

Service Product Data Model – Technical and Business Reference

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1. Overview

This data model defines a flexible structure for managing service-based products, their pricing, bundles, subscription plans, and related features. It supports versioned pricing, product bundling, and extensibility through JSON metadata fields.

2. service_product

Core table representing any product — standalone service, bundle, or add-on. It acts as the base entity referenced by all other modules.

- type – Defines if product is SERVICE, BUNDLE, or ADDON.
- status – Lifecycle stage (DRAFT, ACTIVE, RETIRED).
- metadata – JSON field for extensibility (tags, attributes, UI hints).

3. pricing

Defines how each product is priced and billed. Multiple pricing entries may exist for different time periods using valid_from and valid_to for versioning.

- price_type – FIXED, TIERED, DISCOUNT, or SUBSCRIPTION.
- billing_period – Defines recurrence (ONE_TIME, MONTHLY, YEARLY).
- valid_from / valid_to – Control temporal pricing versions.

4. bundle

Represents grouped products sold together under a bundle product type. The bundle strategy defines how pricing is calculated.

- FIXED_PRICE – Use defined price.
- SUM_COMPONENTS – Sum of item prices.
- DISCOUNTED_SUM – Sum minus discount_percent.

5. bundle_item

Defines child products that make up a bundle.

- optional – If true, user may exclude.
- display_order – Controls order of display.

6. subscription_plan

Defines renewal and recurring billing logic for a service product.

- billing_frequency – MONTHLY, YEARLY, or QUARTERLY.
- trial_period_days – Optional free trial period.
- renewal_policy – AUTO_RENEW, MANUAL_RENEW, or EXPIRE.

7. feature

Catalog of reusable service features that may be included or sold as add-ons.

8. product_feature_mapping

Links products with features and supports optional add-on pricing.

- included – TRUE if built-in, FALSE if optional.
- addon_price – Price for optional feature.

9. Relationships Overview

Relationship	Type	Description
service_product → pricing	1-to-many	Product can have multiple pricing entries.
service_product → bundle	1-to-1	Bundles extend product definition.
bundle → bundle_item	1-to-many	Each bundle contains multiple child items.
service_product → subscription_plan	1-to-many	Product may have multiple plans.
service_product ↔ feature	many-to-many	Products can include or sell multiple features.

10. Business Logic Examples

Fixed Service: 'Website Design' – one-time fee \$5,000.

Subscription Service: 'Social Media Management' – \$1,200/month auto-renew.

Bundle: 'Marketing Launch Bundle' includes multiple services with 10% discount.

11. Lifecycle and Metadata

Products transition through DRAFT → ACTIVE → RETIRED. Pricing can overlap by valid_from/to to support versioning. Metadata JSON fields allow dynamic schema extension for integration with external systems.