

Frequently Asked Questions

DynamicAccess Boot Services (DABS)

Q. How is DABS different from Intel's boot services?

A. Intel provides PXE and TFTP boot services through its PXE PDK. These are NT services only (not applications) and are provided for development/test environments. The PXE PDK is not available for commercial distribution. Intel also provides PXE and TFTP boot services as a subset of its desktop management tools LANDesk Management Suite and LANDesk Client Manager.

DABS provides easily configurable PXE and TFTP boot services not only as NT services, but also as applications that can be used under Win9x. Additional GUI-based tools are provided for client configuration—a BOOTPTAB Editor, a BOOTP server, and a Boot Image Editor. When combined, the DABS tools create a powerful environment focused on implementing manageability through standards-based network boot environments.

Q. What operating system is required?

A. The operating system must be Windows 95 (OSR2), Windows 98, Windows NT (Version 3.51, Service Pack 5 or higher, or Version 4.0, Service Pack 4 or higher), or Windows 2000.

Q. What is the difference between PXE and BOOTP?

A. BOOTP was the original method of giving configuration information (IP number, boot file name, and so on) to a client. It uses a simple text file (BOOTPTAB) as a database for this information. BOOTP uses static IP number assignments, and each client has to be manually assigned an IP number on the server. To simplify the manual configuration of IP numbers, DHCP is now used instead of BOOTP in assigning dynamic IP numbers to clients. DHCP does not have a database for client-specific information; therefore it cannot assign unique information to individual clients. The PXE server works with a DHCP server to issue the unique

information to clients. The DHCP server will issue the IP number, while the PXE server will issue client-specific parameters. The PXE server can be on the same host as the DHCP server, or on a different host.

The choice of server depends on the type of ROM in the client. If the client has a BOOTP ROM, the BOOTP server must be used. If the client has a PXE-compatible ROM, the PXE server must be used.

Q. Why are there both applications and services and what are the differences between them?

A. A service is an NT program that remains running in the background, even when no one is logged on to the computer. An application stops executing when a user logs off the computer.

Windows 9x does not support service-based programs. Therefore only the applications can be used with Windows

Q. What components are needed, and what are their capabilities with other Network Operating Systems?

The Task	Protocol	Components required
Deploy a drive image (e.g., Ghost, Image Cast, and so on)	PXE	Boot Image Editor, BOOTPTAB Editor, PXE server, and TFTP server
Deploy a drive image (e.g., Ghost, Image Cast, and so on)	BOOTP	Boot Image Editor, BOOTPTAB Editor, BOOTP server, and TFTP server
Deploy a drive image (e.g., Ghost, Image Cast, and so on)	DHCP	3rd-party DHCP server, Boot Image Editor, and TFTP server
Remoteboot DOS or Windows 95	PXE	Boot Image Editor, BOOTPTAB Editor, PXE server, and TFTP server
Remoteboot DOS or Windows 95	BOOTP	Boot Image Editor, BOOTPTAB Editor, BOOTP server, and TFTP server
Remoteboot DOS or Windows 95	DHCP	3rd-party DHCP server, Boot Image Editor, and TFTP server
Remote NT Installation (unattended)	PXE	Boot Image Editor, BOOTPTAB Editor, PXE server, and TFTP server
Remote NT Installation (unattended)	BOOTP	Boot Image Editor, BOOTPTAB Editor, BOOTP server, and TFTP server
Remote NT Installation (unattended)	DHCP	3rd-party DHCP server, Boot Image Editor, and TFTP server
Update a switch/router	BOOTP	BOOTPTAB Editor, BOOTP Server, TFTP server.

9x. That is the main reason why there are both services and applications of the server components in the DABS suite.

Q. Is LINUX compatibility or support provided?

A. Currently there is no support for Linux.

Q. What are the DOS utilities for?

A. Three DOS utility programs are included in boot services: PBOOT, FREEMEM, and BPPATCH.

The PBOOT utility is used in conjunction with the 3Com Boot Image Editor program to create Pre-OS boot image files. At the end of a preboot or remote-boot process, PBOOT invokes a very soft reset and passes control from the boot image file back to the local hard drive. The PBOOT utility is always the last command executed in the autoexec.bat file in Pre-OS boot files.

FREEMEM releases the memory used by the boot image file after the client PC has booted. It also changes drive A: back to the local floppy drive (drive A: is used as a RAM disk while the client PC is booting from the boot image file).

The BPPATCH command-line utility is used to replace parameters from the BOOTP, DHCP, or PXE reply packet into text files. BPPATCH allows one common boot image file with BPPATCH variables to be used by several client PCs. The parameters that are unique to each client PC (such as the IP address or NDIS driver) are specified in the BOOTPTAB file on the network server and replaced in the writable boot image file when the client PC boots.

Q. What are WfM and RIS?

A. The Wired for Management Initiative (WfM) is an Intel-led, industry-supported effort to make Intel Architecture-based systems universally manageable and managed without sacrificing agility or performance. Through WfM, Intel has worked with others in the industry, including 3Com, to develop guidelines for a new generation of platforms that can be centrally managed over networks to reduce the

total cost of ownership (TCO). Systems based on these guidelines provide key technologies that, when combined with management software applications, deliver capabilities that enable down-the-wire management. They also provide benefits in five critical areas of managing and controlling the computing environment: asset management, universal network boot, off-hours maintenance (power savings), system diagnosis and repair, and investment protection.

One of the most challenging and costly functions that IT staff perform is the deployment of a new operating system to client PCs and the subsequent management and updating of tasks on those PCs. Microsoft's Windows 2000 Server includes a new functionality—Remote Installation Services (RIS)—that goes a long way in addressing these issues. The Preboot Execution Environment (PXE) network boot technology on the client PC allows administrators to use RIS to do a simple installation of Windows 2000 Professional over the network from a server onto a PC. RIS allows one to clone existing installations of Windows 2000 Professional, including applications, onto a server and to install that cloned image onto other PCs.

Q. Is DABS compatible with RIS?

A. The Boot Image Editor can be used to create boot files that can be used with RIS. One does not need to use any of the server components (PXE, TFTP, etc.) with RIS, because RIS includes these services.

To create an RIS-compatible image file, one must first create a TCP/IP image file and then a PXE menu file. These two files must be placed in the correct RemoteInstall directory on the RIS server. An .SIF file must also be created so that RIS will recognize the image files.

A simpler solution is to use the 3Com RIS Menu Editor. It is available at no cost from 3Com's Web site at <http://www.3com.com/managedPC>.

Q. How many clients can be supported?

A. The maximum number of clients that DABS can support is determined by the physical limitations (such as the RAM and connection speed) of the client/server/network environment.

Q. Where is help available?

A. All of the Windows-based components of DABS include extensive on-line help, which can be accessed by selecting the Help menu or clicking on the Help buttons found in most dialog boxes.

Information on the DOS-based components can be found in the text file DOSUTILS.TXT. This file will be located in the folder that was specified when DABS was installed.

Q. What does DABS cost?

A. DABS retails for U.S.\$249 per server license, including ten client access licenses. Additional client access licenses are available. For details, go to www.3com.com/bootservices.

PXE / BOOTP

Q. Why does PXE require BOOTPTAB?

A. The Preboot Execution Environment (PXE) server needs information specific to each client (configuration parameters, boot image file name, and so on). 3Com chose to use the standard BOOTPTAB file format because it is a simple text file format that can be easily edited by any text editor (in addition to the BOOTPTAB Editor that is included with DABS).

Q. Why is the PXE server not responding? (DHCP tag information.)

A. If PXE and DHCP are being run on the same server, an option tag must be added to the DHCP configuration. This tag indicates to the client that PXE is available on the same server as DHCP. See the topic "Adding the Option 60 'PXEClient' Tag String to DHCP Packets" in the PXE online help.

Q. What RFCs do PXE and BOOTP servers support?

A. There is currently no RFC for PXE. Our PXE server is compatible with the PXE 2.0 specification.

The BOOTP server supports RFC 1084.

Q. Does WfM require PXE?

A. Yes. PXE is required on the client PCs in a WfM environment.

BOOTPTAB Editor

Q. What is a BOOTPTAB file?

A. A BOOTPTAB file is a database of client PCs that use the BOOTP or PXE server. The BOOTPTAB file provides client-specific configuration information for each client PC. Each client PC that uses the BOOTP or PXE server needs an entry in the BOOTPTAB database file.

- A BOOTPTAB entry for a client PC with a boot ROM usually consists of
- The name of the client PC (or of the end user who uses it).
- The media access control (MAC) address on the network interface card (NIC).
- An IP address (for BOOTP users only).
- The boot image filename or bootstrap file name.
- The default boot directory on the network server.

Q. Can BOOTPTAB Editor create, open, or modify “standard” BOOTPTAB files?

A. Yes, as long as the BOOTPTAB file conforms to the Carnegie-Mellon University (CMU) model.

TFTP

Q. What Requests for Comments (RFCs) does TFTP support?

A. RFCs 1350, 1783, and 2348.

Q. What are the differences between the TFTP that DABS and Intel provide?

The DABS TFTP is available as (1) a Windows application that displays all the transfer activities and allows TFTP parameters configuration, or (2) as a Windows NT service that can be configured through a special Control Panel applet. The application variant can run on Win 95/98/NT, while the service can run only on Windows NT/2000. Intel’s TFTP is available only as a Windows NT service. Some of the multicast parameters of Intel’s TFTP can be configured through the PXE configuration utility that comes with Intel’s PXE PDK.

The DABS TFTP has features that allow one to log service activities, configure TFTP parameters, and select between physical NICs in a multihomed server environment. It also provides “secure mode” TFTP when the client provides only the file name for transfer, and it assures a correct configurable base directory for the file. Intel’s TFTP does not provide all of these features, but only some multicast address configuration through the Intel’s PXE Configuration utility. Intel’s TFTP provides a fixed-default base directory only for file transfer.

The DABS TFTP behaves gracefully when a user stops the services while a transfer is in progress, allowing one to chose between waiting for the end of the transfer and canceling the transfer. Intel’s TFTP always cancels the current transfer when it is stopped.

Intel provides both multicast and unicast TFTP capabilities. The current version of the DABS TFTP provides

only unicast access. However, multicast functionality is being planned for an upcoming version of DABS.

Boot Image Editor

Q. What are bootstrap and menu files?

A. A bootstrap file is a small file that is transferred to the client by a PXE-compatible boot ROM using TFTP. This file then performs a specific task on the client, which usually involves transferring another, larger boot file.

A menu file is a bootstrap file that allows users to define a menu of boot images from which they can select the image they wish to use. In the PXE protocol definition, this first small bootstrap is often referred to as “Remote.0,” and the next boot file as “Remote.1.”

Q. What is Pre-OS?

A. Pre-OS software, which is included with DABS and the DynamicAccess managed PC boot agent, enables a PC to download and execute centrally administered desktop management agents from a network server before actually loading the client operating system from the local hard drive. After loading and executing the remote operating system, agents, or other software, the PC can exit the Pre-OS boot and boot from its local hard disk.

Q. How big can an image be?

A. Normally an image file is the same size as the floppy disk from which it was created. However, Boot Image Editor does support creating extended images up to 16 MB in size.

Q. Does BIE support Linux?

A. Currently there is no support for Linux.

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