Usage of PPSP System

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Content

- **Usage Overview**

- **Parameter Setting Progress**

- **Further Limitations and Gaps**

Usage Overview

- Describe the normal operations of PPSP system based on the Tracker Protocol 1.0 and the Peer Protocol

- Parameters suggestions for PPSP system

- Limitations and gaps analysis for making it better

Content

- **Usage Overview**
- **Parameter Setting Progress**
- **Further Limitations and Gaps**

Research Roadmap

- Tracker and Peer Protocol Implementation

- PPSP System Building

    -- Simulation: Oversim, Peersim

    -- Real Testing

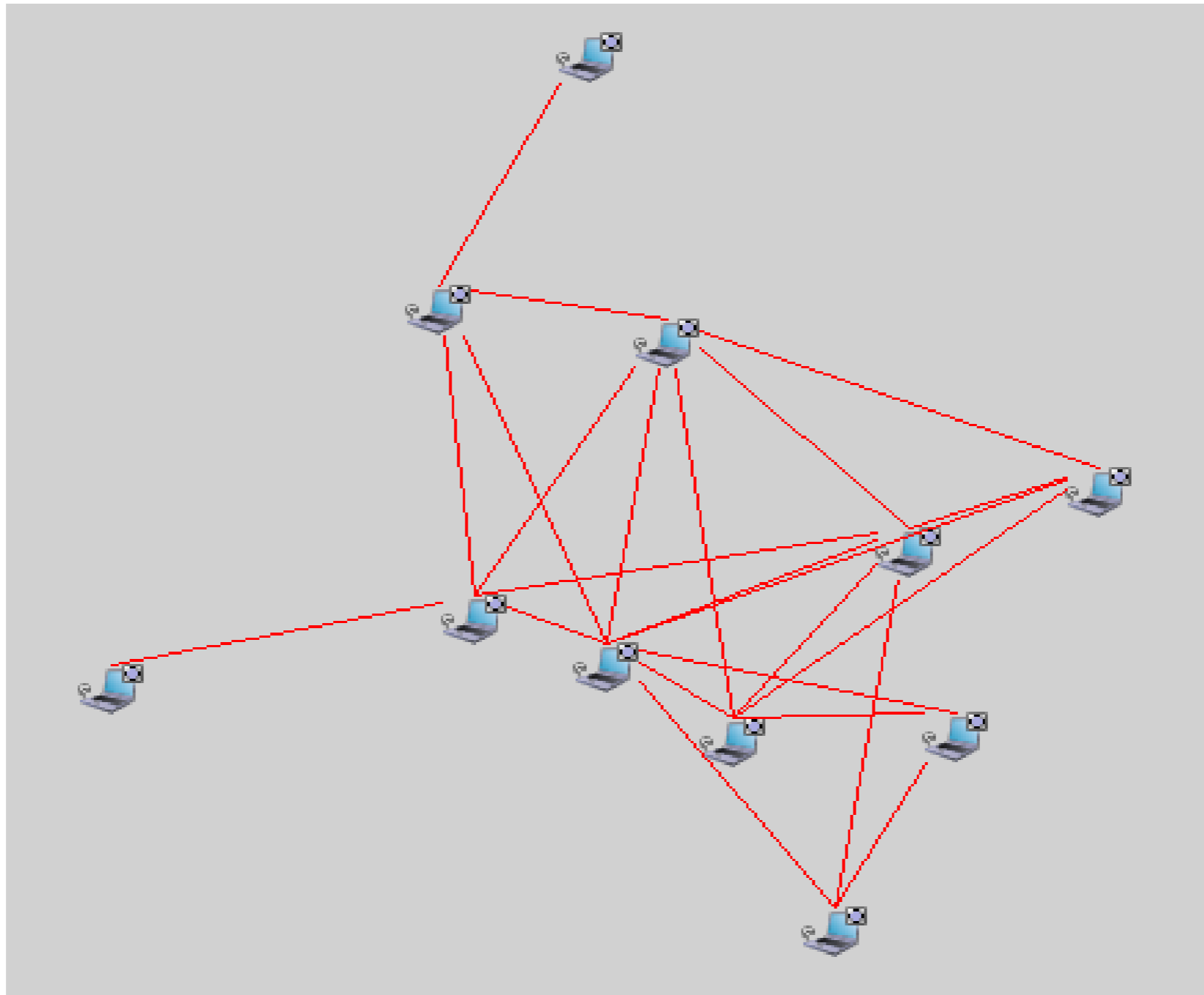- Parameter Settings and Performance Analysis

Parameter Setting

For validating the usability of parameters and analyzing current PPSP system performance, we set up multiple scales of network topologies.
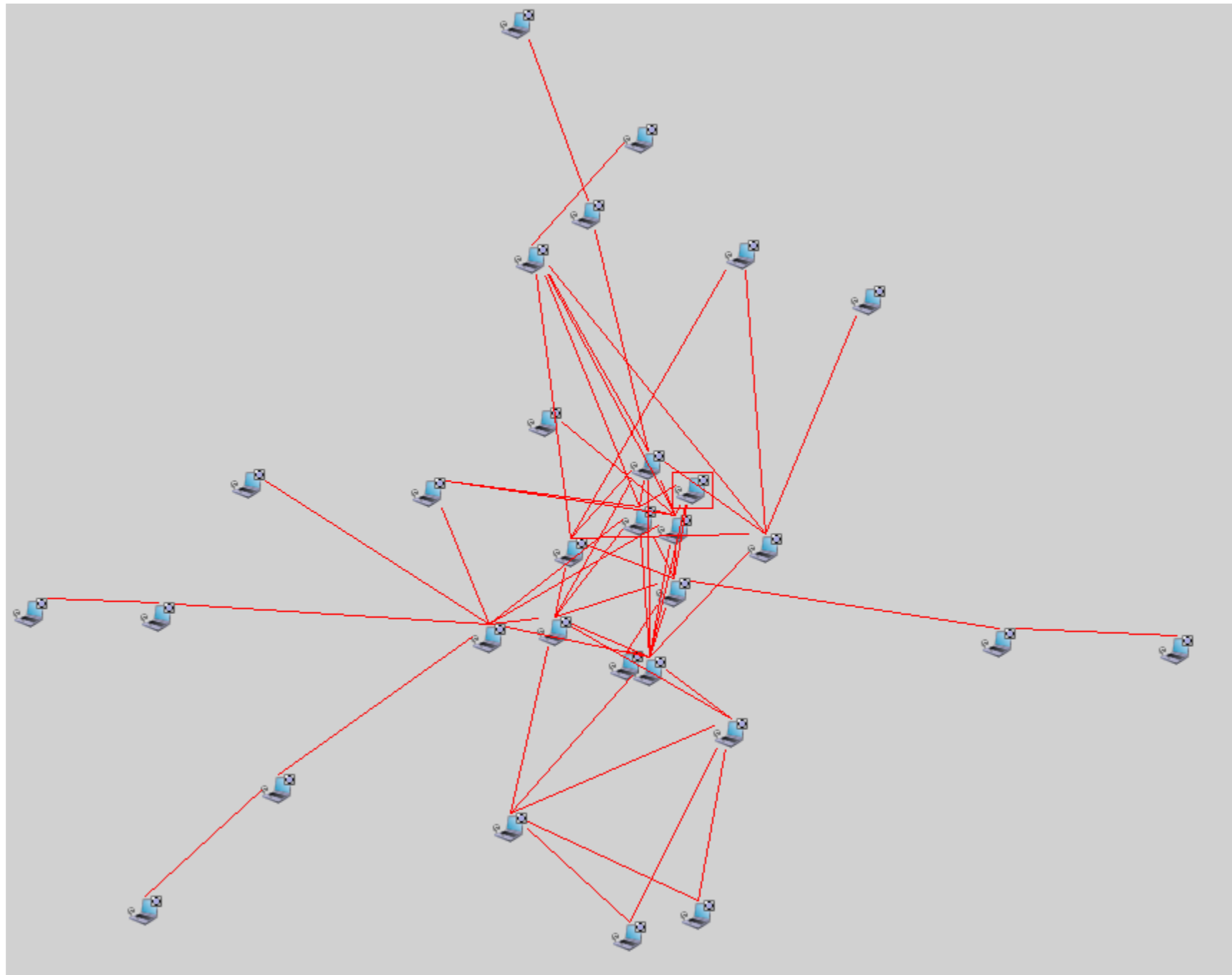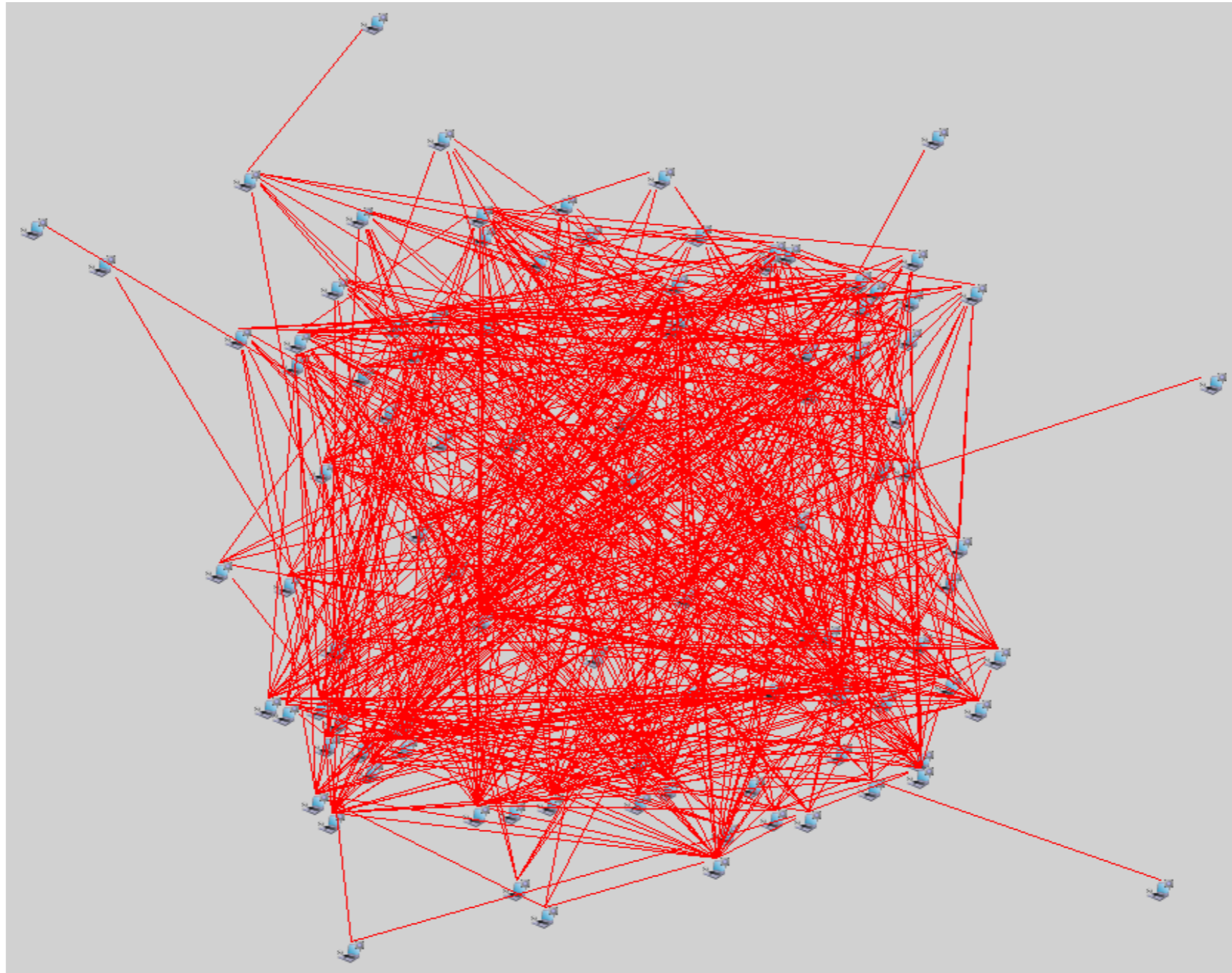
Compact Topology
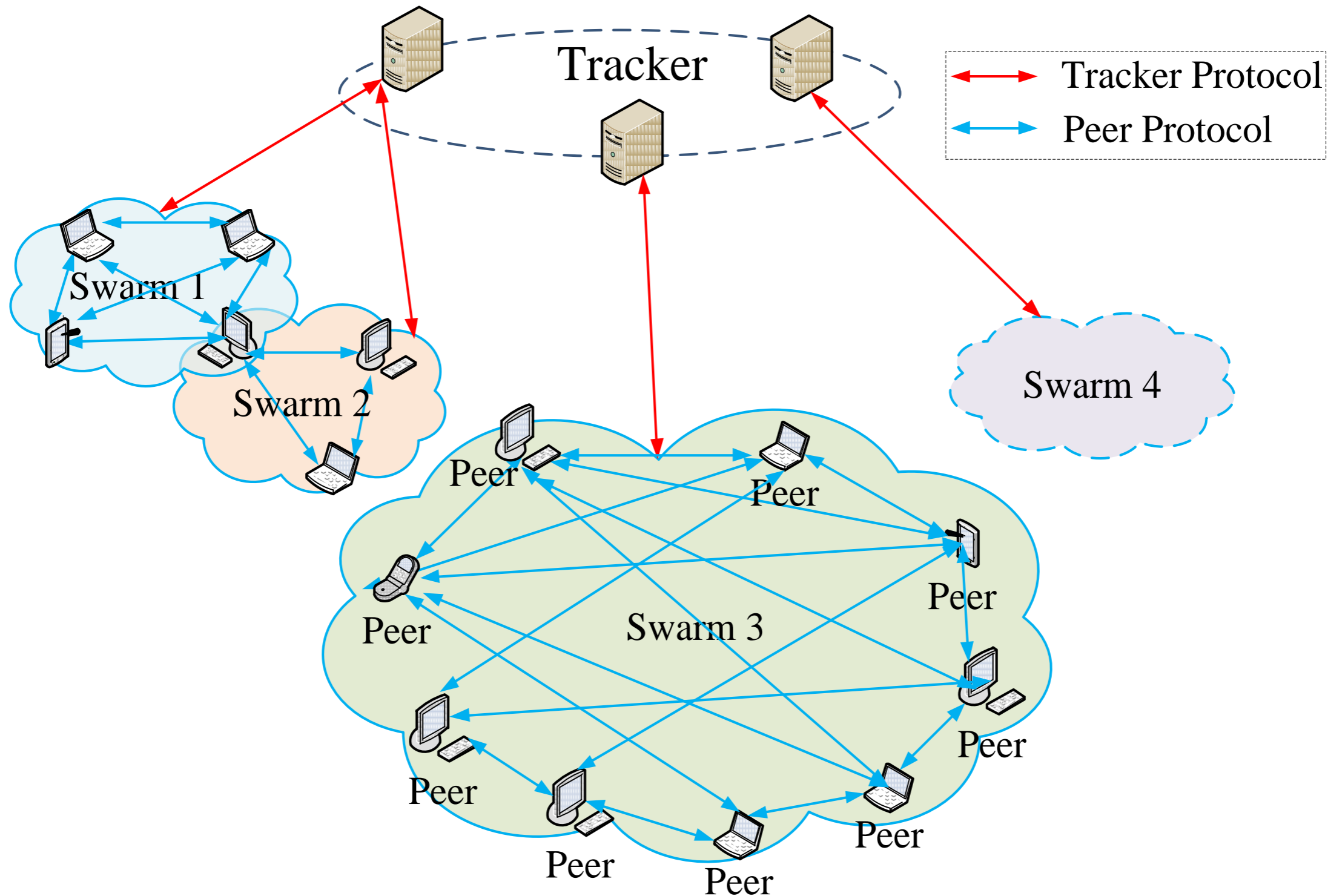
Simulation with Small Scale

Simulation with Middle Scale

Simulation with Large Scale

Parameters Setting

Name	Range(seconds)	Default(seconds)
Init_timeout	[0, 60]	30
Track_timeout	[60, 300]	180
STAT_REPOTR	[60, 300]	180
Retry_timeout	[60, 300]	180
KEEPALIVE Period	[100, 150]	120
Dead Peer Detect	--	--

Performance Analysis

- Joining in delay

- Throughput

- Download Time

- The affect of churn

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Gaps in last discussion

Content	Discussed
CONNECT and FIND, similar or not?	√
Can STAT_REPORT include content info.?	✕
Continue transferring from breakpoint?	√
Supporting mobile environment ?	✕
Sequence of updating PeerList?	✕
How to change the PeerMode?	√

Limitations and Gaps

For making the PPSP system more practical and efficient, more details should be discussed.

These comments could be separated into two parts:

Common Ideas **(CI)** and New Suggestions **(NS)**

Limitations and Gaps (NS)

1. According to RFC 6972, The tracker (peer) protocol MUST take the frequency of message exchange and efficient bandwidth use into consideration when communicating chunk availability information (chunk information).

Is it possible and necessary to adjust the video definition based on the bandwidth (or user demand) automatically (or manually)?

Limitations and Gaps (NS)

2. About swarm size

Is it possible and necessary to split large swarm (or change the scale of the SWARM) according to QoS and the size of the file?

If a swarm is too large, it increases the calculation burden for the tracker. Sometimes a small swarm can also fulfill users' requirement and it is easy to manage for having quick responses.

Limitations and Gaps (NS)

3. According to RFC 6972, Each peer MUST have a unique ID (i.e., peer ID).

Consider a circumstance that one user has several devices which have different peer IDs. He/She might want to:

1) watch part of a video clip or live telecast on one device for a while, then switch to another device for continuing.
2) split the file into several parts (assuming the file is huge) and receive them in different devices.

Can peers share information or cooperate with each other?

Limitations and Gaps (NS)

4. In RFC 6972, Tracker protocol part 7 and Peer protocol part 13, we have a lot security considerations. We focus on how to make our protocols invulnerable and prevent all the possible attacks.

However, we cannot guarantee the absolute safety scenario for the server and user. Shall we discuss about the subsequent steps after being attacked?

Thank you! Questions?