Seamless Object Migration for Massively Multiplayer Online Games

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Motivation

Two main methods currently used for distributing work to multiple servers in a massively multiplayer online game (MMOG)

User Based Load Distribution
- Assign players to servers when they login.
- The assignments do not change during the whole play session.
- **Disadvantage**
  - Players on different servers can never interact with each others.

Location Based Load Distribution
- Divide the game into several areas, each managed by a server.
- When players move around, they change their servers dynamically.
- **Disadvantage**
  - Long waiting time when moving from one server to another.
  - Players in different areas still can't interact with each others.
Goals

- Easy to use tools to do load distribution for game developers.
- Players can interact with each others without any limitation.
- Players do not need to wait when moving from one server to another.
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Related Works


System Structure

- **Game Server**: central manager
- **Zone Servers**: calculating game states
- **Directory Server**: map ip address/port to server ID
- **Message Exchanger**: direct messages to/from clients
Simulation Results