



HP Systems Insight Manager: One Console to Rule Them All

Quick Note

Thomas Deane
Jonathan Eunice
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Across today's IT landscape, cost reduction is the mantra. Save a buck here; save a buck there; save a buck *everywhere*. As budgets get squeezed, IT managers have to "do more with less"—without reducing delivered services or service levels, of course!

It's easy to look for cheaper servers or storage arrays. But it's estimated that just 10 percent or 20 percent of the overall cost of IT is in the equipment. The vast remainder is spent operating, integrating, and managing IT resources. Thus a growing focus on systems management—loosely defined as "everything you *didn't* buy your systems for, yet are forced to do to keep them running."¹ If you make operations efficient, overall costs will drop.

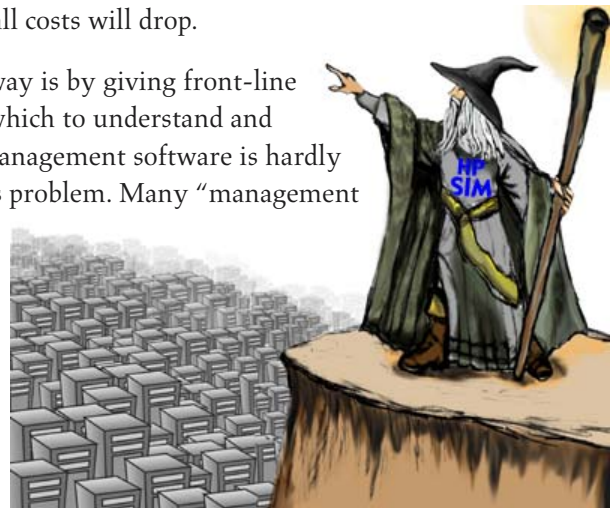
But how do you do that? One way is by giving front-line IT managers better tools with which to understand and wrangle their environments. Management software is hardly new. But it has had a Goldilocks problem. Many "management frameworks" are behemoths—too large in scope and too hard to deploy. In contrast, other tools don't do enough.

Narrowly focused on one task, one operating system, or one set of equipment, they force admins into using a small army

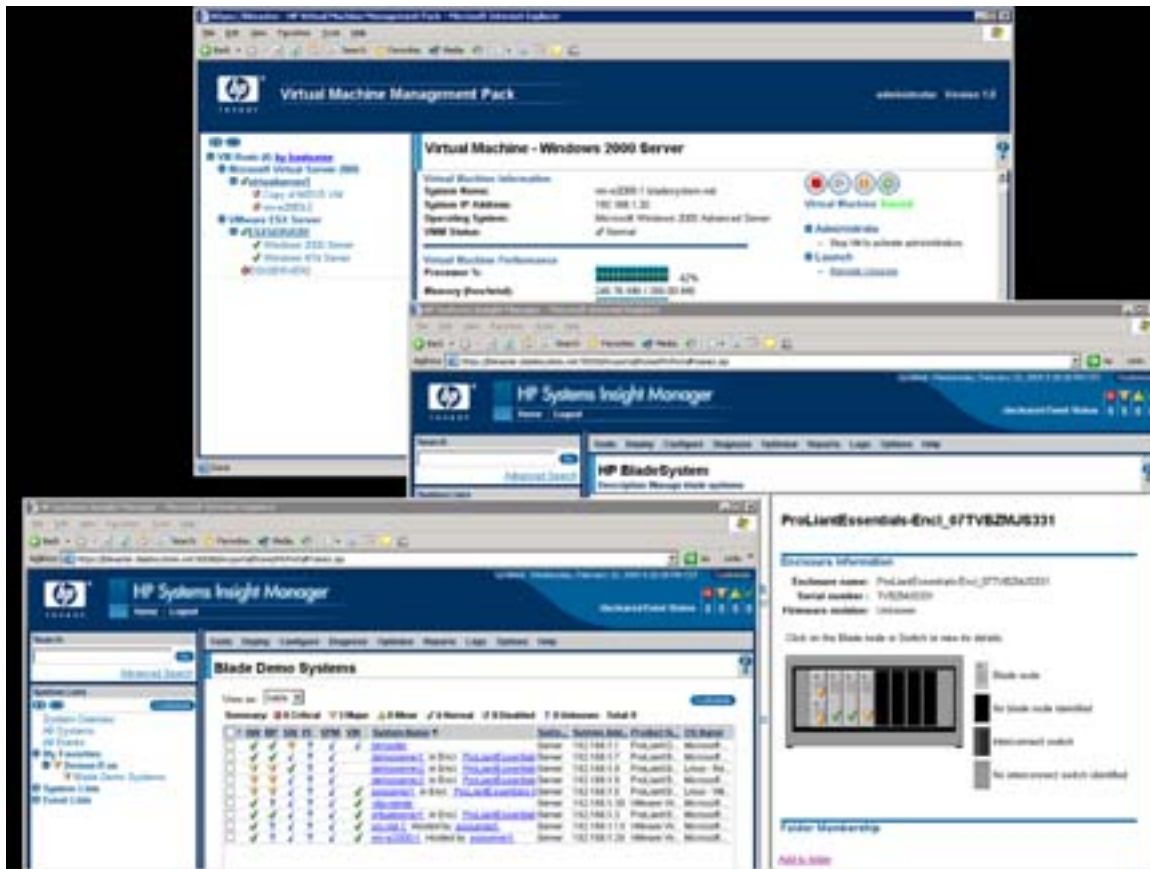
of separate tools to monitor and control the mix of systems seen in practice. What's been lacking is the happy medium: control centers that fall comfortably between the behemoths and the one-task wonders, providing a nice middle ground of heft and capabilities, and into which functionality can be easily and modularly added.

HP System Insight Manager (SIM) is such a tool. It's the cornerstone of HP's systems management portfolio, which also includes OpenView and segues into the company's overarching Adaptive Enterprise vision. Within the past 18 months, SIM has evolved into a tool that can control, monitor, and manage multiple kinds of HP systems, as well as some from other vendors. It manages multiple environments, including Windows, Linux, and HP-UX. Web-based, it can be used from essentially anywhere. SIM nicely bridges the gap between immediate practicality, on one hand, and breadth and extensibility, on the other.

1. One might also carve out "application development and integration" as another "not bought for, yet essential" function.



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HP SIM Console

SIM Core

The SIM core is distributed free with HP hardware. It concentrates on managing basic IT assets—especially the servers and associated devices that underpin business applications.² It can automatically discover and identify these assets on the network, and manage an inventory of them. Beyond answering “what are they?” it helps managers keep those assets operational (through tracking their faults and early fault indicators) and up-to-date (through software and driver management). It can deliver the same information remotely and securely, across the network; admins don’t have to run hither-and-yon to make updates and configuration changes. SIM’s kernel, the Central Management Server (CMS), can be installed on a customer’s choice of Windows, Linux,

2. SIM’s next release will enhance storage management for both HP and a number of third-party storage arrays, HBAs, and storage networks.

or HP-UX. A web-based console provides an integrated and consolidated IT management view.

The “lifecycle management” that SIM provides is the fancy name for the tracking of any systems asset throughout its useful life—from installation and initial configuration, through use and updates, and finally on through retirement.

SIM gathers detailed information concerning server hardware assets, system faults, and overall system security, and keeps this information in a relational database.³ It also provides base-level management of HP clients, printers, and selected storage. SIM can also create detailed reports about the systems it monitors.

Not surprisingly, SIM’s primary focus is HP’s ProLiant, Integrity, and HP 9000 systems. It can, however, also detect and provide information about non-HP systems. For example, it will search out and

3. The open source PostgreSQL when in *nix land and Microsoft’s SQL Server when in Windows-land. The next release will also support Oracle as the DBMS when running on Linux or HP-UX.

detect Dell and IBM servers—and indeed, directly communicate with in-place Dell and IBM management agents. The information gathered from competitive systems is not as complete as that from HP units, nor can it control as many management tasks and functions. Still, it's admirable—and to our understanding, unique—that SIM can gather information as well as it does without the need for the deployment of an HP-flavored agent. Once AppIQ's StorageAuthority Suite is available as part of HP Storage Essentials later this year, SIM will coordinate storage devices as well.

To facilitate more automated (scripted) processes, SIM can be controlled from the command line. Off-the-shelf or custom scripts can be integrated through a mechanism called "Tool Definition Files."

SIM is fairly proactive about fault management. Even just out of the box, SIM monitors quite a few system components including disks, CPU, memory, I/O subsystems, and internal server environment variables such as temperatures and fan speeds. SIM can detect many hardware problems early, before they result in downtime. SIM accelerates the diagnosis and resolution of these problems by alerting IT managers, and by allowing them to rapidly drill down into the system status indicators.

SIM provides role-based security so that each admin can be made part of a particular access-level group. This role-based security provides fine-grained control, allowing an IT manager to specify which users and admins can perform which management actions. This helps delegate system management responsibilities in a controlled and consistent fashion.

SIM's core functionality as a management console is impressively complete. But at some point, a console is a console is a console. It is, however, SIM's extensibility that really makes it shine.

Extending the Core

A key success strategy for SIM is its extensible framework into which new functionality can be easily integrated with plug-ins. In a classic "give the

razors away, sell the blades" strategy, plug-ins are not free. Available today are plug-ins for the management of patches, blades, and hardware performance, automatic software installation and system activation,⁴ out-of-band "Lights-out" management, and virtual machine management. The interface between SIM and plug-ins is generally well-defined and fairly easy to modify.⁵ Some plug-ins contain technology developed entirely in-house; others contain technology purchased outright by HP; while others still are technology collaborations between HP and other companies.

A collaboration example is the use of Altiris technology at the heart of SIM's Remote Deployment Pack (RDP). RDP allows IT managers to consolidate deployment and management of HP servers systems through the SIM console. Another collaboration involves the HP Storage Essentials plug-in, which is based on AppIQ technology.⁶ Available in the summer of 2005, this plug-in will help manage storage area networks (SANs), provide storage resource management (SRM), provisioning, and application infrastructure monitoring. By permitting server and storage management from the same console, Storage Essentials will unify functions that have been too-often separated. Finally, the Vulnerability and Patch Management plug-in combines partner and acquired technology, such as vulnerability scanning functions from HP partner Harris, as well as patch management functions HP acquired from Novadigm.

These examples illustrate how HP is actively collaborating to extend SIM foundations. The record time in which not-invented-here technologies have been added in is a testament to SIM's extensible design.

Not all plug-ins, however, are arms-length collaborations. HP has occasionally outright purchased a technology, or an entire company.⁷ A case in point is CodeArts, which HP bought to quickly create its

4. Via the Rapid Deployment Pack (RDP)

5. The SIM-RDP interface, for example, uses SOAP/XML. SIM has been built using the latest in industry standards, including J2EE, SMI-S, WBEM and WMI.

6. Co-developed with HP's StorageWorks Division.

Virtual Machine Manager. VMM very powerfully allows an IT manager to treat a Virtual Machine (VM) in the same way as a physical server. It can manage VMs from both VMware (GSX and ESX) and Microsoft's Virtual Server 2005,⁸ and it can facilitate a number of sophisticated transformations between physical and virtual machines. These include V2V (Virtual to Virtual),⁹ P2V (Physical to Virtual), and, hardest of all, V2P (Virtual to Physical) moves.¹⁰ Such unified management of technology components from multiple, competing vendors is precisely the sort of consolidation and simplification that customers desire.

The Rise of SIM

SIM represents a modern and modular approach to platform systems management for the everyday systems administrator.

In the 1990s, frameworks for system management were encapsulated in commercial software mega-toolsets such as BMC Software's PATROL, Computer Associates' Unicenter, IBM's Tivoli Management Environment (TME), and HP's OpenView. While all very capable, none of these frameworks ultimately provided the management ease and breadth they promised. One key reason is that they were too expensive and difficult to implement in their full glory. Another is that some of these tools require the purchase of the entire single-vendor, mega-toolset farm—a large and expensive pill to swallow. Yet another reason is that while

7. HP has made 6 acquisitions since September 2003: Baltimore Technologies (identity management), Talking Blocks (standards-based service-oriented architecture), Consera (IT service-modeling), TruLogica (user life-cycle management), Novadigm (change and configuration management), and CodeArts (virtual machine management).
8. See Illuminata report "VMware on the March" (August 2004).
9. In this context, V2V is not the movement of a VM from one system to another (a la VMware's VMotion), but rather a VM conversion from VMware to a Virtual Server 2005, or visa-versa.
10. Because V2P transformations require intimate knowledge of the targeted physical system, VMM can accomplish it only when the target is an HP system. V2P is scheduled for release in summer 2005.

they provide fine high-level functions, they remained—by design—a bit removed from the day-to-day requirements of the average administrator. For all their enterprise-scale and network-wide views, they provide limited assistance with actual equipment. That's the role of the systems console.

After it bought Compaq, HP realized it needed a management console that was cross-platform, cross-OS, and, even to some degree, cross-vendor—especially given its "unified platform" strategy. Management, too, had to be unified. HP had OpenView, of course, but that tool worked at the wrong level, and appealed to the wrong groups. The HP/Compaq tool shed also contained many lower-level utilities, but each was an island that would only work within its own unique environments. These included Compaq Insight Manager (CIM) for Intel-based ProLiant systems, HP's TopTools, and Servicecontrol Manager for HP-UX and Linux, plus various others for managing other OS environments such as OpenVMS, Tru64 UNIX, NonStop Kernel, and so on.

HP's ideal tool needed to be easily extensible, and to consolidate many of HP's existing management products. At about the same time, HP earnestly started working on the Adaptive Enterprise (AE) model/marketing campaign, and also realized that it needed to revamp its collection of management software to support AE. Kudos to HP for realizing that these separate management software products needed to be torn asunder, their entrails examined, and the best parts reassembled into one product. Thus SIM was born.¹¹

The Competition

All the major system vendors—as well as a number of third parties¹²—have products that compete at some level. However, the consoles offered by the direct competitors Dell and IBM—OpenManage

11. Internally, the new SIM project was known as Nimbus.
12. Other SIM competitors and peers include [Aprisma](#), EMC Smarts, Microsoft's [MOM](#), [Peregrine](#), and [SunMC](#).

and IBM Director, respectively—generally trail SIM in multiple dimensions.

In Dell's case, OpenManage offers functionality more comparable to CIM, SIM's predecessor. CIM's role was constrained to managing Compaq's ProLiant servers, and only at a fairly basic level. OpenManage, likewise, only manages Dell's PowerEdge servers, and only with basic functions such as checking hardware status and pushing firmware and BIOS updates. OpenManage can't update operating systems, nor middleware and applications code. If you want to update the entire software stack, you need Altiris' Management Suite or a similar third-party product. The Altiris suite, which Dell resells, contains tools for building remote servers, creating and deploying server images, monitoring hardware and software, updating the BIOS, and managing patches.¹³ But Altiris is doing the heavy lifting, not OpenManage—and it's doing it through a separate interface and architecture. OpenManage is not only limited (for example, it can't coordinate server provisioning, availability clustering, application monitoring, storage management, or similar functions), but also not really extensible. OpenManage is at least a few years and a few dozen key functions behind SIM. Given Dell's limited software investments, that is where it is likely to stay.¹⁴

IBM Director is a bit broader and more sophisticated. It has a long-term mission to manage more of the IBM eServer lineup than its historical xSeries purview, and it extends into functions such as partition and VM management that go beyond basic inventory, health monitoring, and firmware updates. It is thus closer to SIM than OpenManage in ambition. Today, however, IBM Director focuses mostly on Intel-based xSeries and BladeCenter servers. And IBM retains a management hodge-podge, including tools such as Director and VE Console that span multiple eServer brands, as well as numerous brand- or OS-specific tools such as the

13. See Illuminata report "Altiris Beyond Bit-Pushing" (September 2004).

14. Dell quite explicitly plans to continue leveraging third parties for much of its management stack. See Illuminata report "Dell Reembarks on the Blade Journey" (January 2005).

POWER HMC (Hardware Management Console), AIX's SMIT, CSM, and the TotalStorage Productivity Center, among *many* others.¹⁵

This untoward diversity saps functional energy as well. For example, SIM's Virtual Machine Manager plug-in is several years ahead of what IBM Director has. While Director is somewhat extensible, it is not as easily—nor in practice as often or effectively—extended as SIM¹⁶ is.

Finally, the management mega-toolsets such as BMC Software's PATROL, Computer Associate's Unicenter, IBM's Tivoli Management Environment (TME), and HP's own OpenView suite are sometimes compared with SIM. But they are really a class to themselves, and not easily judged side-by-side with systems consoles. They generally look at a much higher-level view; they often cannot see, and almost never can control, at the same nuts-and-bolts level that a console such as SIM does. HP, in fact, believes that OpenView¹⁷ hardly overlaps with SIM. It doesn't even market SIM under the OpenView brand—a strong statement in itself, given how well-known OpenView is in the management world. HP would, however, still clearly be happy to up-sell OpenView and its broader network- and service-management functions to customers who start with SIM.

Conclusion

Management software tools come in many sizes, shapes, and colors. Some are gargantuan and enterprise-scale ambitious. Some are tiny and narrowly

15. The sheer number of tools isn't the biggest problem. Both legacy and functional issues make "one tool for everything" a future ideal, not a modern reality. Even so, it's hardly optimal to have many separate tools, doing essentially the same functions, but in different ways, with different interfaces, for an ostensibly unified eServer product line.

16. For example, VMM was created from technology from HP's CodeArts acquisition in about 5 weeks.

17. OpenView, by the way, is more than just the historic Network Node Manager (NNM). OpenView is a collection of approximately 90 separate tools—some of which work together, some of which do not—under a single marketing/brand umbrella. That should be clear at this late date, but often is not.

focused on managing just one product or just one task. SIM lies nicely between these extrema.

It provides an admirable console for managing a variety of different systems. While provided with, and particularly focused on, HP equipment, SIM goes further than any competitive management console to be operating-environment agnostic, and to bridge out to competing vendors' gear. While powerful by itself as a server manager, SIM's extensible framework allows needed functionality to be

easily added. This extensibility has permitted HP to make rapid progress and integrate a combination of home-grown, acquired, and licensed products into a single console. And those plug-ins have in turn made SIM a far more powerful and useful tool.

Two years ago, HP promised a management software revamp—one that would go well beyond CIM and the rest of its historical portfolio, in the process providing an easily-augmented, multi-platform tool. SIM delivers.



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