

SCTP Terminology

These document uses certain terms and abbreviations that have a special meaning which is defined in [RFC2960](#) , and may be confusing at first. Take, e.g. a connection between two SCTP instances, which has been named an **SCTP association**. Most of these terms are explained here. In case you are missing something (or we have missed something) please contact us. For addresses see below.

SCTP Key Terms

These terms are taken straight from the [RFC2960](#) .

Active destination transport address

A transport address on a peer endpoint which a transmitting endpoint considers available for receiving user messages.

Bundling

An optional multiplexing operation, whereby more than one user message may be carried in the same SCTP packet. Each user message occupies its own DATA chunk.

Chunk

A unit of information within an SCTP packet, consisting of a chunk header and chunk-specific content.

Congestion Window (cwnd)

An SCTP variable that limits the data, in number of bytes, a sender can send to a particular destination transport address before receiving an acknowledgement.

Cumulative TSN Ack Point

The TSN of the last DATA chunk acknowledged via the Cumulative TSN Ack field of a SACK.

Idle destination address

An address that has not had user messages sent to it within some length of time, normally the HEARTBEAT interval or greater.

Inactive destination transport address

An address which is considered inactive due to errors and unavailable to transport user messages.

Message Authentication Code (MAC)

An integrity check mechanism based on cryptographic hash functions using a secret key. Typically, message authentication codes are used between two parties that share a secret key in order to validate information transmitted between these parties. In SCTP it is used by an endpoint to validate the State Cookie information that is returned from the peer in the COOKIE ECHO chunk. The term "MAC" has different meanings in different contexts. SCTP uses this term with the same meaning as in [RFC2104](#).

Ordered Message

A user message that is delivered in order with respect to all previous user messages sent within the stream the message was sent on.

Outstanding TSN (at an SCTP endpoint)

A TSN (and the associated DATA chunk) that has been sent by the endpoint but for which it has not yet received an acknowledgement.

Path

The route taken by the SCTP packets sent by one SCTP endpoint to a specific destination transport address of its peer SCTP endpoint. Sending to different destination transport addresses does not necessarily guarantee getting separate paths.

Primary Path

The primary path is the destination and source address that will be put into a packet outbound to the peer endpoint by default. The definition includes the source address since an implementation MAY wish to specify both destination and source address to better control the return path taken by reply chunks and on which interface the packet is transmitted when the data sender is multi-homed.

Receiver Window (rwnd)

An SCTP variable a data sender uses to store the most recently calculated receiver window of its peer, in number of bytes. This gives the sender an indication of the space available in the receiver's inbound buffer.

SCTP association

A protocol relationship between SCTP endpoints, composed of the two SCTP endpoints and protocol state information including Verification Tags and the currently active set of Transmission Sequence Numbers (TSNs), etc. An association can be uniquely identified by the transport addresses used by the endpoints in the association. Two SCTP endpoints MUST NOT have more than one SCTP association between them at any given time.

SCTP endpoint

The logical sender/receiver of SCTP packets. On a multi-homed host, an SCTP endpoint is represented to its peers as a combination of a set of eligible destination transport addresses to which SCTP packets can be sent and a set of eligible source transport addresses from which SCTP packets can be received. All transport addresses used by an SCTP endpoint must use the same port number, but can use multiple IP addresses. A transport address used by an SCTP endpoint must not be used by another SCTP endpoint. In other words, a transport address is unique to an SCTP endpoint.

SCTP packet

The unit of data delivery across the interface between SCTP and the connectionless packet network (e.g., IP). An SCTP packet includes the common SCTP header, possible SCTP control chunks, and user data encapsulated within SCTP DATA chunks.

SCTP user application

The logical higher-layer application entity which uses the services of SCTP, also called the Upper-layer Protocol (ULP).

Slow Start Threshold (ssthresh)

An SCTP variable. This is the threshold which the endpoint will use to determine whether to perform slow start or congestion avoidance on a particular destination transport address. Ssthresh is in number of bytes.

Stream

A uni-directional logical channel established from one to another associated SCTP endpoint, within which all user messages are delivered in sequence except for those submitted to the unordered delivery service.

Stream Sequence Number

A 16-bit sequence number used internally by SCTP to assure sequenced delivery of the user messages within a given stream. One stream sequence number is attached to each user message.

Transmission Sequence Number (TSN)

A 32-bit sequence number used internally by SCTP. One TSN is attached to each chunk containing user data to permit the receiving SCTP endpoint to acknowledge its receipt and detect duplicate deliveries.

Transport address

A Transport Address is traditionally defined by Network Layer address, Transport Layer protocol and Transport Layer port number. In the case of SCTP running over IP, a transport address is defined by the combination of an IP address and an SCTP port number (where SCTP is the Transport protocol).

Unacknowledged TSN (at an SCTP endpoint)

A TSN (and the associated DATA chunk) which has been received by the endpoint but for which an acknowledgement has not yet been sent. Or in the opposite case, for a packet that has been sent but no acknowledgement has been received.

Unordered Message

Unordered messages are "unordered" with respect to any other message, this includes both other unordered messages as well as other ordered messages. Unordered message might be delivered prior to or later than ordered messages sent on the same stream.

Verification Tag

A 32 bit unsigned integer that is randomly generated. The Verification Tag provides a key that allows a receiver to verify that the SCTP packet belongs to the current association and is not an old or stale packet from a previous association.

Abbreviations

The following list of abbreviations is also largely taken from [RFC2960](#) .

MAC

Message Authentication Code

RTO

Retransmission Time-out

RTT

Round-trip Time

RTTVAR

Round-trip Time Variation

SCTP

Stream Control Transmission Protocol

SRTT

Smoothed RTT

TCB

Transmission Control Block

TLV

Type-Length-Value Coding Format

TSN

Transmission Sequence Number

ULP

Upper-layer Protocol