Replication

Primary Data Center

DB Node — DB Node — Copy — Message Receiver

Copy — High-availability Que

User Que — User Que

Vaults

Authentication & Authorization

Secondary Data Center

DB Node — DB Node — Copy — Message Receiver

Copy — High-availability Que

User Que — User Que

Vaults

Authentication & Authorization

Transport

Timestamped Inbound Message

App

Transport

Timestamped Outbound Message

App

- Messages, naturally, remain on users' devices until deleted.
- High-availability que, coupled with copies on devices, guarantee data availability and delivery in the face of network outage.
- Authentication layer provides single-sign-on and/or log-in.
- Database clusters maintain historical and archival copies.
- End-to-End encryption provides data protection in rest and transit.
- Vault service in the data center protects secrets and facilitates public-private key cryptography.
- Replication to alternate data centers enables failover in the face of hardware failure and maintains near 100% availability and network partition tolerance.
- Dedicated queues, coupled with making copies of messages for each user, significantly reduce lock contention and ensure that connection to one user doesn't affect another. This further improves performance and increases tolerance to failure.