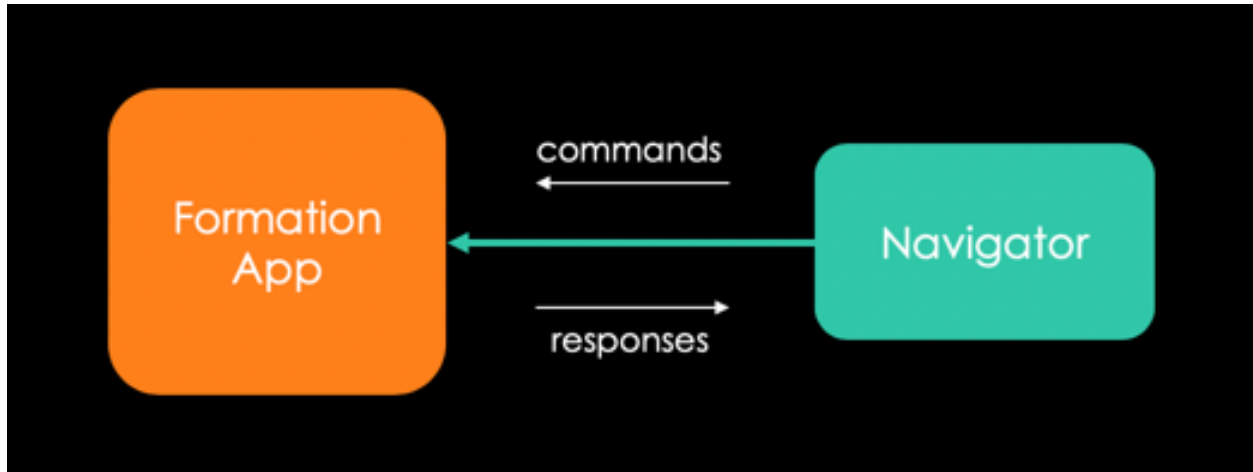


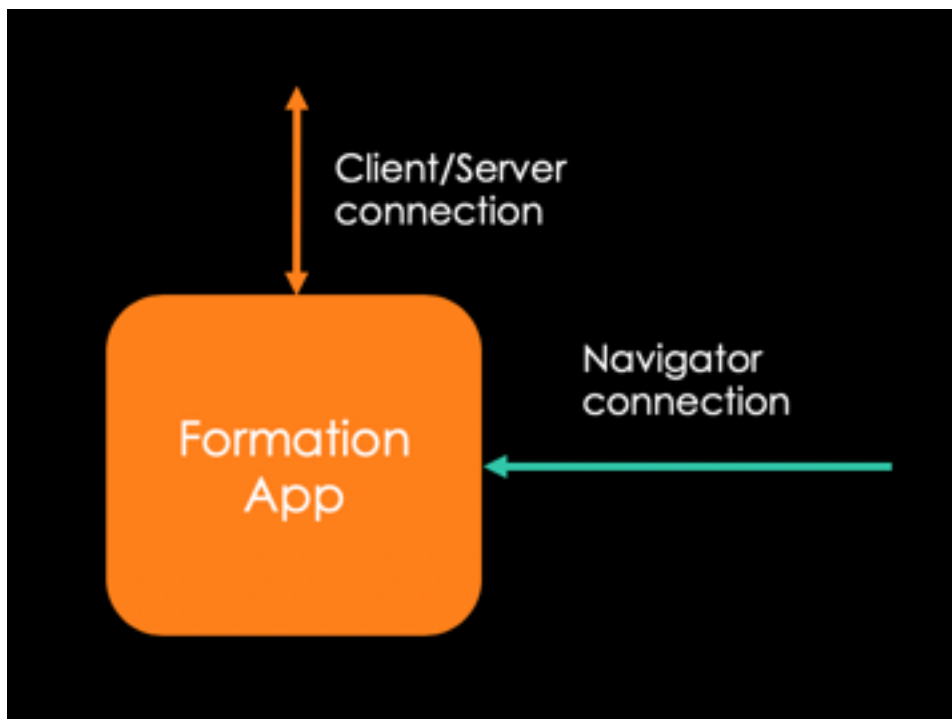
## Configurations

Every *challenge*, or *game*, requires \* a **Formation server**, and \* one or more **Formation clients**.

The Formation app provided by HSDC can function as a client, a server, or both. You will be developing a *Navigator*: an application that is capable of flying your drone ship. Your Navigator will use the AardMsg API to communicate with the Formation app to \* send navigation commands to your drone ship, and \* retrieve information about your ship and the other ships.



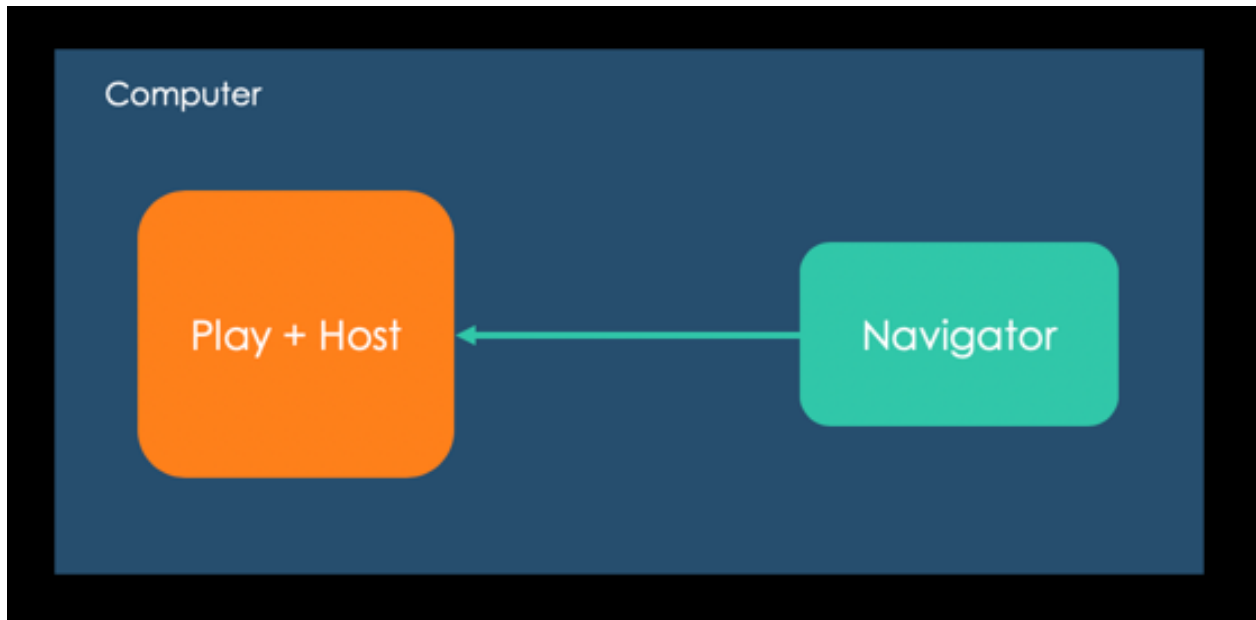
The Formation client has two network connections: 1. a server connection which connects Formation clients to a Formation server, and 2. a navigator connection, which connects a Navigator to a Formation client.



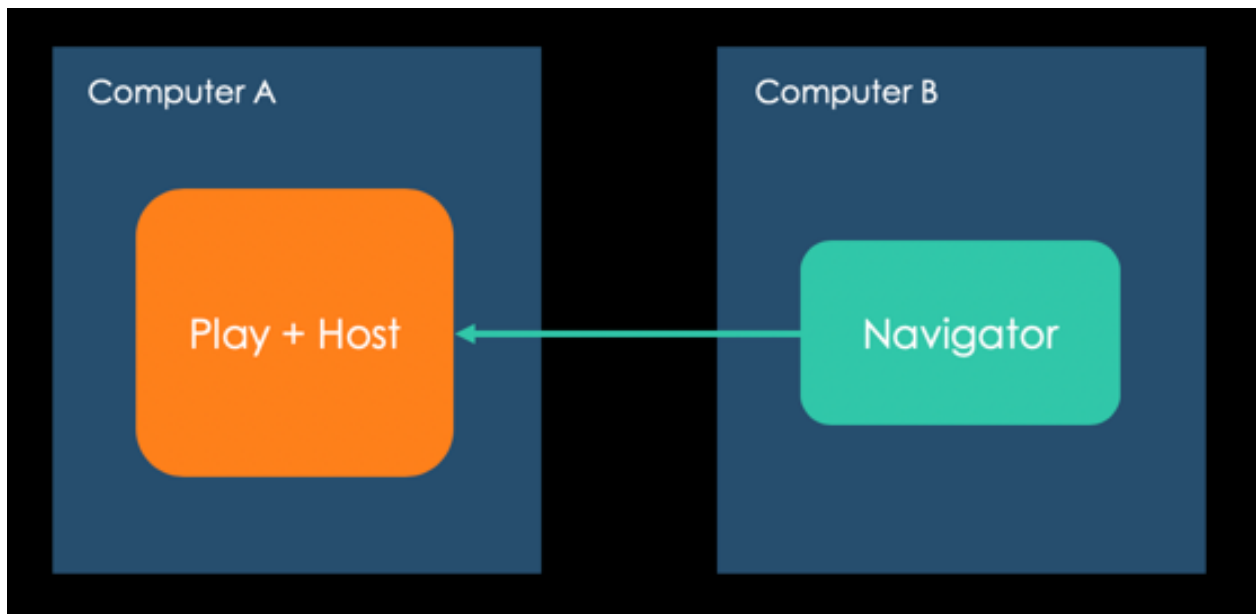
Formation servers, Formation clients, and navigators can be combined in many different ways. They can run on the same computer or on different computers connected by a network. The connection rules are simple: 1. A client must connect to a server 2. Multiple clients may connect to the same server 3. A Navigator must connect to a client

During development of your Navigator, you can run the Formation app in **Play and Host** mode. The app

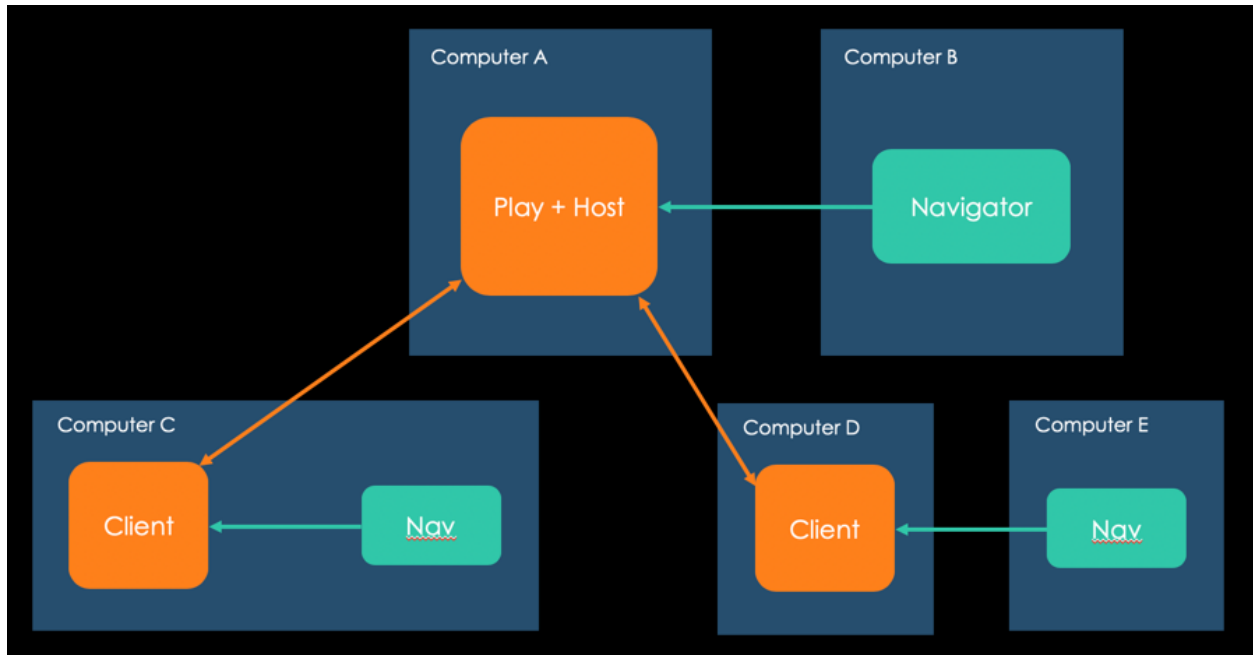
will act as both a server and a client. This lets you conveniently run a challenge on a single computer. The computer may run Windows, MacOS, or Linux. This is shown in the following diagram. (The Formation app is labeled “Play + Host”.)



You could run the Formation app on one computer and the Navigator on a second computer, as shown in the following diagram.



You add players to the game by connecting additional Formation clients. And each client has its own Navigator. A three-player configuration is shown below.



This three-player configuration uses *five* computers! The Formation clients need to run on computers that can display some graphics and have an X86-64 CPU. This means that the Formation client cannot run on something like a Raspberry Pi. But the Navigator certainly could! However, for most people it will probably be easiest to run the client and the Navigator on the same computer.