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Replication Policy for Redundant Protection draft-geng-spring-redundancy-policy-00

Abstract

Redundancy protection is a method of service protection by sending copies of the same packets of one flow over multiple paths, which includes packet replication, elimination and ordering. This document defines redundancy policy as an extension to the current SR policy to support redundancy protection.

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 .

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[1.](#) Introduction

Redundancy protection is a method of providing 1+1 protection by sending copies of the same packets of one flow over multiple paths, which includes packet replicaion, elimination and ordering. This document defines redundancy policy to support redundancy protection.

[2.](#) Terminology and Conventions

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](#)].

Redundancy Node: the start point of redudancy protection, which is a network device that could implement packet replication.

Merging Node: the end point of redudancy protection, which is a network node that could implement packet elimination and ordering(optional).

Redundancy Policy: an extended sr policy which includes more than one active segment lists to support redudancy protection.

Editor's Note: Similar mechanism is defined as "Service Protection" in the [[RFC8655](#)]. In this document, we define a new term "Redundancy Protection" to distinguish with other service protection method. Some of the terms are the similar as [[RFC8655](#)].

In this document, we introduces Redundancy Policy as a variation of Segment Routing Policy defined in [\[I-D.ietf-spring-segment-routing-policy\]](#) to support redundancy protection. Redundancy policy applys equally to both SR-MPLS and SRv6.

The following elements are extended in Redundancy Policy:

- o Redundancy ID: is used to distinguish different redundancy policy
- o Redundancy SID: is variation of Binding SID for Redundancy policy. Redundancy SID will be instantiated as Redundancy Policy in redundancy node. Redundancy SID is define in [draft-geng-spring-redundancy-protection-sid-00](#)
- o Candidate path: more than one candidate paths are included in redundancy policy. In each candidate path, the last segment SHOULD be merging SID. Merging SID is defined in [draft-geng-spring-redundancy-protection-sid-00](#). The preference of the candidate path is used to select the best candidate path for an SR Policy. The preference of candidate paths in redundancy policy SHOULD be the same .

A packet is steered into a Redundancy policy at a redundancy node in similar ways of SR policy defined in section 8 of [\[I-D.ietf-spring-segment-routing-policy\]](#):

- o Incoming packets have an active SID matching the redundancy SID at the redundancy node;
- o Incoming packets match a BGP/Service route which recurses on an SR policy (BGP should be extended to support matching to a redundancy policy, which is supposed to be covered in the following work);
- o Per-flow Steering: incoming packets match or recurse on a forwarding array of where some of the entries are Rplication Policy.
- o Policy-based Steering: incoming packets match a routing policy which directs them on a redundancy policy.

[5. IANA Considerations](#)

TBD

[6. Security Considerations](#)

TBD

[7. Acknowledgements](#)

Thank you for valuable comments from James Guichard and Andrew Mail

8. Normative References

- [I-D.ietf-spring-segment-routing-policy]
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