

Task ID: Messaging-Evaluation

Design Scenario

A help desk system is to be produced; it dispatches incoming chat messages to human agents. To save costs, a chat bot is currently being designed to replace some of these agents without compromising user satisfaction. It has been decided to implement an *update notification mechanism* in the scenario. The chat bot implementation has to be integrated with a Natural Language Processing (NLP) system and an Architectural Knowledge Base (AKB). *Asynchronous messaging* has been selected as implementation pattern for the integration channel. A *publish-subscribe* channel should be realized; this channel should be supervised and managed by using one or more systems management patterns. Three messaging technologies have been identified as candidates: 1) RabbitMQ, 2) Apache Kafka, and 3) ActiveMQ

Non-functional requirements

Guaranteed delivery of messages, high throughput and low latency are three important quality attributes. Using standard protocols and formats are required to ensure portability and interoperability.

Constraints

To avoid vendor lock-in, the chosen technology should be implemented and supported by at least three vendors. The learning curve of the technology should be in the hours-to-days range, not in the weeks-to-months range or even higher. Preferably, Java should be supported, but Python, PHP and Scala would also be acceptable.

Search goal

The architect would like to compare the three technologies regarding their suitability to the described scenario, non-functional requirements and constraints.

Please consider specially finding information about the drawbacks of the three technologies, which can discourage the architect from selecting one of them.

Search and determine the relevance and the types of architectural knowledge of the resulted web pages from Google, which could support the architect fulfilling his request.
