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  LINKLOOP — DEXCOM DATA FLOW DIAGRAM
  Partner: VibeCMD LLC  |  App: LinkLoop  |  Date: February 2026
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  │                          ACTORS & SYSTEMS                                │
  │                                                                          │
  │   [USER]      T1D Warrior using LinkLoop iOS app                         │
  │   [APP]       LinkLoop iOS (React Native / Expo, iPhone only)            │
  │   [SERVER]    LinkLoop Backend (Node.js / Express on Render.com)         │
  │   [DB]        MongoDB Atlas (cloud database, US region)                  │
  │   [DEXCOM]    Dexcom API  — api.dexcom.com  (v3 REST API)                │
  │   [CIRCLE]    Care Circle Members (family / caregivers)                  │
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  PHASE 1 — DEXCOM AUTHORIZATION (One-time setup, explicit user action)
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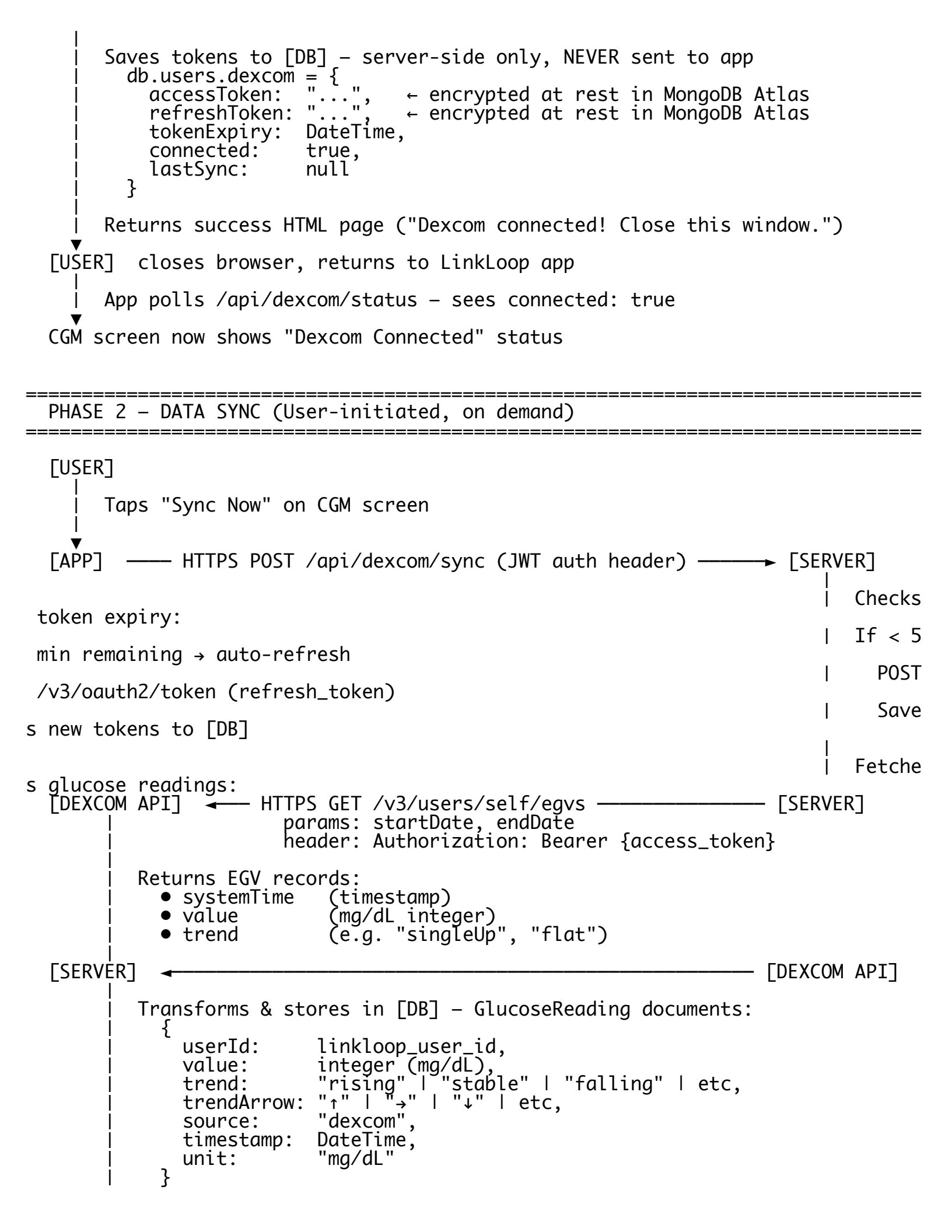
  [USER]
    |
    |  Taps "Connect Dexcom" button on CGM screen
    |
    ▼
  [APP]  ──── HTTPS GET /api/dexcom/auth ──────────────────────────► [SERVER]
                                                                        |
                                                                        |  Builds
 Dexcom OAuth URL with:
                                                                        |    • cl
ient_id (server env var)
                                                                        |    • re
direct_uri (server callback)
                                                                        |    • sc
ope: offline_access
                                                                        |    • st
ate: linkloop userId
                                                                        |
  [APP]  ◄──── Returns { authUrl } ──────────────────────────────── [SERVER]
    |
    |  Opens authUrl in iOS system browser (Safari)
    |
    ▼
  [DEXCOM OAuth Login Page]  —  api.dexcom.com/v3/oauth2/login
    |
    |  User enters THEIR OWN Dexcom credentials
    |  ⚠ LinkLoop never sees username or password
    |
    |  User reviews and approves requested permissions
    |  (scope: offline_access — read glucose data)
    |
    |  Dexcom issues authorization code
    |
    ▼
  [SERVER]  ◄──── HTTPS redirect with ?code=xxx&state=userId ──── [DEXCOM]
    |
    |  Exchanges auth code for tokens via POST /v3/oauth2/token:
    |    • access_token   (short-lived, ~2 hours)
    |    • refresh_token  (long-lived)
    |    • expires_in
```


Saves tokens to [DB] — server-side only, NEVER sent to app
db.users.dexcom = {
accessToken: "...", ← encrypted at rest in MongoDB Atlas
refreshToken: "...", ← encrypted at rest in MongoDB Atlas
tokenExpiry: DateTime,
connected: true,
lastSync: null
}
Returns success HTML page ("Dexcom connected! Close this window.")
[USER] closes browser, returns to LinkLoop app
App polls /api/dexcom/status — sees connected: true
CGM screen now shows "Dexcom Connected" status
PHASE 2 — DATA SYNC (User-initiated, on demand)
[USER]
Taps "Sync Now" on CGM screen
[APP] ——— HTTPS POST /api/dexcom/sync (JWT auth header) ———► [SERVER]
Checks token expiry:
If < 5 min remaining → auto-refresh
POST /v3/oauth2/token (refresh_token)
Saves new tokens to [DB]
Fetches glucose readings:
[DEXCOM API] ◄——— HTTPS GET /v3/users/self/egvs ——————— [SERVER]
params: startDate, endDate
header: Authorization: Bearer {access_token}
Returns EGV records:
• systemTime (timestamp)
• value (mg/dL integer)
• trend (e.g. "singleUp", "flat")
[SERVER] ◄——— [DEXCOM API]
Transforms & stores in [DB] — GlucoseReading documents:
{
userId: linkloop_user_id,
value: integer (mg/dL),
trend: "rising" | "stable" | "falling" | etc,
trendArrow: "↑" | "→" | "↓" | etc,
source: "dexcom",
timestamp: DateTime,
unit: "mg/dL"
}


NOT stored: raw Dexcom userId, personal identifiers,
device serial number, raw trend strings
Returns { synced: N, message: "Synced N readings" }
[APP]
[SERVER]
Fetches latest readings via GET /api/glucose
CGM screen displays:
Current glucose value + trend arrow
24-hour history graph
Time since last reading
High / Low / In Range status
PHASE 3 – CARE CIRCLE SHARING (Optional, warrior controls)
[USER / WARRIOR]
Chooses to invite family / caregiver to their Circle
Sends invite code (generated by server)
[CIRCLE MEMBER] joins via invite code in LinkLoop app
Gets linked to warrior's account as role: "member"
Can view warrior's glucose readings – READ ONLY
[APP – Circle Member]
HTTPS GET /api/glucose/member-view
[SERVER]
Verifies circle membership
Returns warrior's readings from [DB]
(same data warrior sees – no extras)
[APP – Circle Member]
[SERVER]
Circle member sees: glucose value, trend, history
Circle member CANNOT: modify readings, access Dexcom tokens,
see warrior's Dexcom credentials,
share data further
PHASE 4 – DISCONNECTION / REVOCATION
[USER]
Option A: Taps "Disconnect Dexcom" in LinkLoop app
[APP]
HTTPS POST /api/dexcom/disconnect
[SERVER]

```
                                                                    |  Immedi
ately nulls all tokens in [DB]:
                                                                    |    dexc
om.accessToken  = null
                                                                    |    dexc
om.refreshToken = null
                                                                    |    dexc
om.connected    = false
                                                                    |
                                                                    |  Existi
ng glucose readings are retained
                                                                    |  (user'
s own historical data, not Dexcom's)
                                                                    ▼
                                                                  [DB] tokens
 deleted

    |
    |  Option B: User revokes access directly at dexcom.com
    |            → access_token immediately invalidated by Dexcom
    |            → Next sync attempt returns 401
    |            → Server marks dexcom.connected = false automatically
    |
    |  Option C: User requests full account deletion
    |            Email: vibetech@vibecmd.net
    |            → All user data including glucose readings deleted within 30 da
ys
    |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  DATA STORAGE SUMMARY
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  What is stored in LinkLoop's database (MongoDB Atlas):

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  | Data                             | Location         | Retention            |
  ├──────────────────────────────────┼──────────────────┼──────────────────────┤
  | Dexcom access_token              | Server DB only   | Until disconnect     |
  | Dexcom refresh_token             | Server DB only   | Until disconnect     |
  | Glucose readings (value,         | Server DB        | While account active |
  |   trend, timestamp)              |                  |                      |
  | User account (name, email)       | Server DB        | While account active |
  | Care Circle membership           | Server DB        | While account active |
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  What is NEVER stored:
    • Dexcom username or password
    • Dexcom device serial numbers
    • Raw Dexcom internal user IDs
    • Any data not directly needed to display glucose to the user

  What is NEVER shared:
    • Data is never sold to third parties
    • No advertising SDKs in the app
    • No analytics platforms with access to health data
    • Care Circle members only see data the warrior explicitly shares


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  SECURITY CONTROLS
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✅ All traffic — HTTPS / TLS 1.2+ enforced, no HTTP fallback
✅ Authentication — JWT tokens, short-lived, validated server-side
✅ Dexcom tokens — stored server-side only, never transmitted to app
✅ Database — MongoDB Atlas with access controls and encryption at rest
✅ Server — Render.com managed hosting (automatic security patches)
✅ Auto token refresh — silent, 5 min before expiry, no user interruption
✅ Disconnect — full token wipe on user request, immediate effect

CONTACT

Company: VibeCMD LLC
App: LinkLoop
Owner: Kevin Cunningham
Email: vibetech@vibecmd.net
Privacy: https://vibecmd.net/privacy/linkloop
Server: https://linkloop-9l3x.onrender.com