HTTP vs AMQP Research

Contents

What is HTTP

Http stands for hypertext transfer protocol. Http is a protocol which allows 2 systems on the internet to communicate, mainly to transfer web pages. HTTP communication is synchronous. (Mustapha, 2023)

Pros

HTTP pros according to (Sörenson, 2017)

Easy Debugging and Repeatability

Debugging HTTP requests is straightforward and repeatable, making it easier for developers to troubleshoot. In contrast, debugging AMQP messages can be more complex, often requiring connections to queues, specialized libraries, and potentially custom scripting.

Familiarity for Developers

HTTP is a widely used and well-understood technology. Most developers are already familiar with it, meaning there's no need for additional training to work with HTTP-based APIs in a project.

Broad Compatibility

As the most widely supported protocol on the internet, HTTP is a standard practice for sharing APIs, ensuring broad compatibility across various platforms and services.

What is AMQP

AMQP stands for Advanced Message Queuing Protocol. AMQP allows 2 systems to communicate by sending and receiving messages. AMQP communication is asynchronous.

Pros

AMQP pros according to (Sörenson, 2017)

Reliability and Asynchronous Delivery

AMQP ensures reliable message delivery, and its asynchronous nature means you don't need to worry about whether messages are successfully delivered before moving on with other tasks.

Simplified Setup

With AMQP, knowing the host or IP address of the message broker cluster is sufficient to send or receive messages. In contrast, HTTP-based systems may require dealing with multiple hosts or IP addresses depending on the server's regional setup.

Efficient Messaging with Fanout

AMQP allows for fanout messaging, where a single message can be delivered to multiple recipients or components. This reduces the overall communication overhead by consolidating multiple messages into one.

Which one should be used where and why

Both HTTP and AMQP have their own use cases. To decided which one to use in which case, it is best to decide whether I need to use synchronous or asynchronous communication. If I need synchronous communication, I should use HTTP and if I need asynchronous communication, I should use AMQP. (Sörenson, 2017)