



Applications without Deployment — Thinstall Delivers Them on the Fly

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Management Summary

The deployment of applications is a non-trivial matter. In large enterprises, the pains of deployment go far beyond the particulars of doing it right – there are issues of compatibility, security, and patching that loom large when you are talking about thousands of instances. Strategies include libraries of golden images, use of virtual machines to make deployment more automated, and remote patching schemes. Organizations with needs for high security often rely on locked-down client configurations. There, deploying a new application may be downright impossible. But – what if you didn't have to deploy it onto your infrastructure, but could run it from the network, or a thumb drive, as an executable file? Wouldn't it be useful?

This is the promise offered by Software as a Service (SAAS) – but many security-centric organizations still would like to keep their business process environment totally under their control. Some applications that will be used mainly for the duration of a project may not merit the signing of a contract for an ongoing service.

A company named Thinstall, based in San Francisco, CA, offers a way to avoid the pains of application deployment entirely. Thinstall addresses the needs for customization of the environments of certain worker with applications, like Adobe's *Photoshop*, that in their usual full deployment, are unwieldy. It addresses the continuing needs for back-generation applications that may be incompatible with new parts of standard deployments, like *Windows Vista*. By leveraging their intellectual property and using virtual machines as templates, they can transform an application into an executable file that can be stored on a thumb drive or on a file share. This executable approach turns out to be a boon in other ways, as well. For more details about the Thinstall approach, read on.

Thinstall

Thinstall was founded in 1999 as a company providing hacker protection. They obfuscated executable files so that they could not be reverse engineered.¹ With the addition of a streaming capability, suddenly a completely new value became possible. In today's business environment, there is virtue in having an IT asset that can be used without becoming part of the infrastructure that must be managed – yet that can contribute documentation of its use to the system of record that must be maintained by the business. Streaming gave the isolation ability to be there and, yet, not there.

IN THIS ISSUE

➤ Thinstall	1
➤ Thinstall Methodology	2
➤ How This Can Solve Data Center Pains	2
➤ How This Can Save Money for the Enterprise	3
➤ Conclusion	3

¹ This heritage contributes to the security of the Thinstall solution.

This is application virtualization to the n^{th} degree. The application has no footprint, and requires no client install. When you wish to use it, it can be accessed from the network (LAN, WAN, even the Internet) or from a thumb drive or CD-ROM. It temporarily borrows memory and CPU cycles, but explicitly erases memory when the application closes, leaving no security exposure. The technology has found favor first among the paranoid enterprises, such as the U.S. Department of Defense, whose desktop security is so high that it does not allow the use of installation agents, making application deployment difficult, at best.

Thinstall recently announced its *Application Virtualization Suite 3.0*. This new version moves the target audience for Thinstall capabilities from IT developers to include IT administrators, who are the ones feeling the pains described later in this paper.

Thinstall Methodology

With Thinstall, the application runs in user mode, the lowest privilege layer on an operating system. User mode by definition does not touch the operating system kernel.

Thinstall uses a hypervisor, such as VMware's *ESX*, as a template to transform an application (and its libraries) into an executable file. First, the operating system of the desktops in question is installed on the hypervisor and a snapshot taken of that. Then the application is installed in that virtual machine, and another snapshot is taken of that. Thinstall software will analyze the difference between the two snapshots and will produce a single executable file that will include all the application code and libraries. A *Thinstall client* and the *Thinstall Directory*, described in detail below, are embedded in the executable. The virtual machine acts as a catalyst in the development of the executable file, but does not play a part in its use. Therefore, there are no virtual machine license charges.

The *Thinstall Directory* is a read-only file, in a segregated sandbox of all the changes an end user makes to the application. It resides on the thumb drive or network share. When the application wants to write to the operating system directories and file system, it is actually writing to the Thinstall Directory. The Thinstall Directory also contains the user

profile with all the credentials needed. The host PC is not changed, unless the end user wants to save files or the application locally - and the IT rules and user profile permit it.

How This Can Solve Data Center Pains

Ubiquity

This, basically, gives you the ability to endow thin clients anywhere with the functionality that you need - when and where you need it. It also gives you the ability to remove that functionality cleanly. The application is not interacting with any settings on the desktop or compressing data. Files are not touched.

Security

Since Thinstall comes from a heritage of preventing reverse engineering, those executable files are not, in themselves, an in-the-clear risk. Thumb drives come with two-factor authentication these days, and the URL out on the Internet can be similarly endowed. The application is isolated from the local machine, but you can have access to all the files on your local machine. Of course, if your machine allows it, you can save the application locally as an executable file if you want to. You can save files created by the application locally if you want to and if policies permit.

Efficiency

Thinstall offers an easy way to customize environments and try new applications without the litany of tests that accompany the usual application deployment. Its environment is atomic. With the popularity of virtualization, Thinstall's approach to application optimization has become better accepted. All sorts of applications can be Thinstalled. *Adobe Photoshop* is a popular choice. Even *SAP* has been Thinstalled.

Thinstallation has certain other direct benefits.

- A Thinstalled version is smaller than a standard deployment. In *Photoshop*'s case, by about a third.
- Thinstall can have a forced "no write," that will protect its use from being tracked by key loggers.

- Many applications that are not compatible with Microsoft Vista can be run on Vista desktops, if they are Thinstalled. Legacy applications get an extended life. Thinstall can run on a 64-bit OS, and can enable 32-bit applications to do so.
- Thinstall stands as an alternative approach to Rich Clients.
- As virtualization becomes the norm, Thinstall becomes a similar, but leaner, variant.
- As an executable file, the application starts up faster than a traditionally installed application.
- Thinstall can also be installed on a server to provide an application service streamed on demand and retracted at the end of a session. Like most streaming applications, the application starts after 5 MB has been streamed.

Pricing

The Thinstall builder costs \$5,000. Enterprises pay an additional license of \$39 per user. Software Vendors (for whom this is a great boon) pay a license according to their user population.

Thinstall is for Windows only. It does not do Linux or Mac, unless those environments are running a Windows emulator. It competes with Microsoft's *SoftGrid*², which does involve kernel-mode interaction.

How This Can Save Money for the Enterprise

The enterprise can leverage the capabilities of its desktops without installing anything. It can even put its PCs on a LAN share and get more general use out of them through a grid strategy. Imagine if you could safely leverage the compute power of your neighbor's desktop while he or she is on vacation. Software packaging for a particular role is facilitated by the use of Thinstall. You customize before you Thinstall, just as you compress before you encrypt. The risk of laptops be reduced – and the need for laptops is reduced. This reduces both cost and risk.

Conclusion

Thinstall gives an enterprises workers enhanced geographic independence and the IT department freedom from the burden and pain of installation. With Thinstall, an enterprise can avoid shipping locked-down PCs to all its remote location, and instead can ship a secure, 2GB memory stick. With a VPN connection, they add mobility while keeping security intact.

If your organization is struggling to juggle new applications, more mobility, and an aversion to increased risk, Thinstall may have an answer for you. Check it out!



² For a vintage look at the Softricity product, see **The Clipper Group Navigator** *Civilizing the Unruly Application with Softricity*, dated May 11, 2004, and available at <http://www.clipper.com/research/TCG2004042>.

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