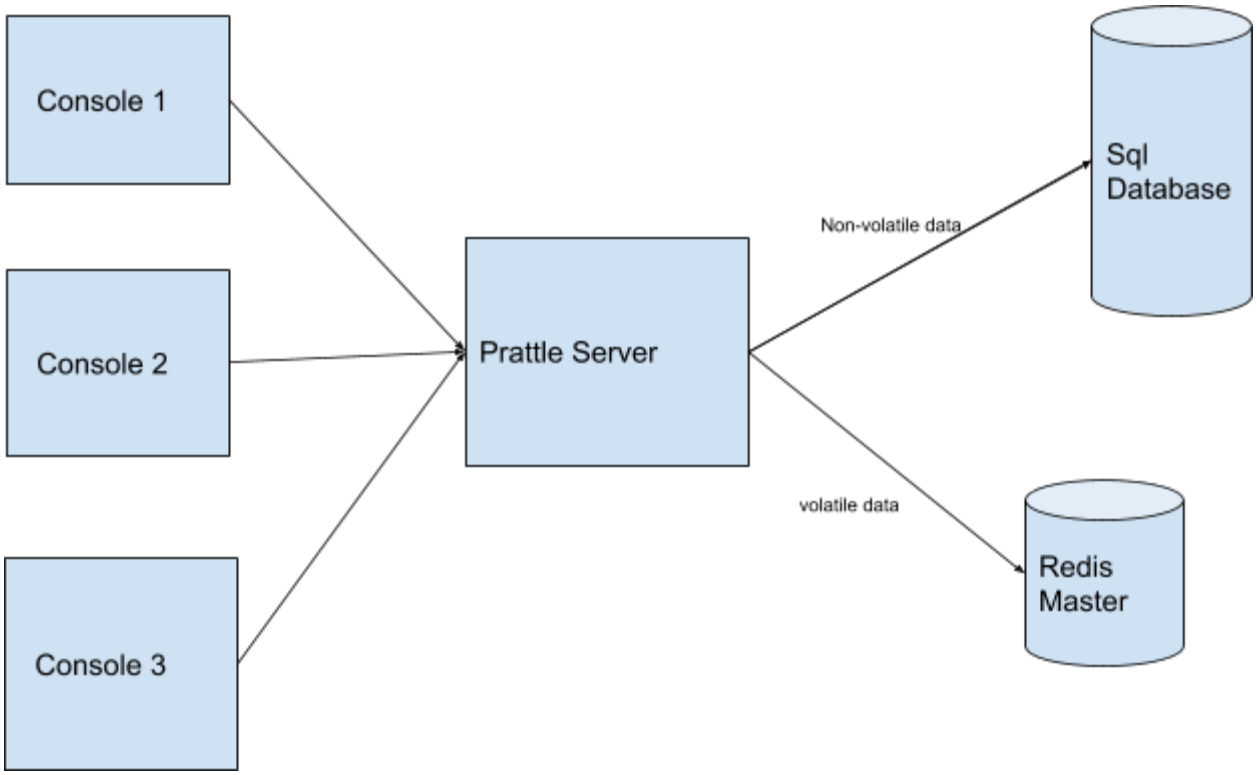
1. Architecture Review



Console:
We are keeping the chat application to be console-based. Every user will have unique credentials and identification which will allow him to connect with the Prattle server.The console is lets user to login, send messages and receive messages when it connects to the Prattle server.

Prattle Server:
The prattle server is responsible for the authentication of users, creation of groups,users . The server will handle two major tasks of message processing and request processing. Message processing includes storing incoming data, map the data to the authorized user and

Datastores:
The application features include data some of which is highly volatile(e.g messages, sessions etc). However, some of the data do not change so frequently.(e.g user profiles, user list, group list). A structured database like mySQL, Sqlite can be used to store the non-volatile data. To store chat sessions, group chats, an in-memory dataset like Redis is used.

2. Database Selection and overview of Design.

As explained in the architecture diagram, the volatile and non-volatile data needs to be handled independently. We are using two types of databases.

i. SQL-based database: A structured database allows us to track systematically the relationships between users and groups, their profile info and connections with other users and groups.This database stores tables like `user-list`, `group-list`, `user-profiles`, `archived-messages`.

ii. In-memory database: An in-memory database allows us to access our volatile data. The users might be creating groups and adding chat sessions. We need a really fast, transparent data store. This database is perfect for storing tables like `individual - chat -sessions`, `group-chat-sessions`. Future scope might include replication of in-memory data store to avoid loss of data.

3. Prioritizing Items of Development:

a. User can send and receive message from a single user
b. User can broadcast message to a group channel
c. User can create group.
d. User can create profiles.
e. An admin user can add users to the group.
f. An admin user can delete users from the group.
g. Setting up datastores and storing data in them.