**📊 Reports & Dashboards in Salesforce**

Reports and Dashboards are Salesforce’s **analytics tools** that help organizations **analyse data**, **track performance**, and **make data-driven decisions**.

**📋 REPORTS**

A **Report** is a **list of records** that meet specific criteria and answer a particular business question.  
It displays data in **rows and columns**, which can be **filtered**, **grouped**, or **summarized**.

**🧩 Report Types**

**1. Standard Report Types**

* Automatically created by Salesforce for standard and custom objects (with “Allow Reports” enabled).
* Includes all standard and custom fields of the object.
* Cannot be customized.
* Created automatically when:

A new object is created.

A new relationship is established between objects.

* Always use **Inner Joins** (i.e., only records with related data appear).

**2. Custom Report Types**

* Created manually by Admins or users with **“Manage Custom Report Types”** permission.
* Useful when standard report types don’t meet business needs.
* You can define:

**Primary Object** (mandatory)

Up to **3 related objects** (maximum of 4 total)

* Record inclusion logic:

Include records **with** or **without** related child records.

Once created, **Primary Object cannot be changed**.

* If the **primary custom object** is deleted, the report type and its reports are deleted too.

⚠️ **Note:**  
A report type cannot include more than 4 objects.  
If you remove an object from a report type, all reports and dashboards using it lose related fields and data.

**🧰 Report Builder**

The **Report Builder** is a visual drag-and-drop interface for creating reports.  
It has **three main panes:**

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| --- | --- |
| **Pane** | **Description** |
| **Fields Pane** | Displays available fields from the chosen report type. |
| **Filters Pane** | Allows you to limit data with filters (view, date range, custom criteria). |
| **Preview Pane** | Shows a live preview of report data (limited rows). You can add columns, groupings, formulas, and charts. |

⚠️ Preview shows limited records — run the report to see full data.

**📑 Report Formats**

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| **Type** | **Description** |
| **Tabular** | Simple list of records with totals. No grouping or charts. |
| **Summary** | Groups rows by a field; supports subtotals and charts. |
| **Matrix** | Groups records by rows and columns. Grid-style summary. |
| **Joined** | Combines multiple report blocks (each from a different report type). |

**⚙️ Report Features**

* **Filters:** Limit data shown in the report.
* **Formulas:** Add calculated fields or summaries.
* **Charts:** Add visual elements directly to reports.
* **Buckets:** Group values without creating formula fields.
* **Scheduling:** Reports can be **run manually** or **scheduled** to email results periodically.
* **Folders:** Reports are saved in folders with defined access levels.

**🔒 Report Folder Access Levels**

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| **Access Type** | **Permissions** |
| **Viewer** | Can view and clone reports only. |
| **Editor** | Can view, modify, and move reports between folders. |
| **Manager** | Full access, can delete reports and manage folder access. |

🧠 By default, the **creator** of a folder is its **manager**.

**Public Folders:** Reports visible to all users with “View Reports in Public Folders” permission.  
**Private Folders:** “My Personal Custom Reports” — accessible only by the owner.

**📤 Exporting Reports**

* Can be exported as **.xlsx** or **.csv** files.
* Reports display up to **2,000 rows** on-screen.
* Larger reports can be emailed as Excel attachments.

⚠️ **Limitation:** A user **cannot create** a report on an object they **don’t have access to**.

**⚠️ Report Limitations**

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| **Limitation** | **Description** |
| **Row Limit** | Only 2,000 rows are visible in UI (full data via export or email). |
| **Object Access** | User must have Read access on the object. |
| **Report Type Lock** | Report type and primary object cannot be changed once created. |
| **Field Search** | Encrypted, formula, lookup, and roll-up summary fields are not searchable. |

**📈 DASHBOARDS**

A **Dashboard** is a **graphical representation of one or more reports**.  
It visually displays key metrics, performance indicators, and business trends.

🧠 Dashboards = “Visual Storytelling of Reports”

**🎨 Dashboard Components**

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| **Component Type** | **Purpose** |
| **Chart** | Shows comparisons (Line, Bar, Pie, Donut, Funnel). |
| **Table** | Displays lists of records (Top 5 or Bottom 5). |
| **Gauge** | Shows progress towards a target goal. |
| **Metric** | Displays a single numeric value. |
| **Visualforce** | Displays data from other data sources. |

**⚙️ Dashboard Functionality**

* Each dashboard can have **up to 20 components**.
* Each component is based on **a single source report**.
* Dashboards show data **as of the last time the report was run**.
* Dashboards can be **refreshed manually** or **scheduled** (daily, weekly, monthly).

**🔒 Dashboard Security**

Access is determined by:

1. **Folder Access:** Only users with access to the dashboard’s folder can view or edit it.
2. **Running User:** Determines which data is visible.

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| **Type** | **Description** |
| **Run as Specified User** | All viewers see data based on one user’s access. |
| **Run as Logged-In User** | Dashboard displays data based on each user’s access (Dynamic). |

**⚡ Dynamic Dashboards**

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| **Regular Dashboard** | **Dynamic Dashboard** |
| Shows data from one user’s perspective. | Shows data based on the logged-in user. |
| Used for org-wide metrics. | Used for personalized, role-based insights. |
| Can be scheduled for refresh. | ❌ Cannot be scheduled for refresh. |
| Can be saved in any folder. | ❌ Cannot be saved in personal folders. |

⚠️ **Dynamic Dashboard Limits:**

* Enterprise Edition: Up to 5
* Unlimited Edition: Up to 10
* Developer Edition: Up to 3

**🧩 Bucket Fields in Salesforce Reports**

A **Bucket Field** in Salesforce is a **special field used in reports** to **group, categorize, or segment records** **without creating a new formula field or custom field** in the object.

It allows you to create **logical groupings** of field values directly inside the **report builder** — simplifying data analysis and visualization.

**🎯 Purpose**

* To **group related values together** for easier reporting.
* To **simplify complex data** without using formulas.
* To **avoid creating extra fields** in the object for simple classifications.

**🧮 Types of Bucket Fields**

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| **Type** | **Description** | **Example** |
| **Numeric Buckets** | Group number fields by value range. | “Amount” → Small, Medium, Large |
| **Picklist Buckets** | Group picklist values into categories. | “Stage” → Open, Closed, Lost |
| **Text Buckets** | Group text field values. | “Region” → North, South, East, West |

**🔒 Key Points & Limitations**

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| **Aspect** | **Details** |
| **Field Type** | Bucket fields exist **only in the report** — not in the object. |
| **Number of Buckets** | You can define **up to 20 buckets** per bucket field. |
| **Report Limit** | You can add **up to 5 bucket fields per report**. |
| **Usability** | Can be used in **filters, groupings, and charts**. |
| **Export** | Bucket values appear in exported reports. |
| **Edit Access** | Only users who can edit the report can modify bucket logic. |
| **Formula Fields** | You **cannot** use bucket fields inside formula fields. |
| **Dynamic Values** | Buckets are **static** — you must manually update them if data ranges change. |