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# SCTP Socket API Extensions for Concurrent Multipath Transfer

## 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 [2], [1]) 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 [3], [10], [5], [4], [7], [6], [8], [9], [11]).

## 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 [9] is applied.

**3** Turns CMT-SCTP on. CMT/RPv2 Resource Pooling as defined in [8] is applied.

**4** Turns CMT-SCTP on. MPTCP-like Resource Pooling as defined in [6], [8], [5] 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 [12], [13], some further information can be found on the project website [14].

## 4. Security Considerations

Security considerations for the SCTP sockets API are described by [2].

## 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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