

# AppSense: How User Virtualization Can Save You Money



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### Executive Summary

In the area of virtualization, the marketplace features numerous products and approaches, and the list continues to grow. Dividing today's data center into distinct layers, i.e., server, OS, application, and user is a direct outgrowth of the virtualization trend. Administrators have achieved greater workplace productivity by addressing each layer individually. In these terms, user virtualization is the newest approach that promises to provide greater end user flexibility and workplace productivity. Essentially, user virtualization products capture everything a person does on a non-persistent desktop image. The user can then log off and log back in to a newly refreshed image and have everything still in place from previous sessions.

AppSense is one product that IT administrators have begun to recognize in this emergent field. AppSense provides a combination of settings management, workspace configuration, application lock-down, and better management beyond VDI (Virtual Desktop Infrastructure). This white paper explores key aspects of user virtualization and answers a number of questions related to its functionality and promise in the workplace. We look particularly at AppSense as an innovative user optimization product and how user virtualization can help to reduce costs in general.

#### **Datacenter virtualization today**

Historically, the individual desktop PC has been the dominant feature in workplace computing. However, the spread of virtualization in its many forms has begun to change that. For example, individual server deployment, where one server is responsible for a finite number of machines, is considered woefully inefficient.

Now, as organizations turn to server virtualization to decrease capital expenses and to reduce physical server count, every aspect of the datacenter has been impacted.

**Server Virtualization:** Hardware virtualization has not only simplified IT operations, it has offered both IT and end users a combination of efficiency, flexibility and unparalleled resource accessibility. In turn, more efficient datacenters have helped lower corporate costs and enhanced application delivery in ways that were unforeseen a few years ago. The marketplace features numerous mature virtualization products, and administrators have many options for reducing costs and consolidating infrastructures.

**Desktop Virtualization:** In the case of desktop virtualization, the desktop operating environment is separated from the underlying hardware, keeping the 'virtualized desktop' on a central server. IT managers can then set up a single master image and deliver it quickly and easily to large groups of users. Virtualization has enabled this layered approach which segments the desktop into the operating system, applications, and user information,

- all tied to one piece of hardware. The release of Windows 7 upgrades, more efficient virtualization architectures, and a rise in mobile devices, from smartphones to tablets, are fueling increased interest and setting the stage for more seamless adoptions in the desktop virtualization market.
- **Application Virtualization:** The more recent growth of cloud-based offerings, SaaS (Software as a Service), and other application-related services is simply another extension of this layered approach. Application virtualization entails separating the desktop environment and installing applications on demand or through streaming to the desktop environment as requested. Application streaming and virtualization can make applications available to desktops, laptops, server-hosted VDIs, and RDS (Remote Desktop Services) platforms. Applications are then executed without any need for platform modification. Advantages include: easier installations & upgrades, roll-backs, faster delivery speed, and easier application support.

Overall, virtualization has substantially increased the computing power of the datacenter. Developments in both desktop and application virtualization mean more mobility for users who can now choose to take both their applications and desktops with them.

User virtualization promises the ability to apply user environments across operating system versions (i.e. XP, Vista, Windows 7 & Server 2008) and to provide freshly provisioned user-customized desktops on demand anytime, anywhere.

### **Virtualization: Things to keep in mind**

To better understand current datacenter trends, it's important to clarify terms that are frequently mentioned in connection with desktop virtualization and, by extension, user virtualization. SBC (Server-based Computing) and VDI are technologies fundamental to the development of desktop virtualization.

Both SBC and VDI enable the use of thin clients, while VDI also supports zero clients (devices without operating systems). Configuring a thin client is achieved by simply plugging the device into a power source. Thin clients eliminate both the need for PC upgrades and for users to double as desktop administrators. They provide users with simple functionality and agility, and offer IT admins new ways to integrate both remote users as well as new acquisitions that use different operating systems and configurations.

SBC, a mature platform, is closely tied to Citrix and XenDesktop. It offers administrators easy patching and upgrades and the ability to support multiple users. However, personalization is limited and since all users share a single Windows Server session, that can have its limitations. For example, a malware infection on one user can affect all the other users connected to the host server.

VDI refers to hosting desktops on hypervisors and it is more closely tied to VMware and its suite of offerings. Administrators can provide the exact look-and-feel with which users are comfortable via 'persistent desktops.' These are run as a complete image in the data center on a 1-to-1 ratio of desktop to user. However, administrators must carefully manage the individual virtual machines as well as multiple identical copies of the OS and user data.

A non-persistent desktop recreates the desktop settings each time the user logs in. However, it lacks the ability that allows users to customize their desktops. As a result, companies such as AppSense have come along to offer user virtualization approaches that decouple user information and settings from the OS and applications.

Desktop virtualization has offered organizations and administrators a range of advantages. In terms of productivity, three user-experience areas are critical: desktop performance, mobility, and settings customization to create familiar environments. Yet as virtual desktops are managed they can, for example, come into conflict with corporate policy. This area of potential conflict is minimized through user virtualization adoption.

Policy is related to actions, such as network mapping rights, drive accessibility, printer designations, and application access that is regulated and managed by IT. In the past, profile management, a common feature in Windows-based systems, was sufficient to assign and control rights. Increasingly, vendors such as VMware, Microsoft, and Citrix, have incorporated profile management into their virtualization products.

However, profile management fails to adequately deal with the complexity of desktop/user personalization which involves not only policy management, but cross-platform issues. That's where user virtualization offers advantages. The user environment is automatically managed and freshly provided on demand. It generally includes user-based corporate policy, personalization settings, user-rights management, and applications. This makes it less expensive to support since administrators no longer have to deal with multiple unique machines to update and manage.

### **AppSense: What makes it different?**

As mentioned previously, virtualization has led to a component-based view where the operating system, applications, and user data are separated into three distinct layers that are then managed separately. User virtualization offers administrators a way of managing this third layer to make the desktop environment more efficient for workers and to ease the IT burden.

For users, it provides the ability to maintain a fully personalized virtual desktop when not on the company network. Then, once users are on the go, they can take this personality with them and access it, regardless of the device or the operating system. AppSense Environment Manager provides users with that 'follow me' personalization by providing user-specific settings on the fly and thoroughly managing them so the user or IT administrator doesn't have to.

From a technical standpoint, the functionality of AppSense is quite simple. First, the application is installed on a particular user's machine as an agent that communicates back with a centralized service.

Then, since it's linked up with the user's operating system, it intercepts reads/writes to all of the places where configuration occurs: registry, file system, and database calls. Once it has gathered these settings, it abstracts them to a neutral XML format stored in a database. When the user logs into another device with a different operating system, the agent on that device communicates with the centralized service. It recalls the XML and converts it back into the appropriate environment settings for the OS type the user is currently logged onto.

For both standard and complex users, precise environment settings geared to that specific user's work habits are important. The constant need to re-personalize desktop and application settings can often be time-consuming and tedious. Consequently, loss of user productivity and overstretched IT resources can slowly add up. One quality unique to AppSense that distinguishes it from competing products are its user rights management (URM) capabilities.

URM provides the ability to manage the privileges that users require to run processes and it prioritizes user rights to specific applications. This can be crucial for reducing desktop TCO (Total Cost of Ownership), because it addresses security, limits support calls, and ensures users have access to the features and applications they require. Infrastructure management tools such as these are critical for optimizing the user environment, and for ensuring users have the best working configuration.

AppSense also offers the advantages of automating user personalization between virtual and physical desktops and the application delivery technologies that can be applied to those desktops. These deliveries of personalization data and applications occur as start/stop processes instead of logon/logoff events, thus rendering personalization in real time.

The AppSense methodology is based on effective user virtualization where every user has personalization management, whether on a physical or virtual desktop. In order to achieve true desktop management, or to achieve the cost benefits related to SBC or VDI, AppSense focuses on the user instead of the application. This approach acknowledges that premium cost savings and worker productivity will primarily be achieved through improved desktop management via user virtualization.

### **How AppSense helps minimize costs**

As illustrated so far, user-specific environment settings are pretty important. For example, imagine a developer who frequently moves across workstations using application virtualization. While the application provisioning is taken care of, there are a number of redundant, time-consuming tasks that need to be performed each time the developer sits down at a new workstation. These can include: customizing applications and preferred settings, re-installing browser favorites, installing specialized default templates as needed, and re-arranging dockable windows to preferred placements.

Productivity time constraints such as these, spread across several developers, can eventually incur substantial costs, affecting a company's bottom line. User virtualization represents a means for streamlining production tasks and, in the process, eliminating cost overruns.

As regards desktop virtualization, user virtualization tools like AppSense can be critical enablers. Of course, desktop virtualization provides simple and cost-effective management to significantly reduce the TCO (Total Cost of Ownership) over traditional desktop supervision methods. User virtualization represents a more granular, holistic approach to ensure that certain aspects of the desktop are automatically managed. It optimally meets user demands by providing seamless desktop transition and portability while offering IT the level of control it requires.

For example, since the user data has been decoupled from the desktop using AppSense, the underlying operating system and applications can be standardized. As a consequence, the user experience is minimally impacted and new, up-to-date desktops are provided each time a user requires access. Freshly provisioned desktops, sourced from a single image, are inherently less expensive to support. In the process, business agility is increased since there are no longer numerous unique physical machines to constantly update and manage. It's further evidence that user virtualization represents a key component in achieving a better-managed desktop environment for companies.

AppSense's URM (User Rights Management) functionality alleviates the concerns with normal users running programs that require administrative rights. This frequently occurs in companies when a user is given administrative rights in order to run a specific application.

As a result, it risks the potential security breaches that most companies can ill afford. It also requires IT attention, further stretching limited resources. AppSense URM can automatically be configured to elevate user rights to run certain applications, map printers, and access network information and system settings, all with the proper security in place. This in turn reduces support calls and eases the IT burden. Consequently, companies can achieve further cost savings as well as alleviate unnecessary security concerns.

Finally, when companies consider all the product possibilities related to VDI, SBC, and RDS (Remote Desktop Services), sometimes they will still find limitations. They realize it's probably more cost effective to continue the status quo of supporting multiple computing models for different users just due to economics. Some companies will implement SBC with little or no personalization and achieve cost savings. Still others will employ 1-to-1 VDI, achieving greater reach (tablets, smartphones, mobile devices, etc.) and flexibility with minimal cost increases. These represent typical scenarios that many companies experience today. User virtualization represents a means for managing *all* these diverse users, regardless of the platform, and for achieving significant cost savings in the process.

## Conclusion

This article outlines some of the ways in which user virtualization represents the next step in the ongoing stratification of the data center. Better managed desktops are crucial for achieving the cost benefits of VDI, SBC, or some other single-image desktop virtualization solution.

User virtualization offers the means for attaining comprehensive, automated applied user environments on a desktop. AppSense provides the same managed yet personal experience regardless of the type of desktop delivery method. It manages everything specific to a user on demand, without cumbersome profiles or scripts. While it may seem like a significant challenge, personalized ubiquitous computing environments are what many users have come to expect. The explosion of social media has set the stage, and companies are increasingly expected to provide similar environments for users.