

SFC Working Group
Internet-Draft
Intended status: Standards Track
Expires: April 20, 2017

G. Van de Velde, Ed.
M. Vigoureux
P. Mulay
Nokia
October 17, 2016

Network Services Header Context Allocation Identifier
draft-vandeveld-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](#)].

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[1.](#) Introduction

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

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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

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[4.](#) Acknowledgements

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[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

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Praveen Muley
Nokia
Mountain View
USA

Email: praveen.muley@nokia.com

