            Network Services Header Context Allocation Identifier
                draft-vandevelde-sfc-nsh-length-overload-00

Abstract

   The specification of the NSH MD Type 1 header [draft-ietf-sfc-nsh]
   mandates four Context Headers, 4-byte each, and they MUST be added
   immediately following the Service Path Header. As direct
   consequence, an NSH MD Type 1 header is always Length 0x6 (six 4-byte
   words). As a result, the Length field of the NSH MD Type 1 header
   provides an information which is known by simply looking at the "MD
   Type" field. However, while [draft-ietf-sfc-nsh] does not specify
   the encoding of these Context Headers, other specifications have
   started to do so. A need to distinguish types of Context Headers
   therefore arises.

   This draft proposes to overload the Length field of an NSH MD Type 1
   as Meta-Data context allocation identifier and to create a IANA
   repository for NSH MD Type 1 allocation schemes. The NSH MD Type 1
   Length field overload intends to allow universal understanding at any
   network location and by any network device of the context allocation
   structure.

Requirements Language

   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 [1].

Status of This Memo

   This Internet-Draft is submitted in full conformance with the
   provisions of BCP 78 and BCP 79.

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material or to cite them other than as "work in progress."

This Internet-Draft will expire on April 20, 2017.

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1. Introduction

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mandates four Context Headers, 4-byte each, and they MUST be added
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Length field overload intends to allow universal understanding at any network location and by any network device of the context allocation structure.

The capability of overloading the NSH MD Type 1 Length field as context allocation identifier is particular useful in networks environments where multiple different NSH MD Type 1 allocation schemes exist simultaneously. For example in Datacenters where data-flows are serviced and allocations are based upon either [draft-guichard-sfc-nsh-dc-allocation] or [draft-napper-sfc-nsh-broadband-allocation]. Without Length field overload, it is for a servicing node non-trivial to know how the NSH Meta Data is structured and how the Meta Data should be consumed without provisioning of additional context information to understand the NSH embedded Meta-Data.

In addition, this document serves as anchor-point to request an IANA repository for NSH MD Type 1 allocation schemes.

2. Operation

The Length field in the NSH Base header intends to provide the length of the NSH header including the Base header itself in 4-byte words. According [draft-ietf-sfc-nsh] the NSH MD Type 1 the value within the Length field MUST always be 0x6.

This note proposes a different usage for the length field taking backward compatibility into account. This draft proposes to use the Length field of a fixed length NSH MD Type 1 header as indication of the Meta Data allocation scheme. The allocation scheme context overloading of the length field does not modify the fixed length of the NSH MD Type 1 fields and expected Meta Data fields is fixed at four words of 4-byte data.

The different from 0x6 value represents the Meta Data allocation scheme used for the NSH MD Type 1 header. To avoid compatibility issues with older NSH MD Type implementations the Length value of 0x6 is reserved and allows existing NSH MD Type 1 usage to carry opaque Meta Data.

The following MD allocation types have been defined:

0x0: draft-guichard-sfc-nsh-dc-allocation

0x1: draft-napper-sfc-nsh-broadband-allocation

0x6: draft-ietf-sfc-nsh

3. Security Considerations

   tbc

4. Acknowledgements

   tbc

5. IANA Considerations

   This document requests IANA to setup a central repository to keep
   track of the different NSH MD Type 1 allocation schemes

6. References

6.1. Normative References

   [1]   Bradner, S., "Key words for use in RFCs to Indicate
             Requirement Levels", BCP 14, RFC 2119,
             DOI 10.17487/RFC2119, March 1997,
             <http://www.rfc-editor.org/info/rfc2119>.

6.2. Informative References

   [2]   Halpern, J., Ed. and C. Pignataro, Ed., "Service Function
             Chaining (SFC) Architecture", RFC 7665,
             DOI 10.17487/RFC7665, October 2015,
             <http://www.rfc-editor.org/info/rfc7665>.

Authors' Addresses

   Gunter Van de Velde (editor)
   Nokia
   Antwerp
   Belgium

   Email: gunter.van_de_velde@nokia.com

   Martin Vigoureux
   Nokia
   Route de Villejust
   Nozay 91620
   France

   Email: martin.vigoureux@nokia.com

Praveen Mulay
Nokia
Mountain View
USA

Email: praveen.muley@nokia.com