

DHCP Options for Service Location Protocol
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Abstract

The Dynamic Host Configuration Protocol provides a framework for passing configuration information to hosts on a TCP/IP network. Entities using the Service Location Protocol need to find out the address of Directory Agents in order to transact messages. In certain other instances they may need to discover the correct scope and naming authority to be used in conjunction with the service attributes and URLs which are exchanged using the Service Location Protocol.

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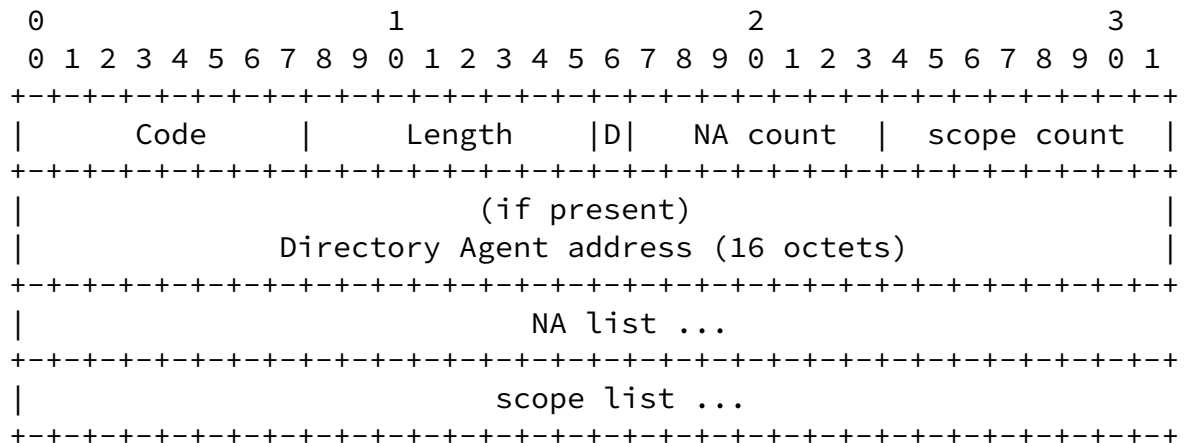
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1. Directory Agent Extension

This extension specifies a Directory Agent (DA) [3], along with zero or more Naming Authorities [2] known to that DA and zero or more scopes supported by that DA.

The code for this extension is 78. Each Naming Authority and each scope MUST be a null-terminated string of ASCII characters. The lengths of the strings are only indicated implicitly by their null termination and the overall length of the extension.



Code 78

Length variable

D If the 'D' bit is set, the Directory Agent address is present.

NA count The number of Naming Authorities indicated by strings in the NA list following.

scope count The number of scopes indicated by strings in the scope list following.

NA list

A list of strings denoting Naming Authorities.

scope list

A list of strings denoting scopes.

Note that more than one Directory Agent extension may be present in a DHCP message. Each such extension may have the same or different lists of Naming Authorities and scopes. The client may request a

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Directory Agent with a particular scope, and/or knowledgeable about schemes defined by a particular Naming Authority, by including the Directory Agent extension in a DHCP Request message with no Directory Agent address included (the 'D' bit set to zero), and the appropriate strings in the NA list and/or scope list.

[2.](#) Service Scope Extension

This extension indicates a scope that should be used by a Service Agent (SA) [[3](#)], when responding to Service Request messages as specified by the Service Location Protocol.

```
Code   Len
+-----+-----+-----+-----
|  79  |  n  | Scope ...
+-----+-----+-----+-----
```

Scope is a null-terminated ASCII string, of length 'n' including the terminating null character.

[3.](#) Naming Authority Extension

This extension indicates a naming authority (which specifies the syntax for schemes that may be used in URLs [[1](#)]) for use by entities with the Service Location Protocol.

```
Code   Len
+-----+-----+-----+-----+-----+-----
|  80  |  n  | Naming Authority ...
+-----+-----+-----+-----+-----+-----
```

Naming Authority is a null-terminated ASCII string, of length 'n' including the terminating null character.

4. Security Considerations

If a malicious host is able to insert fraudulent information in DHCP OFFER packets sent to a prospective client of the Service Location Protocol, then the client will be unable to obtain service, and vulnerable to disclosing information to unauthorized service agents. Likewise, a service agent would find that it might rely on fraudulent or otherwise malicious directory agents to advertise its services. Many opportunities for denial of service exist.

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This difficulty is inherited from the much larger and more serious problem, viz. securing or authenticating any information whatsoever from a DHCP server (or client!) is not possible in common DHCP deployments.

5. Acknowledgements

Thanks to Erik Guttman for his helpful suggestions in the creation of this draft.

References

- [1] T. Berners-Lee, L. Masinter, and M. McCahill. Uniform Resource Locators (URL). [RFC 1738](#), December 1994.
- [2] Paul E. Hoffman and Ron Daniel, Jr. Generic URN Syntax. [draft-ietf-uri-urn-syntax-00.txt](#) -- work in progress, April 1995.
- [3] J. Veizades, E. Guttman, C. Perkins, and S. Kaplan. Service Location Protocol. [draft-ietf-svrloc-protocol-14.txt](#) - work in progress, June 1996.

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