Login

```
    ┌─────────┐          ┌─────────┐
    │ server  │          │ client  │
    └────┬────┘          └────┬────┘
         │                    │
         │    login request   │
         │◄───────────────────┤
         │                    │
┌────────────────────────┐    │
│ check if nickname valid │─┤  │
└────────────────────────┘    │
         │                    │
         │   login response   │
         ├───────────────────►│
         │                    │
┌────────────────────────────┐
│        [success]           │
└────────────────────────────┘
         │                    │
         │                    │ ┌──────────────┐
         │                    ├─│ update view  │
         │                    │ └──────────────┘
         │                    │
┌────────────────────────────┐
│        [failure]           │
└────────────────────────────┘
         │                    │
         │    login request   │
         │◄───────────────────┤
         │                    │
```
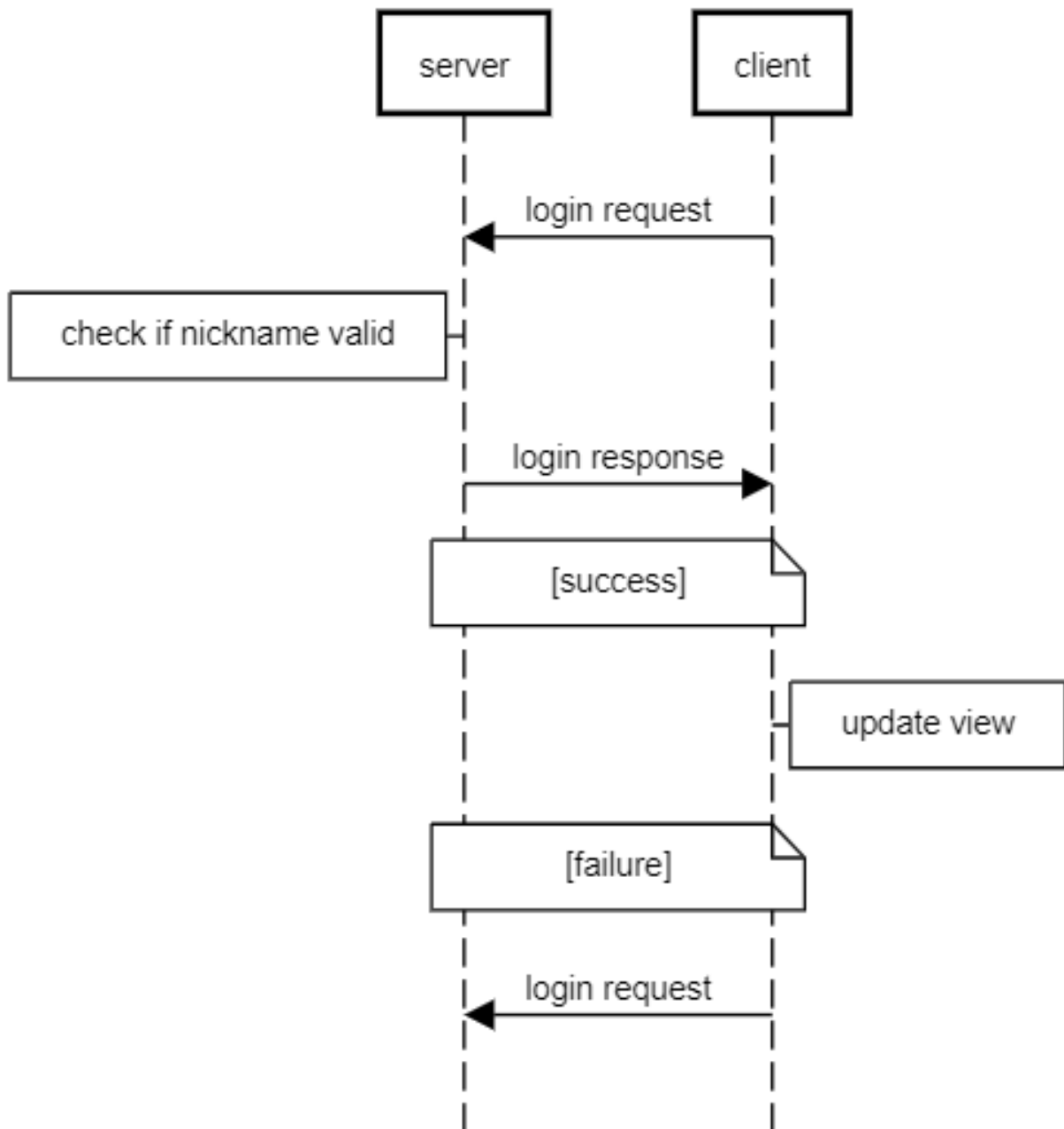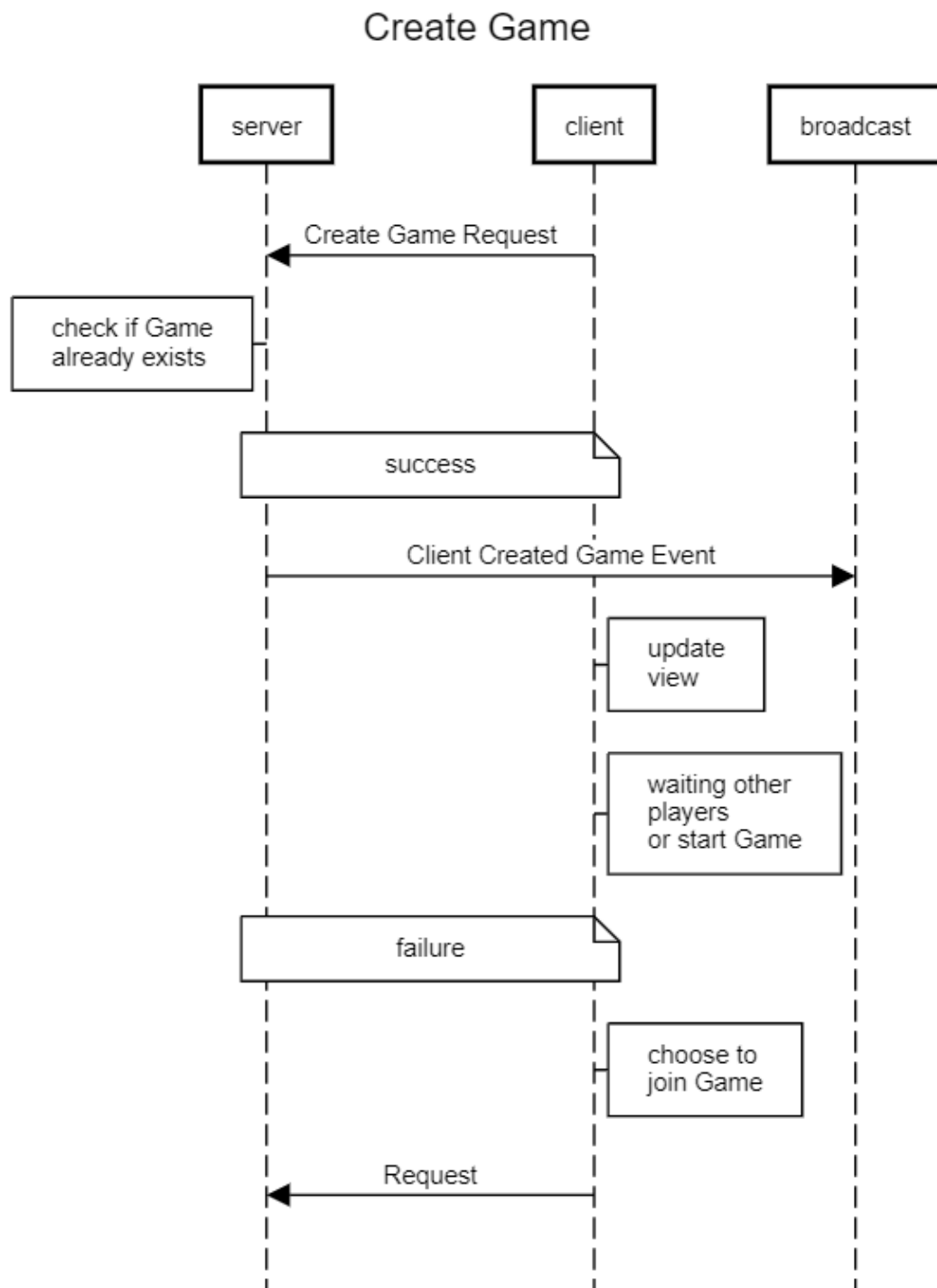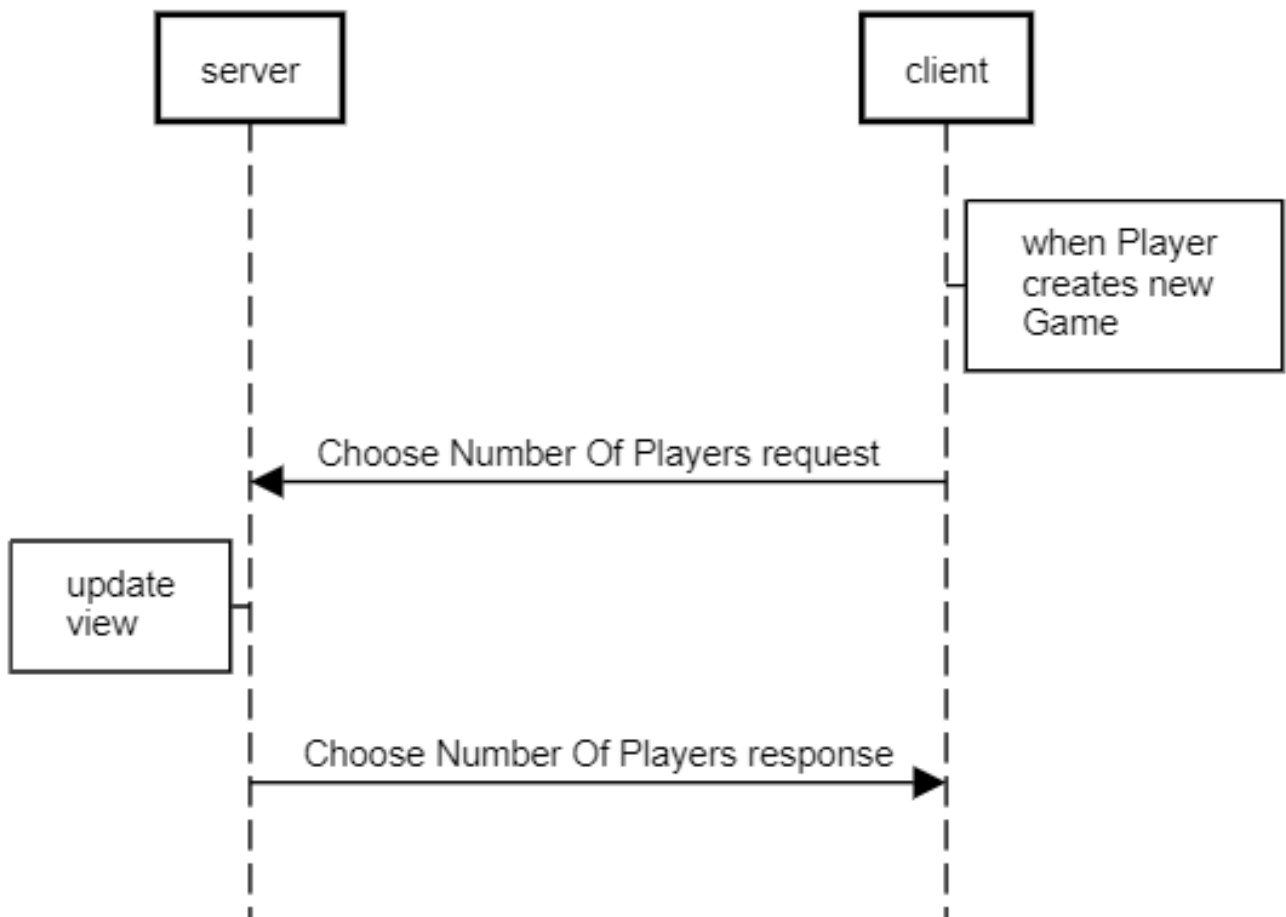
When the client connects, the server checks if the given nickname is valid.
If so, the login is successful. If not, the client must require to login again

Create Game

```
         server              client            broadcast
           │                   │                   │
           │◄──Create Game Request──│              │
           │                   │                   │
  ┌────────────┐               │                   │
  │ check if Game │            │                   │
  │ already exists │           │                   │
  └────────────┘               │                   │
           │                   │                   │
  ┌────────────────── success ──────────┐          │
  └──────────────────────────────────────┘         │
           │                   │                   │
           │──────Client Created Game Event──────►│
           │                   │                   │
           │          ┌──────────────┐            │
           │          │ update       │            │
           │          │ view         │            │
           │          └──────────────┘            │
           │                   │                   │
           │          ┌──────────────┐            │
           │          │ waiting other │           │
           │          │ players       │           │
           │          │ or start Game │           │
           │          └──────────────┘            │
           │                   │                   │
  ┌────────────────── failure ──────────┐          │
  └──────────────────────────────────────┘         │
           │                   │                   │
           │          ┌──────────────┐            │
           │          │ choose to     │           │
           │          │ join Game     │           │
           │          └──────────────┘            │
           │                   │                   │
           │◄──────Request──────│                  │
           │                   │                   │
```

When the client connects, the server checks that the client isn't trying to connect to an already existing Game. If it doesn't exist, it creates a new Game, and the client must wait for the selected number of players. If it does exists, the client requires to join the game.

Choose Number Of Players

server		client

when Player creates new Game

Choose Number Of Players request
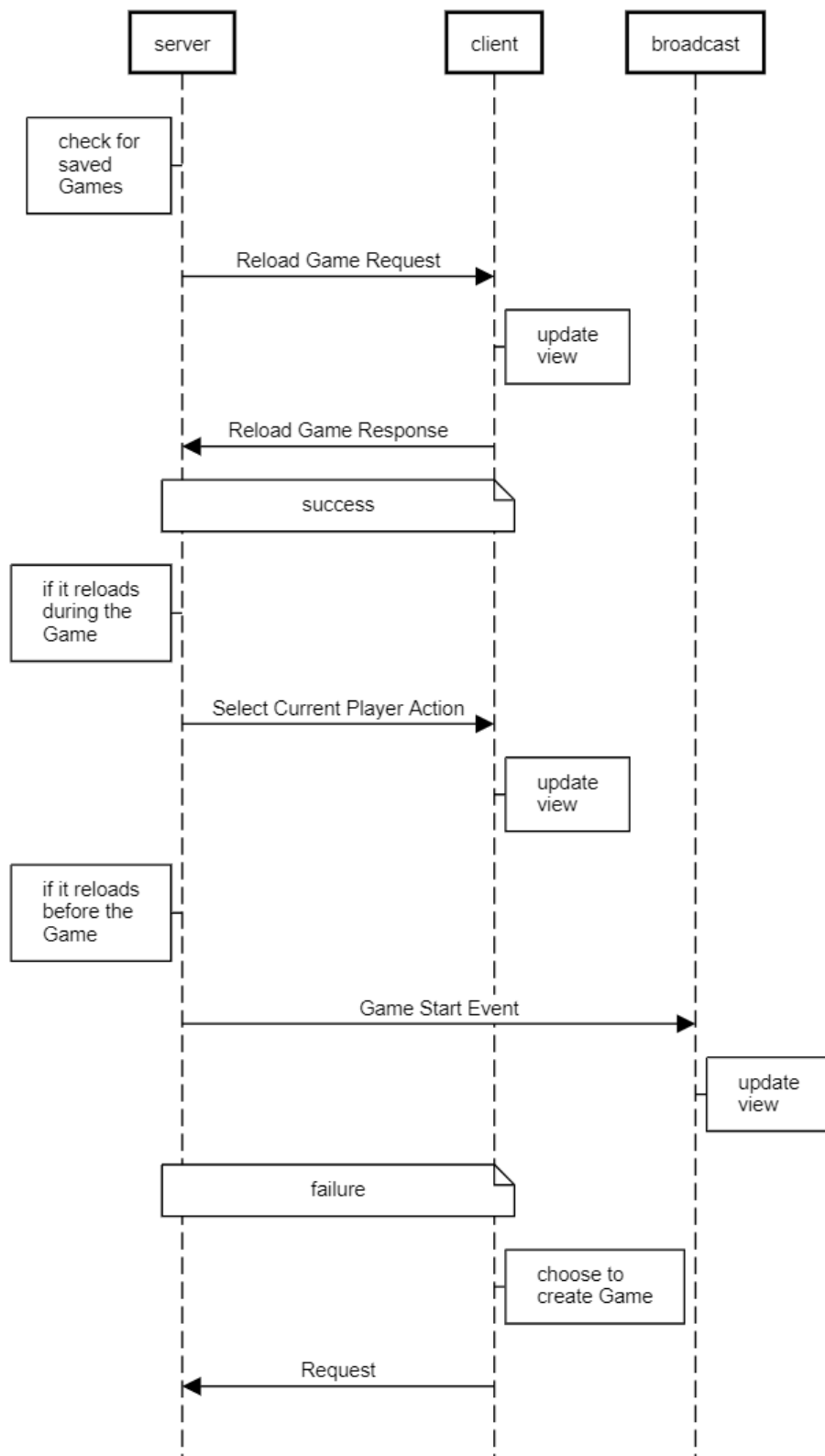
update view

Choose Number Of Players response

When the player starts a new game, the client chooses the playing mode, simple or expert, the server updates the view and answers the server
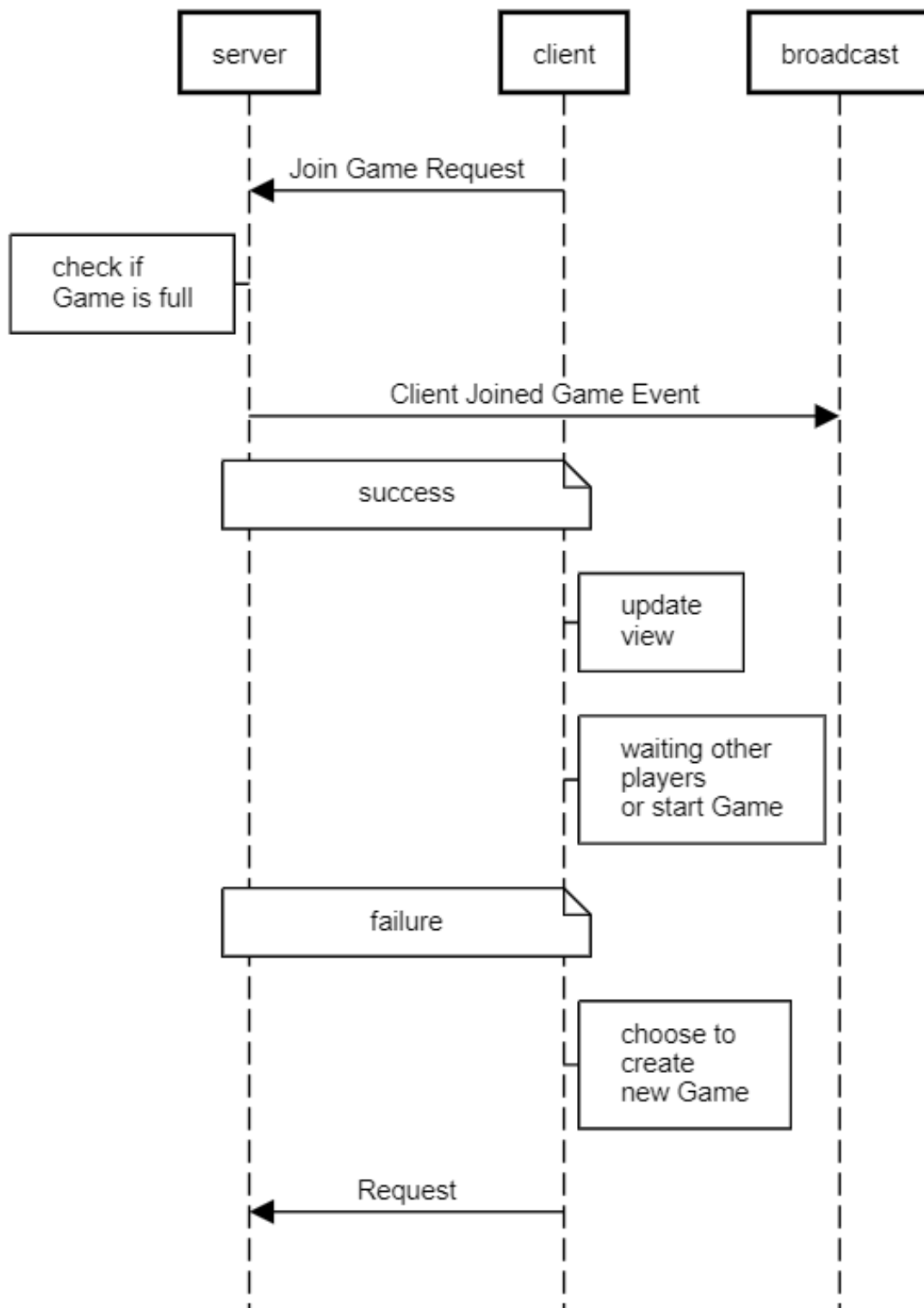
Choose Number Of Players

```
┌──────────┐                              ┌──────────┐
│  server  │                              │  client  │
└────┬─────┘                              └────┬─────┘
     ┆                                         ┆
     ┆                              ┌──────────────────────┐
     ┆                              │ when Player           │
     ┆                              │ creates new           │
     ┆                              │ Game                  │
     ┆                              └──────────────────────┘
     ┆                                         ┆
     ┆     Choose Number Of Players request    ┆
     ◄─────────────────────────────────────────
┌──────────┐                                   ┆
│ update   │                                   ┆
│ view     │                                   ┆
└──────────┘                                   ┆
     ┆     Choose Number Of Players response   ┆
     ──────────────────────────────────────────►
     ┆                                         ┆
```
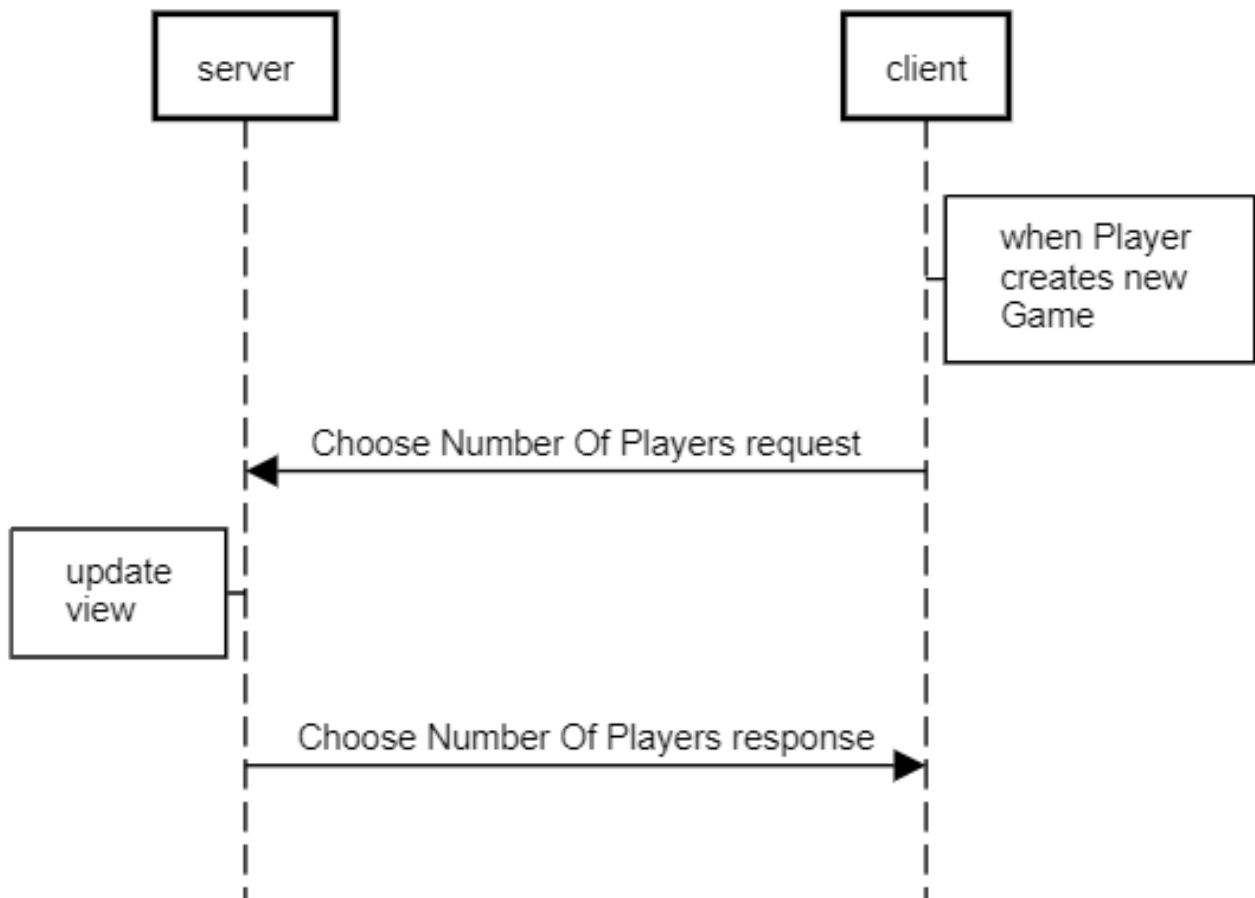
When a Game is created, the server asks the client for the number of players.

Advanced Feature: Reload Game

server	client	broadcast

check for saved Games

Reload Game Request →

update view

← Reload Game Response

success

if it reloads during the Game

Select Current Player Action →

update view

if it reloads before the Game

Game Start Event →

update view

failure

choose to create Game

← Request

If the Server disconnect, once it's online again it checks for saved game, and if it finds one, it asks the client to reload again. If the game is reloaded during an action, it asks the current player to continue the action. If it reloads before the start of the Game, the server sends a Start Game event. If the server doesn't find any saved game, it asks the client to create a new Game.

Join Game

When the client asks the server to join a game, the server checks that the game is not already full. If it's a positive response, it lets the client join, and it must wait for others to join if the desired number of players is not reached, or starts the game if it's reached. If it's a negative response, the client must require to join another game.
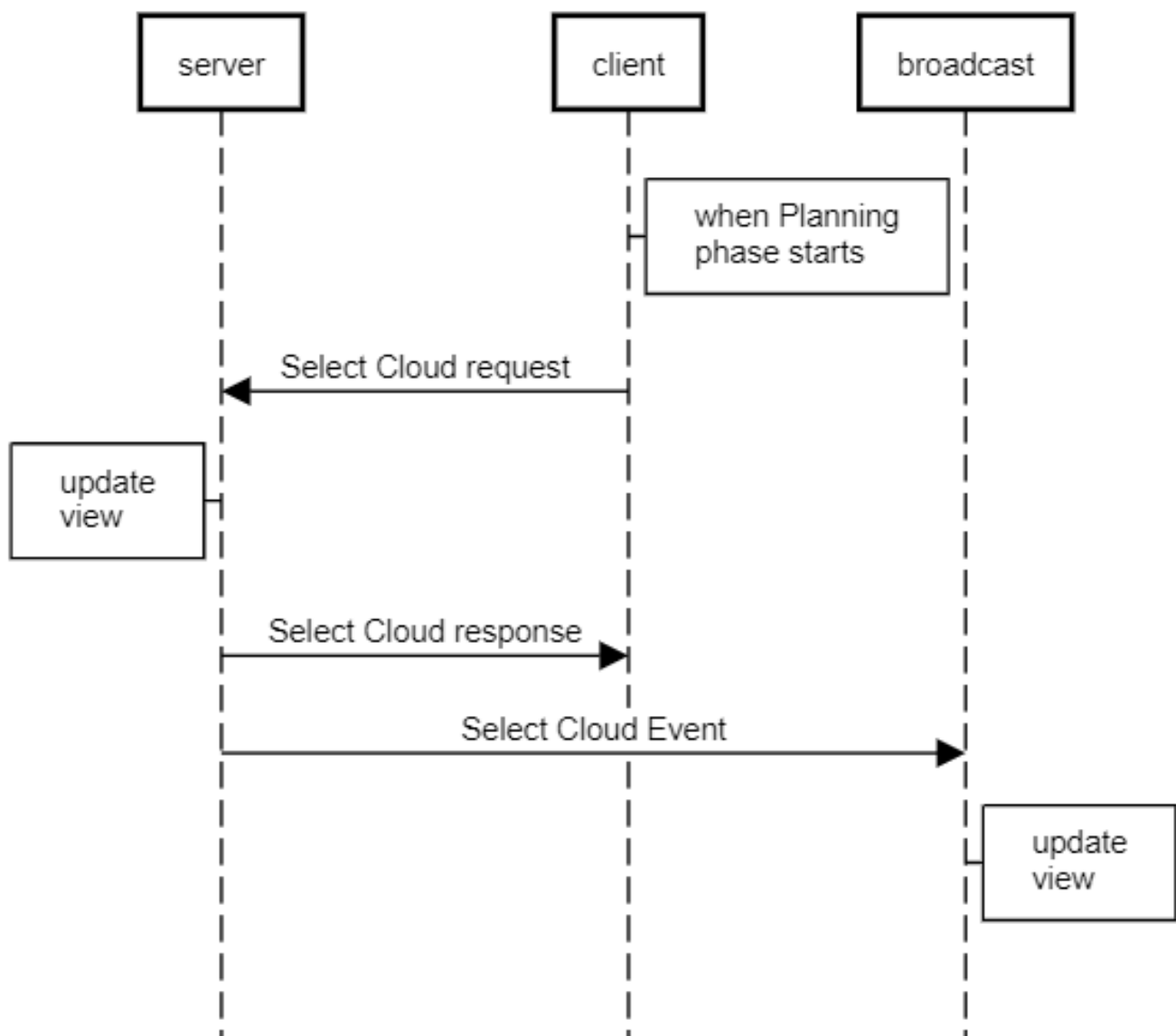
Choose Tower Colour

```
     server                    client              broadcast
       │                         │                     │
       │                         ├──────────────┐      │
       │                         │ when Player  │      │
       │                         │ creates new  │      │
       │                         │ Game or joins│      │
       │                         ├──────────────┘      │
       │                         │                     │
       │◄─── Choose Tower Colour request ──────│       │
       │                         │                     │
  ┌────┴─────┐                   │                     │
  │ update   │                   │                     │
  │ view     │                   │                     │
  └────┬─────┘                   │                     │
       │                         │                     │
       │── Choose Number Of Players response ─►│       │
       │                         │                     │
       │── Choose Number Of Players Event ──────────►│
       │                         │                     │
       │                         │               ┌─────┴─────┐
       │                         │               │ update    │
       │                         │               │ view      │
       │                         │               └─────┬─────┘
       │                         │                     │
```
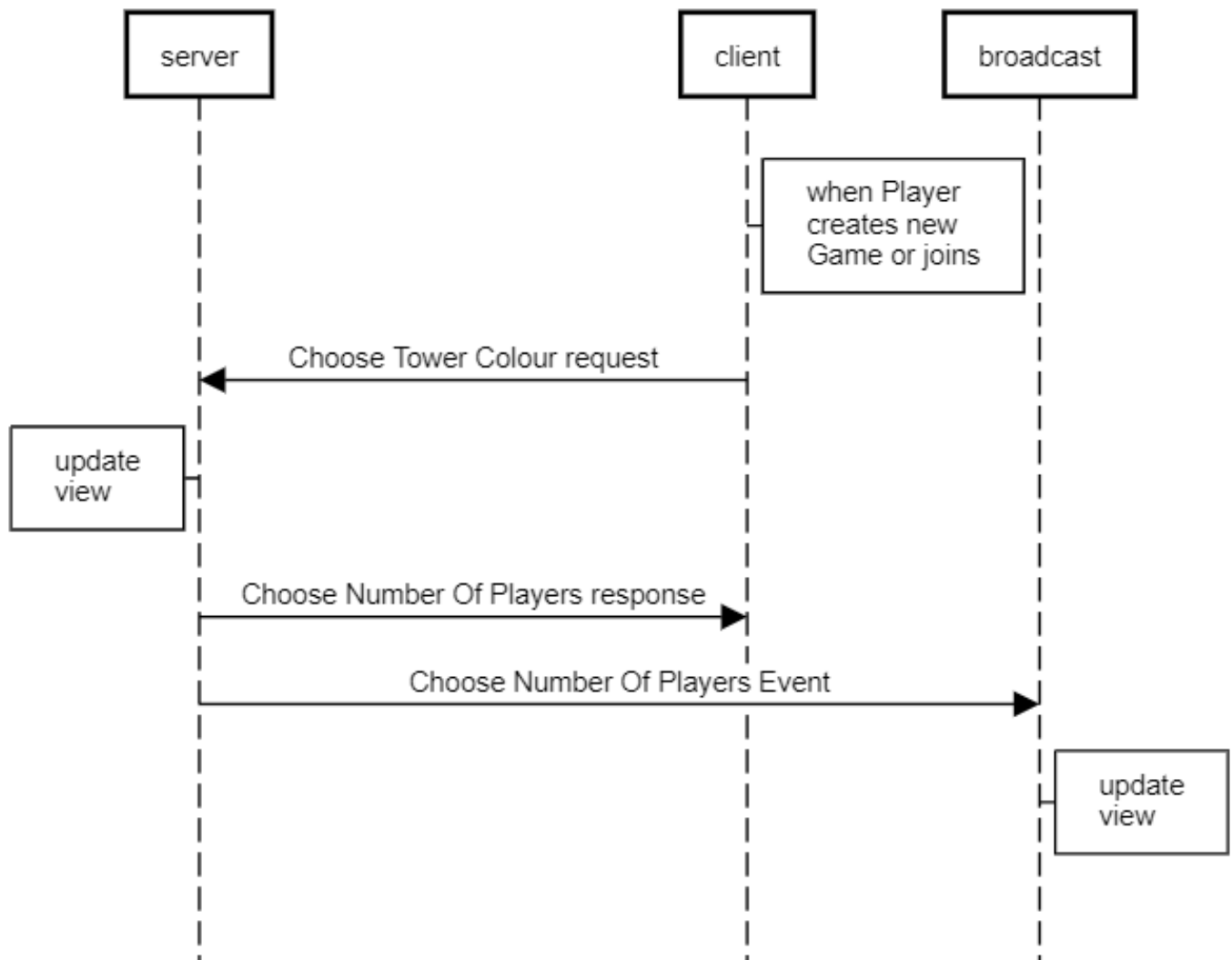
When Player creates a game, it sends the server the tower colour request. When the server answers, it updates the other clients via broadcast so that the know they can't choose the same colour.

Choose Assistant Card
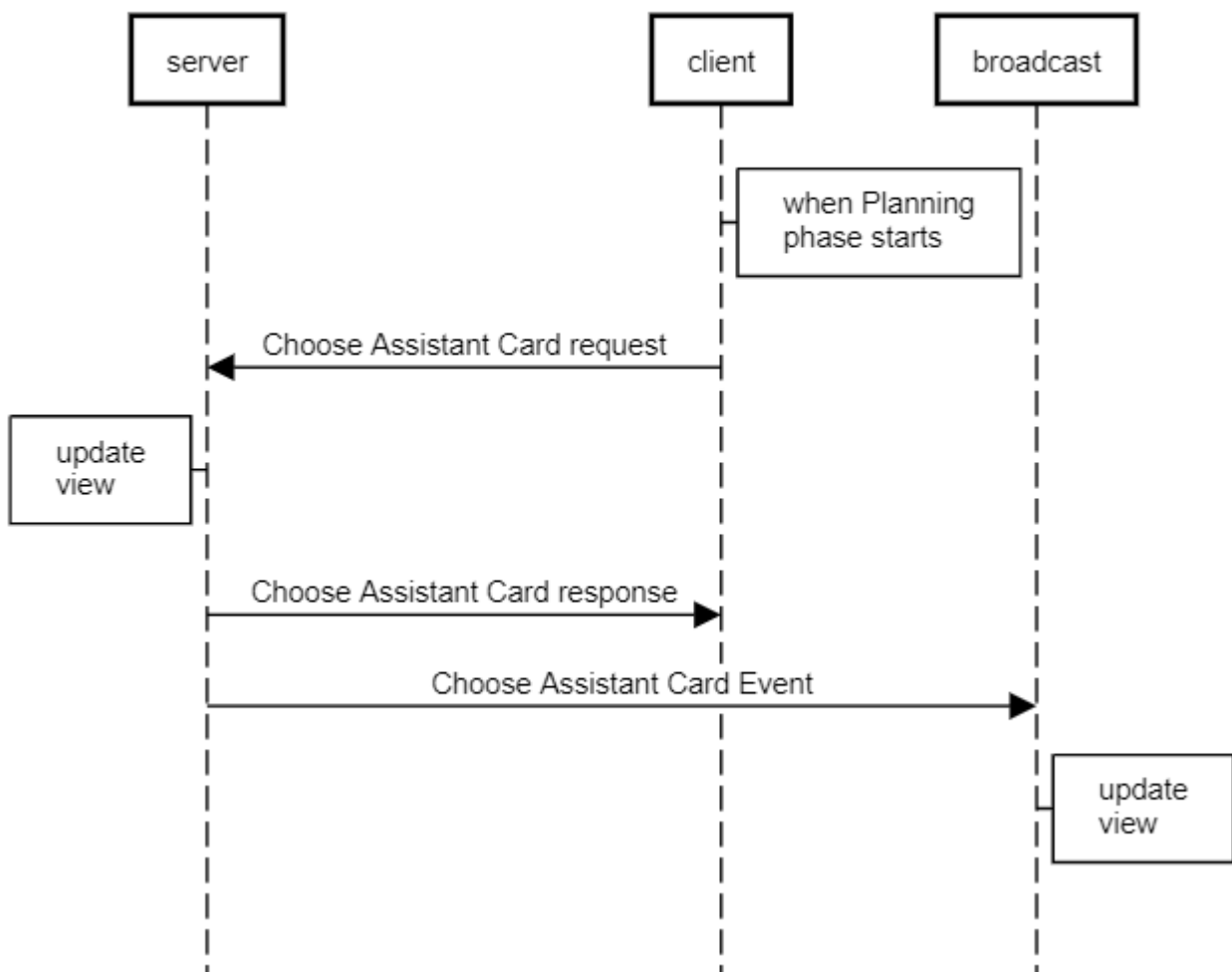
When Player creates a game, it sends the server the Assistant Card request. When the server answers, it updates the other clients via broadcast.

Select Cloud

```
   server              client            broadcast
     │                   │                   │
     │                   │┌─────────────────┐│
     │                   ││ when Planning   ││
     │                   ││ phase starts    ││
     │                   │└─────────────────┘│
     │                   │                   │
     │   Select Cloud request                │
     │◄──────────────────│                   │
┌─────────┐              │                   │
│ update  │              │                   │
│ view    │              │                   │
└─────────┘              │                   │
     │                   │                   │
     │   Select Cloud response               │
     │──────────────────►│                   │
     │                   │                   │
     │        Select Cloud Event             │
     │──────────────────────────────────────►│
     │                   │                   │
     │                   │              ┌─────────┐
     │                   │              │ update  │
     │                   │              │ view    │
     │                   │              └─────────┘
     │                   │                   │
```

When Planning Phase starts, the client sends the request for a cloud to the server. When the server answers, it updates the other clients via broadcast so they know which cloud was chosen.

Select Student To Move
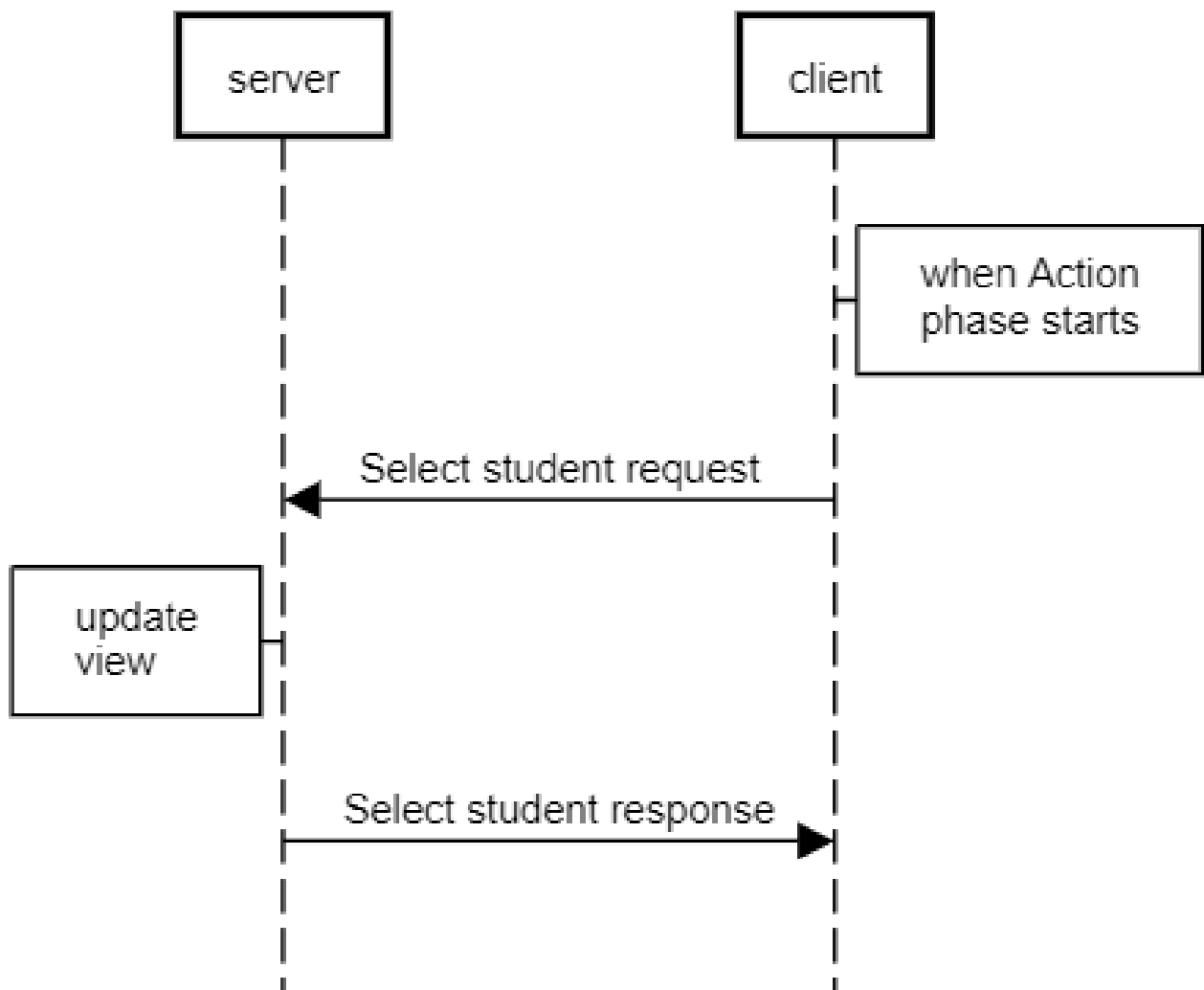
When Action Phase starts, the client sends the request to choose a student to the server. When the server answers, it updates the view.

## Select Student Destination
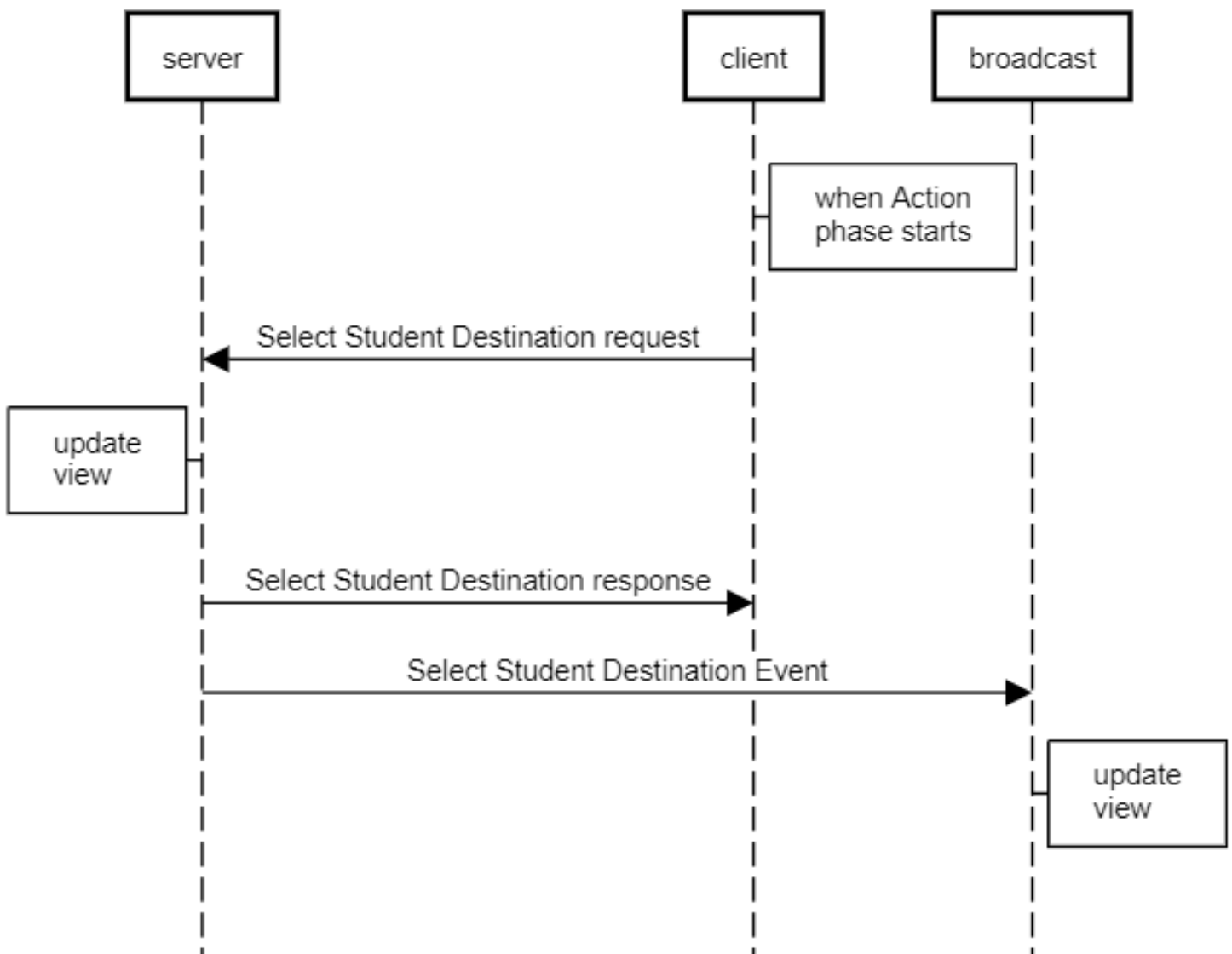
When Action Phase starts, the client sends the request to choose the destination to move a student. When the server answers, it updates the view, and updates the other clients via broadcast.

Select Student Destination
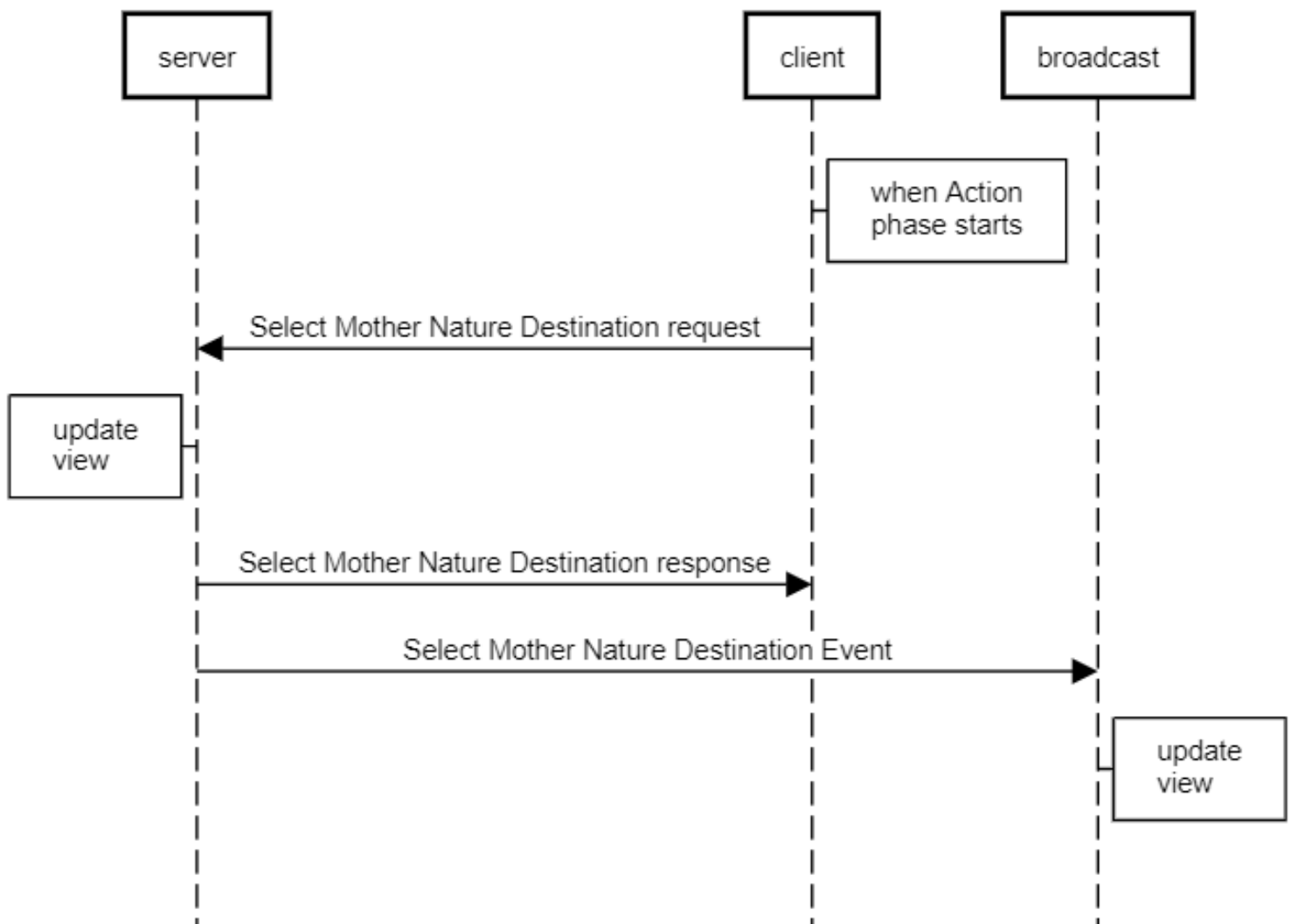
When Action Phase starts, the client sends the request to choose the destination to move mother nature. When the server answers, it updates the view, and updates the other clients via broadcast.

Select Effect
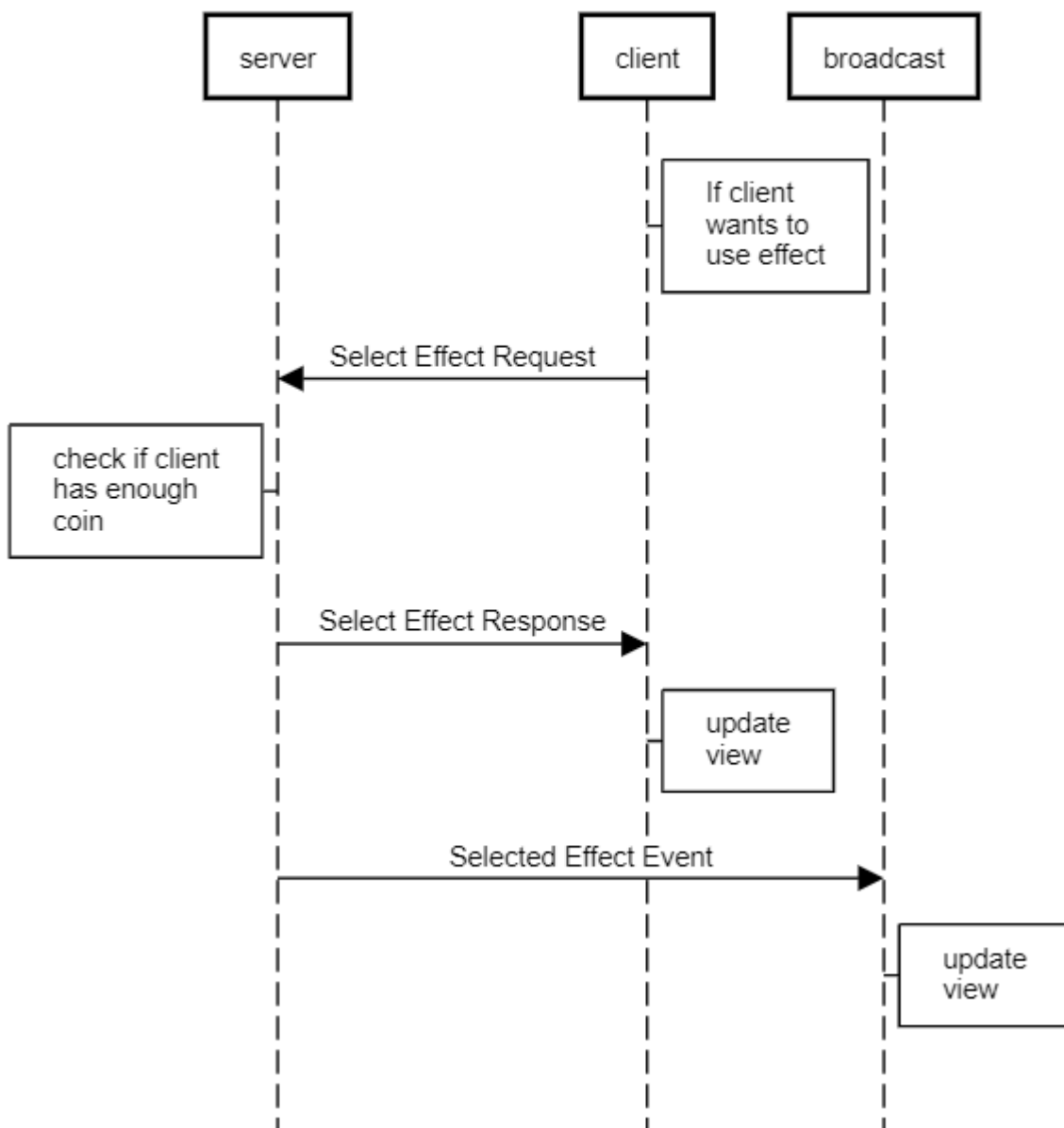
The client can request to use an effect at any moment of the turn. The client chooses an effect, and the server checks if it has enough coins. If it does, it updates the other clients on the effect via broadcast.

Player Won
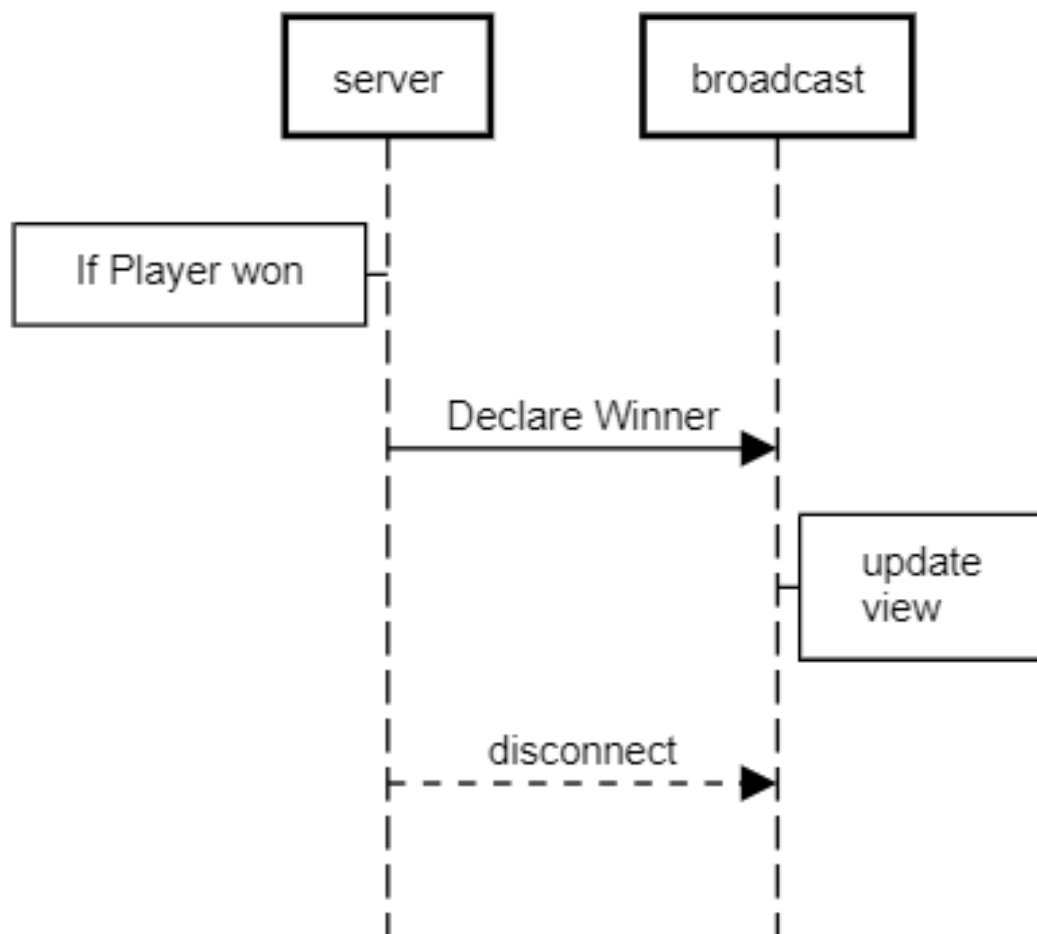
If the conditions to win are reached, the server declares the winner to everyone via broadcast, and disconnect.