SCS3203 – MIDDLEWARE ARCHITECTURE

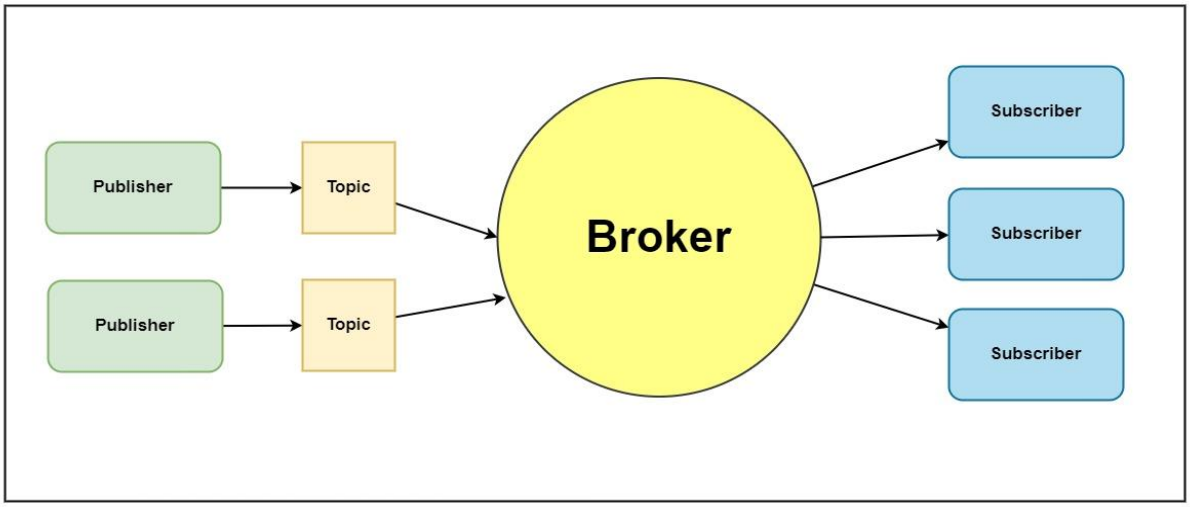
Group No: 45

Group Name: Real Coders

Task 4: Enhance the Architecture to Gain Improvement in Availability and Reliability.

The problem of the single server-based architecture

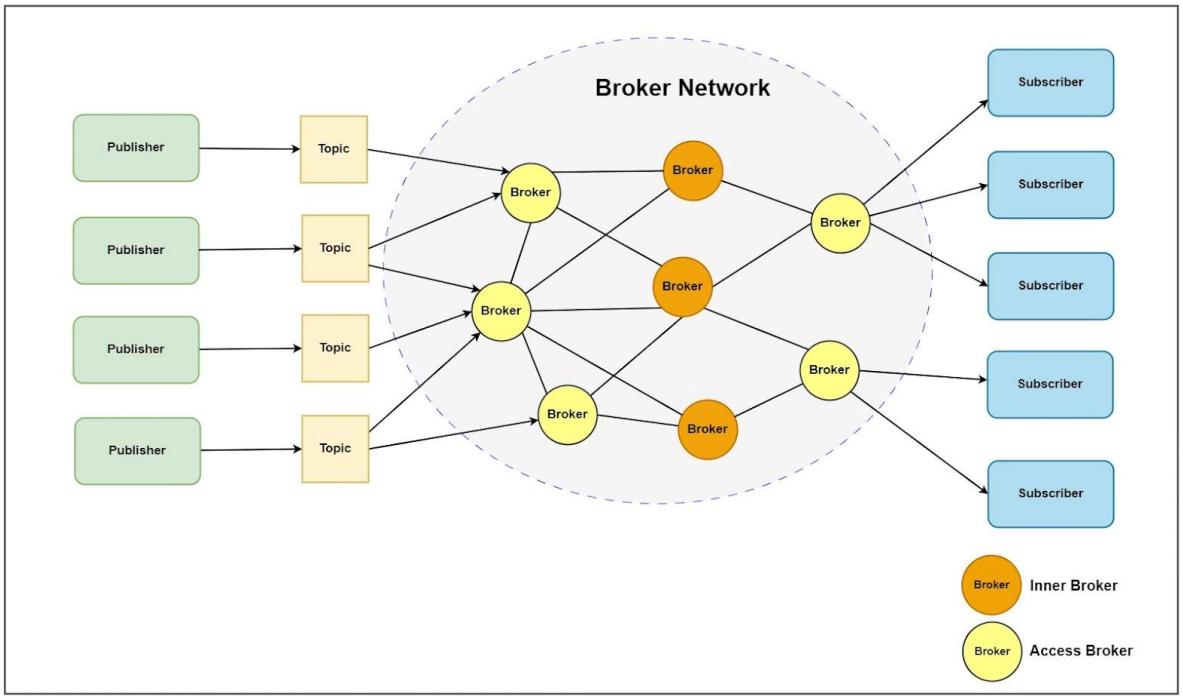
When the server goes down, the entire system fails because the server is centralized.



This is the current system architecture. If the broker or the middleware goes down the entire system's communication goes down and any device can’t connect to each other because all the connections are depending on the single server.

The new architecture that we have designed

If there are many brokers, a failure of a server or a broker will not be affected on the entire system. Our solution is described in below diagram.



There is a broker network, and there are many brokers interconnected with each other as a graph structure. There are also two types of brokers in the broker network. Inner brokers are inside parties in the network. Access brokers are the brokers which are interacting with publishers or subscribers directly. They are connecting the access brokers to each other. So, there are many paths available for sending a message. If there is one access broker or inner broker goes down the entire communication is still happening, and the message can find another path to go to the subscriber. A proper routing algorithm can find the shortest, best path for sending messages to the subscribers.

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