Abstract

The Resource reSerVation Protocol (RSVP) ASSOCIATION object allows to create association across RSVP path states or across Resv states. Two association types are currently defined: recovery and resource sharing. This document defines a new association type called "Resource Sharing Remote Identification". It can be used by the sender to convey to the receiver the information that can then be used by the receiver to identify a downstream initiated resource sharing association.

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Table of Contents

1. Introduction .................................................. 3
   1.1. Conventions Used in This Document ...................... 4
3. Security Considerations ....................................... 7
4. IANA Considerations ........................................... 8
   4.1. Resource Sharing Remote Identification Association Type 8
5. Acknowledgments ................................................ 9
6. References ..................................................... 10
   6.1. Normative References ...................................... 10
   6.2. Informative References .................................... 10
Authors’ Addresses ................................................. 11
1. Introduction

The notion of association as well as the corresponding RSVP ASSOCIATION object are defined in [RFC4872] and [RFC4873] in the context of GMPLS (Generalized Multi-Protocol Label Switching) controlled label switched paths (LSPs). In this GMPLS context, the object is used to associate recovery LSPs with the LSP they are protecting ([I-D.ietf-ccamp-assoc-info]). This object also has broader applicability as a mechanism to associate RSVP state, and [I-D.ietf-ccamp-assoc-ext] defines how the ASSOCIATION object can be more generally applied.

[RFC4872] defines the IPv4 ASSOCIATION object and the IPv6 ASSOCIATION object. In addition, [I-D.ietf-ccamp-assoc-ext] defines the Extended IPv4 ASSOCIATION object and the Extended IPv6 ASSOCIATION object. These four forms of the ASSOCIATION object contain an Association Type field that indicates the type of association being identified by the ASSOCIATION object. For example, Figure 1 illustrates the format of the IPv4 ASSOCIATION object.

![IPv4 ASSOCIATION object format](image)

[RFC4872] and [RFC4873] define two association types: recovery and resource sharing. Recovery type association is only applicable within the context of recovery ([RFC4872], [RFC4873], [I-D.ietf-ccamp-assoc-info]). Resource sharing is useful in multiple contexts and its general use is defined in section 2.3.1 of [I-D.ietf-ccamp-assoc-ext]. For non-recovery usage (for example for resource sharing), [I-D.ietf-ccamp-assoc-ext] defines, in section 2, the notion of upstream initiated association and downstream initiated association. Upstream initiated association is represented in ASSOCIATION objects carried in Path messages and can be used to associate RSVP Path state across MPLS Tunnels or RSVP sessions. Downstream initiated association is represented in ASSOCIATION objects carried in Resv messages and can be used to associate RSVP Resv state across MPLS Tunnels or RSVP sessions.
This document defines a new association type called "Resource Sharing Remote Identification".

1.1. Conventions Used in This Document

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].
2. Resource Sharing Remote Identification Association

We define here a new association type called the Resource Sharing Remote Identification.

The Resource Sharing Remote Identification association type can be used with the IPv4 ASSOCIATION object and the IPv6 ASSOCIATION object defined in [RFC4872] as well as with the Extended IPv4 ASSOCIATION object and the Extended IPv6 ASSOCIATION object defined in [I-D.ietf-ccamp-assoc-ext].

The Resource Sharing Remote Identification association is only defined for use in upstream initiated association. Thus it can only appear in ASSOCIATION objects signaled in Path messages.

The Resource Sharing Remote Identification association can be used by the sender to convey to the receiver (inside the Association Source and Association ID fields), information that can then be used by the receiver to identify an upstream initiated resource sharing association. This is useful in upstream initiated resource sharing applications where the identification of the resource sharing association is not known a priori by the receiver, and instead is known by the sender (for example because the sender is in a better position to assign the association identification necessary to implement the desired resource sharing across RSVP sessions).

[I-D.ietf-ccamp-assoc-ext] discusses the rules associated with the processing of ASSOCIATION objects in RSVP messages. In addition to generic rules applicable to all association types, a given association type may define type-specific processing rules. The following type-specific association rule is defined for the Resource Sharing Remote Identification association type:

- The Resource Sharing Remote Identification association does not create any association across Path states.

This is because the purpose of signaling an Resource Sharing Remote Identification association in the downstream direction is purely to convey identification information from the sender to the receiver that can be used by the receiver to establish an upstream initiated resource sharing association.

Any implementation of the present specification MUST support the Resource Sharing Remote Identification association.

On receipt of an ASSOCIATION object whose association type is Resource Sharing Remote Identification, the receiver MAY use the association identification information contained in the received
ASSOCIATION object as the association identification information in an upstream initiated resource sharing association.

On receipt of an ASSOCIATION object whose association type is Resource Sharing Remote Identification, an RSVP receiver proxy as defined in [RFC5945], SHOULD initiate an upstream initiated Resource Sharing association whose association identification information is copied from the received ASSOCIATION object. This behavior MAY be overridden by local policy on the receiver proxy.
3. Security Considerations

TBD.
4. IANA Considerations

IANA is requested to administer assignment of new values for namespaces in accordance with codepoints defined in this document and summarized in this section.

4.1. Resource Sharing Remote Identification Association Type

This document defines, in Section 2, a new association type. Thus, IANA is requested to allocate the following entry in the Association Type registry found at http://www.iana.org/assignments/gmpls-sig-parameters/:

3 Resource Sharing Remote Identification (I) [this-document]

There are no other IANA considerations introduced by this document.
5. Acknowledgments

We thank Lou Berger for his guidance in this work and in particular with respect to aligning it with the related CCAMP work on Association.
6. References

6.1. Normative References

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6.2. Informative References

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