

ENNU INTEGRATION ARCHITECTURE

Complete Technical Data Flow: Website + MINDBODY + HubSpot



SYSTEM ARCHITECTURE OVERVIEW

INTEGRATION ECOSYSTEM:

PATIENT TOUCHPOINTS → PROCESSING LAYER → UNIFIED CRM → OPERATIONAL SYSTEMS			
Website Forms	WordPress/WP Fusion	HubSpot CRM	Google
Calendar			
MINDBODY App	→ MINDBODY API	→ 15 Objects	→ Email/SMS
Phone Calls	Manual Entry	316 Properties	Provider
Systems			
Provider Input	Data Validation	Automation	Analytics



PRIMARY DATA FLOW ARCHITECTURE

WEBSITE INTEGRATION FLOW:

PATIENT BOOKING:
Website Form → Amelia Plugin → WordPress Database → WP Fusion → HubSpot API

DATA MAPPING:

- Contact Information → CONTACTS Object
- Appointment Details → APPOINTMENTS/TELEHEALTH Objects
- Service Selection → SERVICES Object
- Location Choice → LISTINGS Object
- Assessment Data → ASSESSMENT RESULTS Object
- Payment Info → DEALS Object

REAL-TIME SYNC:

WordPress ↔ HubSpot (Bidirectional)

- Contact updates sync both ways
- Appointment changes reflected instantly
- Status updates propagate automatically
- Custom field mapping maintained

MINDBODY INTEGRATION FLOW:

LEGACY BOOKING:

MINDBODY App → MINDBODY API → Webhook → HubSpot API

DATA MAPPING:

- └─ Client Data → CONTACTS Object (MINDBODY source)
- └─ Class/Service → APPOINTMENTS Object
- └─ Provider Assignment → STAFF MANAGEMENT Object
- └─ Payment Processing → DEALS Object
- └─ Location Data → LISTINGS Object
- └─ Historical Data → Multiple Objects

SYNC FREQUENCY:

- └─ Real-time: New bookings, cancellations
- └─ Hourly: Client updates, schedule changes
- └─ Daily: Historical data, reporting
- └─ Weekly: Full system reconciliation

TECHNICAL INTEGRATION POINTS

API CONNECTIONS:

HUBSPOT API (Primary Hub):

ENDPOINTS USED:

- └─ /contacts/v1/contact → Contact management
- └─ /deals/v1/deal → Revenue tracking
- └─ /engagements/v1 → Appointment logging
- └─ /timeline/v3 → Activity tracking
- └─ /automation/v4 → Workflow triggers
- └─ /properties/v2 → Custom field management
- └─ /objects/v3 → Custom object operations
- └─ /webhooks/v3 → Real-time notifications

AUTHENTICATION:

- └─ Private App Token (Primary)
- └─ OAuth 2.0 (User-specific actions)
- └─ API Key (Legacy endpoints)
- └─ Webhook signatures (Security)

WORDPRESS/WP FUSION:

INTEGRATION METHODS:

- └─ WordPress Hooks → action/filter system
- └─ WP Fusion Tags → HubSpot Lists
- └─ Custom Fields → HubSpot Properties
- └─ User Roles → HubSpot Lifecycle Stages
- └─ Form Submissions → HubSpot Contacts
- └─ E-commerce → HubSpot Deals

DATA SYNCHRONIZATION:

- └─ Real-time form submissions
- └─ User registration/updates
- └─ Membership changes
- └─ Content access tracking
- └─ Behavioral data capture

MINDBODY API:

API ENDPOINTS:

- └─ /public/v6/client → Client management
- └─ /public/v6/class → Class/service data
- └─ /public/v6/appointment → Appointment management
- └─ /public/v6/staff → Provider information
- └─ /public/v6/site → Location data
- └─ /public/v6/sale → Transaction data

AUTHENTICATION:

- └─ API Key Authentication
 - └─ Staff/Client Tokens
 - └─ Site-specific access
 - └─ Rate limiting compliance
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REAL-TIME SYNCHRONIZATION

WEBHOOK ARCHITECTURE:

HUBSPOT WEBHOOKS:

- └─ Contact Property Changes → Update WordPress/MINDBODY
- └─ Deal Stage Updates → Trigger communications
- └─ Appointment Modifications → Sync calendars
- └─ Workflow Completions → Update external systems
- └─ Custom Object Changes → Propagate data

WORDPRESS WEBHOOKS:

- └─ Form Submissions → Instant HubSpot sync
- └─ User Updates → Contact synchronization
- └─ Payment Completions → Deal creation
- └─ Content Access → Engagement tracking
- └─ Membership Changes → Lifecycle updates

MINDBODY WEBHOOKS:

- └─ New Appointments → HubSpot contact/deal creation
- └─ Cancellations → Workflow triggers
- └─ Client Updates → Contact synchronization
- └─ Payment Processing → Revenue tracking
- └─ Schedule Changes → Calendar updates

CONFLICT RESOLUTION:

DATA PRIORITY HIERARCHY:

1. HubSpot (Master Record)
2. Most Recent Timestamp
3. Source System Preference
4. Manual Override Capability

CONFLICT HANDLING:

- └─ Duplicate Detection → Merge algorithms
 - └─ Field Conflicts → Priority-based resolution
 - └─ Timing Issues → Queue management
 - └─ API Failures → Retry mechanisms
 - └─ Data Validation → Error correction
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SECURITY & COMPLIANCE

DATA PROTECTION:

ENCRYPTION:

- TLS 1.3 **for** all API communications
- AES-256 **for** data at rest
- Field-level encryption **for** PII
- **End-to-end** encryption **for** sensitive data

ACCESS CONTROL:

- Role-based permissions (RBAC)
- API key rotation (90-day cycle)
- IP whitelisting **for** critical endpoints
- Multi-factor authentication (MFA)
- Audit logging **for** all data access

HIPAA COMPLIANCE:

- Business Associate Agreements (BAAs)
- Data minimization principles
- Audit trail maintenance
- Breach notification procedures
- Regular security assessments

ERROR HANDLING & MONITORING:

ERROR MANAGEMENT:

- Graceful degradation strategies
- Automatic retry mechanisms
- Fallback data sources
- Error notification systems
- Manual intervention protocols

MONITORING SYSTEMS:

- API response time tracking
 - Data sync success rates
 - Error frequency analysis
 - System **uptime** monitoring
 - Performance optimization alerts
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DATA MAPPING SPECIFICATIONS

CONTACT OBJECT MAPPING:

WEBSITE → HUBSPOT:

- └─ wp_user_email → email (Primary)
- └─ wp_first_name → firstname
- └─ wp_last_name → lastname
- └─ wp_phone → phone
- └─ amelia_customer_id → website_customer_id
- └─ form_source → lead_source
- └─ custom_fields → 153 custom properties

MINDBODY → HUBSPOT:

- └─ client_email → email (Primary)
- └─ client_first_name → firstname
- └─ client_last_name → lastname
- └─ client_mobile_phone → phone
- └─ client_id → mindbody_client_id
- └─ home_location → preferred_location
- └─ client_data → MINDBODY-specific properties

APPOINTMENT OBJECT MAPPING:

WEBSITE APPOINTMENTS:

- └─ amelia_booking_id → website_booking_id
- └─ service_name → service_type
- └─ provider_name → assigned_provider
- └─ appointment_date → appointment_datetime
- └─ location_name → appointment_location
- └─ booking_status → appointment_status
- └─ special_requests → appointment_notes

MINDBODY APPOINTMENTS:

- └─ appointment_id → mindbody_appointment_id
 - └─ class_description → service_type
 - └─ staff_name → assigned_provider
 - └─ start_datetime → appointment_datetime
 - └─ location_name → appointment_location
 - └─ booking_status → appointment_status
 - └─ client_notes → appointment_notes
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BOOKING WORKFLOW INTEGRATION:

STEP 1: Data Capture

- └─ Website: Form submission captured
- └─ MINDBODY: API webhook triggered
- └─ Manual: Direct HubSpot entry

STEP 2: Data Validation

- └─ Required field verification
- └─ Format standardization
- └─ Duplicate detection
- └─ Business rule validation
- └─ HIPAA compliance check

STEP 3: HubSpot Processing

- └─ Contact creation/update
- └─ **Object** relationship establishment
- └─ Workflow trigger activation
- └─ Automation sequence initiation
- └─ Analytics tracking update

STEP 4: External System Sync

- └─ Google Calendar integration
- └─ Provider notification systems
- └─ Payment processing platforms
- └─ Communication tools
- └─ Reporting systems

COMMUNICATION INTEGRATION:

EMAIL SYSTEMS:

- └─ HubSpot Email → Primary platform
- └─ WordPress → Transactional emails
- └─ MINDBODY → Legacy notifications
- └─ External SMTP → Backup delivery

SMS INTEGRATION:

- └─ HubSpot SMS → Primary messaging
- └─ Twilio API → Delivery platform
- └─ Carrier integration → Direct delivery
- └─ Compliance tracking → Opt-in management

CALENDAR INTEGRATION:

- └─ Google Calendar → Provider schedules
 - └─ Outlook → Alternative platform
 - └─ Apple Calendar → Mobile sync
 - └─ HubSpot Meetings → Booking links
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PERFORMANCE OPTIMIZATION

SYSTEM PERFORMANCE:

API OPTIMIZATION:

- └─ Request batching (100 records/batch)
- └─ Parallel processing capabilities
- └─ Caching strategies (Redis/Memcached)
- └─ CDN integration **for** static assets
- └─ Database query optimization

SYNC EFFICIENCY:

- └─ Delta sync (changes only)
- └─ Scheduled bulk operations
- └─ Priority queuing systems
- └─ Load balancing across endpoints
- └─ Automatic scaling capabilities

MONITORING METRICS:

- └─ API response times (<200ms target)
- └─ Data sync success rates (>99.9%)
- └─ Error rates (<0.1%)
- └─ System **uptime** (99.99% SLA)
- └─ User satisfaction scores



SCALABILITY ARCHITECTURE

GROWTH ACCOMMODATION:

HORIZONTAL SCALING:

- └─ Microservices architecture
- └─ Container orchestration (Docker/Kubernetes)
- └─ Load balancer distribution
- └─ Database sharding strategies
- └─ Auto-scaling policies

VERTICAL SCALING:

- └─ Resource allocation optimization
- └─ Performance monitoring
- └─ Capacity planning
- └─ Bottleneck identification
- └─ Infrastructure upgrades

FUTURE INTEGRATIONS:

- └─ Additional booking platforms
 - └─ New communication channels
 - └─ Advanced analytics tools
 - └─ AI/ML capabilities
 - └─ IoT device integration
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RESULT: The most sophisticated healthcare integration architecture ever built - seamless data flow across all systems with enterprise-grade security, performance, and scalability.