

MPLS
Internet-Draft
Intended status: Standards Track
Expires: September 6, 2010

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March 5, 2010

Definition of ACH TLV Structure
draft-ietf-mpls-tp-ach-tlv-02

Abstract

In some application of the associated channel header (ACH), it is necessary to have the ability to include a set of TLVs to provide additional context information for the ACH payload. This document defines a number of TLV types.

This document is a product of a joint Internet Engineering Task Force (IETF) / International Telecommunications Union Telecommunications Standardization Sector (ITU-T) effort to include an MPLS Transport Profile within the IETF MPLS and PWE3 architectures to support the capabilities and functionalities of a packet transport network as defined by the ITU-T.

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 [RFC2119](#) [1].

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1. Introduction

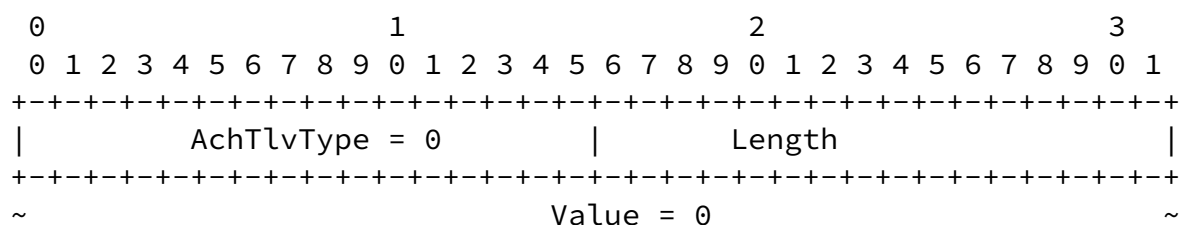
The MPLS generic associated channel header specification [6] (GACH) describes a TLV structure that is used to provide additional context information for the ACH payload. This document defines a number of TLVs that are required by the MPLS-TP design [7], [8].

2. ACH TLV Object Definitions

This section provides the definition for a number of ACH TLV objects. In each case the length in the TLV header is the length of only the value component.

2.1. The Null TLV Object

The Null TLV provides an OPTIONAL mechanism of restoring 32bit alignment of the following element in the packet and also provides an OPTIONAL mechanism to reserve space in the packet to be used by TLV objects that will be written by LSR that perform some operation on the packet at a later time. For security reasons the value must be zero.



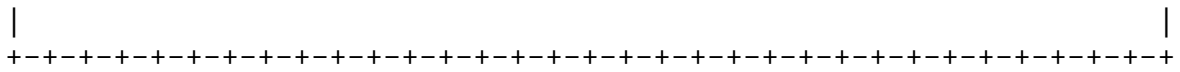


Figure 1: Null TLV Object

2.2. IPv4 Source Address

This TLV specifies the IPv4 [2] source address (SAv4) of an ACH packet.

Where the packet is associated with a maintenance request/response operation it refers to the requester of the operation, i.e. It is the address of the Maintenance End Point that initiated the operation being either requested, or is being responded to.

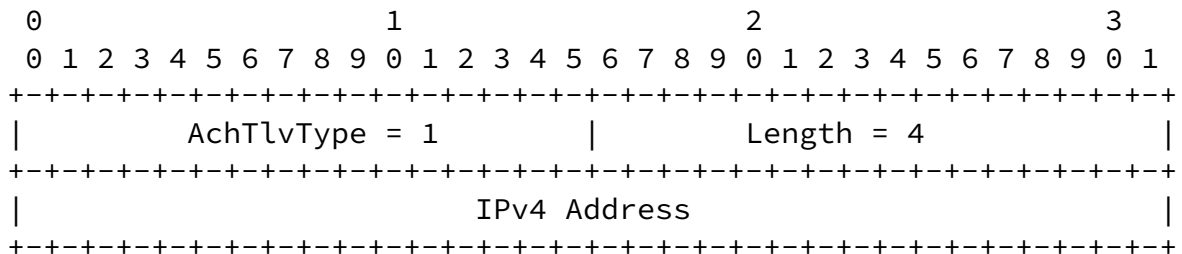


Figure 2: IPv4 Source Address

2.3. IPv6 Source Address

This TLV specifies the IPv6 [3] source address (SAv6) of an ACH packet.

Where the packet is associated with a maintenance request/response operation it refers to the requester of the operation, i.e. It is the address of the Maintenance End Point that initiated the operation being either requested, or is being responded to.

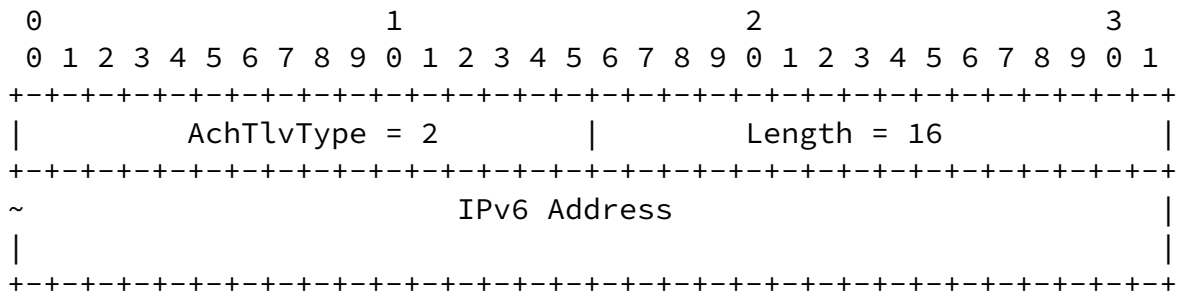


Figure 3: IPv4 Source Address

2.4. ITU-T Carrier Code

This TLV is used to carry an ITU-T Carrier Code Identifier (ICC) as defined in M.1400 [4].

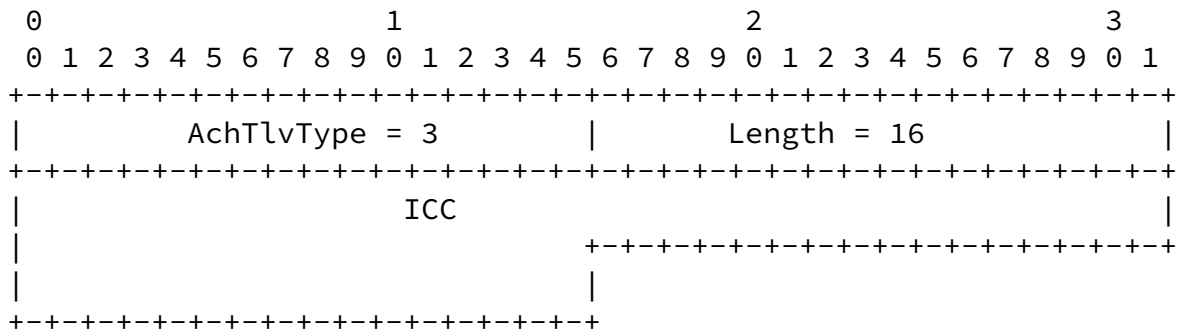


Figure 4: ITU-T Carrier Code

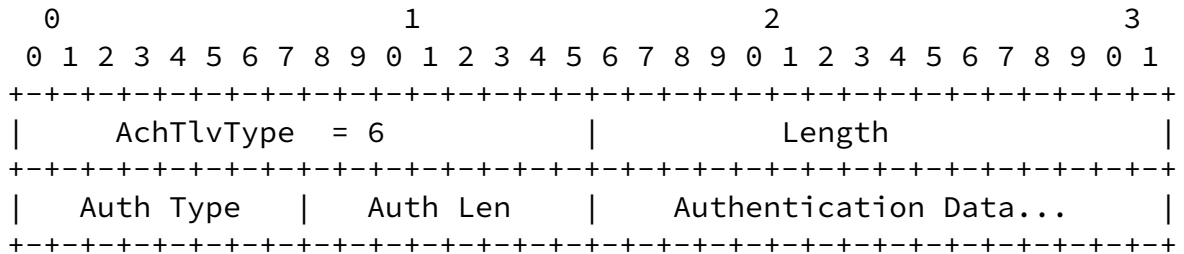
The ICC is encoded in ASCII in a fixed format 6 byte field, with unused trailing bytes set to NULL (0).

+-----+

Figure 6: IF_ID TLV

2.7. Authentication

The structure of the ACH authentication (auth) TLV is as follows:



The authentication procedures and data format used is the same as that defined in Sections [4.1](#), [4.2](#), [4.3](#) and [4.4](#) of [9].

Each document which defines a channel type needs to define whether an authentication TLV is required, permitted, or disallowed, and the actions to be taken in normal and error situations.

An application not supporting data origin authentication MAY use this mechanism instead of defining its own proprietary mechanism.

3. Security Considerations

This specification defines a mechanism to identify a set of protocol parameters. The necessary security considerations will be described in the definition of the protocols that uses these parameters.

4. IANA Considerations

IANA is requested to create a new registry in the pseudowire name spaces: the ACH TLV Registry.

The ACH TLV Registry should be initialized with the following

entries. The allocation policy for this registry is IETF consensus.

Name	Type	Length (octets)	Description	Reference
Null	0	3	Null TLV	This Draft
SAv4	1	4	IPv4 Source Address	This Draft
SAv6	2	16	IPv6 Source Address	This Draft
ICC	3	6	ITU-T Carrier Code	This Draft
Global_ID	4	4	Global Identifier	This Draft
IF_ID	5	8	Network Interface ID	This Draft
Auth	6	var	Authentication	This Draft

[5.](#) References

[5.1.](#) Normative References

- [1] Bradner, S., "Key words for use in RFCs to Indicate Requirement Levels", [BCP 14](#), [RFC 2119](#), March 1997.
- [2] Postel, J., "Internet Protocol", STD 5, [RFC 791](#), September 1981.
- [3] Deering, S. and R. Hinden, "Internet Protocol, Version 6 (IPv6) Specification", [RFC 2460](#), December 1998.
- [4] "ITU-T Recommendation M.1400, "Designations for interconnections among operators' networks"", 2006.
- [5] Bocci, M. and G. Swallow, "MPLS-TP Identifiers", [draft-ietf-mpls-tp-identifiers-00](#) (work in progress), November 2009.

[5.2.](#) Informative References

- [6] Bocci, M., Vigoureux, M., and S. Bryant, "MPLS Generic Associated Channel", [RFC 5586](#), June 2009.
- [7] Niven-Jenkins, B., Brungard, D., Betts, M., Sprecher, N., and S. Ueno, "Requirements of an MPLS Transport Profile", [RFC 5654](#), September 2009.
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