

iPXE boot environment troubleshooting guide

This article is created to resolve problems encountered during iPXE boot installation/update in Windows Server 2012 Server environment. The instructions for building the Windows Server 2012 based iPXE environment can be found from [this KB article](#).

It is important to be able to pin-point the iPXE process step where an issue occurs. Use the following list of iPXE boot loading steps to locate the exact step:

1. PXE boot agent loads on client side
2. PXE client checks network link
3. PXE client reaches out to DHCP
4. Server DHCP responds | Possible error: PXE-E51
5. DHCP scope option 60 (PXEClient) is loaded | Possible error: PXE-53
6. Client machine gets IP address
7. Client machine reaches out to next-server / TFTP server address
8. TFTP boot program is loaded (wdsnbp.com in WDS)
9. TFTP boot program (wdsnbp.com) responds to client machine
10. TFTP boot program detects client architecture (e.g. x64)
11. TFTP boot program (wdsnbp.com) hands out undionly.kpxe (or the configured PXE client program in the WDS settings)
12. Undionly.kpxe loads on the client machine
13. Undionly.kpxe / client checks DHCP scope option 66 (Boot server host name) and tries to load '\Boot\x86\boot.ipxe'
14. Undionly.kpxe / client checks DHCP scope option 67 (Bootfile name)
15. Undionly.kpxe / client loads '\Boot\x86\boot.ipxe' (as configured in opt 67)
16. Boot.ipxe loads menu.ipxe file from the HTTP server (IIS) Virtual directory (at `http://$server/Images/menu.ipxe`)
17. HTTP server / IIS looks for the .ipxe MIME type and delivers the menu.ipxe to the client
18. Blancco PXE boot menu is displayed on the client screen
19. Boot menu option is selected from the boot menu
20. Boot menu / Client tries to load the selected ISO image from the HTTP server at e.g: 'http://10.10.1.1/Images/Blancco_5.iso'
21. HTTP server/ IIS recognizes the .iso MIME type and delivers the Image
22. Boot menu / Client tries to chain load the memdisk.bin file from the Images-directory at e.g: 'memdisk.bin'
23. HTTP server/IIS delivers the memdisk file and the ISO image downloading starts
24. Blancco.ISO image loads on the client and Blancco starts booting

When you have a clear vision at which point the error message appears, use the following list of the most common error messages, causes and fixes, to resolve what's the most obvious fix for the problem. You may also contact our Technical Support team regarding the issue by submitting a Support ticket at: <https://support.blancco.com>

Note! Remember to add picture of the error message from the client computer!

If you find any difficulties in "navigating" to the correct place in Windows Server environment please download the ZIP package below which contains example pictures:

https://download.blancco.com/general/manuals/pxe/ipxe_troubleshooting_pictures.zip

ERROR:

PXE-E51: No DHCP or proxyDHCP offers were received

CAUSE/FIX: Client computer can't find a DHCP server

- a) Check that the network cable is connected and that network connection exists between the client computer and the DHCP server.
- b) Check that the DHCP service is running on the server.
- c) Check that DHCP server is authorized in Active directory (if AD is used).
- d) Check that the DHCP scope is active and running in the same network (same IP range) as the server (check the IP address).
- e) Check that the server network card, that hosts the DHCP service, is active and connected to the client network.
- f) Check that the DHCP scope is configured properly, including the IP range, DNS, Router and boot server host name.
- g) Check that there are no other conflicts or issues between the scope and the server network card.
- h) Check the server/Windows firewall settings and make sure UDP port for TFTP/PXE boot (i.e. ports 67 or 69) is allowed for PXE booting. Try disabling the firewall for troubleshooting purposes.
- i) Check the server network card settings, including IP, subnet mask, gateway and DNS settings.
- j) Reset server network card/IP settings and recreate the DHCP scope if nothing else works.

ERROR:

PXE-E53: No boot filename received

CAUSE/FIX: Server/scope option 60 (PXEClient) is missing in the DHCP settings or WDS -> DHCP -> "Configure DHCP options to indicate that this is also a PXE server" check box is not checked.

ERROR:

CLIENT IP: 10.10.1.2 MASK: 255.255.255.0 DHCP IP: 10.10.1.2

TFTP.

PXE-M0F: Exiting Boot Agent.

CAUSE/FIX: The Client/TFTP server can't find the default TFTP boot program (wdsnbp.com in WDS). Check that wdsnbp.com exists in \RemoteInstall\Boot\x86\ folder and that WDS is properly configured.

ERROR:

Downloaded WDSNBP from 10.10.1.1 WIN-123.test.local

TFTP download failed.

PXE-M0F: Exiting Intel Boot Agent.

CAUSE/FIX: Check the WDS Server -> Boot -> PXE boot policy properties. Make sure "Always continue PXE boot" is selected.

ERROR:

Filename: \Boot\x86\boot.ipxe
^Boot\x86\boot.ipxe... Error 0x3d126001 (<http://ipxe.org/3d126001>)
No more network devices
CAUSE/FIX: Scope option 66 missing or is not correctly defined in the DHCP scope(s)

ERROR:

WDSNBP started using DHCP Referral.
Contacting Server: 10.10.1.1 (Gateway: 0.0.0.0).
Architecture: x64
Contacting Server: 10.10.1.1.
TFTP Download: Boot\x86\undionly.kpxe
CAUSE/FIX:
a) Scope option 67 (\Boot\x86\boot.ipxe) is missing in the iPXE Policy/Vendor class DHCP options.
a) undionly.kpxe file can't be found in the \Boot\x86\ -folder
c) Wdsutil bootprogram/N12bootprogram for x64 architecture is not set correctly.

ERROR:

<http://10.10.1.1/Images/menu.ipxe...> No such file or directory (<http://ipxe.org/2d0c613b>)
CAUSE/FIX: Path for the menu.ipxe file in boot.ipxe file is not set correctly.
a) Check that the menu.ipxe path is correct, e.g.: ([http://\\${server}/Images/menu.ipxe](http://${server}/Images/menu.ipxe)).
b) /Images directory is not properly defined in the HTTP server as virtual directory (IIS: under the default website). Make sure that the /Images folder is added to the HTTP server (IIS: under default website).
c) MIME type for .ipxe missing in IIS under the /images virtual directory. Add .ipxe in IIS MIME types under the /Images virtual directory.

ERROR:

<http://10.10.1.1/Images/menu.ipxe...> input/output error (<http://ipxe.org/1d0c6139>)
CAUSE: HTTP Server (IIS) has a problem accessing the .ipxe file or files in general in the /Images folder.
FIX: Check the IIS virtual directory and the MIME type settings.
a) In IIS, click the MIME types under Default Website/images directory. If you get an error about the MIME types, try deleting the conflicting (.ipxe and .ipxe) MIME types under the server/default website MIME types. Double-click the MIME types again under the /images virtual directory to check that you don't get an error.
b) Another way to test if the problem is related to the virtual directory or the MIME types, is to try browsing the virtual directory from IIS by right-clicking the virtual directory -> Manage Virtual Directory -> Browse. Note that the virtual directory browsing must be enabled first in the IIS settings. If you get a MIME type related error, try removing the conflicting MIME types from the higher levels.

ERROR:

<http://10.10.1.2/Images/menu.ipxe.....> Connection timed out (<http://ipxe.org/4d0c6135>)
CAUSE/FIX: Server address in the boot.ipxe file is not set correctly
a) Check and fix the server address in the boot.ipxe file

ERROR:

(after loading image from the boot menu):
http://10.10.1.1/Images/Blancco_5.iso... ok
Could not boot image: No such file or directory (<http://ipxe.org/2d0c613b>)
No more network devices
Press Ctrl-B for the iPXE command line...
(Reboots)
CAUSE/FIX: .iso MIME type missing in IIS

ERROR:

(after loading image from the boot menu):
http://10.10.1.1/Images/Blancco_5.iso... ok
/memdisk.. No such file or directory (<http://ipxe.org/2d0c613b>)
Booting failed, dropping to shell
Type 'exit' to get back to the menu
iPXE>
CAUSE/FIX: Boot menu can't find/load the memdisk file. Check the memdisk path/filename/extension in the menu.ipxe and in the /Images folder and rename if necessary. For example if memdisk.bin file exists in /Images -folder, try changing the line for the memdisk in the menu.ipxe file as:
chain memdisk.bin iso raw || goto failed