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mdWebSocket.4dbase

A 4D WEB SOCKET SERVER COMPONENT

ABOUT ME

- Matt Davis, Second Generation 4D Developer. “The 4Dmd.”
- I have been programming in 4D for over 12 years on various projects.
- Love to solve things and see how they connect.

WEB SOCKETS (WHY & QUICK INTRO)

- Keeps a connection open & 2 way communication with a browser.
- Only sends data (called “frames”) back and forth.
- Know exactly who has your website/web application open.
- Similar concept of the 4D commands “Register Client” and “Execute on Client” except toward a web client.

LIVE DEMO: Chat Client

https://demos.the4dmd.com/chat/

(Shows how data sends back and forth)

LIVE DEMO: Sortable Syncing List

https://demos.the4dmd.com/list/

(Shows a way to save data and sync with clients)

DEMO: Monitoring Web Sockets in 4D

THE COMPONENT

- Free to download and start using today, 3/13/2019.
- Beta limited to 3 web socket connections for testing.
- Price for Full Unlocked License T.B.D.
- The mdWebSocket component is included with the demos presented today, ready to download shortly after this webinar @ https://the4dmd.com/demos/

Questions?

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For downloads,
components, updates, &
demos

Visit:

[the4dmd.com](the4dmd.com)

(Today is the start....
more tools and pages to come)

Information Slides

WHAT ARE WEB SOCKETS?

- Wikipedia: "**WebSocket** is a computer communications protocol, providing full-duplex communication channels over a single TCP connection."
- Matt's simpler definition: "A connection from a web browser to a server that STAYS OPEN so you can push a message from either direction."
- Browser Support: https://caniuse.com/#feat=websockets (Almost all browsers since 2013, Chrome, Firefox, Safari, Edge, even Internet Explorer 10+, Android 4.4.4+, iOS 6+)

WEB SOCKET BENEFITS

- 2 way communication!
- No overhead from client and small overhead on server to keep socket/connection open. No need to “short poll,” “long poll” or check for new data from client on a loop.
- All messages back and forth are called “frames.” They only contain the payload with no extra stuff like headers.
- Quickly sync data between many devices in front of your eyes.

WEB SOCKETS

- Server and Client can ask or give data at anytime.
- Only one Auth. / Negotiation per socket.
- Keep track of who / how many users have your web application open.

VS

AJAX REQUESTS

- Client (Browser) has to repeatably ask for new data.
- Auth. / Negotiation for every data request.
- Connects to server only to get data then disconnects.

WHEN TO USE WEB SOCKETS INSTEAD OF AJAX REQUESTS?

- Only when 2-way communication or “active/online” status is needed. If not needed, AJAX requests are the better choice and designed for getting data and disconnecting.

For example:

1. Use it on the “Live Chat” page of your site. (Not recommended on the home page of your website.)
2. Use it with an internal web application to keep track of who is online (or not online). Use it to PUSH messages or alerts from the server to your users.

THE COMPONENT: mdWebSocket.4dbase

- Compiled for 32bit & 64bit. Can be dropped into any database. Works and tested on v15, v16 & v17. Used in production for a few v15 and v17 databases.
- Implements Server Methodology: Spins up processes as needed for connections. Keeps track of all connected web sockets with methods to inspect / interact. Sends socket “pings.”
- 1 Connected Web Socket = 1 4D Process
- Runs on a different port than the 4D Web Server. (Default is 8081 but it’s easily configurable)
- Currently SSL is not implemented. It is recommended that you use a reverse proxy (nGinX or Apache) to handle SSL. Especially if you are running a database older than v17… using a reverse proxy can keep your web server secure. (Can talk about that more if needed)