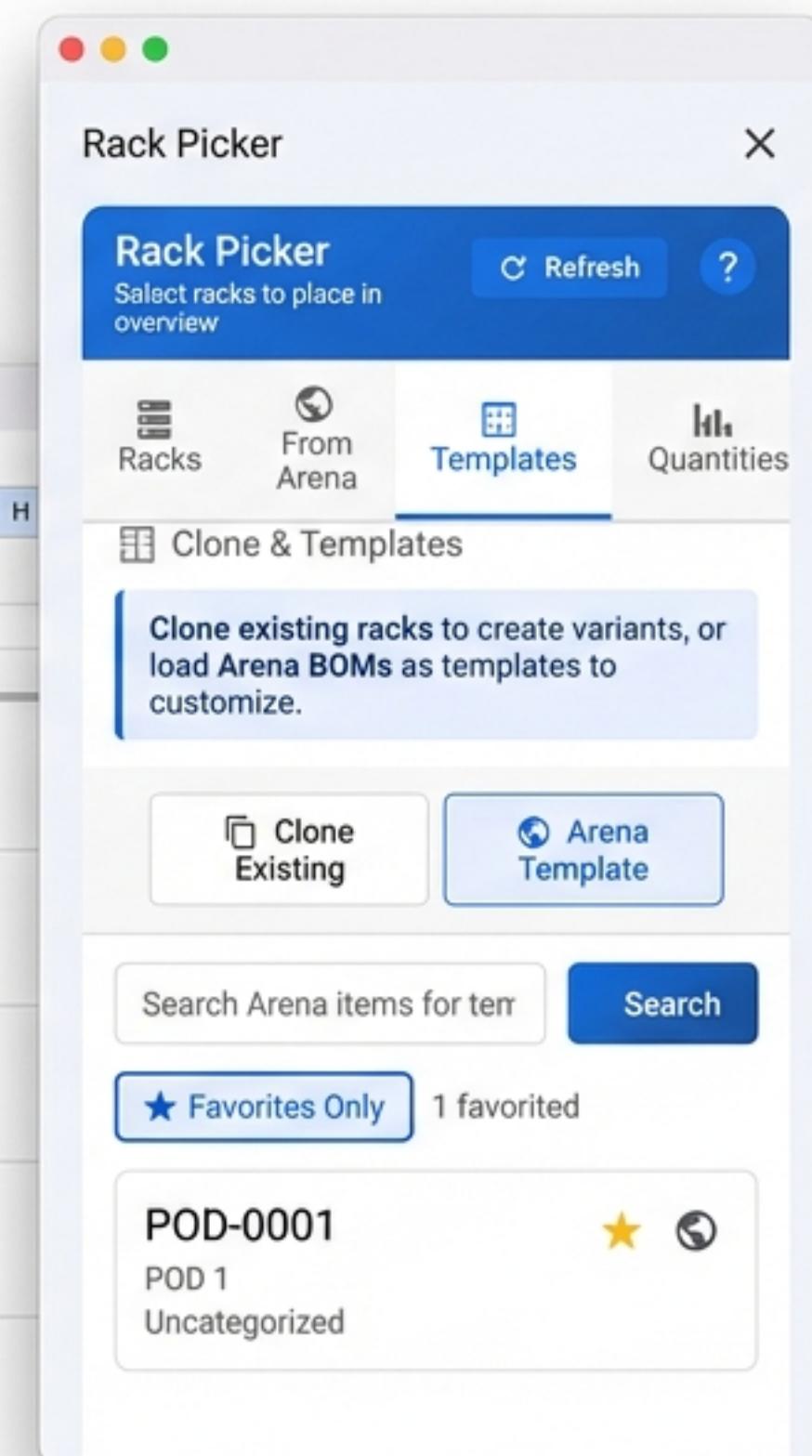


Arena Data Center: Visual Infrastructure Management

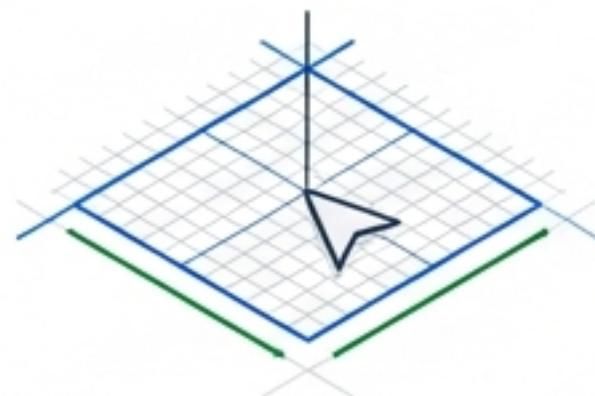
Bridging Google Sheets & Arena PLM for Rapid Data Center Design.

	A	B	C	D	E	F	G	H
1	POD Overview							
2								
3	Pos 1		Pos 2	Pos 3	Pos 4	Pos 5		
4	1	Type A	Type A	Type A	Type A			
5	2					Type A		
6	3	Type A	Type A	Type A	Type A			
7	4							
8	5	Type A				Type A		
9	6		Type A					



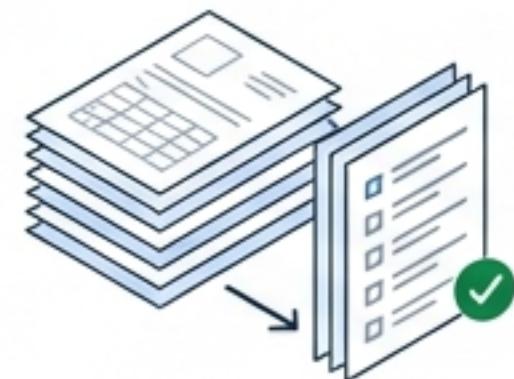
Transforming Static Sheets into Connected Design Environments

From manual entry to automated PLM synchronization.



Visual Rack Design

Drag-and-drop interface for mapping physical coordinates (Rows/Positions) directly in the sheet.



Automated BOM Aggregation

Scans layouts to generate consolidated material lists without manual counting.



One-Click Synchronization

Automates the creation of complex 3-level hierarchies (POD → Row → Rack) in Arena.

Arena Data Center - Help Guide

Arena rack Manager - Help Guide

Your complete guide to managing racks with Arena PLM

Getting Started Menu Reference Configuration Creating Content Status & History Publishing About

Welcome! Let's Get You Started

Welcome! This tool helps you design layouts, manage configurations, and sync everything with Arena PLM. Let's get you up and running!

Step 1: Connect to Arena

- 1 Open the configuration menu

Arena → Setup → Configuration → Configure Arens Connection

Operational Efficiency: The 150% Configuration Workflow

The Old Way (Manual Entry)

- Designers manually build BOMs blindly in PLM.
- The '**Overloading**' Problem: Loading a full BOM (50+ components) and manually deleting 35 unwanted rows.
- High risk of human error.



The Arena Data Center Way

- **Selective Loading:** The BOM Tree Viewer allows selection of only the needed components.
- **Visual Context:** "What you see is what you get" grid mapping.



Key Metric: 80% reduction in manual work for custom rack configurations.

The Visual Overview Grid

Physical Mapping:
Maps racks to specific coordinate systems
(Rows vs. Positions).

The screenshot shows a spreadsheet titled "Arena Sync - Data Center Example" with a "POD Overview" section. The grid maps racks (Rows) to positions (Columns). A "Rack Picker" sidebar on the right provides details on Type A placements.

	A	B	C	D	E	F	G	H
1	POD Overview							
2	Pos 1	Pos 2	Pos 3	Pos 4	Pos 5			
3	Type A	Type A	Type A	Type A				
4	1							
5								
6								
7								
8								
9								
10								
11								
12			Type A	Type A				
13			Type A	Type A				

Rack Picker

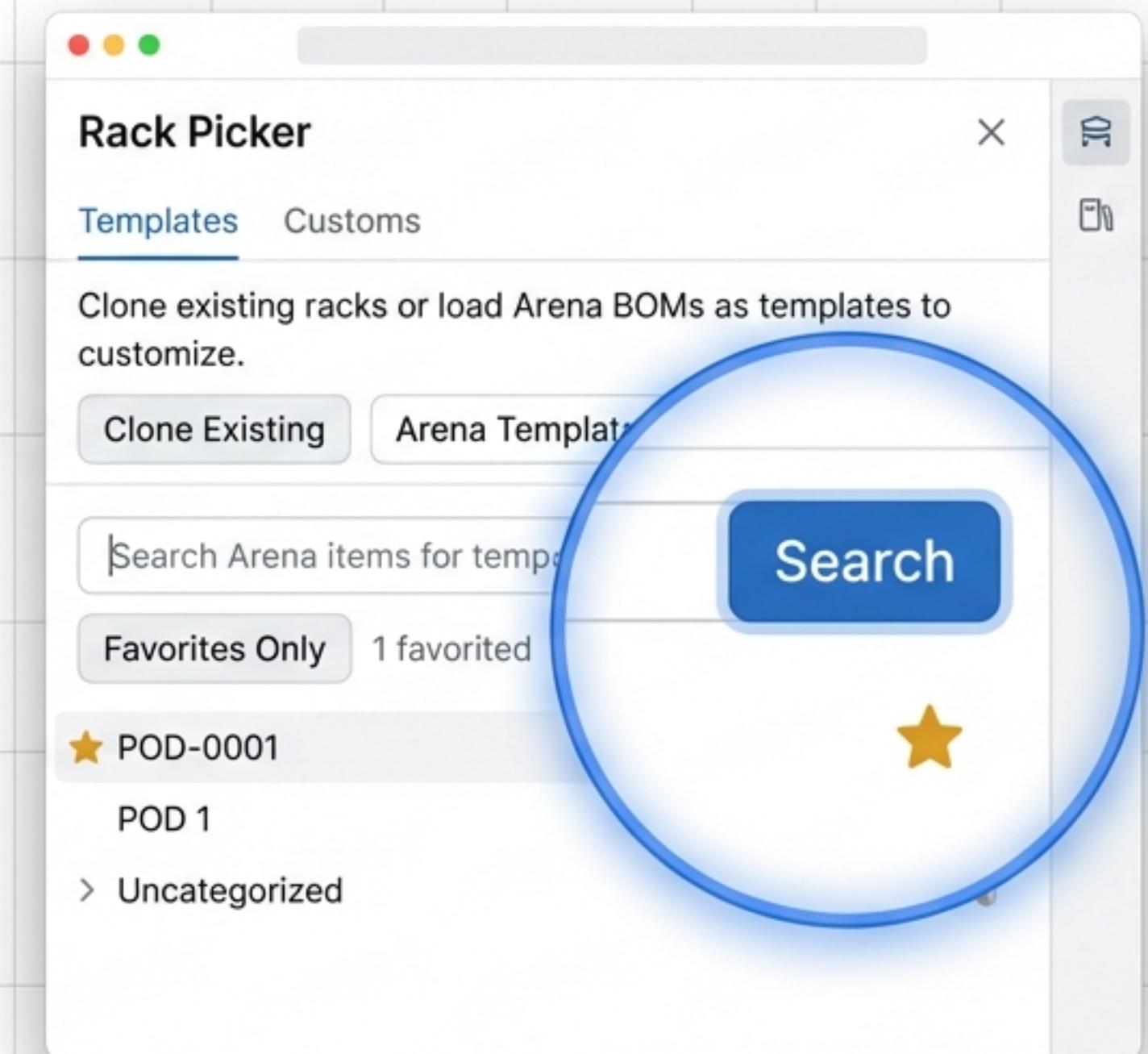
- Rack Picker: Select by place w/ occurrence
- Racks: From Arena
- Templates: Quantities
- Count Racks From:
 - All Racks
 - Overview Only
- Placement Details:
 - El. Racks
 - Placements
- Unique Racks: 1
- Total Placements: 15
- Scope: Current Sheet
- Type A: 18

Smart Linking: Cells are auto-hyperlinked to specific configuration sheets.

Visual Status:
Category-based color coding for instant visual scanning.

Streamlined Component Discovery

- **Explicit Search (v1.1):** Dedicated trigger reduces API calls and improves performance.
- **Favorites System:** “Star” frequently used templates for instant access.
- **Template Mode:** Clone existing Arena BOMs as starting points.



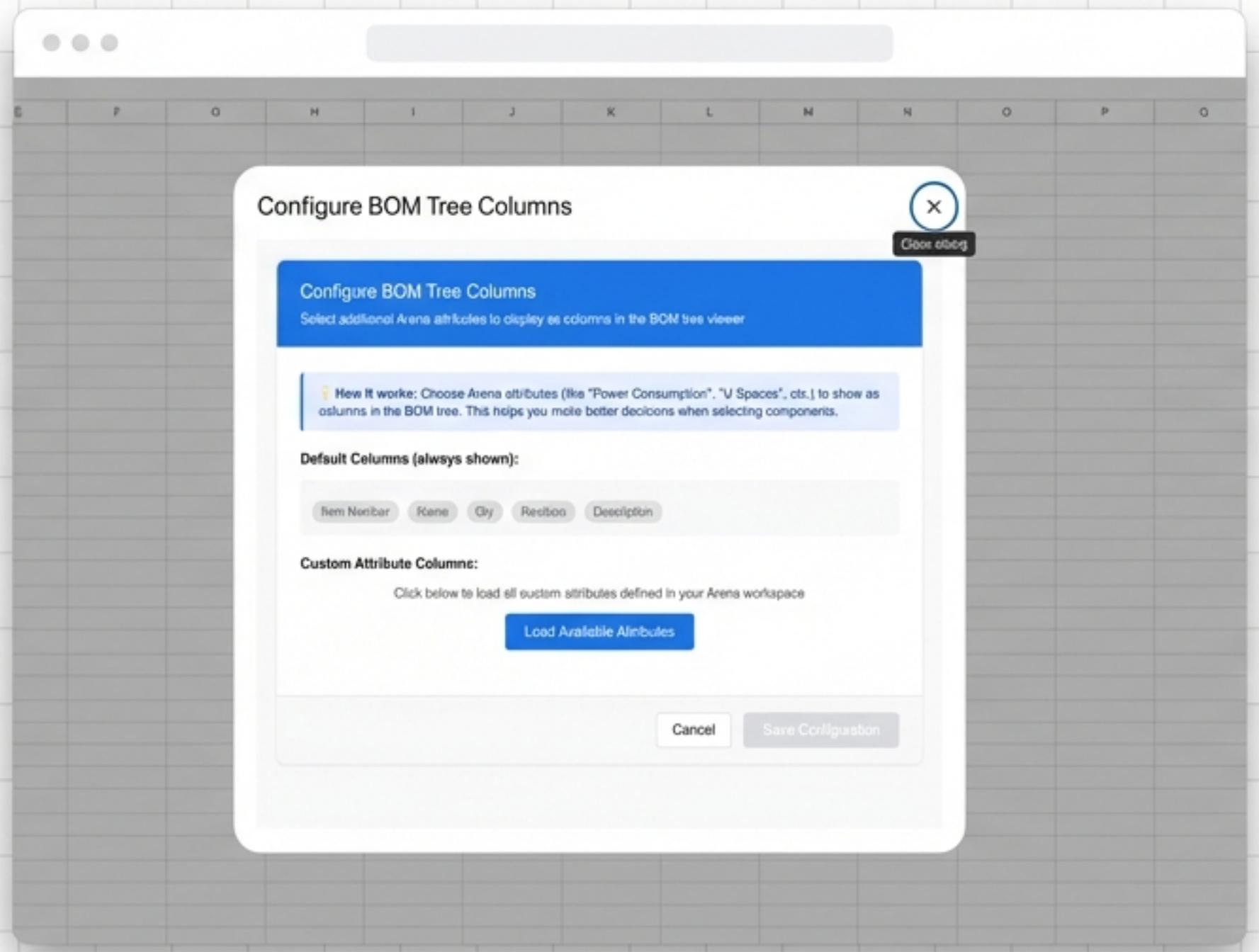
Deep Dive: The Hierarchical BOM Tree Viewer

The Problem

Traditional imports
dump flat lists, losing
parent-child context.

Visual Hierarchy

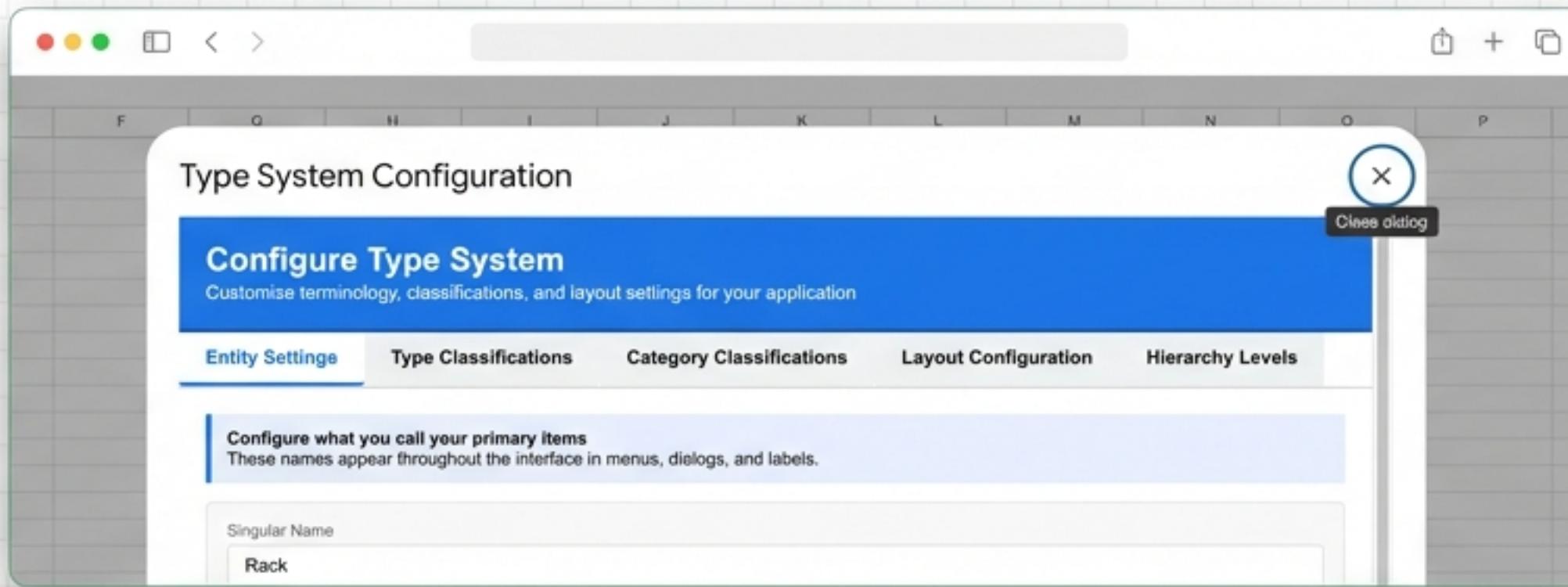
Users see the nested
structure (POD → Row
→ Rack) before
importing.



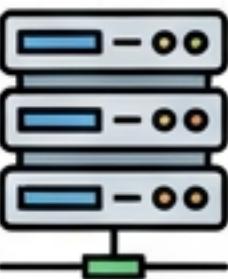
Solution: Selective Insertion

Checkbox interface
allows users to pick
specific sub-
components.
Recursive fetching
ensures complete visibility
up to 10 levels deep.

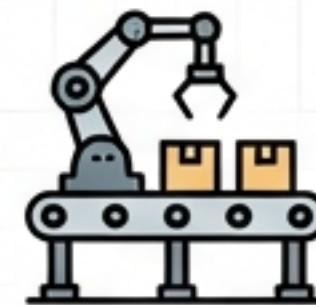
Beyond Data Centers: The v2.0 Generic Type System



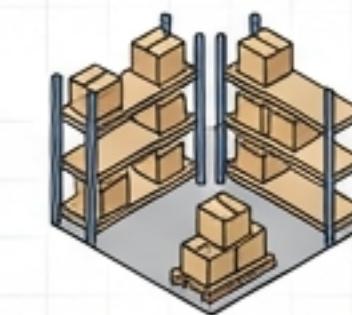
The system is industry-agnostic and fully configurable.



Data Centers
Rack / POD / Row



Manufacturing
Assembly / Line / Station



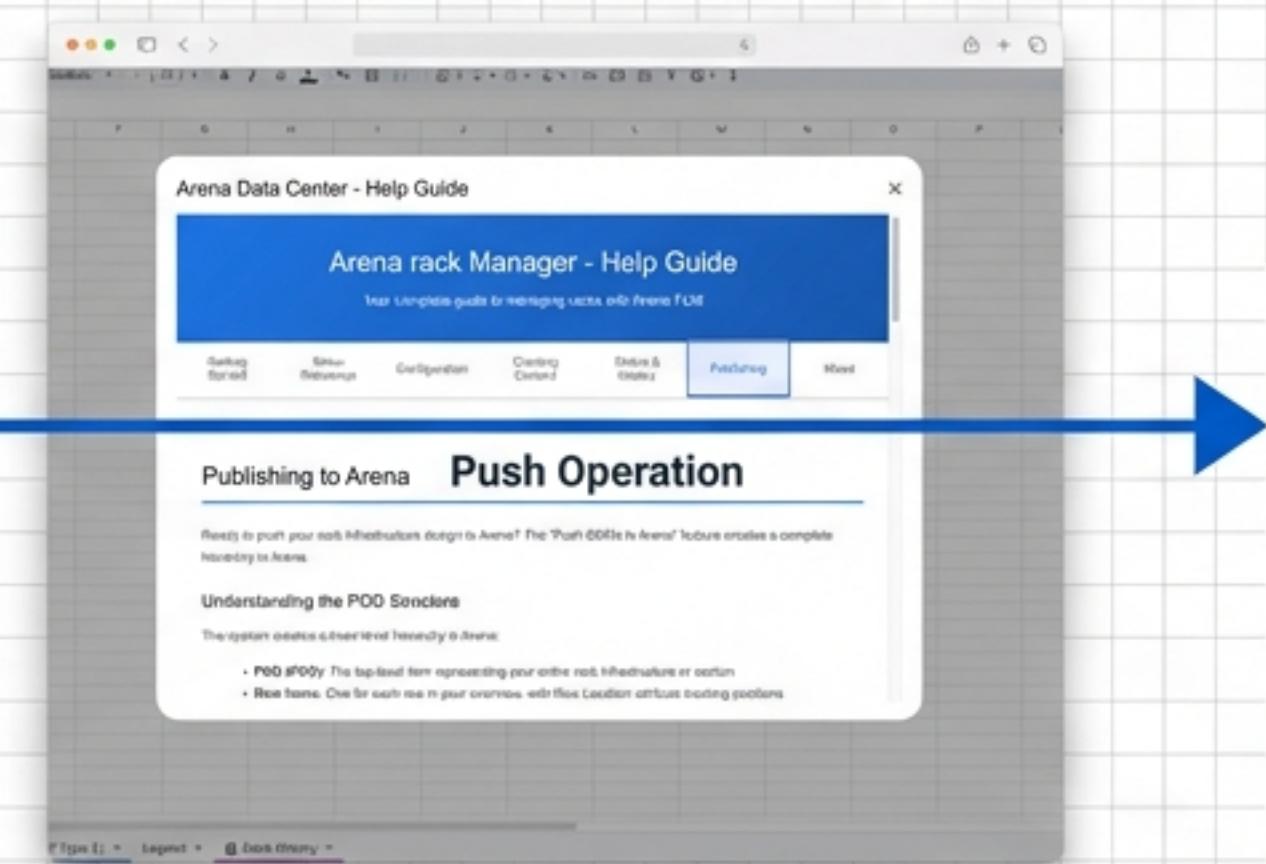
Warehousing
Shelf / Aisle / Warehouse

Users can rename entities and define custom keywords via the configuration menu.

Closing the Loop: Automated POD Synchronization

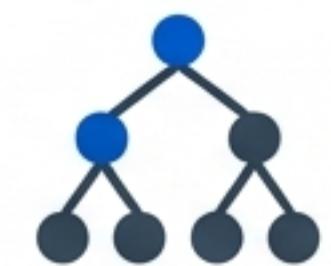


Overview Grid



Validation & Creation

- Check Row Location
- Identify Custom Racks
- Build Hierarchy

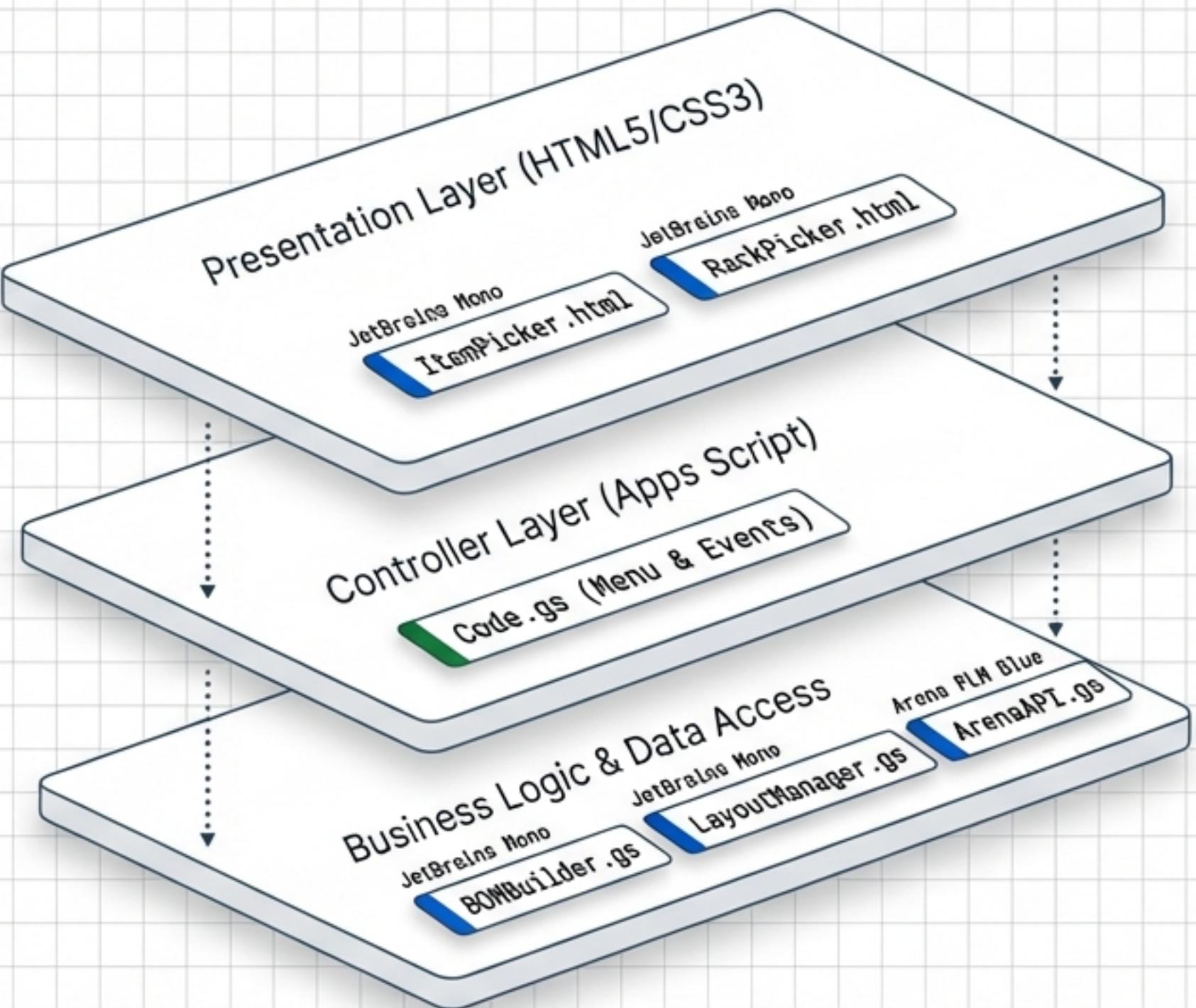


Arena PLM Hierarchy

POD Item
-> Row Item
-> Rack Item

Automatically tags each rack with a 'Row Location' attribute (e.g., 'Pos 1') for precise tracking.

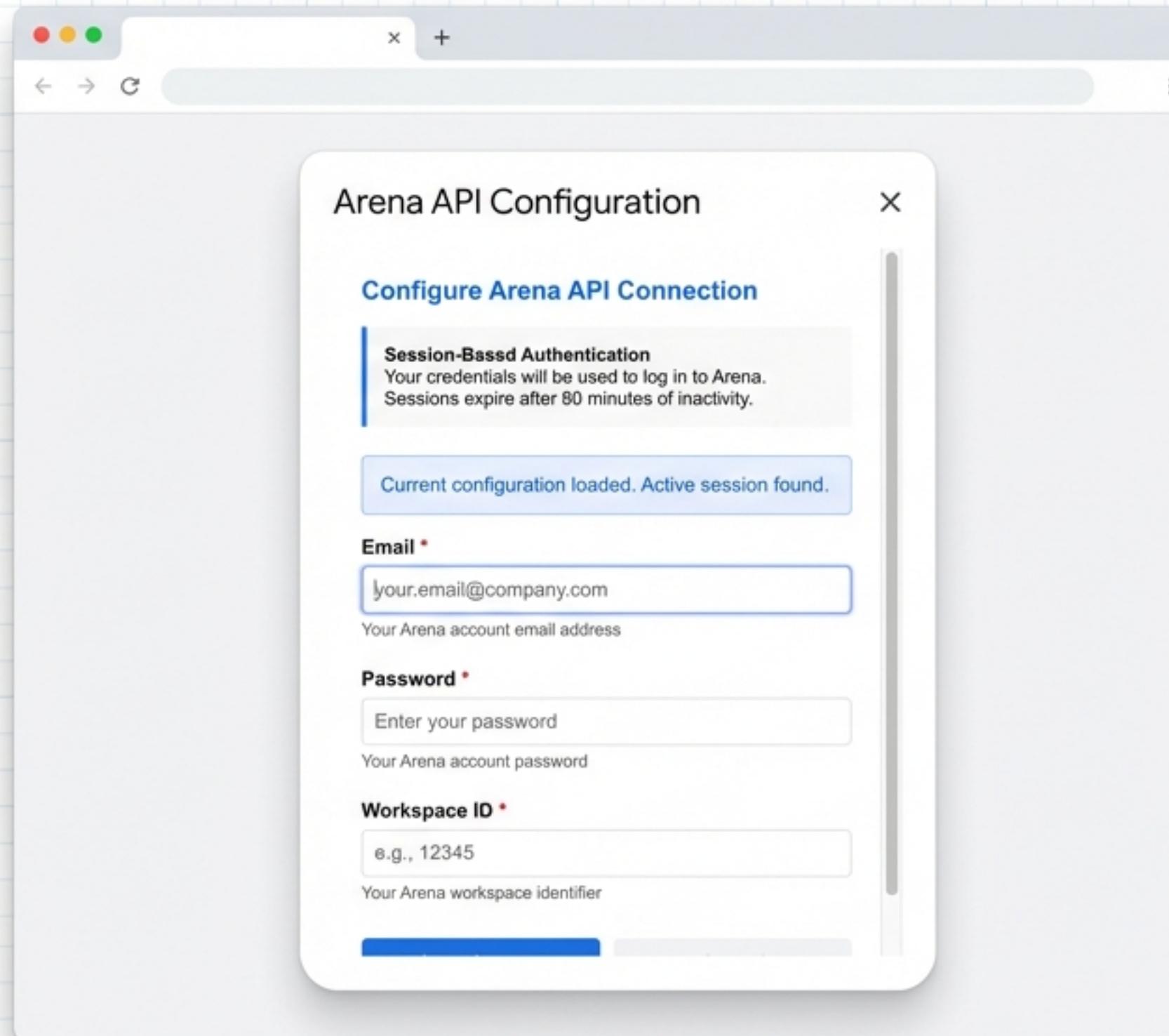
System Architecture & Tech Stack



Design Patterns

- Module Pattern
- Singleton Pattern (API Client)

The Data Access Layer: Arena API Integration



Technical Specifications

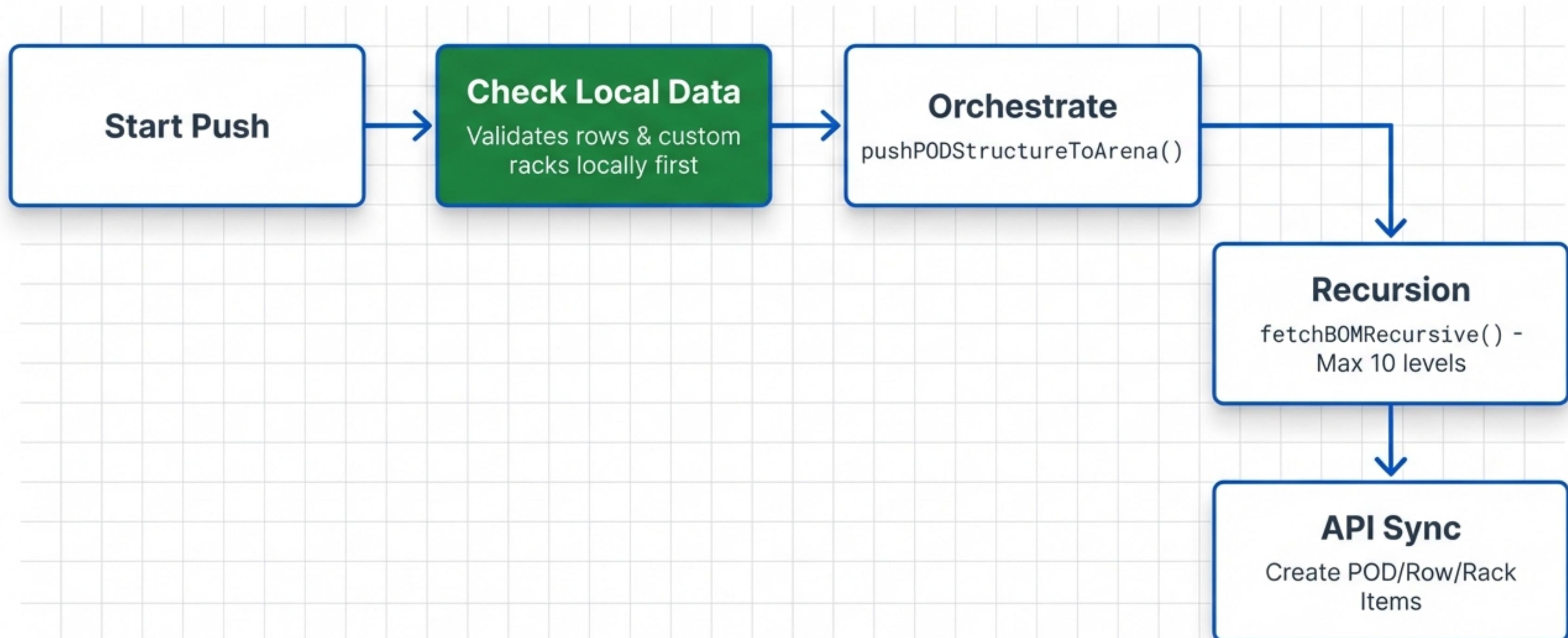
Authentication: Session-based auth with auto-relogin on 401 errors. Credentials stored in PropertiesService.

Caching Strategy:

- Categories: 6-hour TTL
- Items: 30-minute TTL
- **Rate Limiting:** 200ms delays between batch operations to respect API quotas.
- **Pagination:** Automatic batching of 400 items per request.

Business Logic: The BOM Builder Engine

Core Module: BOMBuilder.gs

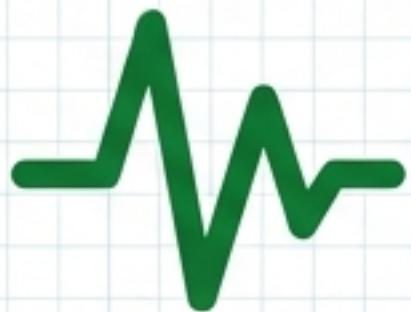


Security & Reliability Engineering



Security Posture

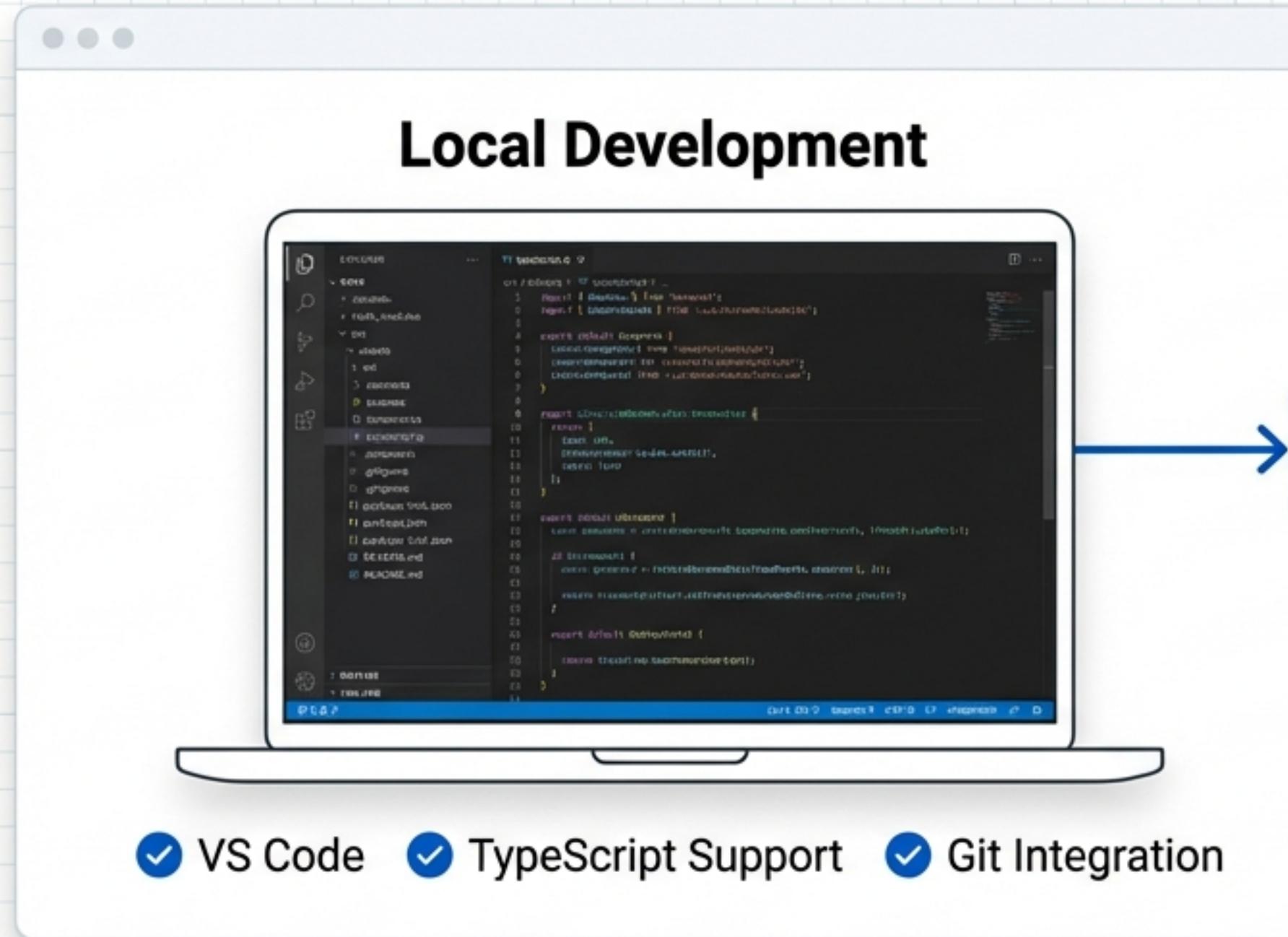
- **Credential Management:** Credentials never stored in code; strictly using PropertiesService.
- **XSS Prevention:** Input sanitization in export dialogs and HTML outputs.
- **Validation:** Strict input checks on color codes and string lengths.



Reliability

- Comprehensive error handling sanitizes messages to prevent leaking internal stack traces to the UI.

Deployment & Developer Workflow



CLASP (Command
Line Apps Script)



Cloud Deployment

Environment Strategy: Supports distinct .clasp.json configurations for Dev, Staging, and Production.

Roadmap & Future Enhancements



Shared Favorites

Team-wide template sharing via ScriptProperties.



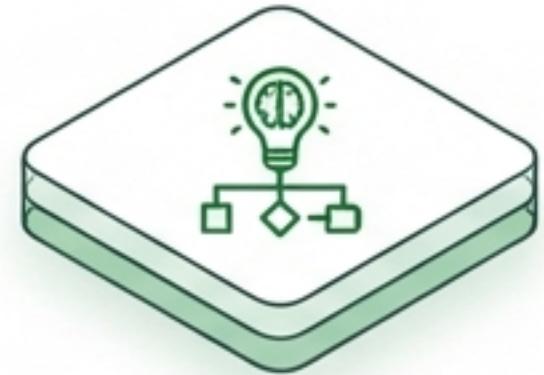
Event-Driven Arch

Trigger-based BOM updates for real-time **Arena** sync.



Automated Testing

Unit tests and mock API responses for safer refactoring.



Smart Suggestions

Auto-selecting components based on usage history.

Getting Started

1. Connect

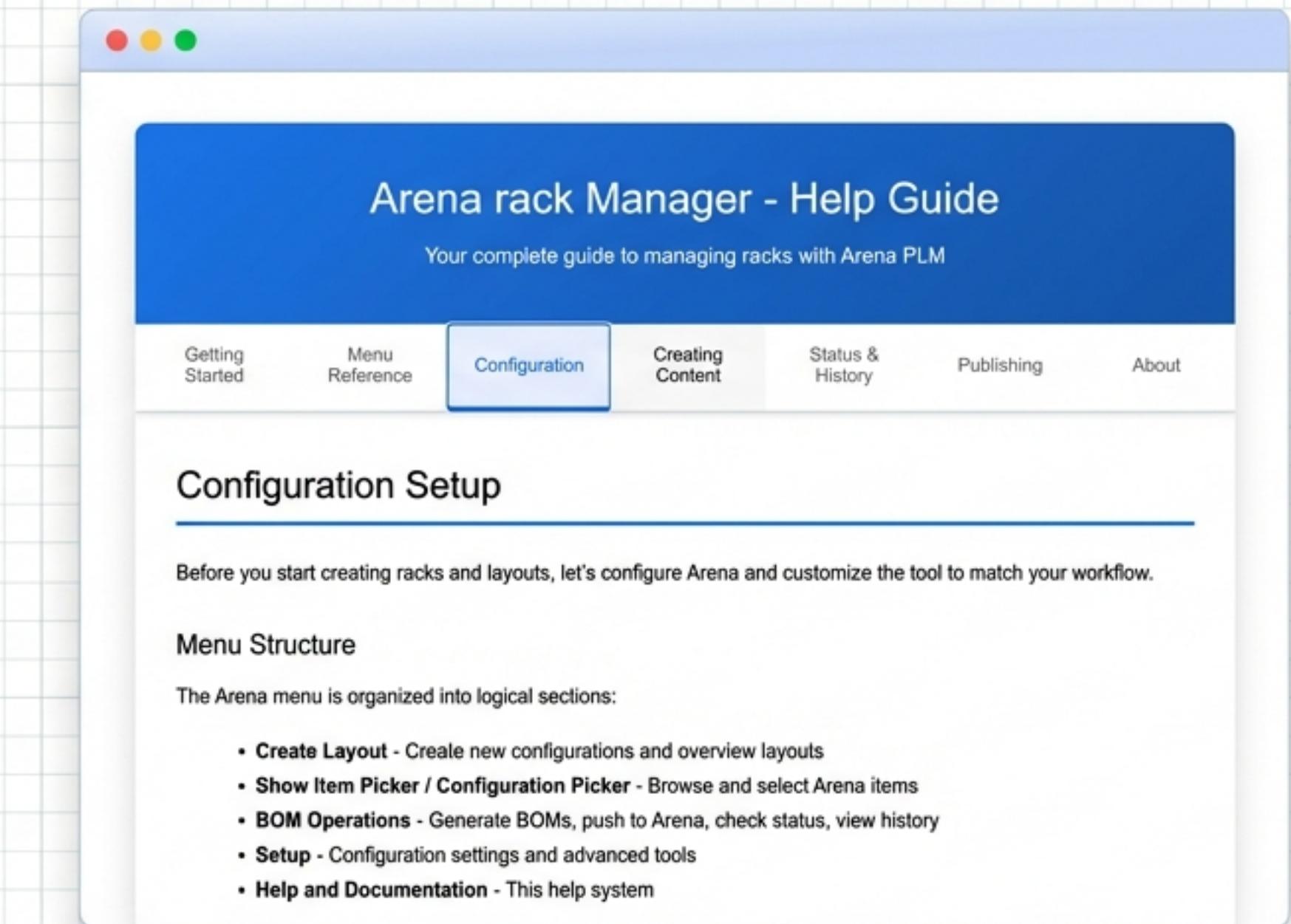
Run the Setup Wizard and enter Arena Workspace ID & Credentials.

2. Configure

Define “Row Location” attributes in Arena and map Category Colors.

3. Create

Use the Rack Picker to pull an existing BOM or start a fresh Grid Layout.



Full documentation available via Arena POD > **Help & Documentation**