ABINZ Orbit

Snowflake Native App — Product Documentation

Version 1.0 | support@abinz.ai | https://abinz.ai

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1. What is ABINZ Orbit?

ABINZ Orbit is a Snowflake Native App that transforms raw Snowflake tables into a governed semantic model, reusable metrics library, and AI-powered natural-language analytics platform — entirely within your Snowflake account.

No data leaves Snowflake. No external services are required for core functionality.

Core Capabilities

Capability	Description
Auto-Relationship Discovery	AI detects table joins using confidence scoring (0.0–1.0) — no foreign keys required
Semantic Model Builder	Maps technical schemas to business concepts with point-and-click configuration
Natural Language Analytics	Ask plain-English questions, get SQL-generated answers instantly
Metrics Library	Define and reuse governed KPI definitions across teams and workflows
PII Detection	Automatically flags sensitive columns for governance and masking controls
Workspace Isolation	Multi-team collaboration with role-based access and workspace-level separation

2. Requirements

Snowflake Edition

- Enterprise Edition or higher (recommended)
- Standard Edition (supported, with limited Cortex AI availability by region)

Required Privileges (Post-Install)

Run the following as ACCOUNTADMIN after installing the app:

Privilege	Purpose
USAGE ON WAREHOUSE	Execute queries within the consumer account
SNOWFLAKE.CORTEX_USER	Enable Snowflake Cortex AI for natural-language processing
USAGE ON DATABASE / SCHEMA	Read metadata for relationship and semantic discovery
SELECT ON TABLES	Profile data and power AI query results

> ⚠ *ABINZ Orbit does NOT request CREATE WAREHOUSE, CREATE DATABASE, or any account-level creation privileges. All access is explicitly granted by the consumer's ACCOUNTADMIN.*

3. Post-Install Setup

After installing from the Snowflake Marketplace, run the following SQL as ACCOUNTADMIN.

Step 1 — Grant Warehouse Access

```
-- Use your existing warehouse
GRANT USAGE ON WAREHOUSE COMPUTE_WH TO APPLICATION ABINZ_ORBIT;

-- Or create a dedicated warehouse (recommended)
CREATE WAREHOUSE IF NOT EXISTS ABINZ_WH
    WAREHOUSE_SIZE = 'XSMALL'
    AUTO_SUSPEND = 60
    AUTO_RESUME = TRUE;
GRANT USAGE ON WAREHOUSE ABINZ_WH TO APPLICATION ABINZ_ORBIT;
```

Step 2 — Enable Cortex AI

```
GRANT DATABASE ROLE SNOWFLAKE.CORTEX_USER TO APPLICATION ABINZ_ORBIT;
```

Step 3 — Grant Data Access

```
-- Repeat for each database/schema you want to analyze
GRANT USAGE ON DATABASE <YOUR_DATABASE> TO APPLICATION ABINZ_ORBIT;
GRANT USAGE ON SCHEMA <YOUR_DATABASE>.<YOUR_SCHEMA> TO APPLICATION ABINZ_ORBIT;
GRANT SELECT ON ALL TABLES IN SCHEMA <YOUR_DATABASE>.<YOUR_SCHEMA> TO
APPLICATION ABINZ_ORBIT;

-- To include future tables automatically
GRANT SELECT ON FUTURE TABLES IN SCHEMA <YOUR_DATABASE>.<YOUR_SCHEMA> TO
APPLICATION ABINZ_ORBIT;
```

Step 4 — Grant Application Roles

```
-- Analyst access for all users
GRANT APPLICATION ROLE ABINZ_ORBIT.ABINZ_APP_ANALYST_ROLE TO ROLE PUBLIC;
```

```
-- Admin access for administrators
GRANT APPLICATION ROLE ABINZ_ORBIT.ABINZ_APP_ADMIN_ROLE TO ROLE ACCOUNTADMIN;
```

Step 5 — Verify Setup

```
-- Confirm roles granted correctly
SHOW GRANTS TO ROLE PUBLIC;
-- Expected: ABINZ_APP_ANALYST_ROLE appears in results

-- Confirm app data access
SHOW GRANTS TO APPLICATION ABINZ_ORBIT;
-- Expected: USAGE on warehouse, CORTEX_USER, SELECT grants on your schemas
```

4. First-Run Walkthrough

Navigate to Apps → ABINZ_ORBIT in Snowsight after completing setup.

Recommended flow:

Home → Data Sources → Relationships → Model Preview → AI Assistant → Metrics Library

Step	Module	Action
1	Home	Verify all modules load in the sidebar
2	Data Sources	Add database/schema → click Scan to discover tables
3	Relationships	Click 'Run Auto-Discovery' → review and approve joins
4	Model Preview	Review semantic entities → publish the model
5	AI Assistant	Ask a plain-English question about your data
6	Metrics Library	Define reusable KPIs (e.g., Total Revenue, Order Count)

5. Sample Queries

Run these in a Snowflake Worksheet after setup to verify the semantic layer is active.

Semantic Coverage Snapshot

```
WITH t AS (
  SELECT COUNT(*) AS total_tables,
         COALESCE(SUM(row_count), 0) AS total_rows_profiled
  FROM ABINZ_KG.TABLES_METADATA
),
r AS (
  SELECT COUNT(*) AS total_relationships,
         COALESCE(AVG(confidence_score), 0) AS avg_relationship_confidence
  FROM ABINZ_KG.RELATIONSHIPS_METADATA
),
m AS (
  SELECT COUNT(*) AS total_semantic_models
  FROM ABINZ_KG.SEMANTIC_MODELS
```

```
)
SELECT t.total_tables, t.total_rows_profiled,
       r.total_relationships,
       ROUND(r.avg_relationship_confidence, 3) AS avg_relationship_confidence,
       m.total_semantic_models
FROM t, r, m;
```

Relationship Confidence Distribution

```
SELECT source_table, target_table, join_key,
       ROUND(confidence_score, 3) AS confidence_score,
       CASE WHEN confidence_score >= 0.8 THEN 'High'
            WHEN confidence_score >= 0.5 THEN 'Medium'
            ELSE 'Low' END AS confidence_tier
FROM ABINZ_KG.RELATIONSHIPS_METADATA
ORDER BY confidence_score DESC;
```

PII Detection Summary

```
SELECT table_name, column_name, data_type, pii_category, pii_confidence
FROM ABINZ_KG.COLUMNS_METADATA
WHERE is_pii = TRUE
ORDER BY table_name, pii_confidence DESC;
```

6. Security Model

Control	Implementation
No data egress	All processing occurs inside the consumer's Snowflake account
Workspace isolation	Each workspace is logically separated with scoped permissions
RBAC enforcement	Admin and Analyst roles have distinct, scoped access
SQL injection prevention	All queries use parameterized execution — no string concatenation
Input validation	Inputs validated before processing (max 50K characters)
Audit logging	All admin actions written to internal audit log table

7. Known Behaviors

Behavior	Explanation
First app load takes 5–10 seconds	One-time initialization of internal metadata tables
No relationships auto-discovered	Requires at least 2 tables with a shared key column
Low confidence scores (< 0.3)	Expected when column names differ (e.g., cust_id vs customer_id)
Model Preview appears empty	Publish at least one relationship in the Relationships module first
AI Assistant returns no results	Confirm the semantic model has been published in Model Preview
Cortex features unavailable	Some Cortex LLM models may not be available in all Snowflake regions

8. Troubleshooting

- **App shows only 'Model Preview' with no navigation?** → Step 4 (Grant Application Roles) was not completed. Run the GRANT APPLICATION ROLE commands and refresh.
- **'Insufficient privileges' error when scanning tables?** → Run GRANT SELECT ON ALL TABLES IN SCHEMA for the target schema.
- **Cortex AI not working?** → Run: GRANT DATABASE ROLE SNOWFLAKE.CORTEX_USER TO APPLICATION ABINZ_ORBIT;
- **Relationship discovery returns zero results?** → Confirm at least 2 tables with a shared identifier column exist in the granted schema.
- **Setup steps complete but app still errors?** → Try: GRANT SELECT ON FUTURE TABLES IN SCHEMA ... TO APPLICATION ABINZ_ORBIT;

9. Application Roles

Role	Purpose	Recommended For
ABINZ_APP_ADMIN_ROLE	Full access — workspace management, model publishing, config	Administrators (ACCOUNTADMIN)
ABINZ_APP_ANALYST_ROLE	Read and query — AI assistant, metrics, model view	All business users (PUBLIC)

10. Support

Channel	Details
Email	support@abinz.ai
Response Time	Within 1 business day
Snowflake Issues	Open a case via Snowsight → Help & Support → Support
Privacy Policy	https://abinz.ai/privacy-policy