



Civilizing the Unruly Application with Softricity

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Management Summary

The ability to deploy and remove materials cleanly is as important in IT systems as it is in a restaurant. Like a restaurant table with multiple tablecloths, a device kept clean is a reusable device. In fact, it is more important. Unlike spots on a tablecloth, **you cannot see electronic mess until it shows up as dysfunction.**

This is particularly true at the client edge of the network, where the problem is exacerbated by the number of devices involved. Remote deployment has removed much of the logistical pain of provisioning clients. But because client-side Windows applications often do not merely sit on client devices but alter configurations, changing applications or installing multiple applications on a client carries a fair amount of risk. The alternative, pushing applications to the edge from servers in the data center increases bandwidth costs, which may be appreciable if communication costs are metered, and may merely move the problem of application contention to the application server. It underutilizes edge device capabilities and makes worker productivity dependent on network connectivity, even for local functionality like printing. In these days of viruses and worms, connectivity may not be a good automatic assumption.

The time available for testing environments and for testing the effects of change, have been whittled by lean economic times, while the need to search for sources of revenue has increased the rate of change in enterprise IT environments. In response to this dilemma, some vendors offer pre-testing, but only for the most popular configurations and application combinations. If you are unique in what you use and how you use it, you probably have to do the integration and testing yourself. The popularity of replicating configurations and drastic measures, like bare metal restore, indicate the extent of this ugly problem.

Softricity's *SoftGrid* software delivers applications to client devices in a fully configured virtualized envelope, so that settings on the Windows client are not altered. SoftGrid can track application use, even by mobile workers who occasionally work off-line. When an application virtualized by SoftGrid is removed, the client is returned to a clean state. The virtualization envelope is permeable, so that the application can access local functionality directly. In thin client environments, SoftGrid delivers similar session isolation to reduce application contention on the server side. It provides the IT equivalent of the jacket and tie for the inadequately garbed patron at a fancy restaurant so that he does not mar the restaurant's ambience. In large enterprises, this civility delivers real value. For more details, read on.

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The Problem of Application Contention

While remote, electronic deployment of applications has eased the burdens of supporting hundreds of client environments, it has not made it easy. With many kinds and, often, vintages of clients to be supported, and multiple applications to be deployed, there is still a lot of expensive, time consuming testing to be done. New releases and new applications are a major headache. And, as people leave, environments must be disabled and the client made ready for the next user. Even if you use standard profiles of applications and automate configuration, you are left, particularly in Windows environments, with the problem of application contention.

One solution is to move the applications back to the data center with thin-client architectures and browser-based portals that aggregate and present the applications to clients. This may work for a campus-bound workforce with ample network connectivity, but can be less useful to remote and mobile workers. And these approaches do not solve the problem of contention between applications on a server, which is a main cause of data center Windows server sprawl.

Moreover, in some cases, centralization is not straightforward. Applications written for desktops can often have routines that prevent them running in multiple instances on an application or terminal server. Some registries can be altered by local users, and data gets overwritten. By clothing the applications in Softricity's *SoftGrid* virtualization, each application is prevented from seeing other instances of itself on the server. For instance, when *Microsoft XP's Word* application is run with Softricity, each user's documents have a separate virtual registry. When multiple versions of a hard-to-upgrade application, like *Access 97*, are run with Softricity, each version has its own virtual registry.

Another approach is to use virtual machines, like those from VMware. These software constructs emulate an operating system or other run-time environment as a container for an application and protect the integrity of the client hardware from the application (and vice versa) in a way similar to application virtualization by Softricity. Virtual machines incur some processor overhead, and also a license cost for each virtual machine deployed. Server partitioning is another form of containers, available on some servers and operating systems.

Softricity's application virtualization is a more lightweight approach – handcuffs, rather than jail

cells. And this is not always an either/or situation. There are customers using both VMware's *ESX Server* CPU virtualization and Softricity's *SoftGrid* application virtualization to achieve an extreme degree of consolidation. Where you use containers, or multiple containers, is a matter of what kind of environment you manage, and its cost/risk profile.

How Softricity Works

Softricity's *SoftGrid* System has multiple parts:

- **Softricity's *Sequencer*** resides on a Wintel server¹ in the data center. The sequencer creates a virtual copy of the application and then sequences the application code to work within Softricity's *SystemGuard* virtual environment.
 - The **SoftGrid Virtual Application Server** (or servers) take the sequenced application and deploy it either directly to the client or, in a thin client system, to the terminal server. Deployment is permission-based, using Microsoft's *Active Directory*. For management, the server and the Sequencer can be managed with Microsoft *Management Console* or *SMS Management Console*. The part of the application needed to launch it locally is delivered first (this is one of the things the sequencer arranges). The rest is trickled as it is requested, minimizing the impact on the network. When the application is closed, all the application code in the *SystemGuard* virtual environment is cached on a local disk.
- Each time the application is opened on the client, *SoftGrid* will check to see if there are updates back at the data center, which it will pull down transparently. If the user authentication has been revoked, the user will not have access to the application. If there are no updates and the user is authenticated, the local cached copy will be used.
- ***SystemGuard*** is the *SoftGrid* client-side container that protects the environment from the application. Like handcuffs, it allows useful local functionality, but curbs the ability to do harm. Once deployed on a client, the application will write configuration changes only to the *SystemGuard* – it will not change the settings on the client. Since there is no client-side contention between the applications,

¹ The central Sequencer server acts basically as a file server – but since it pushes the apps clothed with *SystemGuard* out, either to the user or to a thin client terminal server, it can, over time, support more and more clients - up to 1000 users on a Pentium II or III Wintel server with half a gigabyte of RAM.

multiple applications may be deployed and removed with no risk.

The Impact of Softricity on the System

The overhead added by Softricity to a target environment is in the amount of memory it uses. On distributed clients, the overhead is slight. With thin client architectures, the overhead on the terminal server is more significant. Softricity suggests upping the server memory by 50%. With memory costs plummeting, this is a cost many enterprises can afford.

There are some environments, such as hospitals, where most applications are centralized, but a few critical applications, like dictation voice recognition, must be run locally. With its latest release, Softricity *SoftGrid* can be used in dual mode.

The Impact of Softricity on the Enterprise

This automated, highly managed deployment both controls and measures what client has access to what application. It allows easier and safer purging of applications from clients for a more secure enterprise environment. By keeping clients clean, it can extend the use and reuse of client devices in the enterprise.

SoftGrid 3.0, the latest release, lets an administrator assign a fixed and measurable number of hours of off-line application use for mobile workers. This lets an enterprise invoke usage-based billing and charge-back schemes. It lets an enterprise take advantage of usage-based pricing for applications used only sporadically. Over many clients, this could save a significant amount of money.

The sequencing of Windows applications is a fairly substantial operational investment for just a few users, but **if you have 500 to 1000 users of an application**, using Softricity's protective virtualization can make a lot of sense. **If you have a lot of change in your application inventory**, as is typical these days in the health care industry, Softricity may be a good fit. **If you need to deploy applications and patches quickly**, because downtime or inadequate functionality maims the revenue stream, this approach may be alluring. **If you rotate worker assignments and have a high turnover of client-side environments**, Softricity's *SoftGrid* can may make your life considerably easier. And, as many industries move their IT environments from business-line fiefdoms to a more integrated, billable environment, Softricity may give the degree of manageability needed to make all parties comfortable with the transition.

Pricing

Softricity is available for both traditional client server systems and thin client systems. *Sequencer* and *SoftGrid* (including *SystemGuard*) are priced separately.

SoftGrid pricing is an annual fee per concurrent user.

- Traditional client/server - \$189
- Thin client architecture - \$89
- Dual mode - \$215

The *Sequencer* Starter Pak of sequencer, server, and 20 Concurrent Application Licenses (CALs) is \$15,000.

Potential Wider Use

Applications as a Service

By using servers opportunistically, service oriented architectures, application consolidation and grid computing, carry some the same kind of deployment risk that we have seen in edge environments. Softricity's application virtualization deployment allows computing elements to be used as restaurant tables for the *menu du jour*.

Pervasive Intelligence Extends the Need to Manage Application Contention.

More and more functionality is being embedded as software – in appliances and in switches. Out in the land of clients, devices and embedded components host software that will inevitably need upgrades and patches – even the computers in your car. Transparent upgrades of functionality are now an important part of IT availability – and this will extend to any component in which intelligence is found. **Softricity can make deployment of .Net functionality safer wherever that functionality resides.**

Conclusion

As IT environments seek to use their assets more flexibly, the elements need to work well with others. Interoperability standards promote this in hardware. Software, like Huck Finn, has not yet been civilized. Softricity's *SoftGrid* can curb an application's destructive impulses, and, in Windows environments, make a difference in how time (and money) are spent.



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