



# VMware Lab Manager

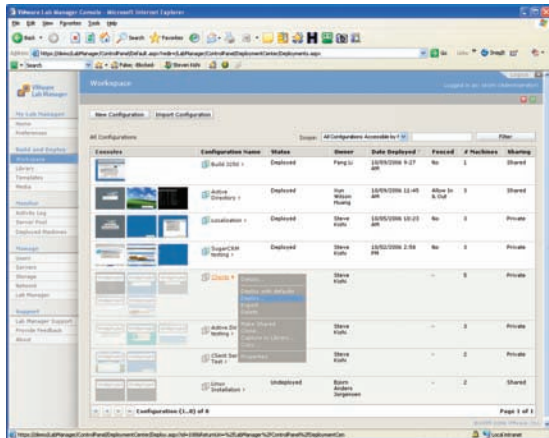
## Virtual Lab Automation System

### AT A GLANCE

VMware® Lab Manager is a new class of software development and test infrastructure that automates the rapid setup and teardown of even the most complex multi-machine software configurations.

### BENEFITS

- Reduce development and test equipment costs
- Slash software development and test cycle times
- Dramatically increase the quality of delivered software systems
- Improve communication and collaboration among teams



*“VMware Lab Manager enables our software developers and QA engineers to easily capture complex system test environments and instantly share them across the organization. This process has allowed us to scale our business and accelerate our time to market.”*

Omar Ansari  
Sr. Manager, Engineering Infrastructure  
Juniper Networks

### How Does VMware Lab Manager Work?

Building on VMware Infrastructure, VMware Lab Manager enables software developers and QA engineers to suspend, then capture to a shared storage library, a complete state of “configurations” – or collections of running, interdependent computer systems that span multiple machines. Over time, organizations can build up a library of configurations, including test scenarios, production environments and customer system configurations.

When a configuration in the library is needed later for development or test purposes, for example to test a new software build in the context of a customer production environment, VMware Lab Manager can instantly deploy the entire configuration to the best available resources in a pool of managed servers – exactly as it was captured, running and ready for use.

Further, the network fencing technology of VMware Lab Manager lets multiple users deploy copies of the same library configuration simultaneously, without having to change machine characteristics such as IP addresses, MAC addresses, or security IDs – and yet still have full network access.

Gathering machines, installing operating systems, installing and configuring applications, establishing inter-machine connections used to be a painstaking, multi-hour exercise. VMware Lab Manager reduces this process to a simple self-service provisioning task, accomplished with a single click of the mouse that literally takes only seconds. Although software developers and QA engineers can now fulfill their own provisioning needs, IT still remains in control of user management, storage quotas and server deployment policies – achieving the best of both worlds.

### CAPABILITIES

- Pool and share server, networking, storage and other resources amongst development and test teams and individuals
- Provide every developer or test engineer the equivalent of their own fully equipped data center with dedicated provisioning staff
- Automatically and rapidly set up and tear down complex development and test configurations
- Suspend and capture a multi-system configuration exhibiting a bug or other unexpected behavior during test, ensuring reproducibility at debug time
- Maintain a complete library of customer and production system environments for use on demand
- Efficiently move and share multi-machine configurations across software development and test teams and facilities

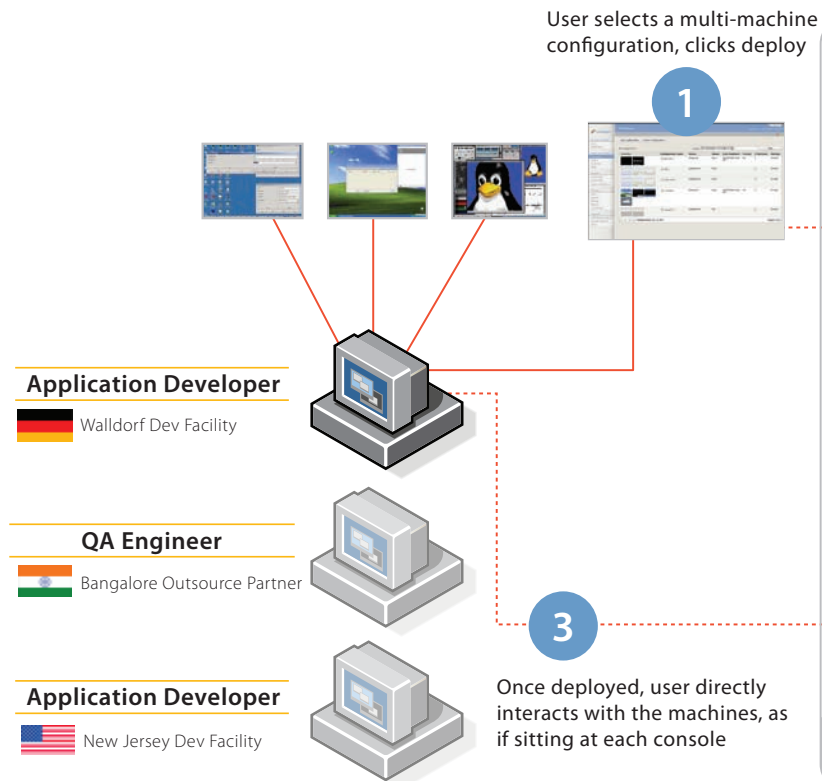
## BENEFITS

VMware Lab Manager is powerful virtual lab automation infrastructure for software developers and QA engineers and the IT groups that support them – enabling development teams to simultaneously accelerate delivery and improve software quality. Its capabilities provide numerous quantifiable benefits to organizations:

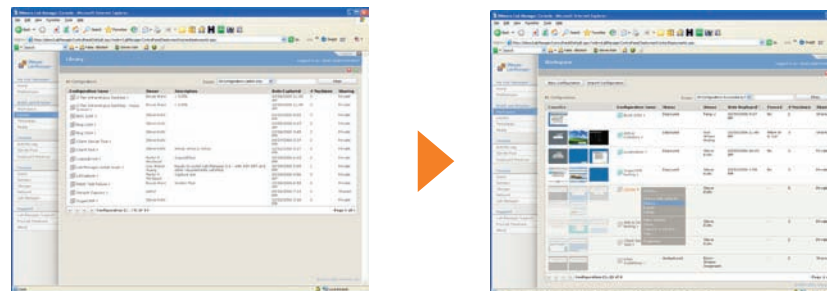
- Reduce equipment-related capital and operating expenditures
- Accelerate integration and system testing
- Shave weeks or months off every software project
- Slash time and energy wasted finding and hoarding servers, storage and networking equipment
- Increase the number of certified configurations a new system supports
- Enable real-world unit and functional testing
- Find and fix more bugs earlier in the development cycle
- Reproduce bugs reliably and reduce time spent in the debug phase
- Reduce the number of latent software defects that slip into production
- Eliminate upgrade breakage
- Deliver better product support
- Rapidly troubleshoot customer production problems
- Improve communication and productivity across distributed development environments

## Simplify and Accelerate Software Development and Testing with VMware Lab Manager

Using VMware Lab Manager is as easy as 1-2-3

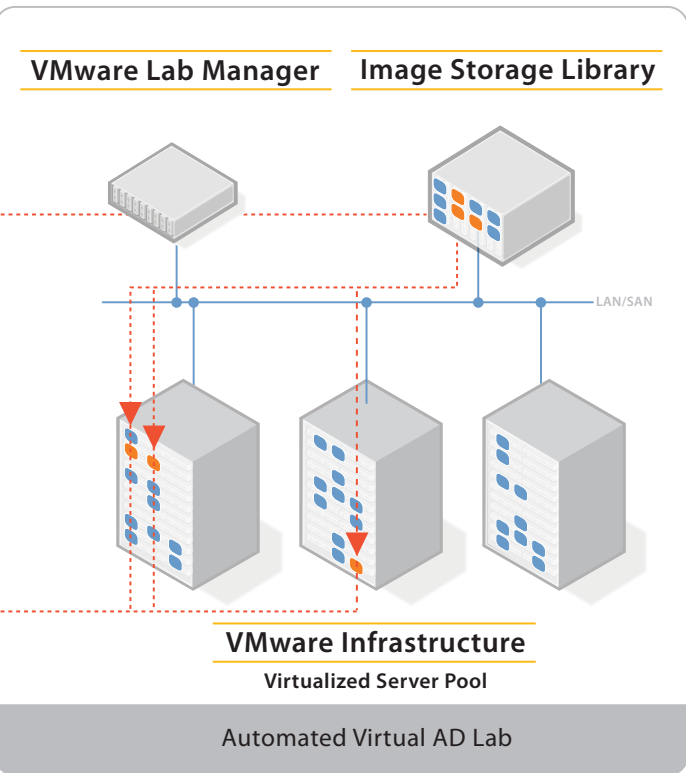


## Point. Click. Done.



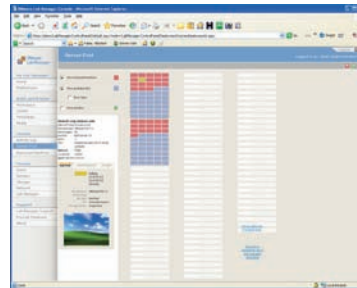
With VMware Lab Manager, configurations go from the library to the server pool to in-browser interaction in just 30 seconds – and with just a few clicks of your mouse.

**2** VMware Lab Manager determines the best host servers, then deploys the machines



### At-a-Glance Monitoring

VMware Lab Manager provides administrators with a bird’s-eye view of the managed server pool, with at-a-glance assessment of utilization, performance and activity – and the ability to drill down for more detailed information.



### Out-of-the-Box Integration Support

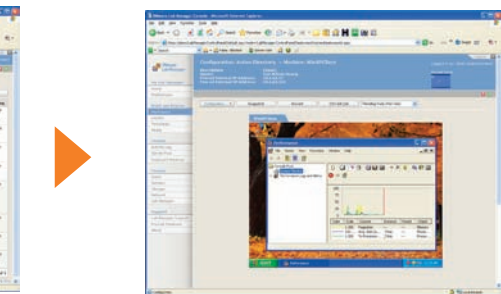
- Borland SilkCentral Test Manager
- HP Quality Center
- SOAP API for custom integrations

### Harness the Power of Virtual Infrastructure

From the user’s perspective, a virtual machine is indistinguishable from a normal server. Virtual machine technology provides encapsulation and insulation properties that VMware Lab Manager leverages to capture, transport, store and restore configurations – even when changes occur to the underlying hardware or deployment environment in the process.

### Seamlessly Integrate with Your Processes and Tools

In addition to its intuitive browser-based user interface, VMware Lab Manager provides a programmatic interface via its standards-based Web service (SOAP) API. Controlling VMware Lab Manager from your automated test script, build system, bug tracking system or any other software component, custom or packaged, is easy.



## KEY FEATURES

### Multi-Machine Configurations

- Create multi-machine configurations in seconds using machine templates - no limit on machine count, no manual adjustments
- View configurations in use with thumbnail console views, public-private scoping and list filtering
- Act on machines in a configuration as a unit: suspend, multi-snapshot, revert to, shutdown, turn on, turn off, suspend, reset, deploy, undeploy, clone, capture to library, and modify properties
- Share templates and multi-machine configurations between users
- Share captured, live configurations via URL-based "LiveLink" capability
- Interact with all configuration consoles side-by-side on a single browser page
- Setup machines in a configuration to boot in controlled sequence

### Configuration Library

- Near-instantaneous check out of configurations with memory and CPU state preserved
- Simultaneous use of library configurations by multiple users without changing MAC and IP addresses or SID, using VMware network fencing
- Efficient storage compression algorithms maximize library entries per storage server
- Public and private library entries
- Public-private scoping and list filtering of library

### Media Library

- Central repository for all development and test media
- Tag media with descriptive attributes
- Upload media from the browser or directly to the file share
- Easily make media available to VMware-managed virtual machines
- Public-private scoping and list filtering of media library

### Deployment

- Browser- or Web service-initiated deployment
- Copy from or execute from storage server
- Configuration or machine deployment granularity
- Automatic load balancing of machines deployed on host servers
- "Fenced Networking" feature for side-by-side execution of cloned configurations
- Set lease times to automatically undeploy expired configurations
- Selectable provisioning heuristic – enabling rapid startup and maximum performance when deploying configurations

### Machine Templates

- Instant creation of new machines from templates with distinct personalization-automated assignment of MAC and IP addresses, and SID (for Windows systems)
- New template creation via cloning and modification of existing templates
- Import pre-existing virtual machine images for use as templates
- Automated installation of mouse and keyboard enhancements for virtual machines
- Optional physical-to-virtual (P2V) capability for storage and management of existing machines
- Public-private scoping and list filtering of templates

### Resource Management

- Automated tracking and issuance of IP addresses
- Storage server management: add, delete, refresh and modify properties
- Managed server management: add, delete, refresh, agent upgrade, remove from service and modify properties
- Set expiration dates for unused configurations to be removed from storage
- Managed server maintenance: quickly shift virtual machines off a managed server so it can be taken down for maintenance
- Storage server maintenance: graphical view displays disk space consumption and configuration dependency tree

### Monitoring

- Active unified "in motion" view of server pool and virtual machine operations
- Drill-down on server, configuration and machine details
- All deployed machines view
- Comprehensive event and job log viewer

### Web Services and Command Line Interface (Automation API)

- Full programmatic control of capture-and-restore operations
- Out-of-the-box automation with leading test automation tools
- Standards-based interface (SOAP, WSDL, HTTP)
- Sample .NET and Java code illustrating use of APIs

### Administration and Security

- User, permission and quota management
- Out-of-the-box support for LDAP
- Administrator role assignment to multiple users
- User self-managed preferences
- Context-sensitive on-screen help

### Installation

- Standard Windows setup.exe installer for all components
- Automated addition of managed servers to deployment pool

### Supported Managed Server Environments

- VMware Infrastructure 3