Raise Your Workload IQ
Start Making All of Your Workloads More Intelligent
by Todd Swensen

Remember when “intelligent workload management” meant postponing a conference call so you could head home early on a Friday afternoon—and “cloud computing” meant playing Solitaire on your laptop on the flight from Chicago to New York? It goes to show that enterprise computing has undergone some major shifts over the past few years, driven by the rise of virtualization and the development of new outsourced services models. And as with any rapid shift in the IT landscape, these changes have introduced some tough questions and—many would argue—the potential for a lot of new IT complexity and uncertainty.

Fortunately, data center virtualization, intelligent workload management and *aaS—which are all obviously interconnected—are beginning to come into sharper focus. As these relatively new markets mature, vendors and IT departments are working through the issues and developing practical ways to manage and apply them in ways that make sense. In other words, the industry is learning how to make trends like cloud computing look more like practical, serviceable extensions of real-world IT infrastructures and less like a replay of the dotcom boom of the late 90’s. As a result, adoption of these technologies is beginning to accelerate at a fairly impressive rate. (See Figure 1.)

![Physical, virtual and cloud utilization](image)

**Physical, virtual and cloud utilization**

*Figure 1: The rapid growth of virtual and cloud computing are making intelligent workload management an unavoidable necessity.*
So what are some of the key factors that are steadily transforming intelligent workload management and cloud computing from interesting new trends into practical, mainstream enterprise solutions? There are a few key concepts and practices that most experts agree will fuel the widespread adoption of these technologies over the next few years.

**The Evolution of the Workload**

There’s certainly nothing new about the concept of a workload. We all know it’s simply an integrated software stack that includes just enough operating system, middleware and some kind of application. But to work well in virtualized or cloud environments, these workloads need to evolve to become more portable and platform agnostic, so they can be combined into business services and deployed quickly into any kind of physical, virtual or cloud infrastructure. For example, you should be able to quickly deliver a business service that combines a database workload running on physical hardware in a legacy data center, an application server running in a virtualized private cloud, and a presentation and graphics server running in a public cloud. And you should be able to move these workloads quickly and automatically across these different environments whenever it makes sense. To meet these new portability requirements, many enterprises are turning to software appliances as a fast and practical way to package, configure and deploy, or in other words build self-contained workloads into physical, virtual and cloud environments. This approach makes sense, but building more portable workloads is only part of the equation. You also have to find effective ways to manage, secure and measure those workloads as they move across these different environments.

**Gaining Flexibility without Losing Control**

The ability to instantly and automatically move workloads among different physical, virtual and cloud resources depending on the situation has immense appeal and offers obvious benefits for lowering costs and improving service levels. But that flexibility simply can’t come at the expense of operational control or increased risk. To take advantage of portable workloads, enterprises have to find ways to extend all of their essential operational and risk control mechanisms across all their different physical, virtual, and internal and external cloud environments.

**WHAT MAKES A WORKLOAD INTELLIGENT?**

What are the biggest differences between the traditional workloads of the past and the intelligent workloads of the future? Intelligent workloads are:

- **Policy-driven**, which means they can regulate and manage themselves, recognize when they are at capacity, and automatically find additional capacity—all based on pre-defined policies.
- **Secure**, which means they include security controls and real-time monitoring and alerting that move with them between environments.
- **Compliant**, which means they understand and follow security protocols and processing requirements and provide built-in log management and compliance reporting.

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This isn’t easy, because in most cases physical, virtual and external cloud environments have separate and siloed governance and compliance, business service management, and IT service management mechanisms in place. Enterprises are justifiably reluctant to move workloads from their secure, compliant and meticulously managed legacy data centers to an external cloud environment where they have to trust a third-party, off-premise vendor to provide those same services. So what’s the answer? In very simple terms, you have to break down the boundaries, so your workloads can access the same management, security, monitoring and compliance mechanisms across all your physical, virtual and cloud computing environments.

> **Adding Identity to Every Workload**

Of course, that’s not as easy as it sounds, especially when many of those mechanisms are ultimately controlled by third-party cloud providers. In a world where workloads need to move freely and securely among physical, virtual and cloud environments, it no longer makes sense to develop complex rules engines and workflows that can work across every possible type of environment and infrastructure. Instead, the Novell approach—called **WorkloadIQ**—embeds security, management, monitoring and compliance controls inside the workloads themselves. In a way, this approach does for workloads what identity has done for individual users, and it’s the key component that makes workloads intelligent. By embedding identity-like attributes into workloads, you make it possible for them to act according to business policies, automatically find alternative computing capacity to optimize performance, adhere to established security controls in any environment and much more. You also embed a kind of workload RFID tag that can provide real-time tracking, monitoring and alerting for every workload—even if it’s running in an off-premise cloud environment. Ultimately, this identity-based approach to workload management is the key to breaking down the silos between environments, making workloads totally portable and imbuing them with all the attributes and capabilities they need to stay compliant, safe and well managed in any environment.
> WorkloadIQ: Build, Secure, Manage, Measure

The effort by Novell to make workloads more portable and intelligent revolve around a new WorkloadIQ strategy—backed by a family of products and solutions designed specifically to build, secure, manage and measure the kinds of flexible, intelligent workloads you need to take advantage of physical, virtual and cloud computing. Together, these technologies can help you build intelligent, policy-driven, identity-aware workloads that will enable you to take full advantage of everything cloud computing and virtual technology can offer your business.

For more information on how Novell WorkloadIQ can help you build, secure, manage and measure intelligent workloads, visit www.novell.com/workloadiq or visit our blog at www.workloadiq.com.

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