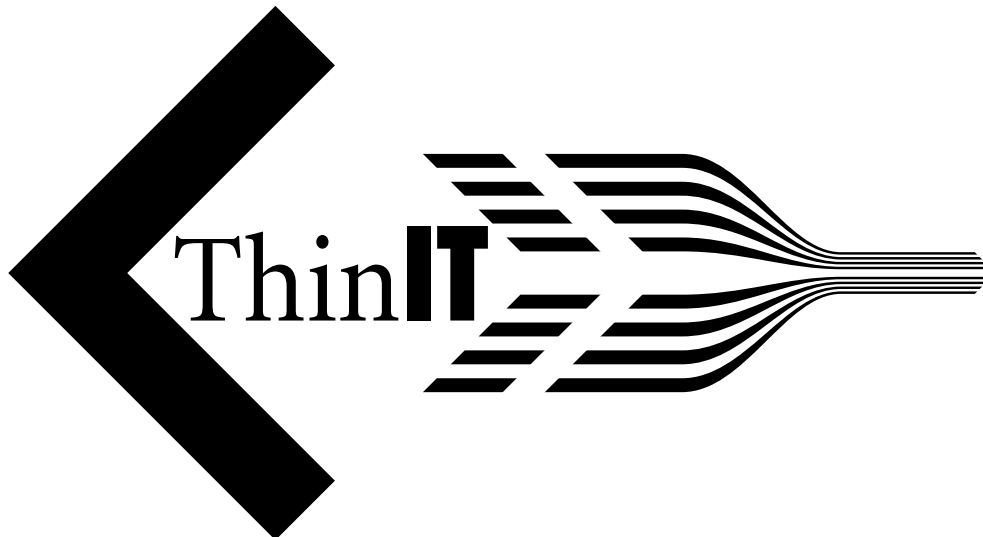


Introduction



Benefits

ThinIT is a product that allows you to turn a fat-client PC into a thin-client. This removes the unreliability and overheads of Windows on the PC and also allows easy central administration. A ThinIT client is capable of accessing a remote Windows session with either Microsoft RDP or Citrix ICA. With suitable server-side software (e.g. Windows Server 2003, Metaframe 1.8 Feature Release 1), it supports sound and thousands/millions of colours on screen. You do not need to shutdown the PC when you have finished using it, just switch it off. As ThinIT is so fast to install, a faulty machine can be got up and running extremely quickly.

Minimum hardware requirements

- 486DX2/66 processor
- 16MB RAM
- 300MB harddrive
- Network card (ISA or PCI)
- 2MB video card supporting 800x600

No CDROM drive or floppy drive is required, but it will make installation easier if you have them (or can attach one temporarily).

Installation

Overview

ThinIT comes on a bootable CD. For older machines, bootable floppies can be built (2 floppies will be required). Before beginning the installation proper, you may test that video, network and sound hardware is supported. During the installation process all data on the hard drive will be destroyed, so any crucial data should be backed up elsewhere. Installation is a quick 5-minute process which requires no technical knowledge.

Methods of booting to the installation screen

Booting from CD and installation from CD

Put the ThinIT CD in the CDROM drive of the PC and switch it on. You may need to alter the BIOS settings on the PC to allow boot from CDROM or drive D. If you do not see any options similar to this and the CD is ignored, it is likely that your PC does not support booting from CDROM.

Booting from floppy and installation from CD

You may run the installation program on your PC by booting from floppy discs. To make the boot discs you will need two formatted 1.44MB MS-DOS floppies. From a PC with a floppy drive and CDROM drive, run the MAKEFLPS.BAT file from the FLOPPIES folder on the CDROM and follow the on-screen instructions. You may create boot floppies with the experimental snapshot kernel (see Advanced Topics - Using different kernels) by running TESTFLPS.BAT.

Once you have built the boot floppies, you can boot the PC using them and run network and sound tests. To install ThinIT or do a graphical test, you will need to insert the CDROM.

Booting from Windows/DOS and installation from CD

Copy the DOSBOOT folder from the onto your local harddisc. From DOS/Windows 3.1 and Windows 95, you can go to a DOS prompt and type the following:

- cd \dosboot
- install thinit.ins

From Windows 98, you will need to boot into DOS by choosing Shutdown and then Reboot into MS-DOS before typing the above commands.

Installing from a NetManager over your network

Put the CDROM in your NetManager and from a command line type: cdromupdate and choose the appropriate option (probably A - all tasks). You may then boot your PC from floppy discs or CDROM (as above). As soon as text starts scrolling up the screen, you may remove the floppy discs or CDROM and move onto a new machine. Choose to test or install over the network. As long as your NetManager is running DHCP, all operations will be carried out over the network. **This option is unavailable in the demo and single-user versions.**

Installation options and procedure

After booting successfully, you will be presented with the following menu:

- T - Install ThinIT on this computer from CDROM
- D - Install ThinIT on this computer from network
- S - Test sound
- N - Check for network hardware
- V - Video and monitor test
- G - Alter graphic card driver
- K - Choose alternate kernel
- A - Advanced options
- R - Reboot

Before installing for the first time on a model of computer that you have not tried before, you should test out the sound, network and video (options S, N and V). The first two are self-explanatory. There are different video card drivers required for different video cards. In theory the "Standard VESA video driver" should work for all cards, but unfortunately some cards differ from the standard. For this reason, there are a few extra drivers provided that have been found to get certain types of cards working. ThinIT should successfully guess the correct driver. Test the current driver by choosing option V and then picking a suitable resolution and colour depth combination (a.k.a mode). If your desired mode does not work as hoped, try a lower resolution or lower colour depth. If you do not get any graphics on screen, you can try alternative video card drivers. If you are unable to get any to work, then if you send your computer to Precedence, we will attempt to get graphics to work for you. This service will usually be chargeable.

Once you are happy with the settings and found a suitable video driver, you may choose to install from either the CDROM or the network. You will not be given the option of a network installation with either the singleuser or demo versions.

If you are unable to get your video card, network card or sound card to work, please read "Using different kernels" in the Advanced Installation Topics chapter.

Known problematic video cards

From version 1.26 onwards, the installer will try alternative video drivers if the one you have chosen fails to work.

Intel 82810E

This chipset uses some of the main computer memory as video memory. Unfortunately, how it does this varies from BIOS to BIOS and this often mean there is a very restricted amount of video memory or it is not easily usable. On some machines, the VESA driver works, whereas on others the Intel driver works better. For this reason, we recommend you run a video test using the Intel video driver (it should be automatically selected). If this test fails, it will try to use the standard VESA driver. Whichever driver is successful will be used when ThinIT is installed. If you are unable to get any 16-bit graphics modes to work, try using 8-bit. Due to BIOS memory restrictions, you may only be able to use 800x600 in 8-bit colour.

Advanced Installation Topics

Installing ThinIT and Windows 2000 Side by Side - dual boot

- Install ThinIT as usual.
- When it's finished, reboot the machine with the Windows 2000 CD in the drive.
- When starting up you will be asked you whether you want to boot from the CD and give you about 5 seconds to respond. Press a key within this time.
- You will then be asked which partition you wish to use. The first of these will be labelled 'Unknown'. This is the partition that ThinIT is installed on. Select the 'Unpartitioned space' using the cursors and press <RETURN>.
- Select the Format using NTFS option and then go through the rest of the Windows installation as per normal.
- Once installed, reboot the machine and make sure it does reboot to Windows.
- Now reboot from the ThinIT CDRom or floppies
- On the installation menu, choose option A (Advanced options)
- Next choose option W (Install menu to dual boot ThinIT and Windows)
- Reboot and check you get a boot menu.

Using different kernels

The kernel is the core of the operating system. It deals with all the hardware in your computer. Unlike Windows, which needs you to locate and install the correct drivers for all your hardware, the ThinIT kernel already contains drivers for most hardware. However, occasionally you may need to use a slightly different kernel to get the most of the hardware in your PC (this is especially true with laptops).

You can change the kernel to install by choosing option K. The standard supported kernel has drivers for most hardware. If your video card is an ATI Mobility Radeon card (there may be other cards similarly affected), please choose "Supported kernel without AGP support". For all other hardware problems, please choose "Experimental snapshot kernel". N.B. The kernel options alter the drivers only when ThinIT is installed. They will NOT alter whether or not the installer is able to detect the sound or network drivers. Therefore, you may need to experiment. Overall, we have only found the need to alter the standard settings if you have a laptop. Most desktop PCs are fine with the "Standard supported kernel".

When booting from the installation CD, the "Standard supported kernel" is used. To test the "Standard supported kernel" without installing ThinIT on the machine in question, you can build boot floppies by using the script called TESTFLPS.BAT in the floppies folder on the CD ROM.

Configuration of the ThinIT client

Introduction

ThinIT can be configured either at the client itself or via the network (if you have the standalone or demo versions, network configuration is not supported). Any local settings will override network settings.

Network settings (not applicable to standalone and demo versions)

ThinIT configures its settings by loading settings files with TFTP from the /thinIt folder on your DHCP server (i.e. TFTP must be enabled). The format of this settings file will be discussed in a later version of this document.

Local settings

Switch to a text screen by using Ctrl-Alt-F1. You may return to the graphical screen by using Ctrl-Alt-F2 at any time. At the login prompt, type root and press Return. On an unconfigured client, you will not be prompted for a password. You will be presented with a menu allowing to configure the client settings. The menu has the following structure:

- Set root password
- Configure RDP settings
 - Set RDP server address
 - Set colours
 - Toggle sound
 - Back to previous menu
- Configure ICA settings
 - Set ICA server address
 - Set colours
 - Back to previous menu
- Configure default session type
- Alter video and mouse settings
 - Set resolution
 - Set colours
 - Alter video card driver
 - Set mouse type
 - Back to previous menu
- Configure networking
 - Automatic
 - Manual configure
 - Set wireless encryption
 - Interface
- Set terminal name
- Show current settings
- Wipe out current settings
- Load new settings
- Go to command line (not on demo version)
- Quit

Appendix 1 - Supported Hardware

Introduction

Most PC hardware is supported, however you may find that very recent or esoteric hardware is not recognised. If this is the case, you may need to add a different ethernet card for example.

ISA Ethernet cards

- AT&T StarLAN 10, EN100, and StarLAN Fiber (ai)
- Allied-Telesis AT1700-series and RE2000 cards (ate)
- Crystal Semiconductor CS8900-based cards (cs) [OFISA]
- Digital DEPCA-series (depca with an le child)
- 3Com 3c319 (tr) [PnP]
- 3Com 3c503 (ec)
- 3Com 3c507 (ef)
- 3Com 3c505 (eg)
- 3Com 3c501 (el)
- 3Com 3c509 (ep) [PnP]
- 3Com 3c515 (ep) [PnP]
- 3Com 3c619 (tr)
- Fujitsu FMV-181/181A/182/182A/183/184 (fmv) [PnP]
- IBM shared RAM Token-Ring controllers (tr) [PnP]
- Intel EtherExpress/16 (ix)
- Intel EtherExpress Pro (iy)
- Digital EtherWORKS 3: DE203, DE204, and DE205 (lc)
- BICC Isalan, Novell NE2100, and PCnet-ISA cards (le) [PnP]
- NE1000, NE2000, and compatibles (ne) [PnP]
- SMC91c9x-based cards and laptop docking station Ethernet (sm)
- SMC/WD 8003-series, 8013-series, Elite16, 8216 (Elite 16 Ultra), and EtherEZ (we)

PCI Ethernet cards

- Adaptec AIC-6915 based cards, including the Adaptec ANA-62011 (single-port 10/100 64-bit), ANA-62022 (dual-port 10/100 64-bit), ANA-62044 (quad-port 10/100 64-bit), ANA-62020 (single-port 100BASE-FX 64-bit), and ANA-69011 (single-port 10/100 32-bit) (sf)
- Broadcom BCM570x, Altima AC1000, Altima AC1001, and Altima AC9100 based Gigabit Ethernet interfaces, including 3Com 3c996, NetGear GA-302T, SysKonnect SK9D2, and on-board Dell server Gigabit Ethernet (bge)
- Digital 21040-, 21041-, 21140-, 21140A-, 21142-, and 21143-based cards, including the Digital DE425, SMC Etherpower, Adaptec/Cogent multi-port, ZNYX multi-port, and Bay Networks NetGear cards (de and tlp)
- Efficient Networks EN-155 and Adaptec AIC-590x ATM interfaces (en)
- 3Com 3c900, 3c905, 3c900B, 3c905B, 3c980, 3c905C, 3c450, 3cSOHO100, 3c555 MiniPCI, 3c556 MiniPCI, and 3c556B MiniPCI (ex)
- 3Com 3c590, 3c595 (ep). Note that the 3c900 and 3c905 will also work with the ep driver, but the ex driver will yield much better performance on these boards.
- SMC EPIC/100 Fast Ethernet, including SMC Etherpower-II (epic)

- Essential Communications Hippi (800 Mbit/s) (esh)
- Digital DEFPAs and DAS FDDI cards (fpa)
- Intel EtherExpress Pro 10/100B/100+ and InBusiness (fxp)
- Intel PRO/100 S (but note that the crypto coprocessor is currently not used) (fxp)
- Intel PRO/1000 family of Gigabit Ethernet interfaces (wm)
- Advanced Micro Devices Am79c970 PCnet-PCI and other members of the PCnet-PCI family (le)
- SBE (formerly LAN Media Corporation) DS1 and DS3 interfaces (lmc)
- NE2000 compatibles, including Realtek 8029, Winbond 89C940F, VIA Technologies VT86C926, Surecom NE-34, NetVin 5000, and Compex, ProLAN, and KTI models (ne)
- RISCom N2 synchronous interfaces (ntwoc with ntwo children)
- RealTek RTL8129/8139 based 10/100 Ethernet cards, including D-Link DFE-538TX and D-Link DFE-530TX+ (rtk)
- Silicon Integrated Systems SiS 900 and SiS 7016 based 10/100 Ethernet cards (sip)
- National Semiconductor DP83815 based 10/100 Ethernet cards, including the NetGear FA-311TX and FA-312TX (sip)
- National Semiconductor DP83820 based Gigabit Ethernet cards, including the NetGear GA-622, Asante FriendlyNet GigaNIX, D-Link DGE-500T, and SMC 9462TX (gsip)
- Texas Instruments ThunderLAN-based cards, including Compaq Netelligent 10/100 TX, Compaq Netelligent 10 T, Compaq Integrated NetFlex 3/P, Compaq ProLiant Integrated Netelligent 10/100 TX, Compaq Dual Port Netelligent 10/100 TX, Compaq Deskpro 4000 5233MMX Ethernet, Compaq NetFlex 3/P w/ BNC, Compaq NetFlex 3/P, and Texas Instruments TravelMate 5000 docking station Ethernet (tl)
- VIA VT3043 (Rhine) and VIA VT86C100A (Rhine-II) based 10/100 Ethernet cards, including the D-Link DFE530TX (vr)
- Sun HME PCI cards (hme)
- Alteon ACEnic and other Tigon-1 and Tigon-2 based Gigabit Ethernet boards, including the NetGear GA-620, 3Com 3c985, and Silicon Graphics Gigabit Ethernet boards (ti)
- Lite-On 82C168 and 82C169 PNIC, found on NetGear, Kingston, and several other Ethernet boards (tlp)
- Lite-On 82C115 PNIC-II, found on newer Linksys boards (tlp)
- Macronix MX98713, MX98715, MX98715A, and MX98725, found on many low-cost Ethernet boards (tlp)
- Winbond 89C840F (tlp)
- Davicom DM9102 and DM9102A, found on motherboards, some 10/100 + HomePNA boards, and the Sun Netra-X1 (tlp)
- ADMtek AL981, AN983, and AN985, including Linksys, Planex, Corega, I/O Data, AboCom, and ACCTON cards (tlp)
- Aironet 4500/4800 and Cisco 340/350 series wireless network cards (an)
- Sundance Tech. ST-201 based 10/100 Ethernet cards, including the D-Link DFE-550TX (ste)
- Sundance Tech./Tamarack TC9021 based Gigabit Ethernet cards, including the D-Link DGE-550T and Antares Gigabit Ethernet (stge)

- AT&T/Lucent WaveLan wireless network cards (wi)
- Intersil PRISM wireless network cards (wi)

PCMCIA and CARDBUS Network Interfaces

- Aironet 4500/4800 and Cisco 340 series wireless network (an)
- BayStack 650 IEEE 802.11FH wireless network card (awi)
- Netwave AirSurfer wireless network card (cnw)
- 3Com 3c562, 3c574 and 3c589 family (ep)
- Fujitsu MB86960-based cards, including the TDK CD021BX (mbe)
- NE2000 compatibles (ne)
- Raytheon Raylink / WebGear Aviator IEEE 802.11 2Mbps Wireless (ray)
- SMC91c9x-based cards, including Megahertz X-Jack (sm)
- AT&T/Lucent WaveLan wireless PCMCIA card (wi)
- Intersil PRISM WaveLan wireless PCMCIA card (wi)
- Xircom CreditCard PCMCIA Ethernet (xi)
- IBM and 3Com Tropic-based Token Ring cards (tr)
- Megahertz XJEM3336 Ethernet/Modem cards (mhzc, com, and sm)
- 3Com 3c575 10/100 Ethernet cards (ex)
- Intel i82557 based 10/100 Ethernet cards (fxp)
- RealTek RTL8139 based 10/100 Ethernet cards (rtk)
- Digital 21143 based 10/100 Ethernet cards (tlp)
- Xircom X3201-3 based 10/100 Ethernet cards (tlp)
- ADMtek AN983 and AN985 based 10/100 Ethernet cards, including Planex, Corega, I/O Data, AboCom, and ACCTON cards (tlp)

USB Network Interfaces

Numerous USB network cards are supported

ISA Soundcards

- Aria-based sound cards (aria)
- ESS 888, 1887, and 1887 (ess)
- Gravis UltraSound and UltraSound Max (gus)
- Gravis UltraSound Plug-n-Play (guspnp) [PnP]
- MediaVision Pro Audio Spectrum family (pas)
- Personal Sound System and SoundPort (pss and sp)
- Creative Labs SoundBlaster family and compatibles (sb) [PnP] [OFISA]
- Windows Sound System and compatibles (wss) [PnP]
- Yamaha OPL3-SA3 (ym) [PnP]

PCI Soundcards

- Sierra's Aria chipset (aria)
- Cirrus Logic CS461x, CS4280 and CS4281 audio (clcs, clct)
- C-Media CMI8x38 (cmpci)
- Ensoniq AudioPCI and SoundBlaster PCI (eap)
- ESS Technology ES1777/1868/1869/1887/1888/888, Maestro 2/2E and Solo-1 ES1938/1946 PCI AudioDrive (eso, esm)
- Forte Media FM801 (fms)
- Intel i82801AA, i82801AB, i82801BA, and i82440MX audio (auich).

- NeoMagic MagicMedia 256 (neo)
- Personal Sound System (pss)
- ProAudio Spectrum (pas)
- S3 SonicVibes (sv)
- VIA southbridge integrated AC'97 audio (auvia)
- Windows Sound System (wss)
- Yamaha YMF724/740/744/754 PCI audio (yds).

PCMCIA Soundcards

- ESS 1688 AudioDrive (esl)