Data 360

Salesforce Data 360

Module 1 — Data Cloud / Data 360: Concepts & Architecture (FOUNDATION)

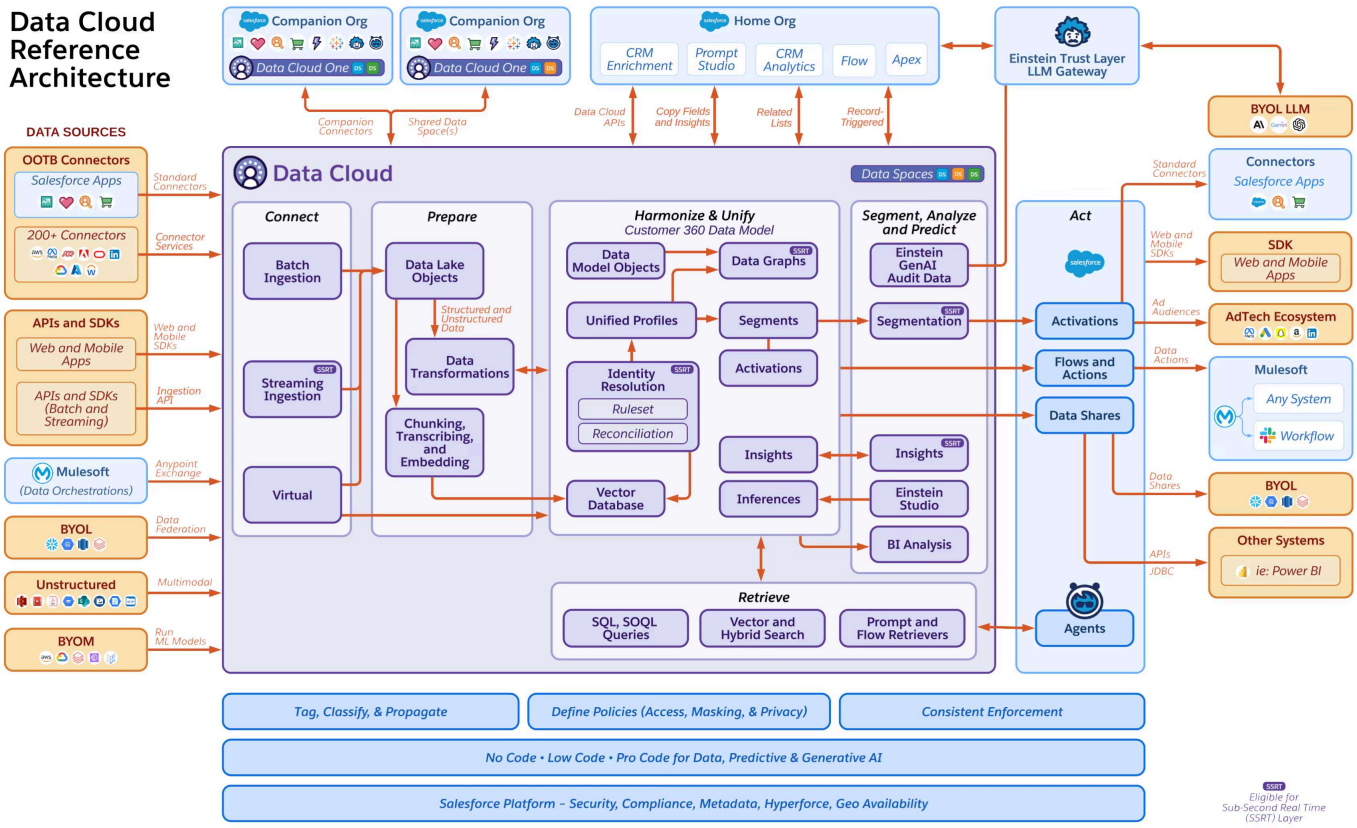
Learning objectives

- Understand what Salesforce Data Cloud (Data 360) is and its business value (CDP concepts).
- Know the core architectural pieces (DLO, DMO, unified profiles / identity graph, activation destinations) and how they connect.
- Recognize rebranding notes (Data Cloud → *Data 360*) and where to look for updated docs.

1. What is Data Cloud / Data 360 — high level & business value

- **Definition (one line):** Data 360 is Salesforce's customer data platform (CDP) that unifies, harmonizes, and makes customer data actionable across the Salesforce stack.
- **Business value:** single source of truth for customer data, faster personalization, real-time segmentation, safer governance of PII, and simplified activation to marketing/sales/service systems.
- **When to use:** cross-cloud personalization, joined analytics across systems, powering Journeys/agents with unified customer context, or when you want "one view" without losing source fidelity.

2. Core architectural elements (simple definitions)



- **Data Stream** — connector that brings data into Data 360 (or points to external data for zero-copy).
- **Data Lake Object (DLO)** — raw, ingested table(s). Think of DLOs as the "raw dump" from each source (each DLO = one table). Use DLOs when you need the original, source-shaped records.
- **Data Model Object (DMO)** — a curated, business-facing view (a mapped/standardized model). DMOs are created by mapping fields from one or more DLOs into a stable schema used by downstream processes (segmentation, activation). DMOs are like "views" or the prepared dataset.
- **Unified Profiles / Identity Graph** — identity resolution rulesets that link multiple source profiles into a single *Unified Individual* (single customer record used for segmentation & activation).
- **Calculated Insights** — derived/calculated metrics or signals (e.g., lifetime value) used in segmentation.
- **Activation destinations** — where segments or unified data are sent (Marketing Cloud Journeys, CRM updates, ad platforms, files, streaming endpoints). Activation can be streaming (near-real-time) or batch.

3. Zero-copy (data federation) — short explanation

- **What it is:** ability to query and use external data without physically copying it into Data 360 (federation / live query). Good when you must avoid duplication or keep very large datasets in place.
- **When to choose zero-copy:** very large tables, regulatory/PII constraints, or when you need the freshest record without ETL. Consider performance and mapping needs — sometimes a physical copy (ingest) is still preferable.

4. How the pieces connect (one-paragraph flow)

1. **Ingest or federate** data via Data Streams into DLOs (or reference external tables via zero-copy).
2. **Map DLO fields → DMO fields** to create harmonized, business-friendly objects (Customer, Transaction, Event).
3. **Create identity resolution rulesets** and unify to produce Unified Individuals (identity graph).
4. **Build real-time segments** (audiences) using DMOs & calculated insights.
5. **Activate** segments to destinations (streaming or batch) for Journeys, ads, CRM updates, or analytics.

5. Quick tips

- **Mapping is contract work:** DMOs are the contract consumers use — think carefully about stable field names and types. Changing a DMO field type later can be disruptive. ([Salesforce][9])
- **Identity rules matter:** loose rules → over-merging; strict rules → duplicate unified profiles. Start conservative, test thoroughly.
- **Zero-copy tradeoffs:** great for governance and freshness, but evaluate query latency and mapping complexity before choosing.
- **Activation mode:** use streaming for near-real-time needs (agentic experiences / immediate journeys), batch for large periodic exports.
- Data 360 architecture overview — Salesforce Architect docs.
- Data Model Objects & mapping guide — Salesforce Help / Developer docs.
- Trailhead module: Get to know Unified Profiles (hands-on identity examples).
- Zero-copy overview & guides (when to use, partner integrations).

Module 2 — DLOs & DMOs — Modeling fundamentals (6 hours: lecture + lab)

Prereq: Module 1 — Data Cloud / Data 360 concepts.

Learning objectives: Know what DLOs and DMOs are; map raw sources to a harmonized model; choose field types & constraints; apply normalization and enrichment; build a DLO → DMO mapping and validate types.

1. Quick definitions

Object	Abbreviation	Definition	Creation and Usage
Data Lake Object	DLO	A container for the **structured data** brought into Data Cloud.	Automatically created from data streams, but can also be created manually. A DLO is **mapped to a DMO**.
Unstructured Data Lake Object	UDLO	A container for **unstructured data** (e.g., documents, media files) referenced by Data Cloud.	Created manually. A UDLO is **automatically mapped to an existing or new UDMO**.
Data Model Object	DMO	A **harmonized grouping of structured data** created from data streams, insights, and other sources. It represents the standardized Customer 360 data model.	A DLO is **mapped to a DMO** to ensure consistency and standardization.
Unstructured Data Model Object	UDMO	A group of **unstructured data** created from an unstructured data source.	A UDLO is **automatically mapped** to an existing or new UDMO.
External Data Lake Object	External DLO	A storage container with **metadata** for data **federated** (referenced, not copied) from an **external data source** (e.g., Snowflake, AWS S3).	Acts as a **reference**, pointing to the data physically stored in an external source.

2. DLO

- Common DLO sources: Sales Cloud exports, event streams (e-commerce), POS CSVs, external warehouses (S3/GCS). You can also reference unstructured DLOs for files (UDLOs).
- DLO properties: schema mirrors source; fields are created at ingest; changing DLO field types after creation is restricted—plan carefully.

3. DMO

- Types: standard DMOs (prebuilt like Contact, Account) and custom DMOs (create when your business needs a specific harmonized view). Create custom DMOs when you need fields or semantics not provided by standard DMOs.
- Behavior: a DMO can draw from one or multiple DLOs; mapping defines how source fields become DMO fields and how relationships are modeled.

4. Mapping rules & data types — practical rules

- **Compatibility:** DLO → DMO field data types must be compatible; once set, types are hard to change — decide types carefully (strings vs numeric vs date).
- **Primary keys & required mappings:** Profile/Other DMOs often require you to map the primary key; some DMOs require specific system fields to be mapped for identity or activation to work. Validate required mappings before activation.
- **Auto-mapping:** Data Cloud offers auto-mapping helpers (model card) — useful for initial mapping but always review and adjust for business rules.

5. Normalization & enrichment — where and how

- **Normalization (when to do it):** fix inconsistent formats (phone, email, currency), flatten nested JSON, split composite fields into atomic fields — typically done between DLO ingestion and DMO mapping (use interim DLOs or transforms).
- **Enrichment (when to do it):** add derived fields (loyalty_score, lifetime_value), lookup references (geolocation), or external enrichments (third-party demographics) — usually created as calculated insights or written back to DMOs/DLOs as needed.

6. Quick tips

- **Plan types first:** once DLO/DMO fields are created, changing types is hard — design schemas thoughtfully.
- **Interim DLOs are your friend:** use them to clean noisy data before mapping into DMOs, especially for contact-point fields.
- **Map only what you need:** avoid ingesting unnecessary columns — smaller DLOs are cheaper and faster.
- **Document mapping decisions:** capture why you chose aggregations (SUM vs MAX), primary keys, and transforms — prevents later regressions.

Lab — Data Mapping (DLO to DMO)

Mapping Data from `Contact_Home` (Data Lake Object) to `Employee` (Data Model Object).

1. Create Data Stream (Source Connection) 🔗

- In Data Cloud, go to `Data Streams` $\to$ New.
- Select `Salesforce CRM` from Connected Sources.
- Click on `View Objects` $\to$ Select `Contact_Home` Object.
- Object Category $\to$ `Other`.
- Select the required fields: `Contact ID, FirstName, LastName, Email`.
- Click Next and then click Deploy.
- Data Lake Object will be created automatically.

2. Create Data Model Object

- Go to Data Model Objects in Data Cloud $\to$ Click New
- Add Fields: `Associate ID (Primary Key), First Name, Last Name, Email`.
- Save and Activate DMO.

3. Map Contact (DLO) to Associate (DMO)

- Go to `Data Streams` $\to$ Open the `Contact_Home` Data Stream.
- In data map section click on `Start`.
- Click on `Select Objects` in data model object section $\to$ Select `Associate` Object.
- Map the fields from DLO to DMO.

- Click Save and close.

Source DLO Field (Contact_Home)	Target DMO Field (Associate)
Contact ID	Map to **Associate ID**
FirstName	Map to **First Name**
LastName	Map to **Last Name**
Email	Map to Work **Email**