



Trade Your Manual Server Farm Headaches for Automated Management Proficiency

***visionapp* Server Management
Revolutionizes IT Management of Large
Terminal Server Farms**

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visionapp was one of the first vendors to develop products that make it easier for IT departments to manage and update their networks. This vision is not only important to the continued growth of large-scale server farms, it has the potential to revolutionize the way IT infrastructure is deployed, expanded, and maintained.

Benefit bullets:

- > Manage the full server farm lifecycle – installation, maintenance, expansion
- > Build servers using a unique collection of building blocks
- > Accommodate and manage change easily
- > Lower risks of project conversions
- > Reproduce server configurations reliably and easily
- > Rely on a tried, tested, and truly standardized product

Introduction

The pace of modern business growth makes for increasingly complex IT environments as they struggle to keep up with the pace of innovation. Ideally, the management of server farms should be able to keep pace with the innovative applications running on them. Today, complex infrastructures require sophisticated management systems that are flexible and dependable to grow with change.

Unfortunately, in all enterprises from midsize to large, while managing servers efficiently has become more and more important, it's become increasingly complex. Blade technology (high performance/high density servers) and virtual machines have resulted in increasing numbers of servers worldwide being installed, configured, and maintained on a daily basis to support millions of users relying on critical applications and functions. This is consuming valuable resources in staffing, time, and budgets within IT departments.

The *visionapp* Server Management (vSM) solution facilitates the tasks associated with managing server farms in Windows environments, particularly when using Citrix Presentation Server (now XenApp). When it comes to building, managing, and maintaining Windows- and Citrix-based server farms, *visionapp* brings revolutionary changes to the process and methodology surrounding managing these servers. This has brought many benefits to the IT departments that save costs, boost productivity, and further business objectives at large.

How does this happen? Read on to find out.

The Bad News of Manual Server Farm Management

Ever since the dawn of Windows Server and Citrix MetaFrame, IT administrators deploying Windows- and Citrix-based server farms consisting of 50 or more servers

(with multiple and different configurations) would be consumed by the tasks for days if not weeks. And this just relates to the initial deployment, much less requirements for ongoing maintenance and upgrades. Some of the time-consuming steps for manual deployments of server farms are:

- > Partitioning of target hardware
- > Operating System installation
- > Activation of terminal services
- > Import required licenses
- > Configuration (Terminal Services, Windows, policies, registry, users, security, ...)
- > Install Citrix software
- > Switch to installation mode
- > Installation of applications (one at a time)
- > Switch to run mode
- > Make adjustments (policies, files, registry, security, user settings, profiles, ...)
- > Configuration of specific parameters of Citrix software
- > Repeat for additional installations
- > Publication of installed applications
- > Deal with problems that will crop up, including:
 - > Intentional and unintentional variations in configuration
 - > Planned or expected upgrade in operation system, applications, etc.
 - > Unplanned changes that arise

In large-scale server farm rollouts, IT administrators inevitably face high probability for error or malfunctions, no matter how skilled they may be. There has been no optimal way to be prepared for change that certainly comes except to try to manage the complexities manually, the same way the initial rollout is often managed. It's simply been the nature of the game when managing dozens or hundreds of servers in a changing environment. Results: much time lost and potential for high user frustration trying to keep up with the changing variables that occur when users rely on multiple applications every day.

The tradition of manual installs for large terminal server farms remains all too common. Fortunately, this troublesome and predictable scenario has become a thing of the past for many administrators, and can become a thing of the past for you and your organization as well. *visionapp* Server Management (vSM) solution brings an entirely new and different reality to the process by automating the many steps in the bullet list above, including allowing the creation of flexible building blocks and convenient reporting and documentation. *visionapp* vastly simplifies this process, while making it far more reliable, both during the initial installation process and ongoing maintenance.

Good News for Large and Midsized Enterprises: There's a Better Way of Building and Managing Server Farms

As mentioned above, the *visionapp* Server Management solution offers a radically different approach to building server farms. This involves the creation of identifying various building blocks for your servers, allowing flexibility in configuration deployment, as well as centralized management by one or multiple administrators. This paper describes this process in detail.

But first, let's discuss the limitations of the current methods still very much in practice.

Why Can't I Just Build My Servers Manually Using Images?

It's normal to raise questions about a new process over one that's familiar, however tedious and difficult that current process may be. A common question we hear when discussing migration away from a strictly manual server farm management process is people asking "Why can't I do this with imaging or scripts?"

The answer is: "You can, to some extent, *but ...*" You must be fully aware of the downsides and be prepared to handle the consequences. Often, those consequences are deal breakers to handling the management process of large server farms effectively, particularly when relied upon exclusively. Many of the people reading this paper have likely managed Windows-based terminal servers (Citrix servers, file servers, print servers, etc.) using a manual process. It's of course technically possible. Those who do it typically follow a checklist. And this process works reasonably well for installing and managing one server, or five servers, relying on checklists.

But try expanding this to 50 servers, or even 500, or anywhere in between or beyond. Maintaining consistency across dozens or hundreds of servers, while dealing with multiple other tasks and interruptions, quickly becomes tedious and taxing to even the best of administrators. And after the initial installation is accomplished, how does the administrator make sure all those servers are kept updated in parallel, from the same place at the same time? How can they be sure they're not getting Service Pack 2 onto 50 of their servers while leaving out the other 10? How can they be sure they're installing it in exactly the same way and the same order so that all the servers are exactly the same? If these kinds of management processes are done manually, one must be sure to record absolutely everything accurately down to the smallest detail. And there had best not be a staff change in the middle. Checklists are only as good as they are kept and followed, and performing this is no small task.

To help with the load, administrators have used images to build and deploy servers. They have a server and it's working well so they can image it and deploy as many others as they need. It's common for people to get their systems set up—and never want to touch them again because they are so complex with many dynamic parts.

But this isn't practical. You still face a problem when it comes to updates. Many administrators believe Citrix servers are delicate and it's easy to get them "out of

whack” – they need updating and maintaining. You might have an imaged system that’s great for right now. But whether it stays that way depends on your willingness and ability to update it with the necessary security updates, the latest applications you need, and the latest versions of operating systems or Citrix servers. It starts to obsolesce the moment you put that state-of-the-art server into production.

What’s Wrong With Building Servers Using Scripts?

One other method administrators have turned to is scripted server installations. They are a lot easier to manage and easier to do on a large scale. But you end up in a situation where you are then dependent on those scripts and making sure they are correct and adequately tested. When it comes time to update them, you must be sure you have a fully qualified programmer who’s familiar with and available to perform the work. It’s necessary to have the consistency of one person’s knowledge that others can rely on going forward into the future. We can’t overemphasize the importance of this – staff administrators and consultants alike are all too familiar with the scenario of being handed a script they’ve never seen before and being asked to “fix” it. Everyone else in the vicinity is clueless how to approach it. These are not fun problems to be faced with.

The more options you have with your servers, the trickier things get. You might have a situation where previously you were doing published applications and now you want to do streamed applications. You now need to update or even replace your methodology, and it’s much (much) simpler if you can update it using technology to automate and track the process. Let technology do the work for you.

By delivering these types of installation and management processes manually or with disparate scripting methods, companies have often ended up increasing their exposure to risk, increasing costs, delaying scheduled commitments, and mis-using skilled personnel to complete low level administration.

We’d like to underscore here that this is not a reflection of the competence of administrator staffs. Even the most brilliant of administrators who would be capable of managing such a meticulous process would do well to adopt a solution that automates the tedium of the process, thereby removing the manual burden on him or her and freeing them up to focus on other business-building objectives. (How many IT projects are on your back burner, waiting for resources to become available?)

We can liken this to the well-known helpdesk scenario. Rather than staff up your helpdesk to address old problems that have good fixes out there, adopt the good fixes and redeploy your helpdesk staff on more productive projects. Scalability and efficiency are paramount in our Web-o-lutionized world today. Efficiently run organizations that scale to meet business demands are the ones who rise above and outrun the competition. It’s as simple as that.

Next and in contrast, we’ll discuss *visionapp’s* building blocks approach that addresses all of these challenges.

***visionapp* “Building Blocks”: Never Struggle with Manually Managed Server Farm Confusion Again**

One of the strongest features of *visionapp*'s Server Management solution is its ability to accommodate managed change. Our unique way of approaching this is that servers in the *visionapp* world are built using a collection of building blocks. Individual building blocks consisting of core pieces of the servers, such as the type of server desired, operating system, and applications, are pre-defined and made available to be selected as needed to define a certain kind of server.

For example, someone may build a Citrix XenApp (formerly Presentation Server) 4.5 Server running Microsoft Office 2007 and Adobe Acrobat 8.0. The process is basically answering a series of questions as you go through the build: What OS do I want to run? What kind of server do I want? What version? What kind of applications do I want to deploy? vSM takes all these building blocks and draws them from the *visionapp* Download Center available from the *visionapp* Web site (all building blocks are Citrix Ready) and combines them all together to build the servers of choice. The administrator can then use the same kinds of building blocks to build different kinds of server roles. You can use the same OS, the same Citrix piece, same patches and so forth that go on after the servers have been deployed. This approach is also designed specifically to accommodate version updates and upgrades. For example, vSM enables administrators to pull out a Citrix Presentation Server 4.0 and plug in XenApp 4.5 without sacrificing the consistency or integrity of the server stack. For *visionapp* vSM, this means it is just the replacement of one Building Block. Administrators do not have to maintain several configuration variations for each kind of server they're building. The building block approach allows the administrator to automate the process of keeping current with ease.

And in terms of recording and detailing the changes, vSM supports the industry-standard best practices for service support and service delivery to help your organization conform to ITIL and ISO standards.

Installing the *visionapp* Solution and Planning the Initial Building Blocks

In order to install and set up the *visionapp* solution, customers need:

- > Multiple servers on which to perform the installation
- > Dedicated database (based on Microsoft SQL Server)
- > Support for all the configuration settings that are stored in the database
- > File share location to hold the binaries for the Building Block and to install the OS

The environment required is dependent on the size and nature of the organization, but need not be complex. The central dedicated database is used to store the configuration information. On a per-site basis, the file share location holds the binaries. The *visionapp* Enterprise Version supports multiple sites on a single console.

Administrators must spend some time initially planning the look and feel of the system before the building blocks are put in place. Administrators know that when deploying Citrix servers and Windows Terminal Servers, they don't operate in a vacuum. The applications and servers interoperate with other servers – including mail servers, Web servers, database servers, even file and print servers. Any system must be able to support and supply that entire infrastructure, not just parts and pieces of it.

When the building blocks are being put in place, administrators can customize and parameterize just about every aspect of those building blocks. Then the customized pieces can be saved to use in other parts of the system or in future rollouts; there's no need to re-do the parameters or customize aspects of those building blocks more than once.

Standardized Building Blocks Provide Reusable Parts for Reproducibility

The *visionapp* solution takes all the building block components administrators have within their environment – comprised of components such as an Operating System, a Citrix Presentation server, applications such as Office, Visio, financial applications – and sets each of them up to become individual building blocks. He or she then goes through a server build effectively saying "I want this piece," and "I want this block." Once the list is complete, he/she then activates the server build process in the control center, and *visionapp* automatically builds all of the component pieces, applies the parameters, and configures the servers.

visionapp Server Management offers more than 3,000 building blocks – also referred to as "packages" – for the automated installation and configuration of a terminal server and Citrix environment. These packages were created, tested, and refined in complex, enterprise-size terminal server projects, tested by engineers, and deployed in customer environments – making implementation much simpler and delivery time much shorter. *visionapp* assures that every single available package is in use in a real-life environment somewhere.

Imaging and scripting can get us (more or less) to this point as well. But to re-build the vSM functionality with imaging and scripting would need tremendous efforts. The real value of vSM comes after initial deployment, where vSM also takes care of ongoing change management. Going forward, for example, when the next service pack comes out, the administrator does not have to re-do initial steps, but rather simply posts the new installation fix to all the servers he/she selects. If a new version of an application comes out – Office 2007, for instance – the administrator simply removes the Office 2003 building block and puts in the Office 2007 building block. If a new application is purchased, a new building block is slipped into the server build process and is available the next time the server is restarted. When a new server must be added to the mix, the administrator doesn't have to build it up separately or do a new patch on top of the installation. He/she selects the management setting to reflect changes. The new servers would never be in a

situation where they take on the configuration of the old ones rather than the new desired versions as long as the servers are kept in sync with each other.

While *visionapp's* approach to building servers can often save hours of labor per server, it is this ongoing change management approach that can not only save dramatic amounts of time and effort, but can lead IT organizations to become much more flexible in their approach to information delivery. Now, a new application or update can be thought of as something easy to implement, not as a massive three-week project that will consume significant resources.

Administrators follow a similar pattern when rebuilding a server. The building blocks they have built throughout the process for each of the installed components are likewise also available for them to select in the event of needing to rebuild a server. They simply use the *visionapp* Control Center to select what they desire – and build it. In this manner, *all* servers are built (or re-built) in the same way via an enforced methodology that automates and streamlines the process, adding standardization and reproducibility.

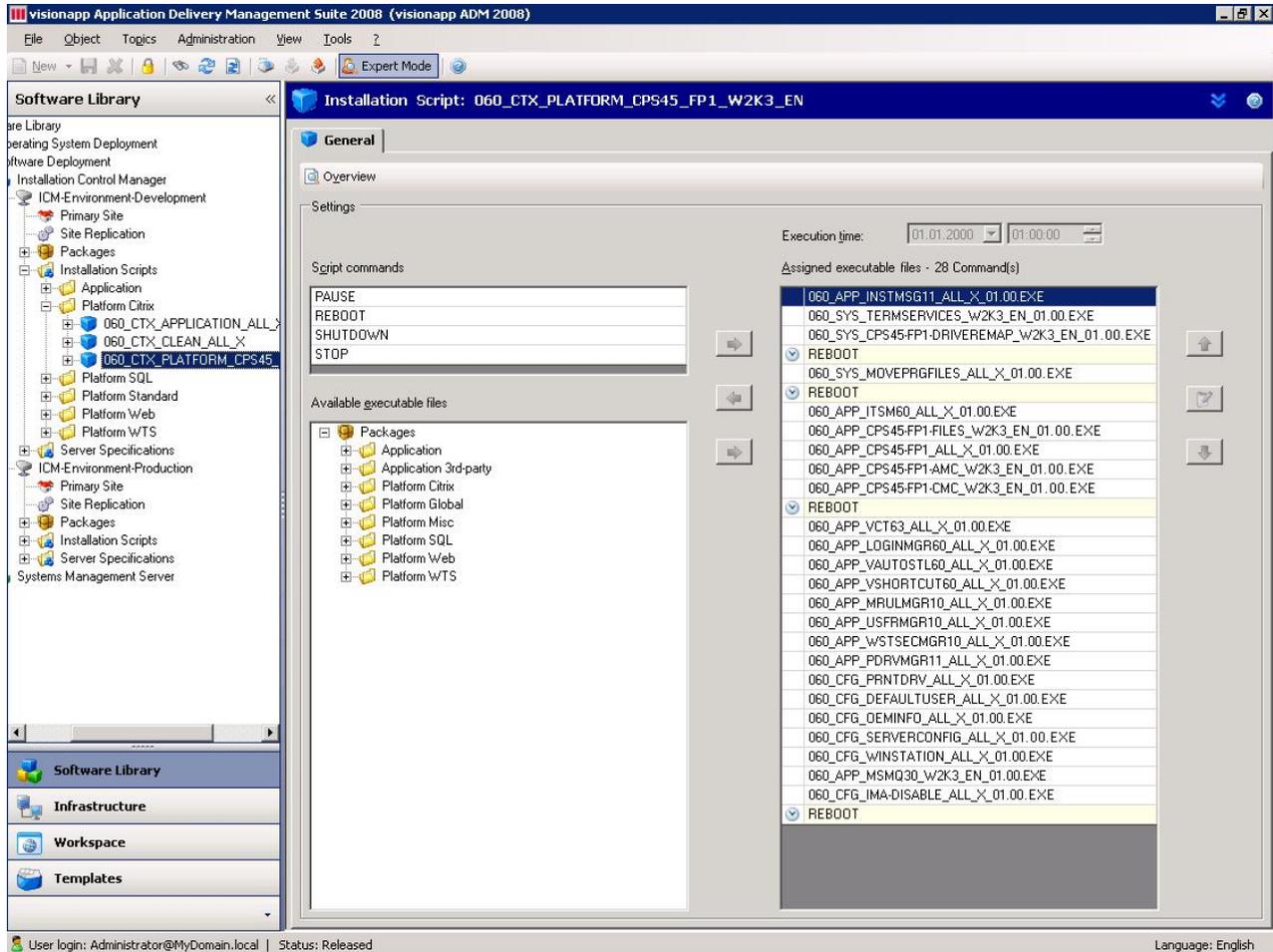
***visionapp* Server Management Capabilities**

As server consolidation and centralization has occurred in IT departments, this means that operating expenses are shifted from the client to the server. This results in ever larger and more complex server farms, and an escalating need for sophisticated and robust management tools. vSM provides all the required features to maintain a stable, highly available Windows server infrastructure while ensuring high performance and maximizing cost efficiency. The vSM management console delivers a fully automated installation process for terminal server environments, as well as a user friendly interface for the efficient management of Microsoft and Citrix-based servers.

vSM transforms the approach of building up server infrastructures from a manual, disparate process to an automated process built on separately defined, re-usable modules. These modules provide an infrastructure that's predictable, documented, manageable, and completely homogenous – even with (and especially with) ongoing changes occurring with increasing frequency. The result is an administrative staff that's efficient not only in their own processes, but also in the environment they create for hundreds if not thousands of users – all coming with the benefit of cost savings.

vSM supports a variety of application delivery methods such as application streaming, published applications, and OS streaming; once again, all of these can be managed from the *visionapp* Application Delivery Management Console through the Server Management platform and its centralized Resource Library which stores configuration settings and server building blocks. What this means is the administrator can rely on the central console and the underlying technology he/she chooses to architect servers to their specifications. For example, if an administrator wants to deploy and manage servers using Microsoft SMS for managing server roles, but they want to use Altiris for deploying the base Operating System, using vSM, he

can do this from one single front end management system without having to go piece to piece.



visionapp Server Management basic configuration of the installation environment

The Streamlined Consistency of Automatic Installations

Automatic installations on a terminal server or server farm involve different installation steps. To achieve a highly available and stable system environment, the software must be installed in a specific sequence on all target systems. The optimized procedure is automated and enforced on all specified servers.

- > Terminal server operating system is automatically installed on the target systems (the OS software image has previously been loaded into the filing system as a "building block" – process described above)
- > Applications are selected and loaded on as building blocks
- > Service packs, hot fixes, patches, and security packs are loaded on
- > Security settings are set automatically and the entire system is "hardened"

For Citrix XenApp, administrators can include configuration of the specific Terminal Server and Citrix settings, such as management of the registry mapping options, monitoring of the farm configuration, or changing the target system to installation mode. Further tools are used in these processes, which are copied together with server-specific configuration files onto the target platform by means of a script. This can be preformed remotely. Before execution, the tools' configuration files are filled with data from the database containing all the server-specific parameters (loaded in as part of the building block methodology).

visionapp tools are closely aligned to Microsoft's and Citrix's roadmaps, allowing customers to leverage their latest, most sophisticated tools. The modular design of the *visionapp* Control Center makes it easy for administrators to have access to tools that support current technology.

Change and Release Management and Tracking Documentation

As described above, one of the key benefits *visionapp* offers is the change and release management tools, which make implementing infrastructure changes vastly simpler. Change management typically refers to technologies that alert administrators to all the components on their network that require attention after installation of new equipment or application upgrades. *visionapp's* philosophy also upholds the principle that true change management should include tools that simplify the change-making process itself. vSM provides administrators with a graphics-based tool in the Console which controls all aspects of building the system and allows them to follow best practices in their change/release/configuration management process.

visionapp Server Management automates the entire lifecycle of server farm management:

- > Building a new server-based computing infrastructure
- > Migrating an existing server-based computing infrastructure to a new operating system or middleware version
- > Expanding an existing server-based computing infrastructure for new users and/or applications

visionapp systems are self-documenting so you always know current status and where you are in a process. If management approaches you and requests information on exactly what's installed on a certain Citrix server or Windows server farm, you can provide documentation that tells them everything they need to know and answers all of their questions. There's no guesswork involved, there's no sitting down with a notebook and documenting everything you can think of. It's all already there in the management console.

Companies are learning that it is crucial to know what exactly is going into a server build, to be able to document it, to test it properly before it goes out, to be able to

manage its release and to be able to add that change back to the system documentation. These are functions vSM manages for administrators by design.

Another advantage of vSM is that it eliminates the need to maintain a very large image library because by using our system of building blocks, the various roles, whether different kinds of Citrix servers or using a Web server or database server, all end up being a delta from the core image(s) you define. You've set up your basic images, and after that you're just describing them in different ways.

visionapp Server Management also provides documentation and reporting tools that are essential for today's standards, and for legal or governmental requirements and regulations. Standardizing IT operational processes ensures a stable environment with a full audit trail. Changes are documented, trackable, and repeatable, even if administration personnel changes.

On the Spot Preparedness for Disaster Recovery

A strong benefit of *visionapp* Server Management is not only its ability to manage design, deployment, and ongoing maintenance of terminal servers, but also its ability to provide reliable disaster recovery. Automation of operational and management tasks enable administrators the ability to react quickly when needed either for system expansion and growth, or, in reducing the time needed for disaster recovery.

As an example, *visionapp* supports many customers in the financial and governmental sectors and as such, high speed disaster recovery is an absolute requirement. Some customers must perform trial recovery runs, such as fulfilling a preparedness requirement demonstrating the ability to be able to bring 200 servers from a completely powered-off, bare-metal state to a fully operational state of production in half a day. With vSM, our customers were able to achieve their goal in just under 4 hours for 200 servers. Had they been forced to resort to a manual process machine by machine, that timeframe would have been days, not hours.

Conclusion: Why Should Administrators Build Server Farms Using vSM?

visionapp Server Management makes it possible for IT directors to do more with their IT resources, to harness server functionality and performance, and to maximize cost efficiency.

For the entire management lifecycle of server farms, the *visionapp* Server Management solution provides the intelligence and necessary functionality for complete automation of installation and operating processes in your server farm environment using pre-built, pre-tested, best-practice packages.

More Information and Next Steps

At www.visionapp.com, *visionapp* offers multiple ways to learn about their solutions, including hands-on evaluations.

- > **Full demos with an engineer:** Visitors are invited to request an online demo where an engineer walks through vSM and provides as in-depth an overview as user's desire – usually 60 to 90 minutes. This provides the opportunity to see exactly what the product looks like, view the administrative backend, and see how it presents on the front-end.
- > **Trial software demos:** You can download a 30-day version of the software yourself and experiment with it. We recommend a short online session with an engineer to familiarize yourself with the environment and save you some time. Engineers are available to set this up in user's own environments, where they can install some servers and see how the process works.
- > **Online white papers:** These describe and explain our methodology and philosophy.

About visionapp

visionapp, the innovative leaders in application delivery management, offers professional consulting, technologies and services that enable a smooth and efficient centralized delivery of applications. *visionapp* customers use proven technologies and a high level of automation to implement an efficient, centralized operation of their IT infrastructure.

The *visionapp* Group, headquartered near Frankfurt, Germany, has offices in the UK, USA and Switzerland, with more than 150 employees worldwide.