

PXE Network Windows Installation

Howto use your Funtoo machine to serve a MS Windows installation over the network In this guide we will assume that you have followed the PXE network boot server (/PXE_network_boot_server) Wiki article and have a working network/pxe boot setup. As of now this guide will cover Windows XP. Soon it will be expanded to also cover Windows 7.

Prerequisites

1. A working Funtoo installation
2. A working PXE Setup (DHCP, TFTP, PXELinux)
3. app-arch/cabextract
4. A legitimate copy of Microsoft Windows
5. Driver for your NIC - *Suggested to use a complete driver pack with all major supported NIC hardware for the version of Windows to be installed.*
6. RIS Linux toolkit >=0.4
7. A working Samba server setup

Creating the Windows XP Image

- In the previous guide, PXE Network Boot Server (http://www.funtoo.org/wiki/PXE_network_boot_server), we used /tftproot as the working directory so we will also use it in this guide for convenience. If you chose to use a different working directory then please apply it where needed in place of the /tftproot we will be going by here.

First you will need to create an ISO from your Windows XP installation disc. If you already have the ISO image you may skip this step.

```
# dd if=/dev/sr0 of=/tftproot/winxp.iso
```

If your cdrom device isn't /dev/sr0 please use the appropriate device in this command.

Mount the ISO and Prepare Installation Sources

Mount the image to /tftproot/cdrom :

```
# mkdir /tftproot/cdrom; mount -o loop /tftproot/winxp.iso /tftproot/cdrom
```

Create the new directory for the network installation files and copy the needed files to it:

```
# mkdir /tftproot/winxp; cp -R /tftproot/cdrom/i386 /tftproot/winxp/i386
```

Depending on your CD/DVD copy of windows the directory name may be I386 as opposed to i386, if that is the case you will just need to change the first part of the command, keeping the new directory name i386 - this is going to be very important later on when creating the remap file! Check the contents of your newly created i386 directory to see if the filenames are in all CAPS or if they are already in lowercase.

```
# ls /tftproot/winxp/i386
```

If you happen to have all UPPERCASE filenames, lets go ahead and run a script to convert it to all lowercase:

```
# cd /tftproot/winxp/i386;ls | awk '$0!=tolower($0){printf "mv \"%s\" \"%s\"\n",$0,tolower($0)}' |
```

Extracting and Modifying the Required Boot Files

Install app-arch/cabextract (package not on wiki - please add (/Adding_an_Ebuild_to_the_Wiki))

```
# emerge app-arch/cabextract
```

Extract the prepackaged drivers:

```
# cd /tftpboot/winxp/i386;cabextract driver.cab
```

Install support for a large list of network cards:

```
# cd /tftpboot/;wget http://downloads.sourceforge.net/project/bootfloppy/pxefiles.tar.gz
# tar zxvf pxefiles.tar.gz; cp pxefiles/drivers/* winxp/i386/
```

Copy the BINLSRV /INFParse tools to /tftpboot:

```
# cp pxefiles/script/* /tftpboot/
```

Extract the netboot startrom:

```
# cd /tftpboot; cabextract winxp/i386/startrom.n1_
```

Fix the startrom for netbooting xp:

```
# sed -i -e 's/NTLDR/XPLDR/gi' startrom.n12
# mv startrom.n12 winxp.0
```

Fix XPLDR:

```
# cabextract winxp/i386/setupldr.ex_
# sed -i -e 's/winnt\.sif/winxp\.sif/gi' setupldr.exe
# sed -i -e 's/ntdetect\.com/ntdetect\.wpx/gi' setupldr.exe
# mv setupldr.exe xpldr
# cp winxp/i386/ntdetect.com ntdetect.wpx
```

Creating a remapping file

Create the file /tftpboot/tftpd.remap and add the following to it:

```
ri ^[az]: # Remove "drive letters"
rg \\ / # Convert backslashes to slashes
rg \# @ # Convert hash marks to @ signs
rg ../ ../no../ # Convert ../ to ../no../
rg A a
rg B b
rg C c
rg D d
rg E e
rg F f
rg G g
rg H h
rg I i
rg J j
rg K k
rg L l
rg M m
rg N n
rg O o
rg P p
rg Q q
rg R r
rg S s
rg T t
rg U u
rg V v
rg W w
rg X x
rg Y y
rg Z z
r ^/(.*) \1
r ^xpldr xpldr
r ^ntdetect.wxp ntdetect.wxp
r ^winxp.sif winxp.sif
```

Install/Configure Samba

If you don't already have Samba (/Package:Samba) installed, then:

```
# emerge net-fs/samba
```

Create a Samba share for your tftp server in `/etc/samba/smb.conf`

Note

Be sure you have the other required samba settings configured in the file

```
[Global]
interfaces = lo eth0 wlan0
bind interfaces only = yes
workgroup = WORKGROUP
security = user

[tftpboot]
path = /tftpboot
browsable = true
read only = yes
writable = no
guest ok = yes
```

Start Samba:

```
# /etc/init.d/samba start
```

or if samba has already been started:

```
# /etc/init.d/samba restart
```

Creating a Setup Instruction File

Create the file `/tftpboot/winxp.sif` and add the following, replacing `SAMBA_SERVER_IP` with the local IP address of your samba server:

```
[data]
floppyless = "1"
msdosinitiated = "1"
; Needed for second stage
OriSrc = "\\SAMBA_SERVER_IP\tftpboot\winxp\i386"
OriTyp = "4"
LocalSourceOnCD = 1
DisableAdminAccountOnDomainJoin = 1

[SetupData]
OsLoadOptions = "/fastdetect"
; Needed for first stage
SetupSourceDevice = "\\Device\LanmanRedirector\SAMBA_SERVER_IP\tftpboot\winxp"

[UserData]
ComputerName = *
```

Editing the pxelinux.cfg/default boot menu

Edit your boot menu so that it contains the following entry:

```
LABEL WinXP
    MENU LABEL Install MS Windows XP
    KERNEL winxp.0
```

Re-Start all required daemons

If the daemon isn't already running use `start` instead or `restart` in the following commands

```
# /etc/init.d/dnsmasq restart  
# /etc/init.d/in.tftpd restart
```

Modify Binlsrv, update driver cache, and start driver hosting service

Change the BASEPATH= variable at or around line #62 of *binlsrv.py* so that it is:

```
BASEPATH='/tftpboot/winxp/i386/'
```

Generate driver cache:

```
# cd /tftpboot;./infparser.py winxp/i386/
```

Start binlservice:

```
# ./binlsrv.py
```

Booting the client

If all is well, you should be able to boot the client choosing to *boot from network* in the boot options, you should get to your PXELinux bootloader, and see the Install Windows XP option after pressing enter you *should* kick off your XP installation via network!! Congratulations!

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(http://www.funtoo.org/index.php?title=PXE_Network_Windows_Installation&oldid=2048)"
Category (/Special:Categories): HOWTO (/Category:HOWTO)

This page was last modified on February 19, 2014, at 23:02.