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WHATSAPP.WEB – A FLOWCHART

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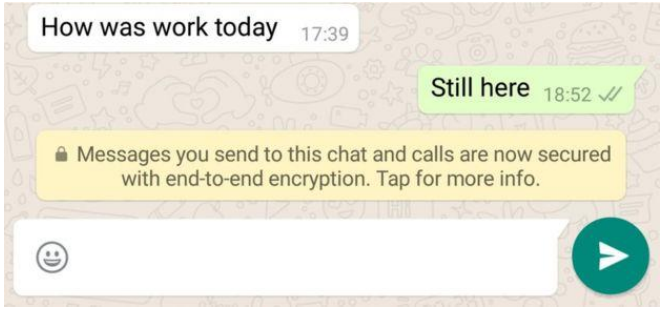
INTRO

It is noticeable straightaway that the WhatsApp app doesn't use a conventional User Name | Password type authentication in their application. They consider the phone number as every account's unique key, i.e. one phone number per user. Moreover, WhatsApp now uses end-to-end encryption to safeguard our conversations, a welcome change that was introduced just a few months back.



The recently introduced end-to-end encryption in WhatsApp

WHATSAPP.WEB

So, for the web based WhatsApp, the authentication requires a simple logic. The QR code scanned by the phone should be associated with the user whose phone number (unique key) is that of the phone that has scanned that QR code. This QR code contains a WebID that uniquely identifies the Web client.

Upon reading the QR code and associated WebID, our mobile WhatsApp client authenticates it and gives permission to WhatsApp server to grant access to the Web client for this phone number. The desktop web client then requests the WhatsApp server to access the user's contacts and chats as these are stored on the client mobile device and not on the WhatsApp server. The WhatsApp server fetches the contacts and chats from the mobile and transfers them to the desktop Web client.

The desktop web client then displays these contacts and chats to the user. For this data flow, WhatsApp web client apparently uses Web Socket to communicate with the server. This means

- More battery and mobile data consumption due repeated hits to the server and real time authentication between the web client and the mobile client.
- Only one web client can be active at a time.

Flow Diagram

Mobile Client

(1) Generates QR code containing unique ID (WebID)

Web Client

(2) Reads the QR code and associated WebID

(3) Authenticates the WebID and tells the WhatsApp server to give access permission to Web Client for its phone number.

(4) Allows the Web client to proceed for the given identity (phone number).

(5) Web Client requests mobile client to send the user's chats and contacts through the WhatsApp server.

(6) Displays the chats and contacts (personal view) associated to this identity (phone number).

WhatsApp Server