Virtualization for Better, Faster, More Cost-Effective QA

An Introduction to Virtual Lab Automation for QA/Test

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Test Setup Has Become a Serious Bottleneck

- **Software and Hardware System Complexity Is Increasing**
  - N-tier applications
  - Distributed
  - Services oriented
  - Open source

- **Number of Test Cases Is Increasing**
  - More systems
  - More devices
  - More network boundaries
  - More components

- **Teams Are Growing in Size and Distribution**
  - Cross-functional teams
  - Remote offices
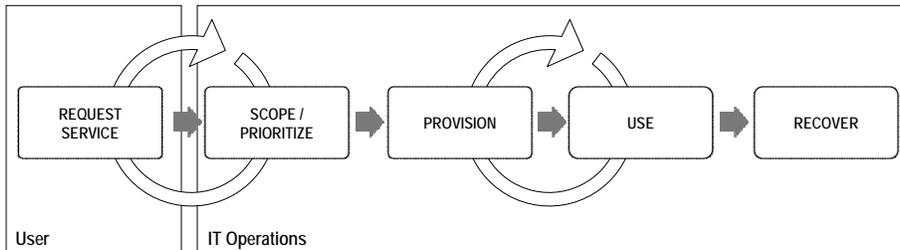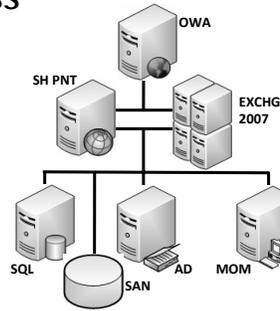 - Contractors
  - Outsourcing/Offshore

Many Moving Parts
- Hardware systems
- Operating systems
- Clients
- Servers
- Runtime systems
- Input data
- Databases
- Patches
- Upgrades
- Interacting systems/components
- 3rd party software
- Network connections
- Access privileges

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General Test Environment Setup Process

OWA

SH PNT

EXCHG 2007

SQL

SAN

AD

MOM

| REQUEST SERVICE | SCOPE / PRIORITIZE | PROVISION | USE | RECOVER |

User

IT Operations

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Test Setup Has Become a Serious Bottleneck

- **Test Environment Setup Is Costly & Time-Consuming**
  - Can easily consume 50% or more of the test cycle
  - Still may not adequately reflect target environment

- **The Bottom Line**
  - Decreased productivity, coverage, and execution limits systems from being developed and tested at a rate that supports business goals
  - Longer test cycles = increased application delivery risk and systems released with inadequate quality

Melinda Carol-Ballou | Program Director | Application Lifecycle Management | IDC

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Virtualization for Test

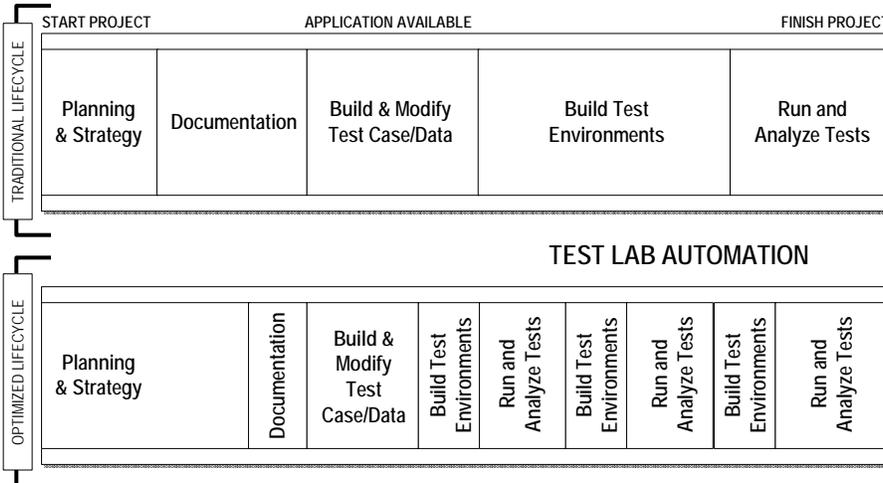| Enable More Testing With Existing Resources	Create Instant Test Sandboxes	Centralize Configuration Management
Multiple applications and operating systems can be supported within a single physical system	Virtual machines are completely isolated from the host machine and other virtual machines… if a virtual machine crashes, all others are unaffected	Complete virtual machine environment is saved as a single file; easy to save, move, copy and restore
Computing resources can be pooled and allocated based on business needs	Data does not leak across virtual machines and applications can only communicate over configured network connections	Standardized virtualized hardware is presented to the application to ensure compatibility

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How Virtual Test Lab Automation Helps

Shortens test & implementation lifecycles, enables developers/testers, reduces IT costs

START PROJECT   APPLICATION AVAILABLE   FINISH PROJECT

TRADITIONAL LIFECYCLE

Planning & Strategy	Documentation	Build & Modify Test Case/Data	Build Test Environments	Run and Analyze Tests

TEST LAB AUTOMATION

OPTIMIZED LIFECYCLE

Planning & Strategy	Documentation	Build & Modify Test Case/Data	Build Test Environments	Run and Analyze Tests	Build Test Environments	Run and Analyze Tests	Build Test Environments	Run and Analyze Tests

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With Virtual Test Lab Automation, You Can:

Manage test resources across distributed teams with business policies and quotas

Easily link test cases and sets to corresponding test lab resources for execution

Automatically provision complex, multi-machine test configurations *(scheduled & on-demand)*

Maintain a comprehensive library of known-good test configurations & environments

"Snapshot" environments to capture defects and allow other teams to exactly re-provision the environments for diagnosis

Securely request, access, save, and restore environments from any browser

Leverage standard & custom reports to accurately track test lab resource use

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Theresa Lanowitz | Founder | voke®, inc. | vokeStream® Market SnapshotTM: Virtual Lab Automation | March 29, 2007

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The Real Benefits of Virtual Test Lab Automation

With virtual lab automation, you can easily leverage excess computing capacity to set up test environments, improve testing collaboration, and speed testing cycles.

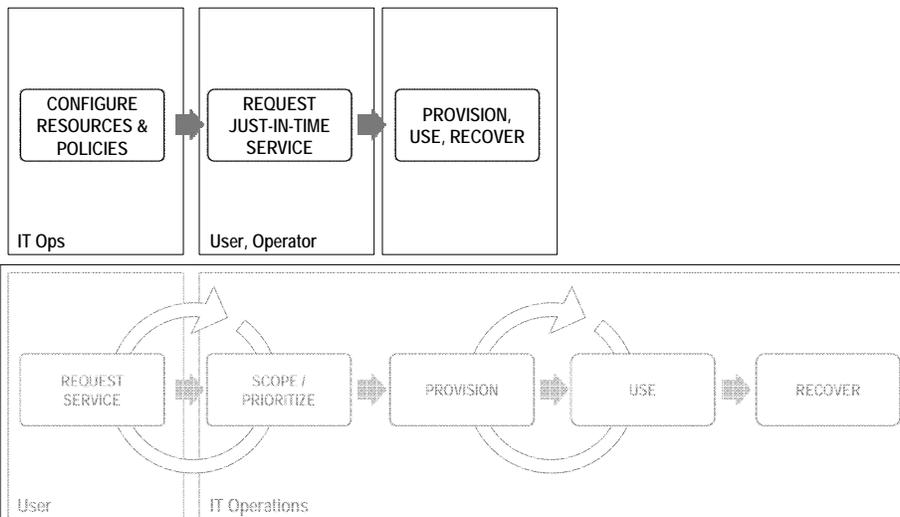|	
Centralize Test Infrastructure and Control Usage	• Employ centrally administered resource management policies to enable safe self-service capabilities without losing control over infrastructure
Reduce Capital Expenses	• Dramatically cut hardware purchases necessary to support testing • Get more utility from existing hardware through re-use and increasing the number of people who can leverage it
Reduce Operating Expenses	• Automate the setup /configuration of test labs, substantially reduce wait times • Free up QA staff to focus on more high value activities
Increase Productivity	• Empower QA teams to do more with less • Increase collaboration between QA and development teams

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Test Environment Delivery with Virtual Lab Automation

CONFIGURE RESOURCES & POLICIES	REQUEST JUST-IN-TIME SERVICE	PROVISION, USE, RECOVER
IT Ops	User, Operator	

REQUEST SERVICE	SCOPE / PRIORITIZE	PROVISION	USE	RECOVER

User   IT Operations

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Case Study | Sisters of Mercy Health Systems

9th Largest Catholic Healthcare System in the US
Hospitals, Clinics, Short and Long-Term Care Facilities

†Mercy
SISTERS OF MERCY
HEALTH SYSTEM

Challenge
- New Enterprise Resource Planning (ERP) system implementation in 2006
- Forced rebuild of 15,000 workstations & 2,000 client applications
- **Estimated 6-year testing time** jeopardized planned roll-out

Solution
- HP Quality Center with integrated Surgient lab management, HP QuickTest Pro
- Automatic workstation deployment and setup for testers
- Automated testing, results posting, snapshots, and tear-down

Results
- Single app testing time **reduced from five days to four hours** (↓97%)
- **Testing bandwidth increased 10X** (8 to 80 apps) with no increase in test resources
- Test coverage reduced from 6 years to 6 months (↓92%)
- Boosted team productivity and morale

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Case Study | Insuresoft

**Leading software provider for the property
and casualty insurance industry**

insuresoft
Success through Insurance Automation

Challenge
- With aggressive release cycles for its full suite of insurance process automation solutions, **needed to reduce QA inefficiencies** to meet demand

Solution
- Surgient virtual lab management added to existing HP Quality Center implementation

Results
- Testing environment **configuration and deployment are now executed automatically**
- Drastically **reduced software delivery cycles** and **improved customer satisfaction** through actual application performance tracking
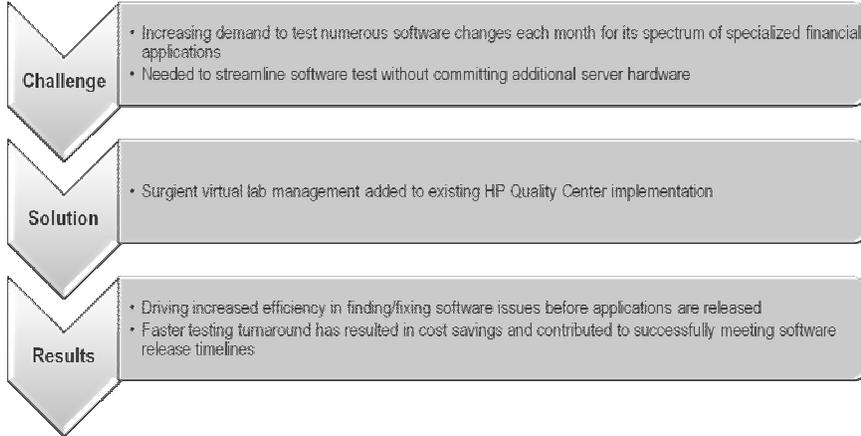- Analysts and developers now have **more time to focus on higher value** activities

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Case Study | Raymond James

Diversified financial services holding company with subsidiaries engaged in financial planning, investment banking and asset management

RAYMOND JAMES

Challenge
- Increasing demand to test numerous software changes each month for its spectrum of specialized financial applications
- Needed to streamline software test without committing additional server hardware

Solution
- Surgient virtual lab management added to existing HP Quality Center implementation

Results
- Driving increased efficiency in finding/fixing software issues before applications are released
- Faster testing turnaround has resulted in cost savings and contributed to successfully meeting software release timelines
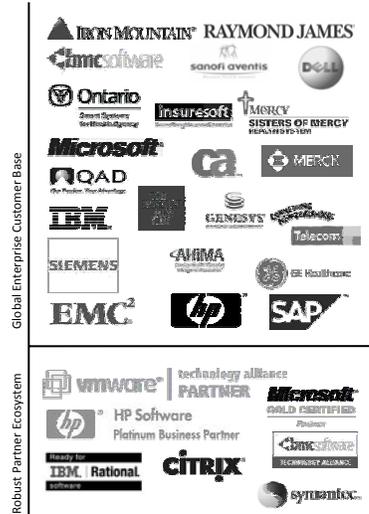
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Surgient

- **Powerful Technology Platform**
  - Automation & deployment of user-centric IT services
  - Patented, just-in-time self-service provisioning & recovery
  - Mixed virtual / physical environment support
  - Enhance and extend VMware virtualization, HP automation
- **Fortune 500 Customer Base**
  - Serving many of the world's largest companies
- **World Class Organization**
  - Experienced leadership team
  - Goldman Sachs, Crosslink Capital, Austin Ventures

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Slide 1

SQGNE Software Quality Group of New England

SQGNE is made possible by the support of our sponsors:

ASQ Software Division

SOFTWARE QUALITY CONSULTING
consulting • training • auditing

Slide 2

Welcome to our **16th** season!

- An all-volunteer group with no membership dues!
- Supported entirely by our sponsors...
- Over 700+ members
- Monthly meetings - Sept to July on 2nd Wed of month
- E-mail list - contact John Pustaver **pustaver@ieee.org**
- **NEW SQGNE Web site: www. sqgne.org**

Slide 3

Volunteers / Hosts / Mission

Volunteers

- John Pustaver - Founder and Director
- Steve Rakitin – Programs and web site
- Gene Freyberger – Annual Survey
- Dawn Wu – our new greeter!!

Our gracious Hosts

- Paul Ratty - room, copies, cookies
- Tom Arakel - room, copies, cookies
- Margaret Shinkle - room, copies, cookies
- Jack Guilderson – A/V equipment

Mission

- To promote use of engineering and management techniques that lead to delivery of high quality software
- To disseminate concepts and techniques related to software quality engineering and software engineering process
- To provide a forum for discussion of concepts and techniques related to software quality engineering and the software engineering process
- To provide networking opportunities for software quality professionals

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Slide 4

ASQ Software Division

- Software Quality Live - for ASQ SW Div members...
- Software Quality Professional Journal www.asq.org/pub/sqp/
- CSQE Certification info at www.asq.org/software/getcertified
- SW Div info at www.asq.org/software
- ICSQ Nov 9-11 2009 Northbrook, IL www.asq-icsq.org/

Slide 5

SQGNE 2008-09 Schedule

Speaker	Company/Affiliation	Date	Topic
Eric Lotter	Surgient	9/9/09	Using Virtualization to Accelerate Quality/Test Cycles
Marc René	Met Life	10/14/09	Maximizing the Value of Testing to the Business
Howie Dow and Steve Rakitin		11/11/09	Interactive Requirements Exercise...
Michael Mah	QSM Associates	12/9/09	Rightsizing Your Project in a Down Economy
Robin Goldsmith	GoPro Management	1/13/10	I went to a Testing Conference and all they talked about was Requirements
Stan Wrobel	CSC	2/10/10	To be announced...
Billie Bell	Intuit	3/10/10	To be announced...
Linda McInnis		4/14/10	Metrics: The Where, How and Why?
Urvashi Tyagi	Microsoft	5/12/10	A day in the life of a tester at Microsoft...
Brian LeSuer	Star Quality	6/9/10	To be announced...
Everyone		7/14/10	Annual Hot Topics Night...

Slide 6

Tonight's Speaker...

Using Virtualization to Accelerate Quality/Test Cycles
Eric Lotter

The enterprise software development process requires significant time and cost investments associated with scheduling, setting up, tearing down and tracking a wide variety of build/test environments. Users of test management tools such as HP Quality Center, IBM Rational, and IBM Quality Manager, now have the ability to leverage fully integrated self-serve virtual machines throughout the build/QA cycle via virtual automation. With both scheduled and on-demand provisioning, QA and IT professionals eliminate tedious administrative tasks, free up more time for focused testing, while reducing costs and delivering higher quality software. In this presentation, you will hear a case study of a fully integrated solution and best practices when implementing virtual automation to accelerate Q/A test cycles.

Eric Lotter is senior systems engineer, Virtual Lab Management practice lead for Surgient. Before joining Surgient in early 2003, Eric was a regional practice lead for configuration and change management at IBM. He has led many Fortune 100 companies in the architecture design, configuration and use of leading change management solutions for development and testing organizations.

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