pax8

White Paper

Pax8 for Workplace as a Service

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Introduction

Organizations of all sizes are constantly looking for ways to lower the high costs associated with end user computing (EUC). The capital investment required for purchasing a large quantity of desktops or laptops, and even the leasing of these devices requires significant overhead to remove the factory-installed operating system and re-deploy a company image in an effort to achieve a consistent user environment.

Traditionally, IT was able to set the standard on what devices, operating system, and customization settings a user would have access to. Then came the concept of "bring your own device" or BYOD. This term refers to the trend of employees bringing their own computing devices – such as smartphones, tablets and laptops – to the workplace for use and connectivity to their organizations' network. This makes the traditional administration approach a bit more complicated. IT now has to support a dissimilar, user-owned computing ecosystem that seems to have few rules or standards associated with it.

Business leaders realized that shifting the cost of ownership of a computing asset to the employee in exchange for some type of reimbursement, stipend or simply to allow the flexibility to use a personal device to allow users to connect from anywhere and at any time was of value to their organizations.

The mobility of laptop computers, tablet computers, and other mobile devices, including phones, have produced a highly mobile, location independent, extremely agile workforce. Salesforce.com was the first to set up a SaaS CRM solution for its customers. Microsoft realized this trend and responded with Office365. Intuit has done the same with its web-based QuickBooks offering. All of these vendors have realized that devices and operating systems were less important than the applications themselves.

What this means for IT is that rather than standardizing the entire end user computing stack, it is best to standardize the access controls and presentation of corporate resources regardless of the device, vendor or manufacturer.

This challenge has been approached by Virtual Desktop Infrastructure (VDI), Desktop-as-a-Service (DaaS) and most recently by Workspace-as-a-Service (WaaS). While there is no silver bullet for solving the end-user computing challenge, WaaS appears to be the most flexible and gaining momentum as published by IDC which reports that "the hosted WaaS market will grow from $282 million in 2013 to $1.7 billion by 2018, representing a five-year CAGR of 42.5 percent."
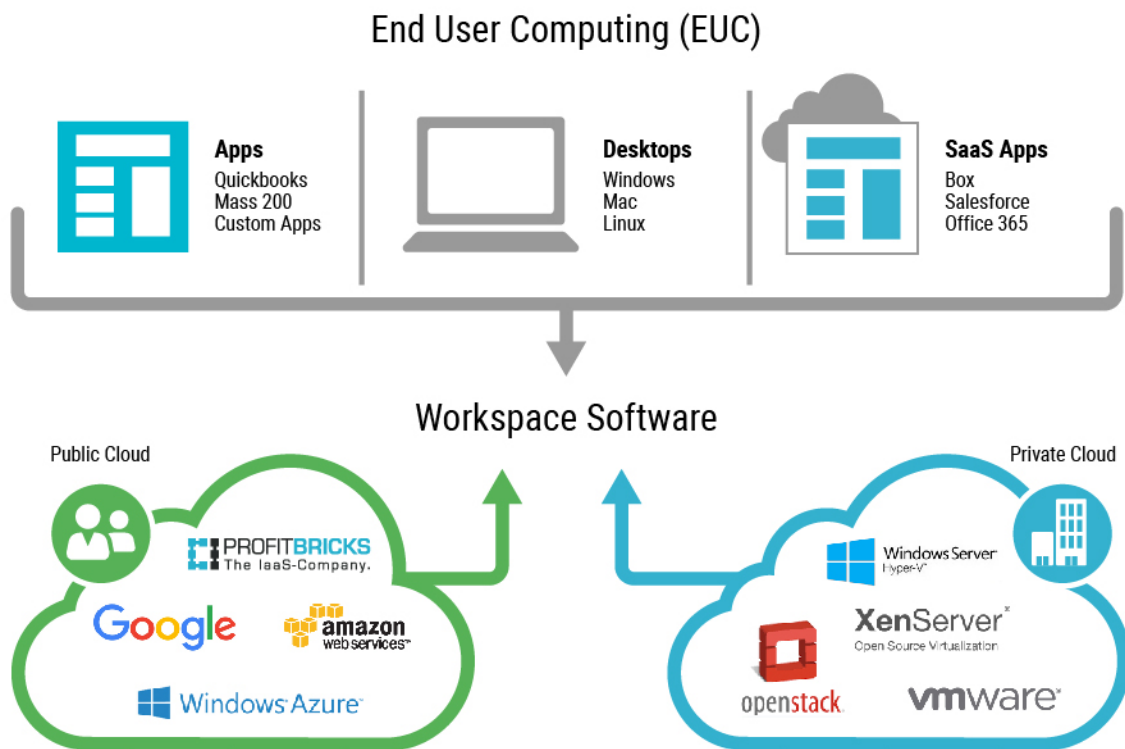
Desktop Delivery – Basics

End-user computing administrators were first introduced to the concept of Virtual Desktop Infrastructure (VDI) as a result of the success of server virtualization. At this point, VDI was simply an extension of this model to deliver desktops through on-site technologies hosted at the organization's datacenter.

As trust in cloud services grew, the possibility to deliver similar "VDI" capabilities developed in the form of Desktop as a Service (DaaS). This approach allows IT to outsource the infrastructure required to deliver this capability to a cloud service provider. VDI and DaaS share most of the same benefits such as simplified desktop management. However; one of the main differences is the ownership of the infrastructure required to operate and deliver this capability. Cloud services are enticing for the business as they can decrease up-front infrastructure costs when compared to VDI (CAPEX vs OPEX).

Workspace-as-a-Service (WaaS) is really a combination of desktop-as-a-service (DaaS) and desktop applications as a service (DAaaS), where DaaS provides the delivery of virtual desktops to users and where DAaaS delivers applications to end user devices.

DAaaS can be thought of desktops applications that have been virtualized or that are part of a virtual desktop session that can also be delivered to any end user device.

With workspace-as-a-service solutions, employees can log in to the WaaS provider's service and be provided with a virtual workspace desktop environment that appears and operates like their actual physical office desktop. In this manner, WaaS solutions enable employees to be more productive and capable of accessing critical applications and data regardless of their geographic location.

End User Computing (EUC)

Apps
Quickbooks
Mass 200
Custom Apps

Desktops
Windows
Mac
Linux

SaaS Apps
Box
Salesforce
Office 365

Workspace Software

Public Cloud

PROFITBRICKS
The IaaS-Company.

Google   amazon
web services

Windows Azure

Private Cloud

Windows Server
Hyper-V

XenServer
Open Source Virtualization

openstack   vmware

Among the advantages of a WaaS, some of the most important ones are:

- Easy Access from Anywhere: users have access to their desktops, files and applications from all their devices.
- Simplifies IT Management: allows for easy management of your IT network (like end users, servers and applications).
- Enhances Data Security and Business Continuity: your applications, files and desktops, most often reside in a very secure cloud environment: most often a Tier 3 or Tier 4 datacenter, with a 24X7X365 monitoring.
- Reduces Costs: traditional on-premises requires upgrades. Eliminates CapEx spending on infrastructure and re-purpose old devices or provision low-cost thin- and zero client devices.

- Supports company disaster recovery plans by keeping all data secure and readily available
- Supports BYOD (bring your own device)
- Consistent end user experience across all devices (PCs, laptops, tablets and smartphones)

Desktop Delivery – Self-Managed

Creating a VDI, DaaS or WaaS infrastructure to allow users to access their desktop from a remote location on any type of device at any time can be intricate, resourceful and very challenging to implement, without the corresponding set of skills. It requires not only infrastructure management (bare-metal or cloud-based), as well as software management.

Let's review the architecture for desktop delivery from Microsoft, Citrix and VMWare.

Microsoft

Microsoft Virtual Desktop Infrastructure (VDI) which is built on standard Windows Server and Remote Desktop Services can enable IT to deliver desktops and applications to users on a variety of devices. An administrator can choose to host personal and pooled virtual machine desktops, session-based desktops and/or RemoteApp programs (application virtualization).

In order to create a service offering with this technology, an administrator would need to consider items such as (but not limited to) the following:

- Datacenter and related infrastructure (space, power, cooling, etc.)
- Server, network and storage infrastructure
- Microsoft Software licensing (OS, RDS, etc.)
- Skillset for deploying and administering infrastructure (RDS, application packaging)

Below is a high level representation for this solution:
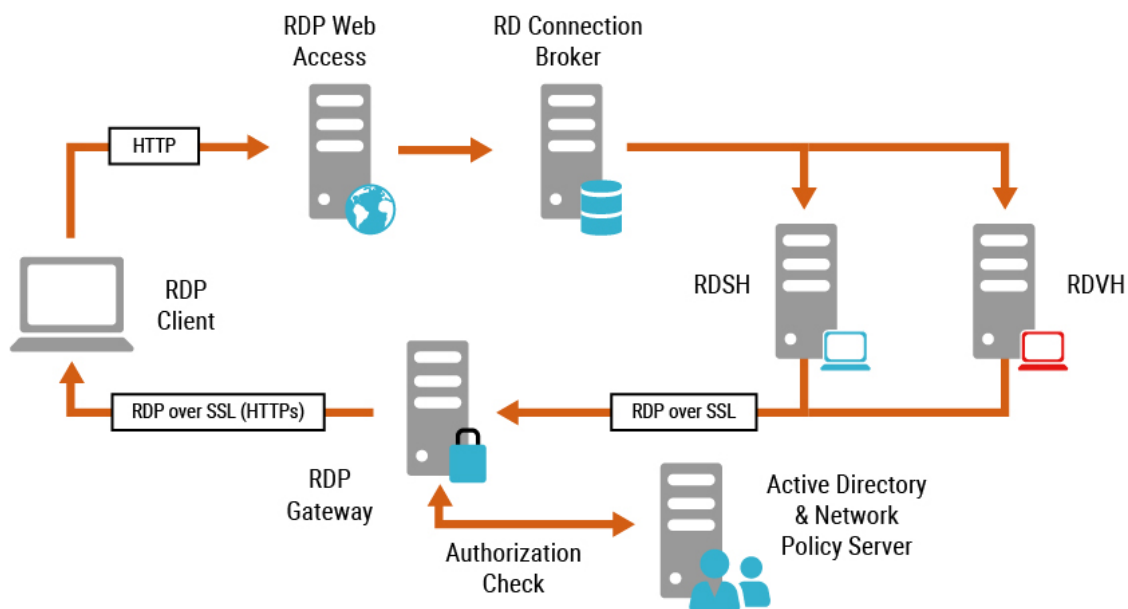
Citrix Systems

Citrix desktop delivery capabilities are powered by XenDesktop and XenApp to provision virtual desktops and virtual applications to users on a variety of devices.

Similar to the Microsoft example referenced previously, the organization would have to decide how much of the infrastructure would be managed by their own administrator and what components could be outsourced to a cloud services provider.

Citrix is a very powerful platform and is the current leader is server-hosted virtual desktops according to Forrester Wave (Q3 2015). With that said, this technology requires specialized skillset to manage the infrastructure and is typically seen mostly in large enterprises. Below is a high level representation of some of the standard components:
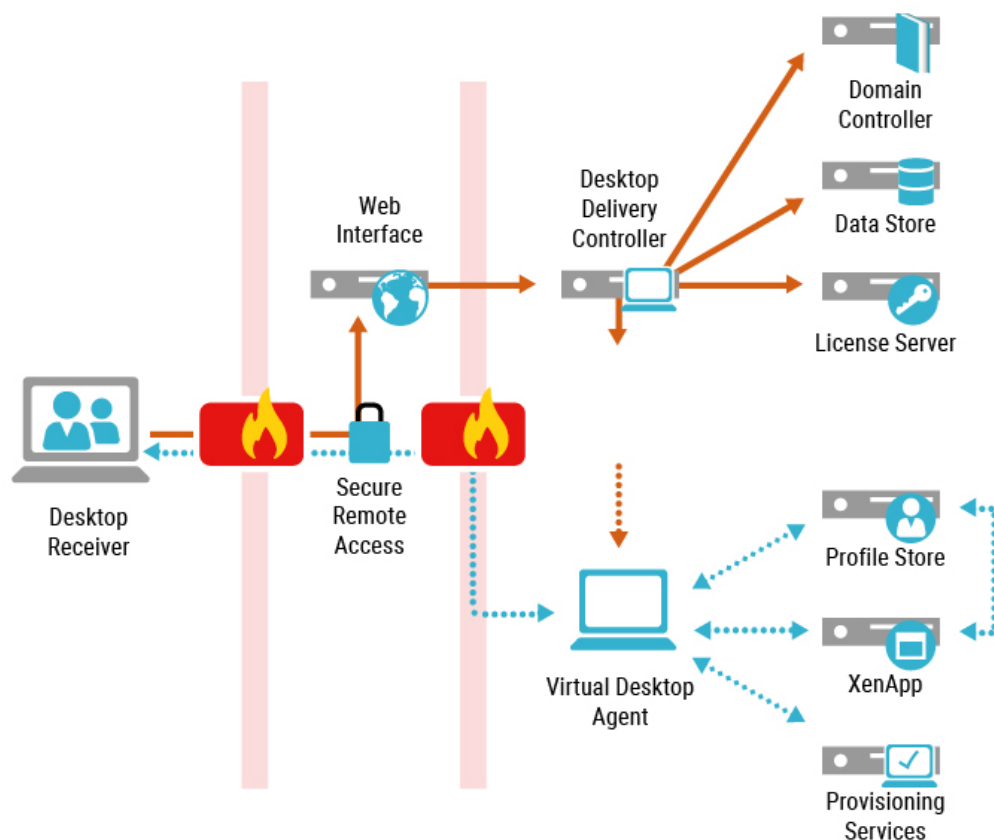
VMware

VMWare delivers virtual or hosted desktops and applications through their Horizon platform and ThinApp. Similar to Citrix, the complexity to deploy and manage this solution typically requires highly skilled and dedicated personnel to maintain the platform running optimally.

Below is a high level representation of the components that make up this solution:
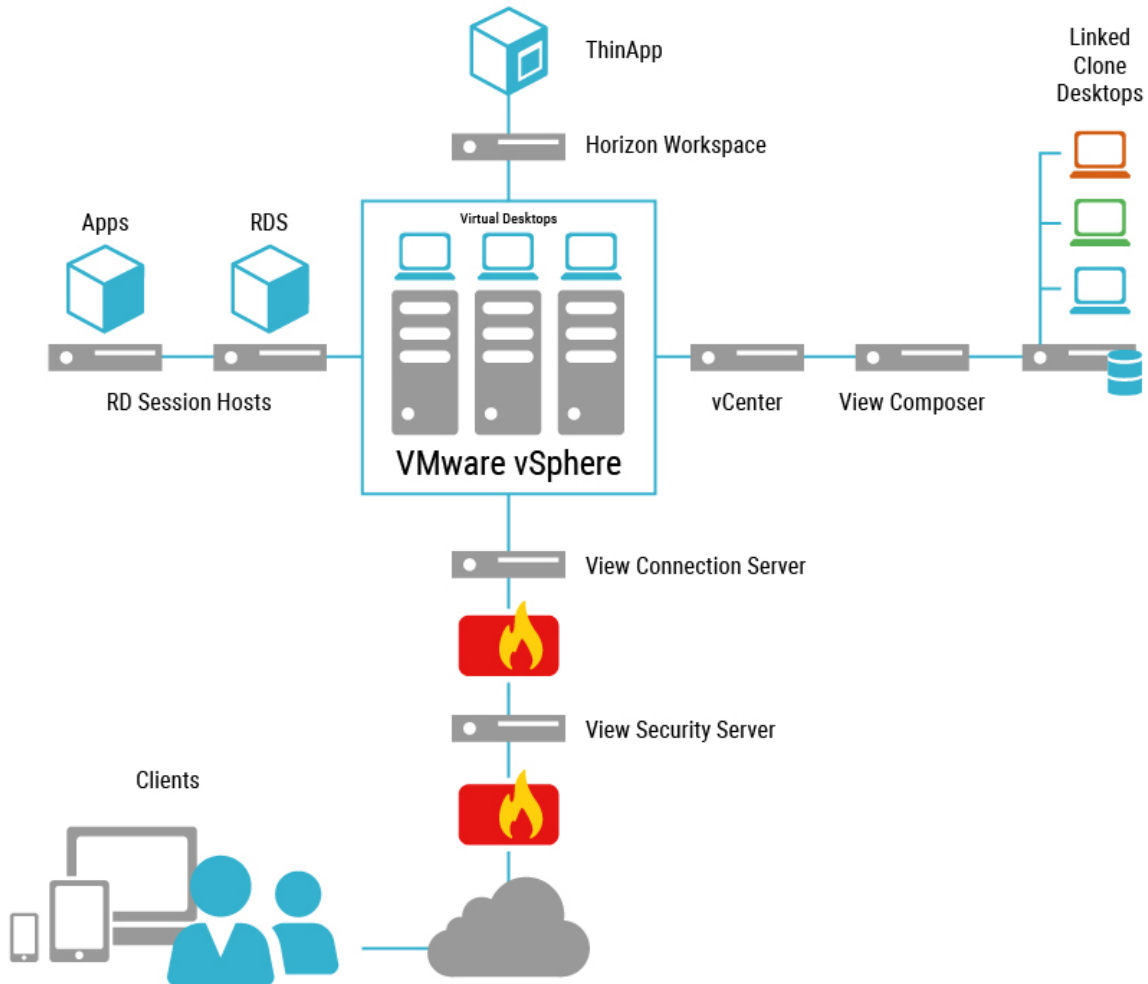
Desktop Delivery – Fully Managed

A fully managed Workspace as a Service allows IT departments, service providers, and Independent Software Vendors (ISVs) to easily provision, manage and monitor complete workspaces in the cloud across multiple cloud deployments.

The value proposition for managed services comes down to a couple of simple questions:

- What do you want to manage?
- How do you want to pay for it?

A fully (or partially) managed model can shift the burden and complexity of a solution to a trusted partner. The figure below is meant to represent the various options that can help select the right level of management for a solution:

End-User support	o Client interaction o Manage users & groups o Configure policies				
Desktop Infrastructure	o Platform & Components o Software licensing				
Data Center Infrastructure	o Facility, Power, Cooling o Hardware Purchase o Rack & Stack				

What do you want to manage?

Who can help you?

| On-Premises | IaaS | DaaS / WaaS Partner | MSP |

It is worth mentioning that each of the green and blue blocks represented above are meant to depict the possibility to build upon each other depending upon the skillset available in the organization and the investment that is required to build the infrastructure.

Desktop Delivery – Use Cases

The demand for working from anywhere, anytime, using mobile devices is increasing rapidly. Trends such as BYOD and the shift to an operational model for acquiring IT capabilities are increasing the demand for WaaS solutions business need to provide device-independent access to business applications and corporate resources.

Below are some examples of use cases for WaaS:

- Road warriors – For users who are always on the go (i.e. sales) having access to their desktops from mobile devices from anywhere at any time.
- Virtual Employees – Personnel working at off-site locations, such as home-based employees can leverage WaaS to gain secure access to company applications from their home devices.
- Training Facilities – Organizations that provide instructor led and online courses can minimize the investment required at their facilities by leveraging pools of desktops that are available on demand and quickly re-baseline at the end of the course.
- Compliance – WaaS can help meet regulatory requirements by providing a secure desktop environment hosted at a datacenter and therefore minimizing the risk of data loss which could result in very high penalties.

Desktop Delivery – Pax8 Solutions

Pax8 continuously seeks the most dependable solutions that can support the evolving needs of our partners and their end-customers to keep their business running and growing. Below are some of the current technology solutions that can assist in delivering WaaS offerings.

CloudJumper

nWorkspace – nWorkSpace represents that next step in cloud computing—beyond just the desktop. Our Workspace as a Service (WaaS) solution makes your IT hassle free IT, and gives you anywhere access to your desktop, with more control, and multiple levels of security. With your IT taken care of, you can get back to business.

Unlike traditional infrastructure software, nWorkspace as a Service is a 100% cloud service. That means:

- IT Simplified - Zero footprint in your datacenter.
- Work Anywhere – Consistent end user experience
- Cross-Platform support – BYOD ready.
- Security – Provide business continuity and high SLAs.

Learn more: www.pax8.com/CloudJumper

ProfitBricks – Infrastructure-as-a-Service

ProfitBricks offers an Infrastructure-as-a-Service option that is flexible, easy to use, and very price competitive. ProfitBricks allows virtual machines and software appliances to be configured with any combination of CPU, RAM and dual-redundant storage, leveraging InfiniBand high speed networking capabilities(80Gbits/s). ProfitBricks is a perfect cloud infrastructure solution, allowing any workspace platform to be fast, flexible, robust, fully redundant and very price competitive.

Learn more: www.pax8.com/profitbricks.com