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SCTP Socket API Extensions for Concurrent Multipath Transfer
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Abstract

This document describes extensions to the SCTP sockets API for configuring the CMT-SCTP and CMT/RP-SCTP extensions.

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1. Introduction

This draft describes extensions to the SCTP sockets API (see [RFC6458], [RFC4960]) which allow an application to configure the behaviour of the Concurrent Multipath Transfer (CMT) extensions CMT-SCTP, CMT/RPv1-SCTP, CMT/RPv2-SCTP and MPTCP-like (see [I-D.tuexen-tsvwg-sctp-multipath], [Globecom2010], [PAMS2012], [Dre2012], [PAMS2011], [SoftCOM2011], [ConTEL2011], [AINA2010], [IAS2006]).

2. Concurrent Multipath Transfer and Resource Pooling Activation/Deactivation (SCTP_CMT_ON_OFF)

This socket option activates or deactivates CMT and sets the corresponding Resource Pooling variant to be applied. The sctp_assoc_value structure is used to specify the association for which the CMT state should be changed and the new CMT state.

Definition of the sctp_assoc_value structure:

```
struct sctp_assoc_value {
   sctp_assoc_t assoc_id;
   uint32_t     assoc_value;
};
```

assoc_id: Holds the identifier for the association of which the CMT state should be changed. Ignored for one-to-one style sockets.

assoc_value:

0 Turns CMT off.

1 Turns plain CMT-SCTP on. No Resource Pooling is applied.

2 Turns CMT-SCTP on. CMT/RPv1 Resource Pooling as defined in [AINA2010] is applied.

3 Turns CMT-SCTP on. CMT/RPv2 Resource Pooling as defined in [ConTEL2011] is applied.

4 Turns CMT-SCTP on. MPTCP-like Resource Pooling as defined in [SoftCOM2011], [ConTEL2011], [PAMS2012] is applied.

3. Testbed Platform

A large-scale and realistic Internet testbed platform with support for the multi-homing feature of the underlying SCTP protocol is NorNet. A description of NorNet is provided in [PAMS2013-NorNet], [ComNets2013-Core], some further information can be found on the project website [NorNet-Website].

4. Security Considerations

Security considerations for the SCTP sockets API are described by [RFC6458].

5. IANA Considerations

This document does not require IANA actions.

6. Acknowledgments

The authors would like to thank Michael Tuexen for his support.

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