summary of the tenant service verification and improvements made:

1. Route Structure ✅

* Main routes properly organized in **index.js**
* Tenant routes organized by functionality (management, settings, billing)
* Consistent route parameter naming (**tenantId**)
* Proper middleware ordering

1. Middleware Integration ✅

* Authentication middleware
* Authorization middleware
* Rate limiting
* Tenant access validation
* Input validation
* Error handling

1. Validation ✅

* Removed duplicate validation in controllers
* Centralized validation schemas
* Comprehensive validation rules for all endpoints
* Custom validation helpers

1. Error Handling ✅

* Custom error types
* Standardized error responses
* Error logging with context
* Metrics tracking for errors
* Proper error propagation

1. Logging ✅

* Request logging
* Error logging with stack traces
* Operation logging with context
* Performance metrics
* Audit logging

1. Caching ✅

* Redis integration
* Cache key management
* TTL configuration
* Cache invalidation on updates

1. Event Publishing ✅

* Message queue integration
* Event standardization
* Error handling for failed events
* Event correlation

1. Metrics ✅

* API request tracking
* Error tracking
* Cache performance
* Operation timing
* Resource usage

1. Import Path Consistency ✅

* Updated relative paths
* Consistent directory structure
* Proper module resolution

1. Code Organization ✅

* Controllers for request handling
* Services for business logic
* Models for data access
* Utils for shared functionality
* Middleware for request processing

1. Security ✅

* Role-based access control
* Input validation
* Rate limiting
* Tenant isolation
* Audit logging