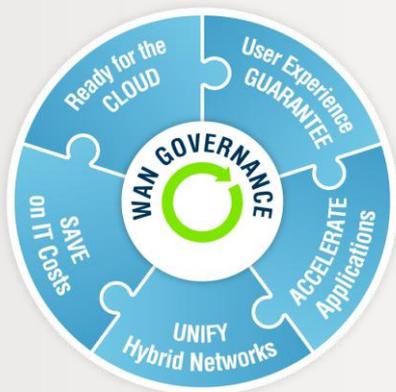# Desktop Virtualization

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The Ipanema System specifically addresses the key requirements of a successful Desktop Virtualization deployment over the WAN:

- It automatically recognizes the virtualized desktop flows and the underlying business critical applications;

- It optimizes all virtual desktop protocols: RDP, ICA and the UDP based PCoIP protocol used in VMware View 4.0;

- It manages the competition between applications sharing the virtual environment (including print flows, non-critical applications…);

- It automatically adapts to the real-time activity of virtualized application users (e.g. from highly transactional to data transfer phases);

- It protects business critical applications against non business critical applications;

- It seamlessly integrates the virtualized application flows into the existing application mix (email, ERP, VoIP…).

ENSURING A SUCCESSFUL ROLL-OUT OF VMWARE VIEW, CITRIX XENAPP AND MICROSOFT DESKTOP VIRTUALIZATION

Desktop virtualization is increasingly deployed as a powerful way of simplifying the management of applications and user desktops. The main technologies used are VMware View (a.k.a. VMware VDI), Citrix XenApp (a.k.a. Presentation Server) and Windows Terminal Services.

Desktop Virtualization is a technique whereby a remote user does not access their applications on a local PC, but via a "virtual" desktop running on a server in the enterprise datacenter instead. There are two ways to deploy Desktop Virtualization: the first one makes use of remote desktop connections to a server running Citrix XenApp or Microsoft Terminal Services. The second one is to implement virtual machines in the datacenter (close to the application servers) in conjunction with proprietary "remote display access" to these virtual machines (VMware View). With its ability to handle complex and heterogonous client software from central datacenter locations, Desktop Virtualization brings many benefits including a significant reduction of IT management costs.

On the other hand, Desktop Virtualization generates very interactive traffic over the WAN. **The end-user quality of experience is thus directly linked to the WAN impact on these interactive flows and negatively effects the way such flows** coexist with the other applications in the network.

APPLIES TO ALL LEADING DESKTOP VIRTUALIZATION SOLUTIONS

- VMware View including View 4.0 with PCoIP (PC over IP) protocol
- Citrix XenApp (Presentation Server)
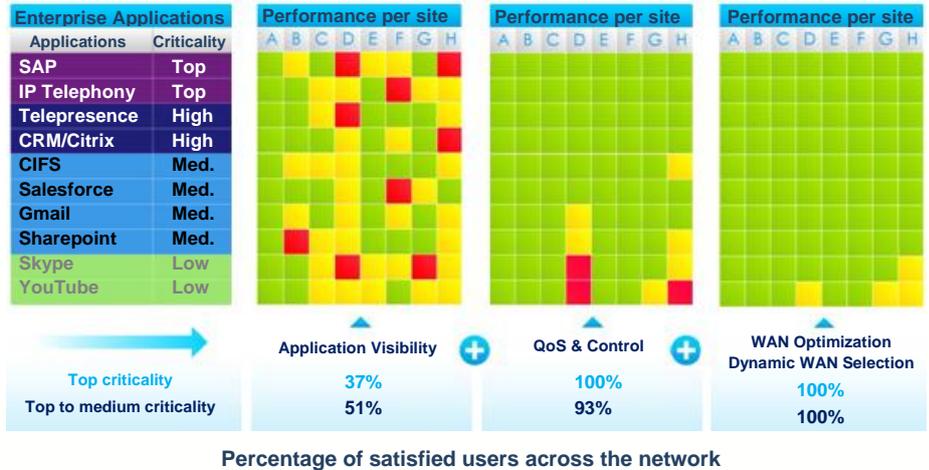- Microsoft Terminal Services

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FEATURES

The Ipanema Autonomic Networking System ensures the success of **VMware**, **Citrix** and **Microsoft** desktop virtualization projects over the WAN. The Ipanema System's features being totally automatic, they scale up to the largest deployment:

Enterprise Applications		Performance per site	Performance per site	Performance per site
Applications	Criticality	A B C D E F G H	A B C D E F G H	A B C D E F G H
SAP	Top			
IP Telephony	Top			
Telepresence	High			
CRM/Citrix	High			
CIFS	Med.			
Salesforce	Med.			
Gmail	Med.			
Sharepoint	Med.			
Skype	Low			
YouTube	Low			

	Application Visibility	QoS & Control	WAN Optimization Dynamic WAN Selection
Top criticality	37%	100%	100%
Top to medium criticality	51%	93%	100%

Percentage of satisfied users across the network

- **Classification** of virtual desktop flows. With Citrix it is even possible to differentiate flows based on the published application;
- **Global optimization** of the whole traffic mix by dynamically managing competition between all flows over the entire network;
- Automatically taking into account the **specific nature of virtual desktop flows** (whether they are based on PCoIP, ICA or RDP). In addition to increased bandwidth requirements per active user, the sensitivity to delays and losses is also taken into account by Ipanema's optimization mechanisms;
- Analysis of the flows in order to detect **user behavior** and maximize the network reactivity, balancing interactive use with, for example, print and save operations;
- Precise **reporting** on the WAN contribution to the Quality of Experience using Ipanema's Application Quality Score (AQS) which takes into account the impact of all network impairments;
- Delivering (through the rightsizing feature) accurate information about the **real bandwidth requirements** (present and future), associated with business critical applications including those supported by virtualized desktop flows;
- Providing a complete framework to enable all services:
  - **Anytime**: Real time and fully automated adaptation to changes in the application mix or in the network environment;
  - **Anywhere**: thanks to its Tele-Optimization concept, Ipanema delivers its benefits over the whole network without the need to equip all sites;
  - **Anyway**: Ipanema optimizes the performance of all applications whether they be data transfers, interactive (such as virtual desktops), or real-time (such as voice or video).

CUSTOMER BENEFITS

- The performance of virtualized desktop applications is **guaranteed** across the whole WAN whatever happens in the network;
- The network contribution is constantly **aligned with the enterprise's business goals** whatever the complexity of the application mix and o the traffic matrix;
- The **telecommunications costs** involved with the deployment of virtualized desktops are minimal and fully under control;
- The WAN contribution to virtual desktop's **quality of user experience** is precisely proven and reported;
- Completely **governed,** the WAN becomes a predictable asset on which the Enterprise can fully rely.

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