

Support for multiple provisioning domains in DHCPv6

draft-kkb-mpvd-dhcp-support-00

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Background

- During the most recent phase of discussion on the architecture document in the design team there was a work item to come up with strawman proposals for mpvd support in DHCPv6 and ND
- This presentation addresses the DHCPv6 extensions and the next one will address the ND protocol extensions

Goals

- Describe how to associate configuration information with provisioning domains
- Describe a mechanism for identifying provisioning domains
- Describe the authentication and authorization issues with the use of mPVDss
 - Generalize the issues and contribute to arch document (done)
 - Work on configuration protocol specific mechanisms

Basic concepts

- The basic construct for compartmentalizing the configuration information per PVD is realized using a container option
 - Encapsulates all configuration information pertaining to a given PVD
 - Multiple PVD containers can occur inside the same DHCPv6 message
 - The PVD identities need to be different though

Container option format

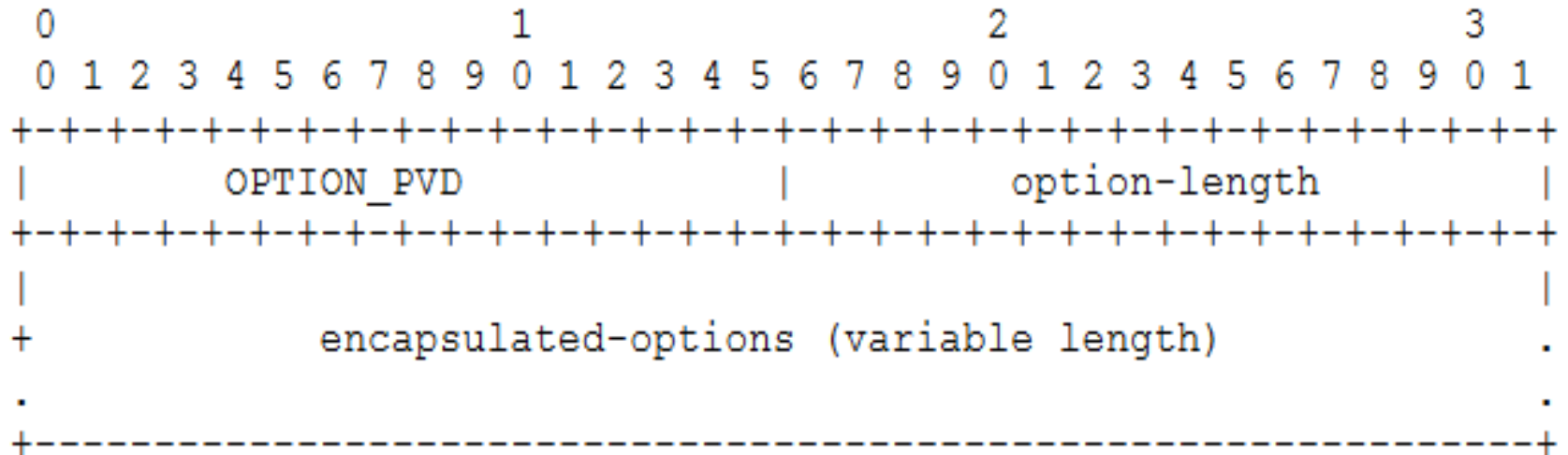


Figure 1: PVD Container Option

Identifying PVDs

- We wanted to have some flexibility on how we identify the PVDs
 - A one-size-fits-all approach didn't seem too likely to be universally acceptable
 - Decided to use a mechanism where we can start of with a few well known types and register new ID types if needed later
- The PVD identity information is carried in a PVD ID option
 - Exactly one PVD ID per PVD container

PVD ID option format

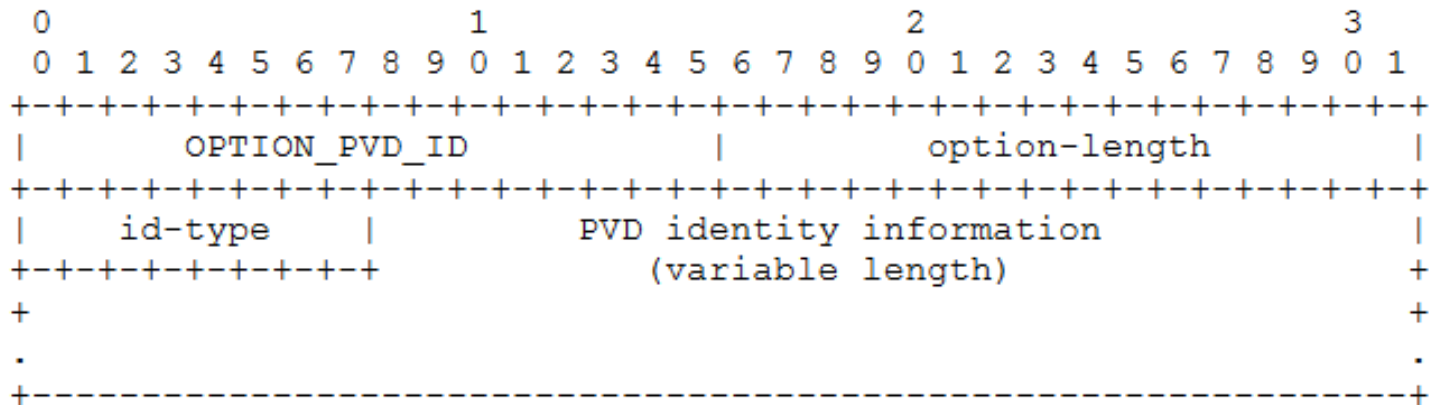


Figure 2: PVD ID Option

- o option-code: OPTION_PVD_ID (TBA2)
- o option-length: Length of PVD identity information + 1
- o id-type: Describes the type of identification information. This document defines four types of PVD identity information
 - 0x01: UUID [[RFC4122](#)]
 - 0x02: UTF-8 string
 - 0x03: OID [[OID](#)]
 - 0x03: NAI Realm [[RFC4282](#)]

Further types can be added by IANA action.

- o PVD identity information: The PVD identification that is based on the id-type.

Authentication/Authorization

- The PVD Auth option is a mechanism for tying the configuration information inside a container to the *original source* of the information
 - Not for authenticating the configuration source (i.e. the DHCPv6 server)
- Strive to use a common mechanism for DHCPv6 and RA
 - Propose to reuse mechanisms specified for SeND (RFC6494/RFC6495)

PVD Auth option format

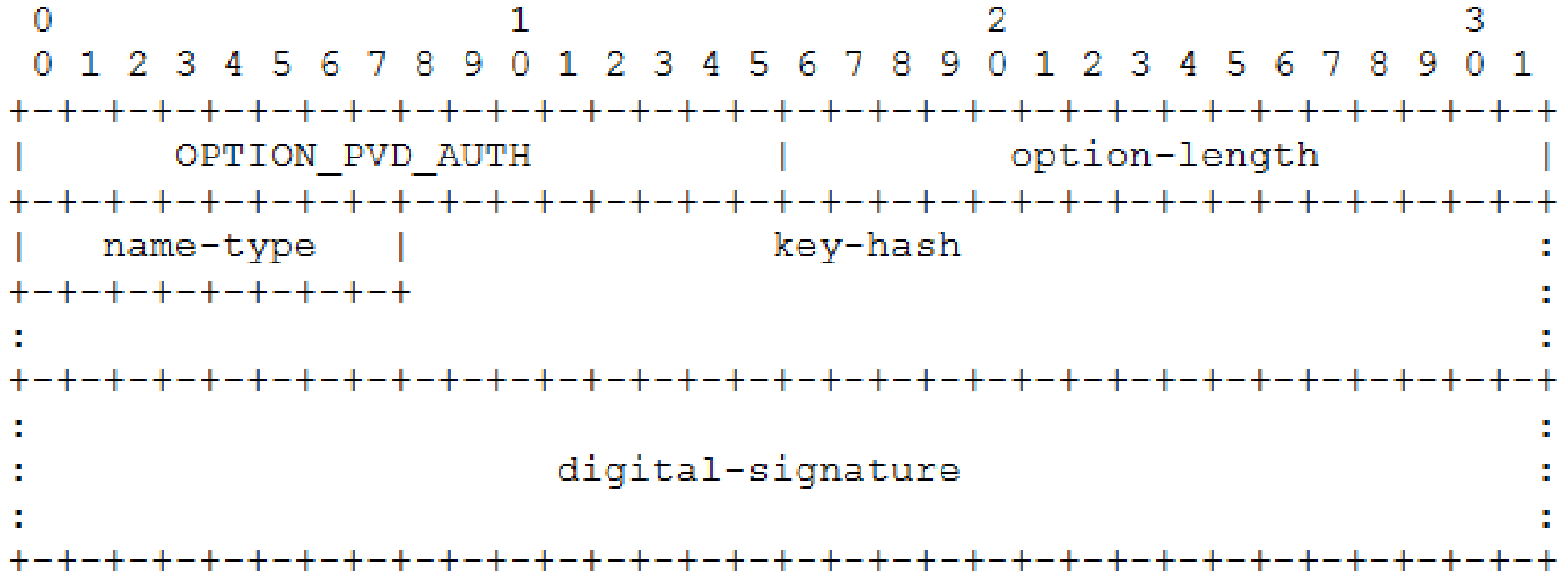


Figure 3: PVD Auth Option

Features

- Backward compatible
 - Clients indicate support using an ORO
 - Legacy clients will not request this option
 - Legacy servers will ignore option
- Allows clients to request information for selected pvds by including one or more `OPTION_PVD_IDS`
 - Default is to provide info for all available PVDs

Next steps

- Work on Dmitry's comments
- Work on the authentication/authorization piece further
- Other changes necessitated by arch document and charter discussions
- Get dhc working group review