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Having finished the implementation of the first client command, you have to add the second command to the client side. In addition, you will start the switch implementation in this task.

Subtask 2.1: Client status command (4 points)

Enhance your implementation from task 1 by adding the status command functionality.

- Make sure to prevent code duplications! Refactor your code where necessary. Document any code changes in an accompanying document.
- Create new classes where necessary.

Subtask 2.2: Server cookie processing (7 points)

Before the server accepts command message, the client has to request a cookie from the server. In this task you have to implement the server part of the cookie exchange.

1. Implement a server application that starts the CP server functionality.
 - a. A server uses any UDP port < 5000 on PHY-protocol layer to listen for incoming messages.
2. Enhance the CPProtocol implementation with a cookie processing method (this is different from the cookie request method clients use on startup) that a server uses to process incoming CookieRequest messages.
 - a. The mappings of clients to cookie are stored in a Java HashMap; use Java HashMap (<https://docs.oracle.com/javase/9/docs/api/java/util/HashMap.html>) for this. This HashMap implements an associative array. Use the PhyConfiguration of a client as key in the map. The value in each entry is the cookie.
 - In order to use objects as keys to a HashMap, you have to implement two methods in PhyConfiguration: *equals()* and *hashCode()*.
 - For any cookie two values need to be stored: cookie values and creation time.
 - There shall never be more than 20 entries in the HashMap. Cookie requests from new clients shall be rejected.
 - b. Make an implementation decision on the processing of premature cookie renewal. Should a client be allowed to request a new cookie while the old cookie has not yet expired?
 - Document your decision with an explanation in an accompanying document.
 - Implement according to your decision.
 - c. Send an appropriate response message to the client.