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1. Overview: Building SaaS with Quantum

Quantum accelerates building multi-tenant SaaS platforms by providing secure-by-default foundations that scale from prototype to production.

1.1. What Quantum Solves

Multi-tenant isolation with controlled sharing - Each tenant's data is isolated by default - Selective sharing via policy rules (e.g., shared catalogs, partner directories) - Flexible tenancy models: one-database-per-tenant or shared-database-with-filtering

Consistent, secure APIs - Single BaseResource pattern for all CRUD operations - Automatic DataDomain filtering ensures users see only authorized data - Built-in query language works across all endpoints

Policy-driven authorization - Human-readable rules define "who can do what" - Rules contribute data filters (not just allow/deny) - Changes take effect without code deployment

Developer productivity - Minimal boilerplate: extend BaseModel and BaseResource - Live reload in development mode - Automatic OpenAPI documentation - Built-in CSV import/export for all entities

1.2. Core Building Blocks

Models: Extend BaseModel for automatic multi-tenancy, validation, and audit trails

Repositories: Extend MorphiaRepo for MongoDB operations with security filtering

Resources: Extend BaseResource for consistent REST APIs with minimal code

Security: Pluggable authentication (JWT, OIDC) with declarative permission rules

Query Language: Single syntax for filtering across APIs, permissions, and reports

1.3. When to Use Quantum

 Good fit: - Multi-tenant B2B SaaS platforms - Applications requiring flexible data sharing between organizations - Teams wanting consistent REST APIs without boilerplate - Projects needing audit trails and compliance features

 Consider alternatives: - Single-tenant applications - High-frequency trading or real-time systems - Applications with complex, non-relational data models - Teams preferring GraphQL over REST

1.4. Next Steps

- **New to Quantum?** Start with Getting Started
- **Learning concepts?** Read Multi-Tenancy Models
- **See it in action?** Try the Supply Chain Tutorial