



# Where AI Agents Debate So Investors Don't Have To

## The Multi-Agent Intelligence Platform for Private Capital

12 specialized AI agents argue, critique, and synthesize—producing verified recommendations with full explainability. No hallucinations. No black boxes. Just better matches.

**12**

AI  
AGENTS

**4**

DEBATE  
TYPES

**\$4T+**

MARKET SIZE

[Product Requirements Document](#)

December 2025

# Table of Contents

## 1. Product Overview

What LPxGP Does

The Problem We Solve

Key Capabilities

Who Uses LPxGP

## 2. Feature Specifications

LP Database & Search

AI-Powered Matching

Pitch Generation

Pipeline Management

## 3. User Journeys

Platform Onboarding

Fund Creation

LP Research & Matching

Pitch & Outreach

## 4. Screen Reference (35 screens)

Public Screens (4)

GP User Screens (13)

Super Admin Screens (10)

UI State Screens (3)

## 5. Data Model

Entity Overview

Key Relationships

## 6. Technical Architecture

System Overview

Technology Stack

Security Model

## **7. Agentic AI Architecture**

Multi-Agent Debate System

The 12 Specialized AI Agents

LangGraph Orchestration

Continuous Learning

## **8. Non-Functional Requirements**

Performance

Security

Scalability

## **9. Success Metrics**

## **10. Glossary**

# 1. Product Overview

## The Opportunity

Private equity and venture capital fundraising is a \$4+ trillion industry running on spreadsheets, outdated databases, and gut instinct. Fund managers spend 40% of their time on fundraising—most of it on manual research, blind outreach, and wasted meetings with misaligned investors.

**The Technical Insight:** Traditional matching systems use a single AI model that outputs a score. They're overconfident, can't explain themselves, and hallucinate data. LPxGP uses a fundamentally different architecture: **12 specialized agents that debate each other**, catch each other's mistakes, and only commit when they reach consensus—or escalate to humans when they don't.

## What LPxGP Does

LPxGP is an AI-native intelligence platform that helps fund managers find and engage institutional investors. But unlike "AI-powered" tools that slap ChatGPT onto a database, we built a multi-agent architecture from first principles.

**In one sentence:** LPxGP's adversarial AI agents debate every match, catch hallucinations before they embarrass users, and produce verified, explainable recommendations—turning fundraising from art into science.

## Platform Capabilities

Capability	The AI Approach	Why It Matters
<b>LP Database</b>	5,000+ institutional investors with mandates, AUM, allocation targets, and contacts—enriched by Research Agent debates that validate every data point	Hours of research in seconds, with verified data
<b>Semantic Search</b>	Voyage AI embeddings tuned for finance + LLM re-ranking. Search "growth equity that likes founder-led companies in fintech" and get relevant results	Find LPs by concept, not just keywords

<b>Multi-Agent Matching</b>	Bull Agent argues for, Bear Agent argues against, Synthesizer weighs evidence. Disagreements get cross-feedback loops or human escalation	Catches overconfidence and edge cases that single models miss
<b>Explainable Scores</b>	Full debate transcripts available. See exactly why Bull thinks it's an 85 and Bear thinks it's a 62—and how they resolved it	Users trust recommendations they can understand
<b>Verified Pitch Generation</b>	Pitch Generator creates content, Pitch Critic catches hallucinations and factual errors, Content Synthesizer approves or regenerates	Personalization at scale without embarrassing mistakes
<b>Pipeline Tracking</b>	Every interaction feeds the learning loop. 12-18 month lag to commitment, but we track early signals (response rate, meeting conversion)	System gets smarter with every match

## The Problem We Solve

Fundraising is broken. Here's why:

### Information Overload

10,000+ institutional investors globally. Mandates change quarterly. Allocation cycles vary. Manually evaluating fit is impossible at scale.

### Wasted Meetings

80% of LP meetings go nowhere—wrong strategy, wrong size, wrong timing. Each wasted meeting costs the GP \$2,000+ in time and travel.

### Generic Outreach

"Dear Investor, we're raising a fund..." gets deleted. Personalization requires hours of research per LP. Most GPs can't scale it.

### AI Hallucination Risk

Standard AI tools make up facts about LPs, invent allocations, and fabricate contacts. One wrong claim destroys credibility permanently.

## Who Uses LPxGP

### GP Fund Manager (Company Admin)

**Role:** Managing Partner or Partner at a PE/VC firm responsible for fundraising

**Platform Access:** Full access including fund creation, team management, and all LP features

**Primary Goals:**

- Raise capital for new funds efficiently
- Build relationships with the right institutional investors
- Track fundraising pipeline across the entire team

## **GP Associate (Company Member)**

**Role:** Associate or VP supporting fundraising efforts at a PE/VC firm

**Platform Access:** LP search, matching, and pitch generation (read-only for fund settings)

**Primary Goals:**

- Research and identify potential LP targets
- Prepare meeting materials and personalized pitches
- Support partners with data and analysis

## **Super Admin (LPxGP Team)**

**Role:** LPxGP platform administrator responsible for operations

**Platform Access:** Full administrative access across all companies

**Primary Goals:**

- Onboard new GP firms to the platform
- Maintain and improve LP database quality
- Monitor platform health and support users

## 2. Feature Specifications

### LP Database & Search

---

#### Database Contents

The LP database contains comprehensive information on institutional investors:

- **Organization Profile:** Name, type (pension, endowment, family office, etc.), headquarters location, website
- **Financial Data:** Total AUM, PE/VC allocation percentage, typical check size range, target returns
- **Investment Mandate:** Strategy preferences, geographic focus, sector interests, stage preferences
- **Contact Information:** Key personnel with names, titles, and professional profiles
- **Activity Data:** Recent fund commitments (when available from public sources)

#### Search Capabilities

Search Type	Description	Example
Keyword Search	Traditional text matching on LP names and fields	"CalPERS" or "technology"
Semantic Search	Natural language queries using AI embeddings	"growth equity investors focused on enterprise software"
Filtered Search	Combine filters for precise targeting	Type: Pension, AUM: >\$10B, Geography: North America

### AI-Powered Matching

---

**Design Principle:** Quality above all else. Cost is not a constraint. Success is measured by actual investment commitments, not just high match scores.

## Quality-First Hybrid Pipeline

The matching system uses a 6-stage pipeline that combines hard filters, multiple scoring methods, LLM analysis, and continuous learning:

- Stage 1: HARD FILTERS (SQL)
  - └ Eliminate impossible matches (strategy, geography, size, track record)
  - └ Output: ~300-500 candidates from 10,000 LPs
- Stage 2: MULTI-SIGNAL SCORING (Python + Embeddings)
  - └ Attribute matching, semantic similarity, historical patterns
  - └ Output: Ranked list with preliminary scores
- Stage 3: LLM DEEP ANALYSIS (Claude via OpenRouter)
  - └ Analyze EVERY filtered candidate with LLM for nuanced judgment
  - └ Output: LLM-validated scores + detailed reasoning
- Stage 4: ENSEMBLE RANKING
  - └ Combine all scores, surface disagreements as "worth investigating"
  - └ Output: Final ranked matches with multi-perspective validation
- Stage 5: EXPLANATION GENERATION
  - └ Rich explanations, talking points, concerns, approach strategy
  - └ Output: Actionable intelligence for GP outreach
- Stage 6: LEARNING LOOP (Continuous)
  - └ Track outcomes, retrain models, A/B test changes

## Ensemble Scoring Weights

Component	Weight	Source	Purpose
Rule-Based Score	25%	SQL + Python	Hard constraints, business logic
Semantic Score	25%	Voyage AI embeddings	Thesis/mandate alignment
<b>LLM Score</b>	<b>35%</b>	Claude analysis	Nuanced judgment, non-obvious fit
Collaborative Score	15%	Historical patterns	"LPs like this invested in funds like this"



## LLM Scoring (Key Innovation)

Unlike systems that only use LLMs for explanations, we use Claude to actually score every match. The LLM analyzes fund profiles and LP mandates to identify:

- **Strategy Alignment:** How well does fund strategy match LP mandate?
- **Size Fit:** Is fund size in LP's sweet spot or at the edge?
- **Track Record:** Does team experience meet LP's requirements?
- **Timing:** Is LP likely allocating now based on known patterns?
- **Non-Obvious Insights:** Red flags, hidden opportunities, and nuanced factors

## Bidirectional Matching

The system supports matching in both directions:

- **GP → LP:** GP creates fund, system finds matching LPs ranked by fit quality
- **LP → GP:** LPs can see which funds match their mandate (optional feature)

## Learning From Slow Feedback

**Critical Reality:** Investment sector feedback takes 12-18 months (first meeting → commitment). The system uses proxy metrics for early learning.

Tier	Signal	Latency	Use For
1	Match shortlisted/dismissed	Immediate	Hard filter tuning
2	Response received	Days-Weeks	<b>Key early predictor</b>
2	Meeting scheduled	Weeks	<b>Strong quality signal</b>
3	Due diligence started	2-6 months	Deal progression
4	Commitment made	6-18 months	<b>Ground truth</b>

## Match Output

For each fund, the system generates:

- **Ranked LP List:** LPs ordered by fit score (0-100)
- **Score Breakdown:** How each component contributed to the score
- **Talking Points:** What to emphasize when approaching this LP
- **Risk Factors:** Potential concerns to address proactively

## Pitch Generation

---

### Output Types

Type	Length	Use Case
Executive Summary	1 page	One-pager tailored to LP's interests and mandate
Outreach Email	3-5 paragraphs	Initial introduction referencing LP's recent activity
Talking Points	Bullet list	Meeting preparation with key messages and responses

**Human-in-the-Loop Design:** All AI-generated content requires human review before use. There is no auto-send functionality - users must copy to clipboard and paste into their email client. This ensures quality control and compliance with professional communication standards.

## Pipeline Management

---

The platform tracks LPs through the fundraising pipeline:

- **Identified:** LP discovered through search or matching
- **Shortlisted:** Selected for potential outreach
- **Contacted:** Initial outreach sent
- **Meeting Scheduled:** Engagement confirmed
- **In Diligence:** Active evaluation underway
- **Committed:** Commitment received

## 3. User Journeys

This section describes the key user experience flows through the LPxGP platform.

### Journey 1: Platform Onboarding

---

**Actor:** Sarah, LPxGP Super Admin

**Goal:** Onboard a new GP firm to the platform

**Screen Flow:** Admin Dashboard → Companies → Create Company → Company Detail → Invite Admin

Sarah receives a request from Acme Capital to join LPxGP. She reviews platform health on the Admin Dashboard, navigates to Companies, creates the new company profile with billing information, and invites John (Managing Partner) as the company admin via email invitation. John receives a secure link to accept the invitation and set up his account.

### Journey 2: Fund Creation

---

**Actor:** John, Partner at Acme Capital

**Goal:** Create fund profile for Growth Fund III

**Screen Flow:** Dashboard → Create Fund → Upload Deck → AI Extraction → Fund Detail

John clicks "+ New Fund" on his dashboard. He can either manually enter fund details or upload a pitch deck PDF. Choosing to upload, the AI extracts fund information (name, strategy, target size, thesis, track record) with confidence scores for each field. John reviews and confirms high-confidence items, manually corrects a low-confidence field, and saves the fund profile. The fund is now ready for LP matching.

### Journey 3: LP Research & Matching

---

**Actor:** Maria, Associate at Acme Capital

**Goal:** Find and evaluate LPs for Growth Fund III

**Screen Flow:** Dashboard → LP Search → Apply Filters → LP Detail → Matches → Match Detail → Add to Shortlist

Maria uses two approaches: manual research and AI matching. For manual research, she navigates to LP Search, enters "growth equity technology investors" and applies filters (Check Size > \$10M, Geography: North America). She reviews 45 results, clicks on promising LPs to view full profiles with mandates and contacts.

For AI matching, she goes to Growth Fund III and clicks "View Matches." The system shows 87 LPs ranked by fit score. She clicks on CalPERS (score: 92) to see why it's a strong match: strategy alignment, appropriate size, and high semantic similarity to the fund thesis. The AI provides talking points about CalPERS's recent tech investments and flags a potential concern about their preference for established managers.

## Journey 4: Pitch & Outreach

**Actor:** Maria, Associate at Acme Capital

**Goal:** Create personalized outreach for high-priority LPs

**Screen Flow:** Match Detail → Pitch Generator → Generate → Edit → Copy → Outreach Hub

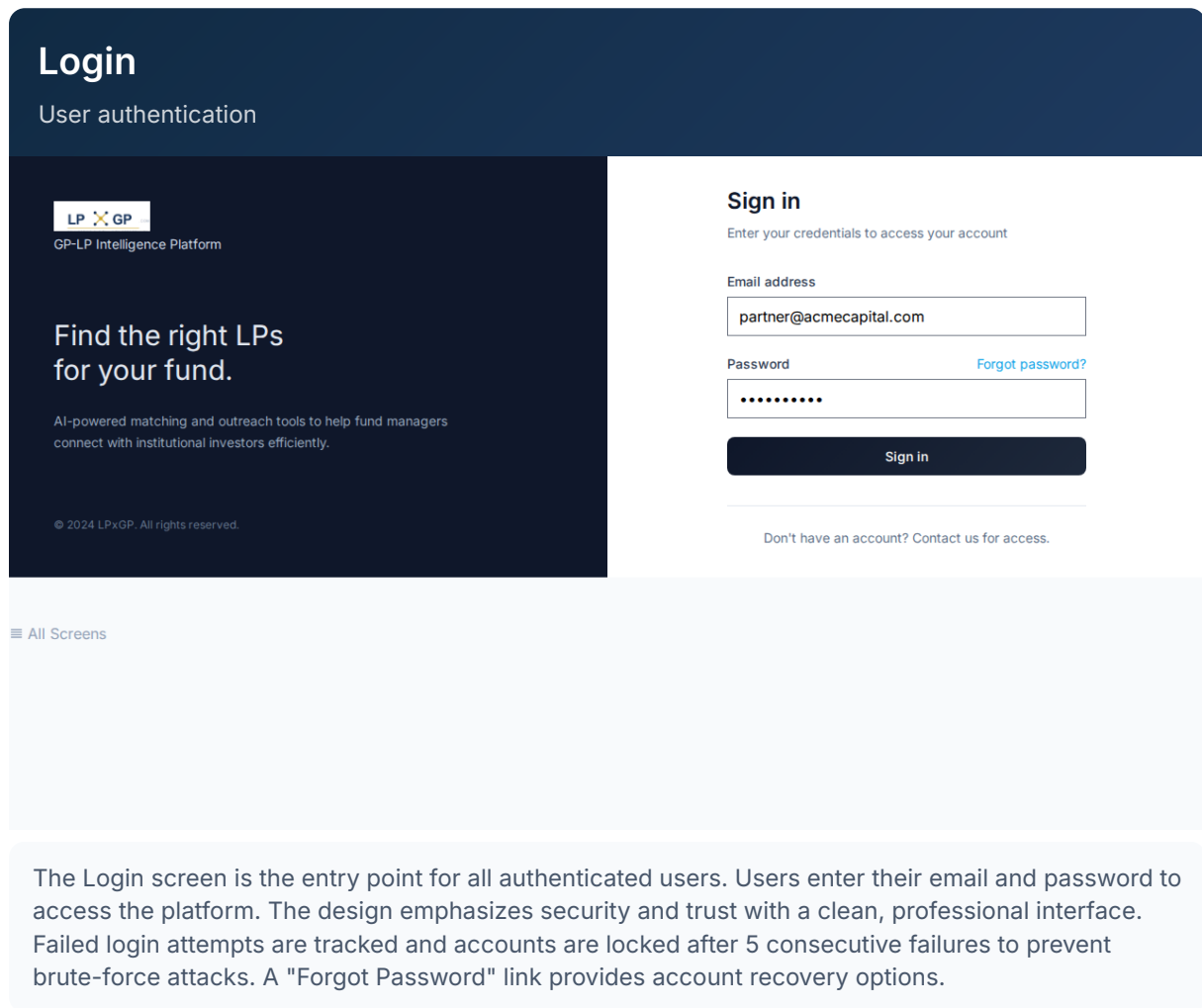
From the CalPERS match detail, Maria clicks "Generate Pitch" and selects "Outreach Email." The AI generates a personalized email referencing CalPERS's recent allocations and how Growth Fund III aligns with their mandate. Maria edits the subject line to add a mutual connection reference, adjusts the call-to-action timing, and copies the final email to clipboard. She pastes it into her email client and sends. Back in LPxGP, she moves CalPERS to "Contacted" in the Outreach Hub and logs the activity.

## 4. Screen Reference

This section documents all 35 screens in the LPxGP platform. Each screen includes a visual mockup and explanation of its purpose, user actions, and role in user journeys.

## Public Screens

4 screens — Authentication and onboarding flows for all users



# Accept Invitation

New user onboarding



GP-LP Intelligence Platform

- ✓ You've been invited to join Acme Capital
- ✓ Complete your account setup below

You're joining

**AC Acme Capital**  
Private Equity Firm

Invitation sent to:

**john.partner@acmecap.com**

Full Name

John Partner

Create Password

••••••••

Minimum 8 characters with a number

Confirm Password

••••••••

☐ I agree to the [Terms of Service](#) and [Privacy Policy](#)

Accept Invitation

Already have an account? [Sign in](#)

This screen appears when a user clicks an invitation link from their email. Since LPxGP is invite-only, this is the only way to create an account. Users set their password and confirm their details. The invitation token is validated server-side to ensure security. Expired or already-used tokens show appropriate error messages.



# Forgot Password

Request reset link

LP X GP

Reset your password

Enter your email address and we'll send you a link to reset your password.

Email Address

you@company.com

Send Reset Link

Remember your password? [Sign in](#)


© 2024 LPxGP. All rights reserved.

≡ All Screens

Users who cannot remember their password can request a reset link. They enter their email address and receive a secure, time-limited reset link. The form includes rate limiting to prevent abuse. For security, the same success message is shown whether or not the email exists in the system.

# Reset Password

Create new password

 Create new password

Email verified. Create your new password below.

New Password

Minimum 8 characters with a number

Confirm New Password

Reset Password

[Back to sign in](#)

© 2024 LPxGP. All rights reserved.

☰ All Screens

After clicking the reset link from their email, users land on this screen to set a new password. Password strength requirements are enforced (minimum 8 characters, mix of letters and numbers). The reset token is validated and expires after use to ensure security.

## GP User Screens

13 screens — Core platform functionality for fund managers and associates

# Dashboard

Fund overview and activity

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

## Dashboard

Welcome back, John

ACTIVE FUNDS  
**3**  
+1 this quarter

TOTAL MATCHES  
**127**  
across all funds

SHORTLISTED  
**34**  
LPs for outreach

MEETINGS  
**8**  
+3 this month

### Your Funds

+ New Fund

Growth Fund III

Private Equity - Growth

Raising

Target Size

\$500M

Matches

45

Shortlisted

12

View Matches →

Growth Fund II

Private Equity - Growth

Investing

Fund Size

\$350M

Vintage

2021

Deployed

72%

View Details →

Growth Fund I

Private Equity - Growth

Harvesting

Fund Size

\$200M

Vintage

2017

Net IRR

28.5%

View Details →

### Recent Activity

The Dashboard is the command center for fund managers. It provides an at-a-glance view of all funds, recent matching activity, and quick access to key features. Users see fund cards showing name, status (Raising/Investing/Harvesting), target size, and match statistics. Recent activity includes new matches, shortlist additions, and outreach updates. The "+ New Fund" button provides quick access to fund creation.

# Funds

List of all funds

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

## Your Funds

Manage fund profiles and view LP matches

+ New Fund

**Growth Fund III**

Raising

Private Equity - Growth

Target Size\$500M

Matches45

Shortlisted12

View Fund →

Matches

**Growth Fund II**

Investing

Private Equity - Growth

Fund Size\$350M

Vintage2021

Deployed72%

View Fund →

**Growth Fund I**

Harvesting

Private Equity - Growth

Fund Size\$200M

Vintage2017

Net IRR28.5%

View Fund →

+

Create New Fund

Set up a fund profile to find matching LPs

The Funds screen shows all funds belonging to the user's company. Each fund card displays key metrics: fund name, status, target size, number of LP matches, and last activity date. Users can filter by status or search by name. Clicking a fund card navigates to the Fund Detail view. Company admins can see all company funds; members see funds they're assigned to.

## Fund Detail

Fund profile with thesis and track record

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Funds / Growth Fund III

**Growth Fund III** Raising

Private Equity - Growth Equity

Edit FundView Matches

**Fund Overview**

Target Size	Target Close
<b>\$500M</b>	<b>Q2 2025</b>
Geography Focus	Sector Focus
<b>North America</b>	<b>Technology, Healthcare</b>
Check Size	Stage
<b>\$25M - \$75M</b>	<b>Growth / Expansion</b>

**Matching Stats**

Total Matches	<b>45</b>
High Score (80+)	<b>12</b>
Shortlisted	<b>8</b>
Contacted	<b>5</b>

View All Matches

**Investment Thesis**

Growth Fund III focuses on technology-enabled businesses in the upper mid-market segment (\$50M-\$200M revenue) with strong unit economics and paths to market leadership. We target companies with proven business models seeking capital to accelerate organic growth, pursue

**Quick Actions**

Generate LP Pitch →

The Fund Detail screen is the comprehensive profile for a single fund. It displays the fund thesis, investment strategy, geographic focus, target size, and track record of notable exits. A sidebar shows matching statistics and quick actions (View Matches, Generate Pitch). Company admins can edit fund details; members have read-only access. This is the primary context for LP matching and outreach activities.

# Create Fund

New fund creation form

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital JP

Funds / Create Fund

## Create Fund Profile

Set up your fund to start finding matching LPs

### Basic Information

Fund Name \*

Strategy \*

Private Equity - Growth

Status \*

Raising

### Fund Size & Timeline

Target Size \*

Target Close


Min Check Size

Max Check Size

The Create Fund screen enables users to set up a new fund profile. Users can either manually enter fund details or upload a pitch deck (PDF/PPTX) for AI-assisted extraction. When a deck is uploaded, the system uses Claude to extract fund name, strategy, thesis, target size, and other details. Extracted fields show confidence scores, allowing users to review and correct low-confidence items before saving.

# LP Search

Search and filter institutional investors

LP 

DashboardFundsSearchMatchesOutreach

Acme CapitalJP

## Search LPs

Find institutional investors for your funds

Search

**Filters**

LP Type

☒ Pension (245)

☒ Endowment (89)

☐ Foundation (67)

☒ Family Office (312)

☐ Sovereign Wealth (23)

AUM Range

\$1B

to

Max

Geography

North America

Invests In

247 LPs found

Sort by: AUM (High to Low)

NAME	TYPE	LOCATION	AUM	ACTIONS
<b>CalPERS</b> California Public Employees' Retirement System	Pension	Sacramento, CA	\$450B	<a href="#">View</a> + Shortlist
<b>Yale Endowment</b> Yale University Investments Office	Endowment	New Haven, CT	\$41B	<a href="#">View</a> + Shortlist
<b>Harvard Management</b> Harvard Management Company	Endowment	Boston, MA	\$53B	<a href="#">View</a> + Shortlist
<b>Ford Foundation</b> Ford Foundation Endowment	Foundation	New York, NY	\$16B	<a href="#">View</a> + Shortlist
<b>Texas Teachers</b> Teacher Retirement System of Texas	Pension	Austin, TX	\$180B	<a href="#">View</a> + Shortlist

LP Search is the primary research tool for finding potential investors. Users can search by keyword or use natural language queries like "technology growth equity investors in North America." Advanced filters allow narrowing by LP type (pension, endowment, family office), AUM range, typical check size, geographic focus, and strategy preferences. Results show relevance scores and key LP attributes. Users can add promising LPs to their shortlist or view full profiles.

24



## LP Detail

LP profile with mandate and contacts

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Search / CalPERS

CP

**CalPERS**  
California Public Employees' Retirement System  
Public Pension Sacramento, CA

+ Add to Shortlist

Generate Pitch

**Overview**

Total AUM  
**\$450B**

PE Allocation  
**13%**

Est. PE Commitment  
**\$58.5B**

**Investment Mandate**

CalPERS maintains a diversified private equity portfolio with allocations across buyout, growth equity, and venture capital strategies. The system prioritizes partnerships with established managers demonstrating strong track records and operational value creation capabilities.

TARGET RETURN  
**Net IRR 11%+**

PREFERRED CHECK  
**\$100M - \$500M**

**Match Score**

92

Excellent Match

Strategy Alignment

Strong

Size Fit

Good

Geography

Match

ESG Focus

Aligned

Why This Score?

The LP Detail screen provides comprehensive information about an institutional investor. It displays the LP's investment mandate, AUM, allocation targets, geographic preferences, and recent fund commitments. The Contacts section shows key personnel with titles and roles. Users can add the LP to their shortlist, generate a personalized pitch, or view matching scores against their funds. This screen is essential for research before outreach.

# Matches

AI-ranked LP matches for fund

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Funds / Growth Fund III / Matches

## LP Matches

Growth Fund III - 45 matched LPs ranked by fit score

Refresh Matches

Total Matches  
45

Avg Score  
72

Shortlisted  
12

Contacted  
8

92

**CalPERS** Excellent Match  
Public Pension | \$450B AUM | Sacramento, CA  
✓ Strategy aligned ✓ ESG aligned ✓ Size fit

Why this match? + Shortlist

88

**Yale Endowment** Strong Match  
Endowment | \$41B AUM | New Haven, CT  
✓ Strong PE allocation ✓ Thesis aligned

Why this match? + Shortlist

76

**Texas Teachers** Good Match  
Public Pension | \$180B AUM | Austin, TX  
✓ Strategy aligned ⚠ Usually requires Fund III+

Why this match? + Shortlist

The Matches screen shows AI-generated LP recommendations for a specific fund. LPs are ranked by a fit score (0-100) calculated from strategy alignment, size fit, geographic overlap, and semantic similarity between fund thesis and LP mandate. Each match card shows the score, LP name, type, AUM, and key alignment indicators (checkmarks for strong fits, warnings for concerns). Users can filter by score range, sort by different criteria, and bulk-add matches to their shortlist.

# Match Analysis

AI insights and talking points

LP X GP

DashboardFundsSearchMatchesOutreach

Acme CapitalJP

Funds / Growth Fund III / Matches / CalPERS Analysis

92

**CalPERS × Growth Fund III**  
Match Analysis & AI Insights

+ Add to Shortlist

Generate Pitch

**Score Breakdown**

95 Strategy Fit	90 Size Match	92 Geography	88 Thesis Alignment
--------------------	------------------	-----------------	------------------------

**AI Match Analysis**

**Why This Is a Strong Match**

CalPERS presents an excellent fit for Growth Fund III based on several key factors:

- ✓ **Strategy alignment:** CalPERS actively invests in growth equity managers targeting technology-enabled businesses, matching your fund's focus.
- ✓ **Fund size fit:** Your \$500M target is within CalPERS' preferred commitment range for emerging managers

The Match Detail screen explains why a specific LP is recommended for a fund. It breaks down the match score into components: strategy alignment, size compatibility, geographic fit, and semantic similarity. The AI generates talking points highlighting what to emphasize in outreach and identifies potential concerns to address proactively. Recent LP activity (if available) helps users time their outreach. A "Generate Pitch" button launches personalized content creation.

# Pitch Generator

AI-powered outreach content

LP X GP

Dashboard Funds Search Matches Outreach

Acme Capital JP

Outreach / Generate Pitch

Pitch Settings [← Back](#)

Target LP

CP

CalPERS

Score: 92

Fund

Growth Fund III

Content Type

☒ Outreach Email

☐ Executive Summary

☐ Meeting Brief

Tone

Professional & Formal

Key Points to Emphasize

☒ Track record

Generated Outreach Email

Regenerate

Copy to Clipboard

Human review required: AI-generated content should be reviewed and personalized before sending.

To: Michael Smith, Managing Investment Director

Subject: Acme Capital Growth Fund III - Investment Opportunity

Dear Mr. Smith,

I hope this message finds you well. I am reaching out regarding Acme Capital's Growth Fund III, a \$500 million growth equity vehicle focused on technology-enabled businesses in North America.

Given CalPERS' strategic interest in growth equity managers with demonstrated operational value creation capabilities, I believe there may be strong alignment with our investment approach.

**Key highlights:**

**Track Record:** Fund I has achieved a 28.5% net IRR, ranking in the top quartile among growth equity peers

**Team:** Our partners average 20+ years of PE experience across technology, healthcare, and financial services

**Strategy:** We target \$50-200M revenue companies with proven unit

The Pitch Generator uses Claude to create personalized outreach content for specific LP-fund combinations. Users select the output type: Executive Summary (1-page overview), Outreach Email (introduction message), or Talking Points (meeting preparation). The AI references the LP's mandate, recent activity, and the fund's thesis to create relevant, personalized content. All generated content is editable before copying to clipboard. There is no auto-send - this ensures human review of all outreach.

28

# Shortlist

LPs ready for outreach

LP X GP

DashboardFundsSearchMatchesOutreach

Acme CapitalJP

Funds / Growth Fund III / Shortlist

## Shortlist

Growth Fund III - 12 LPs ready for outreach

Export ListBatch Generate Pitches

All (12)To Contact (7)Contacted (3)Meeting Set (2)

<input type="checkbox"/>	LP	TYPE	SCORE	STATUS	NOTES	ACTIONS
<input type="checkbox"/>	<b>CalPERS</b> \$450B AUM	Pension	92	Contacted	Sent intro email 2 days ago	<a href="#">View →</a>
<input type="checkbox"/>	<b>Yale Endowment</b> \$41B AUM	Endowment	88	Meeting Set	Call scheduled Jan 15	<a href="#">View →</a>
<input type="checkbox"/>	<b>Harvard Management</b> \$53B AUM	Endowment	85	To Contact	—	<a href="#">View →</a>
<input type="checkbox"/>	<b>Ontario Teachers</b> \$250B AUM	Pension	79	Contacted	Follow-up needed	<a href="#">View →</a>
<input type="checkbox"/>	<b>Texas Teachers</b> \$180B AUM	Pension	76	To Contact	—	<a href="#">View →</a>

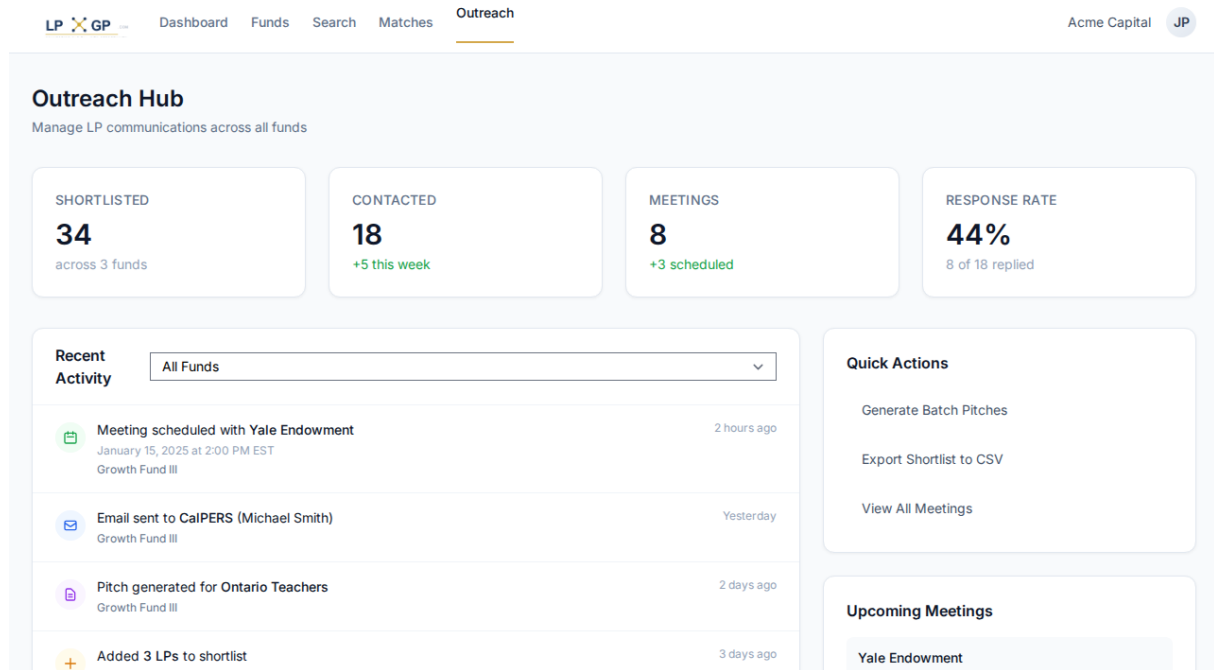
Showing 1-5 of 12

Previous123Next

The Shortlist is a curated collection of LPs the user has identified for potential outreach. It serves as a working list for fundraising campaigns. Users can organize LPs, add notes, track outreach status, and generate pitches in bulk. The shortlist persists across sessions and can be shared with team members. Quick actions allow moving LPs through the pipeline: Not Started → Contacted → Meeting Scheduled → In Diligence → Committed.

# Outreach Hub

Activity tracking and pipeline



The Outreach Hub provides a kanban-style view of the fundraising pipeline. LPs are organized by status: Identified, Contacted, Meeting Scheduled, In Diligence, and Committed. Users can drag-and-drop LPs between stages, log activities (calls, emails, meetings), and track commitment amounts. Summary metrics show pipeline progress and conversion rates. This screen helps teams coordinate outreach and measure fundraising progress.

## Settings - Profile

User profile settings

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Settings

Profile

Team

Company

Notifications

Security

Profile Settings

JP

Change Photo

JPG, PNG. Max 5MB.

First Name

John

Last Name

Partner

Email

john@acmecapital.com

Contact support to change your email address

Title

Managing Partner

Phone

+1 (555) 123-4567

Bio

The Profile Settings screen allows users to manage their personal information: name, email, title, and notification preferences. Users can change their password and manage two-factor authentication. The screen also shows account activity and login history for security awareness. All changes require current password confirmation for security.

## Settings - Team

Team member management

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Settings

Profile

Team

Company

Notifications

Security

Team Members

Manage who has access to Acme Capital

+ Invite Member

JP	<b>John Partner</b> john@acmecapital.com	Admin	You
SJ	<b>Sarah Johnson</b> sarah@acmecapital.com	Member	Edit
MC	<b>Mike Chen</b> mike@acmecapital.com	Member	Edit

Pending Invitations

	<b>emily@acmecapital.com</b> Invited 2 days ago	Pending	Resend	Cancel
--	--	---------	--------	--------

Role Permissions

The Team Settings screen is available to Company Admins and allows them to manage team access. Admins can invite new team members by email, assign roles (Admin or Member), and deactivate accounts. The member list shows names, emails, roles, and last activity. Admins can also manage fund assignments, controlling which team members can access which funds.

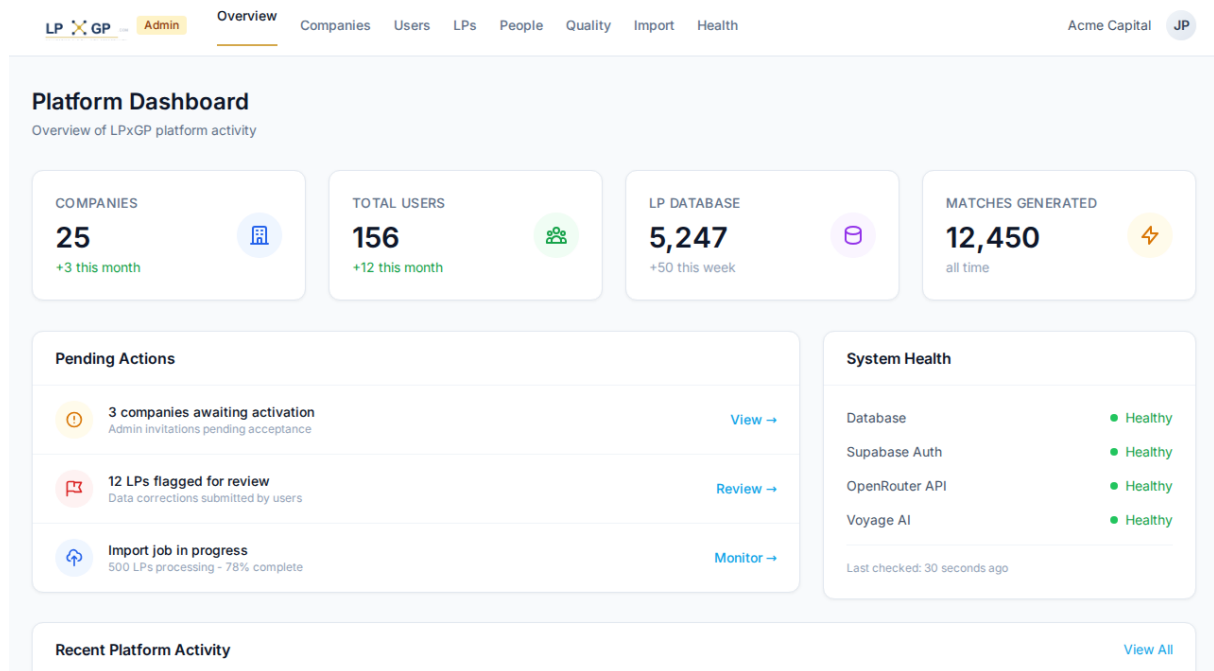


## Super Admin Screens

10 screens — Platform administration and data management

# Admin Dashboard

Platform overview and health



The Admin Dashboard provides Super Admins with a bird's-eye view of the entire LPxGP platform. Key metrics include total companies, users, funds, and LPs in the database. System health indicators show API status, database performance, and external service connectivity. Recent activity logs show new company signups, user invitations, and data imports. Quick actions provide access to common admin tasks.

# Companies

Manage GP firms on platform

LP X GP

Admin

Overview

Companies

Users

LPs

People

Quality

Import

Health

Acme Capital

JP

## Companies

Manage GP firms on the platform

Search companies...

All Status

Filter

COMPANY	ADMIN	USERS	FUNDS	STATUS	CREATED	ACTIONS
<div>AC</div> <div>Acme Capital</div> <div>Private Equity</div>	john@acmecapital.com	4	3	Active	Dec 1, 2024	<a href="#">View →</a>
<div>BV</div> <div>Beta Ventures</div> <div>Venture Capital</div>	—	0	0	Pending	Dec 18, 2024	<a href="#">View →</a>
<div>GP</div> <div>Gamma Partners</div> <div>Growth Equity</div>	alex@gammapartners.com	2	1	Inactive	Oct 15, 2024	<a href="#">View →</a>
<div>DC</div> <div>Delta Capital</div> <div>Private Equity</div>	sarah@deltacap.com	6	4	Active	Sep 20, 2024	<a href="#">View →</a>

Showing 1-4 of 25

Previous

1

2

3

Next

The Companies screen lists all GP firms registered on LPxGP. Admins can view company details, user counts, fund counts, and subscription status. Search and filter options help find specific companies. Actions include creating new companies, viewing company details, and managing billing. This is the primary customer management interface for platform administrators.

# Company Detail

Company users and funds

LP X GP

Admin

Overview

Companies

Users

LPs

People

Quality

Import

Health

Acme Capital

JP

Companies / Acme Capital

AC

**Acme Capital** Active

Private Equity | San Francisco, CA

Edit Company

Deactivate

Users

4

Funds

3

Matches

127

Users

+ Invite User

JP

John Partner

john@acmecapital.com

Admin

Active

SJ

Sarah Johnson

sarah@acmecapital.com

Member

Active

MC

Mike Chen

mike@acmecapital.com

Member

Active

Company Details

Created  
December 1, 2024

Strategy  
Private Equity - Growth

Location  
San Francisco, CA

Website  
acmecapital.com

Activity

Last login

2 hours ago

Searches (30d)

127

Funds

The Company Detail screen shows comprehensive information about a single GP firm. It displays company profile, subscription tier, billing status, and usage metrics. Lists of users and funds associated with the company are shown with quick access to details. Admins can edit company information, manage subscriptions, and impersonate users for support purposes (with audit logging).

# Users

All platform users

LP X GP

Admin

Overview

Companies

Users

LPs

People

Quality

Import

Health

Acme Capital

JP

## Users

All platform users across companies

All Companies

All Roles

Filter

USER	COMPANY	ROLE	STATUS	LAST ACTIVE	ACTIONS
<div>JP</div> <div>John Partner</div> <div>john@acmecapital.com</div>	Acme Capital	Admin	Active	2 hours ago	Impersonate Edit
<div>SJ</div> <div>Sarah Johnson</div> <div>sarah@acmecapital.com</div>	Acme Capital	Member	Active	Yesterday	Impersonate Edit
<div>SD</div> <div>Sarah Davis</div> <div>sarah@delitacap.com</div>	Delta Capital	Admin	Active	3 days ago	Impersonate Edit
<div></div> <div>emily@acmecapital.com</div> <div>Invitation pending</div>	Acme Capital	Member	Pending	—	Resend Cancel

Showing 1-4 of 156 users

Previous123Next

The Users screen provides a global view of all registered users across all companies. Admins can search by name, email, or company. User cards show name, company, role, last login, and account status. Actions include resetting passwords, deactivating accounts, and viewing activity logs. This helps with user support and security monitoring.

# People

LP contacts database

LP X GP

Admin

Overview

Companies

Users

LPs

People

Quality

Import

Health

Acme Capital

JP

## People

LP contacts and investment professionals in the database

[Import](#)[+ Add Person](#)

All OrganizationsFilter

NAME	TITLE	ORGANIZATION	EMAIL	DATA QUALITY	ACTIONS
MS Michael Smith	Managing Investment Director, PE	CalPERS	m.smith@calpers.ca.gov	High	Edit →
JC Jennifer Chen	Investment Director, Growth Equity	CalPERS	j.chen@calpers.ca.gov	High	Edit →
DS David Swensen	Chief Investment Officer	Yale Endowment	Not available	Medium	Edit →
RW Robert Wilson	Sr. Portfolio Manager	Harvard Management	rwilson@hmc.harvard.edu	High	Edit →



Showing 1-4 of 8,234 people

Previous123Next


The People screen manages the global database of LP contacts (individuals who work at institutional investors). Unlike LPs (organizations), People tracks individuals with their employment history. Admins can search contacts, view profiles, and track career movements between organizations. This data enriches LP profiles with specific relationship targets for outreach.

## LPs

Institutional investor database

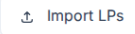
LP  

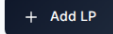
OverviewCompaniesUsersLPsPeopleQualityImportHealth

Acme Capital 

LP Database

5,247 institutional investors





Total LPs

5,247

Pensions

1,245

Endowments

892


Family Offices


2,156


Other

954

Search LPs...

All Types 

All Regions 

Data Quality 

Filter

LP NAME	TYPE	LOCATION	AUM	CONTACTS	QUALITY	ACTIONS
<b>CalPERS</b> California Public Employees' Retirement	Pension	Sacramento, CA	\$450B	12	High	<a href="#">Edit →</a>
<b>Yale Endowment</b> Yale University Investments Office	Endowment	New Haven, CT	\$41B	5	High	<a href="#">Edit →</a>
<b>Smith Family Office</b> Multi-family office	Family Office	New York, NY	\$2B	2	Medium	<a href="#">Edit →</a>
<b>Unknown Pension Fund</b> State pension	Pension	—	Unknown	0	Low	<a href="#">Edit →</a>

The LPs screen is the master database of institutional investors. Admins can browse, search, filter, and edit LP records. Each LP entry shows name, type, AUM, location, and data quality score. Bulk actions allow updating multiple records. The Import Wizard button provides access to CSV import for adding new LPs. Data quality indicators highlight records needing attention.

## Edit LP

## LP data management form

LP

GP

Admin

Overview

Companies

Users

LPs

People

Quality

Import

Health

Acme Capital

JP

LPs / CalPERS

Edit LP: CalPERS

High Quality

Last updated: 2 weeks ago

Basic Information

LP Name \*

CalPERS

Full Name

California Public Employees' Retirement System

Type \*

Public Pension

Location

Sacramento, CA, USA

Financial Information

Total AUM

\$ 450B

PE Allocation %

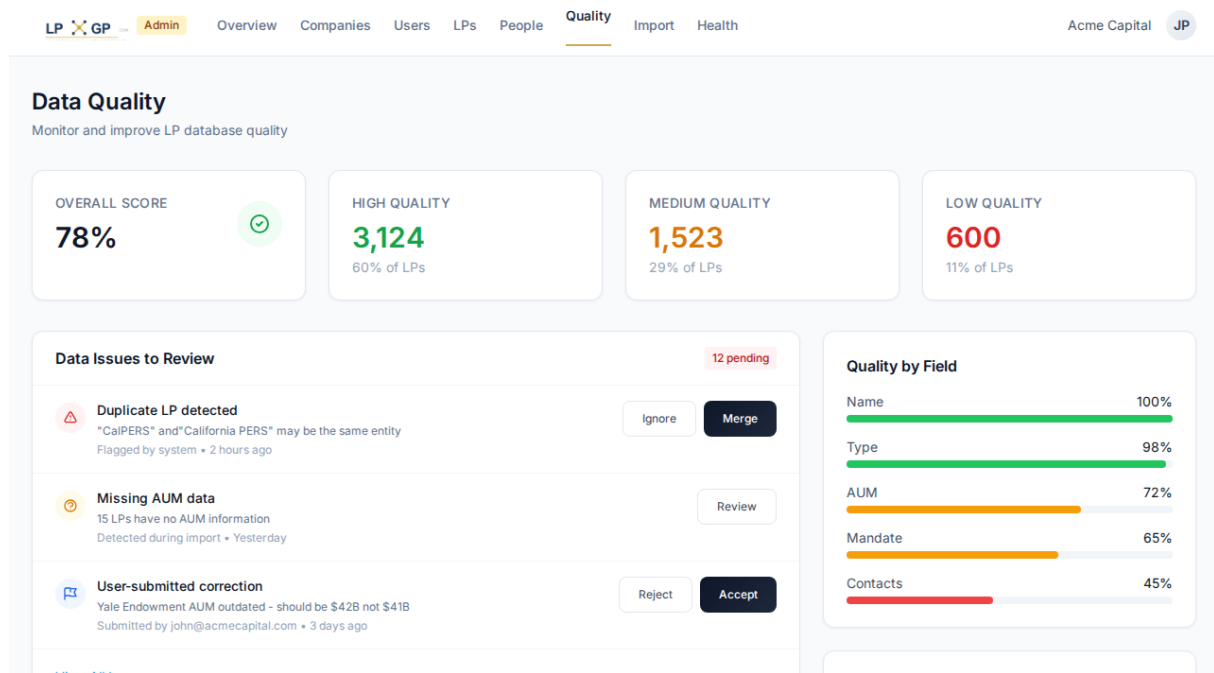
13%

The Edit LP screen allows admins to maintain LP data quality. All fields are editable: name, type, location, AUM, allocation targets, investment mandate, and geographic preferences. The investment mandate text field is particularly important as it's used for semantic matching. Data source and quality score help track provenance. Changes are logged for audit purposes.



# Data Quality

Quality monitoring and issues



The Data Quality screen helps admins maintain high-quality LP data. It shows data completeness metrics, identifies records with missing fields, flags potential duplicates, and highlights stale data. Quality scores are calculated based on field completeness, recency, and source reliability. Admins can drill down into specific issues and take corrective actions.

# Import Wizard

CSV import tool

LP X GP

Admin

Overview

Companies

Users

LPS

People

Quality

Import

Health

Acme Capital

JP

LPS / Import Wizard

1 Upload

2 Map Fields

3 Preview

4 Import

Map CSV Fields

Match your CSV columns to LPxGP fields. 500 rows detected.



File: lp\_database\_export\_2024.csv 500 rows x 12 columns

CSV Column	LPxGP Field
organization_name	LP Name *
investor_type	Type *
hq_location	Location

The Import Wizard guides admins through bulk LP data import. It's a multi-step process: upload CSV, map columns to fields, preview changes, and execute import. The system validates data, detects duplicates, and shows potential issues before committing. Import jobs can be paused, resumed, or rolled back. Progress is tracked with detailed logging for troubleshooting.

# System Health

Services and integrations status

LP  


OverviewCompaniesUsersLPsPeopleQualityImportHealth

Acme CapitalJP

## System Health


Monitor platform status and integrations

All systems operational

**Supabase PostgreSQL**  
Primary database


Healthy

Response	Connections	Storage
12ms	8/100	2.4GB

**Supabase Auth**  
Authentication service


Healthy

Response	Active Sessions	Logins (24h)
45ms	24	156

**OpenRouter API**  
LLM inference (Claude)

Healthy

Response	Requests (24h)	Cost (24h)
1.2s avg	89	\$2.34


**Voyage AI**  
Embedding service

Healthy


Response	Embeddings (24h)	Vectors
180ms	450	5,247

### Recent System Events

View All

**LP import completed successfully**  
500 records processed, 498 imported, 2 duplicates skipped

2 hours ago

**Embedding regeneration completed**  
5,247 LP embeddings updated for semantic search

Yesterday

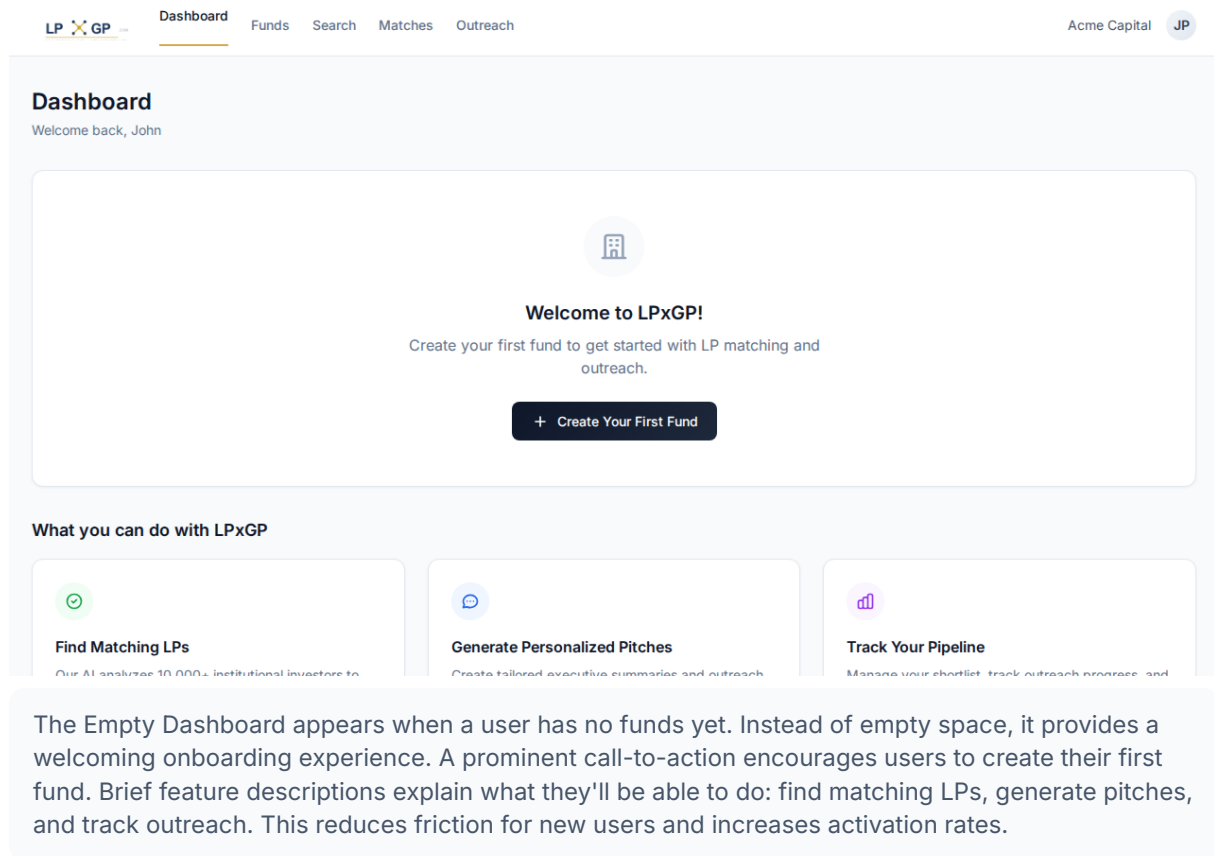
The System Health screen monitors platform infrastructure and external services. It shows status for the database, API server, authentication service, OpenRouter (LLM), Voyage AI (embeddings), and email delivery. Response times and error rates are tracked. Alerts notify admins of issues. This is the first place to check when users report problems.

## UI State Screens

3 screens — Loading, empty, and error states for better user experience

# Empty Dashboard

First-time user experience



The Empty Dashboard appears when a user has no funds yet. Instead of empty space, it provides a welcoming onboarding experience. A prominent call-to-action encourages users to create their first fund. Brief feature descriptions explain what they'll be able to do: find matching LPs, generate pitches, and track outreach. This reduces friction for new users and increases activation rates.

# Loading Matches

Match generation progress

LP X GP

Dashboard

Funds

Search

Matches

Outreach

Acme Capital

JP

Funds / Growth Fund III / Matches

## LP Matches

Growth Fund III

### Analyzing 10,000 LPs for Growth Fund III...

We're finding the best institutional investors that match your fund strategy, geography, and size requirements.

Progress 68%

⌛ Estimated time remaining: ~45 seconds

✓ Applying strategy filters (PE Growth)

✓ Filtering by geography (North America)

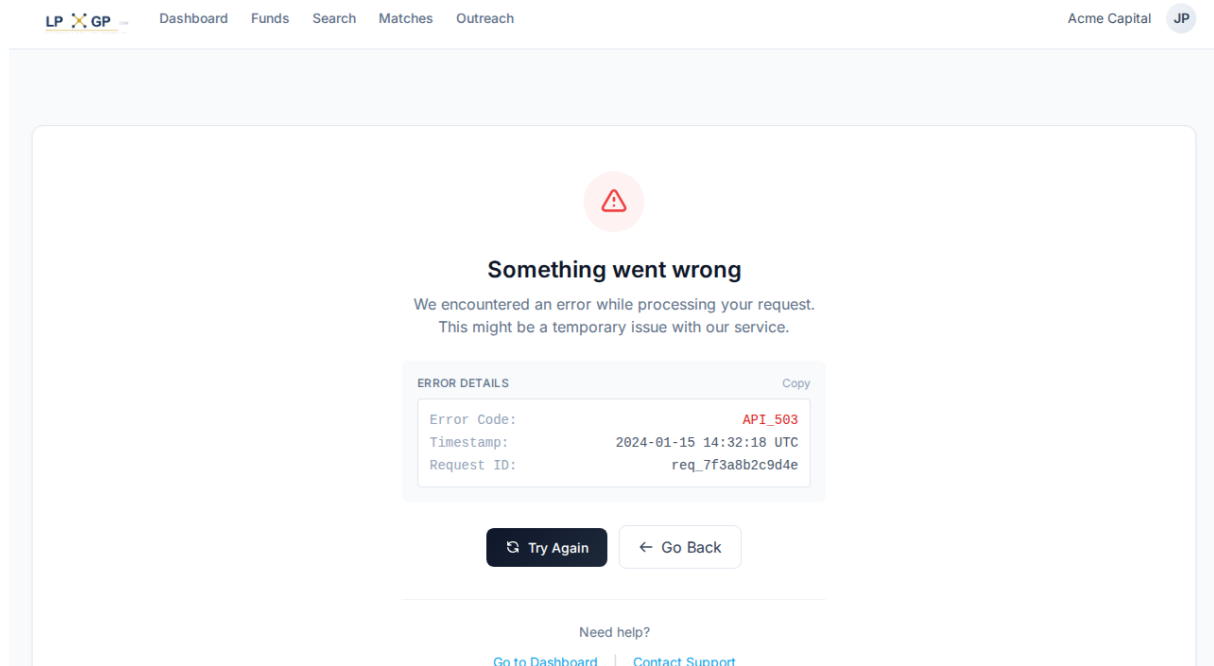
● Computing semantic similarity scores...

4 Ranking and finalizing matches

The Loading Matches screen appears during AI match generation, which can take 30+ seconds for large LP databases. It shows a progress bar, current step (applying filters, computing similarity scores), and estimated time remaining. A cancel button allows users to abort if needed. This transparent feedback prevents users from thinking the system is frozen and reduces support requests.

# API Error

## Error state handling



The API Error screen provides graceful error handling when something goes wrong. Instead of cryptic error messages, it shows a friendly explanation and clear next steps. A "Try Again" button attempts to retry the operation. Error details are available for technical users and support. Contact information helps users get assistance if the problem persists.

## LP User Screens

5 screens — Bidirectional matching - funds ranked for institutional investors



# LP Dashboard

Fund overview for institutional investors

LPxGP LP Portal

Dashboard

Fund Matches

Preferences

Profile

CalPERS

CP

## LP Dashboard

Welcome back, Sarah. Here are funds matching your mandate.

NEW MATCHES

**24**

+8 this week

REVIEWED

**156**

funds this quarter

INTERESTED

**12**

marked for follow-up

ALLOCATION

**\$850M**

available FY24

### Top Fund Matches

[View All Matches](#) →

FUND	GP FIRM	STRATEGY	TARGET SIZE	MATCH SCORE	ACTION
Sequoia Growth Fund VI	Sequoia Capital	Growth Equity	\$2.5B	94	<a href="#">View</a> →
Acme Growth Fund III	Acme Capital	Growth Equity	\$500M	91	<a href="#">View</a> →
Climate Partners Fund II	Climate Partners	Climate / ESG	\$800M	89	<a href="#">View</a> →
TechVentures Fund IV	TechVentures Partners	Venture Capital	\$300M	78	<a href="#">View</a> →

UX Flow: LP User

LP Dashboard

Fund Matches

Match Detail

Preferences

→ All Screens

The LP Dashboard is the command center for institutional investors using LPxGP. It provides an at-a-glance view of matching funds, allocation availability, and recent activity. LPs see statistics including new fund matches, funds reviewed, and current allocation capacity. The top matches table shows funds ranked by compatibility score with quick actions to mark interest or pass. This bidirectional matching enables LPs to proactively discover funds rather than waiting for GP outreach.

## Fund Matches

Ranked funds matching LP mandate

LPxGP LP Portal

DashboardFund MatchesPreferencesProfile

CalPERS CP

### Fund Matches

Funds ranked by compatibility with your mandate

All StrategiesAll SizesScore: High to Low

Showing 156 matching fundsScore range: 70+

#### Sequoia Growth Fund VI

Sequoia Capital

Growth EquityNorth AmericaTechnology

Target Size  
\$2.5B

Closing  
30 days

Fund Number  
Fund VI

Min Commitment  
\$50M

InterestedPass

View Details →

#### Acme Growth Fund III

Acme Capital

Growth EquityNorth AmericaESG

Target Size  
\$500M

Closing  
Q2 2024

Fund Number  
Fund III

Min Commitment  
\$25M

InterestedPass

View Details →

UX Flow: LP User

LP DashboardFund MatchesMatch DetailPreferences

... All Screens

The Fund Matches screen shows all funds ranked by compatibility with the LP's investment mandate. LPs can filter by strategy, fund size, and geography. Each fund card displays the GP firm, strategy tags, target size, fund number, closing timeline, and match score. Quick actions allow LPs to mark interest, pass, or view detailed analysis. The scoring algorithm considers strategy alignment, size fit, track record, geographic overlap, and ESG requirements.

50

# Fund Match Detail

Detailed fund analysis for LPs

LPxGP LP Portal

Dashboard

Fund Matches

Preferences

Profile

CalPERS CP

Fund Matches / Sequoia Growth Fund VI

Sequoia Growth Fund VI

Sequoia Capital

94

Match Score

Mark Interested

Pass

Why This Match

Sequoia Growth Fund VI is a strong match for CalPERS based on multiple alignment factors:

**Strategy alignment:** Growth equity focus matches your core allocation strategy with emphasis on established technology companies.

**Track record:** Fund V delivered 2.8x net MOIC and 28% net IRR, exceeding your minimum return thresholds.

**Check size fit:** \$100M minimum commitment aligns with your typical allocation of \$50-200M per fund.

**ESG commitment:** Sequoia has a formal ESG policy and dedicated sustainability team, meeting your responsible investment requirements.

Fund Details


Target Size	\$2.5B
Fund Number	Fund VI
Strategy	Growth Equity
Geography	North America
Min Commitment	\$50M
Management Fee	1.75%
Carry	20%
Final Close	30 days

Score Breakdown

Strategy Alignment

96/100

GP Team



Jim Loucks

UX Flow: LP User

LP Dashboard

Fund Matches

Match Detail

Preferences

... All Screens

The Fund Match Detail screen explains why a specific fund is recommended for the LP. It provides a narrative explanation of alignment factors, a detailed score breakdown across multiple dimensions (strategy, size, track record, geography, ESG), the fund's investment thesis, historical performance data, and key considerations or concerns. LPs can mark interest, request a meeting, or request the fund deck. Private notes allow LPs to track their evaluation.

# LP Preferences

Matching preferences and alerts

LPxGP LP Portal

DashboardFund MatchesPreferencesProfile

CalPERS CP

## Matching Preferences

Configure how funds are matched to your mandate

### Investment Criteria

Strategies

☒ Growth Equity  
☒ Buyout  
☒ Climate / ESG  
☐ Venture Capital  
☐ Real Assets

Geography

☒ North America  
☒ Europe  
☐ Asia Pacific  
☐ Latin America  
☐ Global

Fund Size Range

Minimum

Maximum

\$250M

\$3B

Check Size Range

Minimum

Maximum

\$50M

\$200M

Track Record Minimum

Fund II+

ESG Requirement

Preferred

UX Flow: LP User

LP DashboardFund MatchesPreferencesLP Profile

... All Screens

The LP Preferences screen allows institutional investors to configure their matching criteria. LPs can set strategy preferences, geographic focus, fund size range, check size range, track record requirements, and ESG requirements. Current allocation availability helps the system prioritize actively deploying LPs. Notification preferences control alerts for new high-score matches, fund updates, closing reminders, and weekly digests.

# LP Profile

Organization profile management

LPxGP LP Portal

DashboardFund MatchesPreferencesProfile

CalPERS CP

## Organization Profile

Manage your LP profile information

### Organization Information

Organization Name	Short Name
California Public Employees' Retirement System	CalPERS
LP Type	Headquarters
Public Pension	Sacramento, California, USA
Total AUM	PE Allocation
\$450 Billion	8% (~\$36B)
Website	
https://www.calpers.ca.gov	

Organization details are managed by LPxGP administrators. Contact support to request changes.

UX Flow: LP User

LP DashboardFund MatchesPreferencesLP Profile

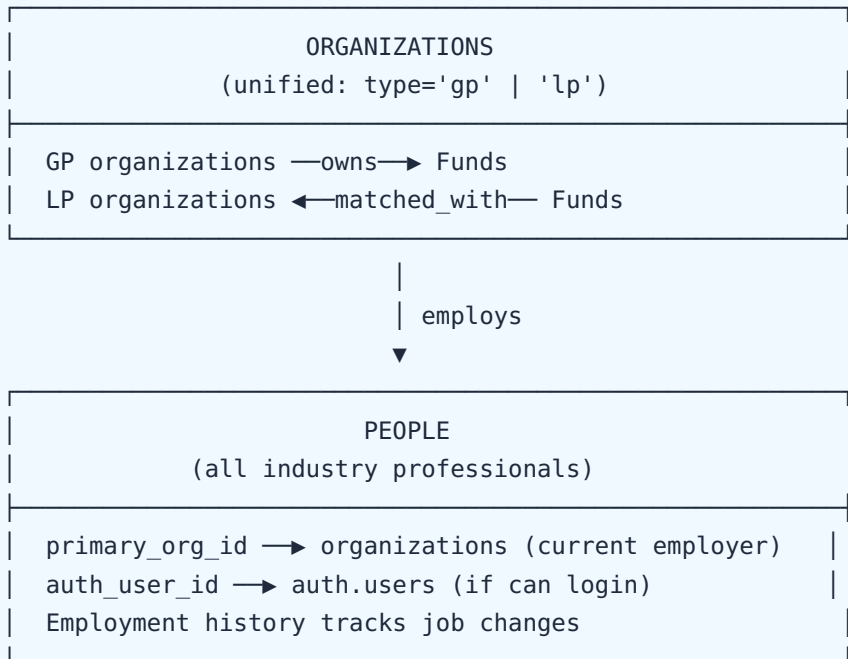
... All Screens

The LP Profile screen displays the LP's organization information and investment mandate. Organization details (name, type, AUM, headquarters) are managed by LPxGP administrators to ensure data quality. The investment mandate section shows the LP's strategies, geographic focus, check size, and track record requirements. User profile settings allow LPs to manage their personal information and security settings including password and two-factor authentication.

## 5. Data Model

### Entity Overview

LPxGP uses a unified relational data model where GPs and LPs are both organizations, and platform users are people with login access:



### Key Entities

Entity	Description	Key Fields
<b>Organizations</b>	Unified table for both GP firms and LP investors	type (gp/lp), name, aum, lp_type, mandate_embedding
<b>People</b>	All industry professionals (can work at any org)	name, email, primary_org_id, auth_user_id, role
<b>Employment</b>	Career history linking people to organizations	person_id, org_id, title, start_date, end_date
<b>Funds</b>	Investment funds owned by GP organizations	org_id, name, strategy, target_size, thesis_embedding

<b>Matches</b>	Fund-LP compatibility scores	fund_id, lp_org_id, total_score, score_breakdown
<b>Pitches</b>	AI-generated outreach content	match_id, type, content, created_by
<b>Outreach Events</b>	Track journey from match to commitment	match_id, event_type, event_date, meeting_type
<b>Match Outcomes</b>	Final outcomes for model training	match_id, outcome, commitment_amount, features_at_match_time
<b>Relationships</b>	GP-LP relationship intelligence	gp_org_id, lp_org_id, relationship_type, prior_commitments
<b>LP Capacity</b>	Timing intelligence for allocation windows	lp_org_id, fiscal_year, remaining_capacity, next_allocation_window

## Key Design Decisions

- **Unified Organizations:** GPs and LPs are both organizations with a type discriminator. No separate tables.
- **People Work at Organizations:** Clean FK to organizations.id - no polymorphic relationships.
- **People Can Move:** Employment history tracks job changes. Someone can move from LP to GP.
- **Platform Users = People + Auth:** People with auth\_user\_id set can log in. No separate users table.
- **Full Referential Integrity:** All foreign keys are real database constraints.

## Vector Embeddings

Semantic matching uses 1024-dimensional vector embeddings stored in PostgreSQL with pgvector:

- **Fund Thesis Embedding:** Vector representation of fund strategy and thesis text
- **LP Mandate Embedding:** Vector representation of LP investment mandate (on organizations table)

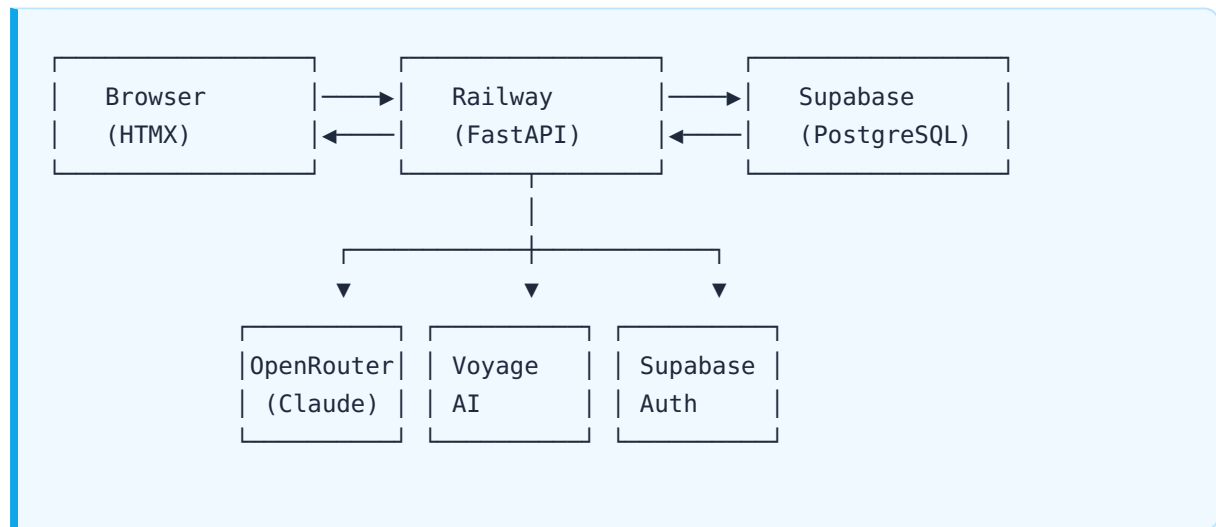
- **Similarity Calculation:** Cosine similarity between embeddings determines semantic fit



## 6. Technical Architecture

### System Overview

LPxGP is built as a modern web application with server-rendered UI and AI integrations:



### Technology Stack

Layer	Technology	Purpose
Backend	Python + FastAPI	API server, business logic, async operations
Frontend	Jinja2 + HTMX + Tailwind	Server-rendered UI with dynamic updates, no build step
Database	Supabase (PostgreSQL + pgvector)	Data storage, vector similarity search, row-level security
Authentication	Supabase Auth	Invite-only signup, session management, password reset
LLM	OpenRouter (Claude)	Pitch generation, fund extraction, match explanations
Embeddings	Voyage AI	Finance-optimized vectors for semantic matching

Hosting	Railway	Auto-deploy from GitHub, managed infrastructure
---------	---------	---

## Security Model

---

- **Invite-Only Access:** Users can only join via company admin invitation - no self-signup
- **Row-Level Security:** Database policies ensure users only see their company's data
- **Role-Based Access:** Company Admins vs Members vs Super Admins with different permissions
- **Human-in-the-Loop:** All AI-generated content requires human review before external use
- **Secure Sessions:** JWT tokens with refresh, automatic expiration, and secure cookie handling

## 7. Agentic AI Architecture

**Competitive Moat:** LPxGP's multi-agent debate system represents a fundamentally different approach to AI-powered matching. Rather than using a single model that can hallucinate or miss nuances, we deploy 12 specialized agents that argue, critique, and synthesize—producing higher-quality results with built-in verification and explainability.

### Multi-Agent Debate System

Traditional AI matching systems use a single model to score compatibility. This approach is prone to overconfidence, hallucination, and missing edge cases. LPxGP takes a radically different approach: **adversarial multi-agent debates**.

#### The Bull/Bear Pattern

For every fund-LP match, we run an internal debate:

- **Bull Agent:** Argues FOR the match—finds alignment, hidden opportunities, optimal timing
- **Bear Agent:** Argues AGAINST—finds risks, constraint violations, relationship barriers
- **Synthesizer:** Weighs both perspectives, resolves disagreements, produces final score

**Why This Matters:** When Bull and Bear agents disagree significantly (>30 points), the system flags for human review rather than making a confident wrong decision. This catches edge cases that single-model systems miss.

#### Four Debate Types

Debate	Purpose	Agents	Output
<b>Constraint Interpretation</b>	Parse LP investment mandates	Broad Interpreter, Narrow Interpreter, Synthesizer	Actionable filter criteria
<b>Research Enrichment</b>	Validate external data quality		Verified profile updates

		Research Generator, Research Critic, Quality Synthesizer	
<b>Match Scoring</b>	Evaluate fund-LP fit	Bull Agent, Bear Agent, Match Synthesizer	Confidence- weighted scores
<b>Pitch Generation</b>	Create personalized content	Pitch Generator, Pitch Critic, Content Synthesizer	Verified, factual pitches

## The 12 Specialized Agents

Each agent has a specific role, versioned prompts, and distinct personality. This specialization produces better results than a generalist model.

### Constraint Interpretation Agents

Agent	Role	Key Behaviors
<b>Broad Interpreter</b>	Find flexibility in LP mandates	Identifies what's implied but not stated, finds edge cases that could qualify, surfaces hidden opportunities based on historical commitments
<b>Narrow Interpreter</b>	Identify constraints and exclusions	Flags hard exclusions, policy constraints, regulatory barriers. Conservative: better to flag than to miss
<b>Constraint Synthesizer</b>	Resolve disagreements, create filters	Classifies constraints as HARD (absolute) or SOFT (preference), escalates unresolved ambiguities for human review

### Match Scoring Agents

Agent	Role	Key Behaviors
<b>Bull Agent</b>	Argue FOR the match	Finds strategy alignment, timing opportunities, warm intro paths, hidden strengths. Generates talking points for GP outreach
<b>Bear Agent</b>	Argue AGAINST the match	Checks hard constraint violations, identifies relationship barriers, flags track record gaps. Sets hard_exclusion=true for deal-breakers

<b>Match Synthesizer</b>	Combine perspectives fairly	Weights Bull/Bear based on evidence quality, resolves disagreements, escalates when confidence is low
--------------------------	-----------------------------	---

## Pitch Generation Agents

Agent	Role	Key Behaviors
<b>Pitch Generator</b>	Create personalized content	Every sentence LP-specific, references recent activity, addresses known concerns proactively. No generic phrases
<b>Pitch Critic</b>	Validate accuracy and tone	Catches factual errors, hallucinations, generic content, tone mismatches. Quality score 0-100
<b>Content Synthesizer</b>	Make publish/regenerate/reject decision	Approves if score $\geq 85$ , regenerates if 50-84, rejects if $< 50$ or unfixable errors. Max 3 iterations

## Sample Agent Prompts

Each agent operates from a carefully-crafted prompt that defines its personality, inputs, and structured output format. Here are excerpts from key agents:

### Bull Agent (v1.1.0) — Excerpt

You are the BULL AGENT analyzing a potential match between a fund and LP.

YOUR MISSION: Argue FOR this match. Find the best reasons why it could succeed. Be optimistic but grounded in data.

ANALYSIS DIMENSIONS:

- strategy\_alignment: How fund strategy maps to LP mandate
- timing\_opportunity: Why now is the right time to approach
- relationship\_potential: Warm intro paths and barriers
- hidden\_strengths: Non-obvious connections and opportunities

OUTPUT REQUIREMENTS:

- Score 0-100 with confidence 0.0-1.0
- Specific talking\_points for GP outreach (5 actionable points)
- acknowledged\_concerns with mitigations
- Data-backed reasoning citing specific profile fields

CRITICAL: Don't inflate scores. Truth matters more than winning the debate.

## Bear Agent (v1.1.0) — Excerpt

You are the BEAR AGENT analyzing a potential match between a fund and LP.

YOUR MISSION: Critically examine this match. Find reasons why it might fail. Be skeptical but fair—not cynical.

ANALYSIS DIMENSIONS:

- hard\_constraints\_violated: Deal-breakers with evidence
- soft\_concerns: Issues that reduce probability of success
- timing\_issues: Allocation cycle misalignment
- relationship\_barriers: Access difficulties

OUTPUT REQUIREMENTS:

- Score 0-100 with confidence 0.0-1.0
- hard\_exclusion flag if this is a definite no
- conditions\_for\_success: What would need to be true
- acknowledged\_positives: Fair credit for genuine alignment

CRITICAL: If you find a hard constraint violation, set hard\_exclusion=true.

## Match Synthesizer (v1.0.0) — Excerpt

You are the MATCH SYNTHESIZER combining Bull and Bear perspectives.

YOUR MISSION: Weigh both perspectives fairly. Resolve disagreements where possible, escalate where not.

RESOLUTION RULES:

- When agents agree: High confidence, weight equally
- When agents disagree <20 points: Resolve based on evidence quality
- When agents disagree >30 points: Flag for human review
- When Bear sets hard\_exclusion=true: Take seriously, escalate if unsure

OUTPUT REQUIREMENTS:

- final\_score 0-100 with component breakdown
- resolved\_disagreements with reasoning
- unresolved\_disagreements escalated to human
- talking\_points that incorporate Bear's valid concerns
- approach\_strategy for GP outreach

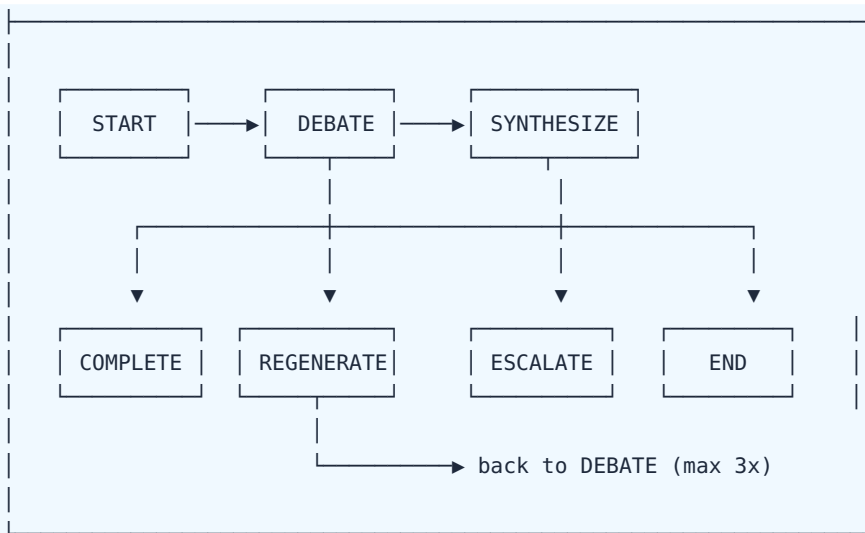
ESCALATION TRIGGERS:

- Disagreement >30 points
- Confidence <0.5
- Hard exclusion with Bull score >70

## LangGraph Orchestration

The debate system is implemented as a LangGraph state machine—a directed graph where nodes are agent executions and edges are conditional transitions.

LANGGRAPH STATE MACHINE



TRANSITION LOGIC:

- Disagreement  $\leq 20$  points  $\rightarrow$  COMPLETE (consensus reached)
- Disagreement  $> 20$  but  $\leq 30 \rightarrow$  REGENERATE with cross-feedback
- Disagreement  $> 30$  points  $\rightarrow$  ESCALATE to human review
- Max 3 iterations  $\rightarrow$  ESCALATE if still disagreeing

## Cross-Feedback Mechanism

When agents disagree, the regeneration step provides each agent with the other's critique:

- **Bull receives:** Bear's concerns, constraint violations, and risk factors
- **Bear receives:** Bull's talking points, alignment arguments, and hidden strengths

This forces agents to directly address counterarguments rather than talking past each other—often resolving disagreements within 2-3 iterations.

## Observability with Langfuse

Every agent execution is fully traced using Langfuse (open-source, self-hostable for data privacy):

### Full Trace Inspection

View every debate as a tree of agent calls with inputs, outputs, token counts, and latency.

### Prompt Versioning

Semantic versioning (X.Y.Z) for all prompts. A/B test new versions before full rollout.

**Quality Metrics**

Track escalation rates, disagreement patterns, and accuracy over time.

**Cost Tracking**

Per-debate token usage and API costs for margin optimization.

## Continuous Learning Loop

The agentic system improves over time through outcome tracking:

Signal	Latency	How It's Used
Match shortlisted/ dismissed	Immediate	Tune hard filters, adjust agent weights
Response received	Days- Weeks	Key early predictor—train on high/low response patterns
Meeting scheduled	Weeks	Strong quality signal—validate match explanations
Commitment made	6-18 months	Ground truth—full model retraining

**Defensible Moat:** As more matches flow through the system, the agent prompts are refined, disagreement patterns are analyzed, and the learning loop compounds. Competitors starting from scratch face a cold-start problem—they lack the interaction data that makes our agents increasingly accurate.

## Why Multi-Agent vs. Single Model?

Dimension	Single Model	Multi-Agent Debate
<b>Overconfidence</b>	Common—no internal check	Bear agent challenges optimism
<b>Hallucination</b>	Can go undetected	Critic agents flag unsupported claims
<b>Edge Cases</b>	Often missed	Broad/Narrow interpreters catch nuances
<b>Explainability</b>	Black box score	Full debate transcript available



<b>Human Review</b>	All or nothing	Targeted escalation when confidence is low
<b>Improvement</b>	Retrain entire model	Tune individual agent prompts

## 8. Non-Functional Requirements

### Performance

---

Metric	Target	Measurement
Page Load (LCP)	< 2 seconds	Largest Contentful Paint for all pages
Search Response	< 500ms	Time from query to results display
Semantic Search	< 2 seconds	Including embedding generation and vector search
Match Generation	< 30 seconds	For 100 matches against full LP database
Pitch Generation	< 10 seconds	LLM response for single pitch

### Security

---

- **Authentication:** Secure password hashing, rate-limited login, account lockout after 5 failures
- **Authorization:** Row-level security policies, role-based access control
- **Data Protection:** Encryption at rest and in transit, no PII in logs
- **Input Validation:** Server-side validation, SQL injection prevention, XSS protection
- **Audit Logging:** Track who accessed what and when for compliance

### Scalability

---

- **Database:** Designed to handle 100,000+ LPs with efficient indexing
- **Concurrent Users:** Stateless backend supports horizontal scaling
- **API Rate Limiting:** Protect external services from overuse
- **Background Jobs:** Long-running tasks processed asynchronously

### Availability

---

- **Uptime Target:** 99.9% availability (excludes planned maintenance)
- **Disaster Recovery:** Daily database backups with point-in-time recovery

- **Graceful Degradation:** Core features work even if AI services are temporarily unavailable

## 9. Success Metrics

### User Engagement

Metric	Target	Why It Matters
Daily Active Users / Monthly Active Users	> 30%	Indicates habitual usage, not just occasional visits
Average Session Length	> 5 minutes	Users are doing meaningful work, not just checking in
Matches Reviewed per Session	> 10	Users are actively evaluating AI recommendations

### Feature Adoption

Metric	Target	Why It Matters
Fund Created within 7 Days of Signup	> 60%	Users are activating and seeing value quickly
Matches Shortlisted per Fund	> 20	AI matching is producing actionable recommendations
Pitches Generated per User (monthly)	> 5	Pitch generation is useful enough to use repeatedly

### Quality Indicators

Metric	Target	Why It Matters
Match Feedback: "Useful"	> 70%	AI recommendations are relevant and actionable
Pitch Copied to Clipboard	> 50%	Generated content is good enough to use
LP Contacted from Platform	> 20%	Platform enables actual outreach, not just research

# 10. Glossary

## **AUM (Assets Under Management)**

The total market value of assets that an investment firm manages on behalf of clients. For LPs, this indicates their overall investment capacity.

## **Dry Powder**

Capital that has been committed to a fund but not yet invested. Indicates available capital for new investments.

## **Embedding**

A vector (array of numbers) that represents text in a way that captures semantic meaning. Used for similarity matching between fund thesis and LP mandate.

## **Endowment**

A type of LP, typically a fund established by a university, hospital, or non-profit organization for long-term investment.

## **Family Office**

A private wealth management firm that handles investments for a wealthy family. Often more flexible than institutional LPs.

## **GP (General Partner)**

The fund manager who makes investment decisions and manages fund operations. GPs are LPxGP's primary users.

## **Hard Filter**

A matching criterion that must be satisfied for an LP to be considered. If failed, the LP is excluded regardless of other scores.

## **HTMX**

A JavaScript library that allows HTML elements to make AJAX requests directly, enabling dynamic updates without full page reloads.

## **LP (Limited Partner)**

An institutional investor who provides capital to investment funds. LPs include pension funds, endowments, family offices, and sovereign wealth funds.

## **Mandate**

An LP's investment guidelines, including acceptable strategies, geographic regions, check sizes, and return expectations.

**Pension Fund**

A type of LP that manages retirement assets for employees of governments, corporations, or unions. Often large and long-term focused.

**pgvector**

A PostgreSQL extension for storing and querying vector embeddings, enabling semantic similarity search in the database.

**RLS (Row-Level Security)**

Database security feature that restricts which rows users can access based on their identity. Ensures data isolation between companies.

**Semantic Search**

Search that understands meaning rather than just matching keywords. Uses embeddings to find conceptually similar content.

**Soft Score**

A matching criterion that contributes to the overall fit score but doesn't exclude the LP if not perfectly matched.

**Sovereign Wealth Fund**

A state-owned investment fund that invests global reserves. Among the largest LPs with diverse mandates.

**Thesis**

A fund's investment philosophy and strategy, describing what types of companies they invest in and why.

**Voyage AI**

An AI company providing embedding models optimized for specific domains like finance and legal.