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**DHCPv6 Support for Remote Boot**  
**draft-ietf-dhc-dhcpv6-opt-rboot-00.txt**

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Abstract

This document provides new DHCPv6 (Dynamic Host Configuration protocol version 6) options for clients, to obtain information about FTP (Trivial File Transfer Protocol) servers and bootfiles needed for booting.

## **1. Introduction**

Network booting is widely used mechanism for booting up of the clients. The clients contact the TFTP server to download the bootfiles for bootup. The advantages of using network booting are; softwares will be in central server and requires maintenance at only one location rather than maintaining individual systems separately. Also, switching between different operating systems becomes easy when network booting is being used. In some cases, the nodes may need

multiple bootfiles also. The additional boot files may be used as supporting software for the boot image. Different Operating System

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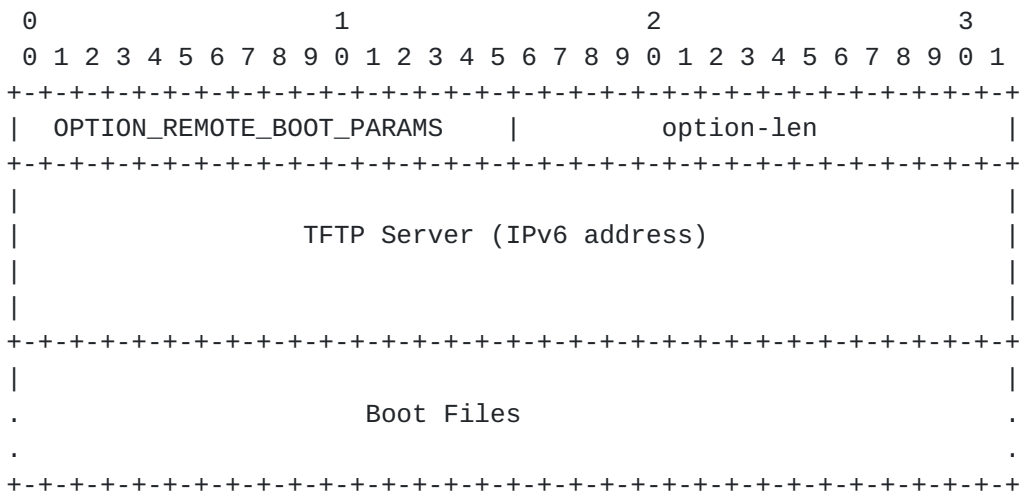
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Remote\_Boot-options: Options associated with the Remote Boot Option.

The Remote Boot option encapsulates those options that are specific to remote boot. This document defines one such option called Remote Boot Parameters Option. Multiple Remote Boot Parameters Options can appear in this option. This option is defined in the [Section 5](#).

## 5. Remote Boot Parameters Option

The Remote Boot Parameters Option is used by the server to convey the client about the TFTP Server IPv6 address and list of boot files needed for booting of the clients. The clients are supposed to contact the TFTP Server, obtain the boot files one by one and boot up using these files.



option-code: OPTION\_REMOTE\_BOOT\_PARAMS (tbd)

option-len: Length of the 'TFTP Server' (16 bytes) + 'Boot Files' in Octets;

Boot Files: One or more Boot File names in the NVT-ASCII string format. Each file name should be NULL terminated. They should be represented as fully qualified directory-path name.

If multiple boot files are provided by the server, then, they should appear in the order of their execution in the client. The first appearing boot file name should be downloaded and executed first for boot up, then the next and so on.

This option MUST appear only in the Remote Boot Option. If multiple Remote Boot Parameters Options are present in the Remote Boot Option, then the clients MUST treat them as an ordered list. The server MAY list them in the order of preference.

## 6. Appearance of these options

The Remote Boot Option MUST NOT appear in other than the following messages: Solicit, Advertise, Request, Renew, Rebind, Information-Request and Reply.

The option number of Remote Boot option MAY appear in the Option

Request Option [\[1\]](#) in the following messages: Solicit, Request, Renew, Rebind, Information-Request and Reconfigure.

The Remote Boot Parameters Option MUST appear only in the Remote Boot Option.

## **7. Security Considerations**

The Remote Boot Option may be used by an intruder DHCPv6 server to cause DHCPv6 clients to contact rogue TFTP server (or) to send invalid file names. This will make booting up of DHCPv6 clients to fail. This will have a greater impact, if the clients are running some time critical applications. It has a direct impact on the security of the networks, if the clients are running any security applications.

To avoid attacks through this option, the DHCP client SHOULD use authenticated DHCP (see section "Authentication of DHCP messages" in the DHCPv6 specification [[1](#)]).

## **8. IANA Considerations**

IANA is requested to assign an option code to the following options from the option-code space defined in "DHCPv6 Options" section of the DHCPv6 specification [[1](#)].

Option Name	Value	Described in
OPTION_REMOTE_BOOT	tbd	<a href="#">Section 4</a>
OPTION_REMOTE_BOOT_PARAMS	tbd	<a href="#">Section 5</a>

## **9. Normative References**

- [1] Bound, J., Carney, M., Perkins, C., Lemon, T., Volz, B. and R. Droms (ed.), "Dynamic Host Configuration Protocol for IPv6 (DHCPv6)", [RFC 3315](#), July 2003.
- [2] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.

## **10. Informative References**

- [3] K. Sollins, The TFTP Protocol (Revision 2), [RFC 1350](#), July 1992.

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