Using SCTP as a Transport for HTTP
(draft-natarajan-http-over-sctp-01)

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Draft Objectives

- Highlight SCTP services that better suit HTTP's needs

- Propose HTTP over SCTP streams design

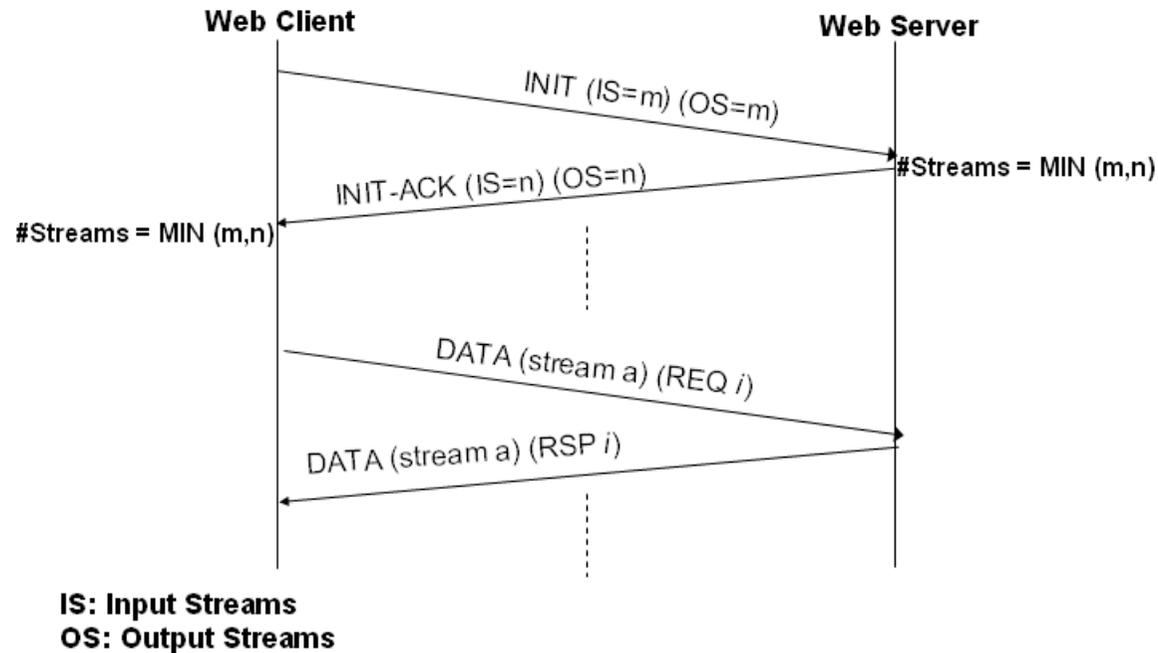- Share implementation experience

- List open issues

SCTP Services for HTTP

- Multistreaming eliminates inter-object HOL blocking
- Cookie mechanism enables more secure association establishment
- Multihoming improves fault-tolerance
- Partial reliability
- Unordered data delivery
- Preservation of message boundaries

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Currently NOT used in proposed design

Design Proposal

Web Client   **Web Server**

INIT (IS=m) (OS=m)

#Streams = MIN (m,n)

INIT-ACK (IS=n) (OS=n)

#Streams = MIN (m,n)

DATA (stream a) (REQ i)

DATA (stream a) (RSP i)

IS: Input Streams
OS: Output Streams

- Objectives
  - Make no changes to the existing HTTP specification
  - Minimize SCTP-related state information at the server
- Implementations in Apache and Firefox

*P. Natarajan et. al., SCTP: An Innovative Transport Layer Protocol for the Web, 15th Intl. Conf. on WWW, 05/2006.

*P. Natarajan et. al., Multistreamed Web Transport for Developing Regions,
ACM SIGCOMM Workshop on Networked Systems for Developing Regions (NSDR), 08/2008.

Open Issues

- How does a web client choose between SCTP vs. TCP?

  1. Try both; Use whichever connection is established first
  2. SRV based solution
  3. New URI for SCTP "http-sctp://"

- NAT Issues

  – draft-ietf-behave-sctpnat