Migration Plan: Hybrid Home-Grown + Auth0 to Ory

Executive Summary

This migration plan outlines the strategy for migrating from a hybrid authentication system (home-grown + Auth0) to Ory's unified identity management solution. The plan incorporates multiple migration approaches including bulk uploads, webhook migrations, and UI synchronization strategies.

Pre-Migration Assessment

Current State Analysis

- **Home-grown Solution**: Custom authentication components
- **Auth0 Integration**: OAuth2/OIDC flows and user management
- **Hybrid Architecture**: Mixed identity sources and authentication flows

Target Architecture

- **Ory Identities**: Core identity management
- **Ory OAuth2 (Hydra)**: OAuth2/OIDC provider
- **Unified UI**: Single authentication experience

Migration Strategy Selection

Recommended Approach: **Stepwise Migration**

Given the hybrid nature of your current system, a stepwise migration is optimal because:

- Reduces risk by migrating components individually
- Allows for thorough testing at each phase
- Minimizes downtime impact
- Enables rollback at any stage

Alternative Approaches Available

1. **Big Bang**: All-at-once migration (higher risk, shorter timeline)
2. **Graceful**: Parallel systems with gradual user migration (longer timeline, no downtime)

Phase 1: Foundation Setup

1.1 Ory Network Project Creation

Create separate environments for development, staging, and production to ensure proper testing and validation at each stage. Configure domain structure with Ory handling authentication flows, API endpoints for backend services, and frontend applications on appropriate subdomains.

1.2 Identity Schema Design

Consolidate schemas from both existing systems to create a unified identity structure that includes:

- **Core Traits**: Email, name components, phone numbers
- **Authentication Methods**: Password, WebAuthn, TOTP support
- **Recovery & Verification**: Email-based flows
- **Migration Metadata**: Source system tracking, migration timestamps, legacy user IDs

Design the schema to accommodate data from both Auth0 and home-grown systems while maintaining backward compatibility during the transition period. (https://www.ory.sh/docs/kratos/manage-identities/identity-schema)

1.3 Domain Configuration

Establish proper domain architecture:

- **Ory Services**: auth.yourdomain.com
- **API Backend**: api.yourdomain.com
- **Frontend Application**: app.yourdomain.com

Phase 2: Data Migration Strategies

2.1 Bulk Upload Migration

Auth0 Users Export

Request password hashes through Auth0 support ticket process, as these are considered sensitive information and require special handling. Create comprehensive bulk user export using the Management API to capture complete user profiles, metadata, and authentication history.

Home-grown Users Export

Extract user data from existing database systems, ensuring all relevant fields are captured including user IDs, authentication credentials, profile information, and any custom metadata. Maintain data integrity during extraction and prepare for format transformation.

Data Transformation and Import

Transform exported data into Ory-compatible format, mapping fields appropriately and handling any schema differences. Import users in batches respecting Ory's limits while maintaining referential integrity and avoiding duplicates.

2.2 Webhook Migration Strategy

Real-time Synchronization Setup

Configure Ory Actions to trigger webhooks for critical identity events including registration, login, profile updates, and password changes. Implement webhook handlers in your backend systems to maintain data consistency across all platforms during the transition period.

Business Logic Integration

Establish webhook endpoints that create corresponding user records in your business database, sync with other systems as needed, and maintain proper linking between Ory identities and internal user records through metadata storage.

2.3 Auth0 Actions Integration (Transition Period)

Bidirectional Sync During Transition

Implement Auth0 Actions that check for user existence in Ory and create corresponding records when needed. This ensures users can authenticate through either system during the migration period while maintaining data synchronization.

Migration Status Tracking

Track which users have been migrated and their current authentication preferences, allowing for intelligent routing between systems based on user migration status and ensuring seamless user experience.

Phase 3: UI Migration Strategies

3.1 Dual UI Approach (Recommended)

Option A: Ory UI Primary with Auth0 Fallback

Implement logic to determine authentication provider based on user migration status. Route users to appropriate authentication flows while maintaining consistent user experience. Gradually transition users to Ory-powered authentication as migration progresses. (https://www.ory.sh/docs/oauth2-oidc/resource-owner-password-grant)

Option B: Auth0 UI Primary with Ory Backend

Maintain existing Auth0 Universal Login interface while routing backend authentication requests to Ory for migrated users. Use custom database connections to bridge Auth0 UI with Ory authentication services, preserving familiar user experience during transition.

3.2 Progressive UI Migration

1. **Phase 1**: Maintain current UI while routing backend authentication calls
2. **Phase 2**: Implement Ory Account Experience alongside existing UI
3. **Phase 3**: Gradually migrate user segments to new UI based on rollout plan
4. **Phase 4**: Deprecate legacy UI components once migration is complete

3.3 Social Login

See account linking: https://www.ory.sh/docs/kratos/social-signin/link-multiple-provider-account

Phase 4: Backend Integration

4.1 Session Validation Strategy

Implement middleware that can validate sessions from both Ory and legacy systems during the transition period. Provide fallback mechanisms to ensure uninterrupted service while users are being migrated between systems.

4.2 Database Synchronization

Establish processes to synchronize user records between Ory identities and existing business databases. Handle both new user creation and updates to existing records, ensuring data consistency and proper metadata tracking throughout the migration.

4.3 API Endpoint Updates

Update all protected API endpoints to handle authentication from multiple sources during transition. Implement proper session validation that can distinguish between Ory sessions and legacy sessions while maintaining security standards.

Phase 5: Testing and Validation

5.1 Comprehensive Testing Requirements

- **Authentication Flows**: Login, registration, password reset, account recovery
- **Session Management**: Creation, validation, expiration, security
- **Data Integrity**: User profiles, metadata synchronization, permissions
- **API Functionality**: All protected routes, authorization checks
- **User Interface**: Forms, redirects, error handling, responsive design
- **Performance**: Response times, concurrent user handling, load capacity
- **Security**: CSRF protection, session security, data encryption

5.2 Migration Validation Process

Implement systematic validation to ensure migration completeness, data accuracy, and functional parity with existing systems. Compare user counts between systems, validate authentication flows for sample users, and verify all business logic continues to function correctly.

5.3 User Acceptance Testing

Conduct thorough user acceptance testing with representative user groups to ensure the migrated system meets usability requirements and maintains expected functionality.

Phase 6: Go-Live Strategy

6.1 Pre-Go-Live Checklist

- All users successfully imported and validated
- Backup and rollback procedures tested and documented
- Monitoring and alerting systems configured and operational
- Support documentation prepared and team trained
- User communication plan executed with clear messaging
- Performance baselines established and load testing completed

6.2 Go-Live Execution Plan

Execute migration during planned maintenance window with clear timeline and checkpoints. Monitor authentication success rates closely and validate system functionality at each milestone. Maintain communication channels for immediate issue resolution.

6.3 Rollback Preparedness

Maintain comprehensive rollback procedures including DNS reversion, legacy system reactivation, and user notification processes. Ensure rollback can be executed quickly if critical issues arise during go-live.

Phase 7: Post-Migration Optimization

7.1 Performance Monitoring and Optimization

Continuously monitor authentication success rates, session validation response times, user experience metrics, and error patterns. Optimize system performance based on real-world usage patterns and user feedback.

7.2 Feature Migration Timeline

Gradually migrate advanced features following core authentication migration:

- **Weeks 1-2**: Core authentication and session management
- **Weeks 3-4**: Multi-factor authentication and social login integration
- **Month 2**: Custom UI components and advanced flows
- **Month 3**: Legacy system decommissioning and cleanup

7.3 Legacy System Sunset Strategy

Plan systematic decommissioning of legacy systems including read-only phases, data archival processes, and final system shutdown. Ensure all historical data is properly preserved and accessible as needed.

Risk Mitigation

High-Risk Areas and Mitigation Strategies

1. **Password Hash Compatibility**: Verify all hashing algorithms are supported by Ory
2. **Session Continuity**: Plan for active session migration or graceful expiration
3. **Data Consistency**: Implement validation checkpoints and rollback procedures
4. **Performance Impact**: Conduct thorough load testing before production deployment
5. **User Experience**: Maintain familiar interfaces during transition period

Contingency Planning

- **Partial Rollback**: Component-level rollback capability for isolated issues
- **Data Recovery**: Regular backups and point-in-time recovery options
- **User Support**: Dedicated support team during transition period
- **Communication**: Clear status updates and user guidance throughout migration

Success Metrics

Technical Success Indicators

- **Migration Completeness**: 100% of user data successfully migrated
- **Authentication Success Rate**: Maintain >99.5% success rate
- **Performance Standards**: <500ms authentication response time
- **System Uptime**: >99.9% availability during migration period
- **Data Integrity**: Zero data loss or corruption incidents

Business Success Indicators

- **User Satisfaction**: Minimal increase in support tickets
- **Adoption Rate**: Smooth transition with high user acceptance
- **Security Posture**: Improved security metrics and reduced incidents
- **Operational Efficiency**: Reduced system complexity and maintenance overhead

Project Timeline

Phase	**Duration**	**Key Deliverables**
Planning & Setup	2-3 weeks	Ory projects, schemas, infrastructure preparation
Data Migration	3-4 weeks	User export, transformation, and import completion
UI Integration	4-6 weeks	Frontend updates, dual authentication support
Backend Integration	2-3 weeks	API updates, session management, middleware
Testing & Validation	2-3 weeks	Comprehensive testing, performance validation
Go-Live Execution	1 week	Production migration and immediate monitoring

Phase	Duration	Key Deliverables
Total Duration	**14-20 weeks**	Complete migration with optimization

Resource Requirements

Technical Team Requirements

- **Backend Developers**: API integration and webhook implementation
- **Frontend Developers**: UI updates and authentication flow changes
- **DevOps Engineers**: Infrastructure setup and deployment automation
- **QA Engineers**: Comprehensive testing and validation
- **Security Specialists**: Security review and compliance validation

External Dependencies

- Auth0 support for password hash export
- Ory support for migration guidance and best practices
- Business stakeholders for user communication and timing coordination

Communication Plan

Stakeholder Communication

- **Executive Updates**: Weekly progress reports and milestone achievements
- **Technical Teams**: Daily standups and integration coordination
- **End Users**: Advance notification, migration announcements, support availability

User Communication Timeline

- **4 weeks before**: Initial migration announcement and timeline
- **2 weeks before**: Detailed migration plan and user preparation guidance
- **1 week before**: Final reminders and support contact information
- **During migration**: Real-time status updates and issue resolution
- **Post-migration**: Confirmation and new feature announcements

Next Steps and Action Items

Immediate Actions (Week 1)

1. Secure stakeholder approval for migration strategy and timeline
2. Allocate technical resources and establish project team

3. Set up development and staging environments
4. Begin Auth0 password hash export request process

Short-term Actions (Weeks 2-4)

1. Complete Ory project setup and schema design
2. Begin user data export from both systems
3. Develop migration scripts and validation tools
4. Start UI integration planning and design

Medium-term Milestones (Weeks 5-12)

1. Complete data migration in development environment
2. Implement webhook synchronization
3. Conduct comprehensive testing phases
4. Prepare go-live procedures and rollback plans

Support and Resources

Documentation and Training

- Ory official documentation and best practices guides
- Internal documentation for custom processes and configurations
- Team training on new systems and migration procedures

External Support Options

- **Ory Community**: Community Slack for general questions and guidance
- **Professional Support**: Ory consultation services for complex scenarios
- **Auth0 Support**: Assistance with data export and transition planning

Success Monitoring

Regular review meetings to assess progress, address challenges, and adjust timeline as needed. Establish clear success criteria and monitoring processes to ensure migration objectives are met effectively.