PPSP Base Tracker Protocol

draft-ietf-ppsp-base-tracker-protocol

PPSP WG

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Changes in -02

- **Appendix D (Implementation Options) added**,
  - All references to formats, encoding and encapsulation of Tracker Protocol messages removed from draft body to this Appendix.

- The **description of a FIND Request** was inserted.
  - As requested during IETF 87 meeting
  - All figures and tables updated to include the description, syntax and semantics of FIND.

Protocol Overview

- The Base Tracker Protocol uses three 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;

  - a **FIND** Request message for peer lists (updates) from the Tracker;

- 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.

Request Messages

- **FIND**:
  - used by a Peer to to request to the tracker a list of peers active in the swarm:
    - Is initiated by the peer, whenever needed.
    - the tracker takes peer status, capabilities and priority into consideration (determined by network topology preference, operator policy preference, etc.).
  - includes a **PeerNum** element to indicate the maximum number of peers returned in the list (scoped by the attributes in PeerNum).
  - If no **PeerNum** attributes in the request, a random sample from the peer population is returned

Extensions and Implementation

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

- Guidelines for extending are provided in the draft

- Reference implementation in **C language**

Extensions and Implementation

- An Extension was submitted as:
  - draft-huang-ppsp-extended-tracker-protocol
- The Extension considers:
  - Request-Response extensions:
    - **CONNECT**, **FIND** and **STAT_REPORT** messages are extended to include information on media content scopes
  - Protocol extension:
    - A **DISCONNECT** Request message to provide a graceful disconnect from the system

Comments are welcomed!

THANK YOU !