

IBM System z Technology Summit



Increasing availability and productivity
with redesigned OMEGAMON®
monitoring and analytics

Presenter Name

Title



IBM System z Service Management continues providing customers improved business flexibility

Key Takeaways

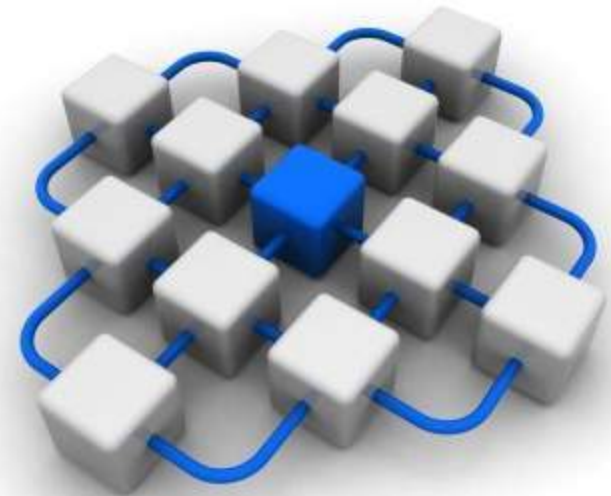
1. IBM recognized leader in **Application Performance Management** for monitoring, managing and optimizing IT infrastructure - *Gartner 2011 MQ*
2. IBM continues to provide new Service Management **visibility, control and automation** capability based on high priority customer requirements - *agile transparent development*
3. Redesigned **OMEGAMON** provides significant customer value to reduce costs and decrease risks - *R&D investment and strategy*



Application Performance Management a key component of Mainframe Service Management

Application performance management (APM) refers to discipline within service management focused on monitoring and managing of performance and service availability .

- End-user experience **monitoring**
- Application and Services **sub-system monitoring**
- Application runtime architecture **discovery, modeling and display**
- User-defined transaction **profiling**
- Application performance **analytics**



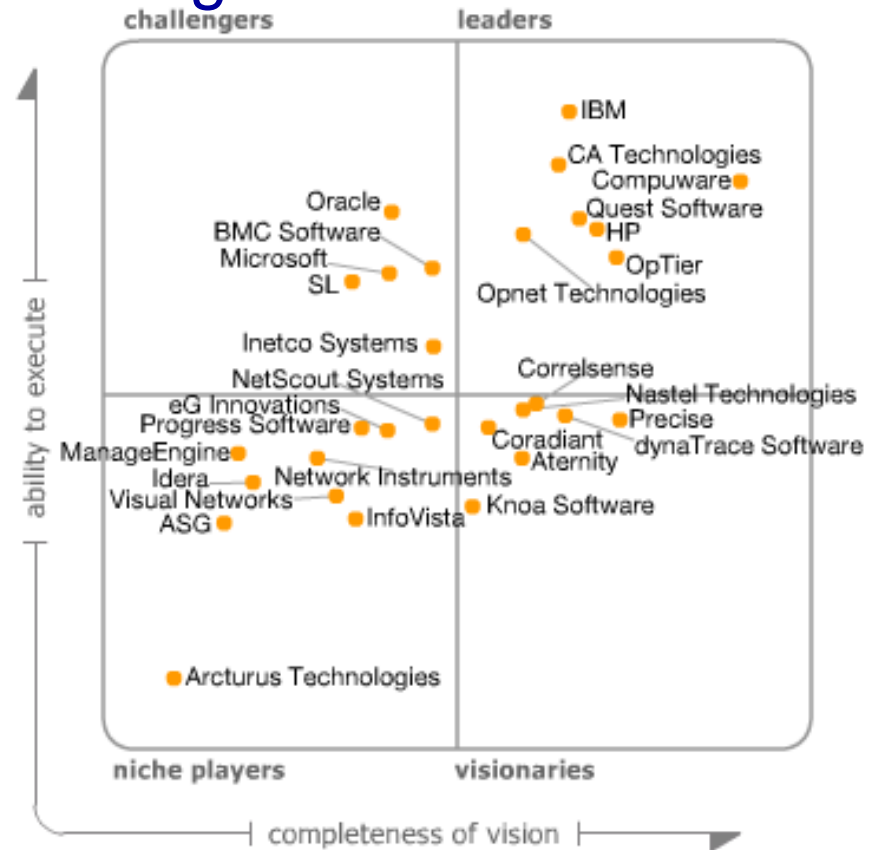
Much more than just basic z monitoring!

Gartner has recognized IBM as a leader in Application Performance Monitoring

Magic Quadrant for Application Performance Monitoring

Will Cappelli, Jonah Kowall

September 19, 2011



As of September 2011

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Business Leaders are looking at IT to drive business agility and flexibility across their Enterprise



VISIBILITY



CONTROL



AUTOMATION

**React with
agility to
diverse IT
landscape**

**Execute with
reduced
risk & cost**

**Achieve
desired
business
outcomes**

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

Modernized and strengthened OMEGAMON product line for reduced resource usage and faster problem resolution

Increased Availability

- Enhanced 3270 User Interface for SMEs
- Built-in Problem Solving Scenarios

Improved Productivity

- Faster Configuration/Maintenance
- zEnterprise monitoring across z196/114 and zBX

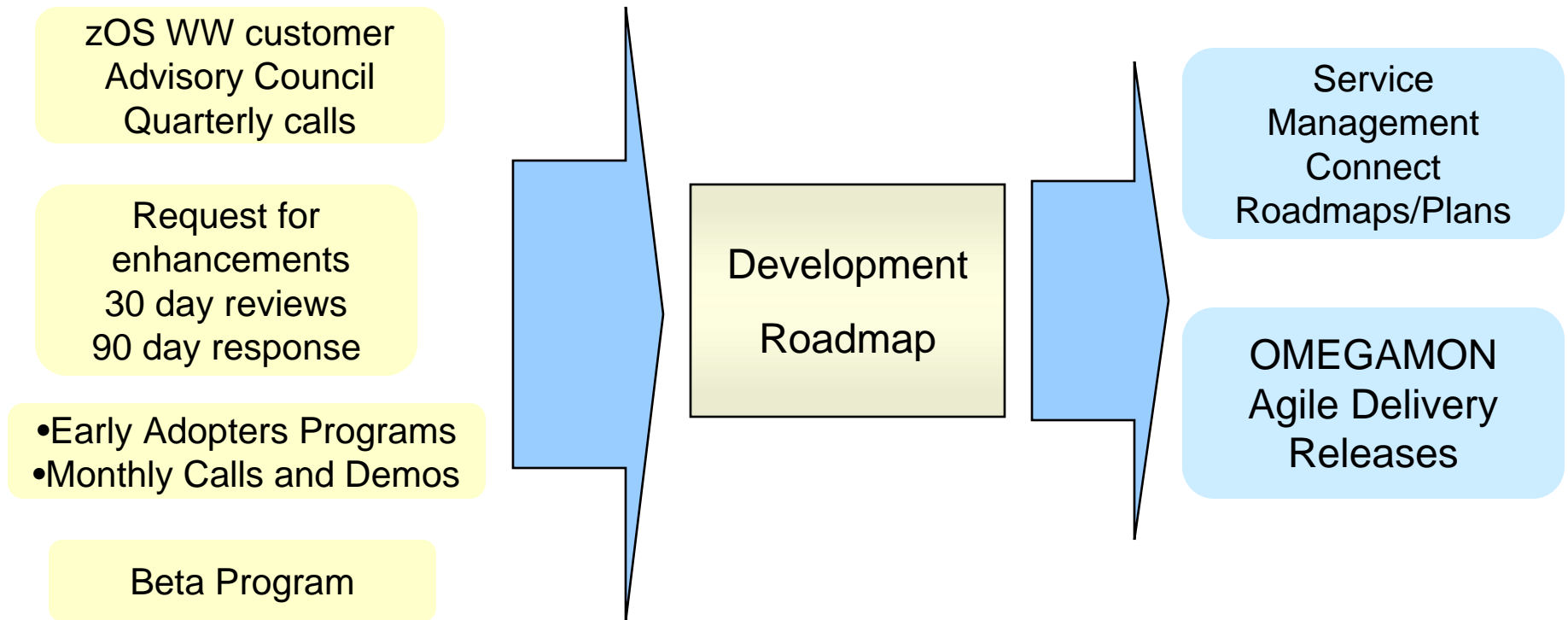
Reduced Resources and Costs

- Usage of zIIP specialty servers
- Simplified OMEGAMON architecture



Redesigned OMEGAMON capability driven by high priority customer requirements

Customer driven capability with new transparent development methodology driven by Agile processes



High Priority OMEGAMON customer capabilities focused on helping decrease costs and reduce risks

Redesigned OMEGAMON Enhanced 3270 User Interface addresses customer requirement to make mainframes more efficient and effective

Customer-Driven Focus Areas for Improvement

- **Simplify** Eliminate complexity and frustration
- **Standardize** Align with existing IBM 3270 Applications
- **Integrate** Move from silo monitoring towards composite views
- **Minimize** Reduce footprint, install, configuration, and CPU
- **Modernize** Make the 3270 Interface 'Best of breed' – SME focused Problem Solving Scenarios
- **Customize** Personalize User Interface
- **Support** Reduce customer calls/PMRs through simplification



OMEGAMON for z/OS provides SMEs with faster problem determination and availability management

First two products being released are OMEGAMON for z/OS and CICS

- Ability to view Enterprise Summary of multiple sysplexes
- Navigate directly to other OMEGAMON v5.1 monitors
- New CEC and CPU top consumers views
- Incorporated Health Checks from Tivoli z Management Console.
- Easy navigation from sysplex to lpar to address space



Command and Control from Enhanced 3270 User Interface

Enhanced 3270 User Interface creates Enterprise wide view of information across multiple sysplex's

- Understand transactions across entire Enterprise
- Color coding to provide ability to find and resolve problems quickly

Command ==> KOBSTART Enterprise Summary

z/OS-wide sysplex view

All Active Sysplexes

Columns 2 to 6 of 9 Rows 1 to 1 of 1

◇Sysplex Name	ΔAverage ∇CPU Percent	Highest LPAR Name	ΔHighest ∇LPAR CPU%	ΔPercent LPAR ∇MSU Capacity	+LPAR Group Name
<u>_</u> ZPETPLX2	3	Z2	3	3.4	N/A

All Active CICSplexes

CICSplex details views

Columns 2 to 6 of 19 Rows 3 of 3

ΔCICSplex ∇Name	ΔNumber of ∇Regions	ΔTransaction ∇Rate	ΔCPU ∇Utilization	∇SOS Regions	SOS Region
<u>_</u> OMEGPLEX	1	0/m	0.3%	No	n/a
<u>_</u> TESTPLEX	8	10985/m	18.4%	No	n/a
<u>_</u> WUIPLEX	1	0/m	0.0%	No	n/a

Customer prioritized Problem Solving scenarios built into Enhanced 3270 User Interface

- Easy to see and find critical system and sub-system information
- Single screen focused on customer defined problems
- Screen content based on high priority problems

Top consumers view of details

Gain graphical view of data

File Edit View Tools Options Help 11/08/2011 10:41:45
 Auto Update : 050
 Plex ID :
 SMF ID :

Top Consumers for Sysplex ZPETPLX2

Highest Consuming Address Spaces of CPU

ΔAddress Space ▽Name	ASID	ΔCPU ▽Percent	Δ0..20..40..60..80..100 ▽	▽Name
CICS3A1A	0174	113.9		Z1
MQQ2S12S	017F	55.7		Z2
MQQ2S23S	015C	41.7		Z3

Highest Consuming Address Spaces of Real Storage

ΔAddress Space ▽Name	ASID	ΔCentral Frame ▽Count	Working Set Size	ΔLPAR ▽Name
IXGLOGR	0019	565304	2208M	Z4
SMSVSAM	000A	428139	1672M	Z4
SMSVSAM	000A	422583	1650M	Z3

Example of quickly finding and fixing z/OS Problem

Screen 1 Exceptions

Columns 3 to 5 of 6 Rows 1 to 8 of 8

◊Sysplex Name	◊LPAR Name	ΔException	Value	Waiting Tasks
- LPAR400J	CANSYSG	Performance_Index	7.50	-
- LPAR400J	CANSYSG	Enqueue	SYSDSN	1
- LPAR400J	CANSYSG	GTF_Active	TRUE	-
- LPAR400J	CANSYSG	CPU_Loop_Index	100.0	-
- LPAR400J	CANSP22	Performance_Index	1.76	-
- LPAR400J	CANSYSL	Performance_Index	4.28	-
- LPAR400J	CANSP12	Performance_Index	1.42	-
- LPAR400J				

Possible Looping Job

Screen 2 Exceptions

Columns 3 to 5 of 6 Rows 1 to 7 of 7

◊Sysplex Name	◊LPAR Name	ΔException	Value	Waiting Tasks
- LPAR400J	CANSYSG	Performance_Index	6.66	-
- LPAR400J	CANSYSG	Active_Storage_Alert	WARNING	-
- LPAR400J	CANSYSL	Performance_Index	2.50	-
- LPAR400J	CANSP11	Performance_Index	1.42	-
- LPAR400J	CANSP22	Performance_Index	1.30	-
- LPAR400J	CANSP22	CPU_Loop_Index	99.6	-
- LPAR400J	CANSYSG	Performance_Index	4.28	-

Enter 'c' to cancel job

Screen 3 Cancel Address Space

Command ==> KMSPLX0

Address Space Name : MGRABZ
ASID : 0044
Address Space Type : BATCH
SMF ID : SP22

Press ENTER to continue

Job Cancelled

Screen 4 Exceptions

Columns 3 to 5 of 6 Rows 1 to 4 of 4

◊Sysplex Name	◊LPAR Name	ΔException	Value	Waiting Tasks
- LPAR400J	CANSP13	Performance_Index	2.85	-
- LPAR400J	CANSP13	Active_Storage_Alert	WARNING	-
- LPAR400J	CANSP22	CPU_Loop_Index	99.6	-
- LPAR400J	CANSYSG	Performance_Index	4.10	-

New E3270UI highlights problems and simplifies resolving them quickly

OMEGAMON for CICS provides improved visibility and opportunity to reduce resource usage

- Manage by using service level analysis of transactions based on response times – new to e3270ui
- Take advantage of using a zIIP specialty processor to decrease resource usage
- Leverage CPSM (Computerized Portfolio Management Services) data for configuration and control
- New 'Find' command to easily locate hung users and programs connections over entire cicsplex.
- Easy navigation from cicsplex to region to resource



Visibility across entire CICS environment with new OMEGAMON for CICS Enhanced 3270 User I/F

Ability to monitor and understand current activity based on SLAs and KPIs

File Edit View Tools Options Help

Command ==> KCPPSLA CICSplex Service Level Summary

CICSplex Service Level Analysis for TESTPLEX

Columns 2 to 6 of 43 Rows 1 to 11 of 11

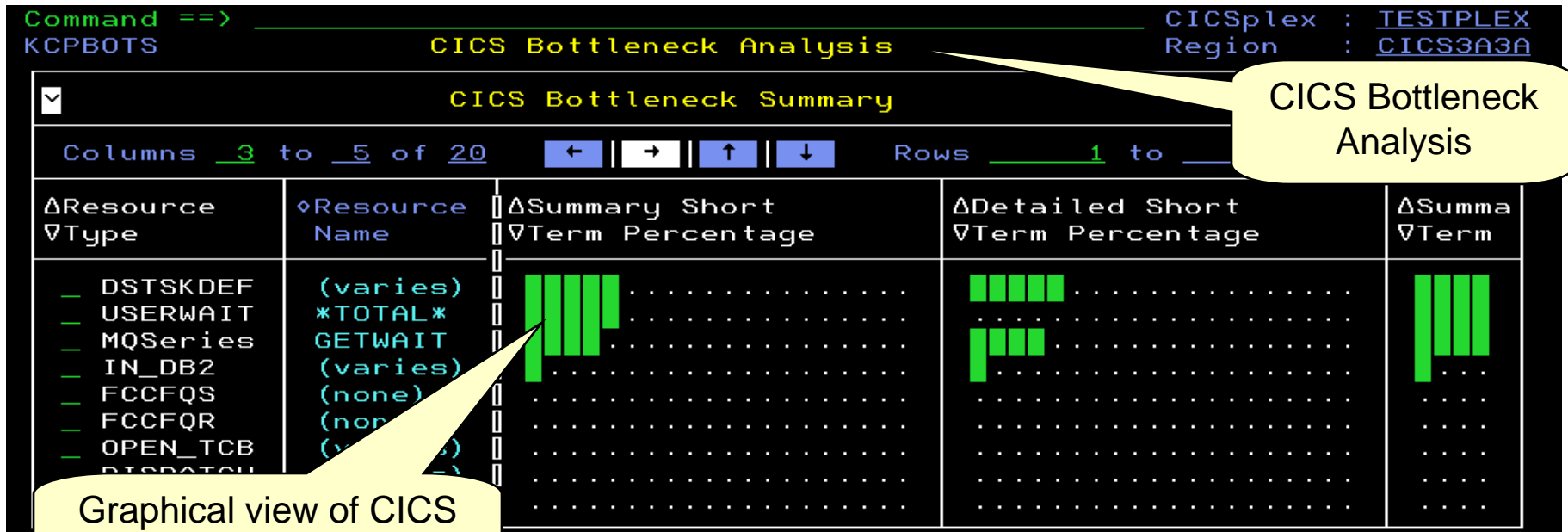
Service Class Name	Workload Name	ΔAverage Response Time	Transactions Total	ΔPerformance Index	+Tra Rat
STRANS	DFLTWORK	0.52900s	47016	0.52%	
TTRANS	DFLTWORK	0.13900s	16351	0.13%	
YTRANS	DFLTWORK	0.04300s	10100	0.04%	
JTRANS	DFLTWORK	0.03300s		0.03%	
UTRANS	DFLTWORK	0.02600s		0.02%	
MTRANS	DFLTWORK	0.01600s		0.01%	
WTRANS	DFLTWORK	0.01100s		0.01%	
GTRANS	DFLTWORK	0.01300s		0.01%	
ITRANS	DFLTWORK	0.00700s		0.00%	
CTRANS	DFLTWORK	0.00500s		0.00%	
RTRANS	DFLTWORK	0.00200s	3128	0.00%	

CICSplex service level analysis

Prioritized by Response time to find potential problems quickly

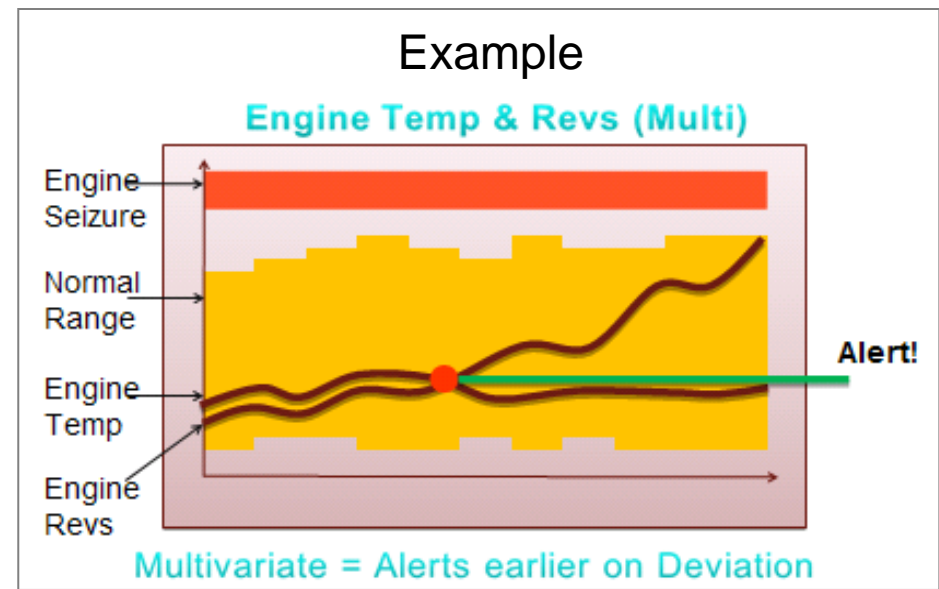
New OMEGAMON for CICS Bottleneck Analysis can improve overall system performance and availability

- *Assess Resource Usage by resource types*
- *Find, analysis and fix problems quickly*



OMEGAMON Problem Solving Scenarios designed to help SMEs avoid service outages and track KPIs

- Identify anomalous KPI behaviour independent of thresholds.
 - Exploit multi-domain analysis to identify complex interactions and enable composite KPIs
 - View near real time streaming analytics to identify complex interactions and subtle emerging problems across domains
-
- Warn users in advance of service impact, deterioration or outage.
 - Focus on usefulness of results, not on individual algorithms.



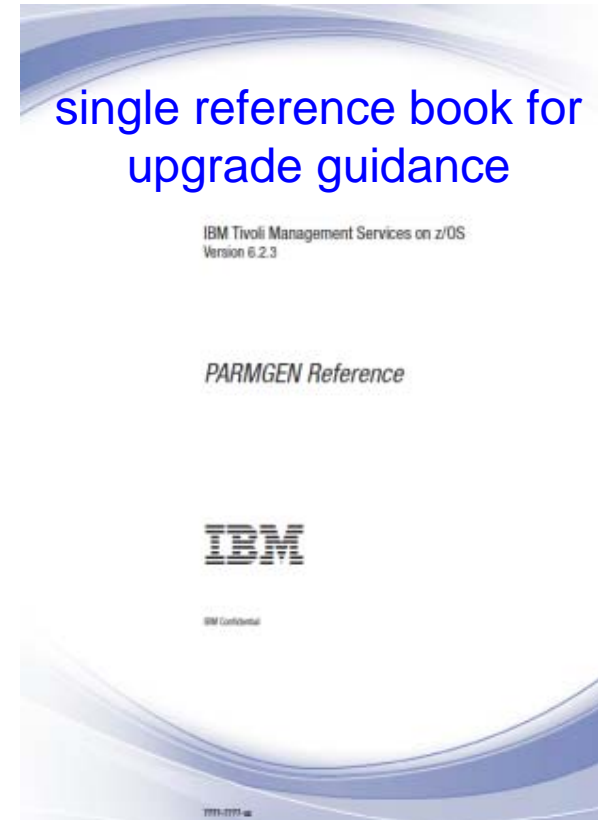
Enhanced Configuration and Maintenance capability with Self-Describing Agents

- **Eliminate monitoring outages caused by ITM Server recycles**
 - Product upgrades/maintenance requires agent or RTEMS recycles only (No HTEMS or TEPS recycles)
- **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
 - Pushes application data from the agent to upper layers at agent startup
- **Self-describing framework extensible to new layers (ex: TIP, E3270)**
- **Eliminates application data DVDs and CDs:**
 - No extra distributed installs or upgrades for mainframe-centric customers



Customer Driven improvements with Installation and Configuration enhancements for Parmgen

- Removal of ICAT as the primary way to Install and Configure
- Install without need of a distributed server
- Walks you through steps to complete configuration and customize a profile
- Automatically updates hundreds of configuration artifacts according to profile, including Auto-discovery of system values



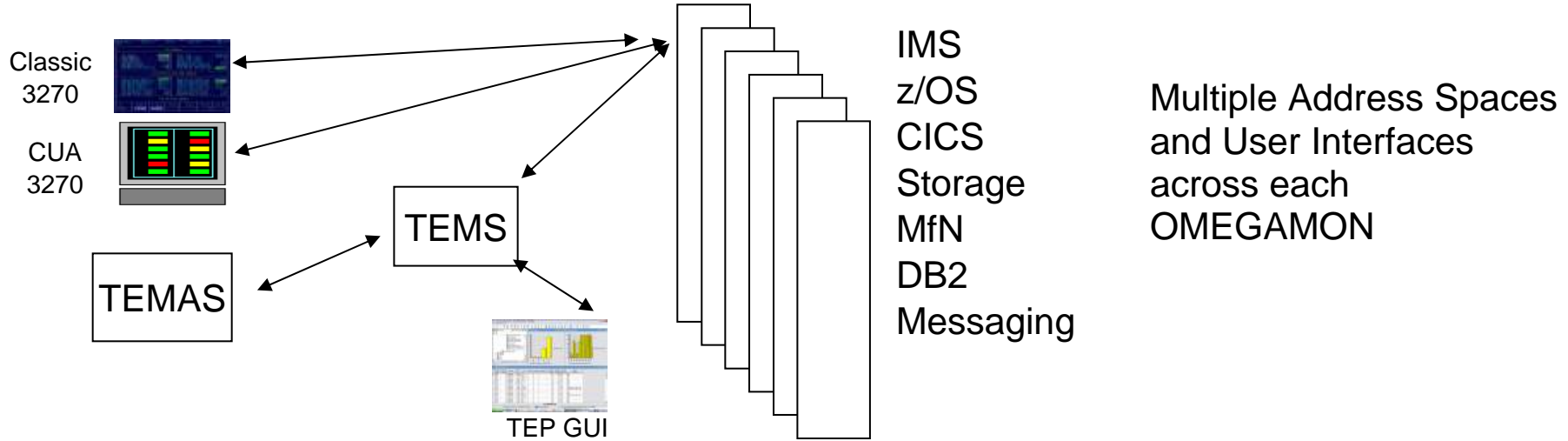
“I like using the Parmgen approach better than CICAT/ICAT. I find it much easier to make things repeatable...”

“I like the fact that Parmgen does not overwrite my running members”

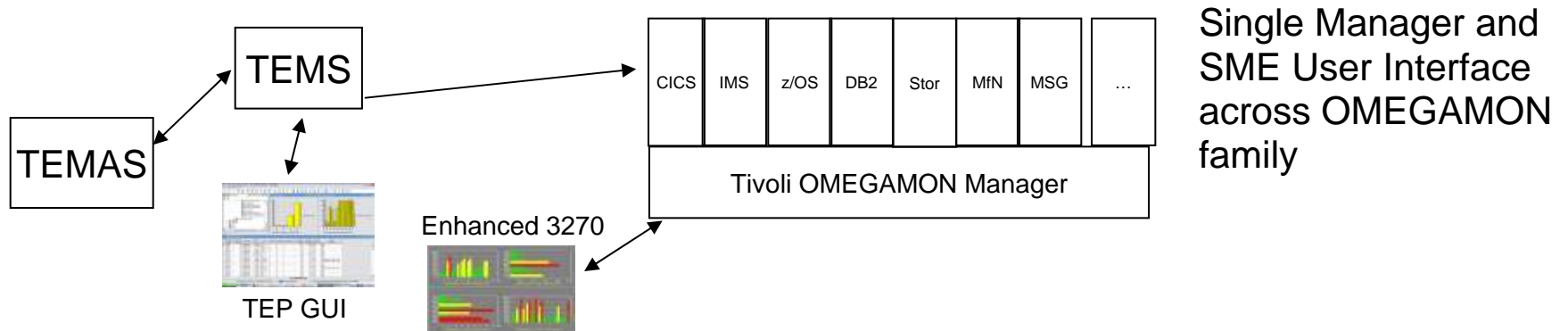
Typical quotes from early adopters program

Redesigned OMEGAMON moving to simplified architecture allowing for decreased resource utilization

Current OMEGAMON Architecture

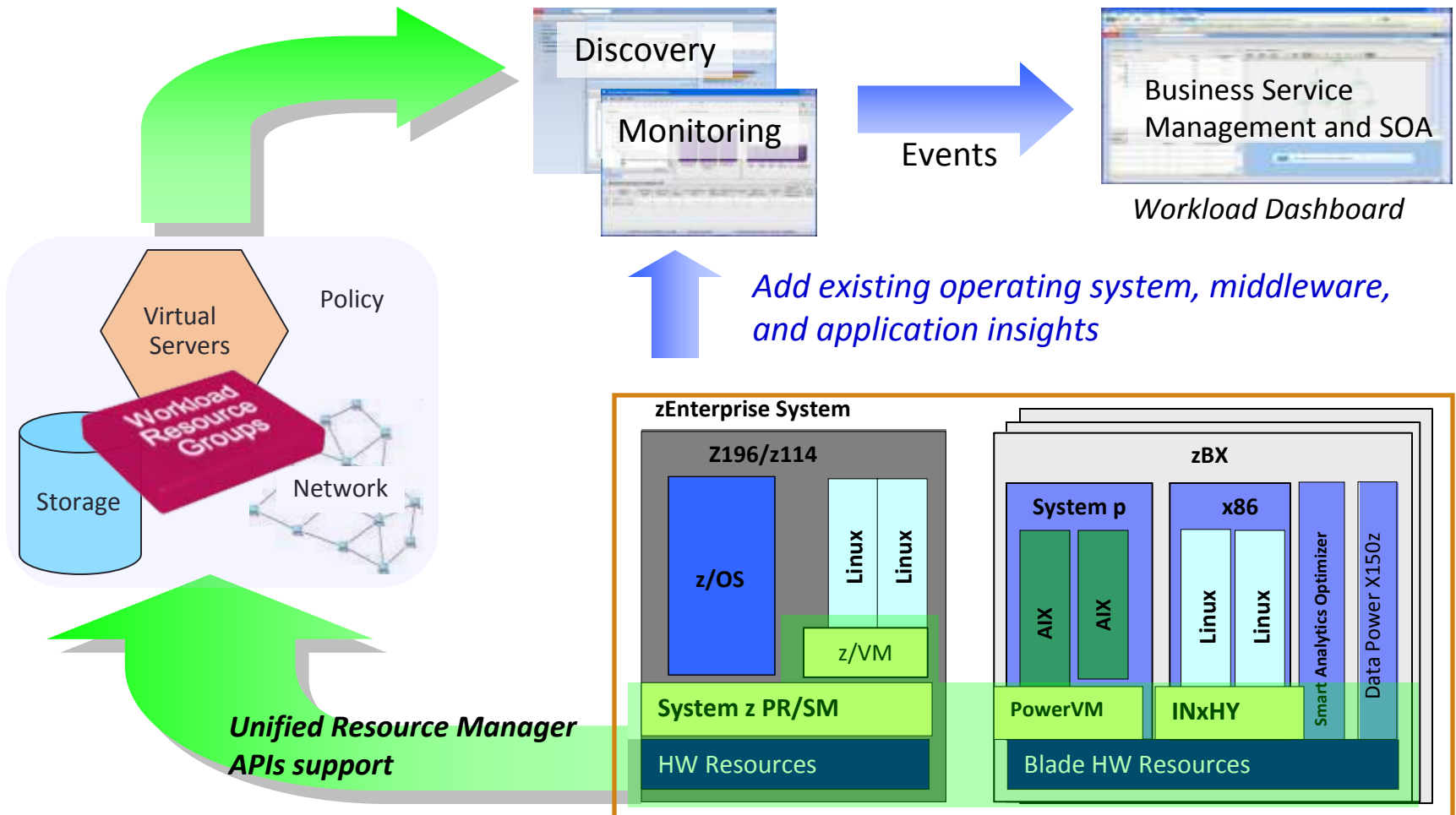


Enhanced OMEGAMON Architecture



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

Workload Resource Groups include information across z196/z114 and zBX



New Problem Determination and Management allows Operations and SMEs to see what is happening sooner

Monitor over time to identify and fix potential problems

KM5MSU0 4-Hour Rolling Average MSU Statistics SMF ID : SP22

☑ LPAR

4 Hour MSUs.....	6	LPAR Defined Capacity Basis	Yes
% LPAR MSU Capacity.....	6.0	Average %	0.0
LPAR Capacity Limit.....	100	Average %	100.0
LPAR Capacity Limit Basis	Entitled		

☑ LPAR Group ▢ ▣ ▤

LPAR Group Name	Average Unused Group MSUs	LPAR Group Capacity Limit	Group LPAR MSU Limit
CANDLE	93	100	100

☑ 5 Minute Intervals ▢ ▣ ▤

Columns 2 to 6 of 8 ← | → | ↑ | ↓ Row 1 to 15 of 48

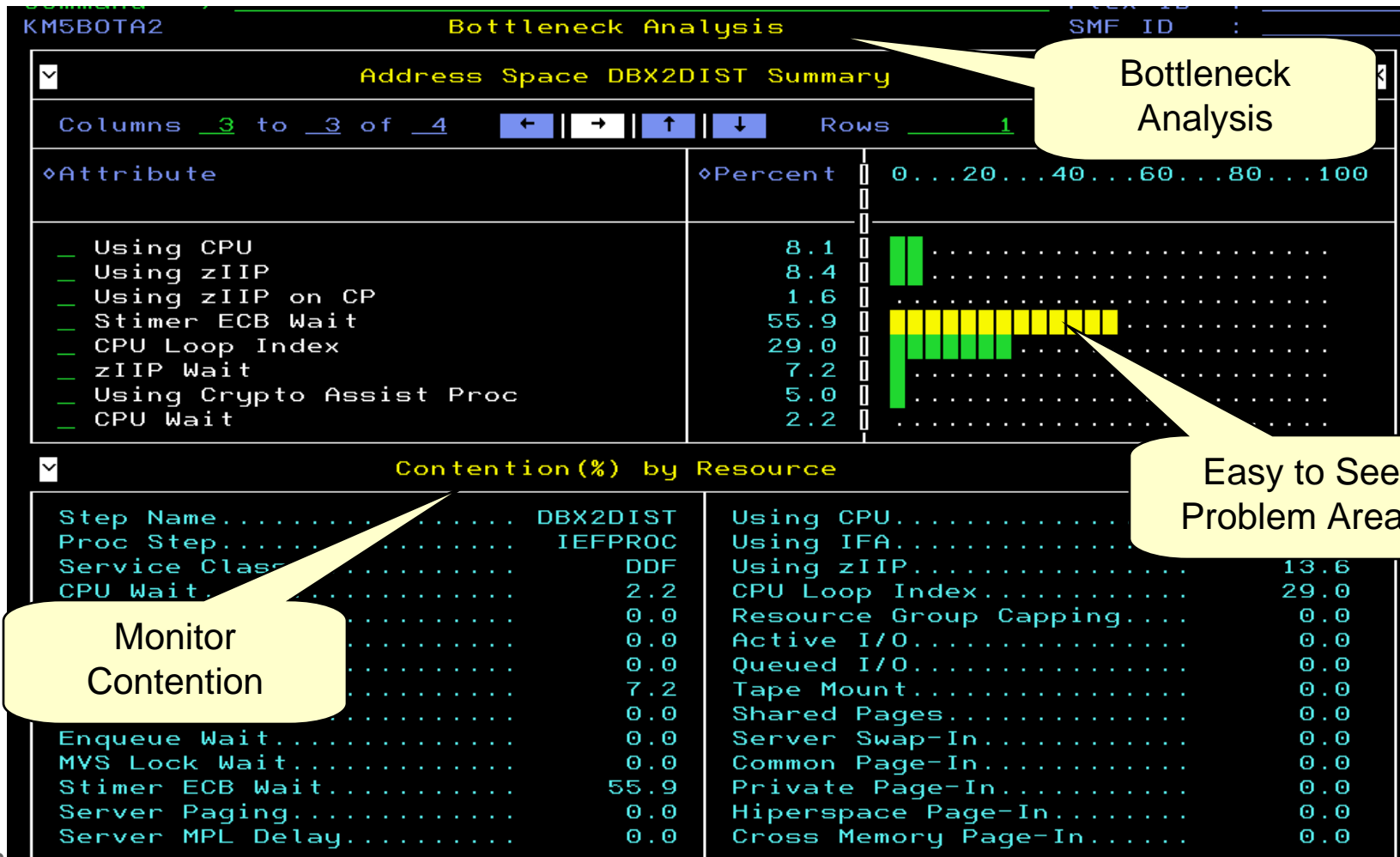
Time Period	% Time Uncapped	Uncapped MSUs/Hour	% LPAR Uncapped	Uncapped MSUs/Hour
08:59-09:02	100.00	8.83	8.83	0.00
08:54-08:59	100.00	6.59	6.59	0.00
08:49-08:54	100.00	6.52	6.52	0.00
08:44-08:49	100.00	7.25	7.25	0.00

4 Hour Rolling Average

5 minute intervals

Bottleneck analysis provides visibility to potential problems before they become outages

Quickly find out where resource contentions and shortage exist



Bottleneck Analysis

Easy to See Problem Areas

Monitor Contention

OMEGAMON Healthcheck analysis assists in finding and fixing problems quickly and efficiently

Regularly monitor key IT resources and usage

KM5HCSTS Health Checker SMF ID : Z2_

Health Check Status

Proc Name.....	HZSPROC	Task Identifi	PROC
Status.....	Active	Exceptions Sev	6
Checks Deleted.....	0	Exceptions SevLow.....	6
Checks Eligible.....	146	Exceptions SevHigh.....	2
Checks NotDeleted.....	177	Exceptions SevNone.....	0
Checks Ineligible.....	31	Exceptions Outstanding....	14
Checks DeletePending.....	0		

Columns 1 to 2 of 2 Rows 1 to 1 of 1

Version Identifier +Parmlib Members

z/OS 01.13.00 LC,IA,CY

Health Checks

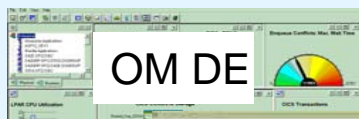
Columns 1 to 3 of 26 Rows 1 to 11 of 177

ΔCheck ▽Name	▽Owner	ΔCheck ▽Status
- XCF_CDS_SPOF	IBMXCF	EXCEPTION-HIGH
- USS_PARMLIB_MOUNTS	IBMUSS	EXCEPTION-HIGH
- VSM_SQA_THRESHOLD	IBMVSM	EXCEPTION-MEDIUM
- XCF_CDS_MAXSYSTEM	IBMXCF	EXCEPTION-MEDIUM
- XCF_CF_STR_POLICYSIZE	IBMXCF	EXCEPTION-MEDIUM
- XCF_CF_ALLOCATION_PERMITTED	IBMXCF	EXCEPTION-MEDIUM
- XCF_CF_STR_AVAILABILITY	IBMXCF	EXCEPTION-MEDIUM
- VSAMRLS_CFCACHE_MINIMUM_SIZE	IBMVSAMRLS	EXCEPTION-MEDIUM
- USS_PARMLIB	IBMUSS	EXCEPTION-LOW
- GRS_AUTHQLVL_SETTING	IBMGRS	EXCEPTION-LOW
- CSV_APF_EXISTS	IBMCSV	EXCEPTION-LOW

OMEGAMON integrates within a total System z Business Service Management solution

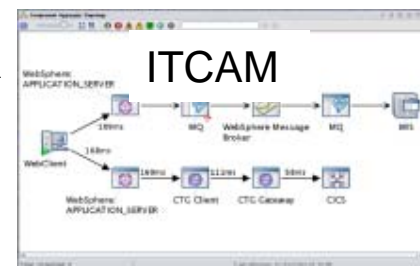
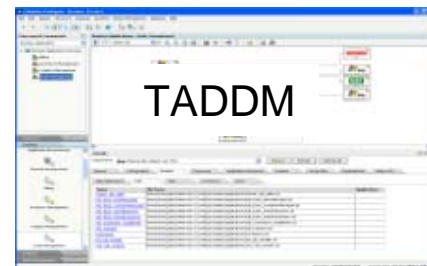
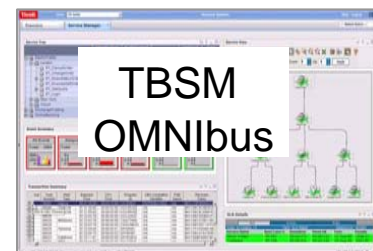
OMEGAMON XE Portfolio provides performance and availability management for events and data consumed by a complete set of Tivoli products on System z

OMEGAMON



Tivoli OMEGAMON Manager

IBM Tivoli Monitoring (ITM)



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

Optimize performance and availability of z/OS platform with OMEGAMON for z/OS Management Suite

- Bringing forward an integrated System z view for virtualized, network infrastructure
 - Manage based on key performance indicators (KPIs)
- Increasing Operations staff control of total System z environment with single view of:
 - Network, both SNA and IP
 - System z Storage
 - Operating System



IBM System z Service Management continues providing customers improved business flexibility

Key Takeaways

1. IBM recognized leader in **Application Performance Management** with **Visibility, Control and Automation** for high quality Service Management
2. Redesigned **OMEGAMON** family reduces resource usage while providing better visibility and problem management
3. **Enhanced 3270 User Interface** provides faster and more effective monitoring and problem management capability across multiple products and sysplexs



Learn more about OMEGAMON and IBM's entire Tivoli System z portfolio at upcoming Pulse Conference

Pulse 2012

Optimizing the World's Infrastructure

Location:

MGM Grand Hotel

Register at:

<http://www-01.ibm.com/software/tivoli/pulse/>



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- [IBM Software Newsletter](#)





Thank
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