NIS Configuration Options for DHCPv6
draft-ietf-dhc-dhcpv6-opt-nisconfig-05

1. Introduction

This document describes four options for passing configuration information related to Network Information Service (NIS) [3] in DHCPv6 (RFC 3315 [1]).

2. Terminology

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 [2].
Throughout this document, unless otherwise specified, the acronym DHCP refers to DHCP as specified in RFC 3315.

This document uses terminology specific to IPv6 and DHCP as defined in section "Terminology" of RFC 3315.

3. Network Information Service (NIS) Servers Option

The Network Information Service (NIS) Servers option provides a list of one or more IPv6 addresses of NIS servers available to the client. Clients MUST treat the list of NIS servers as an ordered list. The server MAY list the NIS servers in the order of preference.

The format of the Network Information Service Servers option is as shown below:

```
<table>
<thead>
<tr>
<th>NIS server (IPv6 address)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIS server (IPv6 address)</td>
</tr>
<tr>
<td>...</td>
</tr>
</tbody>
</table>
```

option-code: OPTION_NIS_SERVERS (tbd)

option-len: Length of the ‘NIS server’ fields in octets; It must be a multiple of 16

NIS server: IPv6 address of NIS server

4. Network Information Service V2 (NIS+) Servers Option

The Network Information Service V2 (NIS+) Servers option provides a list of one or more IPv6 addresses of NIS+ servers available to the client. Clients MUST treat the list of NIS+ servers as an ordered list. The server MAY list the NIS+ servers in the order of preference.

The format of the Network Information Service V2 (NIS+) Servers option is as shown below:

```
<table>
<thead>
<tr>
<th>NIS server (IPv6 address)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NIS server (IPv6 address)</td>
</tr>
<tr>
<td>...</td>
</tr>
</tbody>
</table>
```

option-code: OPTION_NIS_SERVERS (tbd)

option-len: Length of the ‘NIS server’ fields in octets; It must be a multiple of 16

NIS server: IPv6 address of NIS server
The Network Information Service (NIS) Domain Name Option

The Network Information Service (NIS) Domain Name option is used by the server to convey client’s NIS Domain Name info to the client.

The format of the NIS Domain Name option is as shown below:

```
0 1 2 3 4 5 6 7 8 9 0 1 2 3 4 5 6 7 8 9 0 1
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| OPTION_NIS_DOMAIN_NAME | option-len |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| nis-domain-name |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
| ... |
+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+-+
```

option-code: OPTION_NIS_DOMAIN_NAME (tbd)

option-len: Length of the ‘nis-domain-name’ field in octets

nis-domain-name: NIS Domain name for client

The ‘nis-domain-name’ MUST be encoded as specified in section "Representation and Use of domain names" of the DHCPv6 specification [1].
6. Network Information Service V2 (NIS+) Domain Name Option

The Network Information Service V2 (NIS+) Domain Name option is used by the server to convey client’s NIS+ Domain Name info to the client.

The format of the NIS+ Domain Name option is as shown below:

<table>
<thead>
<tr>
<th>OPTION_NISP_DOMAIN_NAME</th>
<th>option-len</th>
</tr>
</thead>
<tbody>
<tr>
<td>nisp-domain-name</td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
</tr>
</tbody>
</table>

option-code:   OPTION_NISP_DOMAIN_NAME (tbd)

option-len: Length of the ‘nisp-domain-name’ field in octets

nisp-domain-name:   NIS+ Domain name for client

The ‘nisp-domain-name’ MUST be encoded as specified in section "Representation and Use of domain names" of the DHCPv6 specification [1].

7. Appearance of these Options

The NIS servers, NIS+ servers, NIS domain name and NIS+ domain name options MUST NOT appear in other than the following messages: Solicit, Advertise, Request, Renew, Rebind, Information-Request and Reply.

The option number for these options MAY appear in the Option Request Option [1] in the following messages: Solicit, Request, Renew, Rebind, Information-Request and Reconfigure.

8. Security Considerations

The NIS servers, NIS+ servers, NIS domain name and NIS+ domain name options may be used by an intruder DHCPv6 server to assign invalid NIS parameters, resulting in clients unable to use NIS service.

The NIS servers and NIS+ servers options may be used by an intruder DHCPv6 server to cause the DHCPv6 clients to send their queries to an intruder NIS/NIS+ server. This misdirected searches may be used to spoof NIS/NIS+ names.

The NIS domain name and NIS+ domain name options may be used by an intruder DHCPv6 server to cause the DHCPv6 clients to search through invalid domains for incompletely specified domain names. The results of these misdirected searches may be used to spoof NIS/NIS+ names.
To avoid attacks through these options, the DHCPv6 client SHOULD use authenticated DHCP (see section "Authentication of DHCP messages" in the DHCPv6 specification [1]).

9. 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].

<table>
<thead>
<tr>
<th>Option Name</th>
<th>Value</th>
<th>Described in</th>
</tr>
</thead>
<tbody>
<tr>
<td>OPTION_NIS_SERVERS</td>
<td>tbd</td>
<td>Section 3</td>
</tr>
<tr>
<td>OPTION_NISP_SERVERS</td>
<td>tbd</td>
<td>Section 4</td>
</tr>
<tr>
<td>OPTION_NIS_DOMAIN_NAME</td>
<td>tbd</td>
<td>Section 5</td>
</tr>
<tr>
<td>OPTION_NISP_DOMAIN_NAME</td>
<td>tbd</td>
<td>Section 6</td>
</tr>
</tbody>
</table>

10. Normative References


11. Informative References


Author’s Address

Vijayabhaskar A Kalusivalingam
Hewlett-Packard STSD-I
29, Cunningham Road
Bangalore - 560052
India

Phone: +91-80-2053085
E-Mail: vijayak@india.hp.com