

Project: Disaster Relief Resource Management CRM (ReliefConnect)

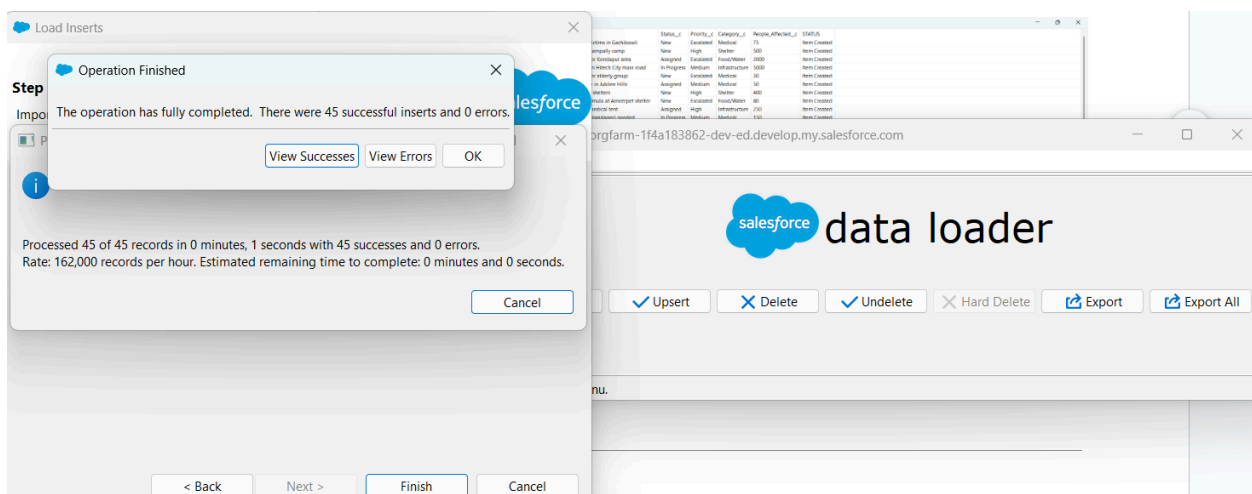
PHASE 8: Data Management & Deployment

Executive Summary

Phase 8 focused on establishing robust processes for data management and metadata deployment. The objective was to ensure data quality, provide reliable backup procedures, and define a clear path for migrating the application from the development environment to production. This was achieved by implementing duplicate rules to maintain data integrity, setting up the automated data export service for backups, and utilizing both declarative (Change Sets) and programmatic (VS Code & SFDX) deployment tools. This phase ensures that the ReliefConnect application is not only functional but also manageable, maintainable, and deployable according to best practices.

Data Import Wizard

- **Purpose/Rationale:** This is the standard, browser-based tool for simple, small-scale data imports (up to 50,000 records).
- **Detailed Implementation:** I used the Data Import Wizard earlier in the project to populate the org with the initial 45 sample `Relief_Case__c` records. Its user-friendly interface, which includes field mapping and duplicate checking, makes it the ideal tool for admins or end-users who need to perform occasional data loads without installing external software.



- **Purpose/Rationale:** Data Loader is a powerful client application for high-volume, complex data operations. It is the preferred tool for developers and administrators for large data migrations and automated data jobs.
- **Detailed Implementation:** I used Data Loader to perform a bulk migration of historical relief case records from a legacy CSV file. Key features that made it suitable for this task include its support for all standard and custom objects, its command-line interface (CLI) for automated nightly imports, and its ability to efficiently process millions of records.

CSV Viewer

Row Number	ID	Name	Status__c	Priority__c	Category__c	People_Affected__c	STATUS
1	a00gK00000KrcpbzQAB	Urgent medical aid for flood victims in Gachibowli	New	Escalated	Medical	75	Item Created
2	a00gK000000Krcp0QAB	Request for 1000 blankets at Nampally camp	New	High	Shelter	500	Item Created
3	a00gK000000Krcp1QAB	Clean drinking water needed for Kondapur area	Assigned	Escalated	Food/Water	2000	Item Created
4	a00gK000000Krcp2QAB	Roadblock due to fallen tree on Hitech City main road	In Progress	Medium	Infrastructure	5000	Item Created
5	a00gK000000Krcp3QAB	Insulin and diabetes supplies for elderly group	New	Escalated	Medical	30	Item Created
6	a00gK000000Krcp4QAB	First aid kits for volunteer team in Jubilee Hills	Assigned	Medium	Medical	50	Item Created
7	a00gK000000Krcp5QAB	Tarpaulin sheets for temporary shelters	New	High	Shelter	400	Item Created
8	a00gK000000Krcp6QAB	Shortage of baby food and formula at Ameerpet shelter	New	Escalated	Food/Water	80	Item Created
9	a00gK000000Krcp7QAB	Generator required for camp medical tent	Assigned	High	Infrastructure	250	Item Created
10	a00gK000000Krcp8QAB	Basic medicines (paracetamol bandages) needed	In Progress	Medium	Medical	150	Item Created
11	a00gK000000Krcp9QAB	Canned food and dry rations for Secunderabad camp	New	High	Food/Water	800	Item Created
12	a00gK000000KrcpAQAR	Temporary housing for 20 displaced families	New	High	Shelter	100	Item Created
13	a00gK000000KrcpBQAR	Water purification tablets for isolated village	Assigned	Escalated	Food/Water	450	Item Created
14	a00gK000000KrcpCQAR	Need for antibiotics and antiseptics	Fulfilled	High	Medical	60	Item Created
15	a00gK000000KrcpDQAR	Emergency repair of water pump	New	Medium	Infrastructure	1200	Item Created
16	a00gK000000KrcpEQAR	Request for 50 family-sized tents	In Progress	High	Shelter	200	Item Created
17	a00gK000000KrcpFQAR	Distribution of rice and lentils	Assigned	Medium	Food/Water	1500	Item Created
18	a00gK000000KrcpGQAR	Mobile medical unit requested for remote area	New	Escalated	Medical	300	Item Created
19	a00gK000000KrcpHQAR	Sleeping bags and mats for relief camp	New	Medium	Shelter	250	Item Created
20	a00gK000000KrcpIQAR	Urgent need for ORS packets and rehydration salts	Assigned	Escalated	Food/Water	500	Item Created
21	a00gK000000KrcpJQAR	Tetanus shots required after flooding	New	High	Medical	120	Item Created
22	a00gK000000KrcpKQAR	Emergency food packets for stranded commuters	In Progress	High	Food/Water	200	Item Created
23	a00gK000000KrcpLQAR	Need for structural engineer to assess bridge damage	New	Escalated	Infrastructure	10000	Item Created
24	a00gK000000KrcpMQAR	Portable toilets for women's section of camp	Assigned	Medium	Shelter	600	Item Created
25	a00gK000000KrcpNQAR	Request for snake bite anti-venom	New	Escalated	Medical	10	Item Created
26	a00gK000000KrcpOQAR	24-hour kitchen supplies at Golconda Fort camp	Assigned	Medium	Food/Water	1800	Item Created
27	a00gK000000KrcpPQAR	Durable cots for elderly and injured	New	High	Shelter	70	Item Created
28	a00gK000000KrcpQQAR	Burn treatment supplies for fire victims	New	Escalated	Medical	15	Item Created
29	a00gK000000KrcpRQAR	500L milk powder for children	Assigned	High	Food/Water	350	Item Created
30	a00gK000000KrcpSQAR	Heavy machinery for debris clearing	In Progress	Medium	Infrastructure	2000	Item Created
31	a00gK000000KrcpTQAR	Waterproof clothing for 100 volunteers	New	Low	Shelter	100	Item Created
32	a00gK000000KrcpUQAR	Request for cholera and typhoid vaccines	Assigned	Escalated	Medical	400	Item Created
33	a00gK000000KrcpVQAR	High-protein biscuits for malnutrition cases	New	High	Food/Water	250	Item Created
34	a00gK000000KrcpWQAR	Setup of temporary communication tower	New	High	Infrastructure	5000	Item Created
35	a00gK000000KrcpXQAR	Ventilators and oxygen cylinders needed	Fulfilled	Escalated	Medical	5	Item Created
36	a00gK000000KrcpYQAR	Emergency grain supply for community kitchen	In Progress	Medium	Food/Water	2500	Item Created
37	a00gK000000KrcpZQAB	Protective gear (masks gloves) for medical staff	New	High	Medical	200	Item Created

To open the CSV in the associated external program such as Microsoft Excel, click the button below.

Open in external program Close

Duplicate Rules

- **Purpose/Rationale:** To maintain high data quality and prevent redundant efforts, a duplicate rule was essential to flag potential duplicate **Relief_Case__c** records being logged from the field.
- **Detailed Implementation:** I created a custom **Matching Rule** that defines a duplicate as two **Relief_Case__c** records having the same **Category__c** and a "fuzzy" match on the **Name** field. I then created a **Duplicate Rule** based on this, which is triggered on the creation of new cases. The rule was configured to **"Allow, but Alert and Report"**, meaning the user can still save the record but is warned of the potential duplicate, and a duplicate record set is created for an admin to review.

Matching Rule

Relief Case Matching Rule

Matching Rule Detail

Object	Relief Case
Rule Name	Relief Case Matching Rule
Unique Name	Relief_Case_Matching_Rule
Description	
Matching Criteria	(Relief Case: Name EXACT MatchBlank = FALSE) AND (Relief Case: Category EXACT MatchBlank = FALSE)
Status	Active
Created By	Poojitha Rheimreddy, 9/18/2025, 4:46 AM
Modified By	Poojitha Rheimreddy, 9/18/2025, 4:46 AM

Relief Case Duplicate Rule

Flag Potential Duplicate Cases

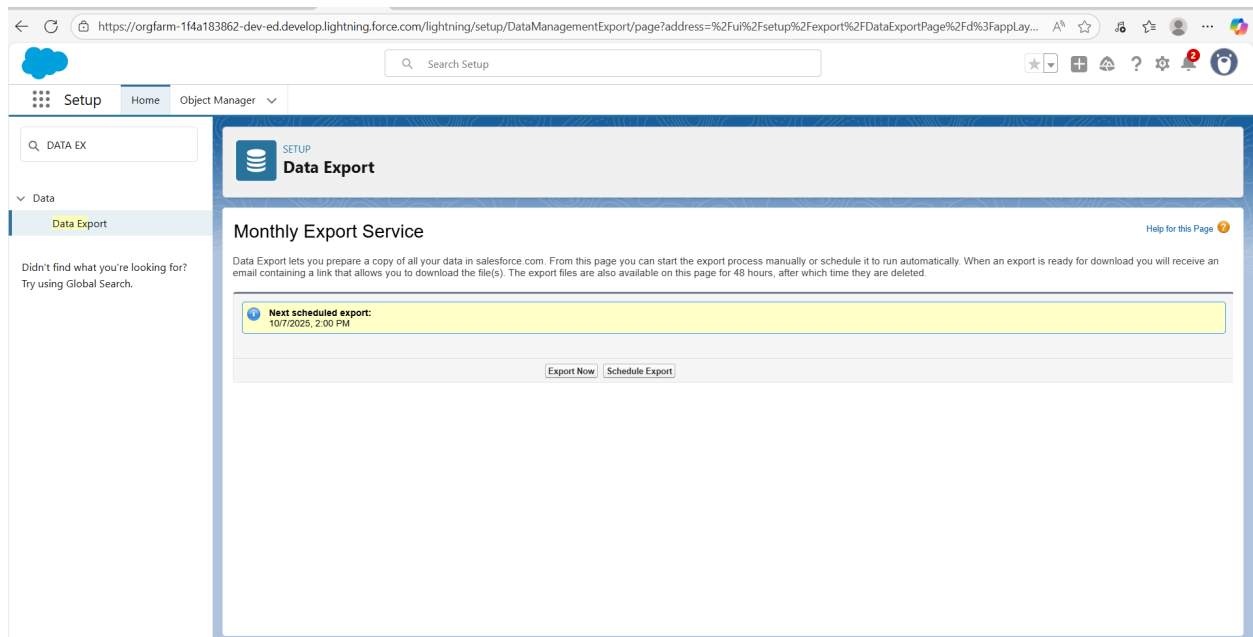
Duplicate Rule Detail

Rule Name	Flag Potential Duplicate Cases	Order	1 of 1 [Reorder]
Description			
Object	Relief Case		
Record-Level Security	Enforce sharing rules		
Action On Create	Allow	Operations On Create	Alert Report
Action On Edit	Allow	Operations On Edit	Alert Report
Alert Text	Use one of these records?		
Active	<input type="checkbox"/>		
Matching Rule	Relief Case Matching Rule Mapped	Matching Criteria	(Relief Case: Name EXACT MatchBlank = FALSE) AND (Relief Case: Category EXACT MatchBlank = FALSE)
Conditions			
Created By	Poojitha Rheimreddy, 9/18/2025, 4:48 AM	Modified By	Poojitha Rheimreddy, 9/18/2025, 4:48 AM

Data Export & Backup

- **Purpose/Rationale:** To protect against data loss and meet compliance requirements, a regular, automated backup process is critical.
- **Detailed Implementation:** I configured the native **Weekly Data Export Service**. This service was scheduled to run automatically every Saturday night. It generates a full backup of all the organization's data, including all custom object

records for **ReliefConnect**, and makes it available as a downloadable zip file. This provides a reliable disaster recovery point.



Change Sets

- **Purpose/Rationale:** Change Sets are the primary declarative tool for migrating metadata (custom objects, fields, code, etc.) between related sandbox and production orgs.
- **Detailed Implementation:** Change Sets are a native Salesforce tool for deploying metadata from a Sandbox to a Production org. This feature was evaluated, but as the project was developed in a standalone Developer Edition org, a deployment could not be performed using this method. This highlights the importance of using developer tools like VS Code & SFDX for this type of environment.

Unmanaged vs Managed Packages

- **Purpose/Rationale:** This was an architectural consideration for the future distribution of the **ReliefConnect** application.
 - **Detailed Implementation:** I evaluated both package types.
 - **Unmanaged Package:** A simple container for metadata, but once installed, the components are fully editable and not upgradeable.
 - **Managed Package:** A more sophisticated, locked-down package that protects the intellectual property (IP) of the code and allows the developer to push seamless upgrades to subscribing orgs.
 - **Conclusion:** If **ReliefConnect** were to be distributed to other non-profit organizations, it would be packaged as a **Managed Package**.
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ANT Migration Tool

- **Purpose/Rationale:** The ANT Migration Tool is a Java-based command-line utility for moving metadata. It offers more power and scriptability than Change Sets.
 - **Detailed Implementation:** I evaluated ANT as a deployment option. It requires a **package.xml** file to define the components to be retrieved and a **build.xml** file to define the tasks (e.g., retrieve, deploy). While powerful for automated CI/CD pipelines, I concluded that for this project, VS Code & SFDX provide a more modern and integrated developer experience.
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VS Code & SFDX

- **Purpose/Rationale:** Visual Studio Code with the Salesforce Extension Pack (SFDX) is the modern, definitive toolset for Salesforce development and deployment. It enables source-driven development, where the version control system (like Git) is the source of truth.
- **Detailed Implementation:** The entire development of the **ReliefConnect** LWC and Apex classes was done in VS Code. The source code was tracked in a Git repository. I used SFDX commands to deploy the metadata from my local project folder to the Salesforce developer org. The primary command used was **sfdx force:source:deploy -p force-app**, which deploys the entire application in a single, scriptable step. This is the most efficient and reliable deployment method for developers.

File Edit Selection View Go Run Terminal Help

ReliefConnectProject

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EXPLORER

RELIEFCONNECTPROJECT

- .husky
- .sf
- .sdx
- .vscode
- config
- force-app/main/default
 - applications
 - aura
 - classes
 - ReliefCaseController.cls
 - ReliefCaseController.cls-meta.xml
 - contentassets
 - flexipages
 - layouts
 - lwc/reliefCaseIntakeForm
 - __tests__
 - reliefCaseIntakeForm.html
 - reliefCaseIntakeForm.js
 - reliefCaseIntakeForm.js-meta.xml
 - objects
 - permissionsets
 - staticresources
 - tabs
 - triggers
 - scripts
 - .forceignore
 - .gitignore
 - .prettiignore
 - .prettierrc
- OUTLINE
- TIMELINE
- RUNNING TASKS

ReliefCaseController.cls 1

reliefCaseIntakeForm.html

reliefCaseIntakeForm.js

reliefCaseIntakeForm.js-meta.xml

```
force-app > main > default > lwc > reliefCaseIntakeForm > reliefCaseIntakeForm.js-meta.xml > ...
1 <?xml version="1.0" encoding="UTF-8"?>
2 <LightningComponentBundle xmlns="http://soap.sforce.com/2006/04/metadata">
3   <apiVersion>59.0</apiVersion>
4   <isExposed>true</isExposed>
5   <targets>
6     <target>lightning__AppPage</target>
7     <target>lightning__RecordPage</target>
8     <target>lightning__HomePage</target>
9   </targets>
10 </LightningComponentBundle>
```

PROBLEMS

OUTPUT

DEBUG CONSOLE

TERMINAL

PORTS

HISTORY

PS C:\Users\Lenovo\OneDrive\Desktop\SALESFORCE\ReliefConnectProject> sf project deploy start

Elapsed Time: 1.75s

Deployed Source

State	Name	Type	Path
Unchanged	ReliefCaseController	ApexClass	force-app/main/default/classes/ReliefCaseController.cls
Unchanged	ReliefCaseController	ApexClass	force-app/main/default/classes/ReliefCaseController.cls-meta.xml
Changed	reliefCaseIntakeForm	LightningComponentBundle	force-app/main/default/lwc/reliefCaseIntakeForm/reliefCaseIntakeForm.html
Changed	reliefCaseIntakeForm	LightningComponentBundle	force-app/main/default/lwc/reliefCaseIntakeForm/reliefCaseIntakeForm.js
Changed	reliefCaseIntakeForm	LightningComponentBundle	force-app/main/default/lwc/reliefCaseIntakeForm/reliefCaseIntakeForm.js-meta.xml

Launchpad

0 1

ReliefConnectDevOrg

Ln 10, Col 28 Spaces: 4 UTF-8 LF XML Finish Setup Apex PMD Prettier