FTPChat Project

File Transfer Protocol Chat Project

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1. What is FTPChat?

FTPChat is a custom-built, encrypted messaging protocol that operates over the File Transfer Protocol (FTP) instead of traditional socket-based communication. It transforms FTP servers, hosted on routers like the ZTE ZXHN H188A SuperVectoring or via platforms like SFTPCloud.io, into secure, relay-based messaging hubs.

2. What is An FTP Server?

An FTP server is a system that uses the File Transfer Protocol (FTP) to store, share, and manage files across a network. According to Cisco, FTP operates on a client-server model using TCP/IP, Port 21 handles control commands (login, navigation).

In practical setups, FTP servers can be hosted on routers with USB and FTP capabilities, such as the ZTE ZXHN H188A transforming a simple flash drive into a customizable cloud-like system.

Unlike commercial cloud services (e.g., Google Drive or Dropbox), FTP servers offer:

- Full control over storage and access
- Local and remote file management
- And are more developer-friendly

3. FTPChat Advantages over web sockets

- Simplified Architecture

FTPChat replaces complex socket programming with FTP, an easy-to-learn protocol that handles transport, authentication, and session management natively.

- Router-Based Hosting

Easily deployable on routers with USB and FTP capabilities, such as the ZTE ZXHN H188A, turning local storage into a secure relay without custom server setups.

- Global Access via SFTPCloud.io

Eliminates the need for tunneling tools like Ngrok. Relays are hosted directly and securely, improving stability and scalability.

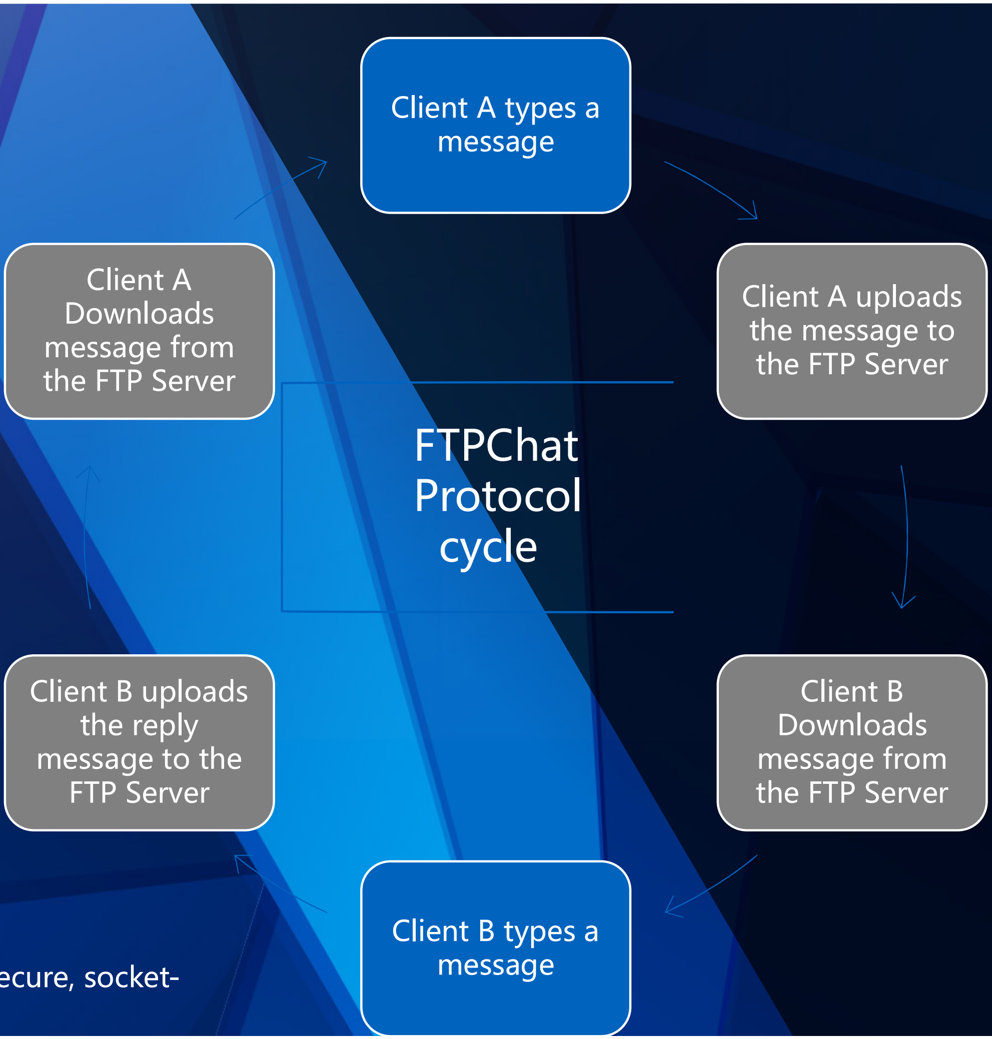
- Modular Encryption Layer

Built with Python, FTPChat`s encryption is flexible and secure, without relying on low-level socket handling. And it comes with 24-Layer Mono-Alphabetic encryption.

4. What makes it different

FTPChat replaces traditional socket-based messaging with a stable, FTP-driven architecture. This shift simplifies deployment, improves compatibility, and reduces development complexity.
It consumes fewer system resources, avoids common socket-related issues, Enables faster and more reliable deployment. FTPChat introduces features rarely found in conventional chat systems, making it ideal for secure communication, protocol innovation, and legacy-grade attribution.

5. Visualizing how it works


Client A types a message
Client A uploads the message to the FTP Server
Client B Downloads message from the FTP Server
Client B types a message
Client B uploads the reply message to the FTP Server
Client A Downloads message from the FTP Server
FTPChat Protocol cycle

Note: The FTP server acts as a relay node, secure, socket-free, and encrypted.

6. Sources

1.Cisco: "FTP uses TCP Port 21 for control and data transfer."
Link:
https://www.cisco.com/c/en/us/td/docs/ios/sw_upgrades/interlink/r2_0/user/ugftpc1.html

2.Microsoft Learn: "Port 22 is used for secure file exchange over SSH."
Link:
https://learn.microsoft.com/en-us/troubleshoot/azure/general/secure-file-exchange-transfer-files

3.IBM Docs: "Sockets require open ports and persistent connections, which may be blocked by firewalls."
Link:
https://www.ibm.com/docs/en/i/7.4.0?topic=programming-how-sockets-work

THANK YOU

Thank you for your time, I hope you enjoyed the project!