

Get more from your Mainframe with Proactive  
end-to-end monitoring

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## New visibility into consolidated zEnterprise Workloads

- IBM continues to enhance the zEnterprise platform with open APIs for monitoring capabilities
- Tivoli products for zEnterprise Monitoring provide **visibility** to zEnterprise objects for performance monitoring, problem determination, capacity and performance planning
  - Resources
  - Relationships
  - Workload goal fulfillment and utilization
- Tivoli zEnterprise Monitoring offers **improved Time-to-Value** because:
  - Data is collected once, maintained in single repository and shared by many
  - Data collected for both, monitoring technologies
  - Enterprise Common Collector packaged with all products but need to be installed and configured only once
- Existing customer investments are protected due to **integration** with other Tivoli products



# IBM zEnterprise Systems – Best in Class Systems and Software Technologies

*A system of systems that unifies IT for predictable service delivery*



Unified management for a smarter system:  
**zEnterprise Unified Resource Manager**

The world's fastest and most scalable system:  
**IBM zEnterprise™ 196 (z196)  
or zEnterprise™ 114 (z114)**

- Unifies management of resources, extending IBM System z® qualities of service end-to-end across workloads
- Provides hardware, platform, and workload management

Scale out to a trillion instructions per second:  
**IBM zEnterprise  
BladeCenter® Extension  
(zBX)**

- Ideal for large scale data and transaction serving and mission critical applications



- Selected IBM POWER7® blades and IBM System x® blades<sup>1</sup> for tens of thousands of AIX® and Linux applications
- High performance optimizers and appliances to accelerate time to insight and reduce costs
- Dedicated high performance private network



# zEnterprise Unified Resource Manager

## *Transforming way resources are managed and deployed*

### What is it?

*Unified Resource Manager provides infrastructure awareness to optimize the system resources in accordance with understanding the policies assigned to that particular workload.*

*Functions are grouped into suites of tiered functionality that enable different levels of capability – Manage, Advanced Management and Automate.*

### How is it different?

- **Heterogeneous management:** Total systems management across heterogeneous resources. APIs facilitate enterprise wide management.
- **Integration:** Single point of control, common skills for resources, reduced complexity of day to day operations..
- **Monitoring.** New dashboard for CPU resources and energy management.
- **Simplified installation:** Auto discovery and configuration of resources and workloads with single interface
- **Secure:** Improved network security with lower latency, less hops and less complexity. Improved control of access due to management of hypervisors as firmware.
- **Service and support management:** Virtual machines and blades able to perform hardware problem detection, reporting and call home



## Unified Resource Manager – Data Available via HMC *Manage Firmware Suite*

- ***Manage (DataPower XI50z, select POWER7 and System x blades)***
  - ▶ Monitor and trend reporting of CPU energy efficiency.
  - ▶ New dashboard interface enabling a broader view of system resource consumption.
  - ▶ Integrated hardware / asset management across all elements of the system.
  - ▶ Private and physically isolated connections for secure support and data sharing.
  - ▶ Administrative simplification (wizard) for virtual server provisioning and enablement of integrated storage and network across hypervisors.



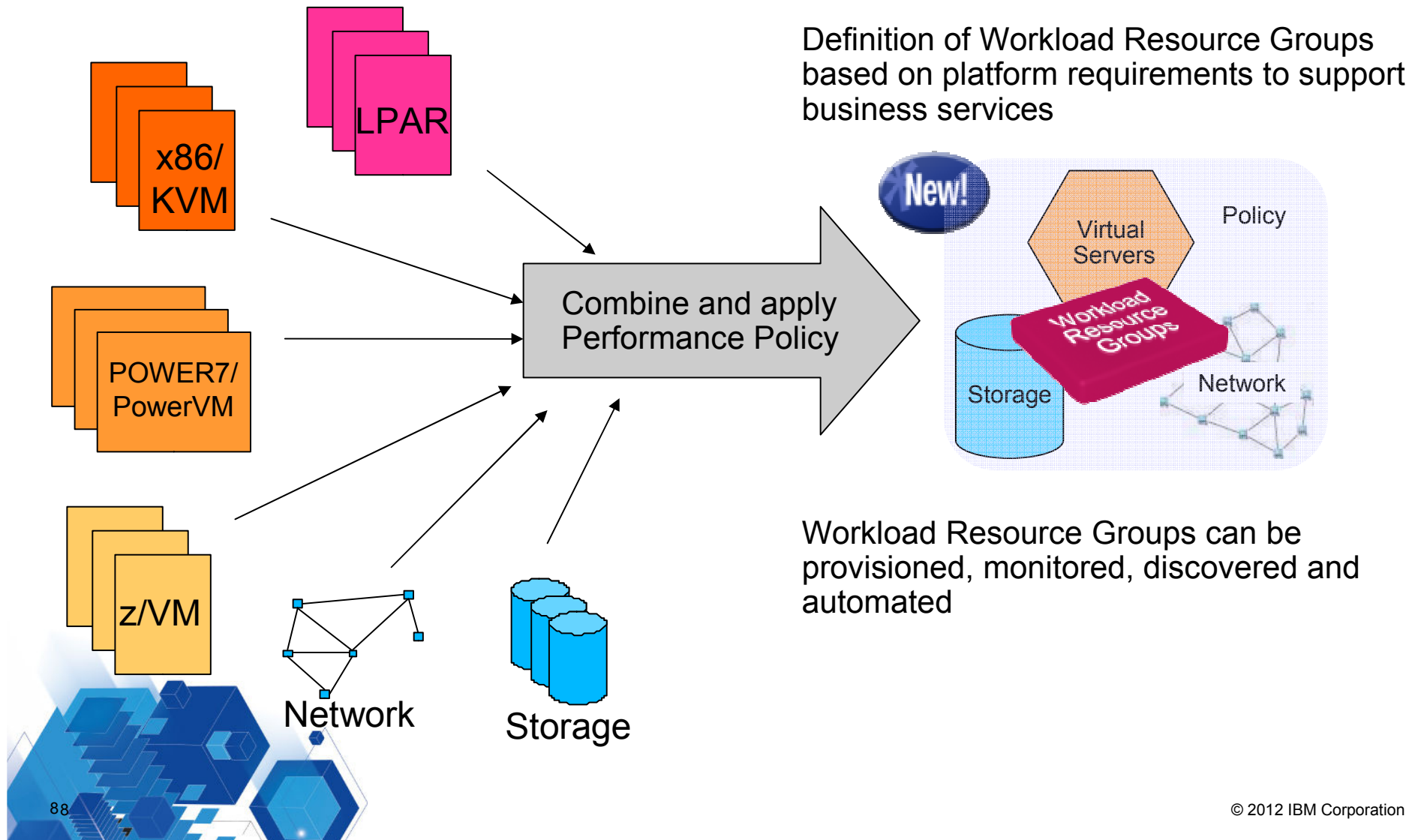


## Unified Resource Manager - Turns Data into information *Advanced Management / Automate Firmware Suites*

- **Advanced Management (Select System x blades)**
  - ▶ Additional wizard function to set up resources associated with a workload and the capability to associate those resources with a named business process.
  - ▶ Ability to monitor and report performance.
  - ▶ Energy management capabilities.
- **Automate (Select POWER7 blades and DataPower XI50z)**
  - ▶ Energy management capabilities.
- **Automate (Select POWER7 blades only)**
  - ▶ Additional wizard function to set up resources associated with a workload and the capability to associate those resources with a named business process.
  - ▶ Ability to manage to a user defined performance service level policy and enable performance monitoring, reporting and resource optimization.
  - ▶ Static power savings.



# Unified Resource Manager APIs intended to enable Tivoli to create and manage Workload Resource Groups





# Unified Resource Manager APIs

## *Enabling Tivoli management tools*

- New API support allows programmatic access to the same underlying functions exploited by the HMC user interface (UI)

- Same resource types, instances and policies
- HMC UI steps are accomplished using panels in a wizard-style task while API steps are accomplished by calling API management primitives
- Therefore the API functions correspond to views and tasks in the UI such as:
  - Listing resource instances
  - Creating, changing, deleting resource instances
  - Operational control of resource instances



- Access to these functions will enable tools external to the HMC to manage Resource Manager
- Initially the priority scenarios will be the discovery, monitoring, and provision



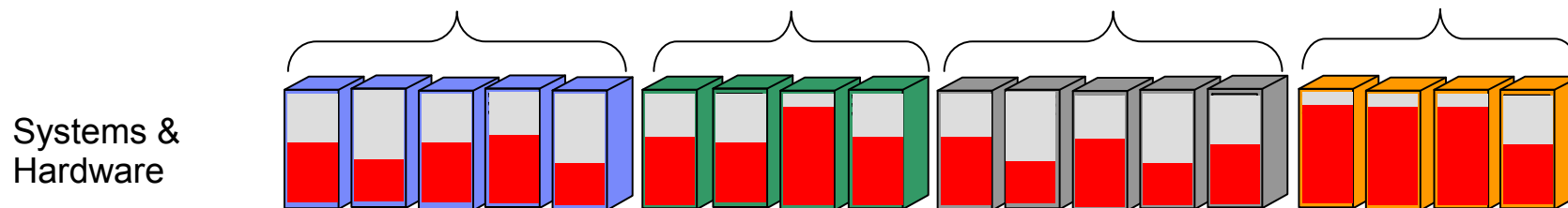
# Data Centers today are siloed across multiple heterogeneous technologies and vendors

## Today's Data Center

*Siloed service delivery processes*



*Multiple platform management systems*



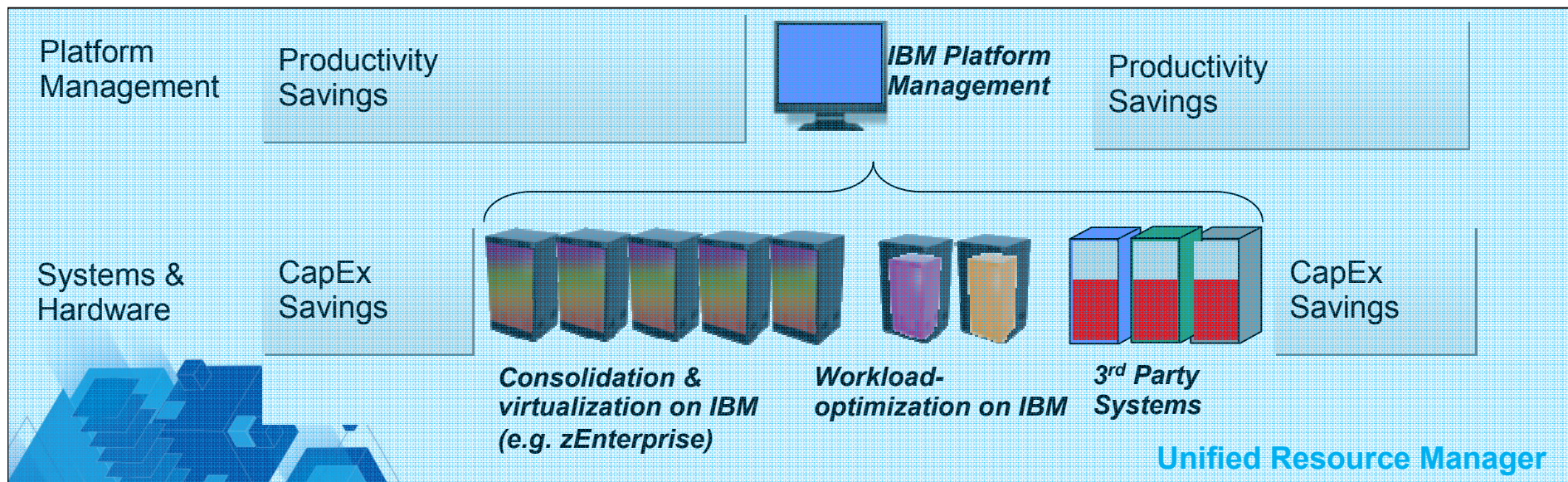
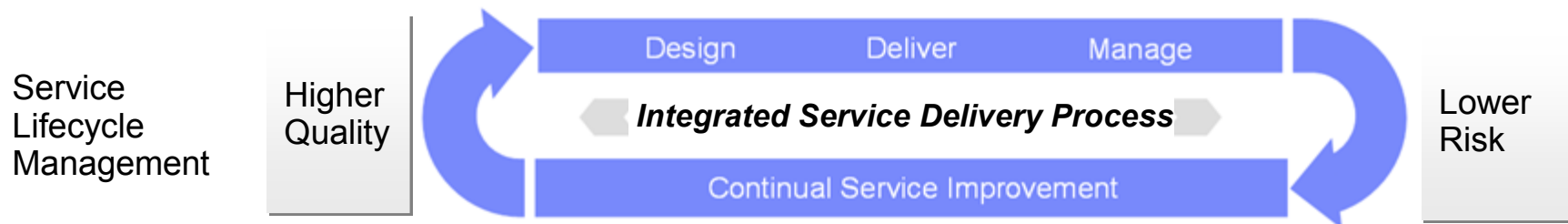
*Sub-optimized, heterogeneous, multi-vendor systems*



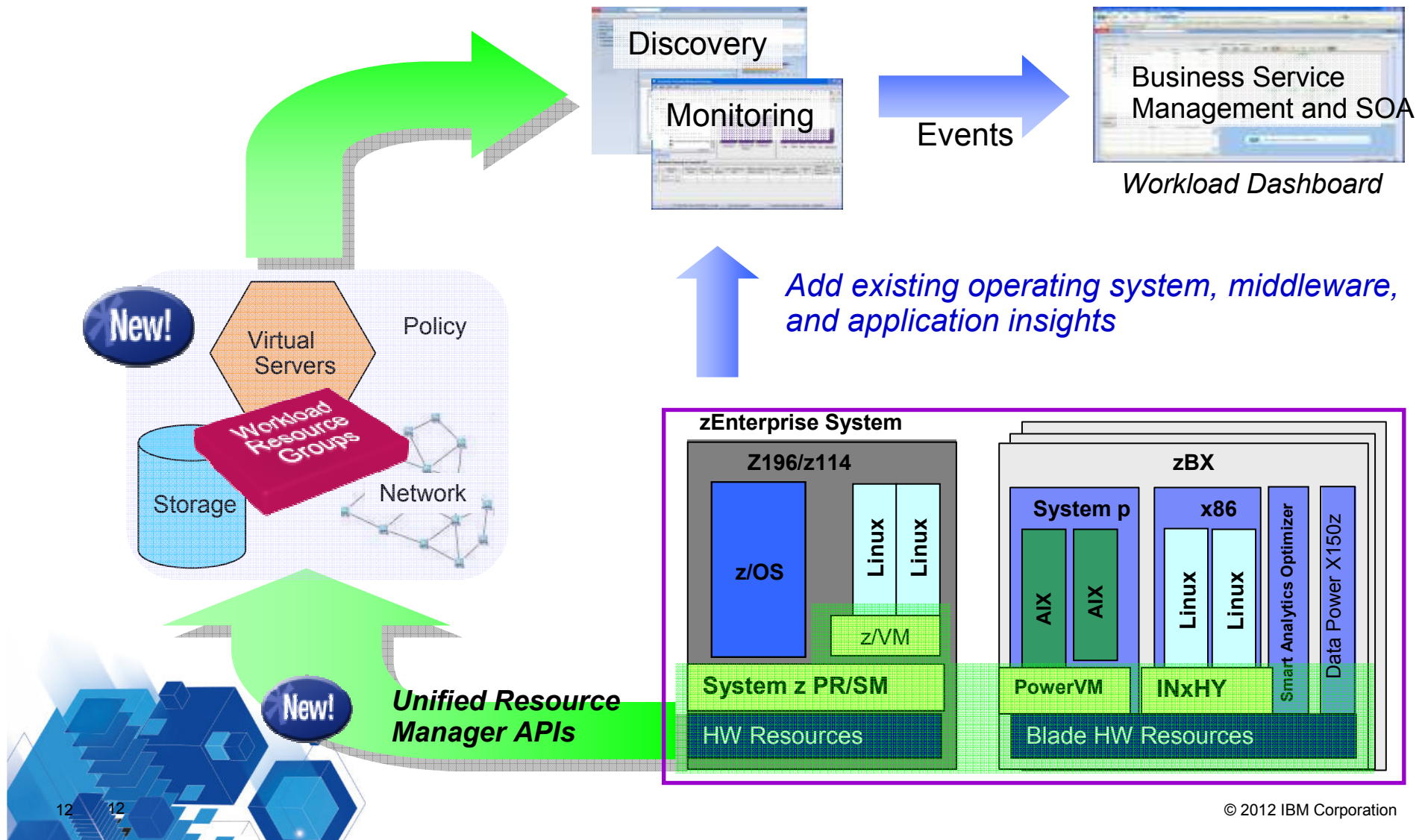
# Tivoli Service Management ensures service quality and integrity from the next generation of data centers

## Optimized Data Center

Service Management extends across all three layers

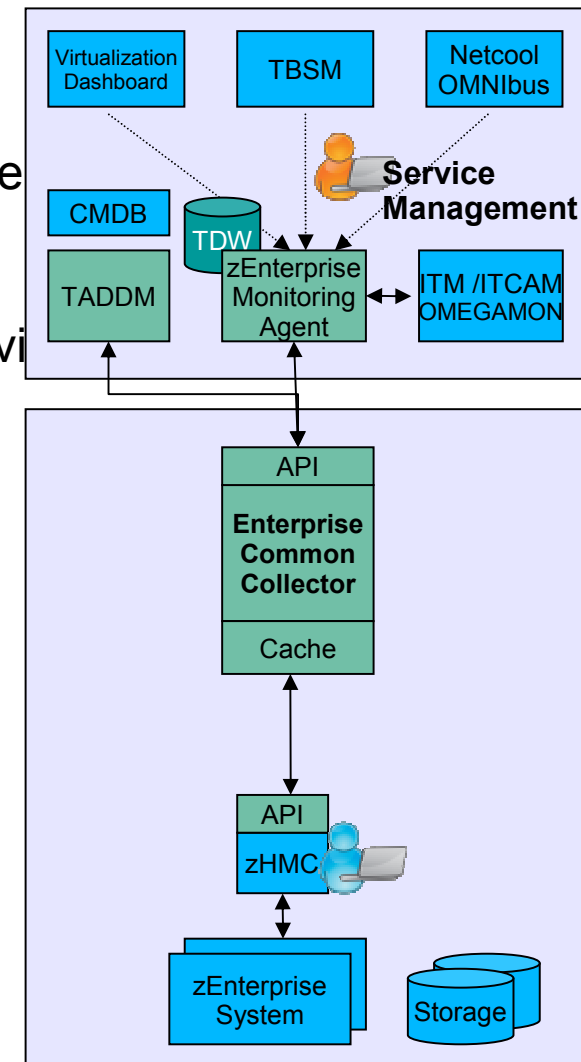


# Tivoli monitoring and discovery can track and manage Workload Resource Groups across zEnterprise



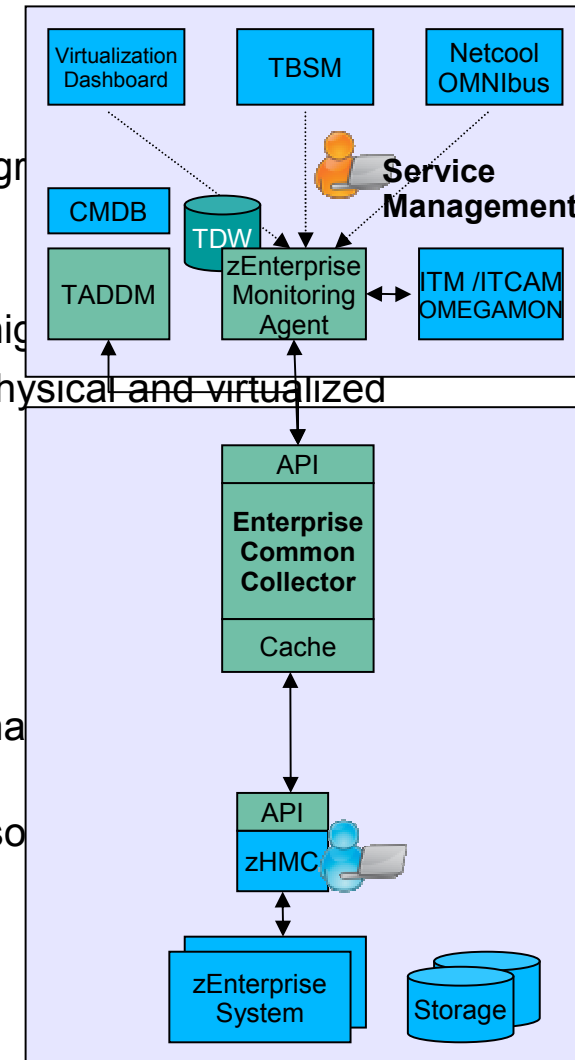
## Proactive end-to-end zEnterprise Discovery

- Discovers physical, logical, and virtual zEnterprise System relationships within the enterprise
  - Fulfills query requests from single TADDM Sensor
  - Used by TBSM to create and visualize business service correlation
  
- Leverages IBM Tivoli Monitoring infrastructure
  - Situation monitoring and event forwarding
  - Historical reporting



# Provide improved performance with proactive end-to-end zEnterprise Monitoring

- Visualizes the health and performance of your workload resource groups and zEnterprise System hardware
  - Across Ensembles and different types of resources
  - Highlights workloads that do not meet business objectives or high availability
  - Provides context of workloads with respect to the underlying physical and virtualized infrastructure including storage and network
  
- Enables effective performance analysis if goals not met
  - Drill down into more detailed resource views
  - Drill down into workload details, such as service classes
  - Integration with other Tivoli Monitoring products for detailed analysis and determination
  - Ability to monitor cloud resources (dynamically provisioned resources) in the zEnterprise Environment.





# Example Flow: Workload Resource Groups Summary (1/3)

The screenshot displays the 'Workload Resource Groups Summary' interface. On the left is a 'Navigator' pane showing a tree view of the system hierarchy. In the center, there are two charts: 'Workload Service Level Index' (a bar chart showing the number of workloads for each service level) and 'Server CPU Distribution' (a bar chart showing the number of servers in different CPU usage categories). Below these is a table of workload groups with columns for Interval End Time, Name, Default Workload, Ensemble Name, Category, Workload Service Level Index, High S, and High Servi.

Interval End Time	Name	Default Workload	Ensemble Name	Category	Workload Service Level Index	High S	High Servi
11/18/11 16:22:00	ATM Europe	No	London Ensemble	Banking	Fatal	ServiceClassF1-V	perfPol01wF
11/18/11 16:22:00	SAP for Banking - New York	No	NewYork Ensemble	SAP	Critical	ServiceClassC3-V	perfPol01wC
11/18/11 16:22:00	ATM Asia	No	Mumbai Ensemble	Banking	Minor	Default	perfPol01wK
11/18/11 16:22:00	SAP Banking Mumbai	No	Mumbai Ensemble	SAP	Minor	Default	perfPol01wJ
11/18/11 16:22:00	Call Center	No	Mumbai Ensemble	Operations	Minor	Default	perfPol01wI
11/18/11 16:22:00	SAP for Banking - Tokyo	No	Tokyo Ensemble	SAP	Minor	ServiceClassD1-V	perfPol01wD
11/18/11 16:22:00	CRM	No	London Ensemble	Operations	Minor	ServiceClassE2-V	perfPol01wE
11/18/11 16:22:00	Test Workload	No	Mumbai Ensemble	Development	Minor	Default	perfPol01wH
11/18/11 16:22:00	Development Workload	No	London Ensemble	Development	Minor	ServiceClassF1-V	perfPol01wF
11/18/11 16:22:00	ATM North America	No	NewYork Ensemble	Banking	Warning	ServiceClassC1-V	perfPol01wC2
11/18/11 16:22:00	Online Accounts	No	Shanghai Ensembl	Operations	Informational	ServiceClassG1-V	perfPol01wG
11/18/11 16:22:00	Default	Yes	Mumbai Ensemble	Default	Satisfactory	Default	perfPol01wE5
11/18/11 16:22:00	Default	Yes	Shanghai Ensembl	Default	Satisfactory	Default	perfPol01wE4

Hub Time: Fri, 11/18/2011 04:22 PM | Server Available | Workload Resource Groups Summary - IBM-0X6CTF15S7A - SYSADMIN \*ADMIN MODE\*

Link used to quickly navigate for more detail

Critical – means Service levels are being missed

## Example Flow: Workload Resource Group details (2/3)

The screenshot displays the 'Workload Resource Group Details' window for 'IBM-0X6CTF15S7A - SYSADMIN \*ADMIN MODE\*'. It includes a Navigator pane on the left, a 'Server CPU Distribution' bar chart, a 'Workload Service Level Index' line graph, and several data tables. A yellow callout points to the 'Active Performance Policy' field in the first table, which is 'perfPol01wC'. Another yellow callout points to the 'Performance Index' of 1.29 for 'ServiceClassC3-V' in the third table, noting that a value greater than 1 indicates service levels are not being met. A red circle highlights the 'Virtual Server Name' and 'Virtualization Host Name' columns in the fourth table, with a callout pointing to the right to see a highlighted 'CPU Delay' item.

Interval End Time	Active Performance Policy	Performance Policy Activation Node Count	Performance Policy Activation Status	Workload Service Level Index	Highest Impacting Service Class	Category	Highest PI Service Class	Highest PI	Service
11/18/11 16:22:00	perfPol01wC	2	Active	Critical	ServiceClassC3-V	SAP	ServiceClassC3-V	1.29	High

Name	Default Policy	Importance	Activation Status	Default Service Class	Last Activation Requested Date	Last Activation Completed Date	Last Activated By	Last Modified Date	Last Modified By	Created Date
perfPol01wC	The display name specified for the performance policy			fault	02/25/11 14:42:14	02/25/11 14:42:14	PEDEBUD	02/25/11 14:42:14	PEDEBUD	02/25/11 14:42:14

Name	Description	Business Importance	Performance Index	Type	Virtual Server Name	Virtualization Host Name	Platform Type	Status	Acceptable Status	GP
ServiceClassC3-V			1.29	Server	virtServer10	virtHost04	PowerVM	Operating	Yes	Operati
ServiceClassC1-V			0.5	Server	virtServer06	virtHost03	xHyp	Operating	Yes	Operati
ServiceClassC2-V			0.67	Server	virtServer07	virtHost03	xHyp	Operating	Yes	Operati
					virtServer02	virtHost01	zVM	Operating	Yes	Operati



## Example Flow: Virtual Server details (3/3)

The screenshot displays the PowerVM Virtual Server Details interface for IBM-0X6CTF15S7A. The main window shows a graph of CPU Utilization and Delay for Virtual Machine (VM) over time. A yellow callout box points to the graph, stating: "CPU delay of 20% means 20% of time work had to wait". Below the graph, there are three tables:

**PowerVM Virtual Server CPU and Memory Details for Virtual Server virtServer10**

Interval End Time	TCPIP Hostname	Status	Acceptable Status	CPU Utilization	Virtualization Host CPU Delay (%)	Current Processing Units	Memory Utilization	Current Memory (MB)	Sampling Rate	Process Mode
11/18/11 16:22:00	virtServer10.virtHost04.ibm.com	Operating	Yes	80	20	1.00	90	1024	0	Shared

**PowerVM Virtual Server Network Details for Virtual Server virtServer10**

Bytes Sent	Bytes Received	Packets Sent	Packets Received	Packets Sent Dropped	Packets Received Dropped	Packets Sent Discarded	Packets Received Discarded	Multicast Packets Sent	Multicast Packets Received	Br Pac
0	0	0	0	0	0	0	0	0	0	0

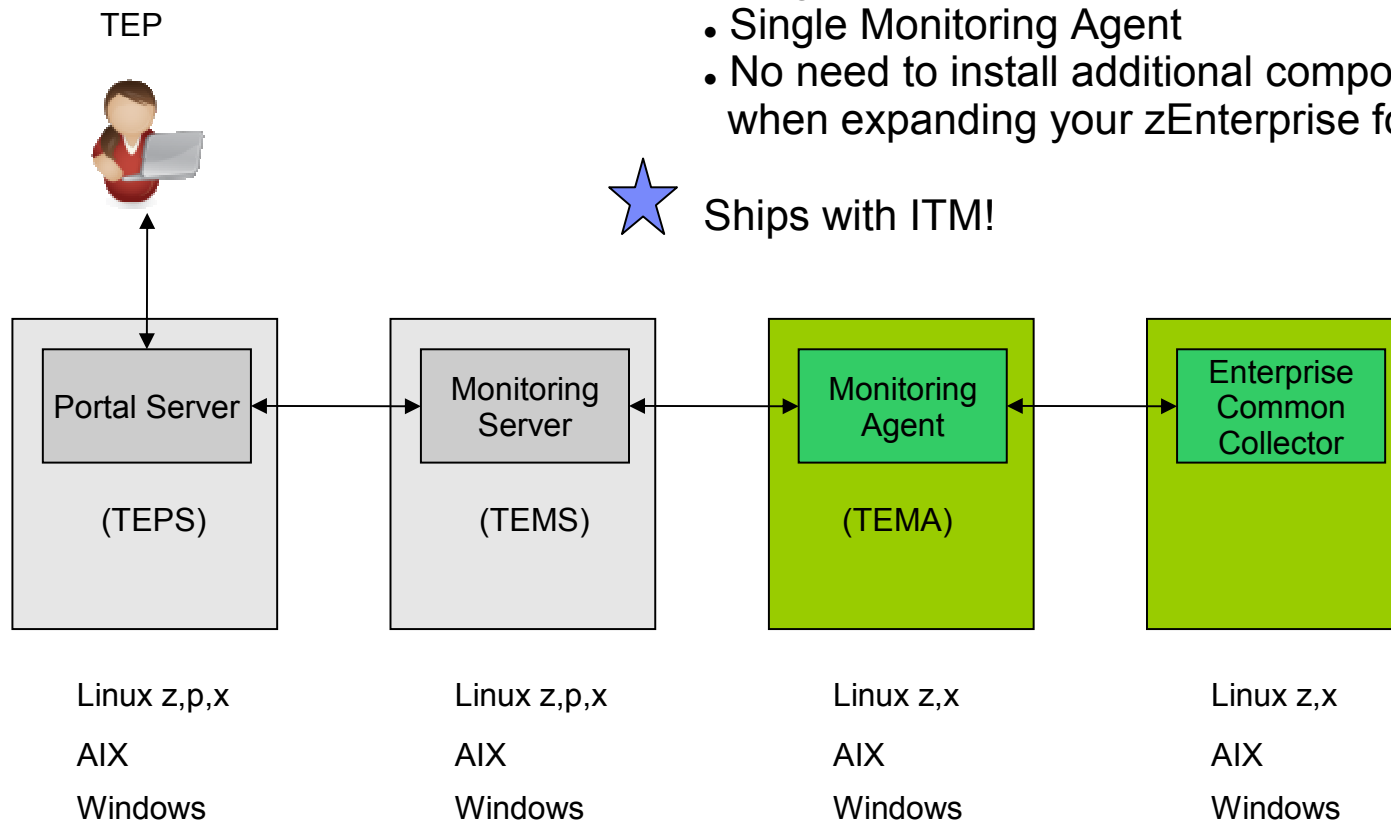
**Workload Resource Groups Summary for Virtual Server virtServer10**

Interval End Time	Workload Name	Service Class of Virtual Server	Workload Service Level Index	Highest Impacting Service Class	Active Performance Policy	Highest PI Service Class	Highest PI	Servi
11/18/11 16:22:00	SAP for Banking - New York	ServiceClassC3-V	Critical	ServiceClassC3-V	perfPol01wC	ServiceClassC3-V	1.29	High
11/18/11 16:22:00	DayTrader	ServiceClassA2-D	Satisfactory	ServiceClassA2-D	perfPol01wA	ServiceClassA2-D	0.00	Unkn

At the bottom of the interface, the status bar shows: Hub Time: Fri, 11/18/2011 04:22 PM, Server Available, and PowerVM Virtual Server Details - IBM-0X6CTF15S7A - SYSADMIN \*ADMIN MODE\*.

# Implement zEnterprise monitoring with simplified installation

- ★ Install it once!
  - Single Enterprise Common Collector
  - Single Monitoring Agent
  - No need to install additional components when expanding your zEnterprise footprint
- ★ Ships with ITM!



New components (mandatory)

Existing components (mandatory)



## This solution addresses IBM July 2011 Statement of Direction for zEnterprise Monitoring

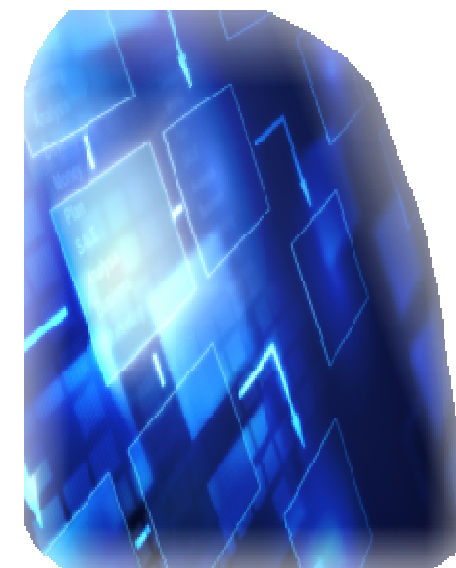
- Products that will have this capability as soon as infrastructure updated to ITM
    - OMEGAMON Family
      - OMEGAMON XE on z/OS
      - OMEGAMON XE for CICS on z/OS
      - OMEGAMON XE for IMS on z/OS
      - OMEGAMON XE for DB2 PE/PM
      - OMEGAMON XE for Messaging
      - OMEGAMON XE for Storage
      - OMEGAMON XE for Mainframe Networks
      - OMEGAMON XE for z/VM and Linux on System
      - OMEGAMON Management Suite
    - ITCAM Family
      - ITCAM for Transactions
      - ITCAM for SOA Platforms
      - ITCAM for Applications
      - ITCAM for Application Diagnostics
      - ITCAM for Microsoft Applications
    - ITM Family
      - ITM for Operating Systems
      - ITM for Virtual Environments
      - ITM for Energy Management
- SmartCloud Monitoring



## New visibility into consolidated zEnterprise Workloads

### Summary:

- Tivoli products for zEnterprise Monitoring and Discovery provide **visibility** to zEnterprise objects for performance monitoring, problem determination, capacity and performance planning
  - Visibility in to **resource** usage
  - Automatically map out **relationships** between resources
  - **Workload goal fulfillment and utilization** with performance indexes based on business rules helping to guarantee service levels.
- Tivoli zEnterprise Monitoring and Discovery offers **improved Time-to-Value** because
  - Data is collected once, maintained in a single repository and shared by many
  - Data is collected for both, monitoring and discovery technologies
  - Enterprise Common Collector is packaged with all products but need to be installed and configured only once
- Existing customer investments are protected due to **integration** with other Tivoli products





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- Connect with **high calibre speakers** including VPs, IBM Master Inventors, Directors of Prod Dev & Strategy, architects from IBM Chief Information Security Office and experts from our Labs  
*over 40 IBM SMEs at your service!*
- See the solutions in action at the **25 solution pods** in the expo
- Take a **complimentary** IBM Professional Certification Exam

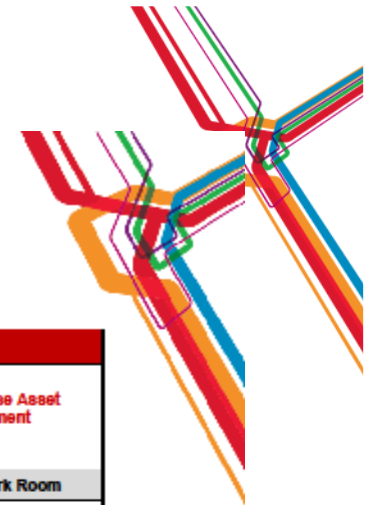


# Pulse2012

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May 31 - June 1

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DAY ONE: THURSDAY 31 MAY 2012							
	Track 1: Growth Markets Communication Service Provider Forum	Track 2: Cloud and Innovation	Track 3: IT Service Management	Track 4: Storage Management	Track 5: Security, Risk Management & Compliance	Track 6: Enterprise Asset Management	Track 7: Enterprise Asset Management
Room	Times on the Park	Castlereagh I	Castlereagh II	Phillip Room	Grand Ballroom I	Grand Ballroom II	Hyde Park Room
8:00am	Registration & Exhibition opens						
9:00am-10:30am	<b>Keynote Session:</b> Bowman Hall, <b>Worldwide Director of Cloud Client Computing Engagements, IBM USA</b> Peter Willis, <b>GM Service Management, NBN Co Ltd</b> Smarter Physical Infrastructure Client Speaker						
10:30am-11:00am	Morning Tea						
Session 1 11:00am – 11:50am	Trends in the Service Provider Industry Dr Craig Farrell, VP and CTO Global telecom Industry, IBM USA	Service Management and Cloud Computing Track Kickoff Bowman Hall, Director of Worldwide Client Computing Engagements, IBM USA	Storage Management Track Kickoff: The Pivotal Role of Storage in the Modern Data Center Mike Grlese, Storage Product Development, IBM USA	IBM Security Track Kickoff Steve Robinson, VP Development, Strategy and Product Management, IBM USA and Denis Kennelly, VP Development, IBM Ireland	Maximo and TRIRIGA Track Kickoff, Strategies and Roadmap Dave Gasdia, Maximo Product Strategy and Development, IBM USA		
Session 2 11:55am-12:40pm	IBM Smarter Networks Solution Dr Sanggy Koo, Global Industry Solution Executive, IBM USA	Cloud Panel : An ANZ View Key Australian clients, CSPs and subject matter experts	Using Advanced Analytics Technologies to Support Improved Decision-Making Peter Conellas, IBM Tivoli Cloud & Analytics Executive	The Butterfly Effect. How to find out the true cost of protecting you data and how IBM can help you mitigate risk from data migrations Robert MacEarcher, Tivoli Storage Leader IBM ANZ	Security Intelligence Jeff Paddock, Senior Tech Director, Q1 Labs	The world is 24/7 and mobile: Maximo Scheduler and Maximo Mobile Update Lisa Stuckless, Tivoli Maximo Product Design & Architect IBM USA	Industry Solutions - Market trends for the Utilities Industry IBM, Maximo Industry Solutions, Utilities Product Manager, E&U.
12:40pm – 1:30pm	Lunch Demo Theatre						

Draft Agenda as at 0/5/12. IBM reserves the right to alter or change this agenda.

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 Security content



Thank  
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