Service Delivery Management: Integrated Service Management for the Cloud

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SEI Private Cloud Solutions Sales Executive, IBM ISA
“Process discipline, automation and self-service management tools, and organizational changes are inevitable. *Without these improvements, internal clouds are impossible.*”

Forrester Consulting: “Virtualization Management and Trends”
January 2010
IT needs to drive revenue
...but business demand is outpacing IT budgets and resources – as well as traditional means of delivery.
Cloud Computing a Model for Optimized Delivery

- Simplify
  - Reduce infrastructure complexity
  - Reduce staffing requirements
  - Improve business resilience (manage fewer things better)
  - Improve operational costs/reduce TCO

- Consolidate
  - Remove physical resource boundaries
  - Increased hardware utilization
  - Allocate less than physical boundary
  - Reduce hardware costs
  - Simplify deployments

- Virtualize
  - Standardized Services
  - Dramatically reduce deployment cycles
  - Granular service metering and billing
  - Massively scalable
  - Autonomic
  - Flexible delivery enables new processes and services

- Dynamic
  - Self-Service
  - Elastic
  - Automatic service metering and billing
  - Industrialized service delivery
  - Economies of scale

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Common Cloud Use Case Patterns

Optimize your data center or dev/test environment

Virtual Environment Management capabilities include:
- Improved resource utilization to address image management
- Improved productivity and service transparency
- Easy on-ramp to additional cloud capabilities

Transform application delivery

Private Cloud Implementation capabilities include:
- Managed services
- Low entry cost and pay per use
- Line of business, process, service focus
- Hybrid connectivity

Provide cloud services

Service Provider Platform capabilities include:
- Scalability and multi-tenancy
- Integration with existing business applications and systems
- Integrated charging and metering
- Full lifecycle management
- Hybrid management capabilities
virtualization is helping to close the gap

Virtualization is redefining the relationship between IT and business service delivery...

and has the potential to provide a fluid, dynamic and flexible on-demand IT infrastructure and help fulfill the promise of cloud computing
and offers outstanding promise

Virtualization can deliver substantial ROI, greater agility, improved continuity, and other business value.

- **agility**: Fast IT support for business innovation, transformation
- **continuity**: Hardware redundancy, site recovery, live migration
- **ROI**: Hardware consolidation, power, rent, cooling, downtime
but there’s a flip side to virtualization: complexity driven by rapid growth and constant change

<table>
<thead>
<tr>
<th>enormous change volume</th>
<th>reduced control</th>
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<tbody>
<tr>
<td>increased process issues</td>
<td>lack of scalability</td>
</tr>
<tr>
<td>more staff pressure</td>
<td>diminshed visibility</td>
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Managing the increased complexity found in dynamic, large-scale, virtualized environments introduces new challenges that constrain cloud deployment
the growing concern of ‘virtual sprawl’

CIOs report a persistent difficulty in expanding virtualization deployments

- 15-25% of workloads running in virtual servers (various analysts)
- 34% of total server infrastructure are virtual servers (CDW)
- 38% of mission-critical business services are virtualized (CIO.com)
- 30% of servers are virtualized on average (Various Analysts)
- ~ 45% of clients reports new operational costs associated with virtualization growth
next-generation service management is particularly key to overcoming virtual sprawl and aiding in automated virtualization.

- Pool resources and self service
- orchestrate and automate processes
- accelerate application deployment
- standardize and automate configuration management
- streamline and automate provisioning
- automation technology and robust management tools address the constraints that can stall cloud deployment
- manage change
- increase control
- decrease process issues
- expand scalability
- reduce staff pressure
- improve visibility

so you can...
Stall hits at specific phases of maturity in your virtualization or cloud computing initiatives

Server Consolidation
- Using scripts or vendor tools

Infrastructure Optimization
- Multi-vendor support
- Capacity Management
- Patching
- Configuration management

Automation and Orchestration
- Provisioning
- Configuration standardization
- Dependency mapping
- Compliance

Dynamic Datacenter
- Process orchestration
- Application deployment
- Self-service
- Chargeback

Best effort → Operationally ready → Application aware → Service oriented → Cloud enabled →
five key automation steps on the journey from virtualization to cloud
(building a private cloud in today’s data center with today’s infrastructure)
1. pair virtualization with management early
taking a unified approach
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taking a unified approach

“Success with virtualization lies in solid, standardized processes and management software to automate and govern …these processes.”

Source “Managing The Virtual World Is An Evolution, Not A Revolution,” Forrester Research, Inc., April, 2010

Importance Level of Virtual Environment Management Regarding Reaching Business Goals

1. pair virtualization with management early taking a unified approach

Use of common P&V management tools

- Yes
- Not yet, but eventually will consolidate
- No, plan separate products long term

51 or more virtual machines (n = 54)
50 or fewer virtual machines (n = 46)

“Comprehensive domain coverage is critical….Automation can only be effective if all technology domains are consolidated into … unified management”

Source: “Virtualization Management And Trends”, A commissioned study conducted by Forrester Consulting January 2010
1. pair virtualization with management early taking a unified approach

<table>
<thead>
<tr>
<th>Reduce Service Failures</th>
<th>Up to 24x faster MTTR, uptime to ‘5 nines’</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improve Staff Efficiency</td>
<td>Up to 270%, saving up to $1000 per server</td>
</tr>
<tr>
<td>Faster Deployment</td>
<td>Up to 240x faster, saving up to $200 per server</td>
</tr>
<tr>
<td>Reduce Facility Costs</td>
<td>Reduce power by 16%, $700K p.a. in a 5Mw DC</td>
</tr>
</tbody>
</table>

“Better response, faster provisioning, improved efficiency, and more are all strongly correlated with the use of specific VSM [Virtual Systems Management] toolsets.”

2. Minimize the moving parts to maximize benefits of automation
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**Discovery and dependency mapping**
- Discover applications & servers
- Identify dependencies and relationships

**Change management**
- Detect changes to applications & servers
- Prevent and correct configuration drift

**Standardize**
- Help enforce best practices
- Standardize to manageable set of service offerings
2. minimize the moving parts to maximize benefits of automation

- What applications do I have?
- Where are my applications installed?
- What servers & systems do I have?
- What is virtual versus physical?
- How is it all connected?
- How many of what do I have?
- How do I systematically reduce the number of individual instances?
3. Be pragmatic, grab a quick “private cloud” win by delivering your own “Amazon EC2” for the business
3. Be pragmatic, grab a quick “private cloud” win...

Specify OS & Applications

Select Resources

Reserve Systems
4. Focus on integrating your unique operational processes, not your management products
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Service Request Provisioning Workflow (TODAY)

Customer submits order request via email to IT for new production environment

IT Project Manager confirms order information and validates request

IT Project Manager reviews request, confirms info and creates a Provisioning Ticket to schedule

Server Ops provisions new VM’s & loads hardened OS config via CMS

Network & Security Ops allocate IP address subnet and provision/configure firewall & VPN access

Storage Team provisions required disk capacity from existing array and adds into backup systems and schedules daily routine

App/DB Team provisions DBMS and App Environment

Project Manager notifies Customer that order is complete and closes Provisioning Ticket

Customer’s production system is up and ready for use

EMS/NMS team configures monitoring; NOC personnel test server and notifies Project Manager of ‘success’ or ‘failure’

Network Management
Manual vs. Automated Timeline Response Comparison (TOMORROW)

Manual Process

- Data Center Ops waits for Server, Network, Storage & App assignments from other overloaded groups.
- Manual process causes delays in communication between groups.

Automated Process

- Service Request process immediately initiates and begins provisioning process for new product environment. Automation orchestrates provisioning actions with corresponding systems for network, security, server, storage and application installation and configuration via CMS.
- Once new production network, VM's, server, storage & app software installed & configured, CA PA performs automated testing process to validate system availability. Automation then registers new product system and component devices & services with Enterprise Monitoring & Management systems.
- As soon as service provisioning has been completed, Automation performs automated testing for the new production environment and notifies IT Project Mgr that the solution is available to release to the customer.

GOING FROM WEEKS TO DAYS OR EVEN HOURS
5. Don’t rule out going Hybrid
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public cloud concepts driving evolution of IT

End users see:
• Flexibility
• Speed
• Control

Executives see:
• Lower costs
• Less Staff
• Simplicity

SaaS
PaaS
IaaS
5. Don’t rule out going Hybrid
public cloud is not perfect

But….some applications and use cases are ripe today for leveraging public cloud options
5. Don’t rule out going Hybrid but do it on your terms so your business users aren’t going around IT

- End Users
- Request Service
- Service Catalog
- Automate IT & Business processes
- Process Automation
- Automated Provisioning
- Transparently provision to private or public clouds
- Charge Back
- Ability to track and charge based on utilization
- Reports
- Report on utilization by project or request
- Private Cloud
- Public Cloud

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summary – five key automation steps on the journey from virtualization to cloud

1. Don’t overlook management or taking a unified approach
2. Minimize the moving parts to maximize automation returns
3. Be pragmatic, showcasing “progress wins” on the way
4. Focus on integrating your unique processes instead of products
5. Don’t rule out going hybrid
Cloud is an increasingly attractive means of creating and delivering IT services.

<table>
<thead>
<tr>
<th>Value delivered</th>
<th>From traditional</th>
<th>To cloud</th>
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<tbody>
<tr>
<td>Change management</td>
<td>Months</td>
<td>Days or hours</td>
</tr>
<tr>
<td>Test provisioning</td>
<td>Weeks</td>
<td>20 minutes</td>
</tr>
<tr>
<td>Install database</td>
<td>1 day</td>
<td>12 minutes</td>
</tr>
<tr>
<td>Install of operating system</td>
<td>1 day</td>
<td>30–60 minutes</td>
</tr>
<tr>
<td>Provisioning environment</td>
<td></td>
<td>51% cost savings</td>
</tr>
<tr>
<td>Design and deploy business applications</td>
<td>Months</td>
<td>Days/Weeks</td>
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“Our commitment to informed decision making led us to consider private cloud delivery of Cognos via System z, which is the enabling foundation that makes possible +$20M savings over 5 years.”

– IBM Office of the CIO
Technology leaders are key to driving business transformation and to the delivery of innovative products and services…

- Speed infrastructure delivery from 45 days to 20 minutes.
- Reduced administrative ratio from 10’s to 1 to 100’s to 1

- Transformed supply chain across 5k stores & 54 countries
- Reduced backorder 85%

- Virtual desktop cloud reduces modernization costs by 64%
- Provides students access to latest educational tools

64% of CIOs work with senior business executives to drive innovation.

*Source: IBM CEO Study*
Thank You