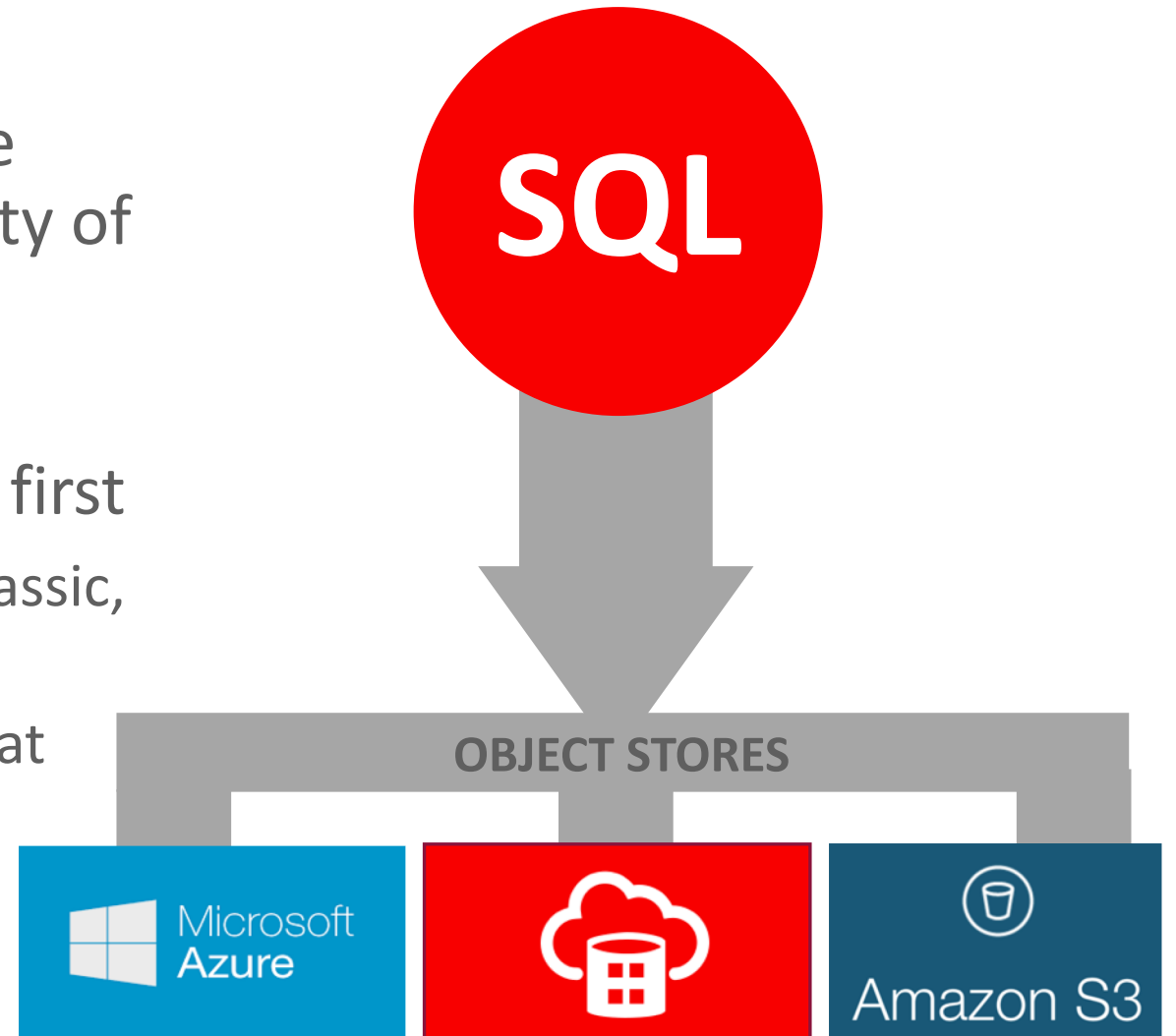# Querying Data

Querying Data

- Combine the power of SQL and Oracle Exadata with the capacity and flexibility of Object Stores

- Directly query files residing on object stores without the need to load them first
  - OCI Object Storage, OCI Object Storage Classic, AWS S3 or Microsoft Azure
  - Any supported ORACLE_LOADER file format
  - Roadmap: any Hadoop file format

SQL

OBJECT STORES

Microsoft Azure

Amazon S3

ORACLE®

Querying Data on the Oracle Object Store

- Define your credentials for the object store
  - Oracle Cloud Infrastructure Object Store username and Swift password required
- Credential stored in the database schema once and used for accessing the object store for all queries
- Call the dbms_cloud API for creating an external table on top of the source files
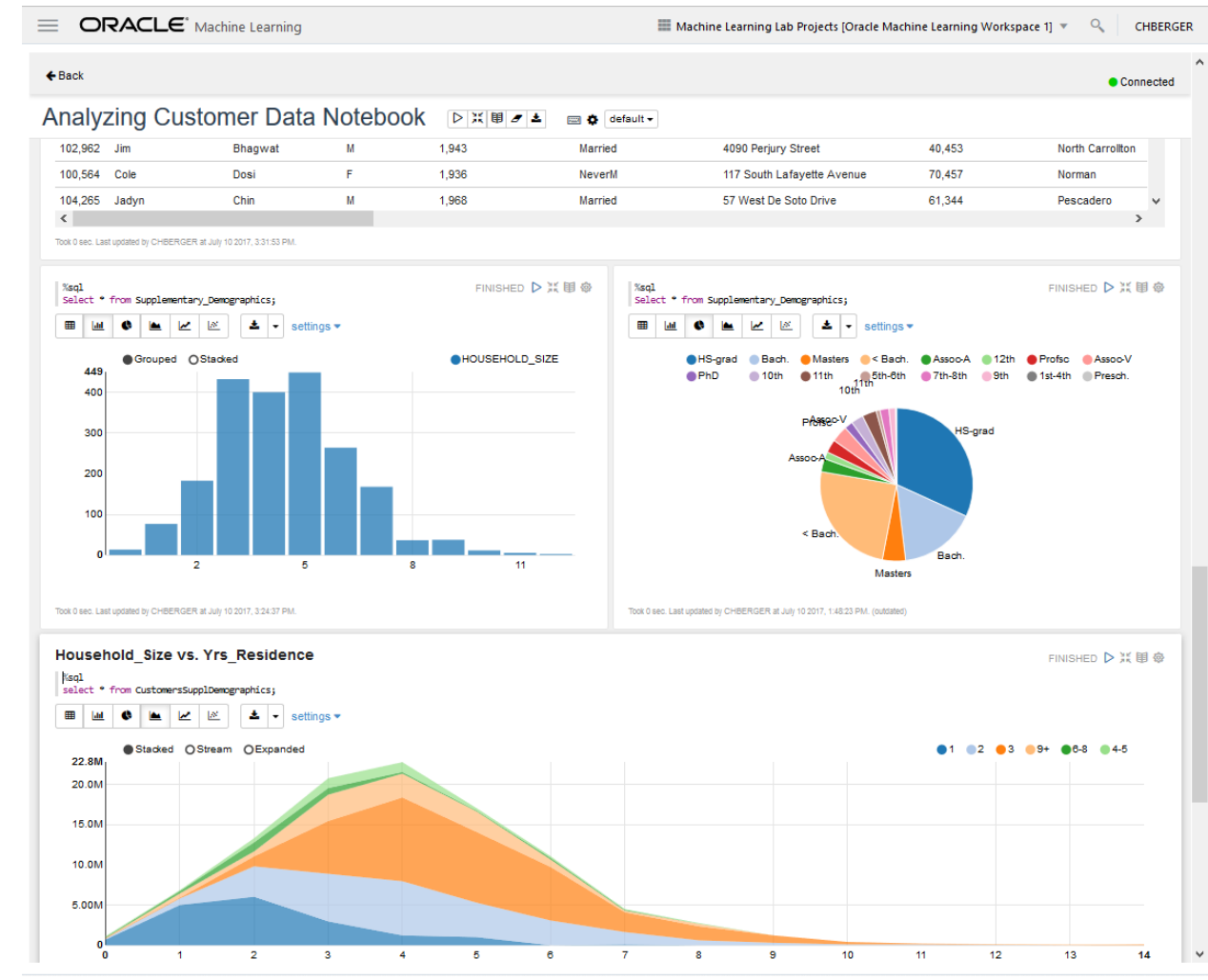
ORACLE®

Querying Data on the Oracle Object Store

```
begin
 dbms_cloud.create_external_table(
    table_name =>'CHANNELS_EXT',
    credential_name =>'OBJ_STORE_CRED',
    file_uri_list => 'https://swiftobjectstorage.us-ashburn-
1.oraclecloud.com/v1/dwcsdemo/DEMO_DATA/chan_v3.dat',
    format => json_object('ignoremissingcolumns' value 'true', 'removequotes' value
'true'),
    column_list => 'CHANNEL_ID NUMBER,
        CHANNEL_DESC VARCHAR2(20),
        CHANNEL_CLASS VARCHAR2(20),
        CHANNEL_CLASS_ID NUMBER,
        CHANNEL_TOTAL VARCHAR2(13),
        CHANNEL_TOTAL_ID NUMBER'
 );
end;
/


select count(*) from channels_ext;
```
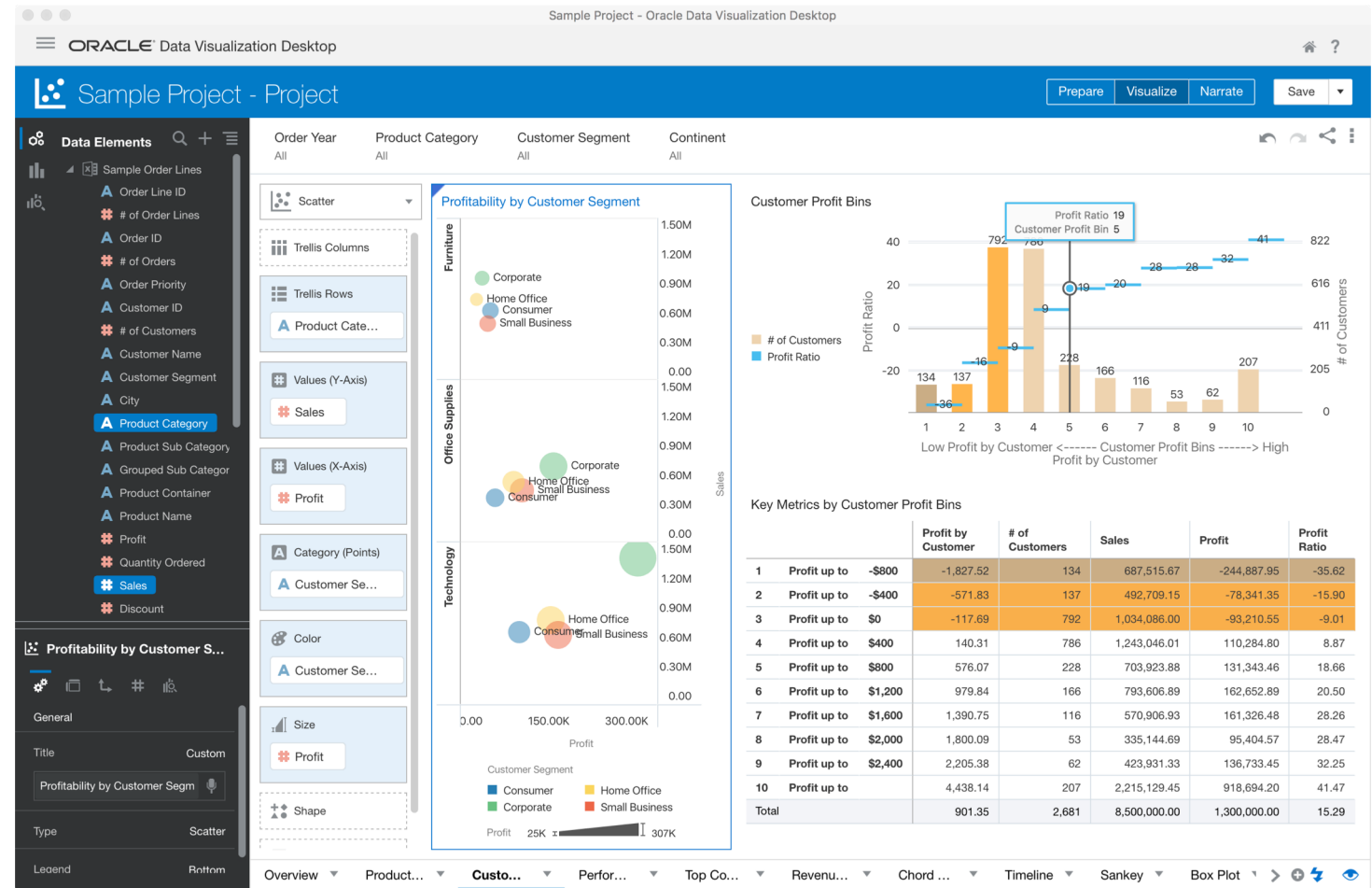
Built-in SQL Worksheet and Notebook

- Quickly start running queries with built-in web-based notebooks
  - No need to install a client query tool

- Initially supports SQL and PL/SQL
  - More languages in the roadmap

- Based on Apache Zeppelin

Oracle Data Visualization Desktop

- Self-service data exploration for business users
  - Rich, interactive visualizations
- Included with ADW*
  - Also available within Oracle Analytics Cloud

*No additional charge

Supported by a rich Data Warehouse Ecosystem

Oracle Autonomous Data Warehouse supports:

- **Existing tools** running on-premise or in Oracle Cloud
  - Oracle BI and data-integration tools
  - 3rd party BI tools
  - 3rd party data-integration tools
- Connectivity via SQL*Net

Oracle Cloud Services
  - Oracle Analytics Cloud
  - Oracle Data Integration Platform Cloud
  - and others…

Third Party Business Intelligence/Integration Platforms

Supporting new architecture