Ping SaaS – Phase-wise Backend Roadmap

This roadmap outlines the exact engineering phases required to build Ping, a real-time messaging platform focused on system design, scalability, and backend fundamentals.

Phase 1 – Authentication & Identity (Week 1)

- Implement signup, signin, JWT authentication
- Create User and UserProfile tables
- Password hashing with bcrypt
- Auth middleware for protected routes
- Deliverable: Users can securely login

Phase 2 – Conversations (Week 2)

- Create 1-to-1 conversations
- Create Conversation and ConversationMember tables
- Prevent duplicate conversations
- Fetch all user conversations
- Deliverable: Chats exist in database

Phase 3 – Messages (Week 3)

- Send message API
- Store persistent messages in PostgreSQL via Prisma
- Pagination support
- Membership authorization checks
- Deliverable: REST-based messaging works

Phase 4 – Realtime Layer (Week 3-4)

- Setup WebSockets / Socket.IO
- Join users into conversation rooms
- Emit messages in realtime
- Database as source of truth
- Deliverable: Live chat experience

Phase 5 – Group Chat (Week 4)

- Group creation logic
- Add/remove members
- Admin roles
- Group name and avatar
- Deliverable: WhatsApp-like groups

Phase 6 – Stealth Mode (Week 5)

- Redis TTL based ephemeral messages
- Do not persist stealth messages in DB
- Auto-expire messages
- Deliverable: Snapchat-style disappearing chats

Phase 7 – Async Jobs & Scaling (Week 6)

- BullMQ worker setup
- AI group summaries
- Background processing
- Hot vs cold path separation
- Deliverable: System design maturity

Phase 8 – Deployment & Polish (Week 7-8)

- Deploy backend
- Environment configs
- Documentation and README
- Cleanup and testing
- Deliverable: Production-ready SaaS

Final Advice: Focus on finishing each phase sequentially. A completed, clean system is far more valuable than many unfinished features.