

What's New on System z Monitoring with OMEGAMON

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Cloud and Smarter Infrastructure
IBM

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14073

IBM System z Service Management development continues enhancing OMEGAMON portfolio



- **OMEGAMON XE V5** portfolio continues delivering significant new business value and support
 - OMEGAMON XE for z/OS V5.1.1
 - OMEGAMON XE for Mainframe Networks V5.1.1
 - OMEGAMON XE for Storage V5.2
 - OMEGAMON XE for z/VM and Linux V4.3
- IBM enhanced OMEGAMON portfolio focused on hardware and **Mobile, Big Data and Cloud** support
- OMEGAMON **Cross-Product** integration simplify operations ability to achieve optimal availability

Increased Business Agility with improved IT visibility now available with redesigned OMEGAMON family

Modernize and strengthen OMEGAMON product line with reduced resource usage and increased information available for higher quality service management

- Enhanced 3270 User Interface for SMEs
- Built-in Problem Solving Scenarios
- Faster Configuration/Maintenance
- Usage of zIIP specialty servers
- zEnterprise monitoring across zEC12/BC12 and zBX

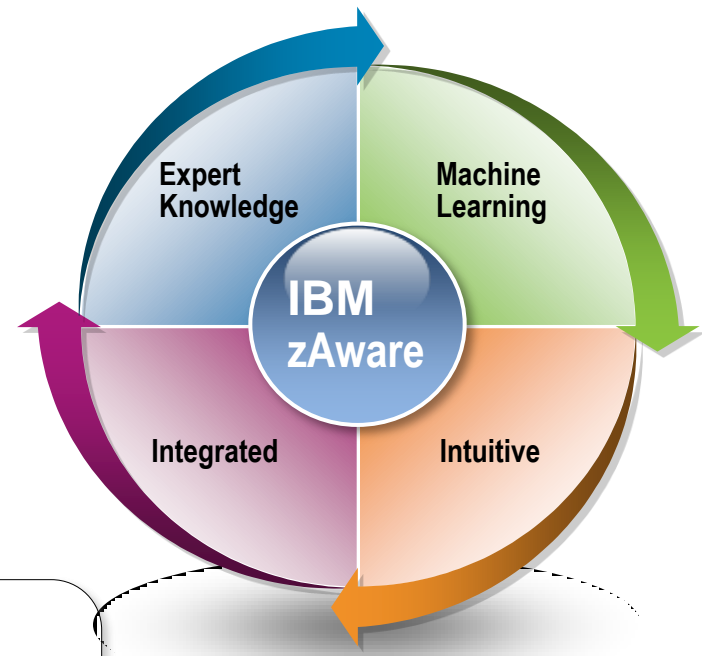




Increased analytics and mobile visibility and productivity

IBM OMEGAMON XE for z/OS V5.1.1

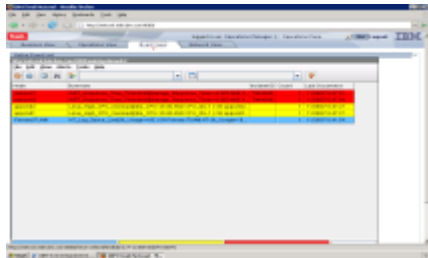
- **Enhanced zEnterprise analytics visibility** – Support zAware for monitoring and management
- **Increased Productivity** – Enhanced OMEGAMON family Install/Config PARMGEN capability .



- Benefits:**
- Save up to 75% of time needed to find problems
 - Up to 73% of CICS SLA processing off-loaded
 - Reduce fix times from 90 minutes to 2 minutes



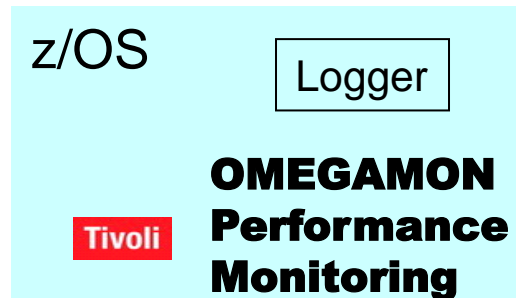
IBM zAware, Event Management and Traditional Performance Monitoring



View event in Active Event List
Generate trouble ticket

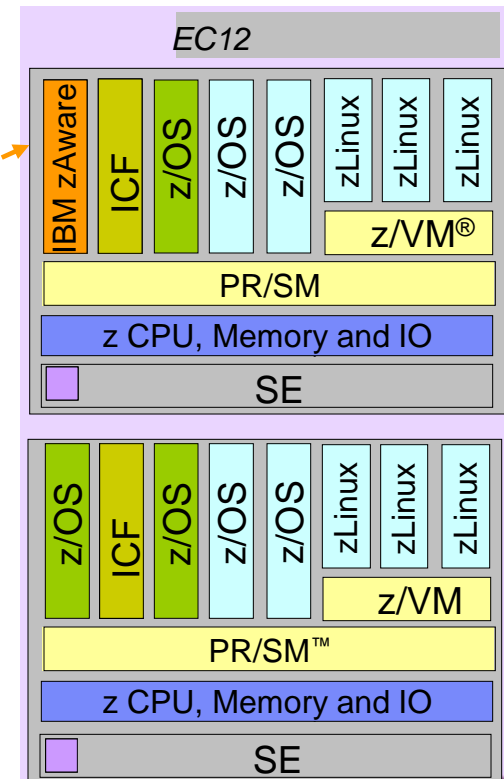


Perform PD for anomaly using association with traditional monitoring KPIs



Processing ...

- Query IBM zAware (10 minute interval)
- If anomaly detected
 - Trigger situation to Generate Event when anomaly is surfaced
- Include IBM zAware insights in performance monitoring views



IBM zAware, Event Management and Traditional Performance Monitoring



Situation Event Console

Total Events: 4 Item Filter: Enterprise

Severity	Status	Owner	Name	Display Item	Source	Impact	Global Timestamp	Age	Local Timestamp
Warning	Open		KM5_zAware_Analysis_Warn		LPAR400J:SYS:MVSSYS	Km5:KM5_ZAW1_1039	07/29/13 14:52:54	3 Minutes	07/29/13 14:52:54
Warning	Open		KM5_zAware_Client_Status		LPAR400J:SP12:MVSSYS	Km5:KM5_ZAW1_1039	07/29/13 11:02:02	3 Hours, 54 Minutes	07/29/13 11:02:02
Warning	Open		KM5_zAware_Server_Status		LPAR400J:SP12:MVSSYS	Km5:KM5_ZAW1_1039	07/29/13 11:02:02	3 Hours, 54 Minutes	07/29/13 11:02:02
Warning	Open		KM5_Ms_Sunday_DASD_Filter_Warn		LPAR400J:SP12:MVSSYS	Shared DASD Groups Data For Sunday	07/29/13 15:07:55	23 Hours, 39 Minutes	07/29/13 15:07:55

Interval View for System SYSG

The Messages table provides detailed analysis information for each message that occurred during the indicated time interval. To view message details for other intervals use the date and time interval selectors. Click the **Return to Analysis** to the Analysis view.

Date:

July 29, 2013

Analysis Source:

LPAR400J.SYSG

Time interval (UTC):

18:40 -- 18:50

Interval anomaly score:

100.0

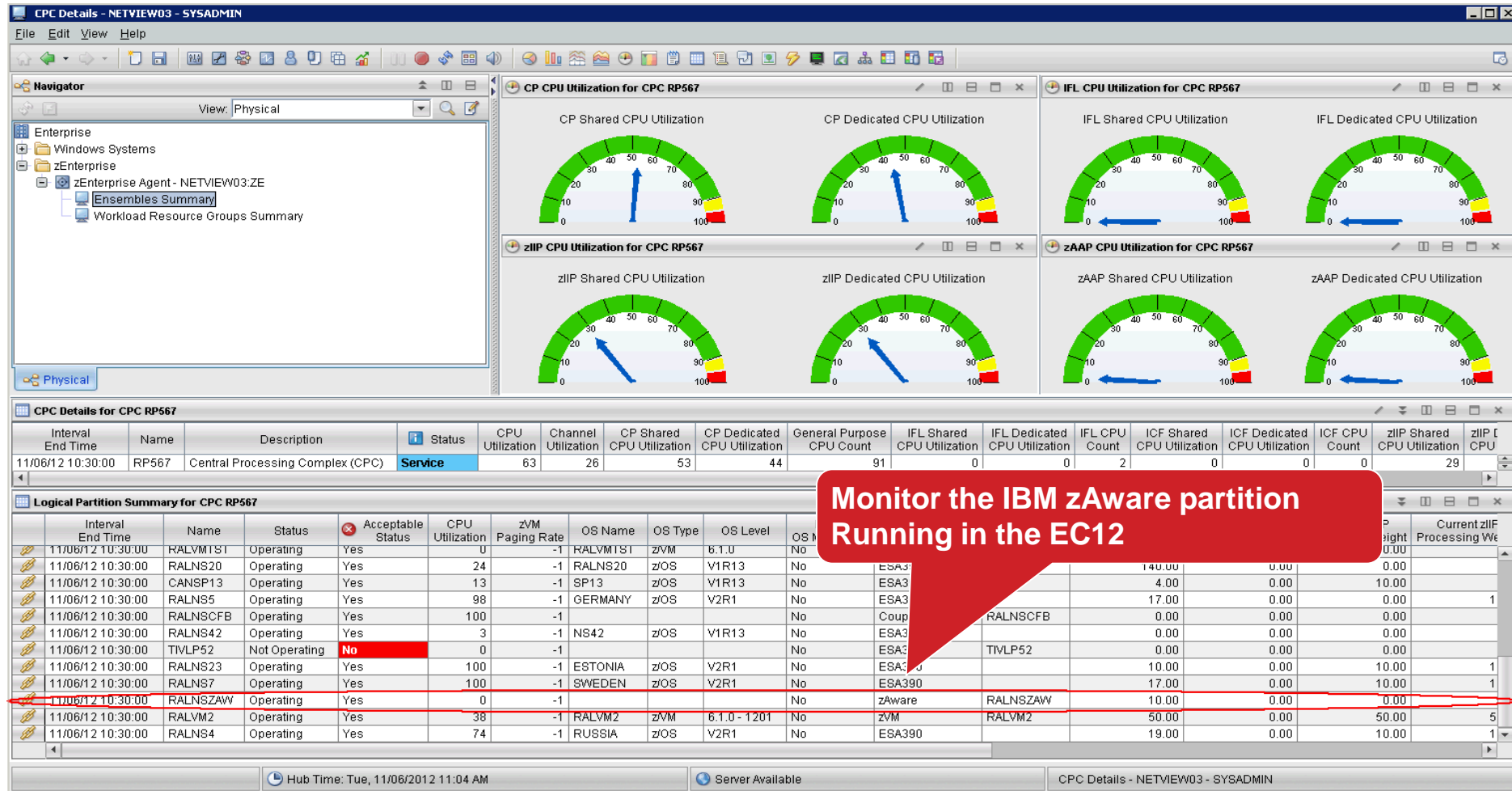
Messages

Anomaly Score	Interval Contribution Score	Message Context	Rules Status	Appearance Count	Time Line	Message ID	Message Example	Rarity Score	Component	Cluster ID
1	15.928	new	None	20		KLVVT251	SESSION SETUP ERROR: POOL(\$DEDICAT) APPLID(DBEMV25)	101	KLVVT	-1
1	7.089	new	None	2		DFS092I	IMS LOG TERMINATED IB1K	101	DFS	-1
1	7.089	new	None	2		DFS1958I	IMS CONNECTION TO APPC/MVS COMPLETE, LUNAME=USCACO01.IMSLUB1K	101	DFS	-1



Monitoring zAware Server with OMEGAMON

- The Tivoli zEnterprise Monitoring Agent already monitors logical partitions in CEC as shown in 'Logical Partitions Summary' table in zEnterprise Ensemble Summary workspace.



The screenshot displays the OMEGAMON interface for monitoring CPC RP567. It includes several gauge charts for CPU utilization (CP Shared, CP Dedicated, IFL Shared, IFL Dedicated, zIIP Shared, zIIP Dedicated, zAAP Shared, zAAP Dedicated) and a 'Logical Partition Summary for CPC RP567' table. A red callout box points to the 'zAware' partition in the table.

Interval End Time	Name	Description	Status	CPU Utilization	Channel Utilization	CP Shared CPU Utilization	CP Dedicated CPU Utilization	General Purpose CPU Count	IFL Shared CPU Utilization	IFL Dedicated CPU Utilization	IFL CPU Count	ICF Shared CPU Utilization	ICF Dedicated CPU Utilization	ICF CPU Count	zIIP Shared CPU Utilization	zIIP Dedicated CPU Utilization
11/06/12 10:30:00	RP567	Central Processing Complex (CPC)	Service	63	26	53	44	91	0	0	2	0	0	0	29	0

Interval End Time	Name	Status	Acceptable Status	CPU Utilization	ZVM Paging Rate	OS Name	OS Type	OS Level	OS B...	...	...	...	...	...	...	Current zIIP Processing Wt...
11/06/12 10:30:00	RALVMTS1	Operating	Yes	0	-1	RALVMTS1	zVM	6.1.0	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS20	Operating	Yes	24	-1	RALNS20	zOS	V1R13	No	...	...	...	...	...	...	...
11/06/12 10:30:00	CANSP13	Operating	Yes	13	-1	SP13	zOS	V1R13	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS5	Operating	Yes	98	-1	GERMANY	zOS	V2R1	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNSCFB	Operating	Yes	100	-1	...	zOS	V1R13	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS42	Operating	Yes	3	-1	NS42	zOS	V1R13	No	...	...	...	...	...	...	...
11/06/12 10:30:00	TIVLP52	Not Operating	No	0	-1	...	zOS	V1R13	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS23	Operating	Yes	100	-1	ESTONIA	zOS	V2R1	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS7	Operating	Yes	100	-1	SWEDEN	zOS	V2R1	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNSZAW	Operating	Yes	0	-1	...	zAware	RALNSZAW	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALVM2	Operating	Yes	38	-1	RALVM2	zVM	6.1.0 - 1201	No	...	...	...	...	...	...	...
11/06/12 10:30:00	RALNS4	Operating	Yes	74	-1	RUSSIA	zOS	V2R1	No	...	...	...	...	...	...	...

Monitor the IBM zAware partition Running in the EC12

Continuing to enhance PARMGEN to make installation and configuration easier



New Capability

Customer Value

Added two global parameters for quicker out-of-the box configuration.	First-time installers now have 490 fewer parameters to customize to get to proof-of-concept.
Automatically refresh PARMGEN profiles whenever configuration changes are made after initial RTE deploy.	75% reduction in steps for this refresh activity.
Automatically incorporate local variables (if defined) into the PARSE job.	50% reduction in the number of jobs needed to incorporate local overrides to system variables.
Provide a job to compare test and production libraries.	Enables quick visualize differences before moving test into production.
Enhance the System Variable report job to include user-defined variables and their current values.	Full range of variables PARMGEN supports and their current values (for debugging purposes).

Enterprise View - Sysplex, CICSplex and DB2plex



File Edit View Tools Options Help 06/30/2012 10:56:46
 Auto Update : Off
 Plex ID :
 Sys ID :
 Command ==> KOBSTART Enterprise Summary

All Active Sysplexes

Columns 2 to 6 of 9 Rows 1 to 1

ΔSysplex Name	ΔAverage CPU Percent	Highest LPAR Name	ΔHighest LPAR CPU%	ΔPercent L VMSU Capac
_ ESYSPLEX	14	ESYSMVS	26	26.5 N/A

z/OS-wide sysplex view

All Active CICSplexes

Columns 2 to 6 of 19 Rows 1 to 6

ΔCICSplex Name	ΔNumber of Regions	ΔTransaction Rate	ΔCPU Utilization	Any S Region	
— CICSACB9	1	0/m	0.0%	No	n/a
— CICSADX1	6	0/m	0.0%	No	n/a
— CICSPLX1	9	0/m	0.0%	No	n/a
— CICWKS38	1	0/m	0.0%	No	n/a
— OMEGPlex	8	6/m	0.0%	No	n/a

CICSplex details views

All Active DB2 Subsystems

Columns 3 to 7 of 29 Rows 1 to 7 of 7

ΔDB2 ID	ΔMVS System ID	Lock Conflict	Lock Escalation	Lock Escalation	Lock	+DDF
— DSNT	MVSE	0	0	0		
— DSNC	MVSE	0	0	0		
— DSNB	MVSE	0	165	0		
— DSNA	MVSE	0	0	0		
— DB1S	MVSE	0	50	0	0.21	
— DB1I	MVSE	0	0	0	0.00	
— DB1D	MVSE	0	0	0	0.00	

DB2plex details views



Increased analytics and mobile visibility and productivity

IBM OMEGAMON XE for Mainframe Networks V5.1.1

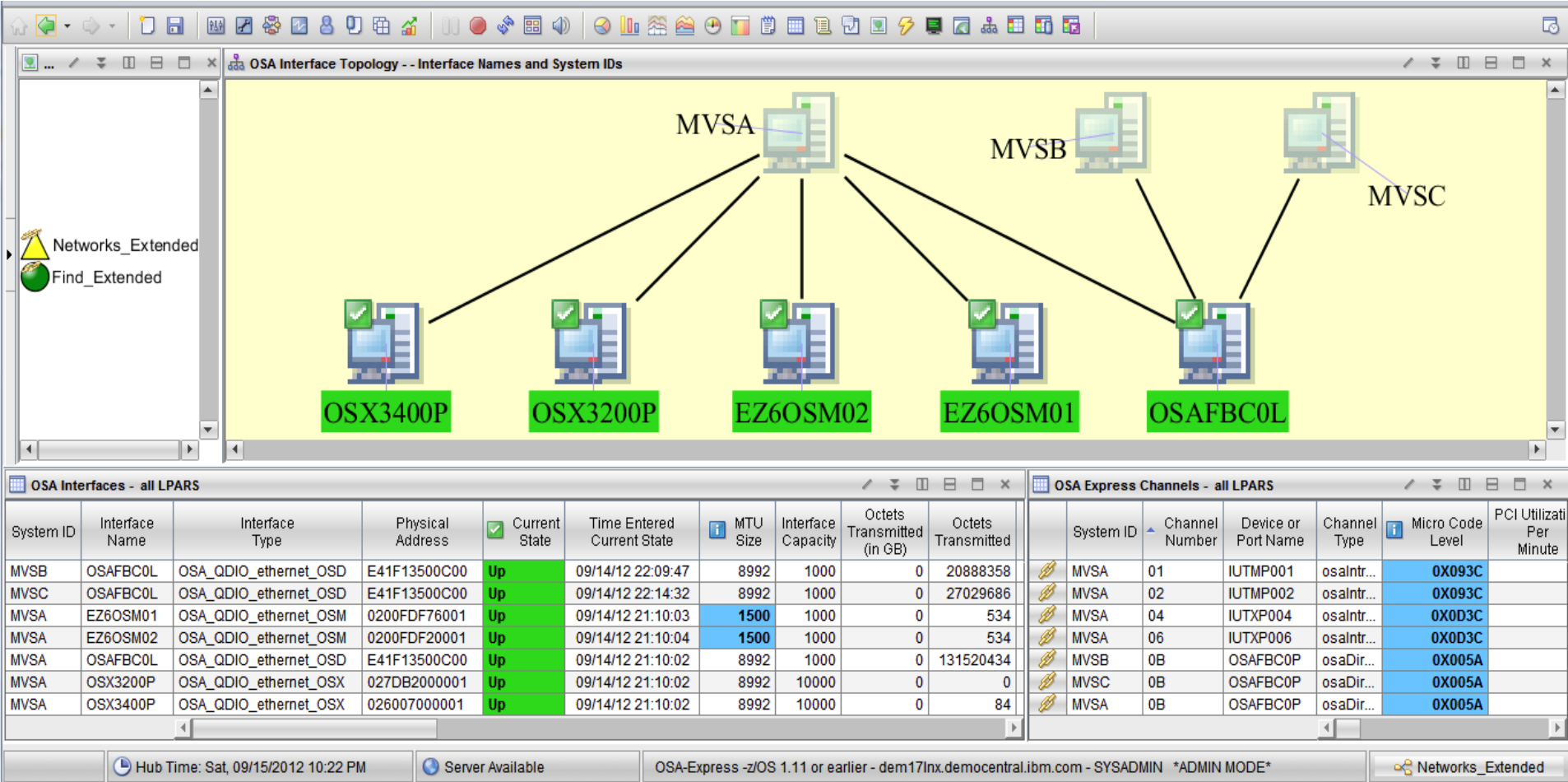
- **Increase Mobile Network availability** – Improved visibility into networks and enhanced problem determination and resolution
 - FTP and Hybrid Networks
- **Enterprise Wide Views** - Extended TEP capabilities to enable SMEs to improve MTTR (Mean Time To Repair) for network related problems



Continued Enhancement of OMEGAMON family to support Mobile, Cloud and Analytics



OMEGAMON XE for Mainframe Networks views across Enterprise



The screenshot displays the OMEGAMON XE interface for Mainframe Networks. The top window, titled "OSA Interface Topology -- Interface Names and System IDs", shows a network diagram with nodes MVSA, MVSB, and MVSC connected to OSX3400P, OSX3200P, EZ6OSM02, EZ6OSM01, and OSAFBC0L. Below the topology are two data tables: "OSA Interfaces - all LPARS" and "OSA Express Channels - all LPARS".

System ID	Interface Name	Interface Type	Physical Address	Current State	Time Entered Current State	MTU Size	Interface Capacity	Octets Transmitted (in GB)	Octets Received
MVSB	OSAFBC0L	OSA_QDIO_ethernet_OSD	E41F13500C00	Up	09/14/12 22:09:47	8992	1000	0	20888358
MVSC	OSAFBC0L	OSA_QDIO_ethernet_OSD	E41F13500C00	Up	09/14/12 22:14:32	8992	1000	0	27029686
MVSA	EZ6OSM01	OSA_QDIO_ethernet_OSM	0200FDF76001	Up	09/14/12 21:10:03	1500	1000	0	534
MVSA	EZ6OSM02	OSA_QDIO_ethernet_OSM	0200FDF20001	Up	09/14/12 21:10:04	1500	1000	0	534
MVSA	OSAFBC0L	OSA_QDIO_ethernet_OSD	E41F13500C00	Up	09/14/12 21:10:02	8992	1000	0	131520434
MVSA	OSX3200P	OSA_QDIO_ethernet_OSX	027DB2000001	Up	09/14/12 21:10:02	8992	10000	0	0
MVSA	OSX3400P	OSA_QDIO_ethernet_OSX	026007000001	Up	09/14/12 21:10:02	8992	10000	0	84

System ID	Channel Number	Device or Port Name	Channel Type	Micro Code Level	PCI Utilization Per Minute
MVSA	01	IUTMP001	osaIntr...	0X093C	
MVSA	02	IUTMP002	osaIntr...	0X093C	
MVSA	04	IUTXP004	osaIntr...	0X0D3C	
MVSA	06	IUTXP006	osaIntr...	0X0D3C	
MVSB	0B	OSAFBC0P	osaDir...	0X005A	
MVSC	0B	OSAFBC0P	osaDir...	0X005A	
MVSA	0B	OSAFBC0P	osaDir...	0X005A	

Hub Time: Sat, 09/15/2012 10:22 PM | Server Available | OSA-Express -z/OS 1.11 or earlier - dem17Inx.democentral.ibm.com - SYSADMIN *ADMIN MODE*

OMEGAMON XE for Mainframe Networks Key Indicators to monitor and manage

TCP/IP Connection
FTP long running jobs
 VTAM Buffer Pools

Backlog Connection Rejected
 Packet Retransmission Rate
 OSA Adapter Interfaces

Listners with active connections - All LPARS

System ID	Application Name	Local Port	Active Connections	Idle Time Since Last Accept	Connections in Backlog	Backlog Connections Rejected	Backlog Limit	Total Backlog Connections Rejected	Hex Connection Number	Local IP Address	Accepted Connections	Connection Rate	Act Conne High Wa
SYS	I5D0B8IP	1920	41	29.57	0	0	10	0	0X0000...	::	0	0	
SP22	N3D0AG22	1920	38	33.14	0	0	10	0	0X0000...	::	0	0	
SYS	I5D0IP00	1920	37	29.57	0	0	10	7	0X0016...	127.0.0.1	0	0	
SP22	VHBC5I@L	1920	35	33.14	0	0	10	0	0X0003...	127.0.0.1	0	0	
SP13	N3D0AG13	1920	23	57.35	0	0	10	0	0X0000...	::	0	0	
SP13	M530DSST	1920	19	57.35	0	0	10	12	0X000A...	127.0.0.1	0	0	
SYS	M5D0HAHB	11757	16	9.89	0	0	10	0	0X0000...	9.42.46.1...	0	0	
SYS	VHBGWG@L	10715	10	54.96	0	0	1	0	0X0027...	127.0.0.1	0	0	
SP22	L3ITDSW8	36230	9	33.16	0	0	10	0	0X000C...	0.0.0.0	0	0	
SP13	V9CTW@@L	33333	9	160.58	0	0	10	0	0X0000...	0.0.0.0	0	0	
SP22	TSS0DSH1	14731	8	29.65	0	0	10	0	0X0004...	9.42.46.22	0	0	
SP22	\$TN22	23	7	16.83	0	0	10	0	0X0000...	::	0	0	
SYS	N3D0DSMG	61757	7	31.36	0	0	10	0	0X0004...	0.0.0.0	0	0	
SYS	D91SDIST	5096	7	0.10	0	0	10	0	0X0000...	::	0	0	
SP22	VHBDSI@L	25104	7	134.63	0	0	10	0	0X0000...	9.42.46.22	0	0	
SYS	\$TNG	23	6	7.91	0	0	10	0	0X0000...	::	0	0	
SP22	BCD1DSST	21618	6	135.17	0	0	10	0	0X0000...	0.0.0.0	0	0	
SP22	BCD1DSST	2764	5	135.16	0	0	1	0	0X0000...	127.0.0.1	0	0	
SYS	S8HUBLL	3658	5	55.17	0	0	1	0	0X0031...	127.0.0.1	0	0	
SP22	M5GBHUB1	43082	5	160.83	5	0	5	12567	0X0000...	0.0.0.0	0	0	
SP22	\$22SDSST	1183	5	155.82	0	0	1	0	0X0000...	127.0.0.1	0	0	
SYS	I5D0B8IP	1920	5	106.45	0	0	10	0	0X0000...	0.0.0.0	0	0	



Enhanced System z Storage Management supporting quickly growing Big Data management requirements



IBM Tivoli:

- OMEGAMON XE for Storage on z/OS v5.2.0
- Adv Storage Management Suite for z/OS v1.2
- Advanced Allocation Management for z/OS v3.3
- Advanced Catalog Management for z/OS v2.5
- Advanced Audit for DFSMSHsm v2.5
- Output Manager for z/OS V3.1

- Reduced resource usage
- New storage hardware support
- Easier Installation and Configuration
- Enhanced support for catalog attributes
- improved recovery processing and reduced recovery time
- Predictive search improves responsiveness and accuracy

IBM Tivoli Storage management portfolio works together to provide simplified management



Enhanced visibility and management for z/VM and Linux applications and resources saving time and money

OMEGAMON for z/VM and Linux V4.3 and SmartCloud Monitoring

Cloud Monitoring



Increased Performance & Availability

- zVM Live Guest Relocation & Single System Image

Cloud Health Visibility and Optimization

- Performance and Availability metrics/analytics

Extensible Cloud Environment

- Business Expansion based on capacity planning
 - Grow without adding hardware

zEnterprise monitoring provides value in Enterprise Private Cloud implementations



OMEGAMON XE on z/VM and Linux provides improved performance for z/VM environment

- Performance monitoring for z/VM and Linux guests
- Linux agents gather detailed performance data from Linux guests
- z/VM agent gathers performance data from z/VM and Linux
 - Including z/VM view of guests
 - Uses IBM Performance Toolkit as its data source
- Executes automated actions in response to defined events or situations
- Part of the Tivoli Management Services infrastructure and OMEGAMON family of products.
 - Integrates performance management for entire enterprise
- Tivoli Data Warehouse (TDW) allows analysis trends and look at historical data



University of Florida (UF) keeps students on track with mobile applications built on zEnterprise



Client Challenges:

- Smartphone ownership at UF jumped from 27% (2009) to 69% (2012) and growing. The message is clear. Want to reach university students - do it with a smartphone
- Enable 50,000 students and 5,400 faculty members to access a rich selection of online features anytime and anywhere with mobile device

Solution:

- Created UF Mobile web with access to Integrated Student Information System for tracking all class related information
- CICS Transaction Server running on upgraded zEnterprise® 114 with OMEGAMON XE for CICS monitoring and management

Benefits:

- Non-disruptive expansion of current applications to support Mobile
- Handling over one million Transactions per day at peak registration times
- “The UF Mobile Web helps students navigate through this information overload and meet their responsibilities.” Steve Ware, systems administrator/programmer, UF

Enhanced Configuration and Maintenance capability with Self-Describing Agents

Faster, easier, less error-prone for improved reliability and productivity

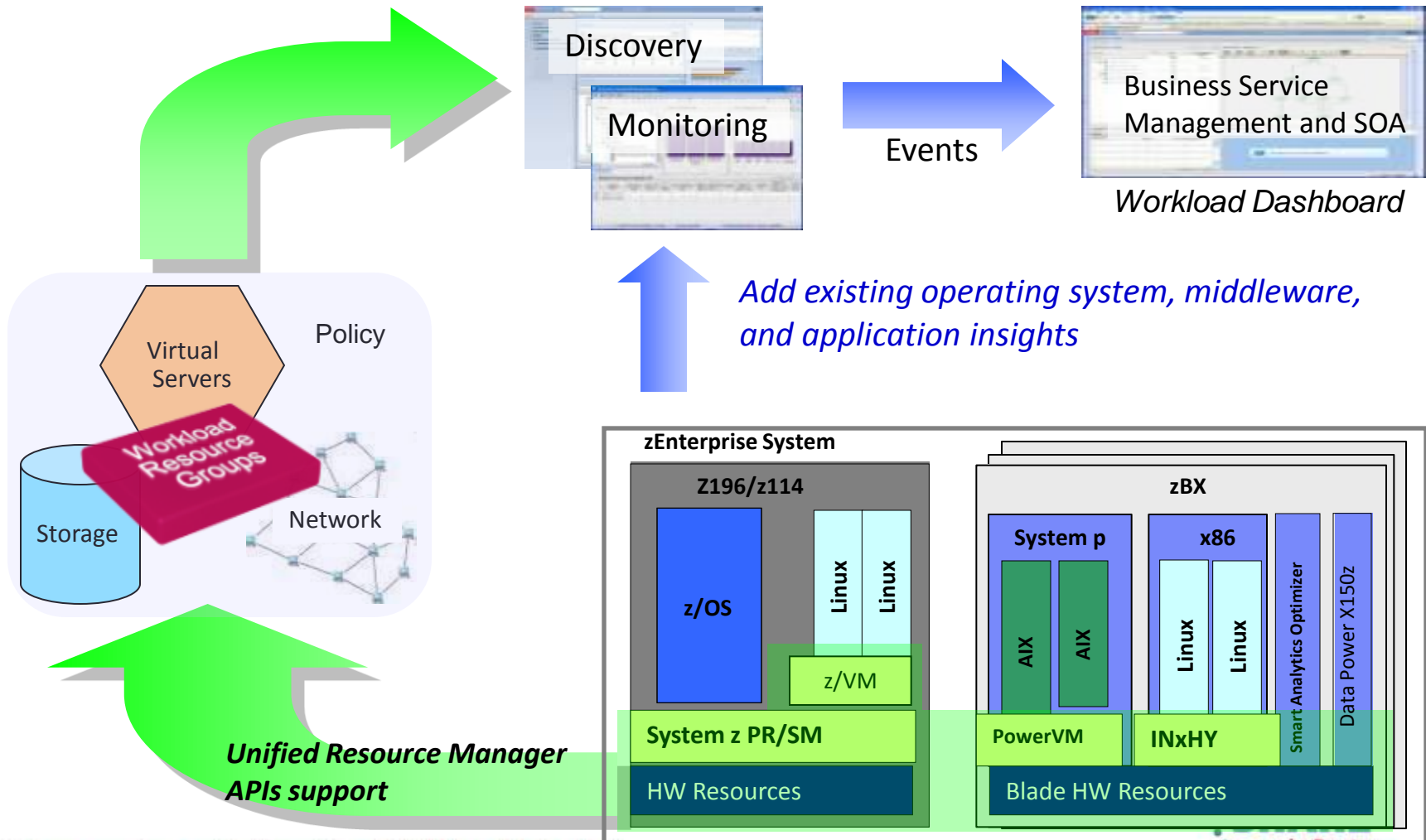
- Eliminate monitoring outages caused by ITM Server recycles
 - Product upgrades/maintenance requires agent or RTEMS recycles only
- Eliminate maintenance upgrade errors:
 - Applies to new installs, staged upgrades, and maintenance
 - Crosschecks and validates version with installed data and framework
 - Avoids inconsistent application data in ITM framework layers
- Self-describing framework extensible to new capabilities
- Eliminates application data DVDs and CDs:
 - No extra distributed installs or upgrades for mainframe-centric customers



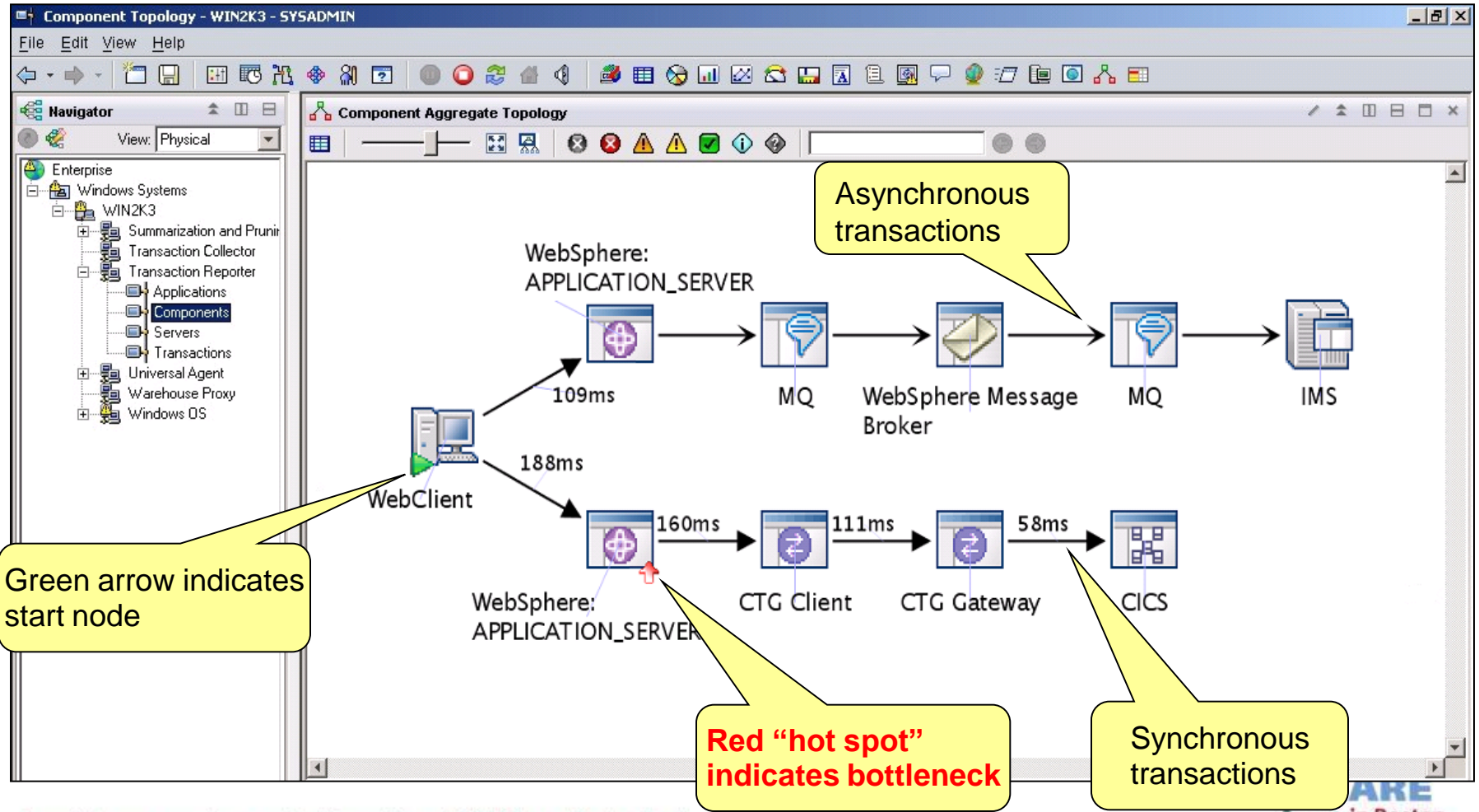
- Moving from 40 hours a week to 4 hours a week maintenance
- 80% improvement in time for installation and maintenance
- 30% improvement in time to configure post installation

zEnterprise visibility support to allow for discovery and monitoring across all components

Workload Resource Groups can include information across z196/z114 and zBX

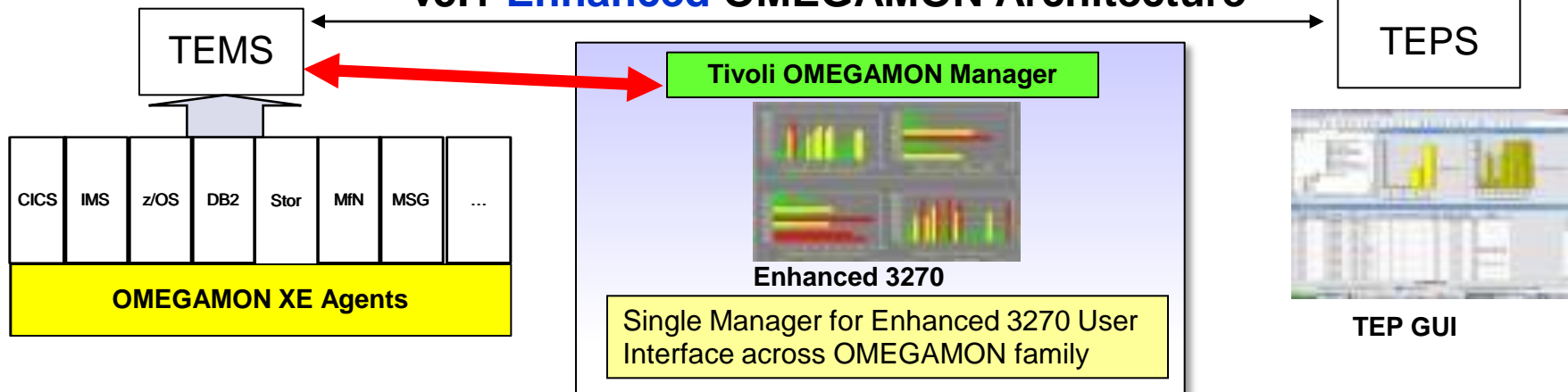


Transaction Tracking designed to increase operations productivity and improve application availability

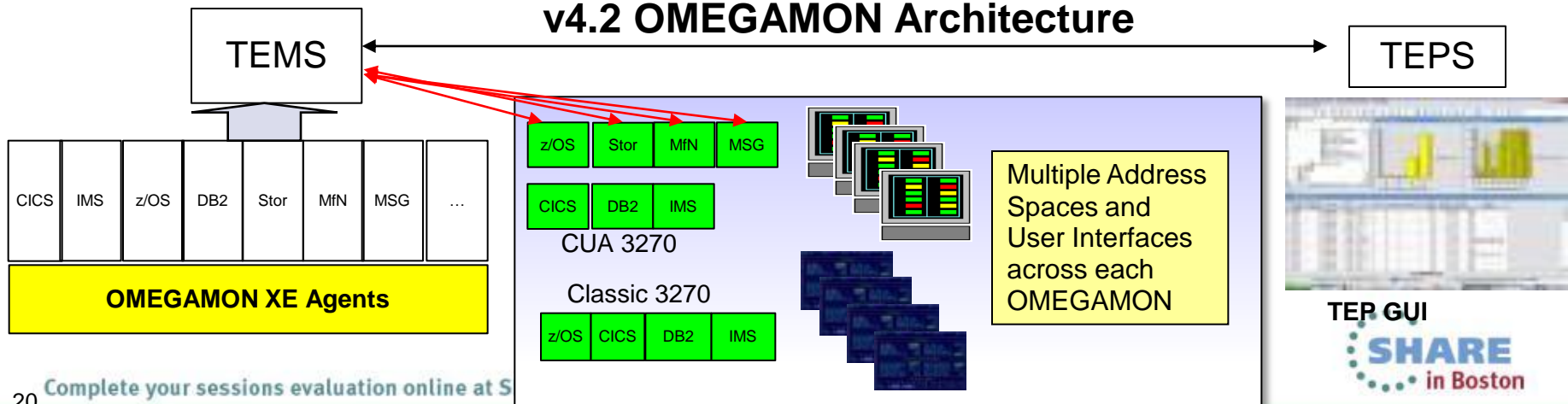


Moving to simplified architecture driving decreased resource utilization with increased capability

v5.1 Enhanced OMEGAMON Architecture



v4.2 OMEGAMON Architecture



OMEGAMON integrates within total Enterprise-wide Application Performance Management capability

Performance and availability visibility for System z events and data

Business Assessment



OMEGAMON V5.1



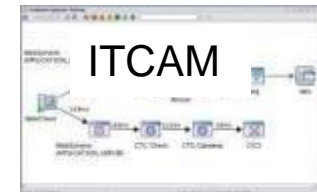
Tivoli OMEGAMON Manager (TOM)

IBM Tivoli Monitoring (ITM)

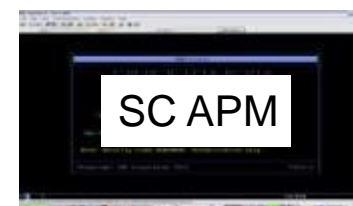
Discovery



Transaction Tracking




Cloud



TADDM – Tivoli Application Dependency Discovery Manager
 ITCAM – IBM Tivoli Composite Application Manager
 TBSM – Tivoli Business Service Manager

OMEGAMON and System Automation work together to improve availability and simplify operations

SA for z/OS
System Automation
NetView



OMEGAMON
Monitoring



z/OS	IMS	DB2	z/VM
Linux	CICS	WebSphere	

- Active or passive performance monitoring
 - Managed by automation
 - Integrated with monitor products
- Determine health state or exceeded thresholds
- Send a notification to event receiver or owner
- Start/stop/move resources (work around)
- Expert level: Cure performance problem
 - Using performance monitor, system or affected subsystem

IBM Enhanced 3270UI improvements



Super Charge your Tivoli OMEGAMON Manager NOW !

Includes:

- Hub Connectivity Administration
- Help build your own workspaces
- Browse your RTE datasets
- Tabbing in Enhanced 3270UI

UA69205 is the OB700 IF1 PTF. It can be downloaded now from the support site.

Apar link: <http://www-01.ibm.com/support/docview.wss?crawler=1&uid=swg1OA42127>

PTF link: <https://www14.software.ibm.com/webapp/set2/ordermedia/shopCart?ptfs=UA69205>



Learn more and join conversation on monitoring requirements going forward

Find documentation and latest advise on OMEGAMON V5.1

Google: OMEGAMON Common Information

Join the Conversation:

- System z Service Management

Google: Developerworks System z Management

Includes:

- e3270ui workspace navigation (cheat sheets)
- Parmgen upgrade guidance reference material



Learn about all recent Tivoli announcement and how to exploit them in sessions this week.

Monday

- 14073 – What's New in OMEGAMON (11:00)
- 14121 – OMEGAMON for Storage (4:30)

Tuesday

- 13903 – OMEGAMON Lab (9:30)
- 14074 – Automation Control (11:00)
- 14163 – OMEGAMON for Storage (4:30)

Wednesday

- 13295 – OMEGAMON for MfN (8:00)
- 13771 – Advanced Catalog Mgmt (9:30)
- 14076 – System Automation (11:00)
- 14089 – Storage Management (11:00)
- 14080 – Workload Automation (3:00)

System z Facebook page:

<https://www.facebook.com/IBMsystemz>

Twitter hashtag: #systemzsw



Thursday

- 13546 – NetView Canslog (12:15)
- 14345 – Lunch and Learn – Mike Baskey
- 14077 – OMEGAMON zAware support (1:30)
- 13545 – NetView Management (3:00)

Friday

- 14056 - OMEGAMON power user (8:00)
- 13824 - OMEGAMON for DB2 (9:30)
- 14082 – Capacity Management with TDSz

IBM System z Service Management critical for moving to Mobile, Big Data and Cloud

IBM continues to improve z/OS environment to support new technologies

- OMEGAMON family enhancements
 - OMEGAMON XE for z/OS V5.1.1
 - OMEGAMON XE for Mainframe Networks V5.1.1
 - OMEGAMON XE for Storage V5.2
 - OMEGAMON for z/VM and Linux V4.3
- IBM Automation Control for z/OS
- Workload Scheduler for z/OS v9.1
- Storage Management for z/OS portfolio enhancements



Learn More: <http://www-01.ibm.com/software/os/systemz/itsm/>

Follow us on Service Management Connect:

<http://www.ibm.com/developerworks/servicemanagement/z/index.html>

And, Mainframe Insights:

https://www-304.ibm.com/connections/blogs/systemz/?lang=en_us

IBM continues to enhance Mainframe monitoring to address new technology, like Mobile, Big Data and Cloud



- **OMEGAMON XE V5** delivers significant new customer value based on high priority customer requirements
- Extended performance tuning methodology to **end-to-end Application Performance Management**
- Enhanced **Cross-Product** capabilities to simplify operations ability to achieve optimal services

Learn more about the IBM's Mainframe support for Visibility, Control and Automation

Mainframe Service Management	http://www-01.ibm.com/software/os/systemz/itsm/
Workload and System Automation	http://www-01.ibm.com/software/tivoli/solutions/system-workload-automation/
Tivoli Workload Scheduler	http://www-01.ibm.com/software/tivoli/products/scheduler/
IBM Tivoli Monitoring	http://www-01.ibm.com/software/tivoli/products/monitor/
OMEGAMON XE Family	http://www-01.ibm.com/software/tivoli/products/omegamonxeproductline/
Tivoli System Automation for z/OS	http://www-01.ibm.com/software/tivoli/products/system-automation-zos/
IBM Tivoli NetView for z/OS	http://www-01.ibm.com/software/tivoli/products/netview-zos/
IBM Geographically Dispersed Parallel Sysplex	http://www-03.ibm.com/systems/z/advantages/gdps/index.html

Thank
You