

# Windows 7 Experience Hosted Virtual Desktop (HVD): Tech Paper

## Contents

Overview.....	1
Supported Client Operating Systems.....	2
Windows .....	2
Mac.....	2
Linux .....	2
Mobile .....	2
Feature Matrix .....	2
Description of Features .....	3
Core Features .....	3
Customisation of your Windows 7 Experience HVD .....	4
Audio/Video Support .....	4
How to Connect to your HVD .....	5
Security Features.....	6
File Server .....	7
Group Management Suite .....	7
Glossary .....	8

## Overview

This document will give you a useful breakdown of all the features our new Windows 7 Experience HVD offers. The first section contains a useful feature matrix; this will show you the exact differences between both HVD offerings. We'll then look at each feature individually in further detail. We have also updated our Management Suite and File Serving and how they work will be outlined towards the end of this document.

## Supported Client Operating Systems

We currently support connections to our HVD portal from a variety of Windows (32 and 64 bit versions), Mac, Linux, and mobile operating systems as listed below:

### Windows

- Windows 7
- Windows XP
- Windows Vista
- Windows XPe
- Windows Embedded Standard
- Windows Server 2003
- Windows Server 2008

### Mac

- Mac OS X Snow Leopard
- Mac OS X Leopard

### Linux

- Ubuntu 8.04, 9.04 & 9.10
- Debian 5.0 or later
- Fedora Core 10 or later
- RHEL Desktop 5.5

### Mobile

- iPad
- Android

## Feature Matrix

Our Windows 7 Experience HVD will now be packaged in the following flavours.

- HVD Pro
- HVD Standard

The table below will list and compare the characteristics of both versions.

Feature	HVD Pro	HVD Standard
<b>Core Features</b>		
Usable Storage	10GB Useable	2GB Useable
Application Memory	2GB Useable	1GB Useable
Fully Isolated	Yes	Yes
Virtual Machine per User	Yes	Yes
Local Printing	Yes	Yes
Microsoft Anti-Virus	Yes	Yes
Core Active Directory	Yes	Yes
Management Suite	Optional	Optional
Daily Backups	Yes	Yes
SLA	99.99%	99.99%

<b>Application Customisation</b>		
Install Any Windows Based Applications	Yes	No
Customisable Desktop	Yes	Yes
Persistent Desktop	Yes	Yes
One Click Application Catalogue	Yes	Yes
<b>Audio/Video Support</b>		
Graphics Acceleration	Yes	Yes
Flash Redirection	Yes	Yes
Bidirectional Audio	Yes	Yes
<b>Connection Methods</b>		
Access to Desktop through a Portal	Yes	Yes
Optimised for WAN	Yes	Yes
Supported Devices	Windows, iPad Mac, Linux, Android	
<b>Security Features</b>		
SSL Connection to Portal	Yes	Yes
Secure Networking	Yes	Yes
One Click Migration to Full Desktop	N/A	Yes
Individual Active Directory OU for each Customer	Yes	Yes
USB Redirection	Yes	Yes
VPN (outbound only)	Yes	Yes

## Description of Features

In this section we'll look at each feature listed in the above table and see how each one works.

### Core Features

Each ThinkGrid desktop is provided in its own virtual machine, this means that resources can be dedicated for a consistently fast experience. By using persistent virtual machines this is also more secure than Terminal Services or Citrix and provides greater isolation.

Our virtual desktop solution supports a vast majority of printers by utilising a Universal Print Driver. This results in a seamless process as your hosted desktop hands over the print job to your local client machine.

As standard we provide 10GB highly available storage for our Professional HVD and 2GB for our Standard HVD. This is fully usable space that doesn't include the virtual desktop operating system. Our Professional HVD has 2GB of usable RAM and our Standard version has 1GB. As standard, all of our HVDs are supplied with anti-virus software from Microsoft Essentials.

We provide free daily backups as standard for both our Professional and Standard HVDs. This backup facility protects your files for 7 days. End users will have the option of either recovering full snapshots of their HVD's or restoring individual files and folders. Charges may be applicable for this service.

<b>Core Feature</b>	<b>Professional HVD</b>	<b>Standard HVD</b>
<b>Local Printing</b>	Yes	Yes
<b>Usable Storage</b>	10GB	2GB
<b>Application Memory</b>	2GB	1GB
<b>Anti-Virus</b>	Included as Standard	

We recommend our Professional HVD for power users who require full flexibility. With this edition they will be able to install any Windows based application as well as have the ability to run more applications simultaneously due to the extra RAM they receive. Standard users get the full benefit of the majority of features our new hosted desktop offers but will only be able to install applications from our one click application catalogue. If Standard HVD end users require any additional applications not listed in our catalogue they can easily upgrade to a Professional account through our control panel.

Another great feature is USB redirection. This mean you can connect a USB external hard drive for example, and have access to all the files on there through your HVD interface.

Clients who require secure access to remote sites from their HVD can use the built in outgoing Windows virtual private network client. Currently, site to site VPN tunnels are not supported in our HVD environment. Please speak to Pre Sales department for advice.

### **Customisation of your Windows 7 Experience HVD**

Our professional edition HVD enables you to install any Windows based applications that you require. Our operating system is based on Server 2008 64 bit edition so we highly recommend installing 64 bit versions of the applications you need. Running 32 bit applications is possible as Windows will automatically run them in a 32 bit subsystem (WoW64).

We also provide all HVD users with a one click application catalogue. This contains an assortment of commonly used applications such as Microsoft Office. The application catalogue can be accessed through the ThinkGrid control panel and applications can be subscribed to on a monthly basis. See below for a full list of the applications available through our 'one click' catalogue.

#### **Messaging**

MSN  
Skype  
X-Lite  
Trillian  
Google Messenger  
OCS Client

#### **Cloud Storage**

DropBox  
Box.net

#### **Productivity**

Microsoft Office 07/10  
Standard  
Microsoft Office 07/10 Pro  
Plus  
Microsoft Visio Standard  
Microsoft Visio Professional  
Microsoft Project  
Microsoft Project Professional  
Microsoft Visual Studio  
Professional  
Adobe Reader

7zip

#### **Browsing**

IE  
Chrome  
Firefox  
Adobe Reader  
Silverlight

All of our virtual desktops are customisable as standard so end users will be able to personalise them just the same as they would a regular on-premise desktop. An example of this would be that end users have the ability to customise desktop, background, icons, start menu and Windows features etc.

### **Audio/Video Support**

Our connection broker software utilises 'Experience Optimized Protocol' (EOP) to provide a rich and seamless user experience even with the most demanding high definition content. This results in video playback that is comparable to your on-premise desktop.

EOP also provides Flash redirection for Windows clients. This works by redirecting the Flash content you are viewing and rendering it on the local client.

Bidirectional audio is a new feature of our virtual desktop. This means as well as listening to audio, you will also be able to use an internal/external microphone. This feature is great for those of you who take advantage of this by using applications such as Skype, VoIP, Microsoft Live Meeting, and WebEx to host your online meetings.

## **How to Connect to your HVD**

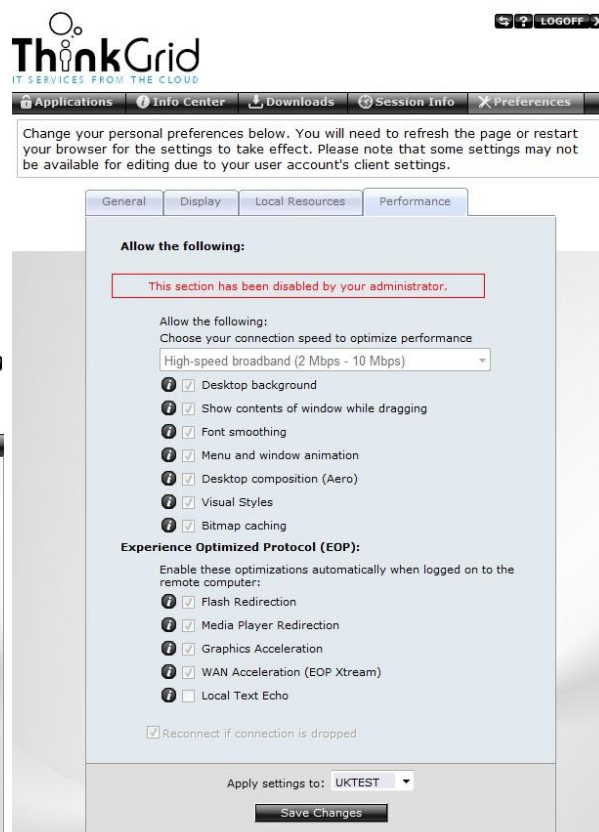
Access to your HVD will be provided through Thinkgrid's portal. Once you have logged into the portal you will have access to resources such as your HVD, and personal preference settings. The protocol used to connect to virtual desktop uses RDP as a base protocol with addition virtual channels for printing, graphics, and WAN optimisation. Access directly through RDP has been disabled due to the reduced user experience that it offers when compared to our connection broker.

We provide access to our HVD portal for the following devices:

- Any Windows based device;
- iPad;
- Android;
- Mac;
- Linux.

For iPad users, there is a downloadable app on the iTunes store that enables access to your HVD.

Here are some screenshots of our connection broker to give you a visual feel of the interface.



We recommend that customers wishing to purchase our HVDs meet the following minimum bandwidth requirements. This is based on standard scenarios where customers are using typical business applications. Testing should be taken to ensure quality of bandwidth service as the quality and number of HOPS between location and datacentre can affect performance.

Minimum Download Speed	Minimum Upload Speed
125 kbps	25 kbps

Settings can be made to reduce the bandwidth requirement for low bandwidth environments however this will of course effect end-user experience.

## Security Features

Our portal offers connecting clients 128bit SSL encryption as standard. We also provide dedicated Private VLANS for each organisation, keeping their network environment completely isolated from other organisations.

# Shared File Storage

As part of your Hosted Virtual Desktop deployment you may want to create a shared pool of file storage for your users to all access and collaborate. The file storage services you offer a pool of storage which can be bought in 10 GB increments and shared via a Mapped Drive or Web Dav.

Data is stored on a clustered file system making the solution highly available. With the Management Suite you will be able to manage users/permissions and rules for your data.

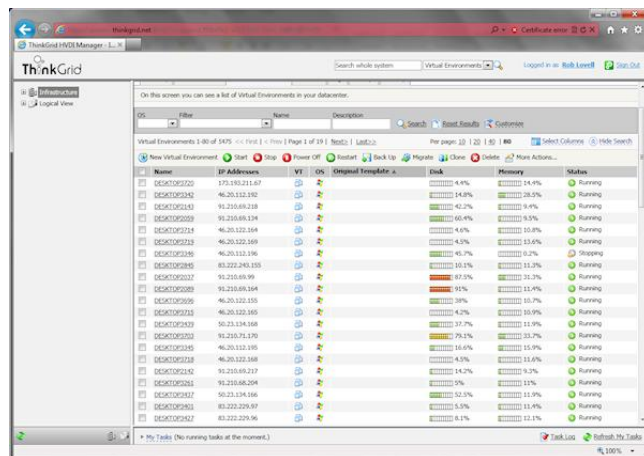
Key Features:

- Highly Available
- Order incremental storage as you need it
- File versioning/rollback
- Easy to access

# Management Suite

Our Management Suite is ideal if you would prefer to take control of user management and various other management tasks. The suite is purchased per administrator and allows management you to perform the following tasks.

- Create User Groups
- Manage User and Folder Permissions on your File Server
- Various Management Tasks
- Edit Group Policies for Users/User Groups
- Lock Down Security Policies
- Create Custom Scripts
- Reboot, Turn on and Turn off virtual desktops
- Monitor resource usage



Unlike with previous versions of our Management Suite, you will now be able to manage multiple OUs. This reduces both the cost and complexity of managing a large group of end users.

## Glossary

**AV** - "Anti-Virus" is protective software designed to defend your computer against malicious software.

**EOP** - "Experience Optimized Protocol" helps accelerate multimedia content and reduces LAN/WAN latency but creating multiple TCP/IP streams instead of the single stream that RDP creates.

**GMP** - "Group Management Pack" is a previous version of our Management Suite.

**HVD** - This refers to your Hosted Virtual Desktop.

**RAM** - "Random Access Memory" is computer memory that holds instructions and data.

**RDP** - "Remote Desktop" provides access to the desktop of a computer running Windows from a computer at another location.

**OU** - "Organizational Units", are administrative-level containers on a computer network that allow network administrators to organize groups of users together so that any changes, security privileges or any other administrative tasks could be accomplished more efficiently.

**SAN** - "Storage Area Network" A network of storage disks. In large enterprises, a SAN connects multiple servers to a centralized pool of disk storage.

**SLA** - "Service Level Agreement" is our agreement with you that we will provide a minimum uptime of at least 99.99% per month. If we fall below this standard, you may be eligible for service credits/refund. Please refer to your contact for further information.

**Snapshot** - A virtual machine snapshot is a file-based representation of the state of a virtual machine at a given time. The snapshot includes configuration and disk data.

**SSL** - "Secure Sockets Layer", a computing protocol that ensures the security of data sent via the Internet by using encryption.

**USB** - "Universal Serial Bus", a connection technology for attaching peripheral devices to a computer, providing fast data exchange.

**VDI** - "Virtual Desktop Infrastructure" refers to our Hosted Virtual Desktop product.

**VLAN** - "Virtual Local Area Network" is a group of hosts with a common set of requirements that communicate as if they were attached to the same broadcast domain, regardless of their physical location.

**VPN** - "Virtual Private Network" is a secure way of connecting to a private Local Area Network at a remote location, using the Internet or any insecure public network to transport the network data packets privately, using encryption.

**vWorkspace** - This is the connection broker software that we use. A connection broker is a software program that allows the end-user to connect to an available desktop.

**WoW64** - "Windows 32-bit On Windows 64-bit" is a subsystem of the Windows operating system that is capable of running 32-bit applications and is included on all 64-bit versions of Windows.