”Cloudifiez” votre infrastructure : stratégie et vision pour créer un cloud privé:

Innovate2011
The Rational Software Conference

Bâtissons une planète plus intelligente

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WebSphere Client Technical Professional
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Agenda

- Why Cloud Computing ?
- Which Cloud Engine ?
- IBM Workload Deployer 3.0
  - Topology patterns
  - Workload Patterns
- Integration w/ Rational Application Developer
- Summary

Get off the Treadmill!

Free your employees to move the ball forward

1.5x

Explosion of information driving 54% growth in server/storage shipments every year.

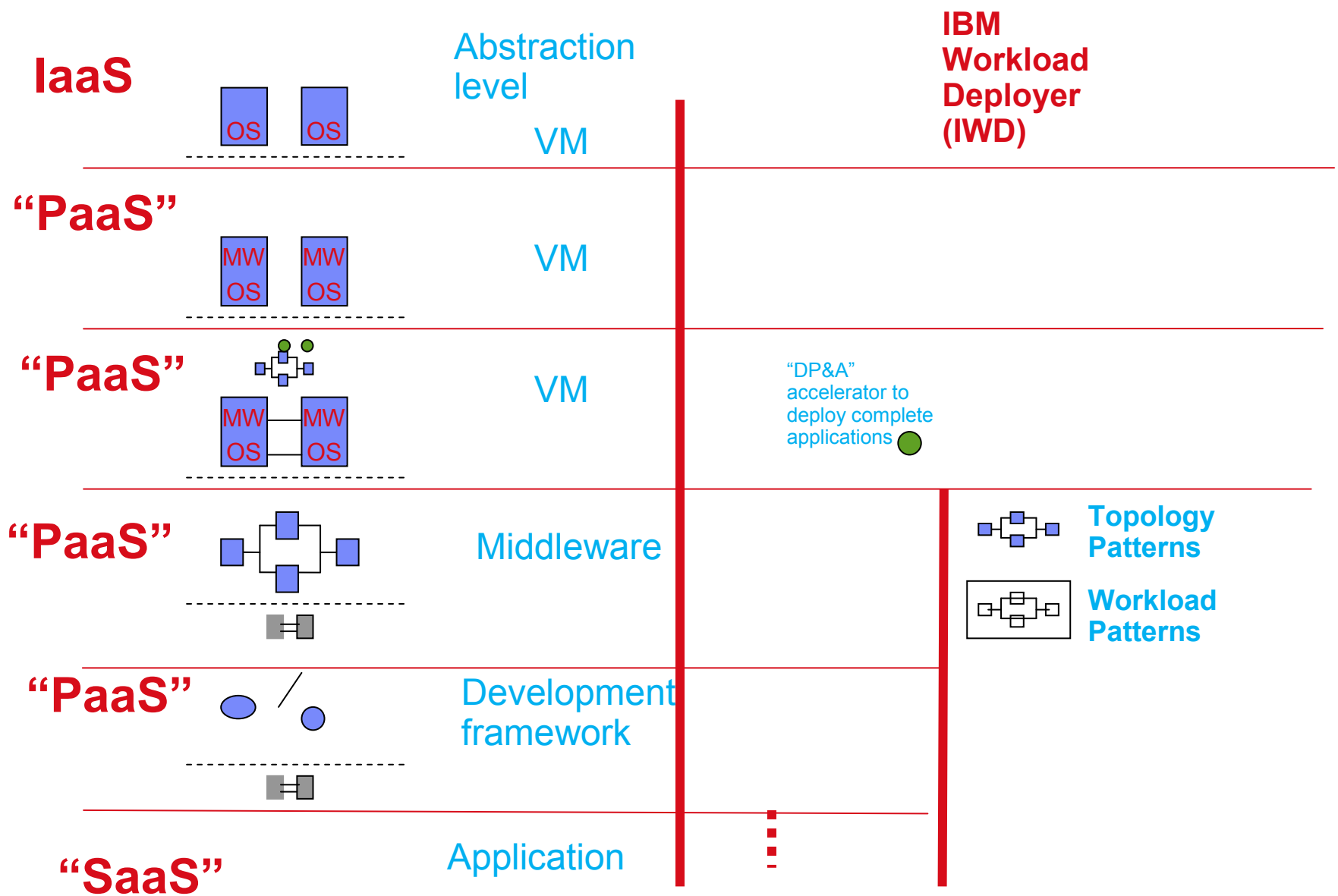
70¢ per $1

70% on average is spent on maintaining current IT infrastructures versus adding new capabilities.

85% idle

In distributed computing environments, up to 85% of computing capacity sits idle.

What Cloud engine should I use?



AUTOMATION

These processes are executed serially for each new app environment:

Approvals	Procurement	HW Install	OS Install	MW Install	App Install/Config

2-4 month lead time

Factor out repetitive tasks to reduce lead time!

Approvals	Procurement	HW Install

Done once at cloud creation/expansion time

OS Install	MW Install	App Install/Config

Done once at image/pattern creation/customization time

Click "Deploy" and wait

Done for each environment request

Hours or Minutes lead time!

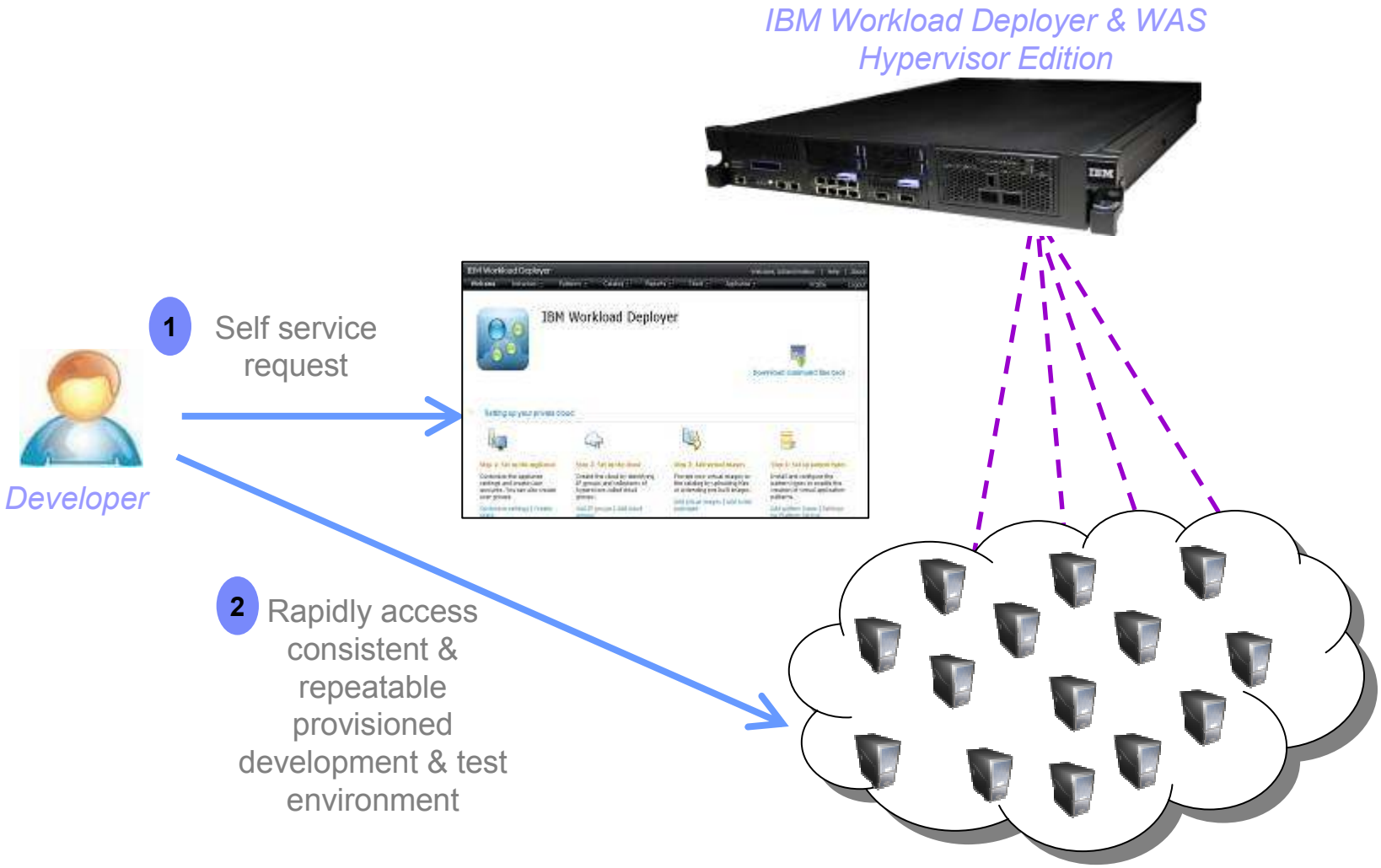
IBM Workload Deployer v3.0

WebSphere CloudBurst Appliance v2.0

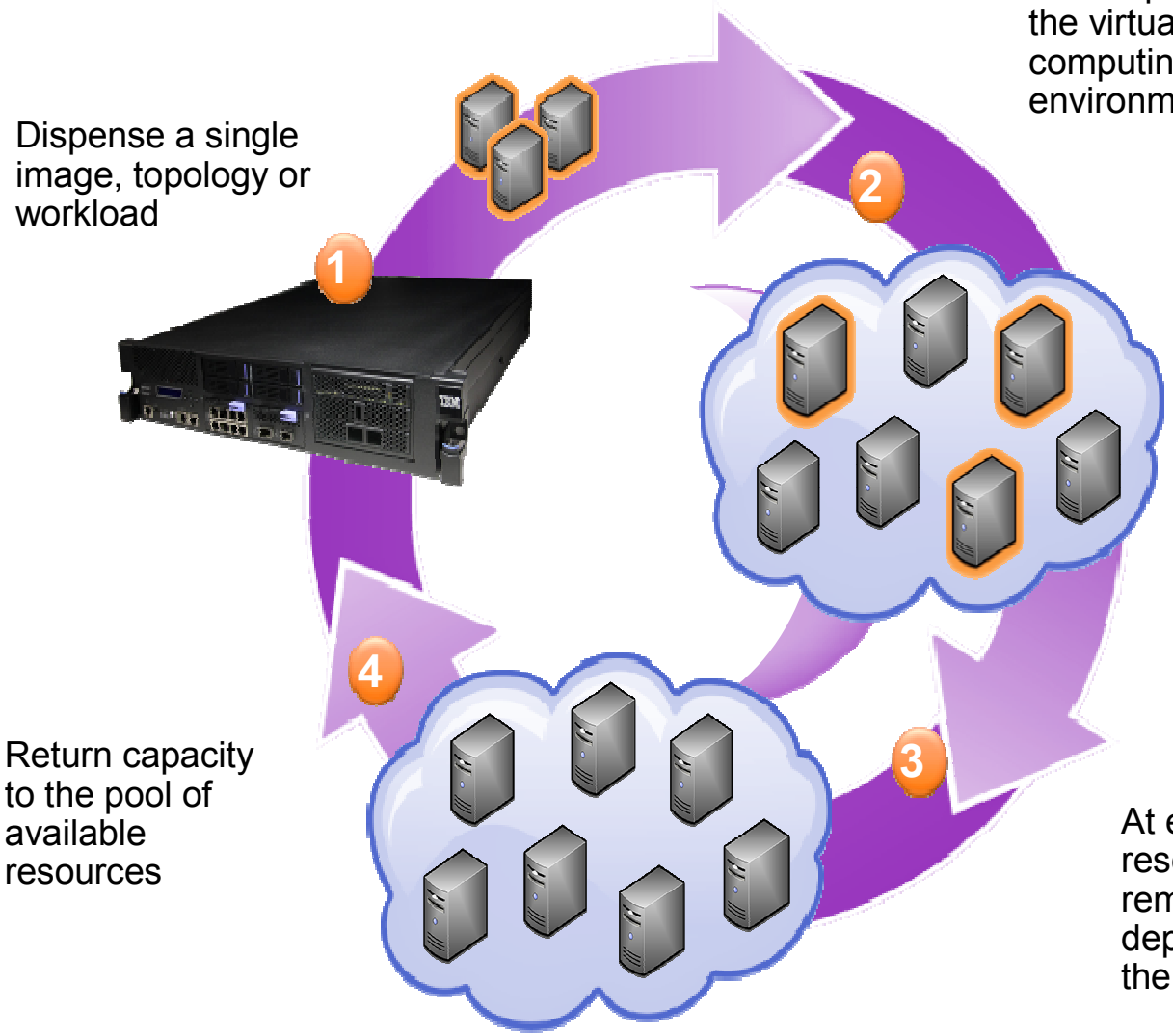
IBM Workload Deployer v3.0

- New branding – “IBM” instead of “WebSphere”
- More robust platform (more storage, compute power)
- Includes all function from WebSphere CloudBurst Appliance, plus NEW capabilities (details to follow)

Speed the Development & Test Lifecycle Through Self Service Access to Repeatable Environments



AUTOMATE: Manage cloud resource usage



STANDARDIZATION: Virtualized Middleware can be deployed in different ways

Images

- Basic execution services for standalone VM images
- Complete control over image contents
- Basic image management/ library functions
- IBM provided product images
- Ability to create custom images
- Leverages IBM image management tools

Image Management

Topologies

- IBM defined product images and patterns for common topologies
- Ability to create custom patterns
- Traditional configuration and administration model
- Aligned around existing products
- Automated provisioning of images into patterns

Automated provisioning of middleware

Workloads

- Application awareness
- Fully integrated software stacks
- IBM defined topologies
- Simplified interaction model
- Highly standardized and automated
- Integrated middleware with cloud capabilities
- Integrated lifecycle management

Integrated middleware with cloud capabilities

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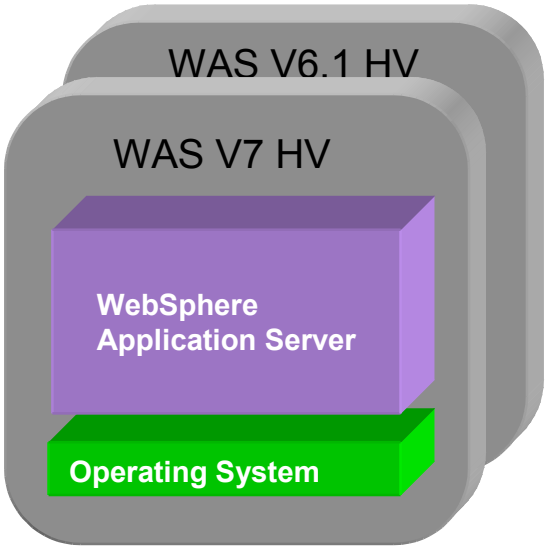
Hypervisor Edition Images

- IBM Middleware shipped as an .OVF virtual image, ready to run on a hypervisor
- The following products offered
  - WebSphere Application Server (64 bit RHEL OS announced)
  - WebSphere Process Server
  - WebSphere Portal Server
  - DB2
  - WebSphere Message Broker
  - WebSphere Business Monitor
  - WebSphere MQ
- Products support various combinations of:
  - VMware ESX, z/VM and/or PowerVM hypervisors
  - Red Hat Enterprise Linux, SUSE Linux, AIX
- Maintenance, support, and fixes through IBM for both middleware and operating system
  - New images include most recent GA components of IBM middleware, as well as OS patches



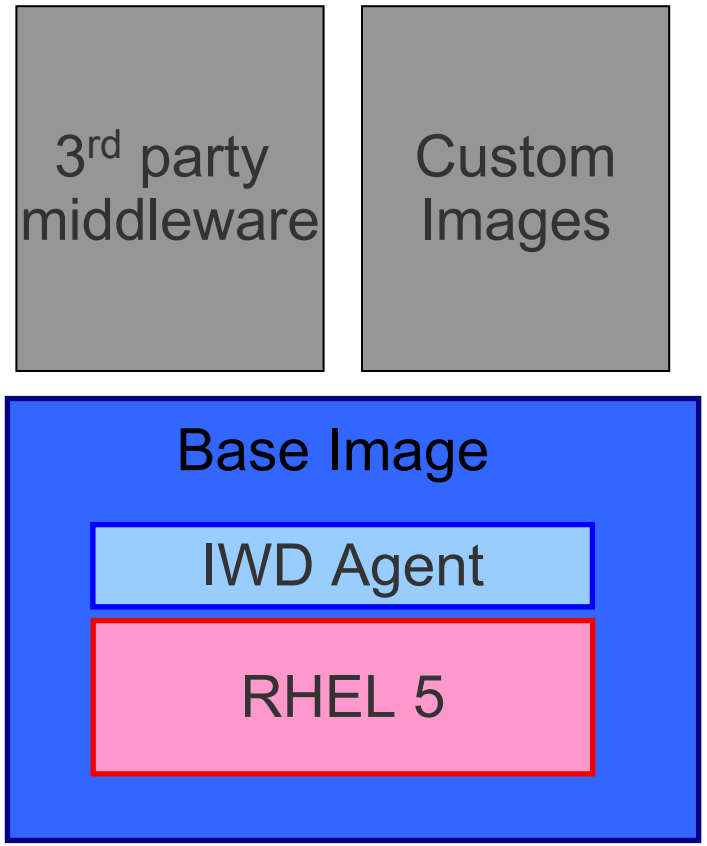
Current HV Image Portfolio

	RedHat ESX	AIX PowerVM	SUSE zLinux zVM	RedHat zLinux zVM	SUSE Linux (64-bit) ESX	SUSE Linux (32-bit) ESX
Portal						
Portal/WCM V6.5.1						X
Portal/WCM V7.0	32-bit					X
Database						
DB2 V9.7		X			X	X
BPM						
WPS V6.2		X	X			X
WPS V7.0	32-bit	X	X			X
WPS V7.5						
Monitor V7.0						X
Monitor V7.5						
ILOG						
Cognos						
Connectivity						
Cast Iron						
WMQ v7.0.1	64-bit					
WMB v7.0	64-bit					
WSRR v7.5						
WTX v8.4						
Application Infrastructure						
WebSphere Application Server v6.1	32-bit	X				X
WebSphere Application Server v7.0	64, 32-bit	X	X	X	X	X
WebSphere Application Server v8.0						
IBM HTTP Server for WAS HV	64, 32-bit	X	X	X	X	X

2010 or earlier | 1H 2011

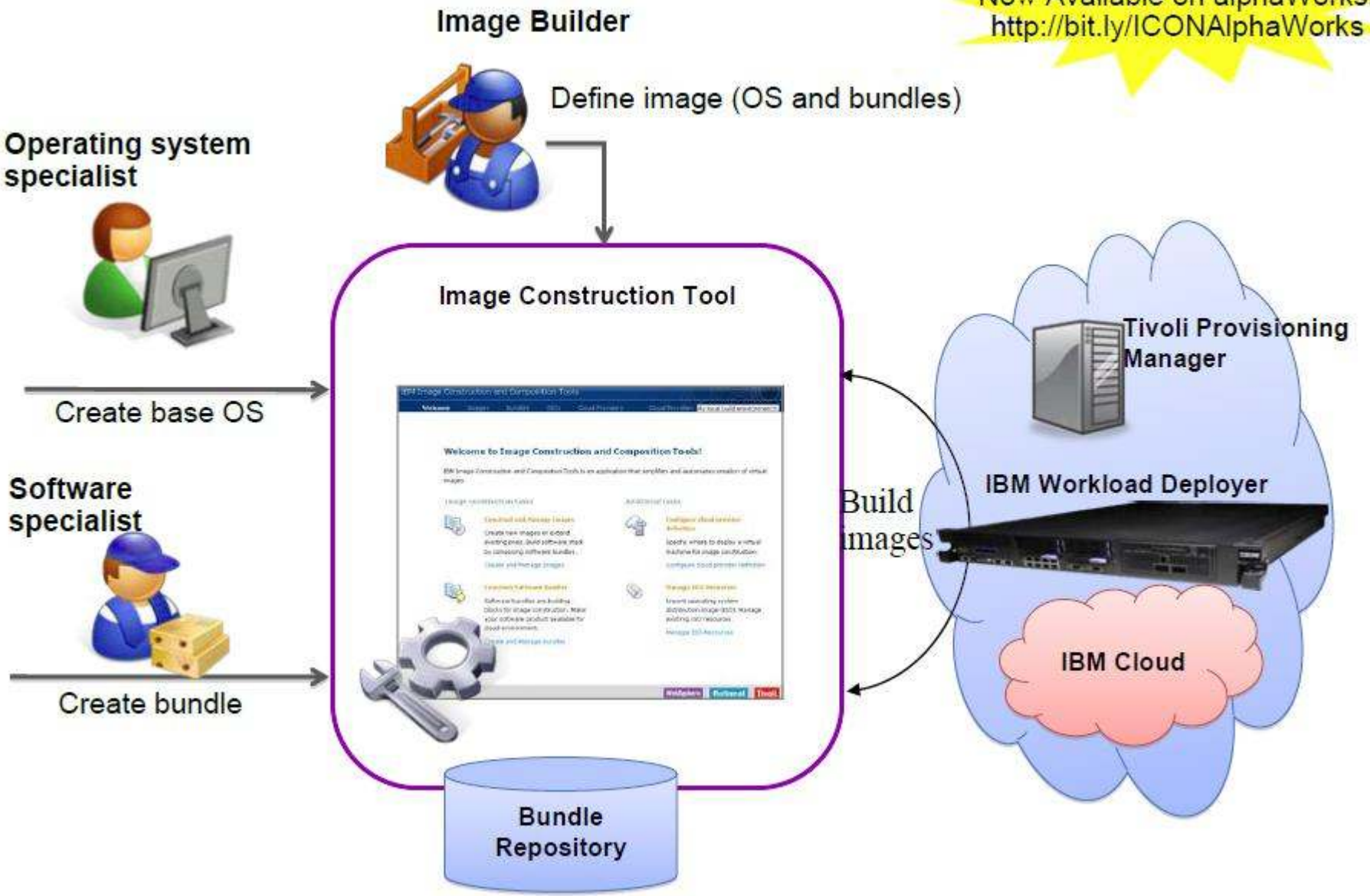
Extend/Capture of Base RHEL Image

- **Extend/Capture the Base RHEL Image to:**
  - Accommodate IBM products that are not available as HV's or Virtual Application patterns
  - Accommodate 3rd party products that are required to round out a full topology
- **"Breadth" requires a tradeoff in "Depth"**
  - Topology management requires scripting
  - Maintenance responsibility falls on user

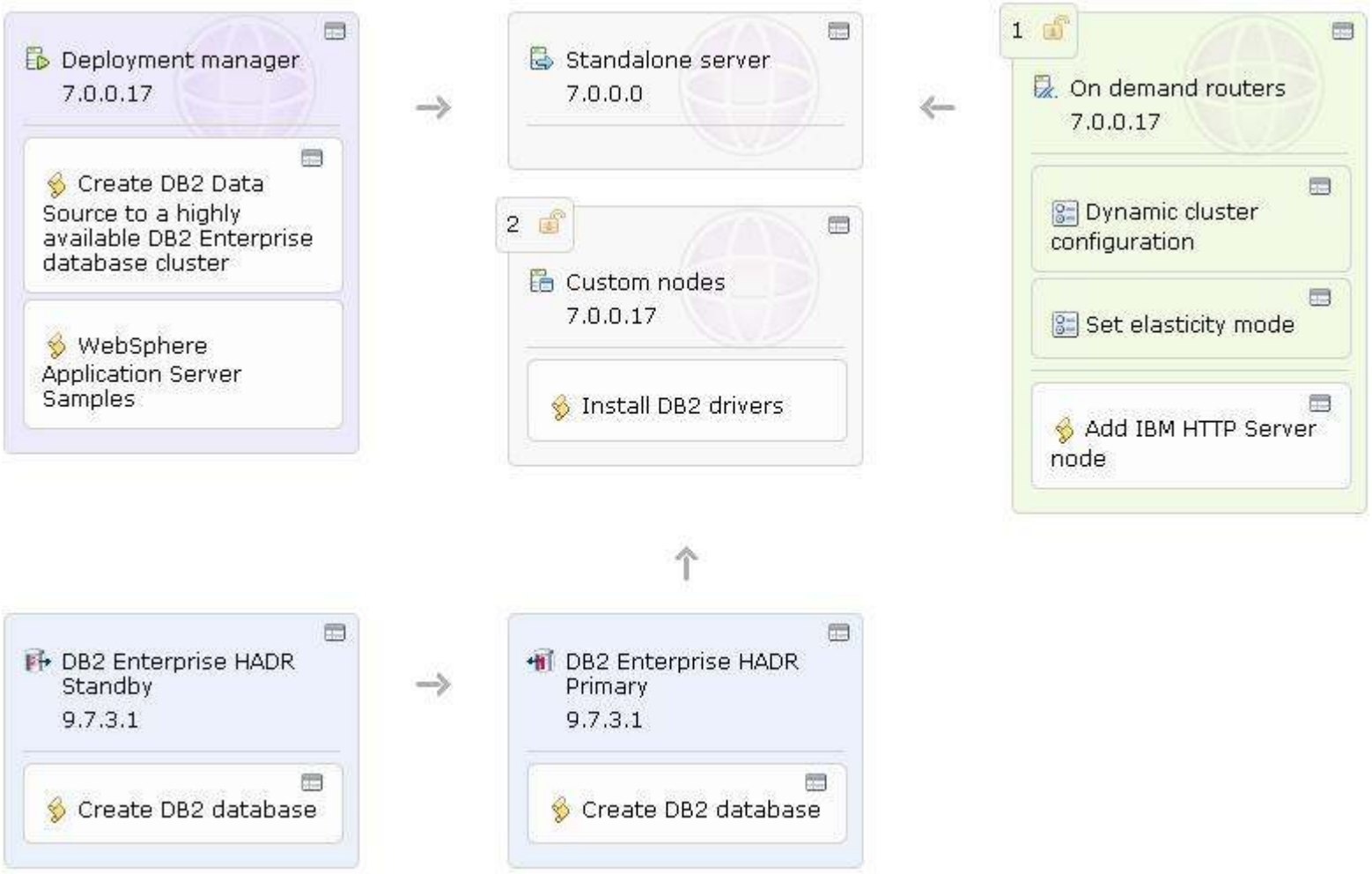


IBM Image Construction and Composition Tool

Now Available on alphaWorks!
http://bit.ly/ICONAlphaWorks



Demonstration: Topology Pattern



IBM Workload Deployer v3.0 – New Capabilities!

Workload Pattern Support	Enhanced patterns with full lifecycle management
Autonomic Elasticity	Intelligent Mgmt Pack – enabled topology patterns scale up/down according to observed demand
VM Mobility	User may request that a virtual machine is moved from its present location in order to optimize placement
IP & Naming Control	Users have more control over IP address and name assignment of dispensed nodes in topology patterns.
Larger Storage	The appliance can hold more images and patterns with over 6x the storage capacity of the WCA v2.x appliance

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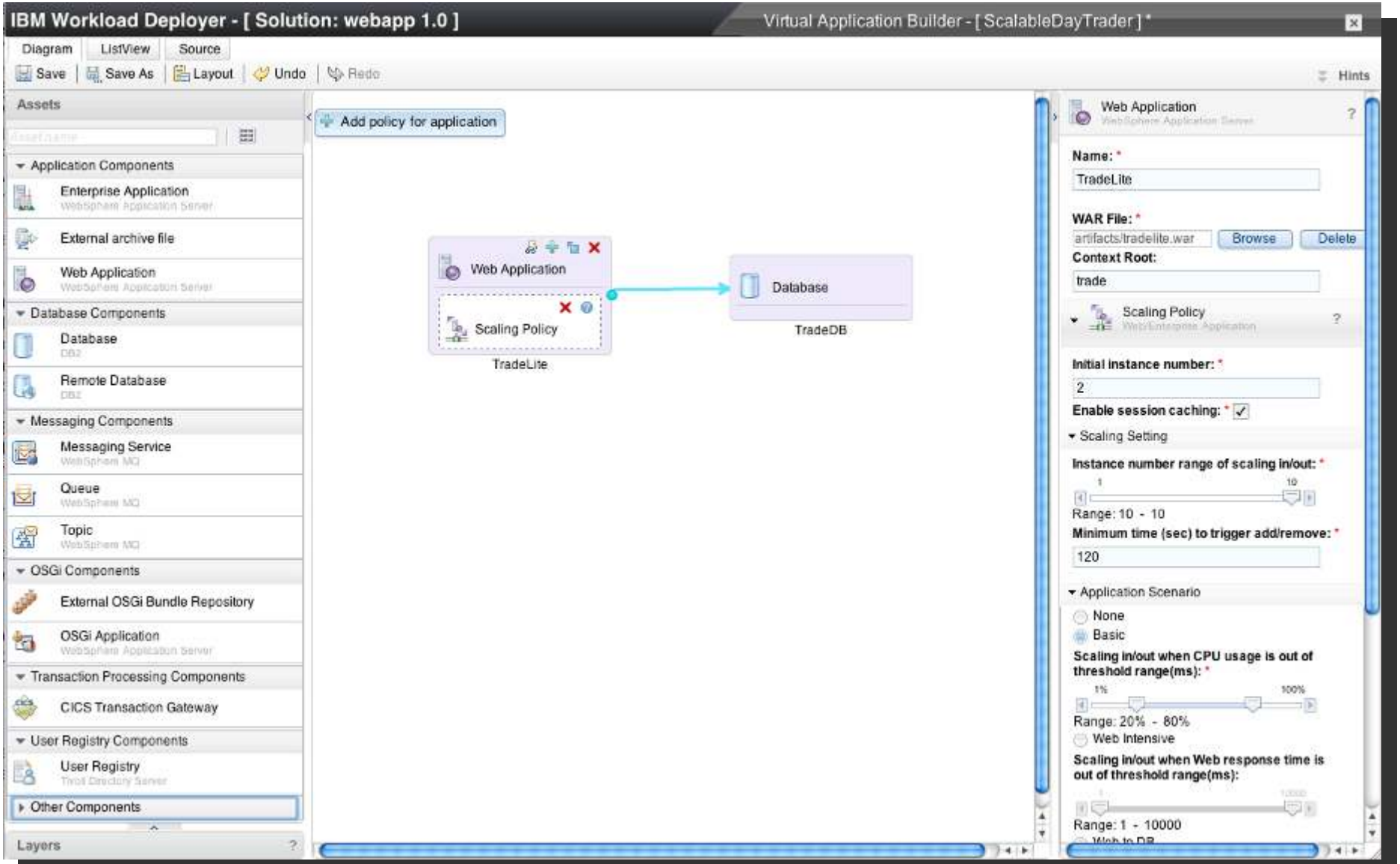
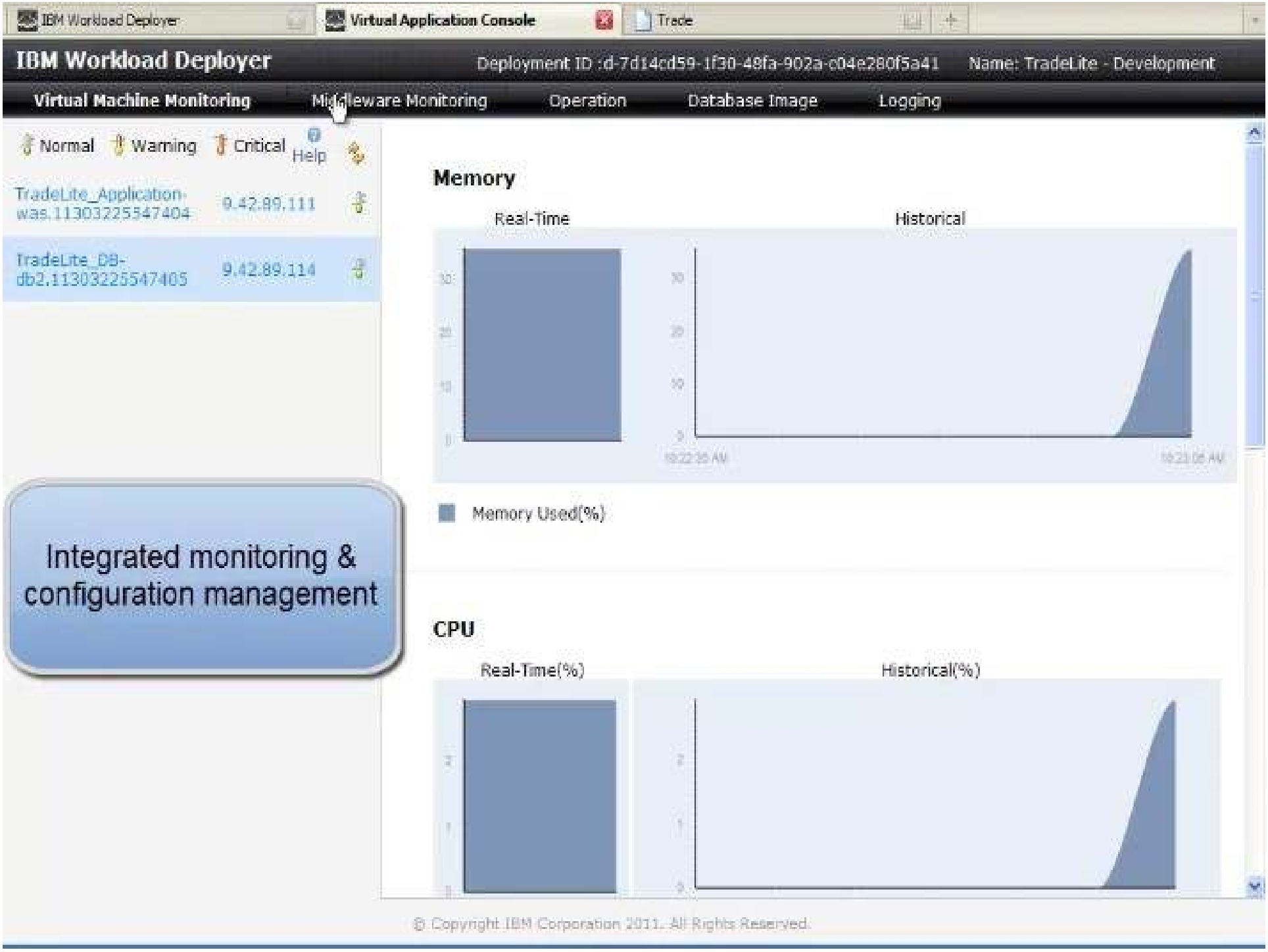
Integrated middleware with cloud capabilities

Workload Pattern Features

Automated Scaling	Managed environments scale up and down based on observed utilization of compute resources
Failover	Failed virtual machines are replaced with new VMs which are configured with the old VM's identity
Load Balancing	Requests coming into workload pattern environments are load balanced
Security	ACL's for application sharing and management access, LDAP integration for application security
Monitoring	All components of workload pattern environments are monitored by IWD

Demonstration : Cloud Application Builder




IBM Workload Deployer
Virtual Application Console
Trace
IBM Workload Deployer
Deployment ID :d-7d14cd59-1f30-48fa-902a-c04e280f5a41
Name: TradeLite - Development
Virtual Machine Monitoring
Middleware Monitoring
Operation
Database Image
Logging
Normal
Warning
Critical
Help
TradeLite_Application-was.11303225547404
9.42.89.111
TradeLite_DB-db2.11303225547405
9.42.89.114
Memory
Real-Time
Historical
Memory Used(%)
CPU
Real-Time(%)
Historical(%)
Integrated monitoring & configuration management
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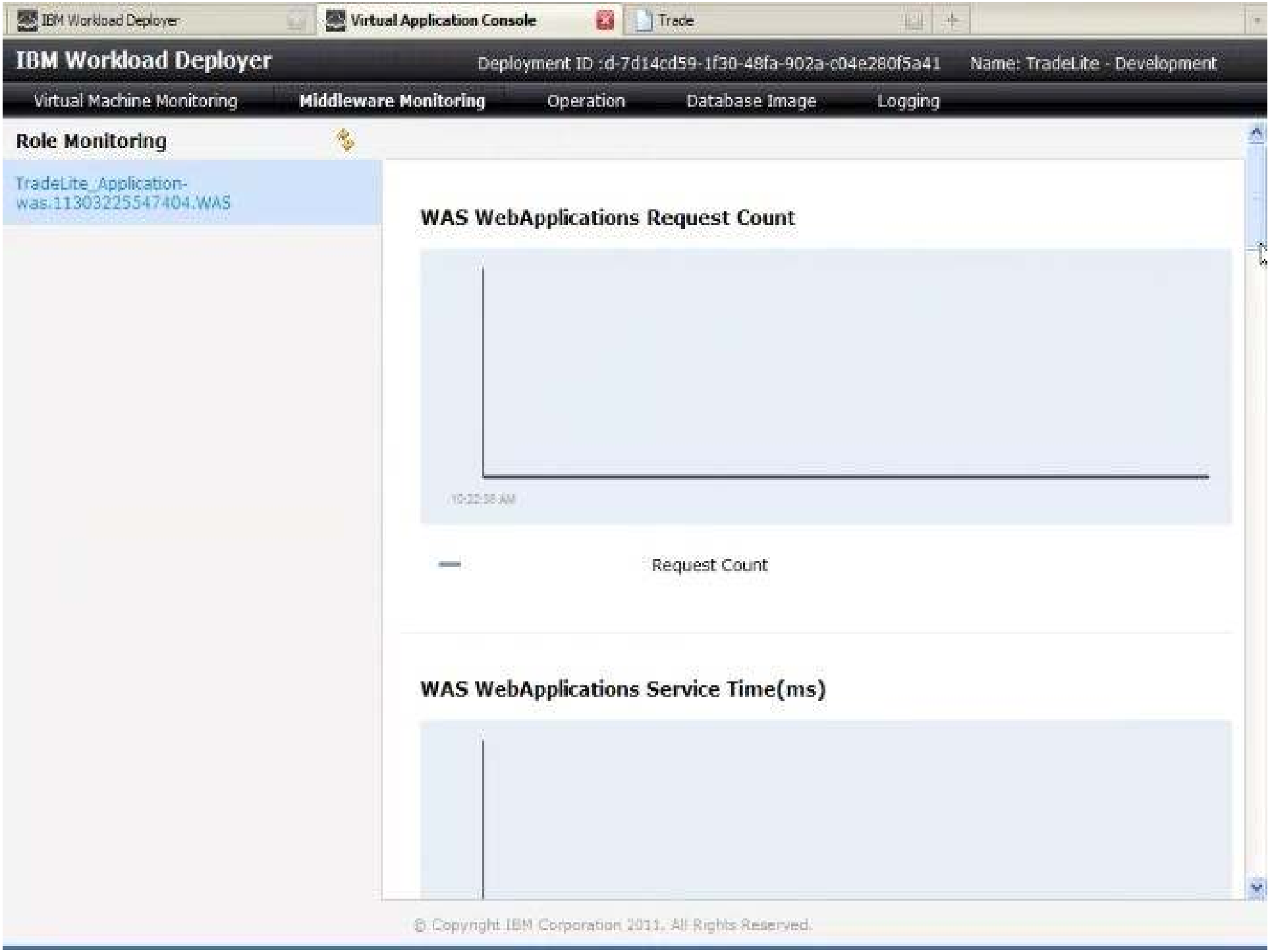
IBM Workload Deployer
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IBM Workload Deployer
Deployment ID :d-7d14cd59-1f30-48fa-902a-c04e280f5a41
Name: TradeLite - Development
Virtual Machine Monitoring
Middleware Monitoring
Operation
Database Image
Logging
Role Monitoring
TradeLite_Application-was:1130322554740 4.WAS
WAS WebApplications Request Count
Request Count
WAS WebApplications Service Time(ms)
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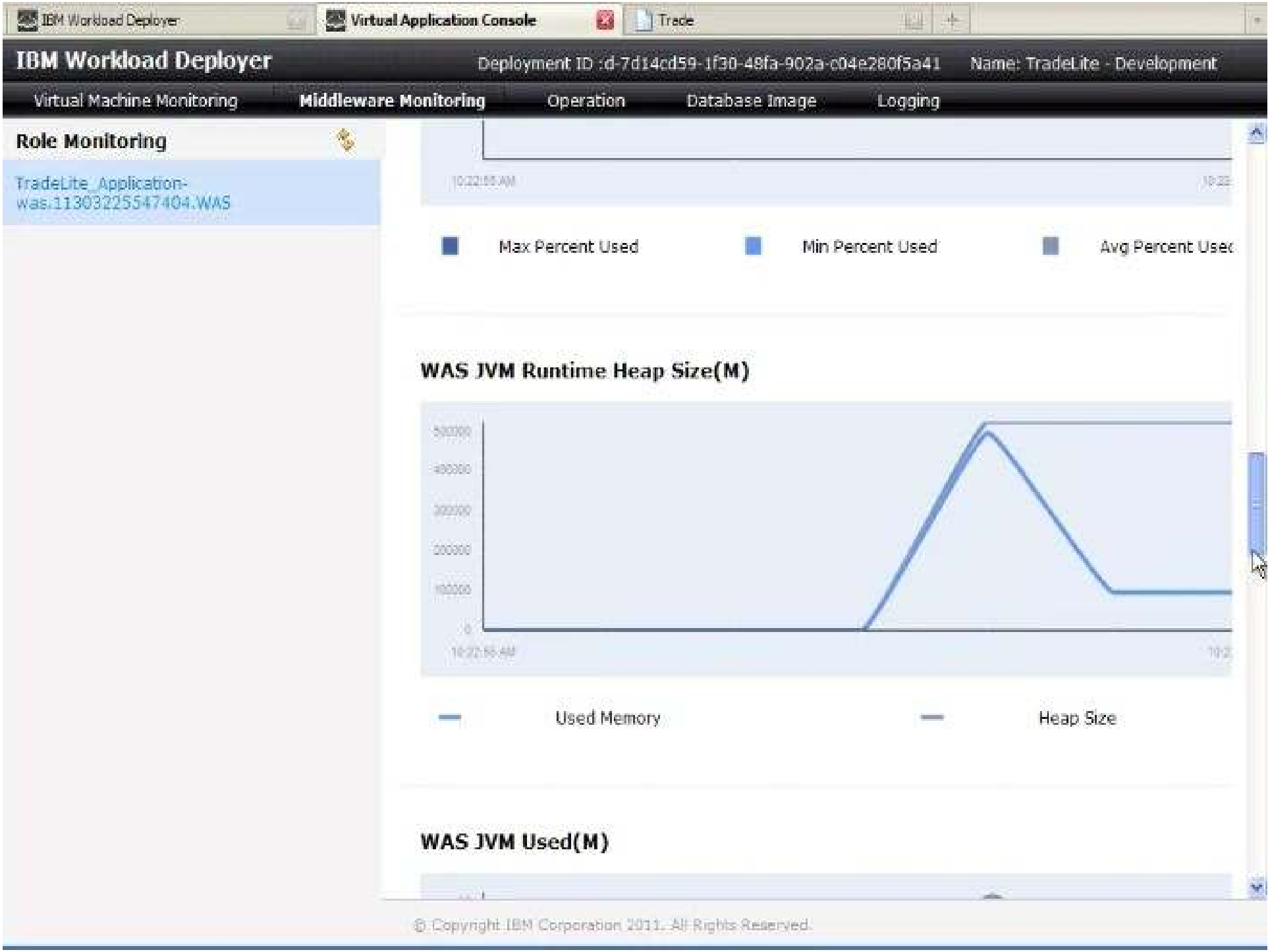
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Name: TradeLite - Development
Virtual Machine Monitoring
Middleware Monitoring
Operation
Database Image
Logging
Role Monitoring
TradeLite_Application-was:11303225547404.WAS
Max Percent Used
Min Percent Used
Avg Percent Usec
WAS JVM Runtime Heap Size(M)
Used Memory
Heap Size
WAS JVM Used(M)
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IBM Workload Deployer | Virtual Application Console | Trace

IBM Workload Deployer

Deployment ID :d-7d14cd59-1f30-48fa-902a-c04e280f5a41 Name: TradeLite - Development

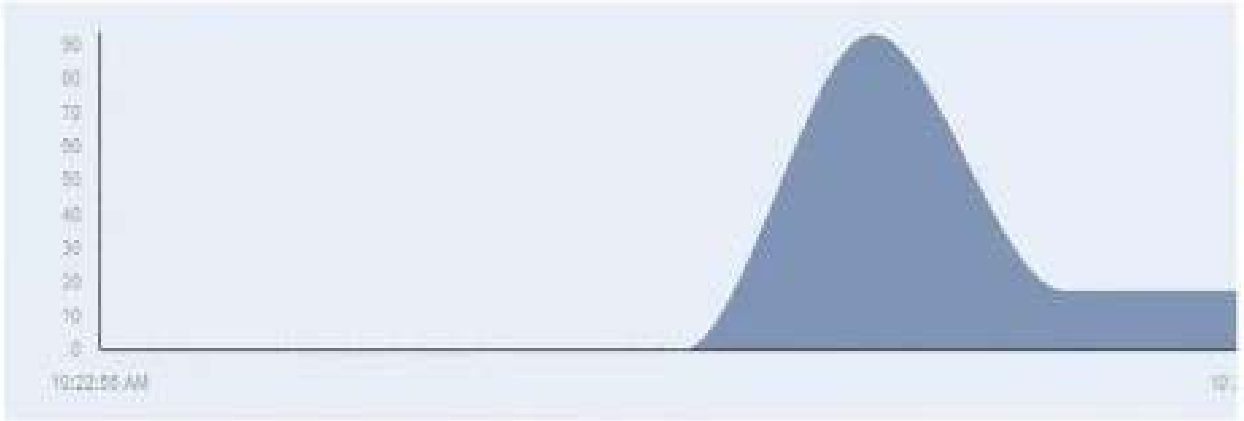
Virtual Machine Monitoring | **Middleware Monitoring** | Operation | Database Image | Logging

Role Monitoring

TradeLite_Application-was.11303225547404.WAS

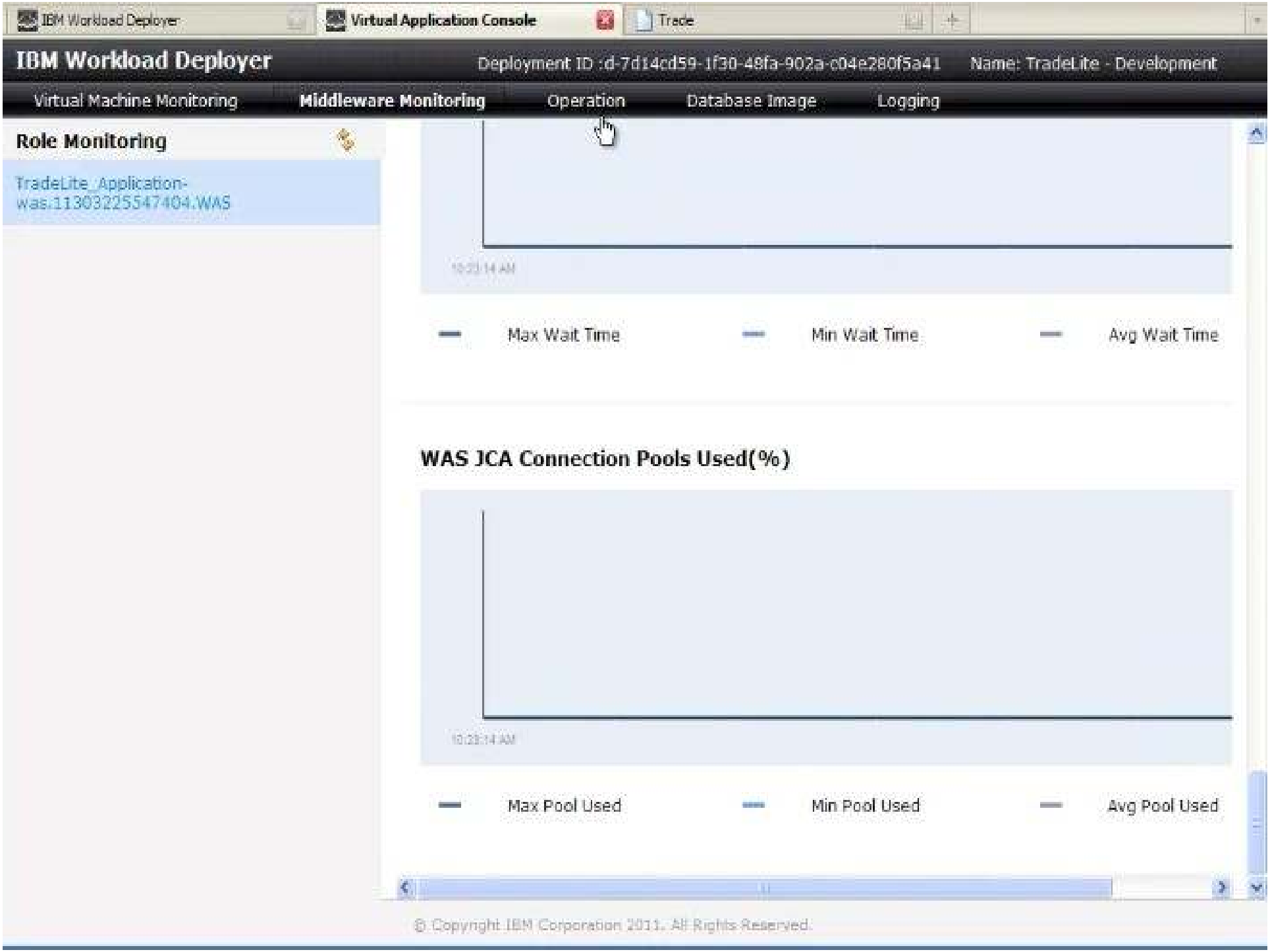
Used Memory Heap Size

WAS JVM Used(M)



JVM Heap Used

WAS Enterprise Beans Method Response Time(ms)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Name: TradeLite - Development
Virtual Machine Monitoring
Middleware Monitoring
Operation
Database Image
Logging
Role Monitoring
TradeLite_Application-was:11303225547404.WAS
Max Wait Time
Min Wait Time
Avg Wait Time
WAS JCA Connection Pools Used(%)
Max Pool Used
Min Pool Used
Avg Pool Used
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IBM DB2 Express Edition Server Option	5724-E49	Server	Ignore	0	90.0 %	0	0
NOVELL SUSE LINUX ENTERPRISE SERVER FOR X86, AMD64, & INTEL EM64T (MAXIMUM 32 CPU) 1-YEAR SUBSCRIPTION WITH NOVELL STANDARD SUPPORT INCLUDING 12X5 UNLIMITED ELECTRONIC AND TELEPHONE SUPPORT	5724-L43	Server	Ignore	0	90.0 %	0	0
IBM WebSphere Application Server Hypervisor Edition	5724-X89	PVU	Ignore	300	90.0 %	280	280
IBM WS App Svr Hyper Ed for Novell SLES on Sys z-Novell Sub Not required	5725-A12	PVU	Ignore	0	90.0 %	0	0
IBM WebSphere Application Server Hypervisor Edition on AIX	5725-A25	PVU	Ignore	0	90.0 %	0	0
IBM WebSphere App Svr Hypervisor Edition for Red Hat Enterprise Linux Svr	5725-A26	PVU	Ignore	0	90.0 %	0	0
IBM WebSphere Appl Server Hypervisor Edition Intelligent Management Pack	5725-A27	PVU	Ignore	0	90.0 %	0	0
IBM HTTP Server WAS Hypervisor Ed on Novell SUSE Linux Enterprise Server	5725-C00	PVU	Ignore	0	90.0 %	70	70

Links

- Harness the power of the cloud with IBM Workload Deployer V3
  - http://www.ibm.com/developerworks/websphere/techjournal/1106_amrhein/1106_amrhein.html
- Easy virtual app automation using Workload Deployer
  - http://www.ibm.com/developerworks/cloud/library/cl-workloaddeployer/index.html?ca=drs-
- IBM Workload Deployer: Application-centric cloud platform
  - https://www.ibm.com/developerworks/mydeveloperworks/blogs/CLLotusLive/entry/ibm_workload_deployer_application_centric_cloud_platform_part_1_of_320?lang=en