

The Right Tools Will Accelerate You to the Cloud

Make a Plan and Select the Right Tools at Each Stage

by Jason Dea

Let's say you're hosting a pool party. You have a beautiful pool in your comfortable backyard. And you just bought a big pool party kit from your favorite big-box store, with all the goodies to make the party a smashing hit. The problem is, all your guests are on their way, and you're still filling the pool with a ladle rather than a fire hose. A little planning and the right tools would have gone a long way to help you prepare.

This is the way many companies are approaching cloud computing. Everyone is talking about moving to the cloud as if it were a big party. And some companies like Salesforce.com and Amazon with its Elastic Cloud Computing (EC2) have been demonstrating the value of cloud computing for several years with their on-demand applications.

But cloud computing is just the party goodies. True, it helps companies lower costs by reducing infrastructure waste, adds flexibility by allowing resources to move freely, increases agility by reducing the time needed to acquire new resources, and boosts profitability and customer satisfaction by adding more valuable business services. But cloud computing can't provide any of these without the virtualization infrastructure. If the goodies are the cloud, the pool is virtualization. Without the virtualization pool filled, the cloud is just a box of potential. And while many companies talk of the cloud, they're building their virtualization strategy with a ladle. Only about 20 percent of workloads have been virtualized so far.

It's time to get serious and plan your move to the cloud. And the first step is to accelerate your virtualization initiatives.

> Making a Plan

Organizations mature through four stages of virtualization on their way to cloud computing. We recommend that if you plan to make the move to cloud computing, you assess where you are on this path and plan how you will move forward methodically through each of these stages. This article will discuss some of the tools Novell provides at each step to ensure your path is smooth and your progress is effective.

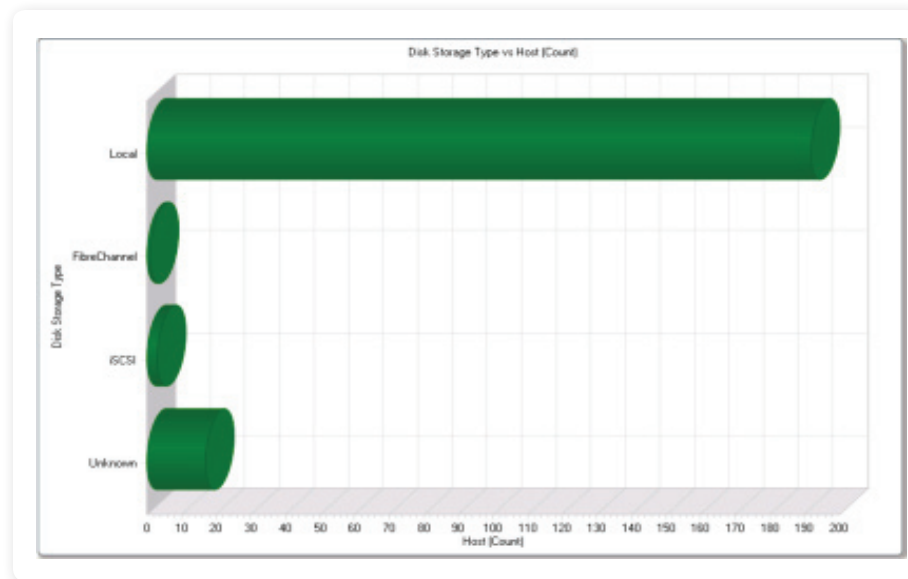
> Stage 1: Acclimation

Organizations in this stage are just getting their feet wet. They're getting comfortable with the concept of virtualization and understanding how they can use it as a tool to save money and add efficiency to their data centers. They begin testing and developing and may deploy virtualization solutions for disaster recovery in areas such as e-mail that are not critical to the business. They may also launch some tactical production applications, but they do not change operations processes and limit deployments of virtualization tools.

At this stage you need a tool that will tell you where you are and help you begin planning your move to virtualization. [PlateSpin Recon](#) is an awareness, analysis and planning tool that shows you the resources such as physical servers you currently have running in the data center; average, peak and valley load metrics over time; and consolidation scenarios. PlateSpin Recon provides the map that you need to start on your path to virtualization and then to cloud computing.

PlateSpin Recon begins with telling inventory reports that illustrate where your resources are and shows you where you should begin consolidation. The Storage Architecture report tells you where your data is currently being stored, either locally or on a storage-area network (SAN). (See [Figure 1.](#)) The report shows you:

- Local storage
- FibreChannel
- iSCSI
- Unknown



Storage Architecture report

Figure 1: *PlateSpin Recon provides numerous reports to help you understand your current architecture and plan to move to virtualization.*

Use this information to get an idea of how much data is being stored locally. For example, if the report shows that you are using FibreChannel and iSCSI very little, this indicates a good opportunity for you to migrate to shared storage.

An Operating System inventory report is another of the many inventory summary reports PlateSpin Recon provides. It shows how many workloads are running in the data center, as well as how many Windows, AIX, Red Hat and other servers are running.

Next you need to understand how efficiently you are using your resources, including processors, memory, disk input and output (I/O) and network I/O. PlateSpin Recon measures capacities and use and generates a number of utilization reports. The Utilization Report, for example, shows you disk usage by server to help you understand which servers are underused and which are at or near capacity. PlateSpin Recon then helps you identify good and bad consolidation candidates with further reports.

Now that you have a good picture of your current situation, you can start planning your consolidation to virtualized machines that run on a smaller number of physical hosts. PlateSpin Recon produces reports that help you determine whether you should scale up, which is to use a small number of powerful servers as virtual hosts, or to scale out, which is a larger number of midrange servers to accomplish the same effect. The reports help you determine which scenario will work best for your organization. (See Figure 2.) The reports include everything from the number of CPUs needed to how much the scenarios would reduce CO2 emissions.

PlateSpin Recon is a very useful tool that you will use in each of the four stages on your migration path to cloud computing to determine where you are and where you should go next. Other Novell products that help you through this stage include PlateSpin Migrate, which we'll discuss in the next section, and Xen on SUSE Linux Enterprise Server hypervisor.



Consolidation scenarios

Figure 2: PlateSpin Recon lets you compare various consolidation scenarios to determine the best one for your situation before you finalize plans.

Without the virtualization pool filled, the cloud is just a box of potential.

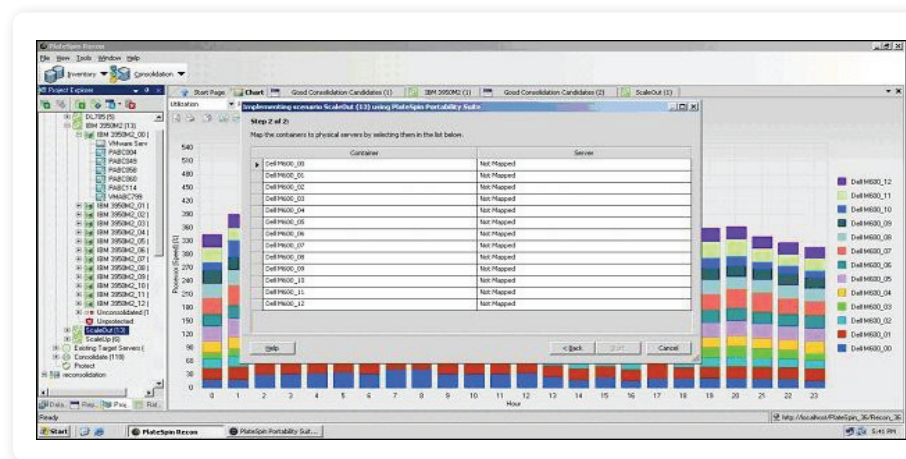
> Stage 2: Strategic Consolidation

In Stage 2 on your path to cloud computing, your organization becomes more comfortable with the concept of virtualization, its use and stability. Your thinking shifts from servers to virtual servers, and you begin to spread production deployments throughout the organization's functions, including business-critical disaster recovery. You begin the painful transition from server sprawl to virtual server lifecycle management and experimenting with workload migrations.

In concert with [PlateSpin Recon](#), [PlateSpin Migrate](#) enables you to move workloads, which include the data, applications and operating systems that would otherwise reside on a physical server, from your physical servers to your virtual environment. PlateSpin Migrate decouples the underlying server hardware and transfers workloads between the physical and virtual environments over a wide area network or the Internet using TCP/IP.

Start with the consolidation scenarios you created in PlateSpin Recon and export the one you have decided to be the best option to PlateSpin Migrate by selecting a PlateSpin Migrate server in PlateSpin Recon and pointing the planned ESX servers in the tool to the real ESX servers. PlateSpin Migrate uses "jobs" to migrate workloads, and PlateSpin Recon populates these jobs automatically. (See [Figure 3](#).)

Next you will use PlateSpin Migrate to discover your source and target servers, and choose to run the migration wizard, which will walk you through the process of migration from physical servers to a virtual environment.



Migrating workloads

Figure 3: PlateSpin Recon automatically populates migration jobs based on your consolidation scenarios.

> Stage 3: Process Improvement

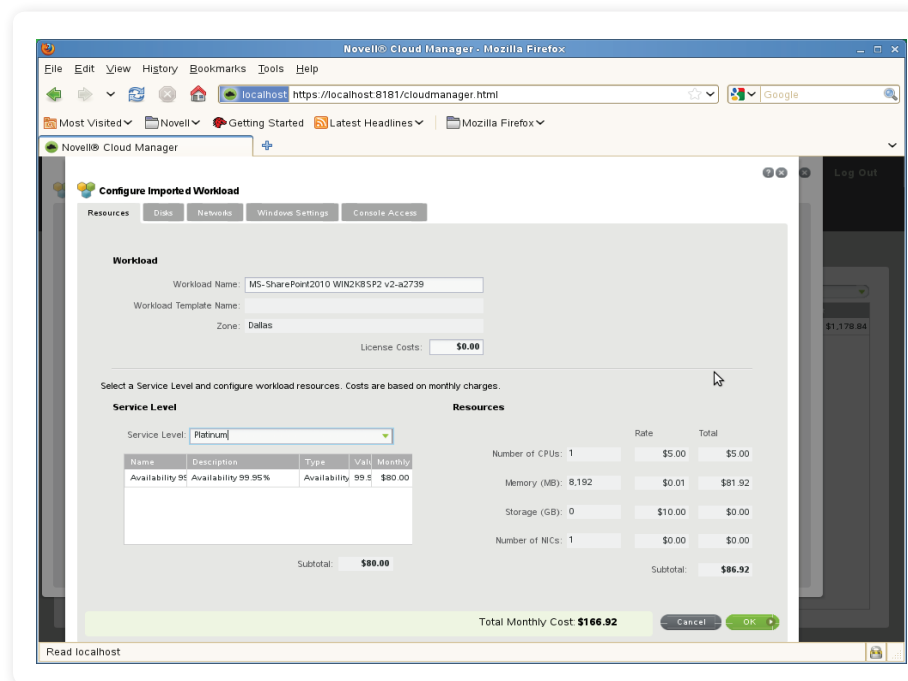
Once you've reached State 3, you have adopted a virtual environment and mindset, although you likely still have physical servers running for certain applications. You are now focused on using migration tools and on understanding how you can increase utilization rates. You have fully employed disaster recovery for business-critical applications, and you have started dividing between high-priority and low priority applications. You have moved from just managing data resources to seeking process improvement and discovering new operational efficiencies.

You should regularly use [PlateSpin Recon](#) to continue to review and plan for these greater efficiencies. You should also be using [PlateSpin Migrate](#) to optimize resource use, and [PlateSpin Protect](#) for virtualized disaster recovery.

> Stage 4: Pooling and Automation

You have now moved into the realm of cloud computing. You fully trust disaster recovery systems for business-critical applications. You have launched production policies for automation, are pooling resources in an internal cloud environment, and you're using cloud management capabilities to charge business units for the resources they use. PlateSpin Recon, PlateSpin Migrate and PlateSpin Protect are likely well-worn tools in your IT toolbox.

[Novell Cloud Manager](#) helps you apply charges to cloud services used by business units. To set up this charge-back capability, you open Cloud Manager and click on the Business Service option. Cloud Manager then discovers unassigned virtual machines to which you can assign the following: (See [Figure 4](#).)



Charging business units for services used

Figure 4: Cloud Manager enables you to identify the services used by the organization and charge business units back for those services.

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- Business service name
- Business purpose
- User
- Service level: Bronze, Silver, Gold or Platinum
- Number of virtual CPUs, memory, storage size and number of network interface cards
- Cost to the business unit

Novell Cloud Manger also generates usage, cost and other reports to help you stay on top of your cloud computing environment.

If your organization plans to accelerate to the cloud, it's time to turn on the fire hose to fill your virtualization pool and turn that box of cloud potential into lower costs, greater flexibility, increased business agility and improved profitability. You should understand the four stages of the Virtualization Maturity Lifecycle that you will advance through on your path to cloud computing, and plan to use the right tools to do the right job at each stage.

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Learn More

- [PlateSpin Recon](#)
 - [PlateSpin Migrate](#)
 - [PlateSpin Protect](#)
 - [Novell Cloud-Manager](#)
 - [Building Your Virtual Landscape Without Messy Disruptions](#)
 - [Environmental Sustainability](#)
 - [Managing Service Levels in the Cloud](#)
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