PPSP Base Tracker Protocol

draft-ietf-ppsp-base-tracker-protocol

PPSP WG

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Changes in -01

- **Review of Terminology**,
  - To follow PPSP Problem Statement.
  - Some new definitions added (PEER LIST, CHUNK ID, PPSP-TP, SEGMENT CHUNK, TRANSACTION ID).
  - Other definitions moved to Appendix C.
  - Some definitions removed (not referenced in text).
- The **description of CONNECT** was updated to clarify the information recorded and maintained by the tracker related with Peer addressing, location and activity mode in the swarms.
- **PeerNum** element restricted to a maximum value of 30,
  - maximum number of entries to be returned in a Peer List
  - in binary format, the message size becomes smaller than 1 KiB, fitting in a single TCP packet
- Complementary **information on incentive mechanisms** added.
- **Operations and Manageability** section completed.

Protocol Overview

- The Base Tracker Protocol uses two messages for the operation:

  - a **CONNECT** Request message to "register" and/or request actions on swarm(s) of streaming contents;

  - a **STAT-REPORT** Request message to periodically inform the Tracker about its status and supply statistic information;

- To terminate all its activity in the P2P streaming service the Peer may:

  - Send a CONNECT Requesting action to LEAVE swarm(s);
  - Stop sending periodic STAT_REPORT;

Request Messages

- **CONNECT**:
  - used when a Peer first "registers" to the system and request "actions" on swarms;
  - if already registered, to request further "actions" on swarms;
    - The Peer provides its Peer-ID, and the IP addresses on its interfaces (IPv4, IPv6).
    - The Peer provides "actions" on one or more swarm(s)
    - The Tracker records the Peer-ID, connect-time, peer IP addresses and link status.
    - The tracker checks if Peer is LEECH or SEED in swarm "actions" requested and updates the Peer-ID to the peer lists.
  - The method allows a security layer to be established between the Peer and the Tracker.

Request Messages

- **STAT_REPORT**:
    - used by a Peer to inform the Tracker on statistic data and status:
        - Is initiated by the peer, periodically while active.
        - May contain activity statistics.
    - When not including statistics data, behaves as a **keep-alive** signal to the tracker.

Extensions and Implementation

- The protocol is designed such that it can be extended for enhanced functionalities

- Guidelines for extending are provided in the draft

- An Extension was already submitted as:
  - draft-huang-ppsp-extended-tracker-protocol

- Reference implementation in **C language**

Comments are welcomed!

THANK YOU !