

Chat System

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Recommendations to build a real-time chat system:

1- PUSHER

- The free trial (Sandbox) is **LIMITED (especially in messages amount per minute)**, you will find below the comparison between all plans:

	Messages per day	Concurrent connections ⓘ	Level of support	Monitoring integrations ⓘ	Annual price discount	Functions available ⓘ	
Sandbox Free	200k	100	Standard ⓘ	✗	✗	✓	Sign up
Startup \$49/month	1 million	500	Standard ⓘ	✗	✗	✓	Sign up
Pro \$99/month	4 million	2,000	Standard ⓘ	✓	✗	✓	Sign up
Business \$299/month	10 million	5,000	Premium ⓘ	✓	✗	✓	Sign up
Premium \$499/month	20 million	10,000	Premium ⓘ	✓	✗	✓	Sign up
Growth \$699/month	40 million	15,000	Premium ⓘ	✓	Get in touch	✓	Sign up
Plus \$899/month	60 million	20,000	Premium ⓘ	✓	Get in touch	✓	Sign up
Growth Plus \$1,199/month	90 million	30,000	Premium ⓘ	✓	Get in touch	✓	Sign up

ALSO, there is an “Enterprise Plan” with **10 million connections** and **100 billion messages**, but we need to contact with pusher team.

Please note that:

- 1- Concurrent Connections **means** number of simultaneous open connections across your app.
- 2- Monitoring integrations **means** export metrics to your Datadog or Librato account, which are both cloud-based monitoring and analytics platforms.
- 3- Functions Available **means** serverless functions. Could be used for:
 1. Moderation
 2. Translation
 3. Compliance
 4. Data analysis
 5. Routing
 6. Integration

4- Support Packages:

	Standard	Premium	Enterprise	Priority
Price	See fixed plans	See fixed plans	From \$500/month	From \$3,000/month
Extensive Product Documentation	✓	✓	✓	✓
Product Tutorials	✓	✓	✓	✓
24/7 Platform Monitoring	✓	✓	✓	✓
Response Times	Best Effort / Target 48 hours	Target 24 Hours	Target 1 Hours	Target 1 Hours
Email Support	✓	✓	✓	✓
Slack Support	✗	✗	✓	✓
Customer Success Assistance Get one-to-one access to our expert support team for troubleshooting assistance and implementation reviews. Dedicated advisers will undertake checks to ensure your Pusher plan is being used at full value.	✗	✗	✓	✓
Phone Support	✗	✗	✗	✓
Solution Reviews Scheduled support from Pusher's experienced solutions engineers to assist with your realtime architectural and feature decisions.	✗	✗	✗	✓
Support Hours	UK + US Business Hours	UK + US Business Hours	UK + US Business Hours	24/7 Support *

* Fixed Plans are the plans we have mentioned before.

2- Laravel Broadcasting

It is a built-in support for broadcasting events, which makes real-time communication easier.

3- Front-end Framework

We need to use a front-end framework to handle the dynamic and interactive nature of the chat interface. The best frameworks to use are: **Vue.js** or **React**.

The recommended front-end framework is: **Vue.js**, Laravel has built-in support for it.

4- Database

The recommended performant Databases: **MYSQL** or **PostgreSQL**.

- We need to use **indexing** and **queries** to optimize the efficient retrieval messages, **especially** as the message volume grows.

5- Pagination and Load Balancing

- Pagination => To manage large datasets efficiently.
- Load Balancing => To distribute the traffic among multiple servers if the user base is significant.

6- Security

- Implement secure coding practices to prevent common web vulnerabilities, such as:
 - 1- **SQL injection**: type of cybersecurity attack that occurs when an attacker is able to manipulate an application's SQL query by injecting malicious SQL code.
 - 2- **Cross-Site Scripting (XSS)**: type of security vulnerability that occurs when an attacker injects malicious scripts into web pages that are viewed by other users.

Also, use HTTPS to encrypt communication between the server and clients.

7- Laravel Horizon

- Is a robust dashboard and job queue management tool provided by the Laravel PHP framework.
- It is recommended for monitoring and managing queues, as queuing can be crucial for handling real-time updates efficiently.