

IBM System z Forum



System z Software Update

(2014 Q4 z Software Announcements)

Neale Armstrong
DB2 Client Technical Professional

November 2014



Scope of System Z Software Offerings

What we offer



Big data analytics and data warehousing

Gain faster access to critical insight while minimizing cost and complexity with innovative technologies for data warehousing, predictive analytics, business intelligence and more



Cloud and service management

Effectively manage mainframe performance, availability, workloads, software assets, provisioning, storage security and SNA & IP – including OMEGAMON, ITCAM and more



Data management

Empower your information with databases, tools and enterprise content management, including DB2, IMS, ECM and more



DevOps application development and deployment

Develop, modernize and deploy your applications and new workloads – including Rational Developer for System z, Rational Team Concert, Portals, and more



Infrastructure, connectivity, and business process management

For scale in back-office systems and connectivity to new endpoints of front-office engagements. Includes CICS, WebSphere Application Server, MQ, productivity and tuning tools.



Mobile to mainframe

Build, engage, transform, and optimize from mobile devices to back-end systems - including IBM Worklight, IBM Endpoint Manager, CICS with Mobile Extensions, and JSON support in DB2 and IMS.



Security and privacy solutions

Reduce risks and costs with solutions that provide ultimate protection for information and infrastructure, including InfoSphere Guardium, IBM Security zSecure suite and more

http://www-01.ibm.com/software/os/systemz/en_US/

Announcement Areas : 2014 Q4

IMS & DB2 : Autonomics

IMS & DB2 Tools : New Versions

Analytics : Hardware / Software / Licensing

Tivoli : SCA Log Analysis (Use of Analytics)

Tivoli Omegamon V5.3 Family new functions

Rational : New RDT Release

Websphere : Liberty & ODM Enhancements

Information Management : New Tools

Utilities management

- IBM DB2 Automation Tool for z/OS®, V4.2 (5655-E37)
- IBM DB2 Automation Toolkit for z/OS the SAP Edition, V2.3 (5655-W74)
- IBM DB2 Utilities Solution Pack for z/OS, V2.1 (5697-DUP)

Database administration

- IBM Management Console for IMS and DB2 for z/OS, V1.1 (5655-TAC)

Application management

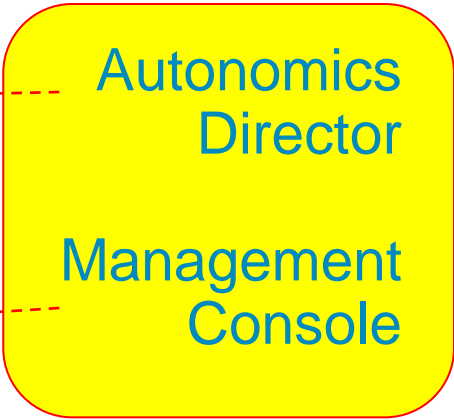
- IBM DB2 Sort for z/OS, V2.1 (5655-AA9)
- IBM Tools Base for z/OS, V1.5 (5655-V93)
- IBM IMS Connect Extensions for z/OS, V2.4 (5655-S56)

Recovery management

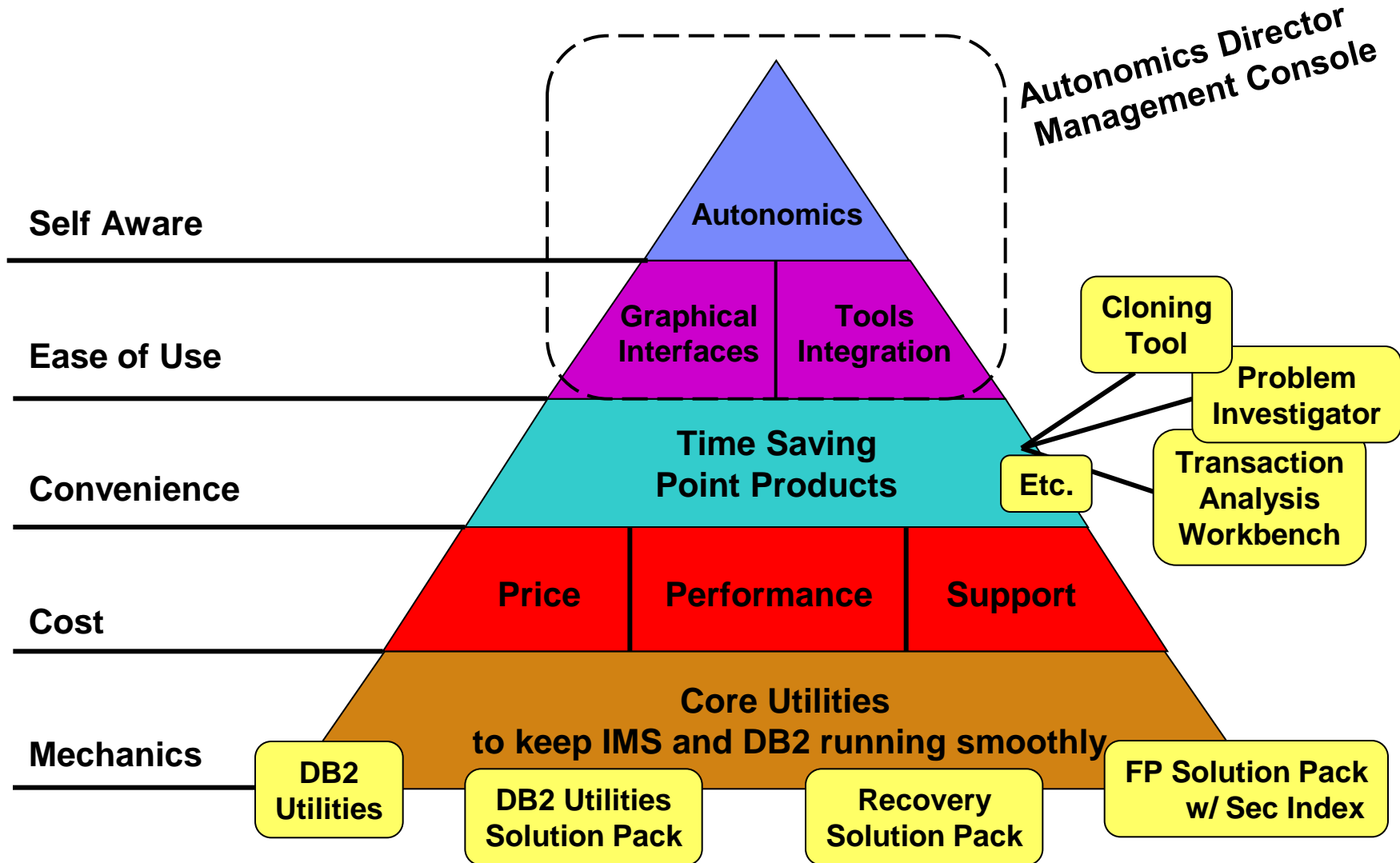
- IBM IMS Recovery Expert for z/OS, V2.2 (5655-S98)

Performance management

- IBM IMS Performance Analyzer for z/OS, V4.4 (5655-R03)
- IBM IMS Problem Investigator for z/OS, V2.4 (5655-R02)
- IBM IMS Performance Solution Pack for z/OS, V1.3 (5655-S42)

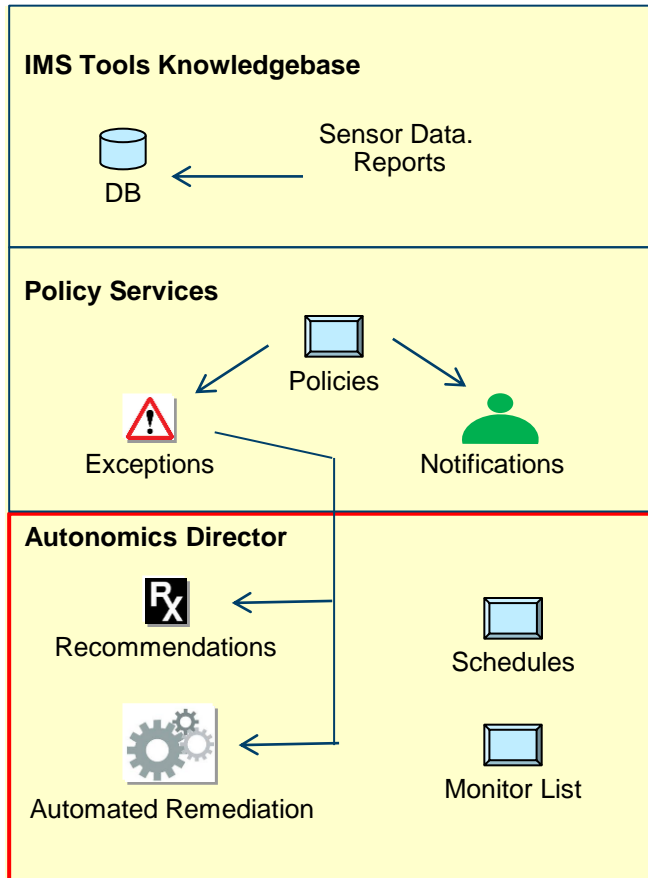


Maslow's Hierarchy of (DB2 & IMS Tools) Needs

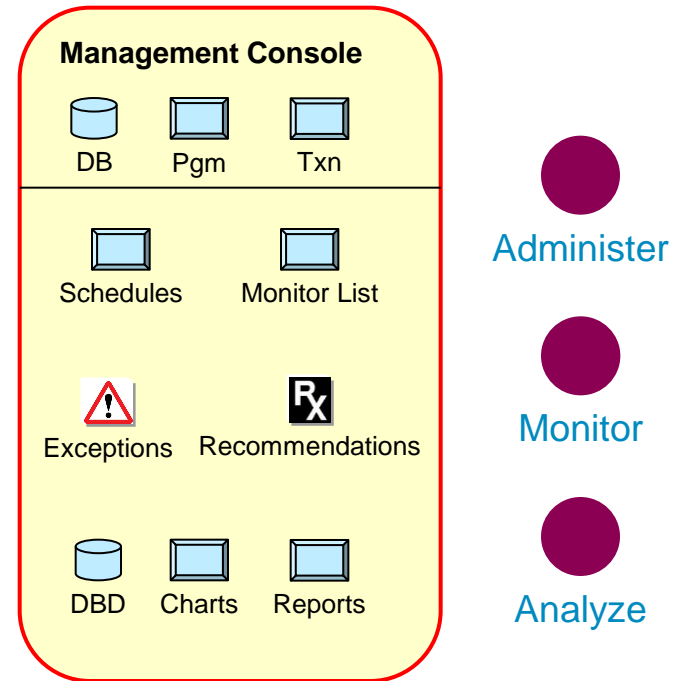


Automating IMS Administration

Tools Base for z/OS



Management Console



DB2 Autonomics Director

Evolution of
DB2 V10 “Autostats”

Sensor Data Examples :

Realtime Statistics (datasets)

Missing Statistics (data)

Trace Data (stats, acctg, performance)

IBM Tools Base for z/OS

V1.4 : Autonomics Director for IMS

V1.5 : Autonomics Director for DB2

(Stored Procedures & Repository)

DB2 Automation Tool V4.2 (standalone)

Manage & Monitor Autonomic Statistics

DB2 Automation Tool V4.2 (within DB2 Utilities Solution Pack)

Manage & Monitor all Autonomic Actions

Introducing the new... IBM Management Console for IMS and DB2 for z/OS 1.1

IBM Tools Base Administration Console for z/OS View Manage Configure admin IBM

Resources

Search

Custom Groups

- Troublesome Databases
 - HDAMVSAM (ACDEMOFF)
 - CUSTD1 (MODERN12)
 - CUSTD2 (MODERN12)
 - CUSTD3 (MODERN12)
 - CUSTD4 (MODERN12)
 - CUSTD5 (MODERN12)
 - CUSTD6 (MODERN12)
 - CUSTD7 (MODERN12)
 - CUSTD8 (MODERN12)

Troublesome Databases > HDAMVSAM (ACDEMOFF)

Properties

Environment alias: STLABE2
 Locale alias: ACDEMOFF
 Database name: HDAMVSAM
 Database type: HDAM
 Segment levels: 2
 Segment types: 3
 External databases: 0
 Logical children: 0
 Access type: VSAM

Exceptions 7

Reorganization recommended
 Exceptions as of Fri Oct 19 15:55:25 PDT 2012

Critical (4)

- Excessive number of synonyms on RAPs
- Excessive number of roots not in home blocks
- Excessive number of variable-length split segme
- One or more data sets are full and approaching the

Severe (0)

Warning (3)

Reports 152

- 2012-10-29 (2)
- 2012-10-28 (2)
- 2012-10-27 (2)
- 2012-10-26 (2)
- 2012-10-25 (2)
- 2012-10-24 (2)
- 2012-10-23 (2)
- 2012-10-22 (2)
- 2012-10-20 (2)
- 2012-10-19 (19)
- 2012-10-18 (2)
- 2012-10-16 (2)

Space Use

Number of Segments

DB NUM SEG	Number of Segments
HDAMVSD1	~12,000,000
HDAMVSD2	~10,000,000

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Optimization

Number of Database Records

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Fragmentation

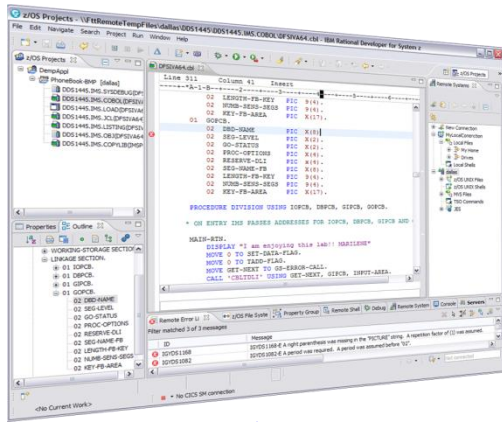
Variable-Length Segment Splits

DB PCT NUM VLSEG SPLIT	Percentage
HDAMVSD1	~40%
HDAMVSD2	~45%

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IMS and DB2 Tools User Interface Strategy

**Eclipse
(development)**

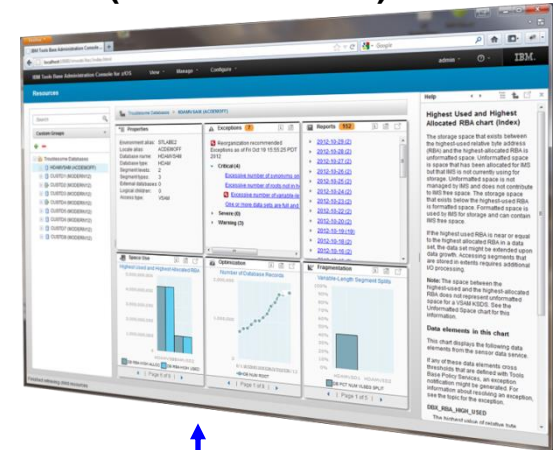


Developers



Administrators

**Web Browser
(administration)**

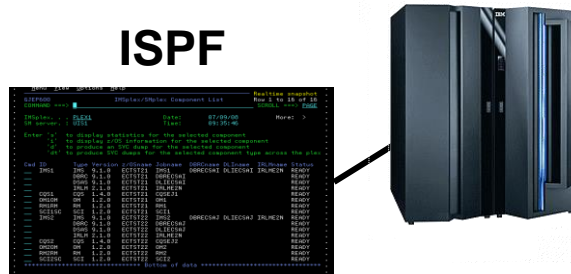


**BTS
RDz
Optim*
Data Studio***

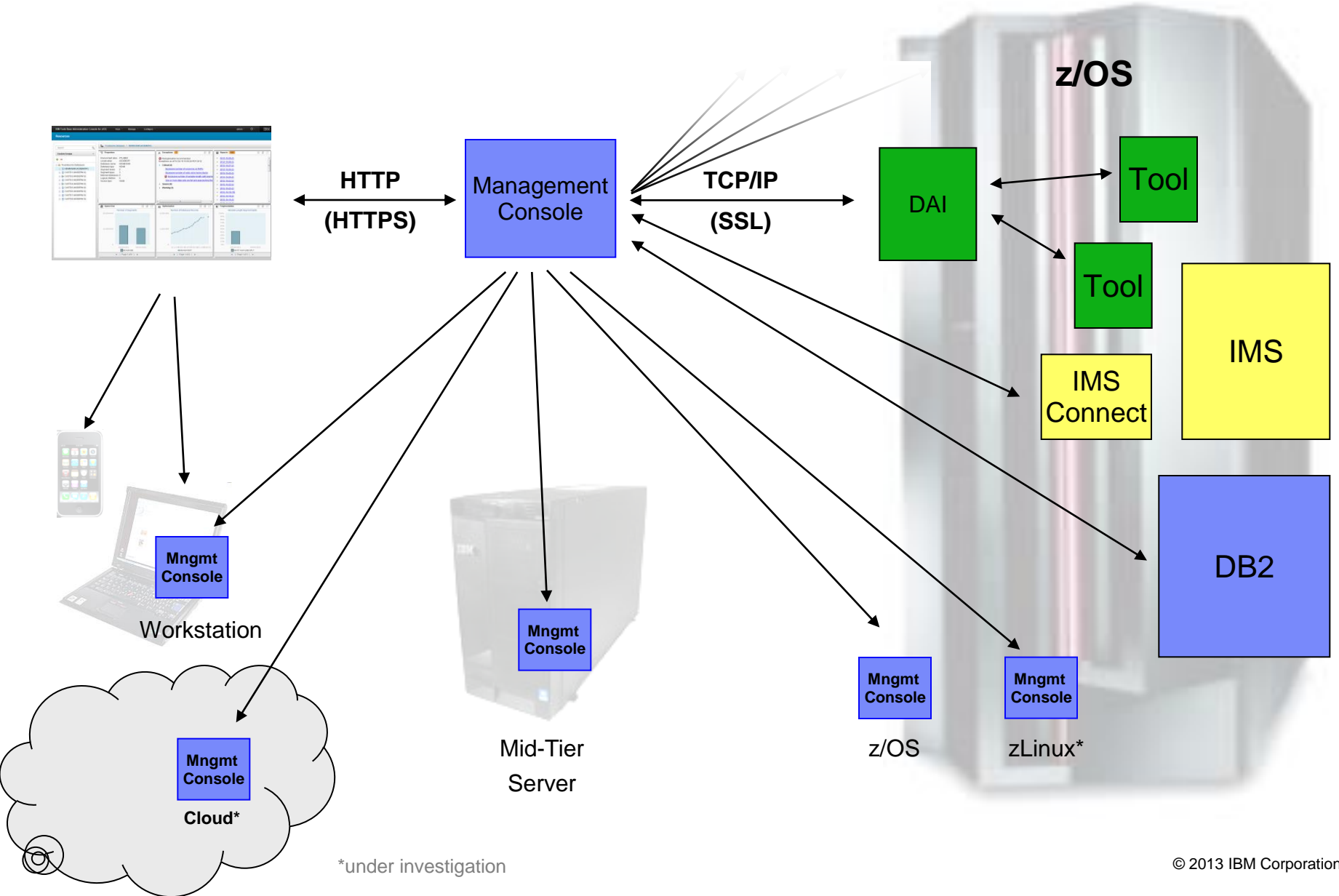
**Admin Tool
Reorg Expert
Pointer Checker
Buffer Pool Analyzer
Image Copy
Automation Tool
Query Monitor
Sysplex Manager
Performance Analyzer
etc...**

TCP/IP

ISPF




Management Console Deployment



DB2 Sort for z/OS V2.1

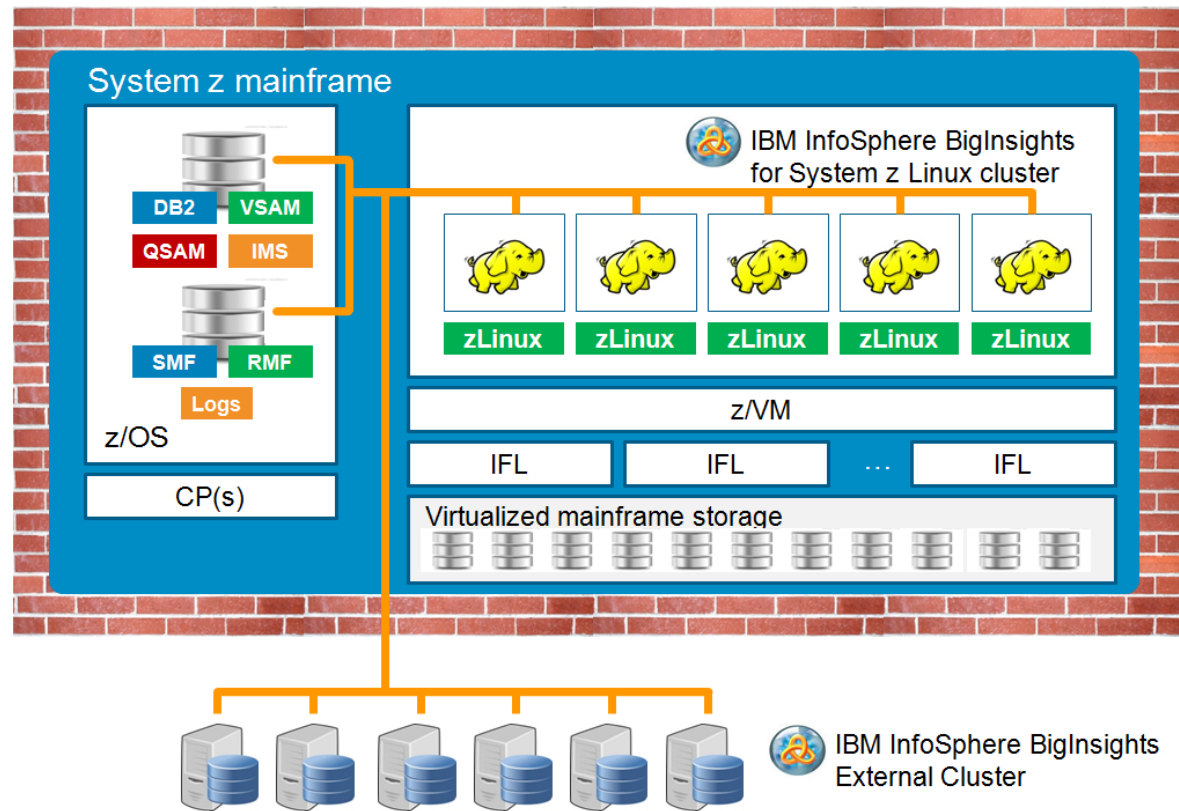
- **Performance benefits from v2.1:**
 - Reduction of Sort CPU usage
 - Up to 87% reduction on machines with zIIP engines
 - Up to 49% reduction on machines without zIIP engines
 - Reduction of Utility CPU usage
 - Up to 60% reduction on machines with zIIP engines
 - Up to 39% reduction on machines without zIIP engines
 - Reduction of Utility Elapsed Time
 - Up to 44% reduction on machines with zIIP engines
 - Up to 46% reduction on machines without zIIP engines

- 
- **DB2 Utilities Solution Pack V2.1**
 - DB2 Automation Tool V4.2
 - DB2 High Performance Unload V4.2
 - DB2 Sort V2.1
 - DB2 Utilities Enhancement Tool V2.2

IBM InfoSphere System z Connector for Hadoop

3Q Recap : Infosphere Big Insights for Linux on Z

- Leverage the power of Hadoop on the mainframe
- Analysis of System z data without it leaving the platform
- Drag-and-drop extracts from z/OS sources to Hadoop clusters both on and off platform
- Protects sensitive data
- Seamless interoperability with BigInsights
- Faster application delivery



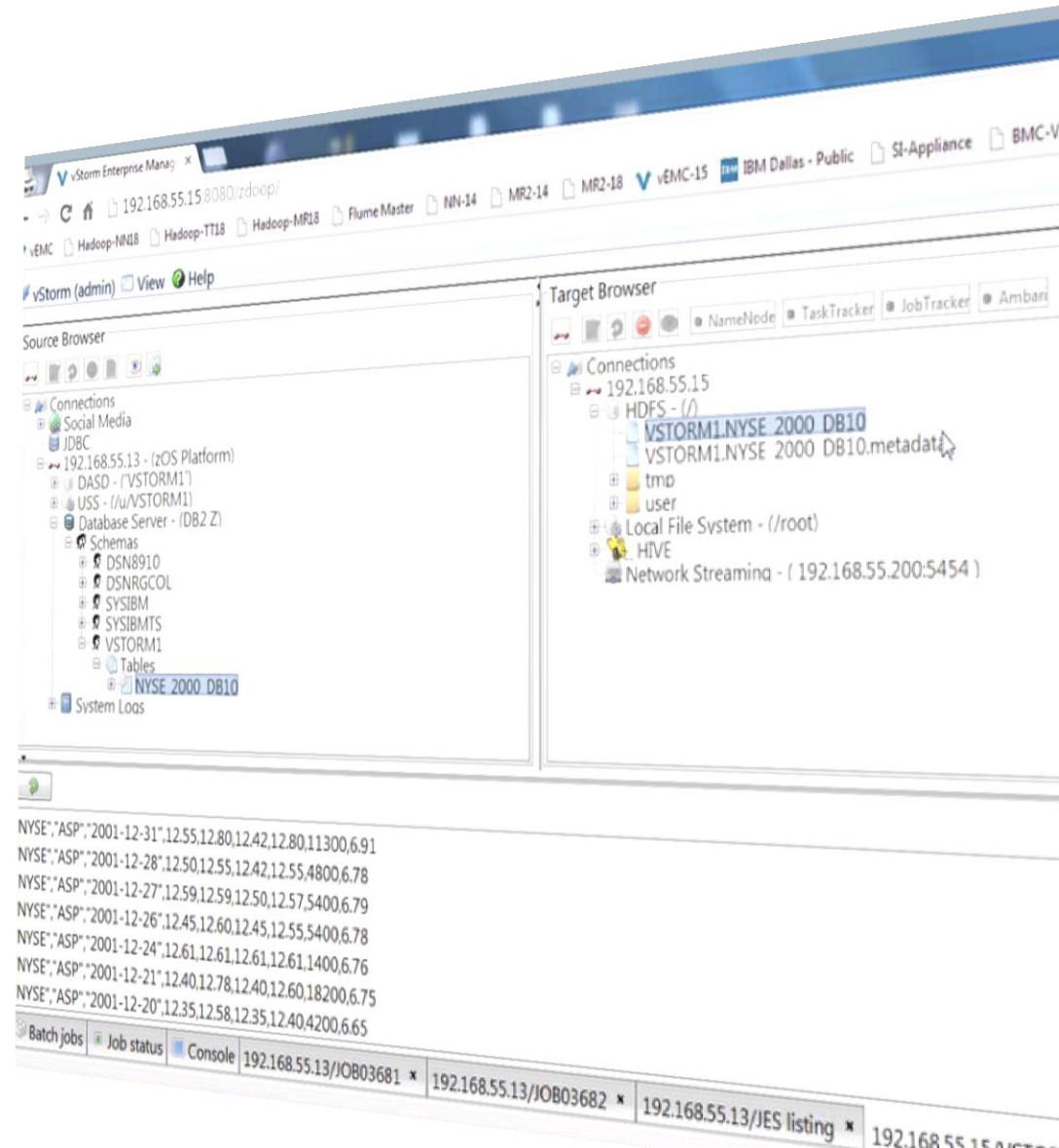
Hadoop Connector : Easy GUI and Secure Direct Streaming

- **A secure pipe for data**

- Data never leaves the box
- RACF integration – no need for any special credentials
- Data efficiently streamed over secure channel using hardware cryptography and hipersockets

- **Easy to use ingestion engine**

- Native data collectors accessed via graphical interface
- Light-weight; no programming required
- Wide variety of data sources supported
- Conversions handled automatically
- Streaming technology does not load z/OS engines or require DASD for staging



IDAA New Models – with Data Encryption

N3001 Model	001	002	005	010	020	040	080
Cabinets	n/a	¼	½	1	2	4	8
S-Blades	n/a	2	4	7	14	28	56
SPU CPU Cores	40	40	80	140	280	560	1120
SPU FPGA Cores	n/a	32	64	112	224	448	896
Capacity in TB (user data space)	4	8	24	48	96	192	384
Effective Capacity in TB (assuming 4x compression)	16	32	96	192	384	768	1536



001



002
005
010



020



040



080

IDAA V4.1 PTF4 and Mako Models 3xxx

Call Home Feature

- IDAA generates SMTP email when pre-emptive service is needed.

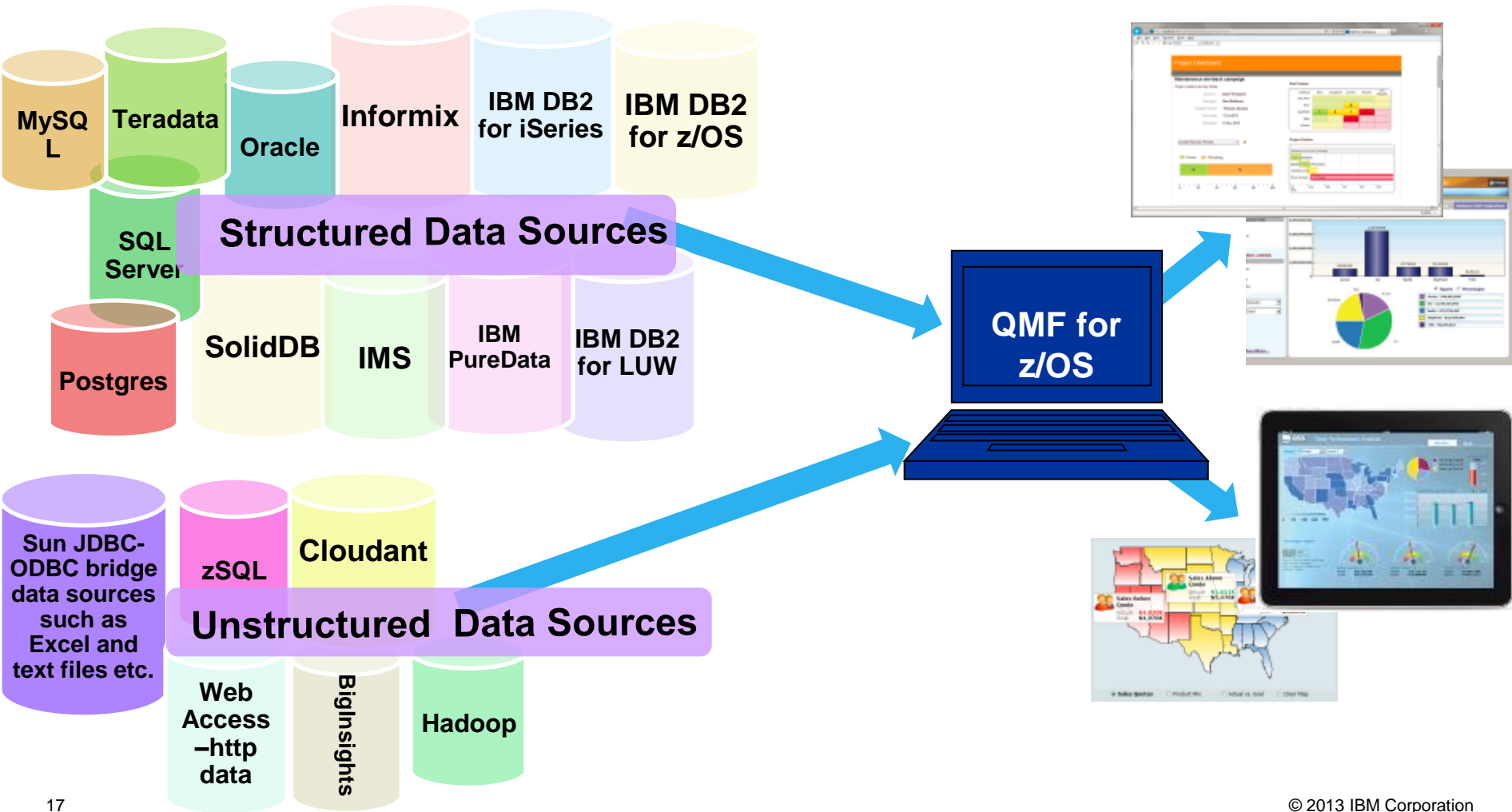
Self Encrypting Drives

- Hardware Encryption using Disk Encryption Key (DEK)
- Unlock DEK at Power on with Authentication Key (AEK)
- Customer manages AEK encryption keys.
- Once encrypted – always encrypted



QMF for z/OS

- New OTC Licensing Option
- New Data Sources
- New User Interface Targets
- Migrate Existing Reports to New Interfaces



QMF Information

- *Information*
 - *Try QMF 11 for z/OS free for 60 days (only QMF for WebSphere and Workstation components)*
<https://www.ibm.com/services/forms/preLogin.do?source=swg-im-qmf>
 - *QMF 11 Best Practices Videos*
<https://ibm.biz/BdDG3N>
 - *DB2 QMF family product page:*
<http://www.ibm.com/software/products/us/en/qmf>
 - *DB2 QMF Redbook*
<http://www.redbooks.ibm.com/abstracts/sg248012.html>
 - *DB2 QMF on YouTube*
<http://www.youtube.com/watch?v=mt5ZEJ57XZs>



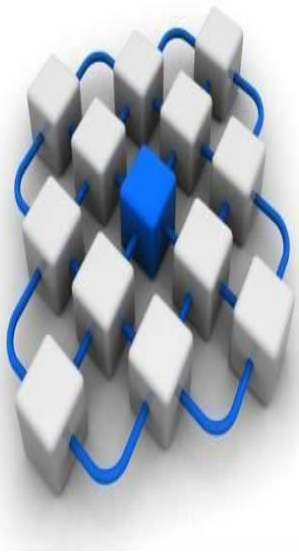
OMEGAMON XE on zOS v5.3 increased problem determination capability

- Near-Term-History for critical zOS attribute groups from RMF Monitor III presented directly in the Enhanced 3270 User Interface
- Summary and detail workspaces support historical problem determination and trending analysis for the following objects:
 - Address Space CPU Usage and Delays
 - zOS Common Storage Usage
 - CPC LPAR Summary and Details
 - WLM Service Classes:
 - Performance Index
 - Resource Usage History
 - Device Resource History
 - Device Job Summary
 - Real Storage Usage History
 - Storage Details



OMEGAMON XE for CICS on z/OS V5.3

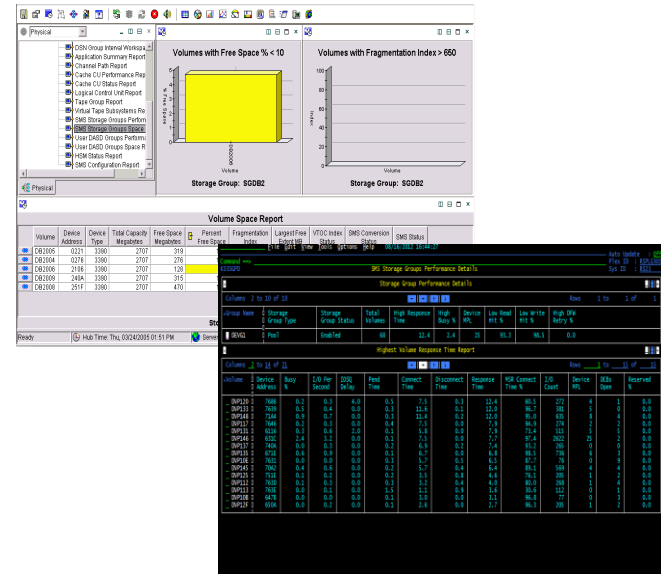
Increased Problem Determination



- **Enhanced 3270 User Interface Near-Term-History allows recent performance problem identification.**
 - View performance metrics from the recent history to identify periods of concern.
 - Navigate consistently for a given time slice as though in real time.
 - Navigate to Task History for a point in time.
- **CICSplex wide views of transaction details in both real time and historically.**
 - See all the CICS regions involved in a transaction combining the task history details for a transaction from anywhere in the CICSplex.
- **Combine Application Trace data for a transaction.**
 - Access to all the trace collected for a transaction spanning multiple regions with a simple view.

OMEGAMON XE for Storage on z/OS V5.3

- Real-time and historical mainframe STORAGE monitoring
- Powerful alerting and “Take Action” capability
- Daily Storage management capability and functions
- New e3270 user interface
- A wide breadth of mainframe storage information:
 - Space and Performance management (storage groups all the way down to data set groups, define your own for reporting)
 - Tape / VTS
 - Channels (FICON), Control Units, CACHE
 - DFSMSHsm (View and administer your active HSM queues, control Datasets, etc.)
 - DFSMSHsm / DFSMSdss / ICKDSF / IDCAMS online toolkit
 - Batch JCL creation from toolkit – any JCL
 - SMS constructs
 - DASD & Tape drive physical device support
 - Ability to see all logical volumes on a physical disk
 - Powerful applications view
 - Powerful dataset view and action capability
 - Integration capabilities from TEP and E3270UI



- **Dynamic Workspace Linking to:**
 - IBM Tivoli Advanced DFSMSHsm Reporter (ITAARD)
 - IBM Tivoli Advanced DFSMSHsm Audit (ITAAD)
 - IBM Tivoli Advanced Catalog Management (ITACM)
 - IBM Tivoli Advanced Backup and Recovery (ITABR)
 - IBM Tivoli Advanced Allocation Manager (ITAAM)
 - IBM Tivoli Tape Optimizer (ITTO)
 - IBM Tivoli Automated Tape Allocation Manager (ATAM)
- **DFSMSrmm reporting and toolkit functions**

OMEGAMON XE for MessagingV5.3

```

File Edit View Tools Navigate Help 08/26/2014 20:28:34
Auto Update : Off
Command ==> HostName : TIVPC043
KMQQMSTS QmgrName : QMC4CLUS
Current Queue Manager Status

[ Status ] [ Parameters ]

Queue Manager Health
QMgr Name..... QMC4CLUS Host Name..... TIVPC043
QMgr Health..... Warning Connection Count..... 22
QMgr Status..... Running Channel Initiator Status.. Running
Command Server Status.... Running Current MQEvents..... 0

Queue Health
Queue Health..... Critical DLQ Depth..... 0
High Depth Queue Count... 1 Put Inhibited Queue Count. 0
Total XMIT Queue Messages. 0 Get Inhibited Queue Count. 0
Total Messages..... 191 Open Queue Count..... 24

Channel Health
Channel Health..... OK Indoubt Connections..... 0
Current Not Running..... 0 Server Connections..... 0
Current Connections..... 0 % Max Channels..... 0.0
Active Connections..... 0 % Max Active Channels..... 0.0

```

- Even in the z/OS Enhanced 3270UI, you can monitor your distributed platform queue managers
- Just zoom on any white field for more data on any item impacting the health of your queue manager
- Common attributes are available for all platforms for monitoring queue managers, queues, channels, application connections, MQ events, messages, MQ clusters, brokers, message flows, and more...
- Messaging agents on distributed platforms are available in ITCAM for Applications bundle product
- Remotely monitor MQ Managed File Transfer environment on z/OS from agent in that bundle

RDT 9.1

New Hardware Support

zEC12 GA2 CPU Architecture & Instruction Set

zEC12 Crypto Emulation Enhancements

- Emulated Crypto Express® 4S support for Export TDES key under AES transport key
- Diversified Key Generation CBC support
- IPEK support
- RXX Key wrapping method support

Enhanced Coupling Support (zEC12 CF19) with improved resilience

Emulated 3590/3592 tape that is now supported

New Software Levels

z/OS V2.1 and V1.13,

Websphere for z/OS V8.0, and V8.5

CICS TS V4.1, V4.2, V5.1, and V5.2

IMS V12.1 and V13.1

DB2 for z/OS, V10 and V11

WebSphere MQ for z/OS, V7.1

IBM Java SDK for z/OS, V6.0, V6.0.1, V7.0, and V7.1

Enterprise COBOL V5.1

Enterprise PL/I V4.4

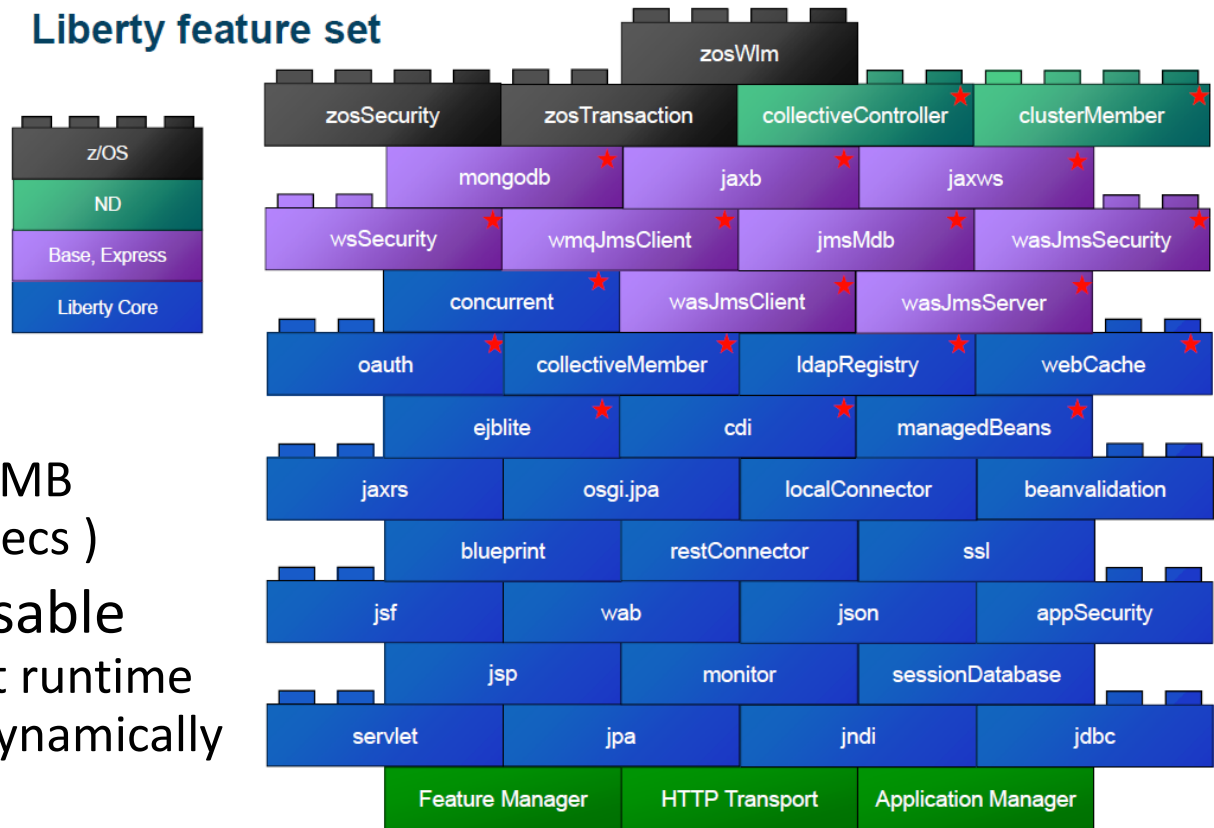
Rational COBOL Runtime V6.0.1 (EGL)

IBM Debug Tool V13.1

Runtime Virtualisation : KVM Support

WAS 8.5 – Liberty Profile Enhancements

Liberty feature set



WAS v8.5 Liberty Profile (V8.5.5★)

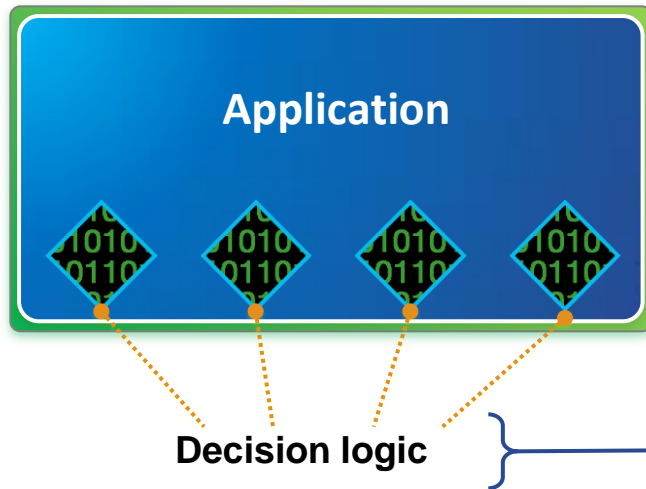
- Lightweight
 - Server install ~ 55 MB
 - Fast Startup (< 5 secs)
- Dynamic & Composable
 - Choose features at runtime
 - Change features dynamically

New : WebSphere Liberty Repository

- online repository that delivers Liberty platform extensions.
- continuous delivery model.

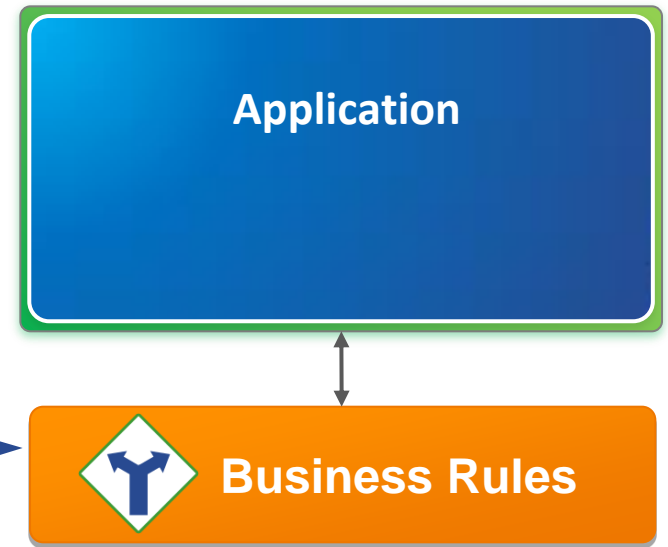
IBM Operational Decision Manager for z/OS V8.7

Without Decision Management



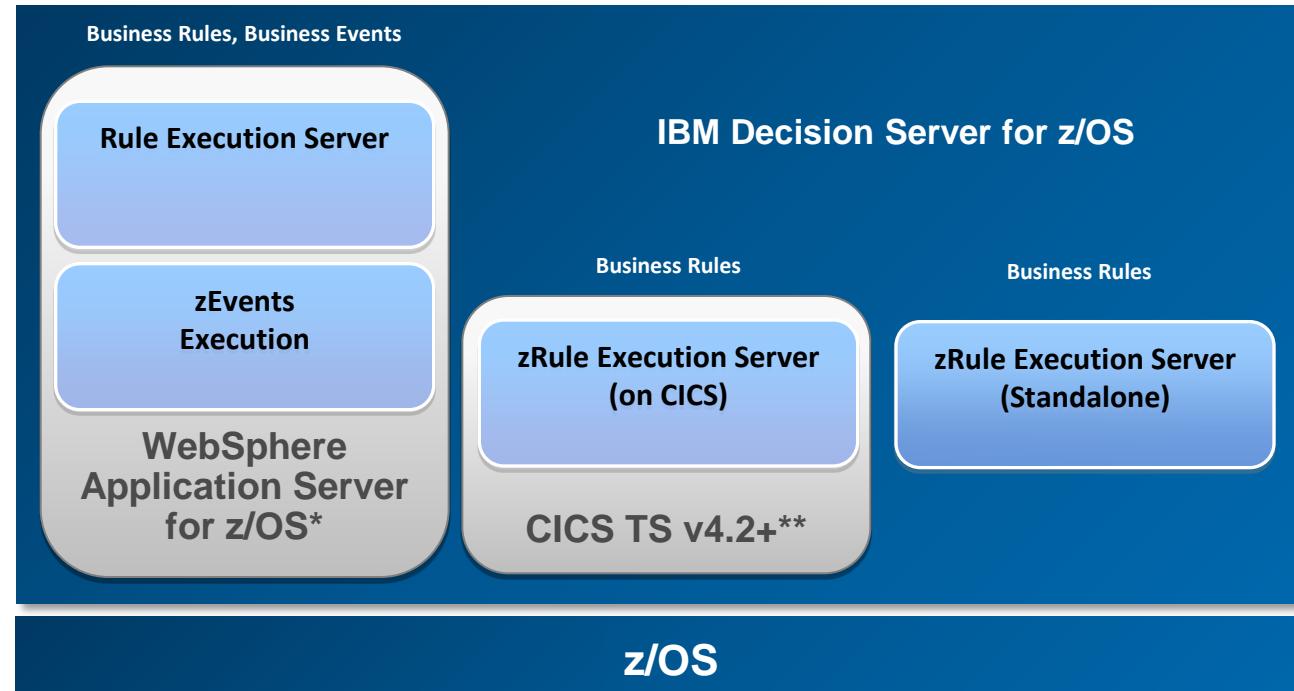
- Rules written in software code
- Hard coded rules are difficult to change
- Rules cannot be reused by other systems

With Decision Management



- Natural language rules can be easily read
- Externalized rules are easy to change
- Centralized rules enable reuse and consistency

New in ODM V8.7



- New simulation capabilities for the business user
- Expanded decision tracking information (SMF recording)
- Improved embedded batch zRES support (performance)
- Ability to utilize a WebSphere Application Server Liberty profile for Rule Execution Servers (RES) on z/OS

Questions?

