databricks

Unity Catalog

Unified governance for all data and AI assets

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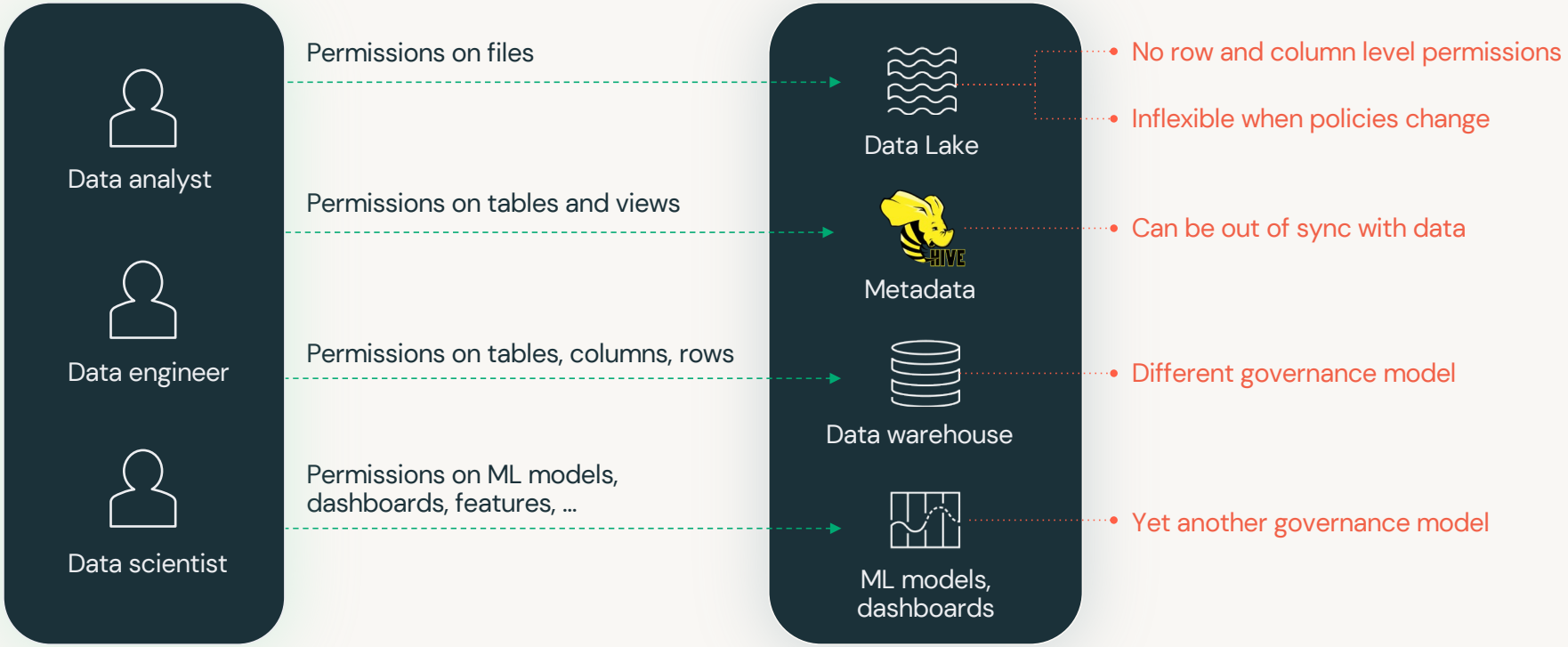
Governance for data and AI is complex



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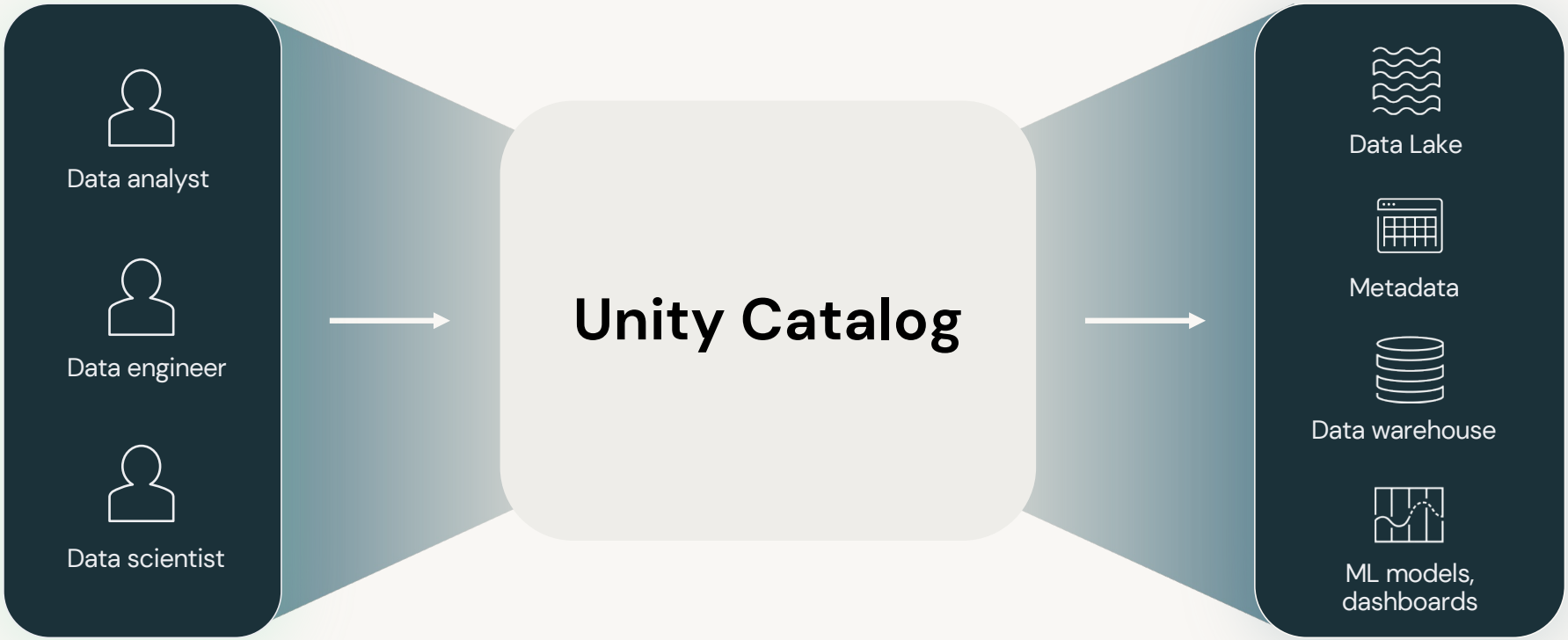
Databricks Unity Catalog

Unified governance for all data and AI assets



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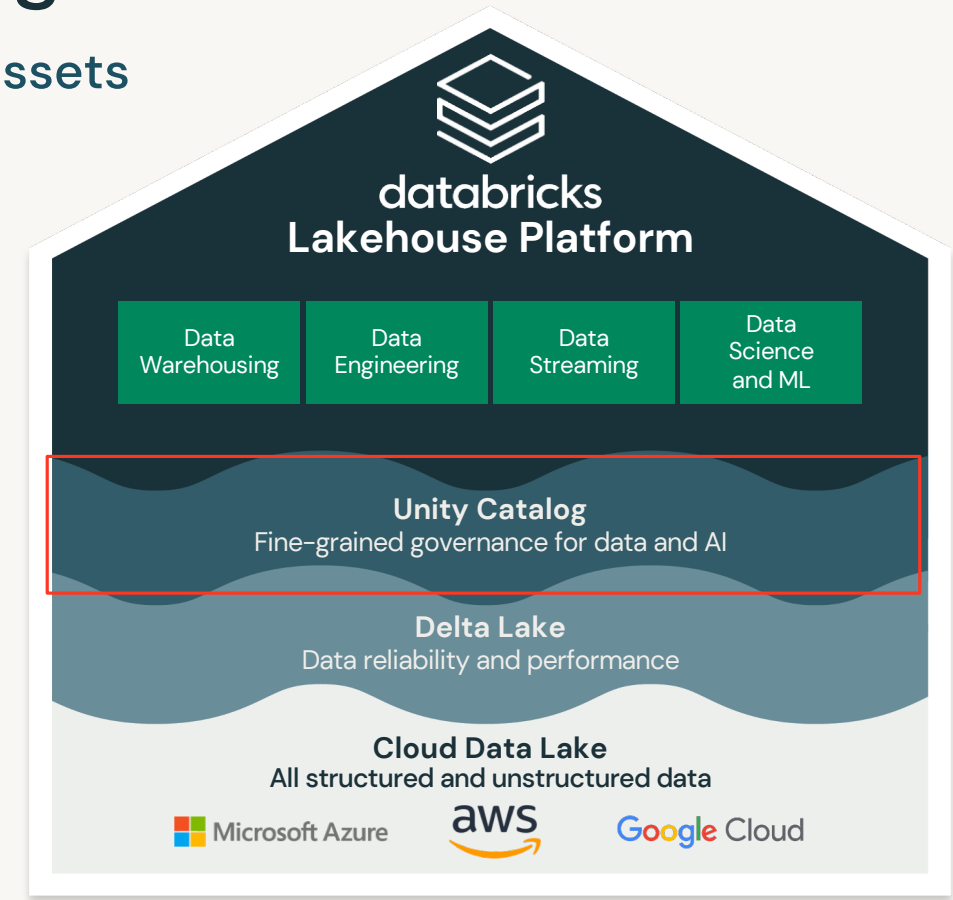
Databricks Unity Catalog

Unified governance for all data and AI assets

- Centralized governance for data and AI
- Built-in data search and discovery
- Performance and scale
- Automated lineage for all workloads
- Integrated with your existing tools



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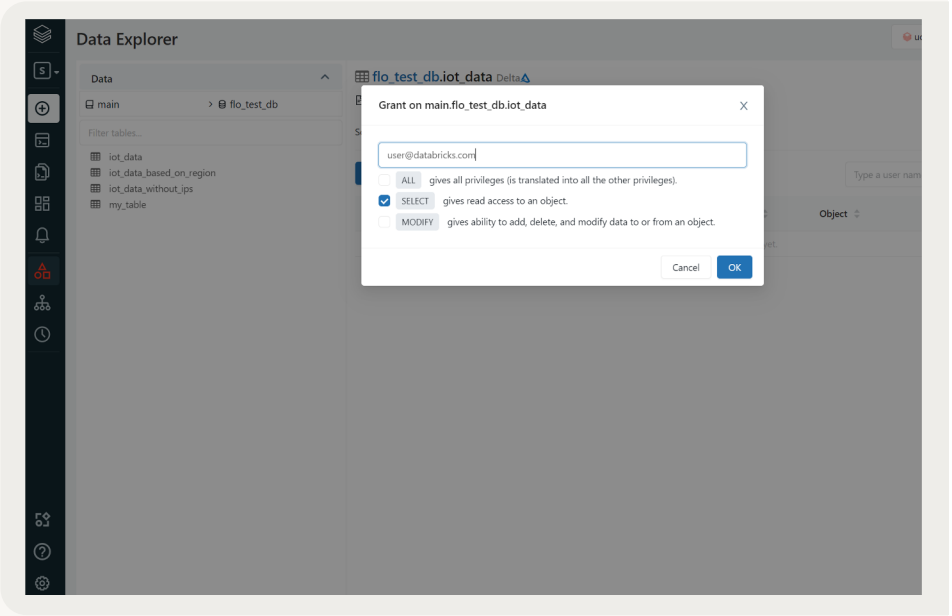
Centralized governance for data and AI

- Create a single source of truth for your data with centralized metadata and user management
- Centrally manage access permissions and audit controls for files, tables across all workspaces and workloads using open standard ANSI SQL
- Enable fine-grained access controls on tables, files, rows, and columns



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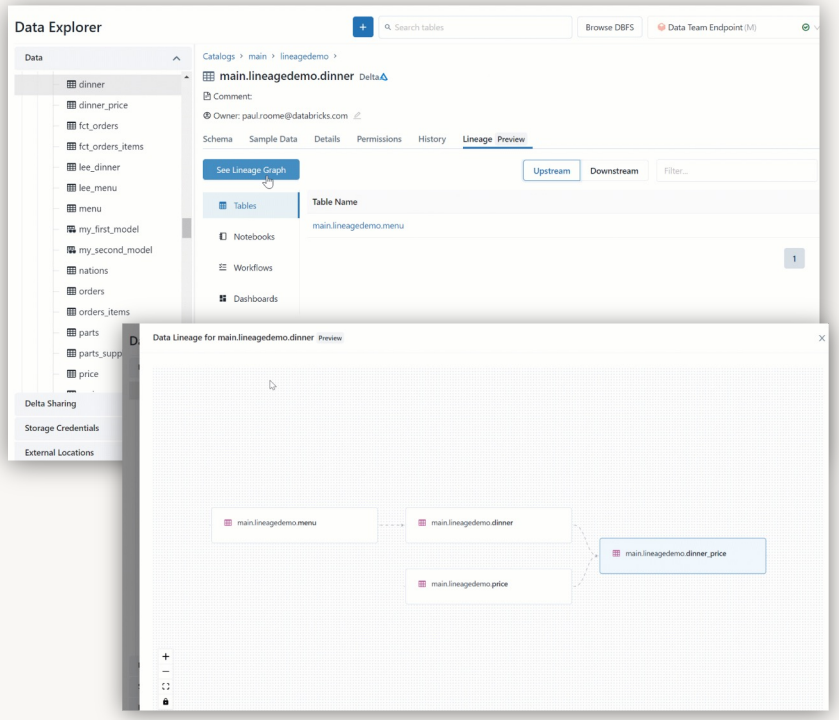
Automated lineage for all workloads

- Get an end-to-end visibility into how data flows in your organization from source to consumption with built-in data lineage
- View lineage across tables, columns, notebooks, workflows, dashboards
- Captured in real time across all workloads in SQL, Python, Scala, and R
- Export API to enable partner integrations



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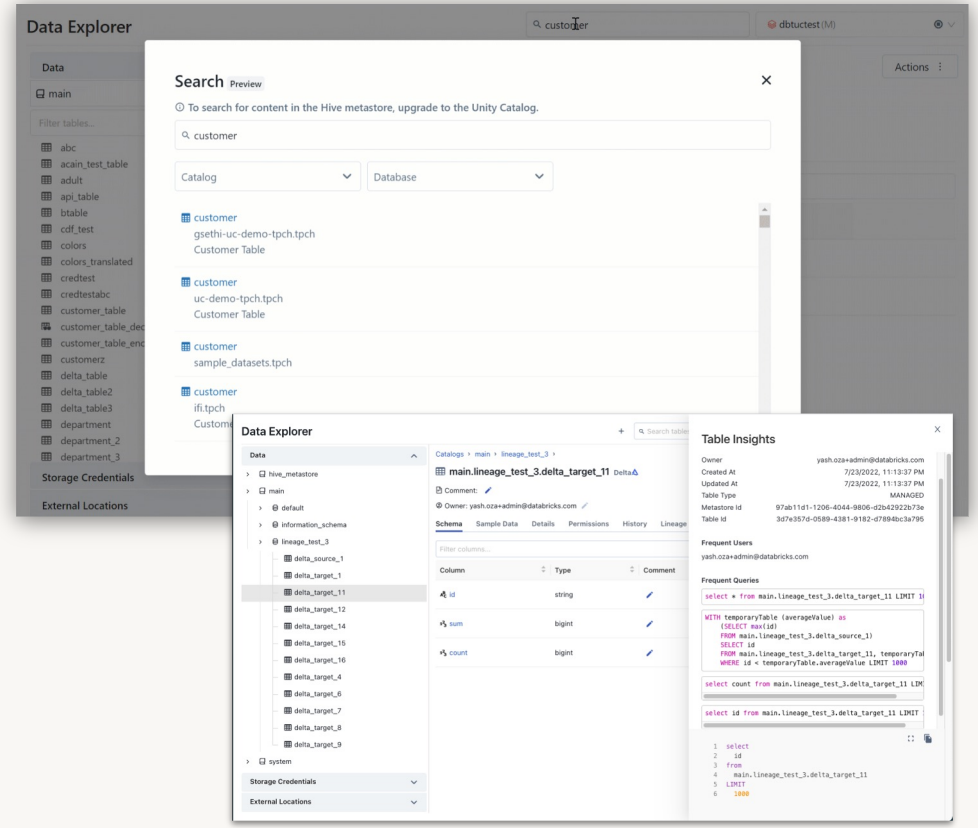
Built-in search and discovery

- Quickly find, understand, and reference data from across your data estate with a unified data browsing experience
- Secure by default—leverages common permission model from Unity Catalog
- Auto-generated data insights to understand your data



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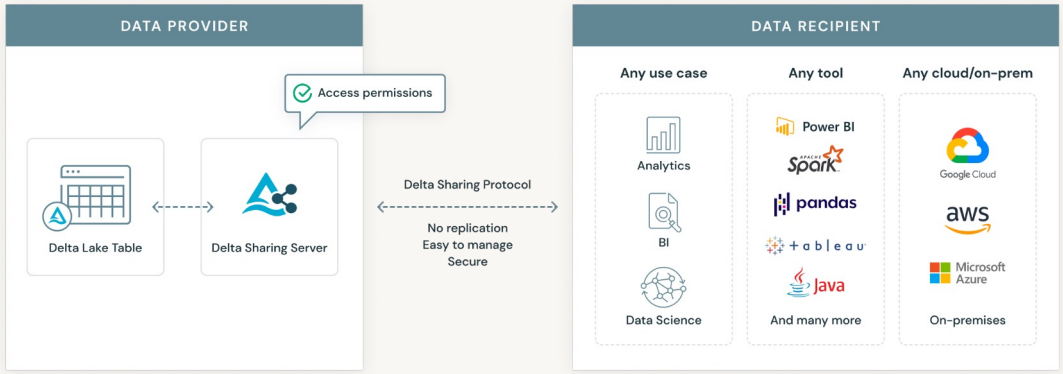
Secure data sharing and collaboration

- Securely share live data from your lakehouse to any computing platform
- Eliminate unnecessary data replication, and vendor lock-in
- Centrally manage, govern, monitor usage and audit access to shared data with ease



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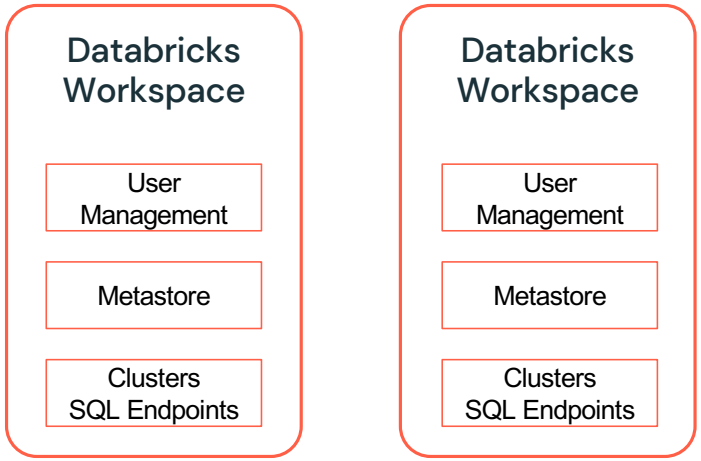
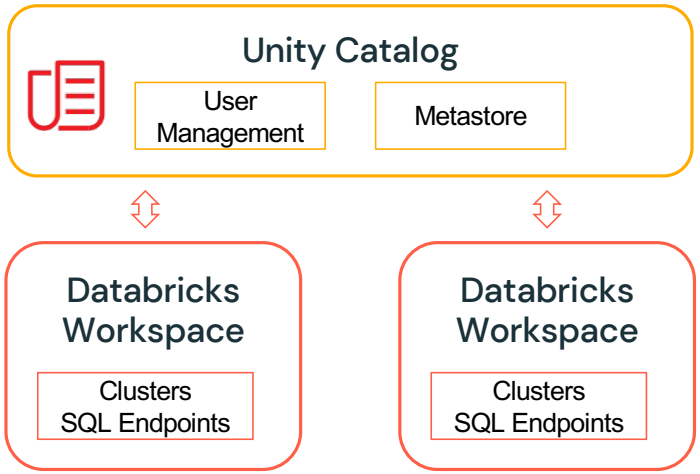
Introducing Unity Catalog

Unified view of your data estate via a centralized metadata and user mgmt

Without Unity Catalog



With Unity Catalog



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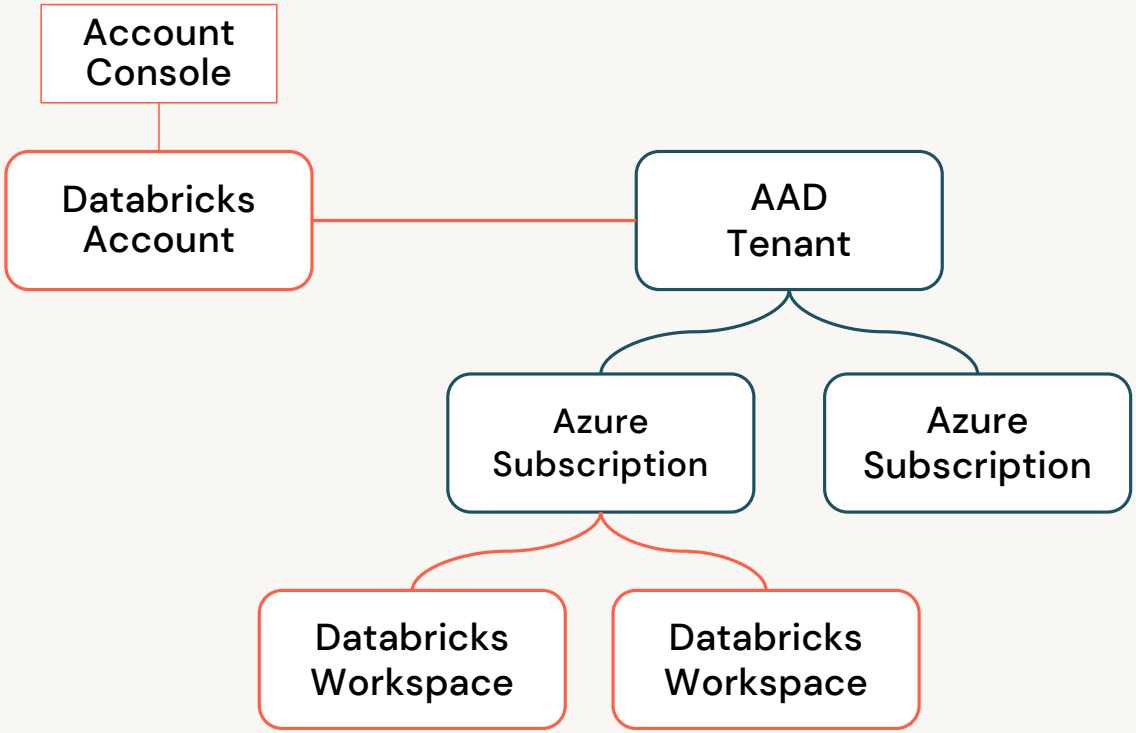
Databricks Accounts and the Cloud Provider Hierarchy



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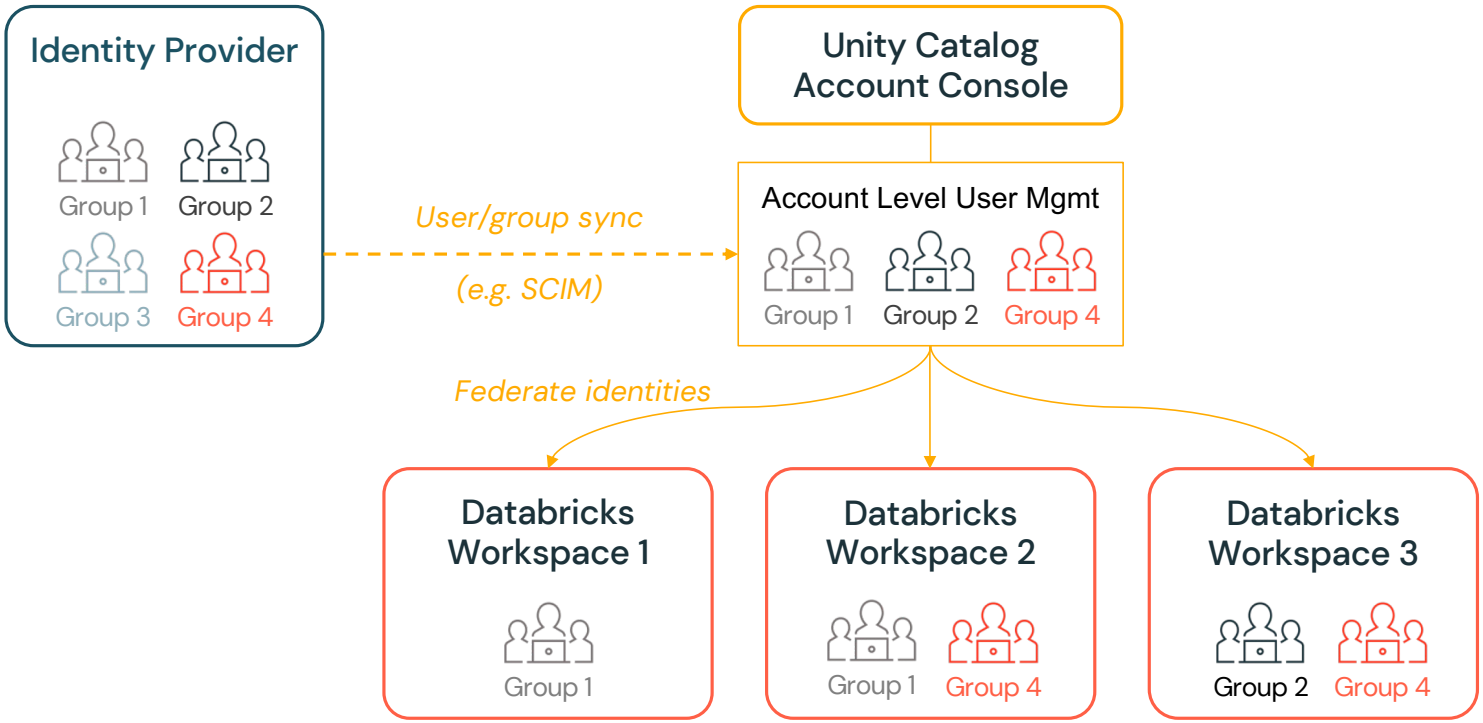
Identity Federation with Unity Catalog



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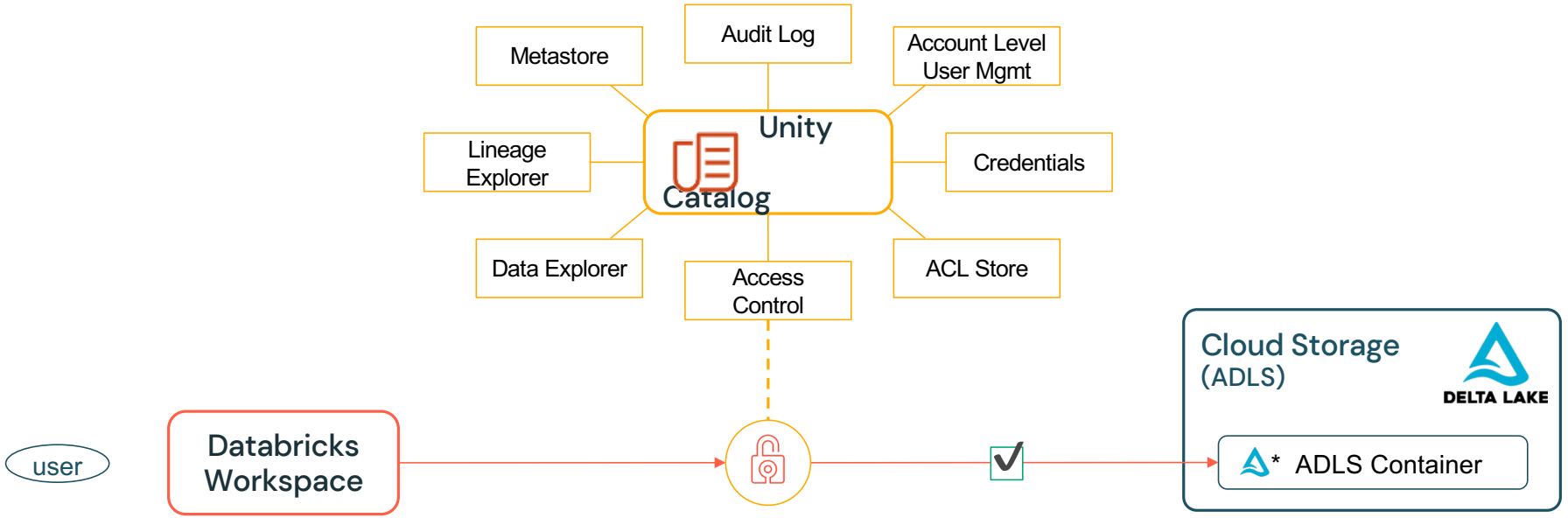
Unity Catalog - Components

Centralized Governance



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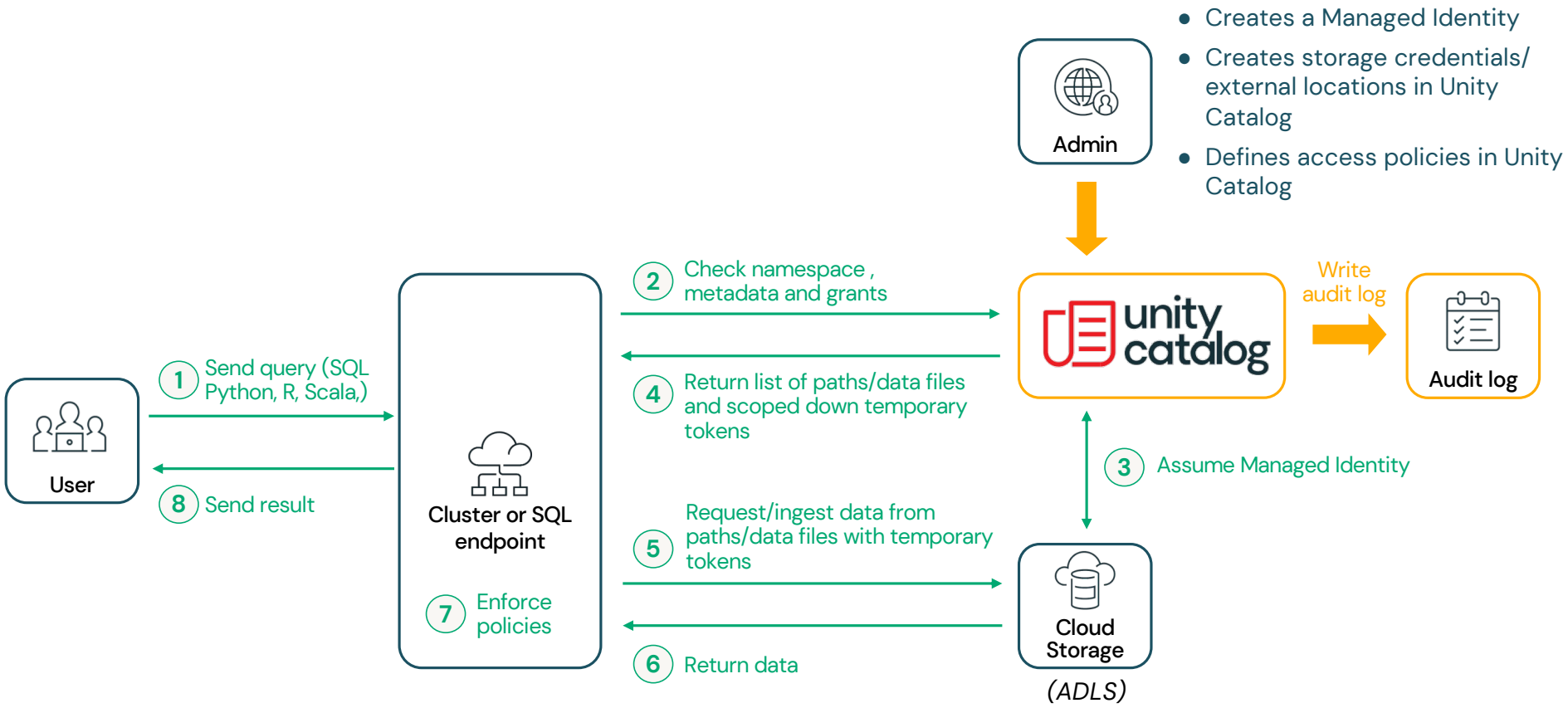
* Unity Catalog will support any data format (table or raw files)

Life of a query with Unity Catalog



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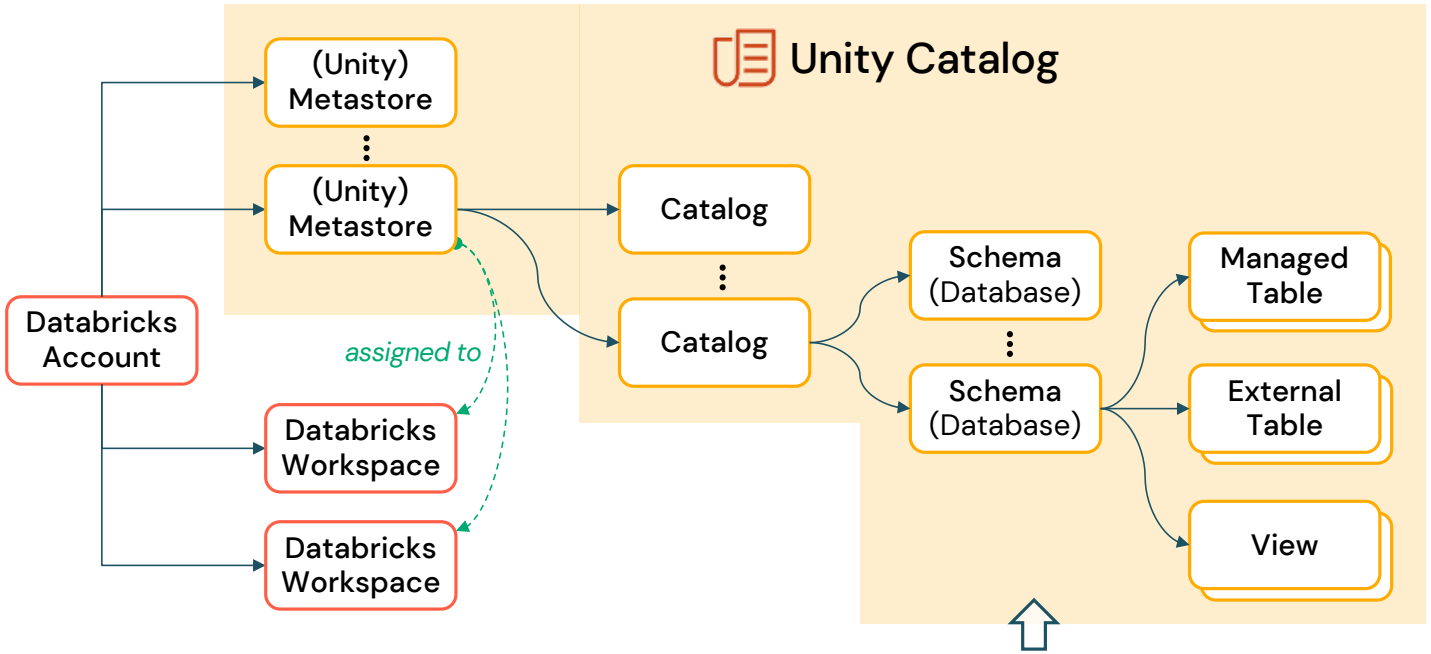
The three level namespace of UC




```
SELECT * FROM catalog1.database1.table1;
```

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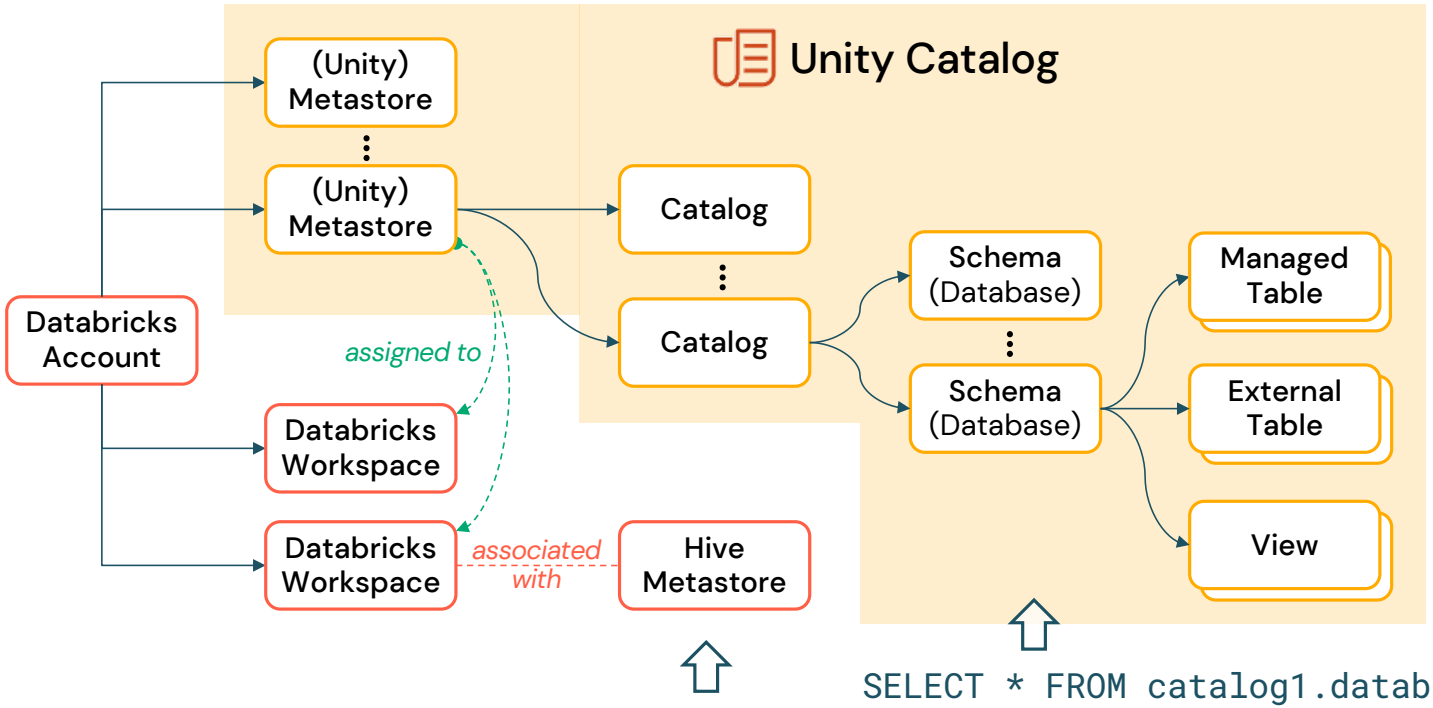
Hive Metastore is integrated into UC




```
SELECT * FROM hive_metastore.database2.table2;
```

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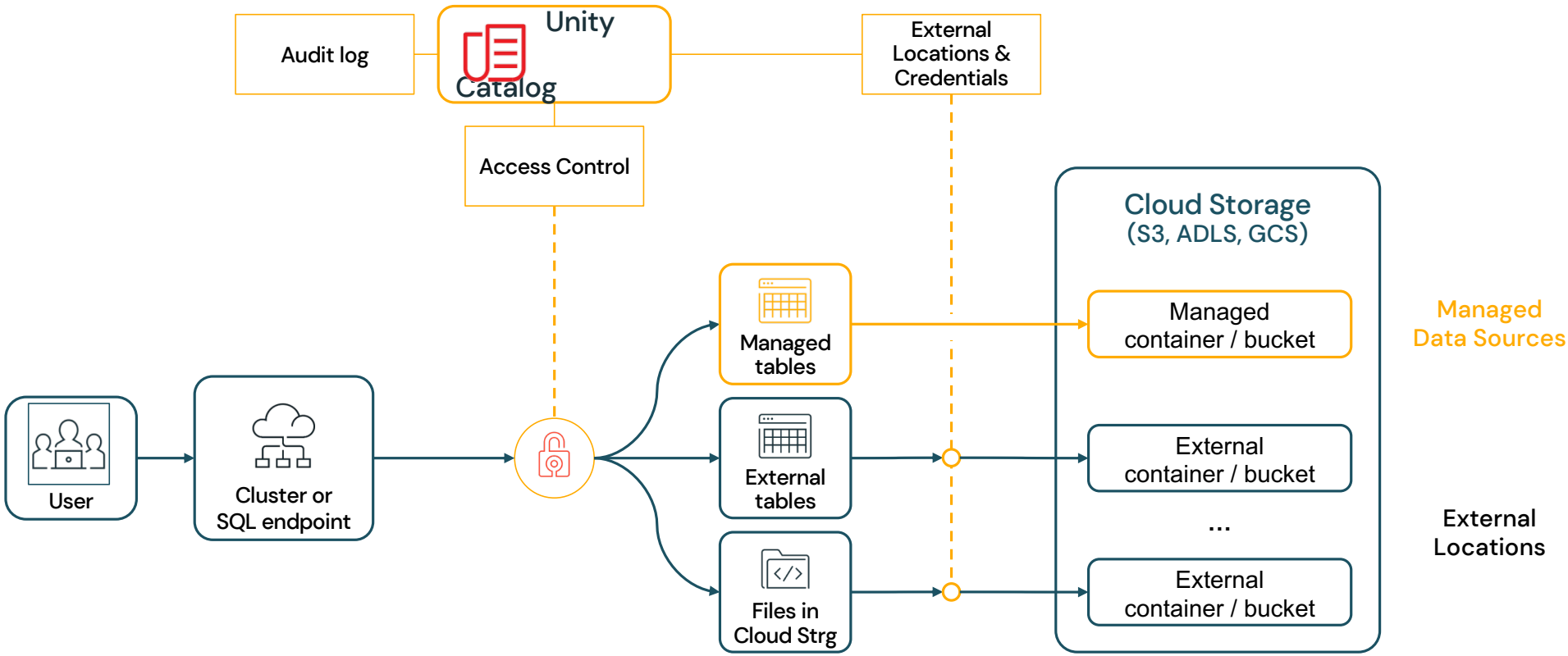
Managed Data Sources & External Locations



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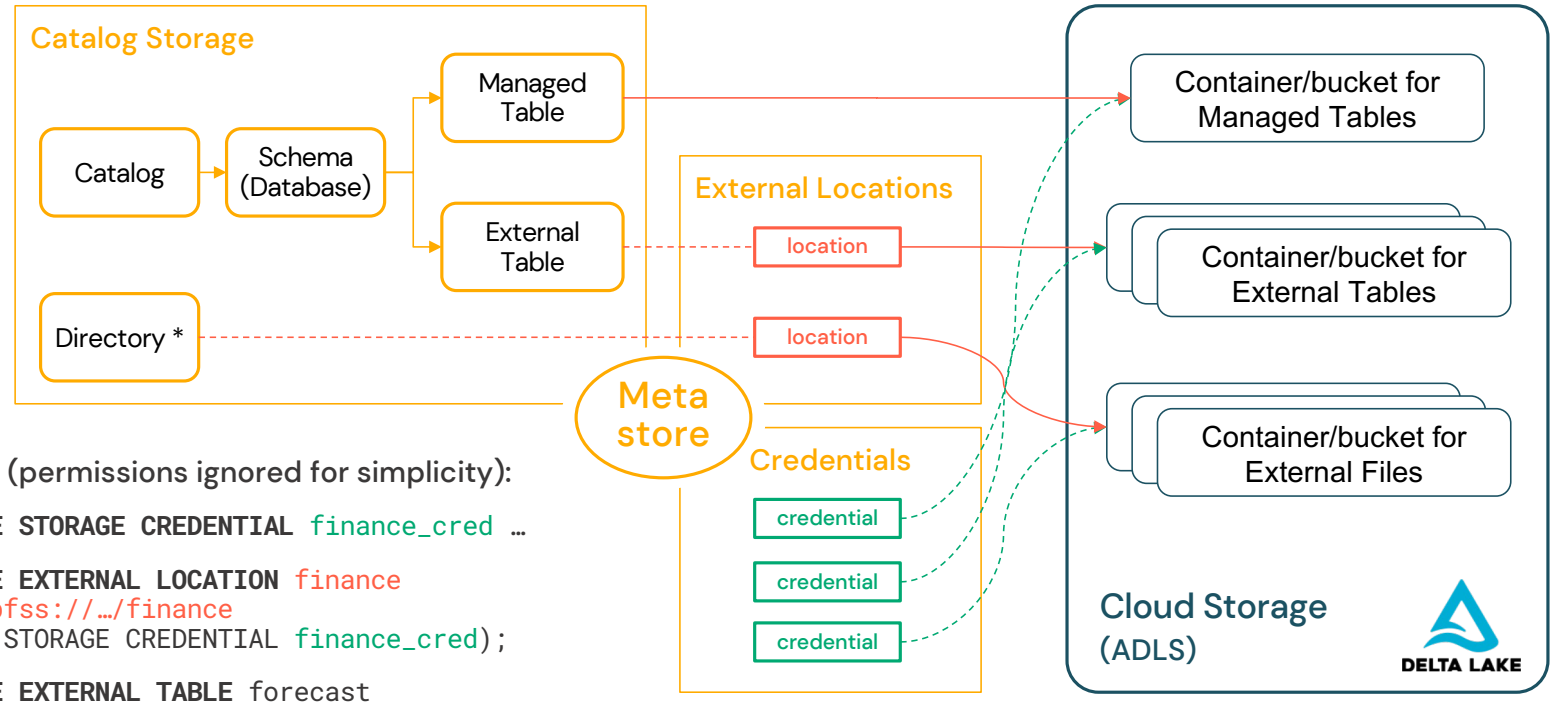
Metastore, external locations and credentials



Example (permissions ignored for simplicity):

```
CREATE STORAGE CREDENTIAL finance_cred …

CREATE EXTERNAL LOCATION finance
URL abfss://…/finance
WITH (STORAGE CREDENTIAL finance_cred);

CREATE EXTERNAL TABLE forecast
LOCATION abfss://…/finance/forecast;

* CREATE DIRECTORY eu_invoices
  LOCATION abfss://…/finance/eu/invoices;
```

* coming soon

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UC and Delta Sharing

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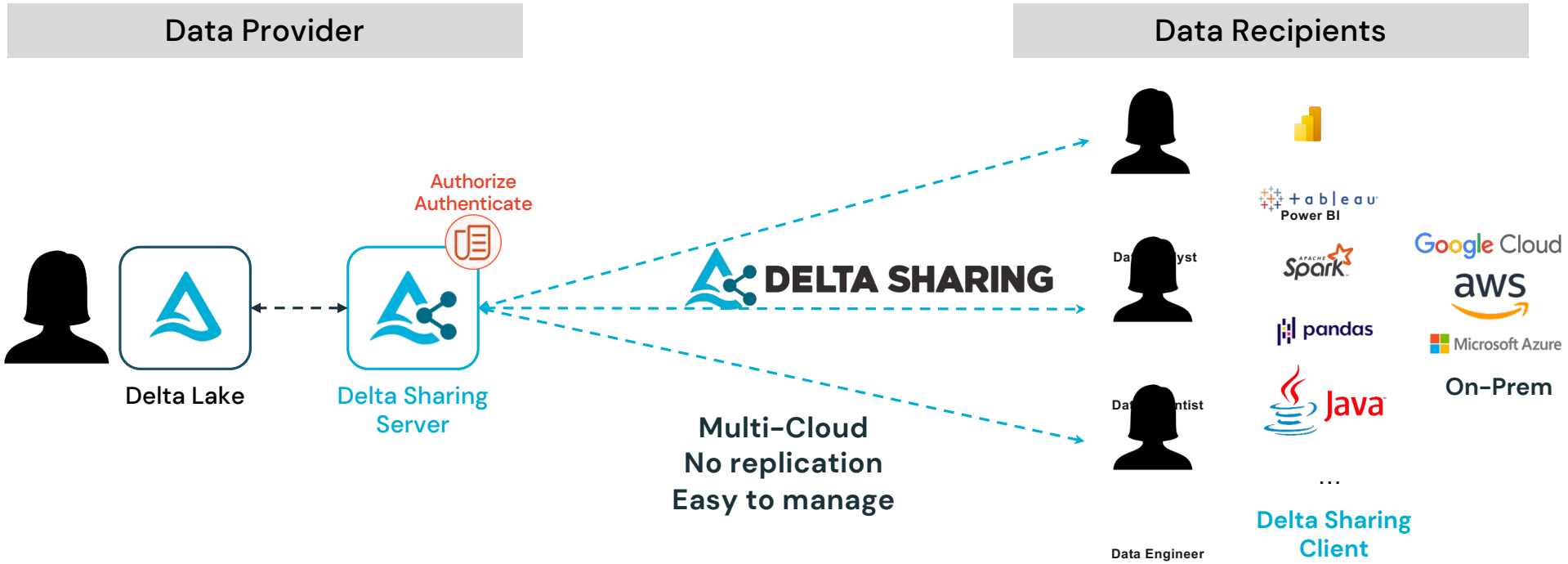
A simple, open and easy approach to data sharing

Reduce data sharing and collaboration from days to real-time



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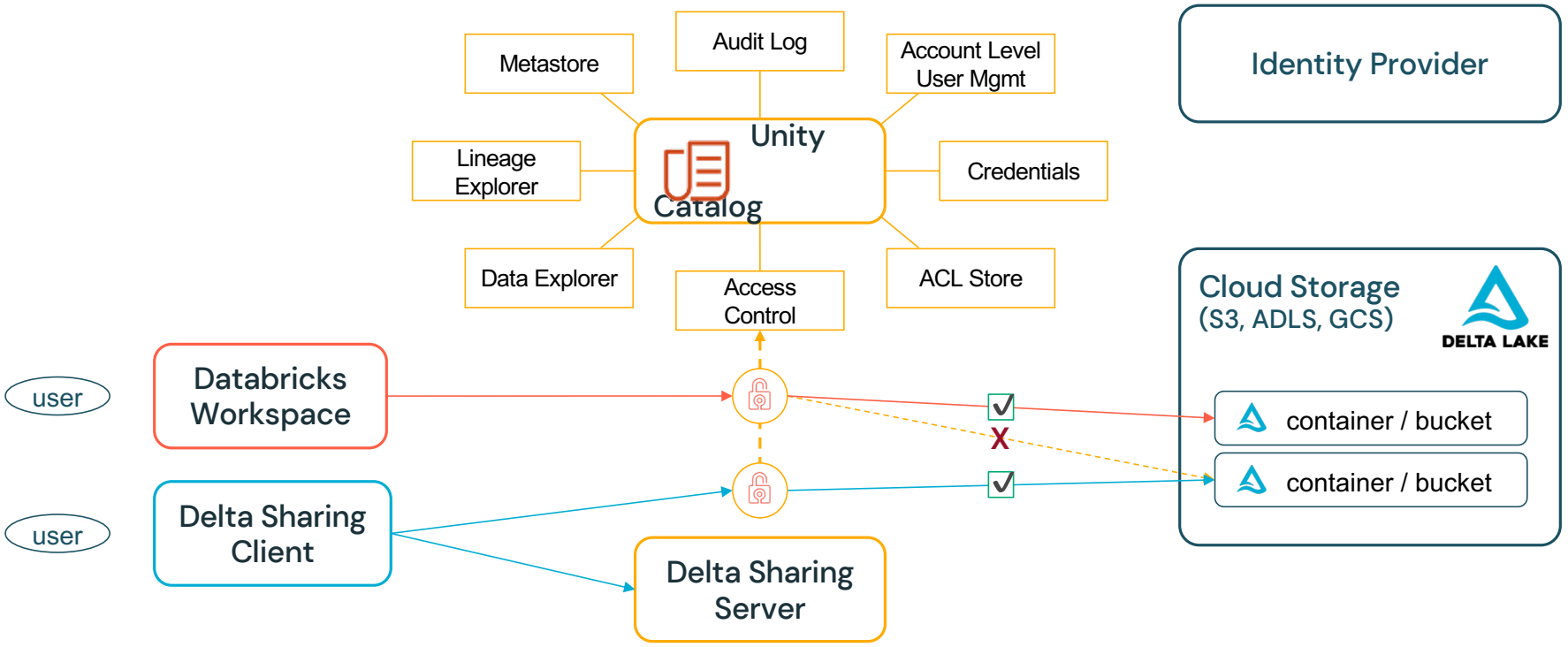
Unity Catalog & Delta Sharing - Components

Centralized Governance



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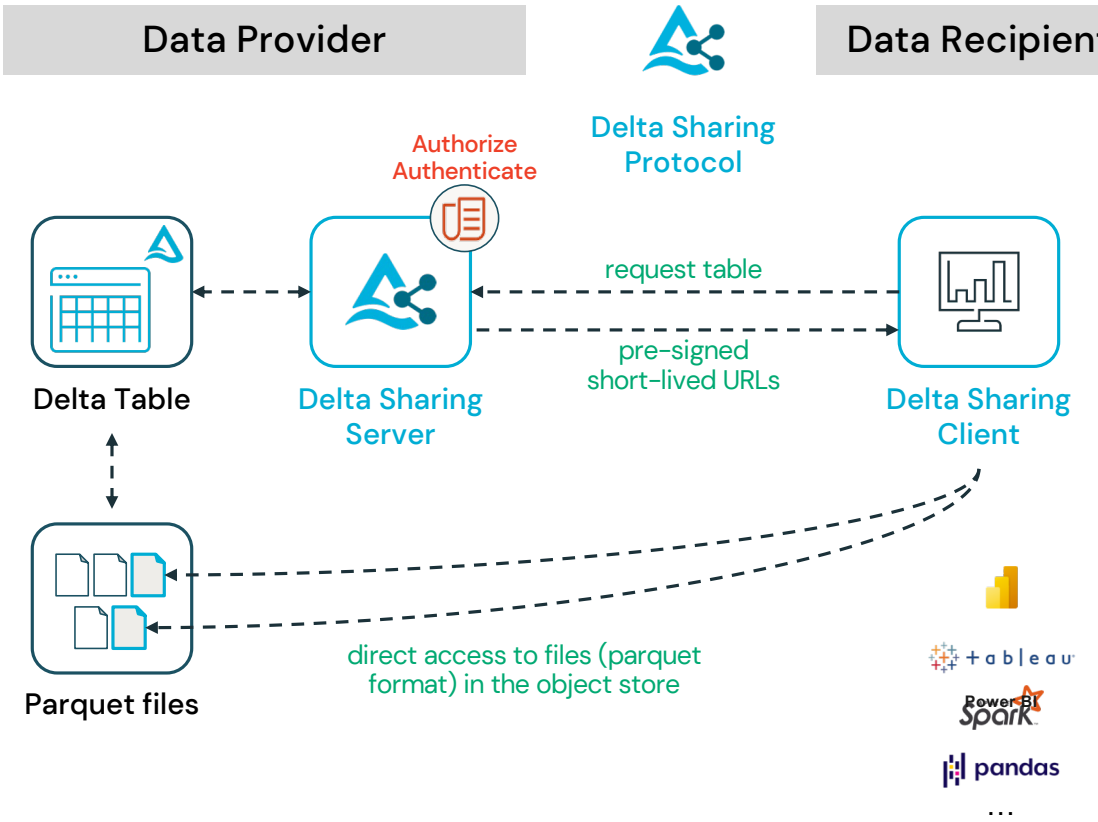
Under the Hood



Delta Sharing Protocol:

- Client authenticates to Sharing Server
- Client requests a table (including filters)
- Server checks access permissions
- Server generates and returns pre-signed short-lived URLs
- Client uses URLs to directly read files from object storage

Notes:

- Sharing happens on Delta part files, supporting full tables, partitions, delta versions, ...
- Client is system independent, just needs to be able to read parquet files
- In Databricks Sharing Server and ACL checks are integrated with Unity Catalog

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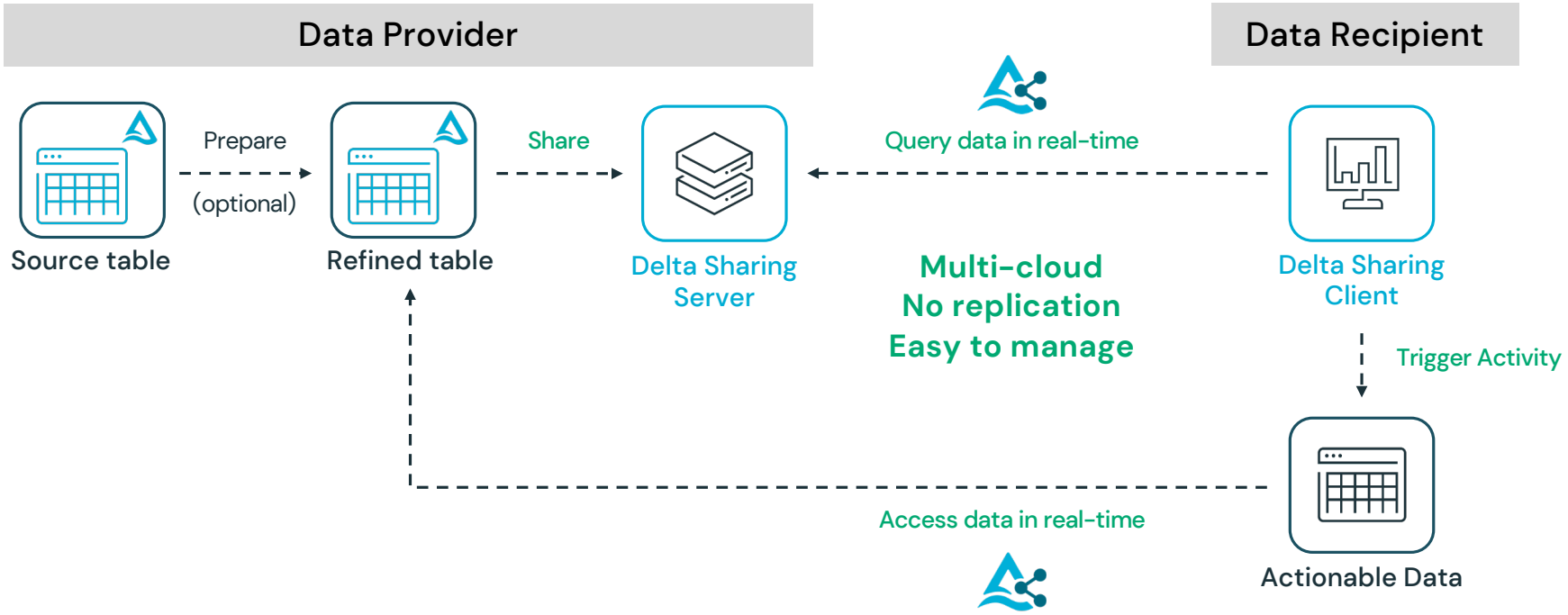
Streamlined Sharing with Delta Sharing

Delta Sharing cuts collaboration time with partners from days to real-time.



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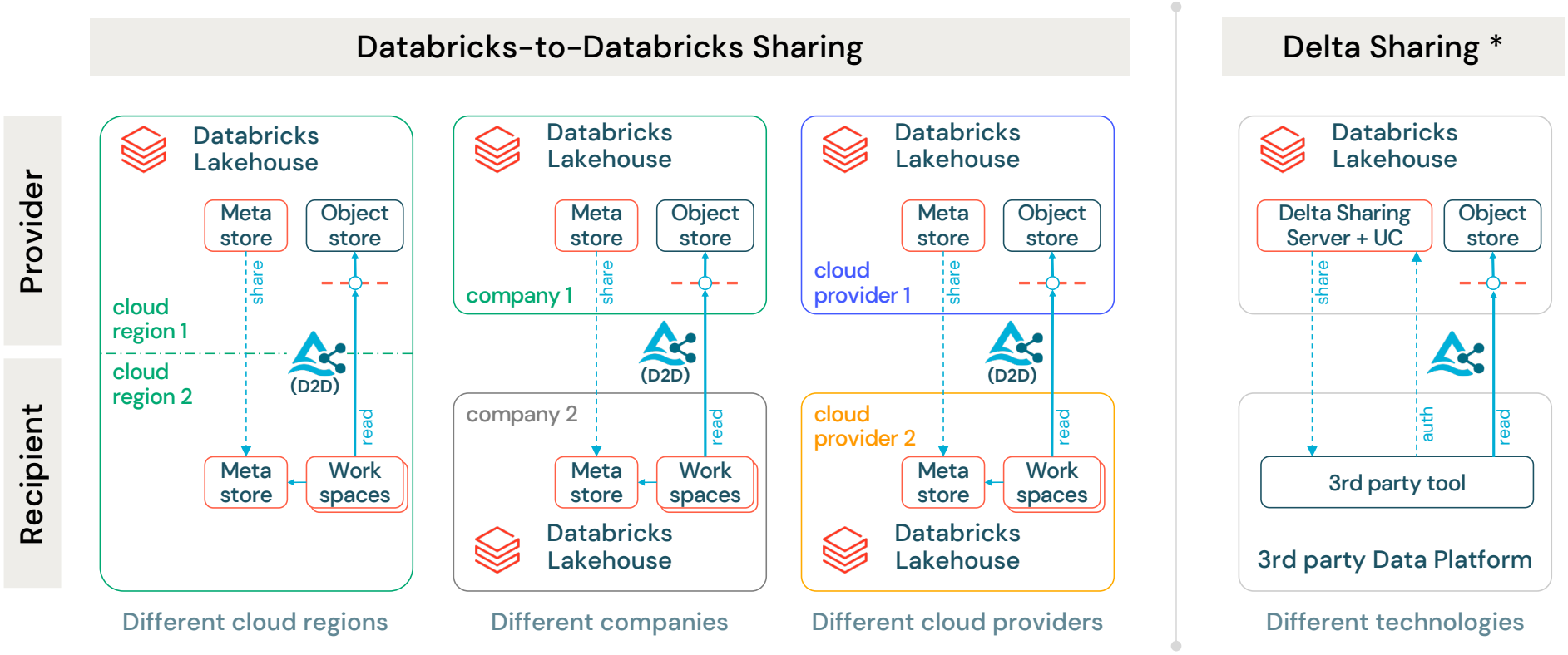
Databricks-to-Databricks (D2D) Sharing



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Provide access to the data on a network level

* Implementing the Delta Sharing protocol, 3rd parties can act as a data provider

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