

Infrastructure Documentation

Architecture, Data Flow & Third-Party Services

1. System Architecture

1.1 High-Level Architecture Diagram

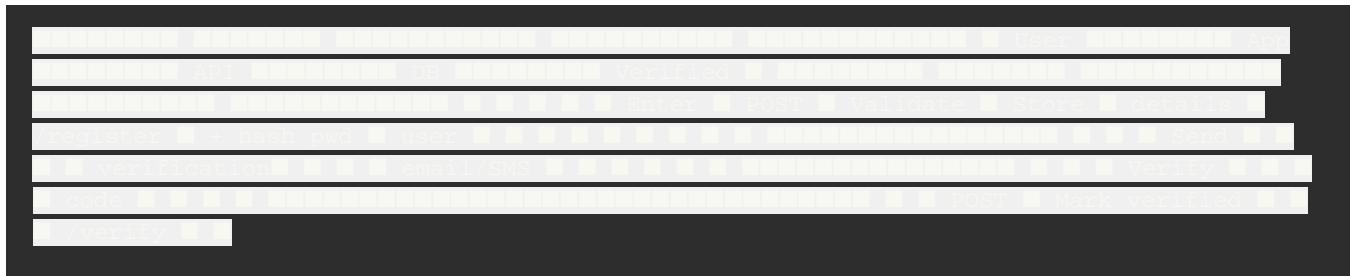


1.2 Component Details

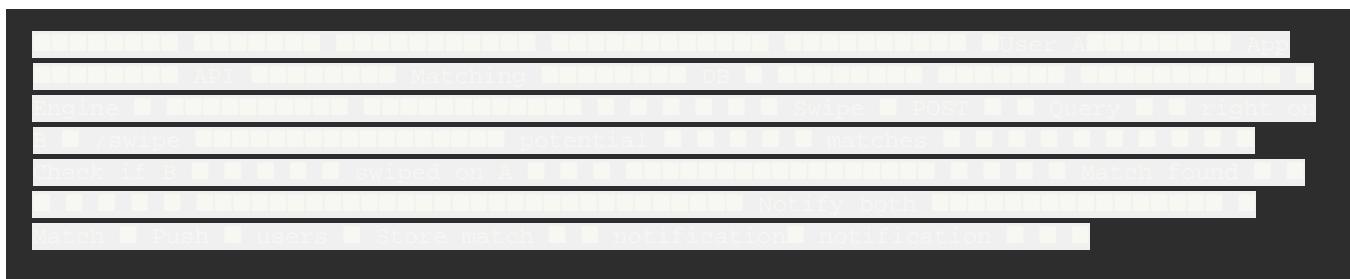
Component	Technology	Purpose	Scaling
API Servers	Node.js / Express	Request handling	Horizontal
Database	PostgreSQL (RDS)	Primary data store	Vertical + Read replicas
Cache	Redis (ElastiCache)	Session, rate limiting	Cluster mode
Object Storage	S3	Photos, media	Unlimited
CDN	CloudFront	Static assets, photos	Global edge
Load Balancer	ALB	Traffic distribution	Managed

2. Data Flow Diagrams

2.1 User Registration Flow



2.2 Matching Flow



2.3 Message Flow





3. Third-Party Services Inventory

3.1 Infrastructure Services

Service	Provider	Purpose	Data Processed	DPA Status
Cloud Hosting	AWS/GCP	Infrastructure	All user data	■ Required
CDN	CloudFront/Cloudflare	Content delivery	Static assets	■ Required
DNS	Route53/Cloudflare	Domain management	None	N/A
SSL Certificates	ACM/Let's Encrypt	Encryption	None	N/A

3.2 Application Services

Service	Provider	Purpose	Data Processed	DPA Status
Email	SendGrid/SES	Transactional email	Email addresses	■ Required
SMS	Twilio	Phone verification	Phone numbers	■ Required
Push Notifications	FCM/APNs	User notifications	Device tokens	■ Required
Maps/Location	Google Maps	Location features	Coordinates	■ Required

3.3 Analytics & Monitoring

Service	Provider	Purpose	Data Processed	DPA Status

Analytics	Mixpanel/Amplitude	Usage analytics	User events	■ Required
Error Tracking	Sentry	Error monitoring	Stack traces	■ Required
Logging	CloudWatch/Datadog	Log aggregation	App logs	■ Required
APM	New Relic/Datadog	Performance	Performance data	■ Required

3.4 Safety & Moderation

Service	Provider	Purpose	Data Processed	DPA Status
Content Moderation	Hive/AWS Rekognition	Photo moderation	User photos	■ Required
Fraud Detection	Sift/reCAPTCHA	Bot prevention	Behavioral data	■ Required
ID Verification	Jumio/Onfido	Age verification	ID documents	■ Required

3.5 AI/ML Services (if applicable)

Service	Provider	Purpose	Data Processed	DPA Status
AI Chat	OpenAI	Conversation features	User messages	■ Required
Recommendations	Custom/AWS	Matching suggestions	User preferences	Internal

4. API Security Requirements

4.1 Authentication

Requirement	Implementation	Status
Token-based auth	JWT / OAuth 2.0	■

Token expiration	24 hours (refresh: 30 days)	■
Secure token storage	Keychain (iOS) / Keystore (Android)	■
Token revocation	Server-side blacklist	■

4.2 Authorization

Requirement	Implementation	Status
Role-based access	User / Admin roles	■
Resource ownership	Users can only access own data	■
Admin permissions	Separate admin endpoints	■

4.3 Input Validation

Requirement	Implementation	Status
Request validation	JSON schema validation	■
SQL injection prevention	Parameterized queries	■
XSS prevention	Output encoding	■
File upload validation	Type checking, size limits	■

4.4 Rate Limiting

Endpoint Category	Rate Limit	Window
Authentication	5 requests	15 minutes
General API	1000 requests	1 hour
Search/Discovery	100 requests	1 minute
Messages	100 requests OITH Confidential - 5	1 hour

5. Backup Policy

5.1 Backup Schedule

Data Type	Method	Frequency	Retention
Database	Automated snapshots	Daily	30 days
Database	Point-in-time recovery	Continuous	7 days
User media	Cross-region replication	Real-time	Indefinite
Configurations	Git version control	Per change	Indefinite
Logs	Archive to Glacier/Coldline	Daily	2 years

5.2 Backup Locations

Primary Region	Backup Region	Data Type
us-east-1	us-west-2	Database
us-east-1	us-west-2	User media
Global	Global	CDN assets

5.3 Recovery Testing

Test Type	Frequency	Last Tested	Next Due
Database restore	Quarterly	-	-
Full DR failover	Annually	-	-
Media restore	Semi-annually	-	-

6. Service Level Objectives (SLOs)

6.1 Availability

Service	Target SLA	Measurement
API	99.9%	Monthly uptime
Database	99.95%	Monthly uptime
CDN	99.99%	Monthly uptime

6.2 Performance

Metric	Target	Measurement
API response time (P50)	< 200ms	Continuous
API response time (P95)	< 500ms	Continuous
API response time (P99)	< 1000ms	Continuous
Photo load time	< 2s	Continuous

6.3 Error Rates

Metric	Target	Alert Threshold
API error rate	< 0.1%	> 1%
Payment failure rate	< 2%	> 5%
Push delivery rate	> 95%	< 90%

7. Infrastructure Checklist

Documentation Complete

- System architecture diagram
- Data flow diagrams
- Network diagram
- Third-party inventory
- API documentation
- Backup procedures
- DR procedures

Security Implemented

- TLS everywhere
- Encryption at rest
- WAF configured
- DDoS protection
- Security groups configured
- Secrets management

Monitoring Active

- Application monitoring
- Infrastructure monitoring
- Log aggregation
- Alerting configured
- On-call rotation

Last Updated: December 2024

Review Due: Quarterly