Session 12879: Building a Platform for Enterprise-Wide Datacenter Operations

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abstract

As mainframe and distributed systems converge, cross-platform automation is key to successfully delivering enterprise-wide IT services. Come to this session to understand steps you can take to help provide seamless automation of IT processes and events across functional and technological silos.
88% Enterprise Commercial Apps Moving to the Cloud

Can you keep up with business demand for innovation?
Sources: See addendum

74% Companies have deployed hybrid cloud services

30% of IT budgets being allocated to cloud deployments

73B Estimated for Public Cloud in 2015

the “New Normal” and the shift to innovation

IT must deliver new services that ACCELERATE INNOVATION

- Mobility
- Social
- Big Data
- SaaS
- Client Experience

While TRANSFORMING delivery of mainstream IT

- Rationalization
- Agile Cloud Delivery
- Standardized Infrastructure
- Automation Reengineering
- Bring Your Own Device

IT must shift from
Managing Technology To Delivering Innovation
cloud as key enabler to innovation and its benefits

Agility + Cost Reduction

 ENTERPRISE

Speed + Simplicity

SERVICE PROVIDERS

Margin + Revenue

ON-PREMISE

ACCELERATE

BUSINESS SERVICE INNOVATION

SECURE

SaaS

SERVICE PROVIDERS

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the innovation mandate: everything as a service
complexity of hybrid service delivery

service delivery in vast heterogeneous, hybrid IT ecosystem
it should be simple, easy and safe to deliver innovation

Business Service Innovation can be achieved in a complex and constantly evolving technological world
CRITICAL QUESTIONS FOR TODAY’S IT STAFF

- **WHICH** apps should we host **WHERE**?
- Which services do I want to create?
- Do I have enough or too much capacity?
- Do I have transparency to services performance, cost and its value to the business?
- How do I accelerate application development and test cycle times?
- Should we buy, build or outsource?
- What about performance, security, and compliance and risks?
- What is the cost of a mistake...?

IT MUST MANAGE APPS AND SERVICES ACROSS HYBRID DELIVERY MODELS
getting started: what do you need?

TO BECOME MORE AGILE, A PLATFORM IS NEEDED

• Think of cloud as a management paradigm, not a place or a thing
• Work across traditional silos to remodel today’s applications as “business services”
• Look at products and tools that do more than just “enable the cloud” – they must “enable the transition to the cloud”
• Does my platform protect my investments?

• Products and tools should work together to form a consistent platform
• Does provisioning work with capacity planning, performance management, service assurance...?
• Do the tools support my hardware and operating environment choices?
• How flexibly can I move services between my operating environment choices?

IT MUST MANAGE APPS AND SERVICES ACROSS MULTIPLE DELIVERY MODELS

- Converged infrastructure
- Use SaaS
- Provide PaaS
- Fabric
- Hybrid Cloud
- Private cloud
- Cloudburst
- Use IaaS
- New or Existing datacenter

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A successful platform implementation improves flexibility and agility by reducing complexity, while supporting the reuse of existing, proven implementations.
a roadmap to successfully delivering enterprise-wide IT Business Service Innovation
For historical reasons, systems management is done along platform lines
- There may even be subdivisions along functional lines

What comprises a “management domain”?
- People
- Process
- Hardware
- Software
- Tools
- Measurements
- Schedules

Politics
the state of the business today...platform silos

STAFF

TOOLING

WEB SERVING

APP SERVING

DB SERVING

x86 Management Domain

RISC Management Domain

Linux on System z Management Domain

z/OS Management Domain

Virtualization

Provisioning

Monitoring

Automation
The business has a problem to solve:

- Inputs
- Outputs
- Metrics & SLAs
- Cost

Application architects and developers will use whatever they have on-hand to create and deliver new value to the business

IT takes these criteria and uses them to deliver a service

- Resources are decided based on the requirements delivered by business
- Historical deployment greatly influences the delivered architecture
- Often, there is external pressure to use particular technologies
  - “Cloud”...“not mainframe”...“Oracle”...“Linux”
IT needs to deliver on business requirements

- IT needs to take business requirements and produce a system that meets those demands

- Cost efficiency and flexibility are always implied
  - Reuse of existing infrastructure should be considered but not be the only guiding influence

- Attributes of the workload will help determine implementation, but IT should also provide multiple paths to support different QoS objectives
  - Do you need Platinum, Gold, Silver, Copper or Wood QoS?
business should be focused on outcomes, not technology
adopting a platform mentality can help eliminate silos

- **WEB SERVING**: x86 Execution Domain
- **APP SERVING**: RISC Execution Domain
- **DB SERVING**: Linux on System z Execution Domain
- **z/OS Execution Domain**

**STAFF**

- Automation
- Monitoring
- Provisioning
- Virtualization

**TOOLING**
adapting a platform mentality can help eliminate silos

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Virtualization

Automation

Monitoring

Provisioning

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adopting a platform mentality can help eliminate silos

STAFF

TOOLING

VIRTUALIZATION

WEB SERVING

APP SERVING

DB SERVING

x86 Execution Domain

RISC Execution Domain

Linux on System z Execution Domain

z/OS Execution Domain

“The Platform”
For IT to deliver the next round of improvements to improve service delivery, there are a set of principles that need to be adhered to:

- IT staff should align to business services and results, not silo metrics
- The tool set should extend to provide both business and technical metrics
- Where possible, abstract or virtualize away technical distinctions
- IT should provide automated or self service access to resources and data
an architecture for alignment

Service View
Analytics
Business Metrics

Platform & Domain
Specific Tools

A business service
step 0: empower the hybrid IT workforce

Converge the management of mainframe, distributed and cloud

- Enable next-generation mainframer: the hybrid IT worker
- “Net Generation” thinks and works differently
- Need tools and processes that simplify and unify
simplify and unify

COMMAND GENERATION SELECTION MENU

Select one of the following:

10 RECEIVE  20 RESETRC  30 LIST BACKUP  40 ZONECOPY
11 APPLY    21 JCLIN    31 LIST LOG    41 ZONEEDIT
12 ACCEPT   22 UCLIN    32 LIST        42 ZONEDELETE
13 REJECT   23 CLEANUP  33 UNLOAD     43 ZONEEXPORT
14 RESTORE  24 GENERATE 34 REPORT     44 ZONEIMPORT
15 LINK     25 LOG      35 BUILDMCS   45 ZONEMERGE
16 UPGRADE  26 UPGRADE 36 UPGRADE   46 ZONERENAME
          27 UPGRADE  37 UPGRADE   47 GZONEMERGE

Enter or verify the following:

ZONE NAME  ==> (required)
OPTIONS NAME ==> OPTIONS name or blank
SMP/E PROCESS PARAMETER ==> WAIT
                      WAIT or END

To return to the SMP/E primary option menu enter the END command

5694-A01 5655-G44 COPYRIGHT IBM CORP 1982, 2008
# CA Mainframe Software Manager time savings install

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*Source: CA Lab test results*
of course....the mainframe has long been known for its...

Integrated Workspace

Rich Visualization

Robust Reporting

Knowledge & Collaboration

Process Automation
Next generation has long been heralded for its...

- Integrated Workspace
- Rich Visualization
- Robust Reporting
- Knowledge & Collaboration
- Process Automation
enhancing productivity
CA Chorus

A new and fundamentally different user interaction model

— Based on **how people do their jobs**, not **how they use specific products**
— Provides rich features and data visualization in a web-based workspace
— Not just a bunch of disconnected GUIs
— True integration of products, process, and data
provisioning the enterprise
extending CA AppLogic to support System z

— Quickly provision, deploy and manage cloud applications on System z as part of a hybrid cloud computing infrastructure

— A single System z server will be able to host dozens of AppLogic grids, each with hundreds or thousands of virtual appliances

— Energy efficiency - single System z server can host thousands of Linux on System z applications, effectively replacing the need for hundreds of distributed servers and their required network fabric

— Easy connectivity to z/OS resident application and database servers

— System z cloud deployment combines cost reduction and agility with massive scalability and reliability
consolidate to Linux on System z
the CA solution portfolio

zVPS™
Performance
Suite

UPSTREAM
for Linux on
System z

CA VM:Manager Suite
for Linux on System z

CA Gen™
Application
Development

CA Cross
Enterprise APM

Data Protection

CA SiteMinder Web Access
CA Access Control
CA Top Secret® for z/VM
ACF2™ for z/VM
CA VM:Secure

Performance Management

Workload Automation

CA VM:Secure
CA VM:Director
CA VM:Archiver

System z

z/VM

Linux on System z
application provisioning and deployment
the AppLogic way

- With cloud-like provisioning:
  - IT provides a pool of resources: approved platforms, delivery models, hardware and software combinations
  - Application architects and developers construct services and applications from basic IT building blocks
  - Some building blocks can execute on different underlying platforms with different delivery models:
    - Java, Tomcat, JBOSS, WAS, DB servers
    - On-premise, off-premise
  - Others are constrained to specific platforms/systems:
    - CICS, IMS
  - IT delivers flexibility to the business by adapting building blocks to what’s most cost efficient at a particular time

- Monitoring and automation policy can be built in at application build time, not applied later
  - When infrastructure is changed, the tools, agents, methods automatically change
monitoring the enterprise

- Current monitoring technology is excellent for monitoring and measuring at the platform and subsystem levels.

- The capability to integrate monitoring of applications, subsystems and disparate platforms is an area where investment and invention is needed:
  - Discovery, aggregation, “technical impedance matching”

- It’s not enough to just gather, aggregate and present data, more capabilities are needed:
  - Synthesis of business metrics: “failed customer interactions,” “orders per second,” “IT cost per order”
  - Infrastructure and application analytics: long term trending and capacity management, profiling to provide early warning of failures, and recognition of application misuse
proactive management across the enterprise monitoring the mainframe, distributed, and cloud
enterprise IT automation
managing the infrastructure and the applications

- Automation is a key capability used by IT to improve the efficiency, reliability and availability of IT services
- Many installations have decades of automated scripts and actions that are just part of the fabric
- “Crossing the platform divide” is often done with bespoke extensions to various products – resulting in fragility that is often exposed when upgrading the automation products or the underlying middleware
- Automation should take advantage of underlying technology to delivery qualities of service
  - Greatest common factor rather than least common denominator
enterprise IT automation
managing the infrastructure and the applications
enterprise IT automation
CA OPS/MVS and CA PAz
enterprise workload automation

- Workload automation has traditionally led the way on enterprise-wide operations
- The roles and functions of workload automation, IT automation and business process orchestration continue to converge and intertwine
- Metrics, SLAs and critical path management for each of these need to be monitored and converge
  - Corrections must occur in real time
- The discipline must expand beyond script based to enable more policy based management
automation convergence

Critical Path Monitoring And Alerting

Business Service Level Management
Workload Resource Broker
Service Oriented Architecture
Workload Service Management
Management & Control
Monitoring, Control, CPM,
Service Management,
reporting
Workload Engine
Policies, events, schedules,
Jobs, Job control, job management

IT Workload Automation Broker

Resource Pool
VMs
Real Servers
LPARS

IT Workload Automation Broker

Packaged Business Applications
Integrate, Trigger
Monitor
SAP, Oracle, PeopleSoft

Platforms
FTP, Scripts, Resource Monitors,
File Monitors, Triggers
Win, Linux, Unix, z/OS, i5/OS,
OpenVMS, Tandem

Application Infrastructure
and Published Services
Integrate, Trigger
Monitor
Oracle, DB2, SQL, J2EE, JMS,
JAVA, Web Services, HTTP, …
Can you unlock innovation while managing complexity, controlling cost, and mitigating risk?
To move to the next level of performance IT must reorganize away from silo (hardware/software/subsystem) delivery to align with the delivery of business services

Systems management remains important, but business service/application management is paramount

By focusing on transforming to a service delivery model, IT can define elements of the infrastructure that can be flexibly provisioned, enabling better cost management

Virtualization, cloud, and xaaS are steps along the way to Business Service Innovation

The business, application development, IT, and IT vendors must collaborate to build a platform to best serve both business and technical needs
transforming IT management
mainframe modernization and optimization

Where CA Technologies Mainframe Solutions can help you today

**Technology Objectives**

- Software rationalization to provide equal or superior functionality
- Simplify and modernize mainframe management to enable the next-generation of mainframers to manage the platform
- Provide cross-enterprise visibility into application performance management

**Business Benefits**

- Reduce costs and simplify vendor management
- Sustain critical skills & improve staff efficiency
- Manage complexity
- Reduce costs & manage complexity

Mainframe Modernization & Optimization
questions?
thank you