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The Domain Search Option for DHCP
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Abstract

This document defines a new DHCP option which is passed from the DHCP Server to the DHCP Client to configure the domain search list which is used by the clients to resolve hostnames in the Domain Name System[3].

Introduction

The Dynamic Host Configuration Protocol (DHCP)[1] provides a framework for passing configuration information to hosts on a TCP/IP network. [RFC 2132](#) allows the Domain Name (option 15) and the Domain Name Server (option 6) to be passed to the DHCP client. This information is used to resolve names in the Domain Name System. These options are usually placed in the resolv.conf file on most operating systems. The name resolution routines on the client are also capable of using a domain search list that allows name resolution to be attempted in a number of domains in sequence. The Domain Search Option allows a list of domain names, in order of preference, to be passed to the DHCP client such that the search directive can be specified for name resolution.

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Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY" and "OPTIONAL" in this document are to be interpreted as described in [RFC 2119](#) [4].

This document also uses the following terms:

"DHCP client"

DHCP client or "client" is an Internet host using DHCP to obtain configuration parameters such as a network address.

"DHCP server"

A DHCP server or "server" is an Internet host that returns configuration parameters to DHCP clients.

Domain Search Option Format

The code for this option is TBD, and its minimum length is 2 bytes. This option can contain multiple domain names separated by the ASCII space character.

Code	Len	Domain Names in Sequence		
TBD	n	d1	0x20	d2

In the above example, d1 & d2 are domain names specified as NVT ASCII strings. An ASCII space character (0x20) is used as a separator between the domain names.

DHCP Client Behavior

The DHCP client will use this option to create a domain search list for name resolution. If a DHCP client is given both a Domain Name Option and a Domain Search Option, the Domain Search Option will take precedence.

Security Considerations

DHCP currently provides no authentication or security mechanisms.

Potential exposures to attack are discussed in [section 7](#) of the DHCP protocol specification [[1](#)]. The Domain Search Option can be used to misdirect domain name resolution on a client and thus misdirect network traffic based on DNS names.

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References

- [1] Droms, R., "Dynamic Host Configuration Protocol", [RFC 2131](#), March 1997.
- [2] Alexander, S. and Droms, R., "DHCP Options and BOOTP Vendor Extensions", [RFC 2132](#), March 1997.
- [3] Mockapetris, P. V., "Domain names - implementation and specification", [RFC 1035](#), November 1987.
- [4] Bradner, S., "Key words for use in RFCs to indicate requirement levels", [RFC 2119](#), March 1997.

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Expiration

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