

# VIRTUALLY AUTOMATIC

## These VMs Won't Manage Themselves

*Virtualization solves many problems, but brings others in its wake. Already early adopters are struggling with virtual machine sprawl. The most promising technology around to address it is production virtualization automation.*

## ICE | INFRASTRUCTURE COMPUTING FOR ENTERPRISE

### 4 FINDINGS

- Server consolidation gives x86 virtualization a foot in the door of the enterprise datacenter, but once it's in, live migration and application availability drive the proliferation of virtual machines (VMs). **PAGE 3**
- Automation is the handling in software of what had been a series of routine manual chores. It helps organizations realize the second-wave benefits of virtualization. **PAGE 3**
- Automation is already available for physical server environments — in the form of provisioning and runbook, change and configuration automation — and in more constrained versions for virtual environments. **PAGE 5**
- Virtualization management stacks expose their live migration and resource pooling functionality as hooks for more fully featured automation frameworks. **PAGE 8**

### 5 IMPLICATIONS

- Virtualization adoption will lead to VM sprawl. **PAGE 17**
- Existing automation tools aren't up to the job, either because they can't track VMs through their lifecycle or can't follow them as they migrate. **PAGE 17**
- Existing virtualization management tools aren't up to the job, because they provide limited or no ability to script routine IT processes into workflows. **PAGE 17**
- Virtual test lab automation frameworks point the way forward, but are tuned for the special needs of QA and test environments. **PAGE 15**
- An opportunity exists for new automation frameworks aimed at production virtual infrastructure, scripting IT processes to take advantage of live migration and resource pooling in response to performance alerts, all without requiring manual intervention. **PAGE 19**

### 1 BOTTOM LINE

- DynamicOps, Embotics, Fortisphere, ManageIQ and Q-layer have identified a provocative and potentially exciting gap in the market, and they have brought forth credible technology to fill this gap.

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## Executive Summary

Hard on the heels of server consolidation comes an intractable new problem for IT shops: virtual server sprawl. Unused virtual machines (or VMs, as they're known) can increase overhead, mop up scarce resources and introduce security holes. They have to be found and killed. Systems administrators are dealing with 10 times the number of system images. They need tools that can handle routine chores without manual intervention.

A new generation of VM automation tools is here to help, built by five startups of exceptional pedigree: DynamicOps, Embotics, Fortisphere, ManageIQ and Q-layer. At first glance, these tools might appear to overlap with physical-server automation tools for provisioning, runbook or change and configuration, or with special tools for managing virtual environments.

In fact, those existing automation tools don't track VMs through their lifecycles, or else they need retrofitting to understand how live migration can move running VMs from one physical server to another. Virtual management tools, by the same token, complement virtual automation frameworks by exposing live migration and resource pooling as features that these virtual automation frameworks can use.

DynamicOps, Embotics, Fortisphere, ManageIQ and Q-layer bring to market different combinations of discovery and tracking, dashboards and self-service portals, automation and federated management to help beleaguered administrators make sense of sprawling and confusing virtual infrastructure. We believe they have identified a real gap in the market, and that their products address real pain points in the enterprise.

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