

# Citrix Presentation Server 4.5

Gartner RAS Core Research Note G00149534, Federica Troni, 11 July 2007 RA2 01232008

**Citrix Presentation Server has been broadly deployed by enterprises for specific Windows client/server applications, but its pure server-based delivery model was not sufficient for all requirements. With the addition of new features and delivery models in version 4.5, Presentation Server now caters to a broader spectrum of users and use needs.**

## Key Findings

- Application virtualization, application streaming and desktop broker features complement Citrix's traditional server-based computing functionality and help overcome some of its use limitations.
- The introduction of application virtualization and application streaming technologies to version 4.5 of Presentation Server means the product is effectively competing with Microsoft's SoftGrid product on these features.
- Compatibility with established PC configuration tools is a key criterion in evaluating an application streaming and application virtualization technology.

## Recommendations

- Citrix Presentation Server 4.5 should be considered when the majority of Windows applications will be delivered using a server-based approach. Application virtualization, along with application streaming and the desktop broker features, accommodates broader use requirements.
- Organizations evaluating the application streaming capabilities of Presentation Server 4.5 to deliver applications outside the Presentation Server environment should consider integrating them with their PC configuration tools.
- Plan for specific training for staff using the packaging and profiling process of application streaming.

## WHAT YOU NEED TO KNOW

With the release of version 4.5 of its Presentation Server product, Citrix has improved its traditional server-based computing capabilities and added new options for delivering Windows applications to users through application streaming and desktop broker features. These new functionalities overcome some of the limitations of server-based computing and can accommodate a broader set of user requirements, while facilitating centralized control of applications and data.

## ANALYSIS

The most interesting additions to Presentation Server v.4.5 are application streaming and application virtualization. Application streaming is gaining popularity for delivering applications from the central site to remote users. Although the application resides in a centralized

repository, it executes locally on the target device. The application is segmented into smaller components that can be streamed to the PC as the application requests the function. The packaging and profiling is accomplished through Citrix's Profiler. Different profiles for the same application are required when different operating systems (OSs) and service packs, languages and security settings are in place.

Applications run in a cached, isolated bubble that resides on the client device: this should prevent any conflict with other applications on the client device. Application virtualization is the technology used to create these isolated bubbles. Applications are cached on the client device and are then ready for subsequent use. The application's license is normally released from the device when the user exits the application, but it can be configured to remain a resident on the device for a predetermined period of time. Citrix refers to this as "checking the application out," and the intention is to support users that occasionally need to work offline. Files are saved locally, and individual settings are preserved. Every time the application is executed, it checks for updates and delivers them automatically.

Application streaming is available in Presentation Server 4.5, Platinum or Enterprise Edition. Currently, Citrix's application streaming and application virtualization features are not available as a stand-alone product. Organizations interested in these features, but not in the server-based computing features, need to license the entry-level (five users) license of Presentation Server 4.5, Enterprise Edition and add the desired number of application streaming licenses.

Citrix has already expanded its support for alternative ways of delivering Windows applications to users, in addition to its server-based computing functionality. The desktop broker feature, released in October 2006 as an add-on to Presentation Server 4.0, provides session brokering for pooled and dedicated (mapped to a specific user) Windows XP images in a virtual desktop environment. The desktop broker feature can be used to support blade PC deployment or to deliver a hosted "virtual" desktop from the server.

Users connect to desktop brokers over the Citrix Independent Computing Architecture (ICA) display protocol, which then connects to the virtual desktop using Microsoft's Remote Desktop Protocol (RDP). The use of RDP, however, is significantly slower than ICA. When used to deliver virtual desktops from a server, desktop brokers can be used in conjunction with most leading server virtualization software, including Microsoft Virtual Server, VMware ESX or XenEnterprise. The desktop broker features are available as part of Presentation Server or in Citrix's Desktop Server product.

In Presentation Server 4.5, Windows application clients reside in a central repository, called the Application Hub, and are profiled in such a way that they are ready to be provisioned across a Presentation Server farm for server-based delivery or delivered directly to the desktop through application streaming or virtual desktops. This reduces server set-up time and regression testing compared with traditional server-based computing. Organizations evaluating the application streaming capabilities of Presentation Server 4.5 to deliver applications outside the Presentation Server

environment should consider its compatibility with their PC configuration tools. PC configuration tools use their own application depot for storing applications that are ready for deployment. As PC configuration tool vendors integrate application virtualization and application streaming into their offerings, they will eventually also integrate the application depots; however, until then, separate depots will coexist. Presentation Server 4.5 is compatible with HP Configuration Management solutions.

Other new features of version 4.5 of Presentation Server are mainly focused on improving the management and security of large and complex server-based computing deployments. These new features include:

- *Application Performance Monitoring* - A tool that helps identify poorly performing applications and the root cause of bottlenecks. It keeps a historical record of application performance and utilization, providing input for capacity planning.
- *Health Assistant* - A tool that performs continuous server health checks. It works with load balancing to direct sessions to healthy servers before users are affected. It interoperates with standard system management tools, such as IBM Tivoli, HP OpenView and Microsoft Operations Manager.
- *Single Sign-on* - A tool that centralizes password management, storing credentials safely and enforcing password policies with automatically generated passwords.
- *SmartAccess* - Based on Citrix's Access Gateway line of Secure Sockets Layer (SSL) virtual private network (VPN) appliances, which enable administrators to implement access control policies at the application level.
- *SpeedScreen Progressive Display* - Optimizes bandwidth use for graphic-intensive applications, thus improving the user experience with such applications.

### Alternative Application Delivery Models

PCs are flexible and powerful tools; however, many organizations are reevaluating their traditional PC architectures, looking for ways to reduce the security risks and management complexity associated with Windows PCs and applications. Server-based computing is a mature alternative to traditional methods of installing and managing Windows applications. Server-based application delivery can deliver significant advantages in terms of ease of management, added security and low total cost of ownership when it is targeted at the right users.

In some circumstances, however, server-based computing may not be a suitable way of delivering applications - not all applications are designed to work in a server-based environment. Application virtualization and application streaming complement Citrix's Presentation Server by addressing some of these limitations. In the context of a server-based computing deployment, they enable organizations to deliver Windows applications to users that need to work offline, while helping to retain central control. They are also an alternative way of delivering applications that do not perform well in a server-based delivery environment.

Similarly, both implementations of desktop brokers (blade PCs and virtual desktops from servers) represent alternative ways of delivering applications and desktops to remote users. Compared with server-based computing, blade PCs and virtual desktops can be configured to enable users to have more control over their desktops and to customize them. Blade PCs will also deliver more performance to power users. However, the biggest disadvantage is that the IT organization will still have to manage multiple images.

Few organizations are able to respond to users' needs by adopting a single client architecture and one application delivery model for all their users. Therefore, organizations are encouraged to evaluate mature and emerging application delivery mechanisms.

### Product Strategy

Presentation Server 4.5 is available in three editions: Advanced, Enterprise and Platinum. Advanced Edition includes all the server-based computing feature sets; Enterprise Edition also includes application virtualization, application streaming, the Application Hub and the Health Assistant tool. On top of these features, the Platinum Edition includes Application Performance Monitoring, Smart Access and Single Sign-on.

Licenses for Advanced Edition are priced at \$350 per concurrent users; \$450 for Enterprise Edition; and \$600 for Platinum Edition. These are list prices, without volume discounts. Pricing for all licenses includes one year of Subscription Advantage, which entitles users to any product updates, including major and minor releases, released during the membership period. Select features, such as application streaming, Single Sign-on, Performance Monitoring and Universal SSL VPN, can be licensed as add-ons for additional users.

In a Windows-server-based computing environment, it is important to evaluate all the licensing components required. Typically these include:

- Windows Server OS
- Windows Server Client Access Licenses (CALs; per user, per device or per server mode)
- Terminal Services (TS) CALs (per user or per device)
- Citrix Presentation Server (per concurrent users) licenses
- Licenses for applications
- Other management tools

### Strengths

- Presentation Server offers a strong set of server-based computing features and scalability for large, complex deployments.
- Citrix's ICA display protocol supports a variety of client devices.
- Alongside its server-based computing features, Presentation Server 4.5 offers the flexibility of delivering Windows applications in other ways: through application streaming, virtual hosted desktops or blade PCs. Integration of these application delivery models into one single offering is the main differentiator.
- Application virtualization and streaming can be used for users that are not permanently connected to the network.

### Challenges

- The introduction of application virtualization and application streaming technologies to version 4.5 of Presentation Server means the products are effectively competing with Microsoft's SoftGrid product on these features.
- Application streaming and application virtualization are not available as stand-alone products.
- The packaging and sequencing process requires IT staff to become familiar with it.
- Some application management features must be preconfigured when packaging applications - for example, to enable the "check out" feature of application streaming. A post-packaging configuration option is more practical.
- The desktop broker feature can't yet take full advantage of the ICA protocol.
- Presentation Server 4.5 requires the use of two management consoles: Citrix Management Console and Access Management Console.

### Competitive Analysis

In 2005, about 90% of server-based computing software licenses sold were Windows-based, and almost 60% of new server-based computing licenses purchased were Citrix Presentation Server running on the Windows TS (WTS) platform. Because Presentation Server runs on the WTS platform, it requires users to license Presentation Server and TS, meaning Microsoft makes license revenue every time Presentation Server is sold. As a result of this business model, Citrix and Microsoft are not in direct competition in the server-based computing market. However, by adding application streaming and desktop broker to Presentation Server 4.5, Citrix enters new markets and faces new competition.

Many vendors have launched application virtualization and streaming products as stand-alone or alternative products (or, rather, complements) to established packaging and software distribution products. The main player is Microsoft, through its acquisition of Softricity. Softricity's product, SoftGrid, combines application virtualization and application streaming functionalities. It also integrates with Microsoft System Center, WTS and Citrix Presentation Server.

Many players are also entering the virtual desktop space. VMware is the pioneer in this market and, following its acquisition of Propero, is able to combine its server virtualization product, ESX, with Propero's brokering software to offer a complete virtual, hosted-desktop solution.

### Consider This Product When

- Citrix Presentation Server 4.5 can be used to deliver Windows applications in several ways; however, its core focus remains server-based computing. For this reason, it should be considered when server-based computing is a suitable environment for the best part of users and applications in use. Application streaming and desktop broker features enhance the scope of Presentation Server by accommodating the requirements of a broader set of users.

- Presentation Server is a viable choice when corporate liability and risk-over-data security are main concerns because it facilitates centralized control over data and applications, mitigating such risks.
- Presentation Server and, more generally, server-based computing are suitable options to address the specific requirements and issues of branch environments.
- Presentation Server should be considered when delivering access to legacy applications that do not fit in the current environment is required. Although Presentation Server has a much broader scope, it is used tactically by organizations in this way.

### Consider Alternatives When

- The server-based computing requirements - that is, the number and type of applications to distribute and the printing requirements - are relatively simple for a number of users. In this case, WTS used on its own may be a viable alternative.
- Organizations predominantly interested in the application virtualization and application streaming component should also consider Microsoft SoftGrid, Symantec Altiris SVS for application virtualization (which has a partnership with AppStream to provide the streaming technology) and LANDesk (which has a partnership with Thininstall to deliver application virtualization).
- Organizations predominantly interested in virtual, hosted desktops should consider VMWare VDI, SWsoft Virtuozzo, Virtual Iron and Citrix Desktop Server.
- Organizations predominantly interested in blade PCs should consider solutions from HP and ClearCube.

#### Company Information

##### Citrix Systems

**Headquarters:** Fort Lauderdale, Florida

[www.citrix.com](http://www.citrix.com)

**Founded:** 1989

**Ownership:** Public

**Employees:** 4,000

**Financial Data:** Fiscal 2006 revenue: \$1.134 billion

**Partners:** HP IBM Microsoft Oracle SAP