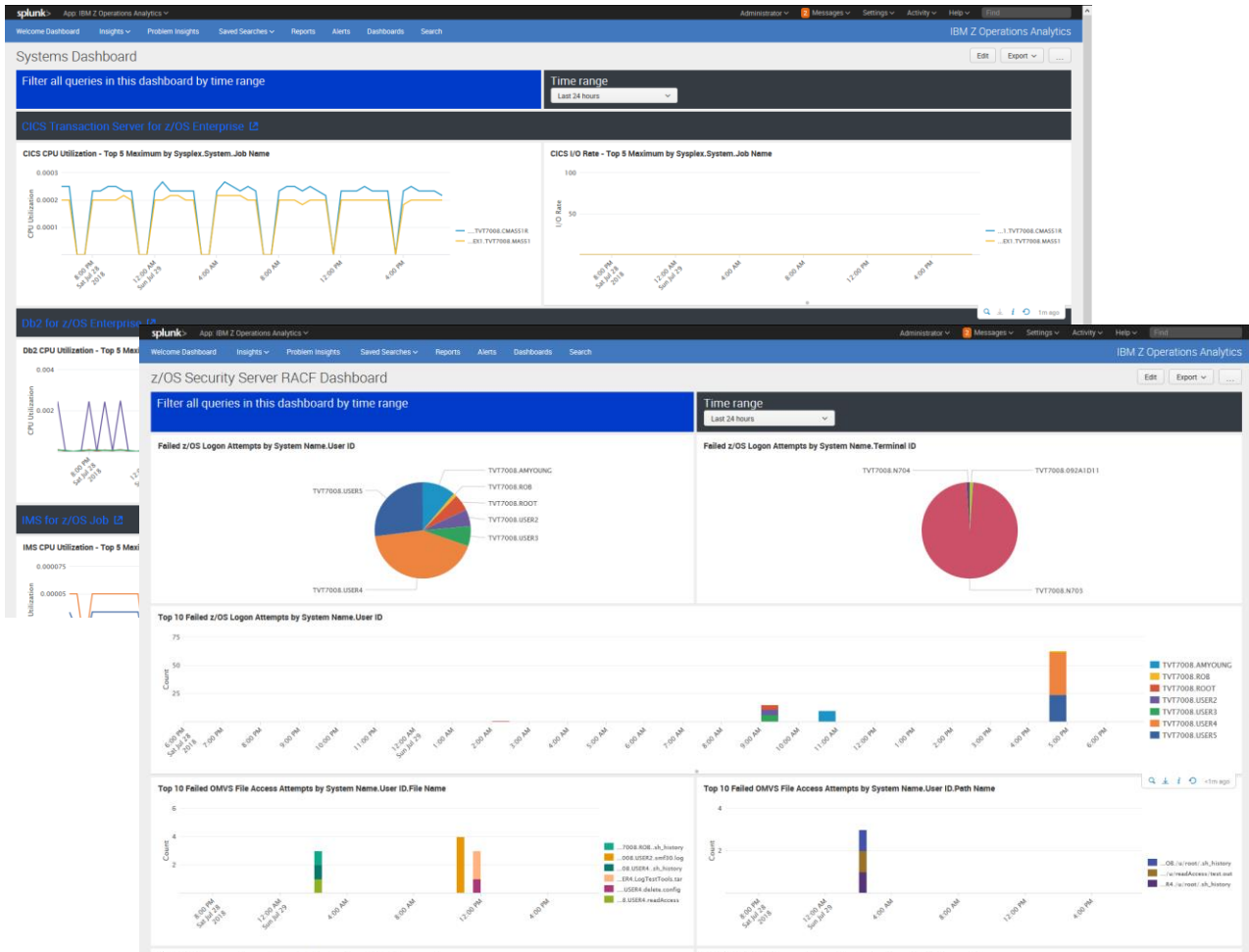
Expert advice and suggested actions

Faster mean time to recovery for outages



IBM IZOA – Insight into IBM Z Operational Data

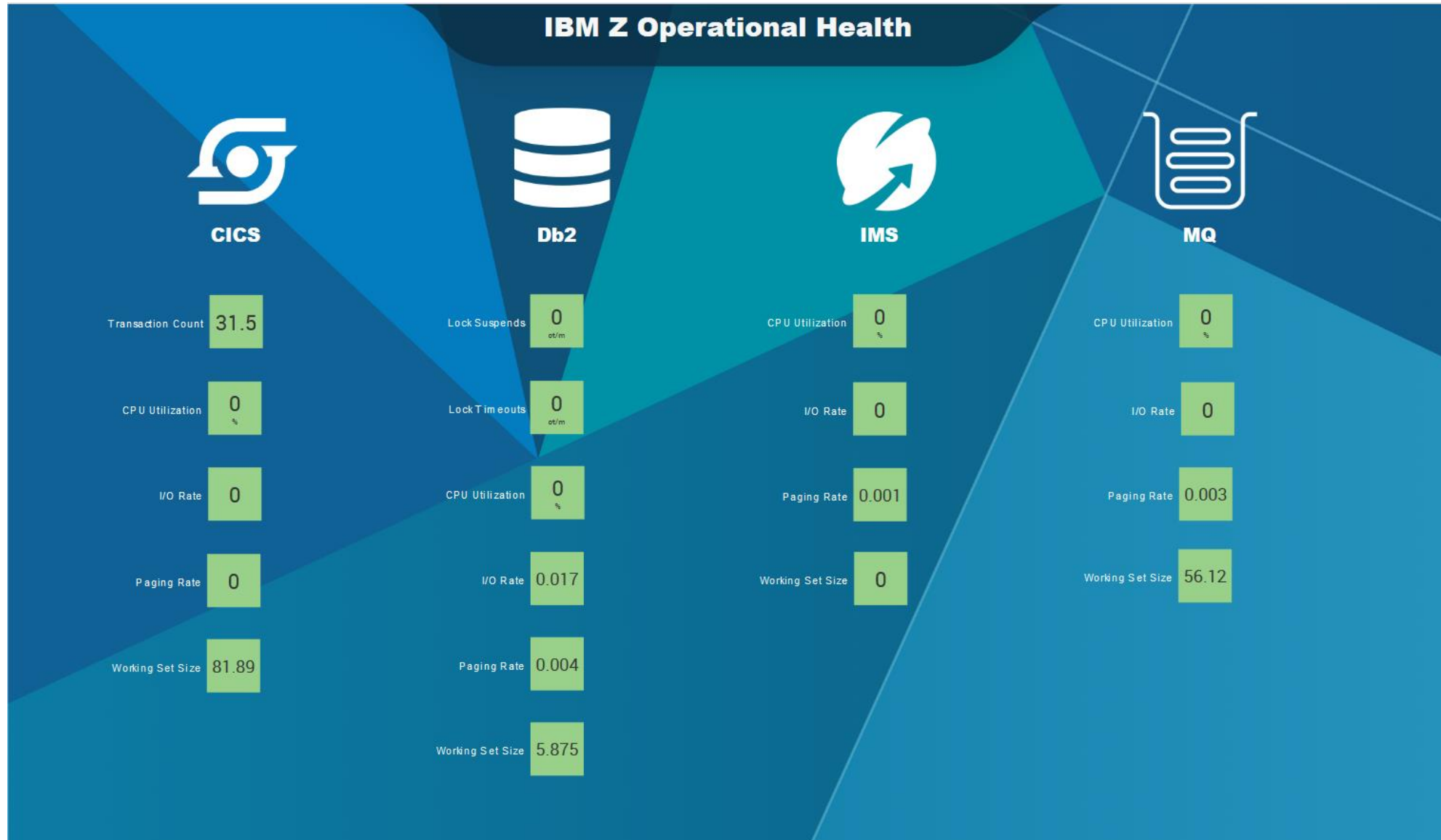
Subsystem Dashboards



Saved Searches

< Back	
CICS TS Messages	Q
CICS TS Abend or Severe Messages	Q
CICS TS Action, Decision, or Error Messages	Q
CICS TS Key Messages	Q
CICS TS Storage Violation Messages	Q
CICS TS Short on Storage Messages	Q
CICS TS Job Performance Metrics	Q
CICS TS All Exceptions	Q
CICS TS Wait on Storage Exceptions	Q
CICS TS Policy Exceptions	Q
CICS TS Transaction Interval Success	Q
CICS TS Transaction End of Day	Q
CICS TS Transaction Times at Maximum	Q
syslogd Messages	Q
syslogd FTPD Messages	Q
syslogd TELNETD Messages	Q
syslogd SSHD Messages	Q
TCPIP Error Messages	Q
TN3270 Telnet Error Messages	Q
z/OS Communications Server Device Error Messages	Q
z/OS Communications Server Storage Error Messages	Q
CSSMTP Error Messages	Q
OMPROUTE Error Messages	Q
IPSEC Error Messages	Q
ATTLIS Error Messages	Q
IKED Error Messages	Q
FTP Error Messages	Q
PAGENT Error Messages	Q
VTAM Connection Error Messages	Q
VTAM Storage Error Messages	Q
VTAM CSM Error Messages	Q

IBM Z KPIs for Splunk IT Service Intelligence



Problem Insights

Automatically surfaces important messages found in the log data.

Provides easy to read problem summary and suggested actions for problem resolution.

The screenshot displays the Splunk ITOA Problem Insights interface. At the top, there's a navigation bar with 'splunk>' and 'App: IBM'. Below it, the 'Problem Insights' section is visible, showing a 'Time Range' of 'Last 15 minutes'. A list of Sysplexes is shown, including 'plex0...(29)', 'plex1...(5)', 'plex2...(4)', 'plex3...(33)', 'plex4...(10)', 'plex5...(33)', 'plex6...(46)', 'plex7...(12)', 'plex8...(46)', and 'plex9...(8)'. A 'Select ALL' button is present. Below the Sysplexes, a table of problem insights is displayed. The table has columns for Severity, Sysplex, System, Subsystem, Time, Problem Summary, Count, Suggested Actions, and Evidence. The first row shows a warning icon for 'plex1' with a 'MAXDBAT problem' and a count of 10. Subsequent rows show various 'The WTO is full...' messages with counts of 0. A callout points to the 'Count' column, and another points to the 'Suggested Actions' column. The bottom of the table shows 'Showing 1 to 10 of 10 rows'.

Severity	Sysplex	System	Subsystem	Time	Problem Summary	Count	Suggested Actions	Evidence
Warning	plex1	LPAR1	Db2	04/24/2018 15:23	MAXDBAT problem	10	View	View
Error	plex8	LPAR8	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Warning	plex7	LPAR7	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Success	plex6	LPAR6	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Error	plex5	LPAR5	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Warning	plex4	LPAR4	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Success	plex3	LPAR3	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Error	plex2	LPAR2	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Warning	plex1	LPAR1	Db2	04/24/2018 15:23	The WTO is full...	0	View	View
Success	plex0	LPAR0	Db2	04/24/2018 15:23	The WTO is full...	0	View	View

Total number of Problem Insights found per Sysplex

Count of this message over the timeframe

Link to search for this message in this time period

Click to show the suggested actions for this message

Statement of Direction: Embedding Machine Learning into IBM Z Operations Analytics

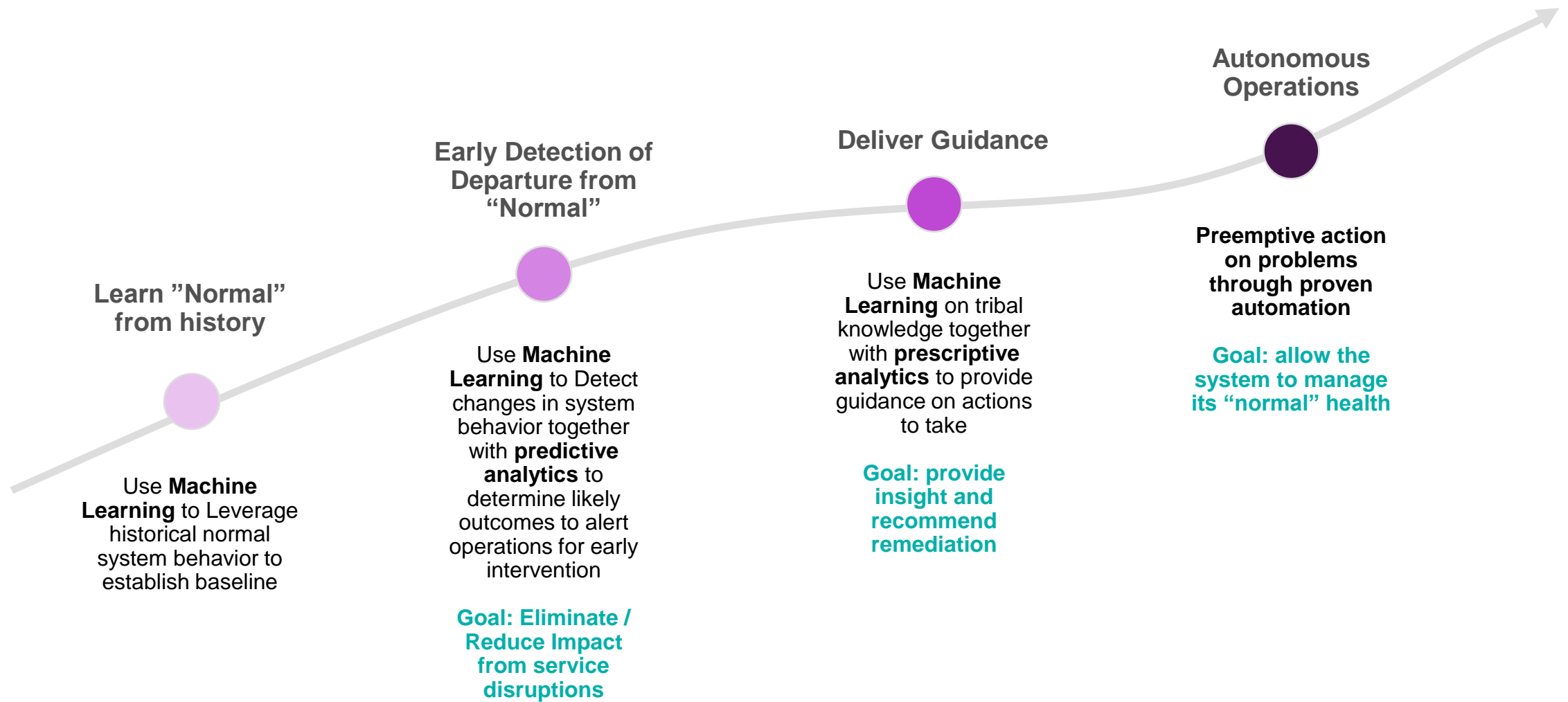


... IBM intends to continue enhancing the Problem Insight dashboard available in Z Operations Analytics to help organizations ensure their IT operations meet their business goals ...

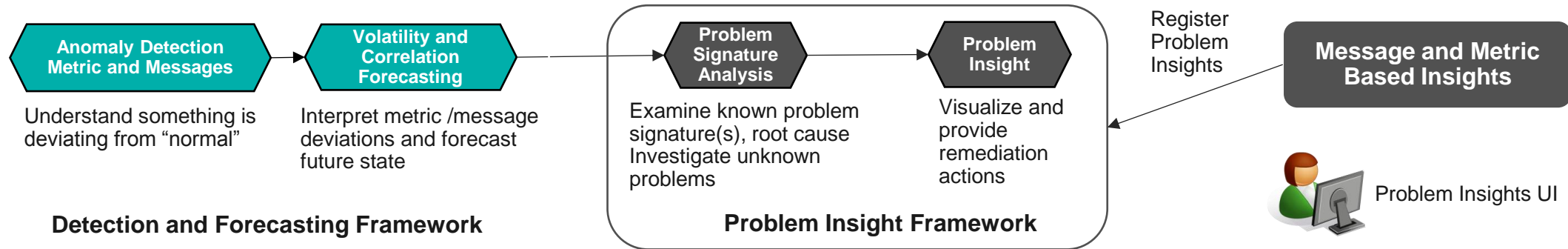
... New insights are expected to advance the existing IBM System z Advanced Workload Analysis Reporter (IBM zAware) anomaly detection by leveraging new IBM Machine Learning for z/OS models and problem signatures based on IBM data science and expertise to forecast when system behavior may lead to broader user impacts and system outages.

Users can expect to be alerted to system behavior changes based on historical data trend analysis across multiple subsystems.

IBM Z Operations Analytics Vision Roadmap



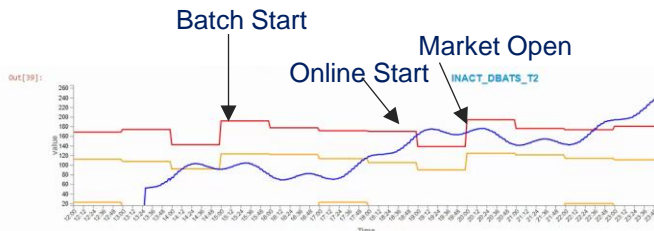
IZOA Problem Insights with Machine Learning



Detection

Identify a set of potential future problems triggered by a change in behavior

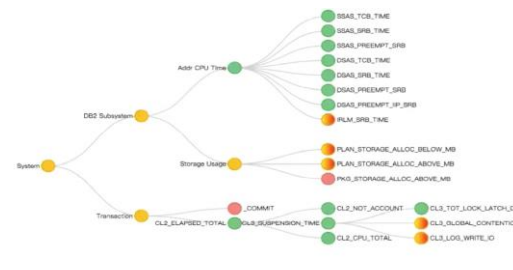
"something is different"
"some change is not normal"



Analysis

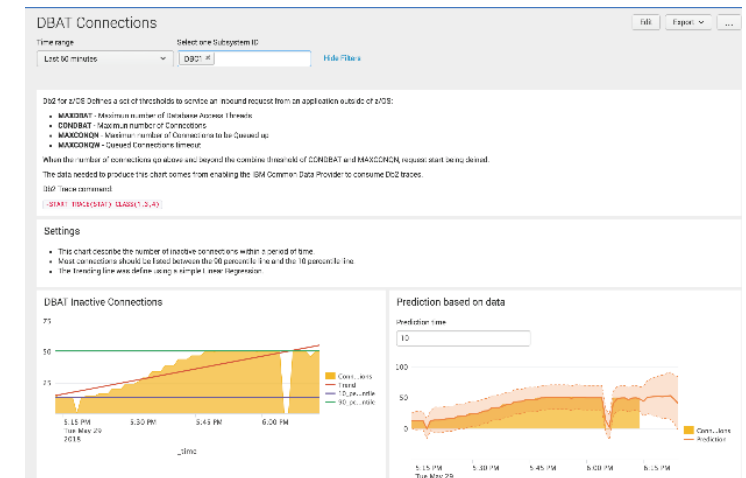
Identify specific problems – problem signatures using one or more detectors

"how does the change impact future state"
"context-aware problem signatures"



Problem Insights

Problem visualization, suggested actions, evidence



Mobile to Mainframe

How Rabobank Gains Visibility Into Instant Payments Using IBM Z and Splunk IT Service Intelligence

Customer
Success



Rabobank



**Thursday, October 4
2:45 PM – 3:30 PM**

IBM Z

IBM Is a Tera Sponsor
Visit Us in the source=*Pavilion

IBM Common Data Provider product page	ibm.biz/CDPzInfo
IBM Z Operations Analytics product page	ibm.biz/IZOAInfo
IBM Z Operations Analytics Announcement	ibm.biz/IZOAAnnounce
IBM Z Decision Support product page	ibm.biz/izdsinfo
Common Data Provider on Splunkbase	ibm.biz/CDPzPartner
Common Data Provider Dashboards	ibm.biz/CDPzSamples
IBM Z ITSM Newsletter	ibm.biz/zITSMNewsletterSubscribe

Thank You

Don't forget to **rate this session**
in the **.conf18** mobile app

.conf18

splunk>