

Understanding and Exploring Your Ontology

Purpose of the Ontology

The Palantir Foundry Ontology acts as a semantic layer that connects organizational data, providing a unified operational view across datasets, models, and applications.

Strategic Function

Enables organizations to model and understand their operations digitally through interconnected data entities—serving as a digital twin for decision intelligence.

Presentation Overview

This deck explores the architecture, configuration, navigation, and analytical capabilities of the Foundry Ontology with hands-on use cases and examples.

What is the Foundry Ontology

An Operational Semantic Layer

- **Core Definition:** The Foundry Ontology is an operational semantic layer that bridges raw data and real-world business meaning. It structures digital assets into coherent objects, enabling intuitive interaction and analytics.
- **Strategic Purpose:** Acts as a digital twin of the organization—providing a unified model that connects datasets, models, and workflows to real-world entities and processes.
- **Key Benefit:** Transforms raw data pipelines into actionable insights and applications by mapping technical assets to semantic business constructs.

Ontology's Three-Layer Architecture

Semantic, Kinetic, and Dynamic Layers



Semantic Layer

Transforms datasets and models into meaningful object types and relationships. It defines the structure of business entities and their properties across the organization.



Kinetic Layer

Activates behaviors and real-time actions—turning static data models into operational systems. Enables automation, decision execution, and feedback loops.



Dynamic Layer

Introduces learning and predictive capabilities. It simulates scenarios, models reasoning, and enables continuous optimization of organizational decisions.

Core Components of the Ontology

Objects, Properties, and Relationships

- **Object Types:** Define the fundamental categories of entities in the organization—such as Customer, Order, or Product—each with its own schema and backing dataset.
- **Properties:** Attributes that describe objects. They can be sourced directly from datasets or derived from transformations and models to enrich business meaning.
- **Link Types:** Represent relationships among object types, creating a navigable network of business entities. Enable one-to-many and many-to-many associations.
- **Action Types:** Operationalize ontology objects by defining the actions users can perform—such as update, approve, or trigger workflows.

Viewing and Navigating the Ontology

Object Explorer and Ontology Manager



Object Explorer Home

Acts as the central hub for discovering, searching, and interacting with ontology objects.

Provides global search, type grouping, and quick previews.



Search and Filtering

Global search indexes object types, properties, and saved analyses.

Filters allow users to narrow results by attributes or linked object relationships.



Ontology Manager

Configuration interface for defining properties, datasets, link types, and visibility rules. Accessible from Object Explorer or Data Lineage.

Backing Datasets in Foundry Ontology

Structure, Mapping, and Data Sources

- **Definition and Role:** Backing datasets are the authoritative data sources providing object instances and property values. They map raw columns to ontology properties.
- **Structure and Dynamics:** Each dataset is structured as rows and columns corresponding to objects and properties. Version control maintains historical integrity and traceability.
- **Multi-Datasource Object Types (MDOs):** Enable one ontology object type to be backed by multiple datasets. Support advanced enrichment across diverse data domains in Object Storage V2.

The Ontology in Data Lineage

Connecting Pipelines, Ontology, and Applications

- **Purpose of Data Lineage:** Visualizes how data flows across Foundry—from raw ingestion pipelines to ontology mappings and downstream applications.
- **Ontology's Role:** Serves as the bridge between technical data assets and business-facing tools, allowing users to trace data provenance and dependencies.
- **Governance and Impact Analysis:** Lineage enables teams to assess the downstream impact of schema or property changes, supporting compliance and robust data stewardship.

Object Explorer Searches and Filters

Discovering and Narrowing Ontology Data



Global Search Functionality

Search across all ontology elements—object types, properties, lists, and explorations. Supports advanced query syntax with categorized result tabs.



Filtering Capabilities

Users can filter results using property values, linked objects, and nested conditions, combining filters through AND/OR logic for precision analysis.



Interactive Results View

Displays results dynamically in tabular form with configurable columns, sorting, and visualization charts for seamless exploration.

Linked Object Filtering

Analyzing Relationships Across Object Types

- **Linked Object Concept:** Enables users to filter objects based on properties of related entities, such as filtering Orders by linked Customer attributes.
- **Multi-Level Relationships:** Supports deep hierarchical filtering across multiple relationship levels—e.g., Order → Customer → Address → City.
- **Performance Optimization:** Designed to scale for large datasets with intelligent query limits and caching to maintain responsiveness.

Saving Lists, Explorations, and Layouts

Preserving and Reusing Analytical Views



Object Lists

Static snapshots of objects created from filtered explorations. Represent a specific object set at a moment in time for reuse or export.



Explorations

Saved analysis views that preserve filters, charts, and layouts for repeatable and collaborative analysis across teams.



Layouts

Custom visual configurations including chart order, filters, and map views—fully preserved within saved explorations for consistent analytical experiences.

Charts, Maps, and Visual Layouts

Interactive Visualization in Object Explorer

- **Property Charts:** Visualize property distributions with bar, pie, or time-series charts. Enable filtering through direct interaction with chart elements.
- **Map Layouts:** Display geographic data using points, heatmaps, and clusters for spatial analysis and regional insights.
- **Linked Property Charts:** Show relationships across linked objects—e.g., Orders by Customer Segment—enabling multi-entity visualization and filtering.

Comparison and Collaboration

Analyzing and Sharing Insights Across Teams

- **Comparison Mode:** Allows side-by-side analysis of two object sets within identical layouts, revealing key differences and patterns between data groups.
- **Collaborative Workflows:** Explorations and lists can be shared across teams, promoting consistent analysis and standardized decision-making frameworks.
- **Reproducibility:** Shared explorations preserve filters, visualizations, and layouts, ensuring reproducibility and transparency in data-driven conclusions.

Key Takeaways & Best Practices

Optimizing Ontology Design and Usage

- **Ontology as a Semantic Framework:** Acts as a unified model that connects data, analytics, and applications—enabling enterprise-wide decision intelligence.
- **Performance and Scalability:** Use efficient primary keys, minimize excessive linked filtering, and leverage cached explorations for optimal responsiveness.
- **Collaboration and Reuse:** Standardize workflows with public explorations and shared layouts to enhance reproducibility and knowledge transfer.