

dynam^ordp

Virtual Desktop Accelerator Kit

opc 
ONE PLANET COMPUTING

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Software overview

The **dynamo accelerator kit** allows organisations to perform a quick proof-of-concept evaluation of a modern virtual desktop infrastructure, using existing equipment and resources.

The dynamo accelerator kit (dynamo)



The dynamo accelerator kit from One Planet Computing contains a small subset of the software that makes up the commercially supported version of **One Planet Desktop**.

The accelerator kit allows organisations to perform a quick desktop virtualisation proof-of-concept in 30mins or less. It contains all of the software resources you need to perform a virtual desktop suitability review on legacy computers that would "normally" be too old to use with modern operating systems and applications.

One Planet Desktop (OPD)



One Planet Desktop is the commercially supported desktop virtualisation client from One Planet Computing. One Planet Desktop is a lightweight, optimised operating system for use with the new breed of server-based desktop virtualisation technologies from industry leaders such as **Microsoft, Citrix and VMware**.

One Planet Desktop allows organisations to re-deploy older hardware as part of a wholesale move to a more efficient server based computing model, or as an enabler for a corporate desktop refresh where some devices would otherwise be too old and too slow to be included in the normal upgrade process and would either be left behind, scrapped or replaced.

Requirements for running a dynamo evaluation

You will need the following components for running a dynamo evaluation.

Required items	Check-list
A dynamo bootable CD or USB device	
At least one desktop PC or server running Remote Desktop (see Appendix A)	
At least one legacy PC or laptop to use as a test machine	
Network cables and a switch to connect all of the devices together	
A DHCP server on the network	

Optional components

Optional items	Check-list
An existing 2003 Terminal Server or 2008 Remote Desktop Server to connect to	
Virtual copies of Windows XP, Vista or Windows7 running on a VMware, Xen or Hyper-V server to connect to.	
A DNS or WINS server on the network (if you wish to specify machines by hostnames instead of IP addresses)	

A three stage process

The dynamo accelerator kit allows you to evaluate desktop virtualisation in your organisation in logical, gradual steps.

1 EVALUATE

Get Started with our free, simple to use desktop virtualisation accelerator kit.

It requires no installation, and runs directly from a bootable CD-ROM or USB device.

2 PILOT

Install a 25 user pilot installation using a preconfigured software bundle.

It can be deployed on a network and streamed to existing PCs, laptops and legacy thin clients.

3 DEPLOY

Get help from our experienced team of Technical Architects and virtualisation experts.

We provide a custom design and implementation services for larger installations

Stage-1 EVALUATION

This guide explains how to perform an evaluation using the **dynamo** accelerator kit.

By using this guide you will be able to establish if any of the legacy equipment in your organisation is suitable for re-use as a modern virtual desktop device or thin client.

For more information please email :
eval @ oneplanetcomputing.com

Stage-2 PILOT

Once you have established if any of the equipment in your environment is suitable for re-use with new applications and server technologies, we can provide you with a pre-configured software bundle that can be used to perform a pilot project on up to 25 existing PCs, laptops or legacy thin clients.

For more information please email :
pilot @ oneplanetcomputing.com

Stage-3 DEPLOY

On completion of a pilot project, we can provide professional services to help you design, install, configure and support One Planet Desktop in your new environment.

For more information please email :
deploy @ oneplanetcomputing.com

Stage-1 EVALUATION

The following check-list shows each step of the evaluation process¹:

Item	Check-list
Minimum requirements	
Creating a bootable CD or USB device	
Booting into dynamo	
The welcome screen	
Select a server	
Enter a username and password	
Log in and use the remote desktop	
Test Applications & USB storage devices	

Minimum requirements

The following table shows the minimum requirements for test machines

Hardware specification	Minimum	Recommended
Processor	Pentium II or Pentium III	Pentium 4 or higher
Memory	64Mb	128Mb or higher
Video	1Mb SVGA	8Mb or higher
Network	10Mb	100Mb or 1Gb

¹ If you require any assistance or advice during your evaluation, please feel free to contact us at:
eval @ oneplanetcomputing.com

Creating a bootable CD or USB device

The simplest way to use the accelerator kit is to download the ISO image from the website and burn this to a CD-ROM.^{2 3}

The dynamo accelerator kit, “**Stage-1 EVALUATE**” image can be downloaded from the website www.oneplanetcomputing.com .



Once the image has been downloaded it can be burned onto a CD-ROM or made into a bootable USB device.

If you do not already have software tools for creating a bootable CD or USB device from an ISO image, more information and links to free tools can be found in the Appendix.

If you already have a bootable CD you can skip this section

If you would like to request a bootable CD by post, please contact us via email at:
eval@oneplanetcomputing.com

2 It is important to burn the ISO as an actual “CD-ROM image” in order for the CD-ROM to be bootable (not just a data CD with the ISO file on it)

3 It is recommended that you do not use a CD or USB device that contains any existing data, as some files may be overwritten during the writing or re-writing process.

Booting into dynamo

At this point you can insert the CD-ROM or USB device and reboot the computer. You may have to change the boot sequence in the computers BIOS/CMOS or press a key when the computing is starting-up to select a "boot menu" in order to boot from the CD-ROM or USB device.



Dynamo will now load from the CD or USB device directly in RAM (nothing is read from, or written to any existing hard drives or other storage devices in the test computer).

On most modern video cards you should see a splash screen as dynamo loads into RAM.⁴ The boot process typically takes 20-30 seconds on a Pentium4 machine.

Dynamo requires a Pentium II and 64Mb RAM to run, but for best results a Pentium4 with 128Mb RAM (or better) is recommended.⁵

⁴ On some older, non-standard video cards (typically 8 or more years old) a text version of the boot screen may be shown instead of the graphical boot screen.

⁵ If you have an integrated video card, please be sure to set the video memory to 8Mb (or higher) if possible.

The welcome screen

Once loaded the welcome screen is displayed and provides further information about the accelerator kit. At this point we need to select a remote desktop to connect to:

OPC dynamo - The virtual desktop accelerator kit

Welcome to the OPC dynamo accelerator kit. These tools have been designed to help you perform a quick desktop virtualisation proof-of-concept.

This CD-ROM provides just enough software and drivers to establish if any of your older PC equipment can be re-used as new Windows7 virtual desktops with "One Planet Desktop" desktop virtualisation software, and the new 64bit "Remote Desktop Services" enhancements found in Microsoft Server 2008.

On the next screen you will be asked to provide a hostname or IP address of a computer on your network capable of hosting a Remote Desktop session.

This could be a Windows XP, Vista or Windows7 PC running remote desktop, or any Windows 2000/2003/2008 server that accepts RDP connections.

(NOTE: only "professional" versions of XP, Vista and 7 allow RDP sessions)

OPC dynamo is now loaded into memory, you may now eject the CD.

This computer will automatically exit dynamo, and reboot itself in 30mins.

PRESS ENTER TO CONTINUE

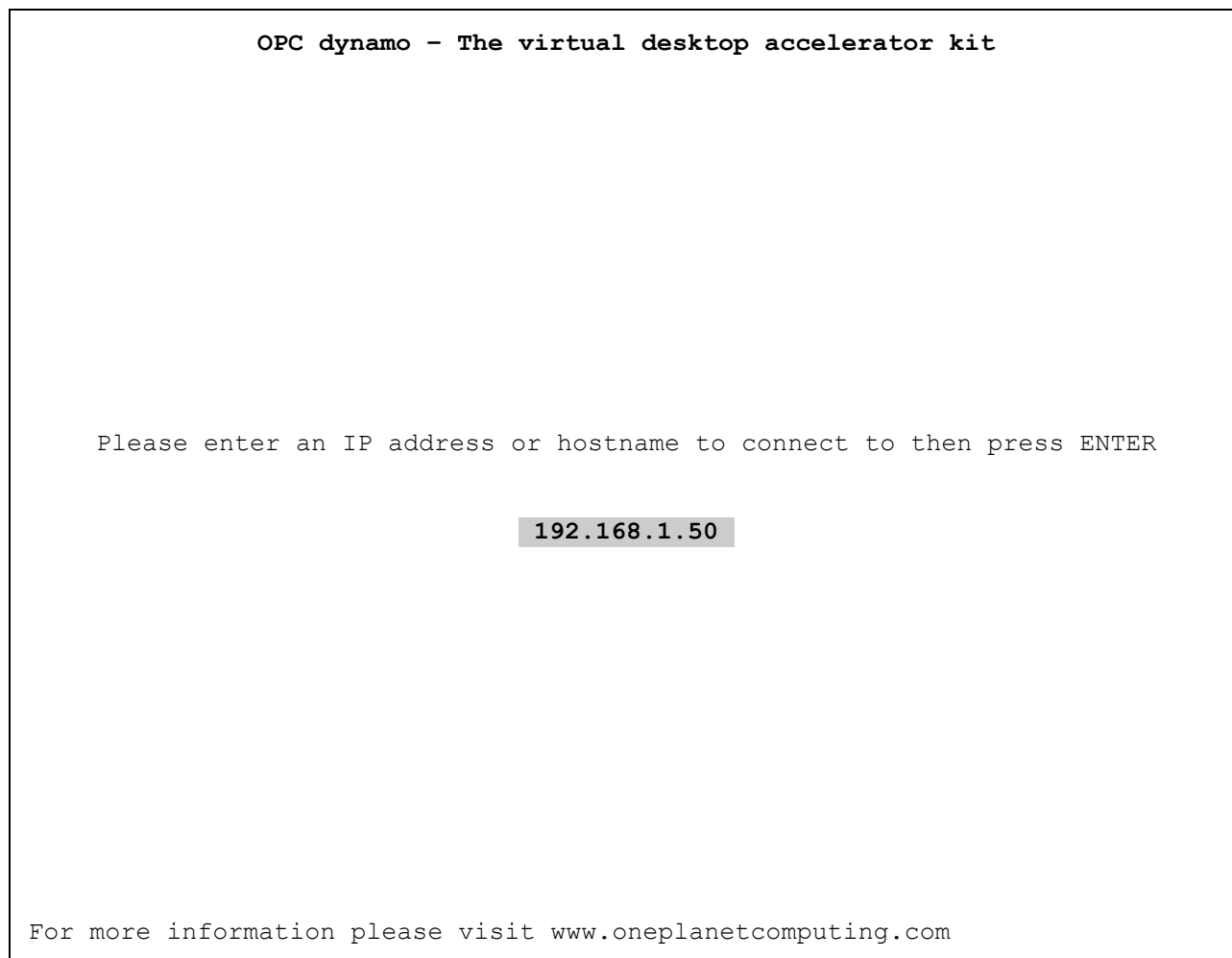
At this point you may remove the CD or USB device from the computer

The computer will automatically reboot and go back to the previous operating system 30 minutes after the Welcome screen has loaded. (This boot method allows us to perform an evaluation without making ANY changes to the programs or files already on the computer).

The CD-ROM or USB device can now be used again if you would like to test any more machines on your network. When you are ready, simply press **ENTER** to select a remote desktop to connect to.

Select a computer to connect to

At the following screen we need to enter an IP address or hostname of a Remote Desktop to connect to:⁶



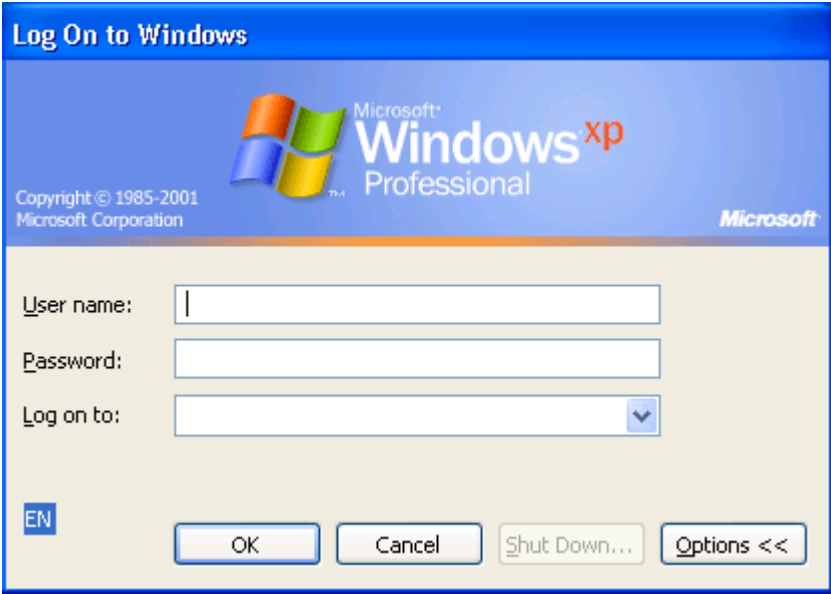

An IP address might be something like **192.168.1.100** or **10.20.30.40**, and a hostname might be something like **test-pc** or **test-server**.⁷

⁶ In a normal installation these text screens do not appear, the end-user boots directly to the graphical Windows login screen. All of the configuration information for each virtual desktop device is stored and managed centrally on the network. Once installed, visits to individual PCs are no longer required to manage settings or add or remove software to or perform any day-to-day updates or upgrades

⁷ Obviously you need to replace these examples with an actual IP address or hostname of the device on your network.

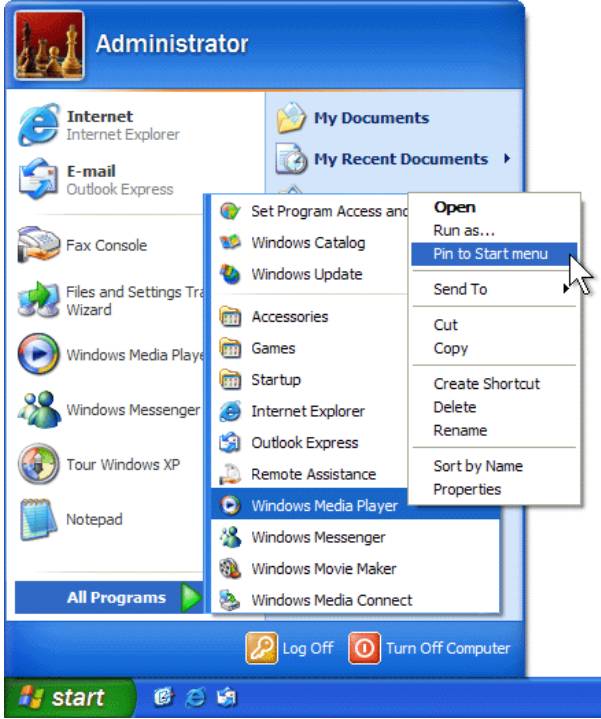
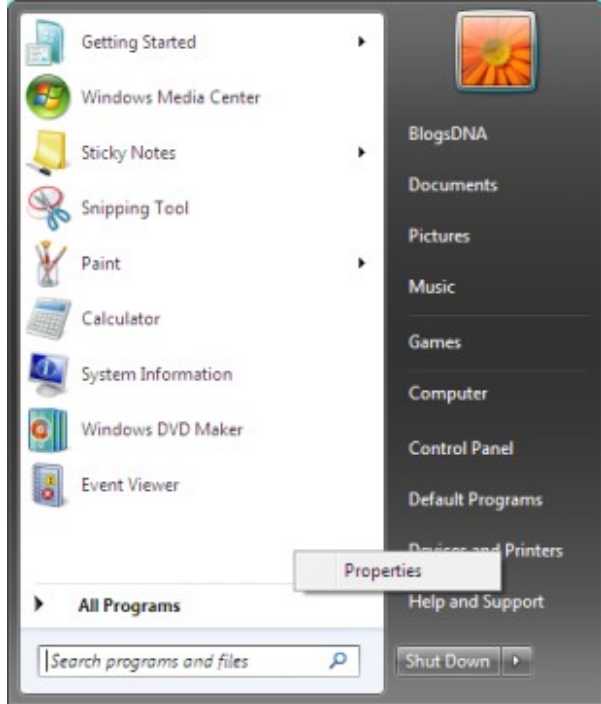
Enter a username and password

Depending on the type of remote desktop you chose to connect to, you will now be presented with a login screen

Operating System	Login Screen Style
Windows XP Server 2003 Server 2003-R2	
Vista Windows7 Server 2008 Server 2008-R2	

Login and use the remote desktop

You should now see a Windows desktop.⁸

A Familiar Desktop Experience	A Modern Desktop Experience
<p>Windows XP</p> <p>Server 2003</p> <p>Server 2003-R2</p>	<p>Windows Vista</p> <p>Windows7</p> <p>Server 2008</p> <p>Server 2008-R2</p>
 <p>The screenshot shows the Windows XP desktop environment. At the top, there is a blue taskbar with the 'Administrator' user name. Below the taskbar is the Start menu, which is open and displays a list of programs and system tools. A context menu is visible over the Start menu, with the 'Pin to Start menu' option highlighted. The desktop background is a blue gradient with various icons for Internet Explorer, Outlook Express, and other applications. The taskbar at the bottom includes the Start button, Log Off, and Turn Off Computer buttons.</p>	 <p>The screenshot shows the Windows Vista desktop environment. The Start menu is open, displaying a list of programs and system tools. The desktop background is a dark grey gradient with various icons for Getting Started, Windows Media Center, Sticky Notes, Snipping Tool, Paint, Calculator, System Information, Windows DVD Maker, and Event Viewer. The taskbar at the bottom includes the Start button, a search box for programs and files, and a Shut Down button.</p>

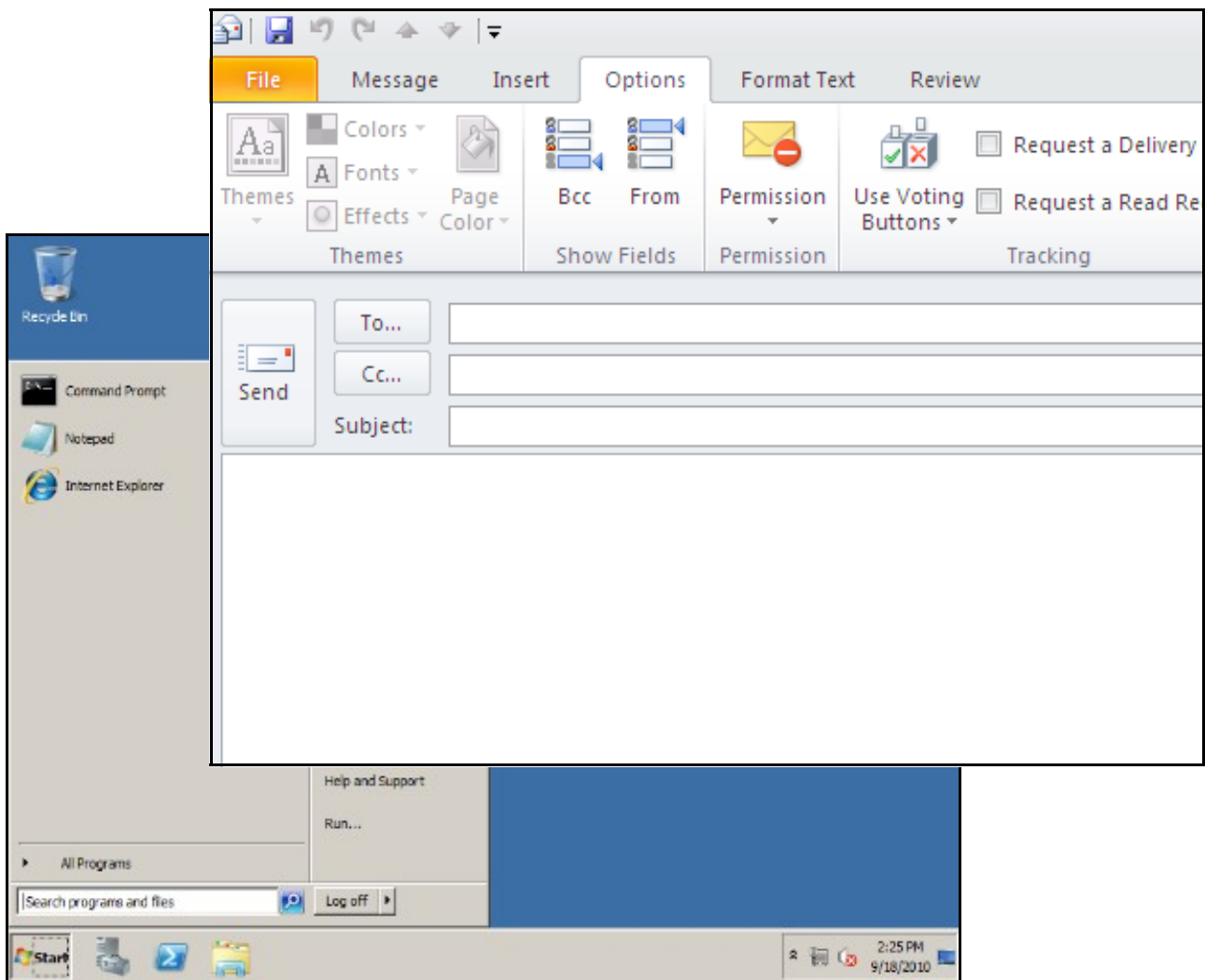
⁸ Terminal Services 2003 and 2003-R2 provide a Windows "XP-like" desktop. Remote desktop services 2008 provide a "Vista-like" desktop. Remote desktop services 2008-R2 provide a "Windows7-like" desktop

Test Applications

You should now be able to test any of the applications installed on the computer running the Remote Desktop session.^{9 10}

At this point we can also test:

- 32bit/64bit compatibility
- Correct colour depth, resolution and video playback
- Windows system sounds, audio alerts and audio playback



Test USB storage devices

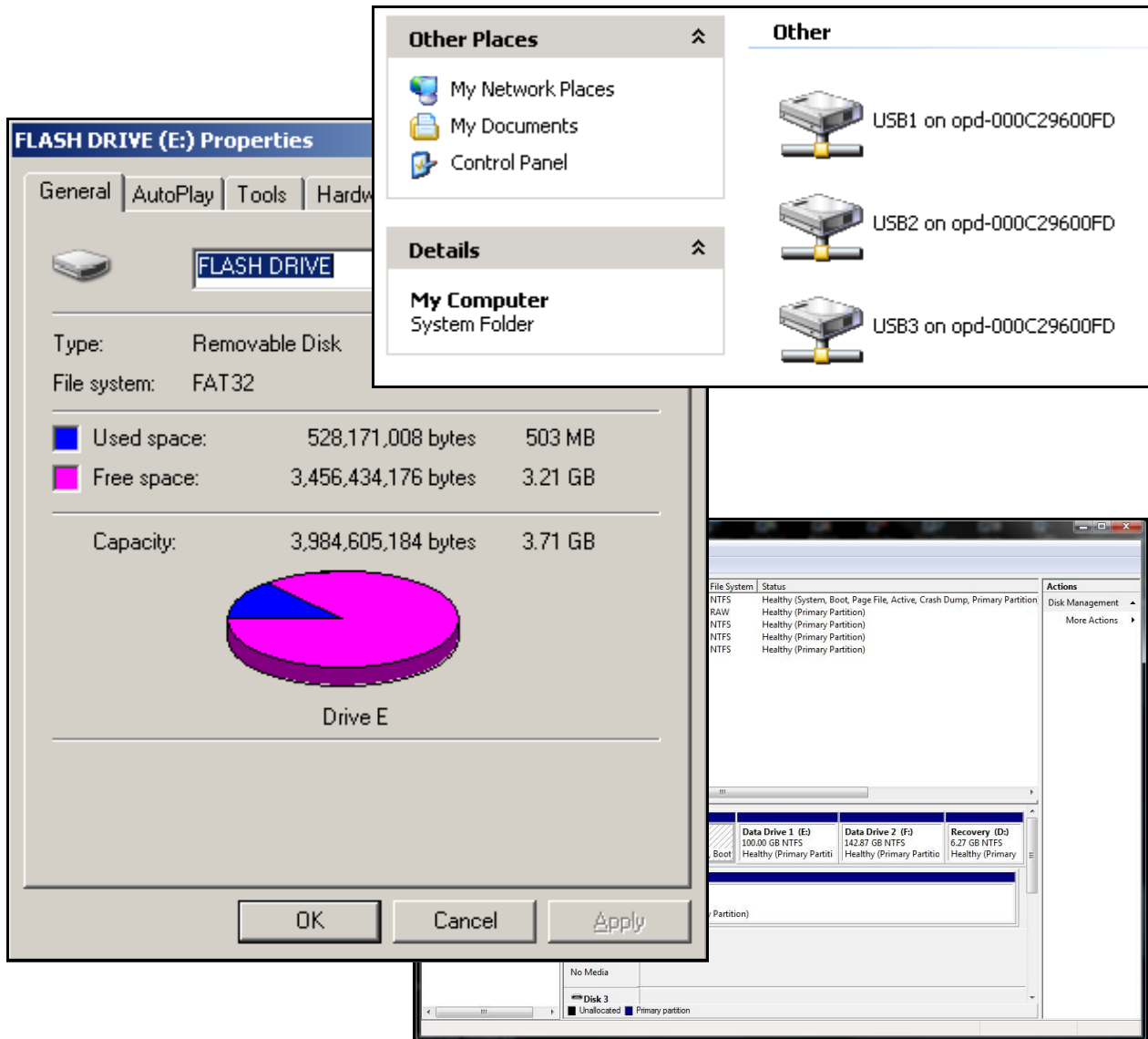
⁹ In a modern Terminal Services or VDI environment (Virtual Desktop Infrastructure), end-users have minimal rights on the system (for increased security/governance and lower cost of support). In most cases, all applications, upgrades and patches are performed centrally by the IT Department

¹⁰ On a Windows Server 2003 or 2003-R2 installation you should only add applications to the server through the dedicated **Add/Remove Programs** applet in the **Control Panel**

Dynamo is configured to automatically detect USB storage devices plugged into a virtual desktop (this can be completely disabled in high security environments if required).

When using the evaluation you should see several USB devices listed under "My Computer".

For best results, USB drives should be formatted with a single FAT16, FAT32 or NTFS partition¹¹



¹¹ Some cheaper drives and non-standard drives are treated as "RAW" space and do not contain an actual disk partition. It is a simple matter to backup any data from these drives, then re-partition and re-format these drives from another Windows PC.

Ending the evaluation

To simplify evaluations, dynamo is designed to be as non-intrusive, and as automated as possible.

Automatic reboot

After 30mins of usage dynamo will automatically reboot the computer.

If 30 minutes worth of testing is not enough to establish if all sound, video and network devices are functioning properly, as well as any USB storage devices, simply reboot the computer again with the dynamo boot disk and continue testing from where you left off.

Zero-touch evaluation

Once the computer has rebooted the original operating system will load as per usual. No files are modified on the internal hard-drive or any other storage devices during the boot or reboot. Testing is done in complete isolation of the original operating system.

Stage-2 PILOT

Once an initial evaluation has been performed we recommend starting a pilot project for 25 users or more.

The pilot project allows you to setup a dedicated server for hosting these virtual desktops and allows you to use them in the same environment as the other computers on your network.

Starting a pilot project

The simplest way to start a pilot project is to speak directly to one of our engineers and discuss the type of environment you are looking to achieve, and any other business requirements or developments that you will have to take into consideration going forward.

Based on these discussions we will supply you with a preconfigured software bundle containing everything you need to start the pilot project. We can also supply you with preconfigured hardware or loan equipment if you require it.

To start a pilot project please contact us at:
pilot @ oneplanetcomputing.com

Benefits of a pilot project

You can use a pilot project to:

- Test a new version of an operating system
- Test a new 64-bit version of an operating system ¹²
- Test new applications
- Test new 64-bit versions of applications¹³
- Establish how accurate predicted savings are against actual, demonstrated savings
- Perform user acceptance testing
- Establish other business benefits in order to prepare a business case
- Work with the support teams and get buy-in from key stakeholders
- Develop an implementation strategy
- Develop a communication strategy

¹² Even on an older 32bit machines that do not natively support 64bit operating systems

¹³ Even on an older 32bit machines that do not natively support 64bit applications

Stage-3 DEPLOY

Once a pilot project has been completed, most organisations will be in a position where all software applications have been tested and verified, and any other issues raised during the pilot have been identified and addressed.

At this point the IT department and finance department will also have visibility of the scope of the project along with any other information around installation dates and estimated costs.

Hopefully enough information will also be available about previous expenditure, support costs and energy costs to make a compelling case for beginning a full deployment.

Commencing a full deployment

Once you are ready to begin a full deployment our team of technical architects and installation engineers will work with your existing IT department to develop a solution and produce a project plan for review by senior management.

At this point all of the compatibility testing and user acceptance should have been completed and signed-off, and any migration work or integration work should be communicated to end-users in advance of the actual deployment.

APPENDIX

APPENDIX A: Windows support for Remote Desktop

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The following tables show which versions of Windows support incoming Remote Desktop connections.

Desktop Operating Systems¹⁴	Supported versions
Windows 2000	Professional
Windows XP	Professional
Windows Vista	Business, Enterprise, Ultimate
Windows7	Professional, Enterprise, Ultimate

Server Operating Systems^{15 16}	Supported versions
Server 2000	All versions
Server 2003	All versions
Server 2003-R2	All versions
Server 2008	All versions
Server 2008-R2	All versions

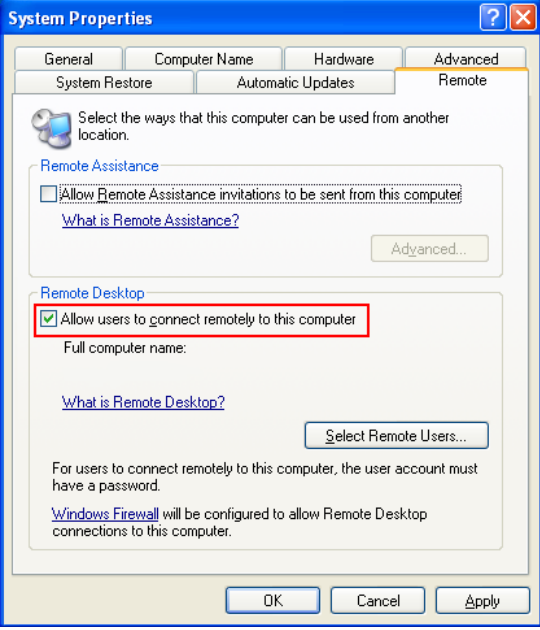
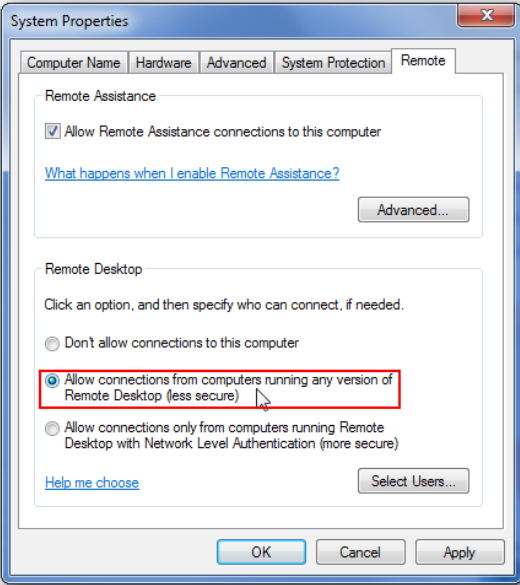
¹⁴ Home, Basic and Starter versions of Windows do not include Remote Desktop functionality

¹⁵ By default only the Administrator account is allowed to use Remote desktop

¹⁶ Terminal Services/Remote Desktop services should be installed and enabled if you wish to test with standard user accounts (these accounts also need to be added to the local "remote Desktop users" group and given the appropriate rights in active directory or by a group policy)

APPENDIX B: Enabling Remote Desktop

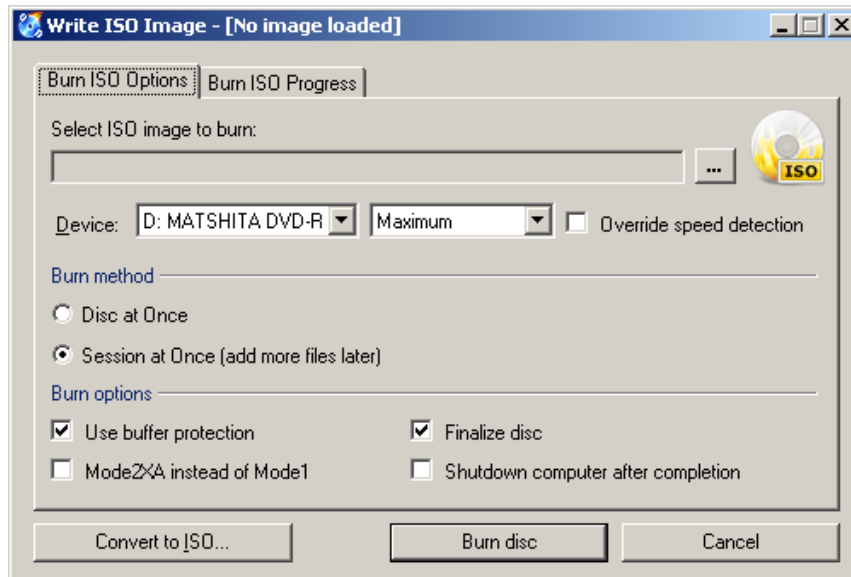
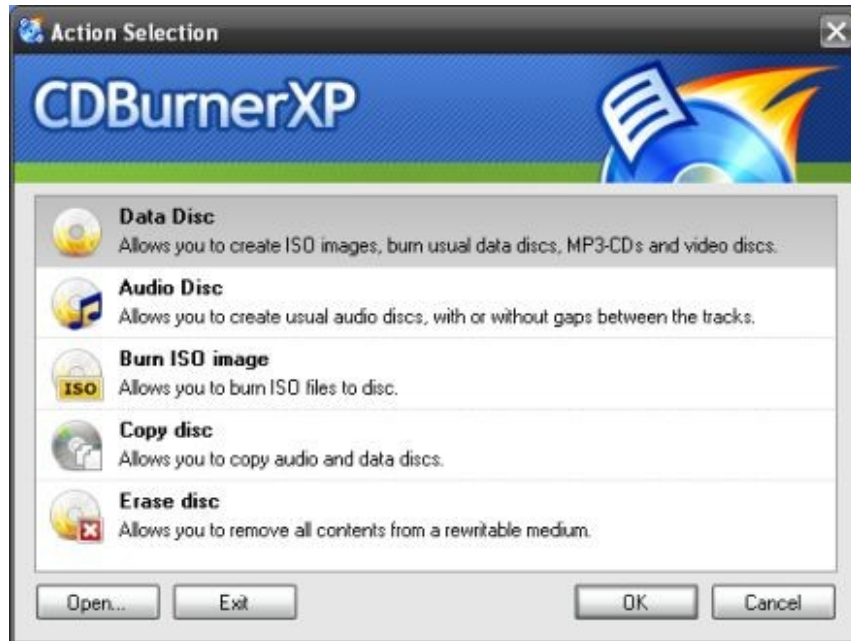
Remote Desktop must be enable in order to for dynamo to connect to it using the Remote Desktop Protocol (RDP). If you have a personal firewall you might also need to open up port 3389.

Operating System	Enabling Remote Desktop
Windows XP Server 2003 Server 2003-R2	 <p>The screenshot shows the 'System Properties' dialog box with the 'Remote' tab selected. Under the 'Remote Desktop' section, the checkbox 'Allow users to connect remotely to this computer' is checked and highlighted with a red rectangular box. Below it, there is a text field for 'Full computer name:' and a 'Select Remote Users...' button. At the bottom of the dialog are 'OK', 'Cancel', and 'Apply' buttons.</p>
Vista Windows7 Server 2008 Server 2008-R2	 <p>The screenshot shows the 'System Properties' dialog box with the 'Remote' tab selected. Under the 'Remote Desktop' section, the radio button 'Allow connections from computers running any version of Remote Desktop (less secure)' is selected and highlighted with a red rectangular box. Other options include 'Don't allow connections to this computer' and 'Allow connections only from computers running Remote Desktop with Network Level Authentication (more secure)'. At the bottom of the dialog are 'OK', 'Cancel', and 'Apply' buttons.</p>

APPENDIX C: CDBurnerXP

If you do not have the necessary software to create a bootable CD-ROM a free CD burning tool called **CDBurnerXP** can be found at <http://cdburnerxp.se> (it also works on Vista and Windows7)

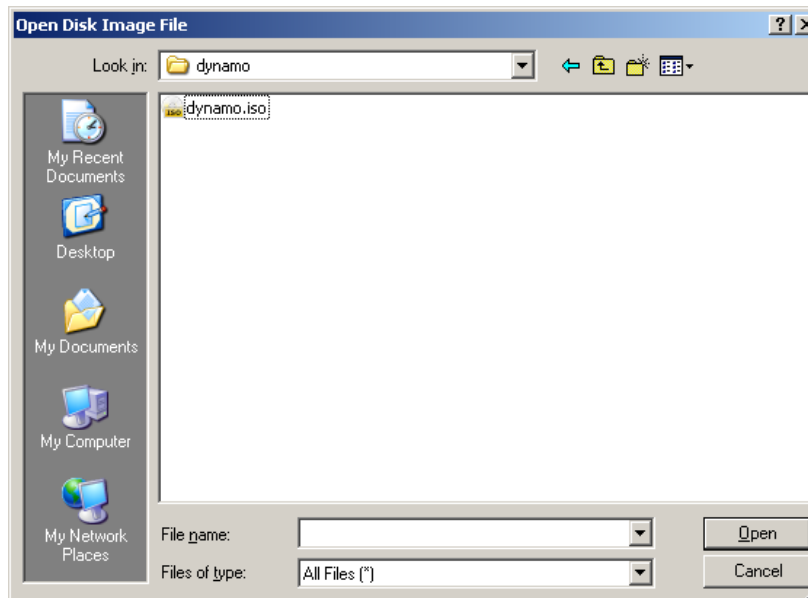
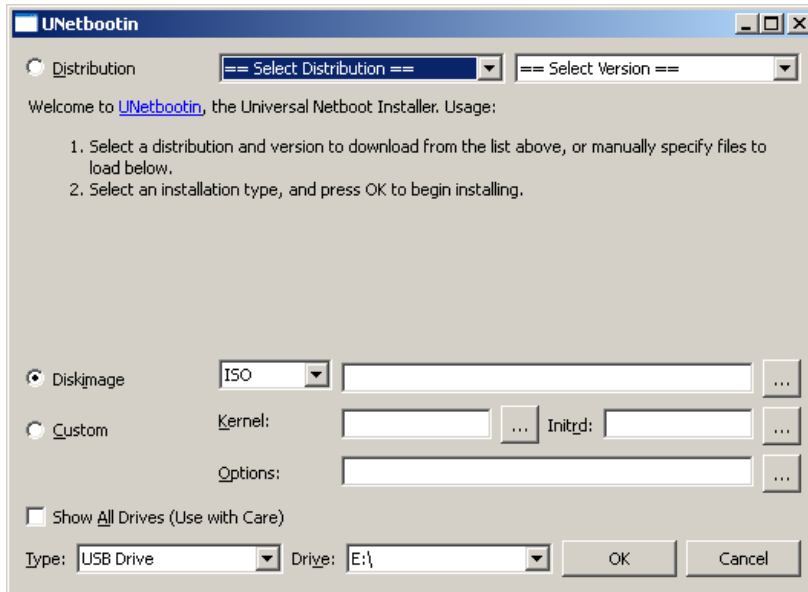
CDBurnerXP



APPENDIX D: UNetbootin

It is also possible to create a bootable USB device by using a tool such as **UNetbootin** which can be found at <http://unetbootin.sourceforge.net/#other> .

UNetbootin



Appendix E: Troubleshooting

This section contains troubleshooting information for reference during a dynamo evaluation.

Booting dynamo

Dynamo does not load, the computer boots straight into windows as normal.

You may have to change the boot sequence in the computers BIOS/CMOS or press a key when the computing is starting-up to select a "boot menu" in order to boot from the CD-ROM or USB device.

Dynamo does not load, the computer boots straight into windows as normal.

If you are presented with a menu the default option is to exit dynamo and boot from hard-disk. If you do not select another option within 60 seconds the computer will boot from the hard-drive.

Dynamo does not load, the progress bar stops part way through loading.

You may need to select a different dynamo image from the menu to enable/disable ACPI or MMConf if your motherboard or BIOS do not report configuration information correctly.

You may need to disable Spanning Tree Protocol on the network port the computer is connected to, or put a cheaper hub or switch between the port and the computer. This error occurs because the network port is not ready and dynamo cannot get a DHCP lease. This happens because dynamo can load in 20 seconds or less but a port configured with Spanning Tree Protocol can take 40 seconds or more to "converge" and become ready.

Remote Desktop

Dynamo cannot connect to the remote desktop.

The computer name or IP address could be incorrect.

A firewall could be blocking network ports (Remote desktop uses port 3389)

Remote Desktop might not be supported on your version of Windows (See Appendix A)

Remote Desktop might not be enabled (see Appendix B)

The user account might not be a member of the local group REMOTE DESKTOP USERS

You may be logging onto the domain instead of the local machines (or vice versa)

Network

Dynamo does not load, the progress bar stops part way.

You may need to disable Spanning Tree Protocol on the network port the computer is connected to, or put a cheaper hub or switch between the port and the computer. This error occurs because the network port is not ready and dynamo cannot get a DHCP lease. This happens because dynamo can load in 20 seconds or less but a port configured with Spanning Tree Protocol can take 40 seconds or more to “converge” and become ready.

Video

Dynamo does not start in the correct resolution

Dynamo is configured to start in a screen resolution of 1280x1024 or 1024x768. This is done to strike a balance of compatibility with a wide range of hardware that could be anywhere between a month old and 15 years old. Full versions and do not contain this limitation and can be further optimised for a particular environment or deployment where the age and model of hardware in use is known.

Dynamo does not start in the correct colour depth

Dynamo is configured to start in default resolution of 16bits per pixel. This is also done to strike a balance of compatibility with a wide range of hardware that could be anywhere between a month old and 15 years old. Full versions and do not contain this limitation.

You should also check that your video card or integrated video card has been allocated enough video RAM, otherwise the computer may drop down to 15 or even 8 bit colour. For example some Dell Optiplex GX2xx computers have a specific setting in the BIOS to toggle video memory between 1Mb and 8Mb.

Sound

Sound does not play correctly

You may need to enable sound in the BIOS

You may need to try selecting a different boot image from the menu with different features enabled or disabled e.g.ACPI or MMconf

Sound may be playing but the volume could be low

The computer might not have a built in speaker and an external set of speakers or headphones may need to be used in order to hear any sound output.

Removable storage

USB devices are not accessible

USB devices are listed under MY COMPUTER as USB1, USB2 or USB3

Wait a few seconds and try opening USB1, USB2 or USB3 again.

Un-plug and re-plug the USB device and refresh the window

Make sure the device has a partition (not just RAW space)

Make sure the partition is formatted with FAT16, FAT32 or NTFS.

If the device is still unreadable make a backup copy of all data on the device and delete all partitions, create a new partition then reformat the device as FAT16, FAT32 or NTFS, then copy the data back onto the device.

The only USB drivers included in the evaluation image are for keyboards, mice and USB memory sticks.

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