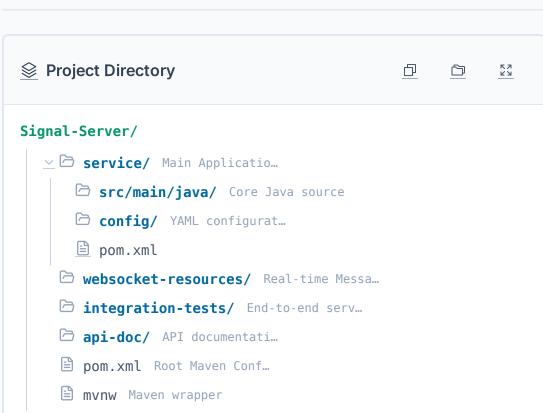


The server-side backend for the Signal messaging app. A focused, high-performance Java application using the Dropwizard framework and Protocol Buffers.

Updated 2025-12-30

#signal #java #dropwizard #protobuf #messaging #security



Repository Info

Repository - signalapp/Signal-Server

Stars - 15k+

License - AGPL-3.0

Last Analyzed - December 2025

Tech Stack

Language - Java 21

Framework - Dropwizard (Jetty/Jersey/Jackson)

Serialization - Protocol Buffers

Database - PostgreSQL / FoundationDB

Architecture Notes

Build Tool - Maven

Signal Server is built using the **Dropwizard** framework, which prioritizes stable, battle-tested libraries over 'magic'. The architecture is highly optimized for message delivery. It uses **Protocol Buffers** for efficient serialization across the wire. A key architectural split is between the standard REST services and the websocket-resources, which manage the long-lived connections required for real-time message pushing.

□ Key Directories

service/ - Contains the bulk of the application code, including account management, key fetching, and message routing logic.

websocket-resources/ - A specialized module for handling WebSocket-based communication, which is the primary channel for delivering messages to online clients.

service/config/ - Dropwizard uses YAML for configuration. This directory contains samples for the complex setup required to run a Signal instance.

Why This Structure?

Signal Server is a masterclass in 'Focused Engineering'. It avoids bloat and focuses entirely on secure, reliable message routing. Its structure shows how to build a world-class system using a minimalist but robust Java stack.