The pros and cons of the Pub-Sub architecture pattern

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Having a grasp of common architectural patterns is essential to designing software architecture at scale. Using them saves not only time but also ensures a reliable implementation of your design. There?s no need to reinvent the wheel when there?s an architectural pattern available that applies to an architecture you?re developing.

The following is a brief overview of the Pub-Sub architectural pattern.

The Pub-Sub pattern is one in which a process sends a message into a message broker. Then, the message is forwarded to one or more parties listening for incoming messages according to a given topic. You can think of a topic as an ?inbox.?

Sending a message to the broker is called publishing. Binding to a particular topic and then listening for incoming messages at the inbox is called subscribing. Hence, the term Pub-Sub.

Pros

Cons

The Pub-Sub pattern is the bedrock of asynchronous architectural design. There are a large number of messaging applications and cloud services dedicated to the Pub-Sub pattern. Using Pub-Sub can be tricky, particularly when there are many topics in play. Learning the basic concepts is straightforward, but implementations can be challenging depending on the messaging technology used and the scope of asynchronous activity that needs to be supported. Still, when it comes to implementing asynchronous communication among services and components in a large distributed application, the Pub-Sub pattern is quite popular.

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