



PlateSpin Builds Flexibility into a Clone-Based Data Center Lifestyle

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Management Summary

With the challenge of by-the-drink subscription services and other forms of computing service delivery, the enterprise data center must respond by doing the job better – providing a higher quality of service and/or a quicker recovery, if there is an outage. In order to do so, many have adopted some of the mass-deployment techniques of service providers, such as providing computing by cloning off an inventory of application golden images. The image contains all the configuration information, and with the use of virtual machines, allows the applications to be installed rapidly. **The intermediary of a virtual machine takes away the need to configure hardware each time to the needs of each application, for the virtual machines buffer the hardware from the peculiarities of the application (as well as isolating the hardware from an application's ill health.).** So the skill set needed becomes far more limited and the data enter management headaches are reduced.

In a perfect world, this would be all that was needed – at least in theory - but reality obtrudes in the following ways.

- **One clone does not fit all.** Different organizational roles demand different environments, different security parameters, and access to different sources of data. In some applications, such as those built to support doctors' offices, this is built into the application – but in many cases, it is not.
- **Things change.** There is a need to evolve environments to meet new challenges and opportunities in an ever-more-timely fashion.
- **Things go wrong.** While the ready spares of an image-inventory approach can get the basic environment up and running, and proper data protection strategies can restore the data, there is still the need for forensics to know exactly what went wrong and why. This cannot be done with virtual environments.

PlateSpin, a company based in Toronto, Ontario, Canada, has had a physical-to-virtual (P2V), virtual-to-physical (V2P) conversion product in the market for years, focused on VMware's *ESX Server* and *GSX Server* virtual machines and on Microsoft's *Virtual Server*. With its release of *PowerConvert 5.1*, and the build-out of its vision, PlateSpin supports a flexible image restore approach to data center business continuance, that works well when things are going well – and when they are not. This use of virtual machines and physical servers goes far beyond server consolidation. For more details, read on.

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On Beyond Server Consolidation

Too many physical boxes are just the tip of the iceberg. The problems plaguing data centers also include server management and utilization issues, the difficulty of adding or tweaking applications, the inefficiency of hardware and software deployments, and the need to recover in a way that is affordably lightweight yet very effective. All these problems are addressed by PlateSpin's solutions. Consider how the lifecycle of data center operations is assisted by the use of PlateSpin technology:

Develop

The use of virtual machines and the ease of conversion between physical and virtual environments allow developers to revise more frequently and to try more options. Testing is easier. Porting to other operating systems, if both systems can use the same processor, is speeded by the convenience of co-location. With a fully functional virtual test bed, applications may be more continuously optimized as business processes evolve.

Deploy

The images of applications, operating systems, and data that virtual machines enable can be the basis for rational, repeatable customization. A clone can be tweaked for a particular role, saved, and deployed with a "send." Command. Since the image (see PlateSpin *Flexible Images* in Exhibit 1, at the top of the next page) includes all the necessary configuration-relevant metadata, remote deployment is straightforward, and does not require local advanced IT skills. PlateSpin can deploy images to any infrastructure – physical or virtual.

The ability to manipulate the physical, the virtual, and the image bank eases the transitions of versioning and upgrades, and hardware evolution with a quick swap in-swap out, since everything is in envelopes. This allows an administrator to minimize the housekeeping and to support more proactively the ever-changing imperatives of your business.

Consume

The ability to manipulate images and virtual machine envelopes also changes how computing is consumed. The envelopes of virtual machines allow multiple applications to

coexist where they could not naturally. Death of an application can be localized to that virtual machine and not freeze the hardware or affect other applications running on the hardware. Removal of an application can be complete. With the virtual machine containment envelope, there is no garbage code to complicate future use of the hardware environment.

Recover

The use of virtual machines, together with remote system management capabilities, makes restoring environments easier. A new virtual machine-housed application can be synced with log files, and then deployed either in the data center or in remote environments where, since there are no indigenous IT skills, this approach is particularly useful. The ability to keep an up-to-date inventory of current application and data images makes recovery from software errors a more straightforward swap than traditional rebuild processes. Additionally, the ailing application can be translated back to its physical incarnation so that administrators can diagnose what went wrong. This keeps the failure from repeating itself.

The Advantages of This Approach

PlateSpin's approach to data center operations allows you to reorganize more easily what runs where as your institution's needs change.

- It allows the data center architects to continuously optimize for business value, and tactically re-deploy assets for strategic advantage – perhaps to meet an anticipated spike in utilization of specific applications after a product announcement. This optimization is not a matter of standardizing on X, but a matter of optimizing locally to the need of the moment.
- Some things are easier to do when resources are virtualized - test, develop, transmit, deploy, retract at end of lease, migrate elsewhere, and recover from disasters, if you have an image library of what you have deployed in virtual machines, with all of the relevant configuration metadata.
- Some things are easier to do when resources are physical. Such activities include customization, optimization, troubleshooting, and fault analysis.

Exhibit 1 — PlateSpin's Products

PowerRecon: In *Windows NT, 2000, and 2003* and *Linux* environments, using no agents, PowerRecon inventories server assets, documenting operating system, CPU speed, memory, network, and disk. This gives the architect a comprehensive and articulated view of his or her domain. *PowerRecon* gives the information needed to match workload demand with resource supply.

PowerConvert: PowerConvert automates the virtualization of applications, operating systems, and data. The virtual environments it supports include *VMWare ESX* and *GSX* servers, *Microsoft Virtual Server 2005* and its own *Flexible Image* file. The latest version, 5.1, expands the ecosystem with more supported sources and target hardware assets, *Windows Dynamic Disk* support and integration with *IBM Director*. This version has also added integrated job scheduling and a Conversion Analyzer tool. Users will appreciate the deeper application configuration its control of the startup state of Windows and Linux services. *PowerConvert* comes in three flavors

- *PC Universal*, which gives the any-to-any support that lets you use your data center as a virtual grid
- *PC for Consolidation*, which is the direct follow-on to the Power P2V product, and PC-Recovery, leverages PlateSpin's *Flexible Images* to provide a recovery environment that is not dependent on the availability of an expensive hardware clone of the original environment. This recovery version works with back up solutions from *Acronis*, *Ghost*, *Symantec*, and *Veritas* to provide a flexible, hardware independent approach to IT recovery – even at a remote site without the need for local staff.
- *PlateSpin Flexible Images:* These contain server volume data and configuration meta-data to enable complete hardware adaptability when the image is redeployed. The image may be culled from the existing environment by PlateSpin or can be based on an installed image from a third party (ISV).

- A combination of both incarnations allows customization of those environment images you have in your library. It offers a way around the draconian choice of rigidly cloned environments (and the license charge penalties that such a one-size-fits-all incurs) or high-maintenance individuality. Moreover, the ability to optimize and then save the optimization down to the last tweak and deploy it hither and yon with the flick of a finger makes customization affordable.
- Over time, a combination of both incarnations, the virtual and the physical, together with a library of golden images of the virtual machines you craft your technology strategy to do many things you have wanted to do for some time. It allows the data center to be architected and modeled as a fully configured whole.

Conclusion

It is time to think of the use virtual machines, and of the virtualization of applications and operating systems, not just as tools, but as the basis of a more flexible and user-oriented lifestyle. PlateSpin's family of products gives the data center the same kind of flexibility that cell phones and laptops give workers in their workday. Yes, there is some processor overhead, but the convenience that virtual machines afford can be well worth it – particularly if the data center challenge is its management. Think of what lifestyle best fits your data center, and the expectations of its business users.



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