Chitchat Service

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Features

Available

- Message Broadcasting.
- Online Buddy List.
- Private Message to any user.
- Browser Based Chat Support using WebSocket.
- JSON based minimalistic protocol.
- Emoticon Smileys.
- Automated Functional Testing.

Planned

- Real Time Whiteboard.
- Login Authentication.
- Search Server through Multi Casting.
- File Sharing.
  QML Desktop client.
- Multiple Chat Rooms.
- MQTT Protocol support.
- Bridging of multiple servers (MQTT).
  Create a Worker Thread for Chat Room on Message arrival.

Implementation Strategy

Performance

- Use a Lightweight Protocol to implement the use cases.
- Handle multiple requests with less resources.

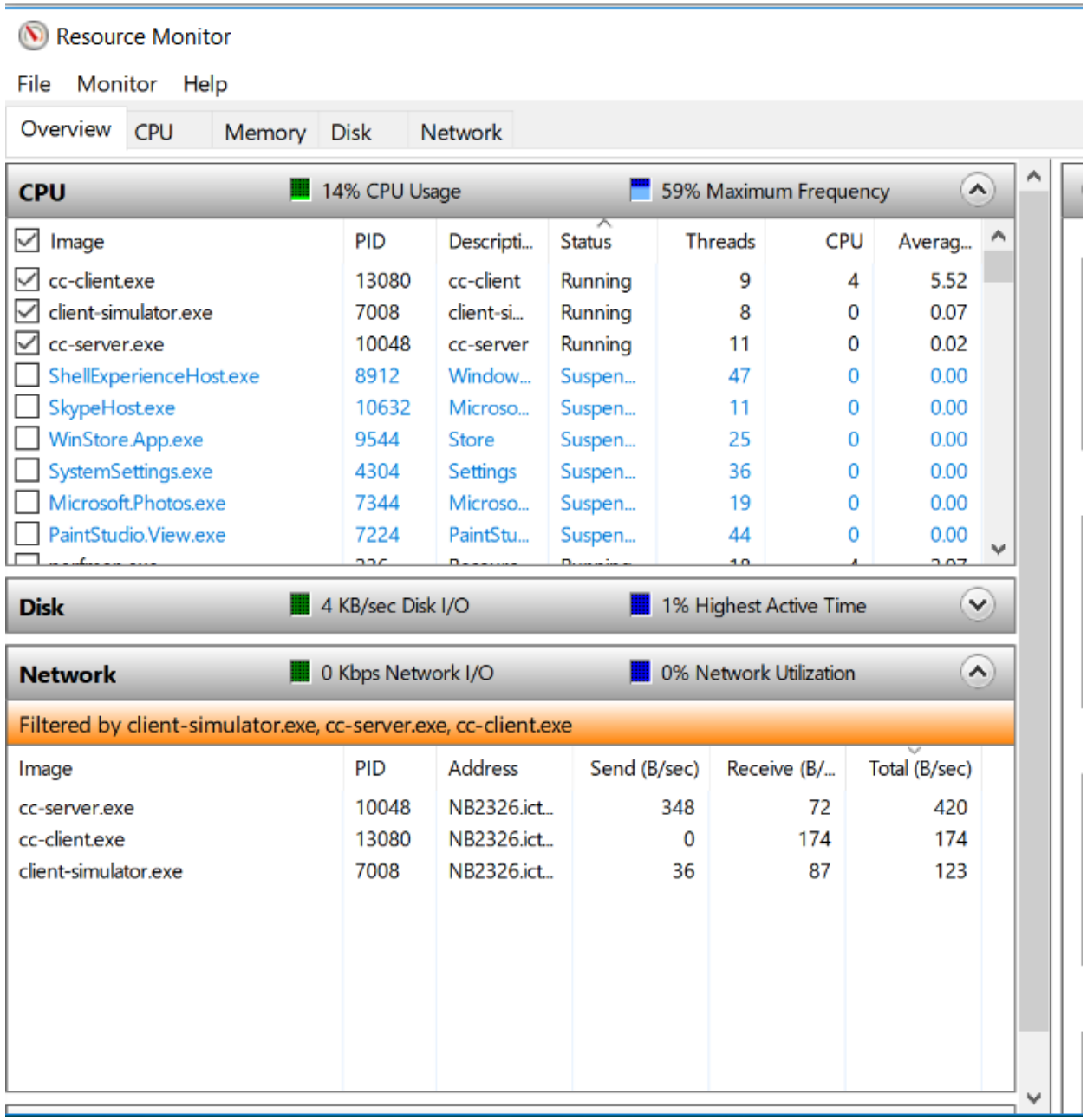
Scalability

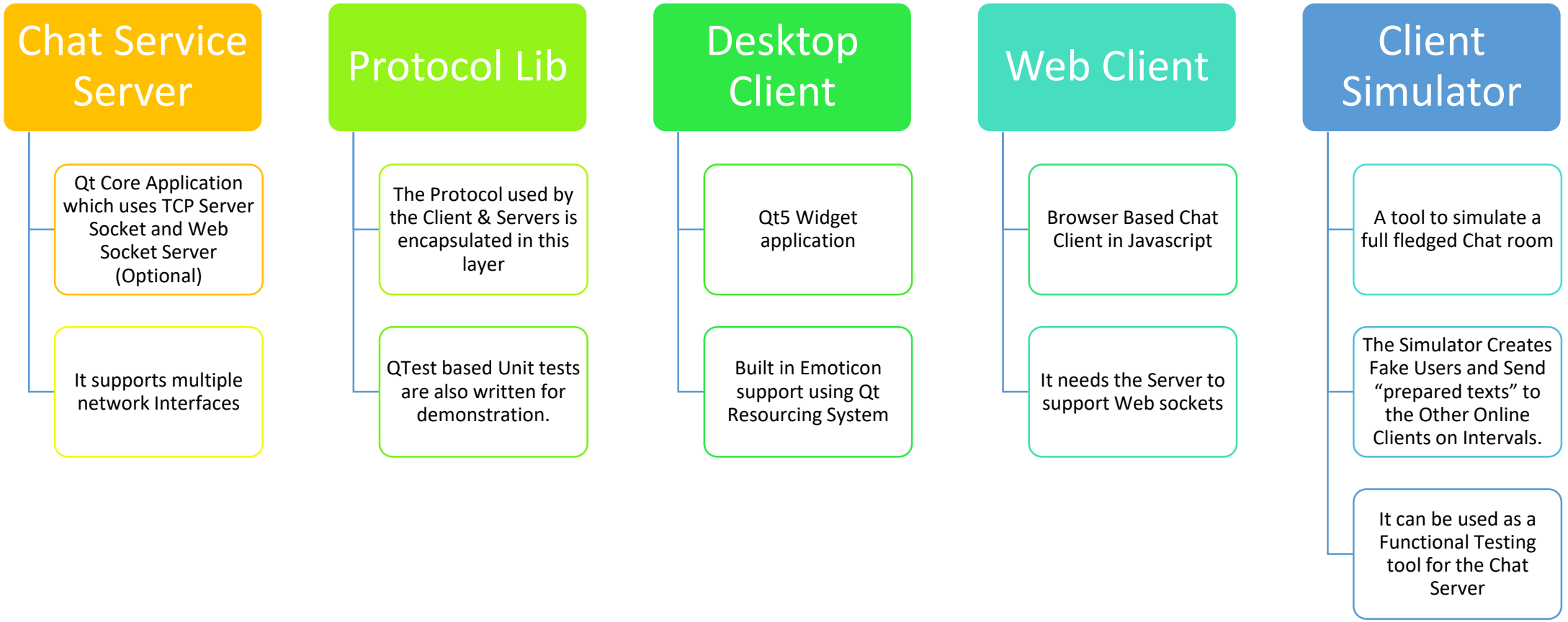
- Use a protocol which can be extended for future use cases without changing the design.
- The entire system should be scalable from one to Many with out any design change.

Portability

- The Qt SDK is already portable to multiple platform.
- Do not use any platform specific APIs and features should be enabled/disabled from a Project file level .

KPI Parameters





Solution & Technology - Components

Qt Creator 4.5.1

Qt 5.10 SDK

C++

JavaScript /HTML/CSS

Windows & Linux(Ubuntu)

Development Tools

Solution Analysis

Pros

- JSON protocol makes system extensible for any use case.
- Written in purely Qt and the solution can be easily ported from Desktop to Embedded systems with less/no changes.

Cons

- Tightly Coupled with Qt Runtime.
- Works on Plain TCP Protocol , Prefer to have a light weight protocol like MQTT

The Transport Mechanism should be improvised

Reduce the Number of Passive Chat session on Server to reduce the threads in Server

Client and Server can communicate via TCP Sockets and Close the socket whenever there is no need .

Clients will use Datagram Protocol to send the Online Heart Beat Status to server.

MQTT would be an ideal Protocol if the chat service needs to support multiple Rooms & Multimedia transportation .

High Availability Chat Service : Design Proposal

Thank you !