

salesforce



Solution Architecture review

for Sales Planning Tool

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Document objective



The aim of this document is to provide details about the recommended actions for Marelli's Salesforce Implementation, named "Sales Planning Tool", as part of the extended outcome of the Salesforce Org Assessment engagement.



Agenda



- ❖ Context
- ❖ Main recommendations from org assessment
- ❖ Solution Wrap-up: Flows, Licenses Summary & Impact dependency analysis
- ❖ Next steps & requests



Context



Org Assessment objectives



In the context Marelli's Salesforce implementation, referred as "Sales Planning Tool", an Org Assessment engagement has been activated to mainly provide feedbacks for the following:

- overall sustainability of the solution for the upcoming roll-out to all business lines
- review performance for Clone Solution related to the Planning Status Process

As part of the Org Assessment, the main focus has been on the following item:

- to fully address the Planning Status Process, related to the tracking of Sales Agreement Forecasts over time, by allowing view and analysis on historical forecasts, no Standard Capabilities could be applied to address the requirement (i.e. Salesforce Reporting Snapshots having known limitation by design), so **the custom Approach to clone Forecasts records data across time has been pointed out for improvement opportunities and future sustainability**



Org Assessment outcomes



As a result of the Org Assessment feedback, a set of recommendations have been identified in order to reduce risks for bad performance and/or low future rollout sustainability, mainly:

- review some data-model details
- leverage more standard sharing & visibility capabilities
- review analytics dataflow setup
- move the Copy Process engine outside the Platform
- plan for archiviation

Next slides contain details about the above recommendations.



Main recommendations from org assessment

Main recommendations from assessment



Summary

To better streamline the solution for Planning Status process, the following recommendations have been discussed as result of the org assessment deliverable and will deepen in next slides:

1. **Year Summary:** move to Master-detail relationship
2. **Volume:**
 - 2.1. instantiate as less as possible records, avoid the “ZERO values”
 - 2.2. add fields to allow direct filters on Planning Statuses / Scenarios
3. **Savings/Lump Sums:** flatten pricing/discounts data directly on Volumes
4. **Sharing & Visibility:** avoid apex sharing and leverage Account/Opportunity Teams and/or Enterprise Territory Management
5. **Dataflows:** Basket Datasets for Planning Statuses and elaborate only new data for later append
6. Implement the clone process leveraging an external ETL (**Mulesoft**) and **Salesforce Bulk APIs**
7. Apply **Archiving** to old Planning Statuses (using Salesforce Connect and OData)



1. Year Summary: move to Master-detail relationship (1/3)

salesforce

As per Org Assessment
deliverable from Dec. 2019

Description

While the typical relationship in this use-case would be a Master-Detail to Opportunity, Year Summary has been implemented as Lookup to Opportunity in order to allow the use of Year Summary ALSO for Vehicles Forecasts.

Because the Master-detail relationship (together with a “Controlled by Parent” sharing setting) may be relevant to address visibility and clone management processes, it is recommended to consider to move to Master-detail and use another entity for Vehicle Forecasts.

Benefit: Visibility setup for Year Summary & Volumes would be implicitly inherited from Opportunity, so the Visibility solution can be centralized on the extended Opportunity’s sharing capabilities ([Account & Opportunity Teams](#) & [Territories](#)), allowing for simplification.

Impacts*: need to review the current Volume Management back-end data logic; implement Vehicle forecasts on different Entities than YS and Volumes & review the central volume management functionality

* Impacts reported are limited to the level of Implementation knowledge within the scope of the Org Assessment, detailed and additional impacts need to be assessed by the Marelli’s technical team.



1. Year Summary: move to Master-detail relationship (2/3)

salesforce

Detailed Impacts* (1/2):

- Data Model
 - Create Object “Vehicle Year Summary” as Master-detail to Vehicle
 - Create Object “Vehicle Volume” as Master-detail to “Vehicle Year Summary”
 - Create Object “Appl. Reference Year Summary” as Master-detail to Application Reference
 - Create Object “Appl. Reference Volume” as Master-detail to “Appl. Reference Year Summary”
- Customizations
 - Volume Management capability for Vehicle and Application Reference will need to be modified in back-end (apex) in order to leverage the new separated objects
 - No front-end/UX impacts in place
 - Need to upgrade the Vehicle Volumes adjustment from Central Volumes implementation

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1. Year Summary: move to Master-detail relationship (3/3)

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Detailed Impacts* (2/2):

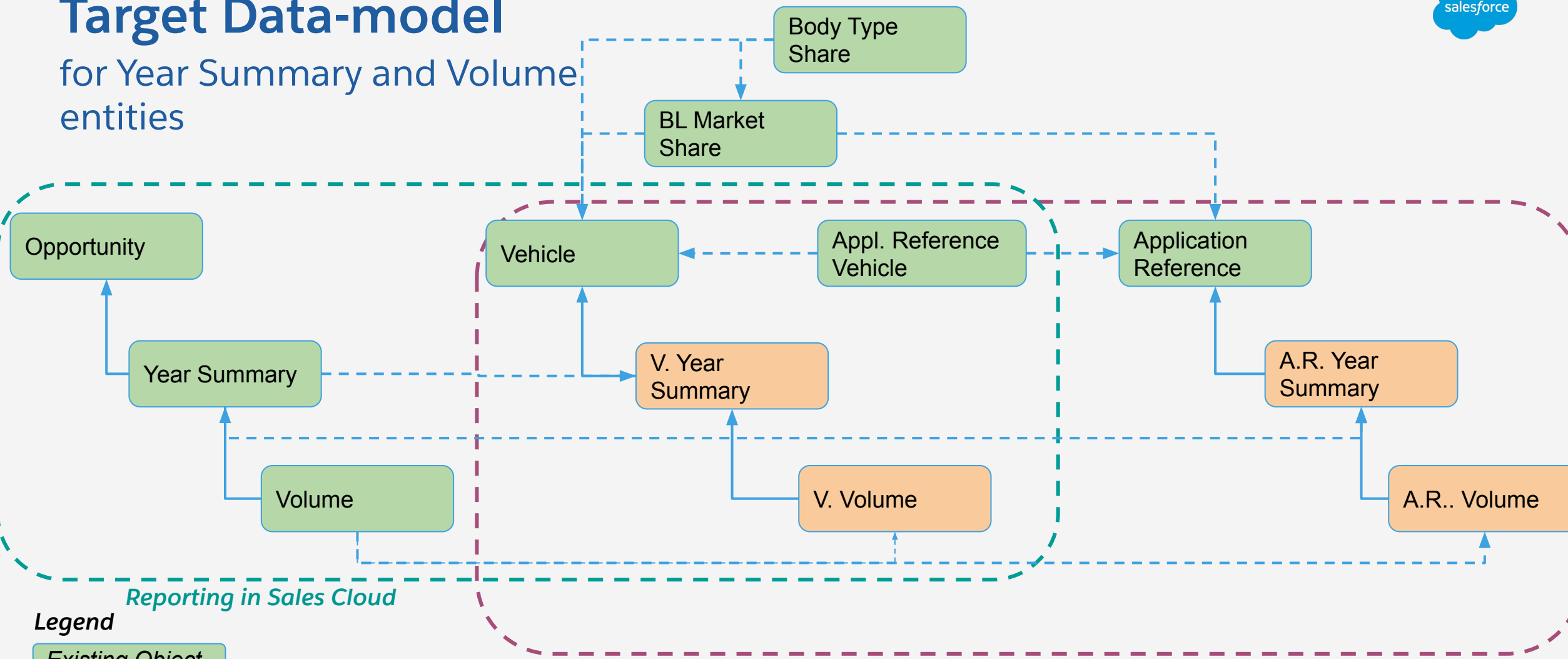
- Reporting
 - Create lookup relations between Oppty, Vehicle and Appl. reference Volumes in order to easily define a Report Type allowing to compare them
 - Analysis for **Oppty Volumes vs Vehicle Volumes**: feasible in Sales Cloud using ReportType leveraging the lookup relation “Oppty Volume” → “Vehicle Volume”
 - Same for **Oppty Volumes vs Appl. Reference Volumes**
 - Analysis for **Vehicle Volumes vs Appl. Reference Volumes** is supportable in Einstein Analytics (due to many-to-many relation between Appl. Reference and Vehicle)
- Data Migration
 - minimum impact expected, since currently just 121 records are used for Vehicle Volumes and no records for Appl. Reference Volumes

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Target Data-model

for Year Summary and Volume entities



Legend

Existing Object

New Object

Master-detail Relation

Lookup Relation



2.1 Instantiate as less as possible Volume records (1/2)



avoid the “ZERO values”

As per Org Assessment
deliverable from Dec. 2019

Description

The records on the Volume entity, representing the Forecast detail at month level, are currently instantiated by default for each month between the Opportunity’s SOP and EOP, even if they do not contain relevant user input or zero-value forecast.

Given the data-volume for Volume records, it is highly recommended to remove the pre-allocation approach for Volume records, so a record should be written in the database only when it needs to persist a non-zero forecast or price update.

Based on preliminary data analysis, opportunity to save from 30% up to 70% is in place.

Benefits: clone process and dataflow durations are dependent of number of Volume rows moved back and forth, so the save in records usage is expected to be reflected in time saving in the Clone processes and dataflows.



2.1 Instantiate as less as possible Volume records (2/2)



avoid the “ZERO values”

Impacts* and dependencies:

- Volume Management Back-end data logic need to be reviewed;
- re-design Reports in Sales Cloud than need to highlight Zero Volume Opportunities with “with or without related records” join setup on Custom Report Types and use Joined Reports (see next slide);
- lens in EA may use cogroup.
- This approach may dependent from the sharing & visibility review (item #4), since currently unexpected visibility apply in case of Custom Report Types.

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Joined Reports



Use Joined Reports to be able to show results with zero-summary group results.

JOINED REPORT ▼

Test Joined Report ✎

+ Add Block

Got It

Fields >

Outline

Filters

Group Across Blocks

Add group...

Opportunity Name ×

"group-by" fields

Columns

▼ ● Oppty with Volumes b...

Add column...

Forecast ×

▼ ● Opportunities block 1

Add column...

Type ×

Previewing a limited number of records. Run the report to see everything.

Opportunity Name ↑ ▼	Sum of Forecast
AL-000334551	332
MM-000334550	0

Oppty with Volumes

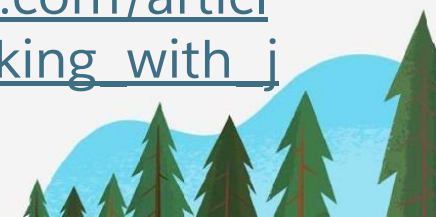
Oppty with Volumes block 1 ✎

First Block of data from a Report Type

Second Block of data from a Report Type

Ref.:

https://help.salesforce.com/articleView?id=reports_working_with_joined.htm&type=5



2.2 Volume: add fields to allow direct filters on Planning Statuses / Scenarios

salesforce

As per Org Assessment
deliverable from Dec. 2019

Description

Some attributes of the Opportunity entity are relevant for filters directly on the Volume Entity, i.e. execute a dataflow in Einstein Analytics to refresh volume data from Opportunities of the Current Planning Status; in this case it is recommended to have directly on the Volume Entity the field indicating the Scenario Type

Benefits: on the given dataflow elaborating on Volume, the filtering operation for Current Planning Status would be executed as first step, allowing to execute JOINS in next dataflow steps ONLY for the relevant Volume record.

Impacts*: define formula fields on Volume or calculate field from trigger/automation at save time, then propagate the use of the given fields on Synched Objects in Einstein Analytics and related dataflows.

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3. Savings/Lump Sums: flatten pricing/discounts data directly on Volumes (1/2)



Description

In order to enable for better reporting between forecasts and Savings/Lumpsums, it is recommended to consider to **flatten Savings and Lumpsums Totals by Type on Volumes entity**, as Roll-Up Summary Fields from the Saving Entity refactored as Master-Detail relationship with Volume.

Benefits: easier reporting/analysis of forecast data vs pricing data.

Impacts*:

- add roll-up fields to Volume Entity and modify the Price Management back-end data logic (apex) in order to correctly fill the new master-detail relation to Volume;
- Analytics & Sales Cloud Dashboards will be able to leverage Savings Summary data directly on Volume Records;
- currently 3 Roll-up Summary fields available on Year Summary, out of the limit of 25:
 - review field usage and free-up more Summary fields from the 23 already used
 - plan to request to support a limit extension (technical limit is 40, [ref.](#))

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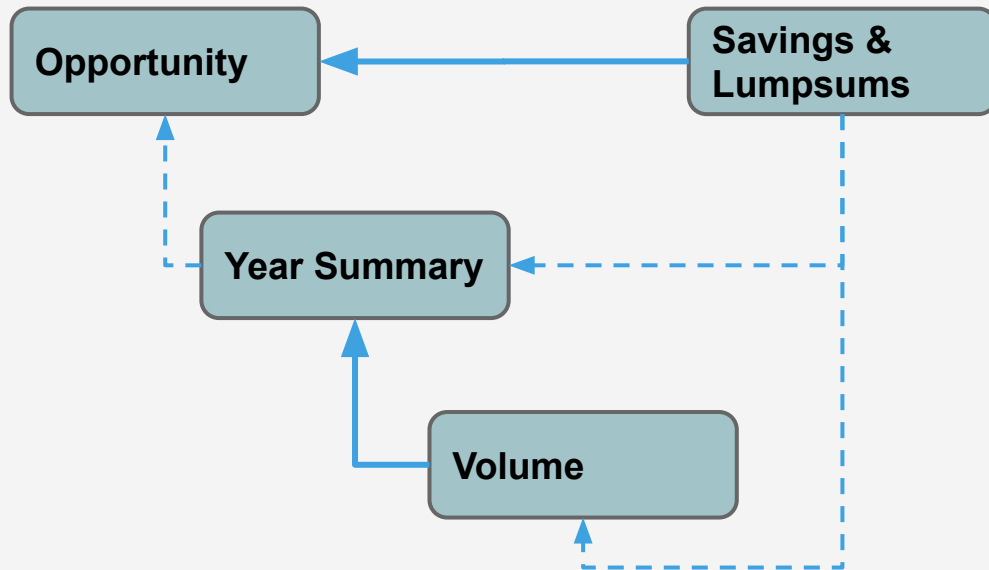


3. Savings/Lump Sums: flatten pricing/discounts data directly on Volumes (2/2)

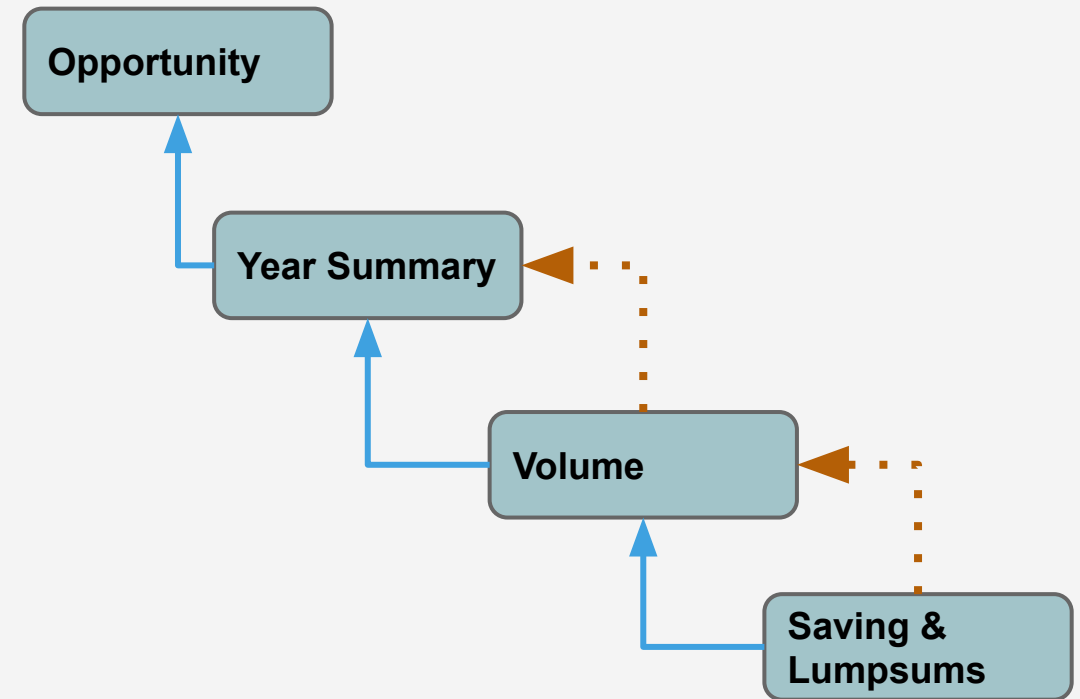


Review Relations and field definitions as follows:

Current Model



Proposed Model



Legend

- Master-detail Relation
- Lookup Relation
- Roll-up Summary Field Definitions



4. Sharing & Visibility: leverage Account/Opportunity Teams and/or Enterprise Territory Management

salesforce

As per Org Assessment
deliverable from Dec. 2019

Description

It is recommended to review the possibility to leverage standard visibility extensions for Opportunity:

- Opportunity Teams
- Opportunity Territories

Benefits:

- reduce implementation and run-time complexity for clone processes (currently using Apex Sharing)
- allow to address requirements for matricial visibility rules (i.e. cross BLs visibility for same user)

Impacts* and limitations:

- remove apex sharing, re-design the detailed Sharing and Visibility solution.
- for visibility of Records in EA, the record sharing inheritance due to Opportunity/Account Teams and Territory Management is supported as per the other sharing capabilities (sharing rules, role hierarchy); by the way the use of explicit predicates may address 2 risky area:
 - query performance of dataset (they work well with predicates than with sharing inheritance)
 - general limit of 400 sharing definitions per record ([ref.](#))
 - review the “[Sharing Inheritance Coverage Assessment](#)” for insights about your coverage

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Reporting Visibility when Extending Sharing with Account/Opportunity Teams



When using **Custom Report Types** on Opportunity, the issue about **difficulty to show ALL records visible to User** has been highlighted; tests have been executed confirming that the **expected visibility on reporting can be obtained as follows:**

- Make sure to have a single Top Role, i.e. Called “CEO”
- Make sure that all ALL Opportunities (that need to show on this reporting) are Owned by Users in the Role Hierarchies (no users with empty role)
- On the Report, based on a Custom Report Type on Opportunity, select “All opportunities” option under the “Show me” filter, and **specify the Top Role, i.e. CEO**

REPORT ▾
AllOppsOnCustomReportType ✎

Fields > Outline ▾ Filters ▾

Filters ▾

Add filter... 🔍

Show Me
All opportunities under role:
CEO

Close Date
All Time

Show Me
All opportunities ▾

Filter by Role

Search Roles 🔍

▼ CEO

CEO

> BU Electronics Sales Director

> BU Lighting Sales Director

> EMEA Corporate Sales

> VP of Customer Service

> VP of Marketing

Narrow by Person Select Person ▾

Clear Selection

Cancel Done

Test it in the current implementation!

5. Dataflows: Basket Datasets for Planning Statuses and elaborate only new data for later append (1/3)



As per Org Assessment
deliverable from Dec. 2019

Description

In case of Marelli requirement to have a Dataset to analyze/compare Old Scenarios & Planning statuses (monthly added) vs Current Planning Status (hourly refresh), the overall dataflows architecture should be as follows:

- A. ad hoc dataflow to run and create stable dataset for Frozen Scenarios / Previous Planning Statuses: i.e. name **"PSs_Frozen"**; this dataflow would run only after a Frozen Scenario is created (monthly/weekly - nightly)
- B. a daily/hourly dataflow running on filtered Volumes records from Current Scenario; i.e. Name **"CurrentScenarios"**
 - a. this dataflow will take care to APPEND **PSs_Frozen** and **CurrentScenarios** to obtain a cumulative dataset named **All_PSs**

Bonus approach:

- it is possible to avoid to save the **"PSs_Frozen"** dataflow, so during the [B] step the same data can be obtained as a daflow FILTER step starting from the previous **"All_PSs"**

Benefits: this dataflow architecture would limit the amount of time currently used for the same JOIN operations done in the hourly dataflows.

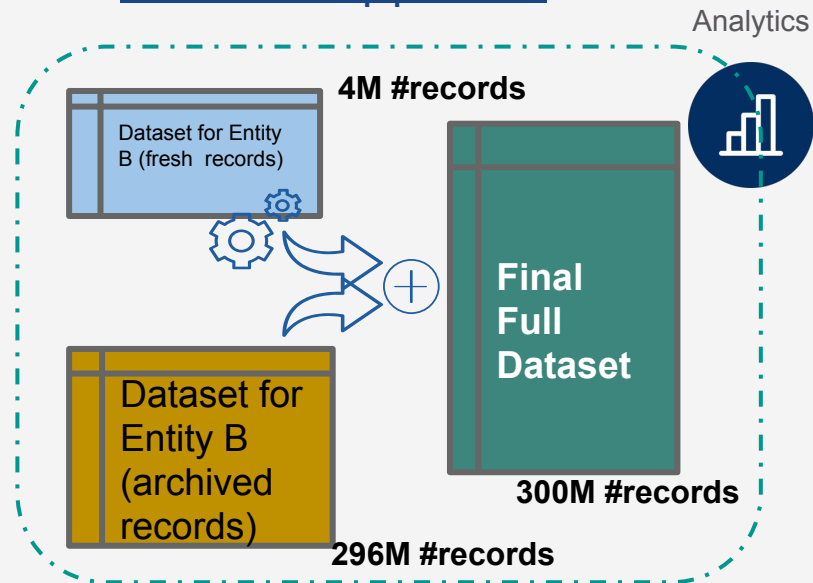


5. Dataflows: Basket Datasets for Planning Statuses and elaborate only new data for later append (2/3)



dataflow schemas

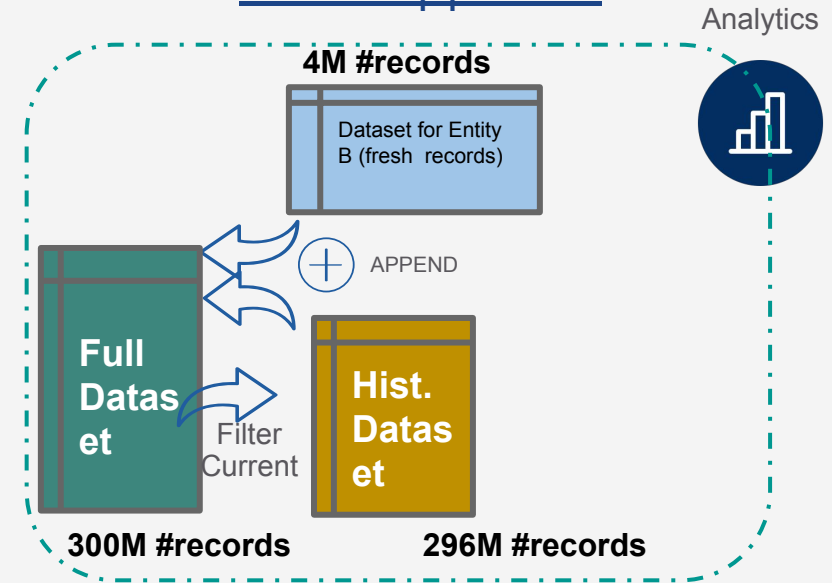
Standard approach



pros less risks to compromise the “frozen” scenario data during daily operations/updates

cons double use or rows from allotted rows in Analytics

Bonus approach



save rows from allotted rows in Analytics

higher risk to accidentally *burn* the dataset data and need to recover from archived data



5. Dataflows: Basket Datasets for Planning Statuses and elaborate only new data for later append (3/3)



Impacts* and limitations:

- recommendation #2.2 (“Volume: add fields to allow direct filters”) is preparatory to this item;
- dataflows and datasets needs to be re-designed;
- no automation available to trigger the dataflow [A] after the Planning Status Freeze, a manual operation should be planned monthly.
- about the Append operation performance, the following :
 - the APPEND time is related to the total number of resulting rows and to the dataset complexity (number of columns)
 - a Proof of Concept of Marelli’s dataset type (approx 220 columns), takes 4 minutes to join 100M in an APPEND step
 - *also note that, in the PoC, the final optimize/registration of a dataset in a dataflow (despite the use of APPEND) takes up to 25 mins*
- based on technical approach to store “stable data for Frozen Scenarios”, the solution may need to use double amount of Analytics rows than the number of Volume records

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6. Implement the clone process leveraging an external ETL (Mulesoft) and Salesforce Bulk APIs (1/3)

salesforce

As per Org Assessment
deliverable from Dec. 2019

Description

Based on results from a Copy Performances Proof of Concept conducted on a medium-simplified Scenario, the Cloning Process may be enhanced by up to 68% in time by moving from Batch Apex approach to ETL approach.

This item is tracked in order to point-out the opportunity to implement in Mulesoft the process to execute a Clone processes by interfacing the Salesforce Bulk APIs

Benefits: better runtime expected and lower risk for the copy process to be affected by the Platform governor limits.



6. Implement the clone process leveraging an external ETL (Mulesoft) and Salesforce Bulk APIs (2/3)

salesforce

As per Org Assessment
deliverable from Dec. 2019

Impacts* and design recommendations (1/2):

- Implement on Mulesoft jobs able to:
 - query Opportunities to clone
 - query Year Summaries and Volumes to clone
 - query other Opportunity Related records to clone
 - Insert Opportunities with INSERT operation defining a pre-determined external key
 - Insert Year Summaries and Volumes with UPSERT operations, referencing the pre-determined external keys
 - Insert other Opportunity Related records with UPSERT operations, referencing the pre-determined external keys
- Manage the risk for record locking (i.e. when writing data under the same account from distinct transactions) by using an ordered flow of data (by account id).
- Design external keys definitions in order to easily link cloned structures of records, i.e.:
 - OpportunityExternalKey: [Original Opportunity ID]_[Scenario ID]
 - YearSummaryExternalKey: [Original YearSummary ID]_[Scenario ID]
 - VolumeExternalKey: [Original Volume ID]_[Scenario ID]

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6. Implement the clone process leveraging an external ETL (Mulesoft) and Salesforce Bulk APIs (3/3)



Impacts* and design recommendations (2/2):

- investigated approaches for pre-cloning (a.k.a. “Shadow Planning Status”), in order to execute copy of most of data in advance during the month and then execute minimal data updates daily until the real Freeze day, the following design recommendations have been highlighted:
 - reference the LastModified date to retrieve modified records daily
 - use Change Data Capture to retrieve deleted records (Salesforce Platform Events)
 - 50k Events/day included in Enterprise Edition, review if needed Add-On license for upper consumption ([ref.](#))
 - temporarily apply a different Technical User as Owner to Opportunities and a different Account in order to keep data outside of inherited Sharing & Visibility of records
 - when needed to publish the copy, change the Owner and the AccountId to the original Opportunity values
- While designing the job schedule for queries/inserts, consider the 10.000 batches in a 24-hour period
- While designing other non-bulk API interactions from mulesoft, consider the Org API daily limits; each vCore grants additional 125k API calls

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Additional Products needed:
Mulesoft CloudHub vCore
MS SFDC Connector

7. Apply archiving to old Planning Statuses (1/3)

using Salesforce Connect and OData

Description

As solution for the Planning Status process, the record cloning approach is intended to lead to a progressive increment of data rows in the Salesforce Database.

Moreover, while the general requirement is that even the very old Planning Statuses are available for punctual consumption or exploration in Sales Cloud and part of the full datasets in Analytics for historical analysis, **the opportunity to Archive the oldest planning statuses should be considered.**

In this scenario, the Archive capability should be obtained as follow:

- record off-load on an external database: done by Mulesoft, that will
 - read data to archive from Sales Cloud
 - save data to Archive in external database
 - delete previous read data to archive
- archived data access for user in Sales Cloud: by using Salesforce Connect and the External Database exposed by Mulesoft to Salesforce through OData interface
- Data in Analytics
 - data subject to archiving are intended to be persisted in Analytics in advance due to the recommendation #5, so no explicit flow needed from the external database to EA
 - in case a new dataset implementation will need to leverage archived data, then EA connectors to Mulesoft/External database may be explored to cover the need

7. Apply archiving to old Planning Statuses (2/3)

using Salesforce Connect and OData



Benefits: the data off-loading for large data volume entities from Sales Cloud to an External Database would lead to the following benefits:

- limit the use of Salesforce Storage licenses
- lower general technical risks related to very large data volume entities
 - query/reporting performance in Sales Cloud
 - DB contentions / longer transactions due to high volume data



7. Apply archiving to old Planning Statuses (3/3)



using Salesforce Connect and OData

Impacts* and limitations:

- Mulesoft as engine for archiving:
 - read data to archive from Sales Cloud
 - save data to Archive in external database
 - delete previous read data to archive
- Mulesoft able to expose the archived data in External Database Tables as OData interface
- Sales Cloud able to show to users archived records as External Objects referring directly to External Database Tables thanks to the Salesforce Connector
- In Sales Cloud, the archived records will be accessible with dedicated listview and details pages
- Archived Data visibility will be driven by the CURRENT opportunity visibility to the given user

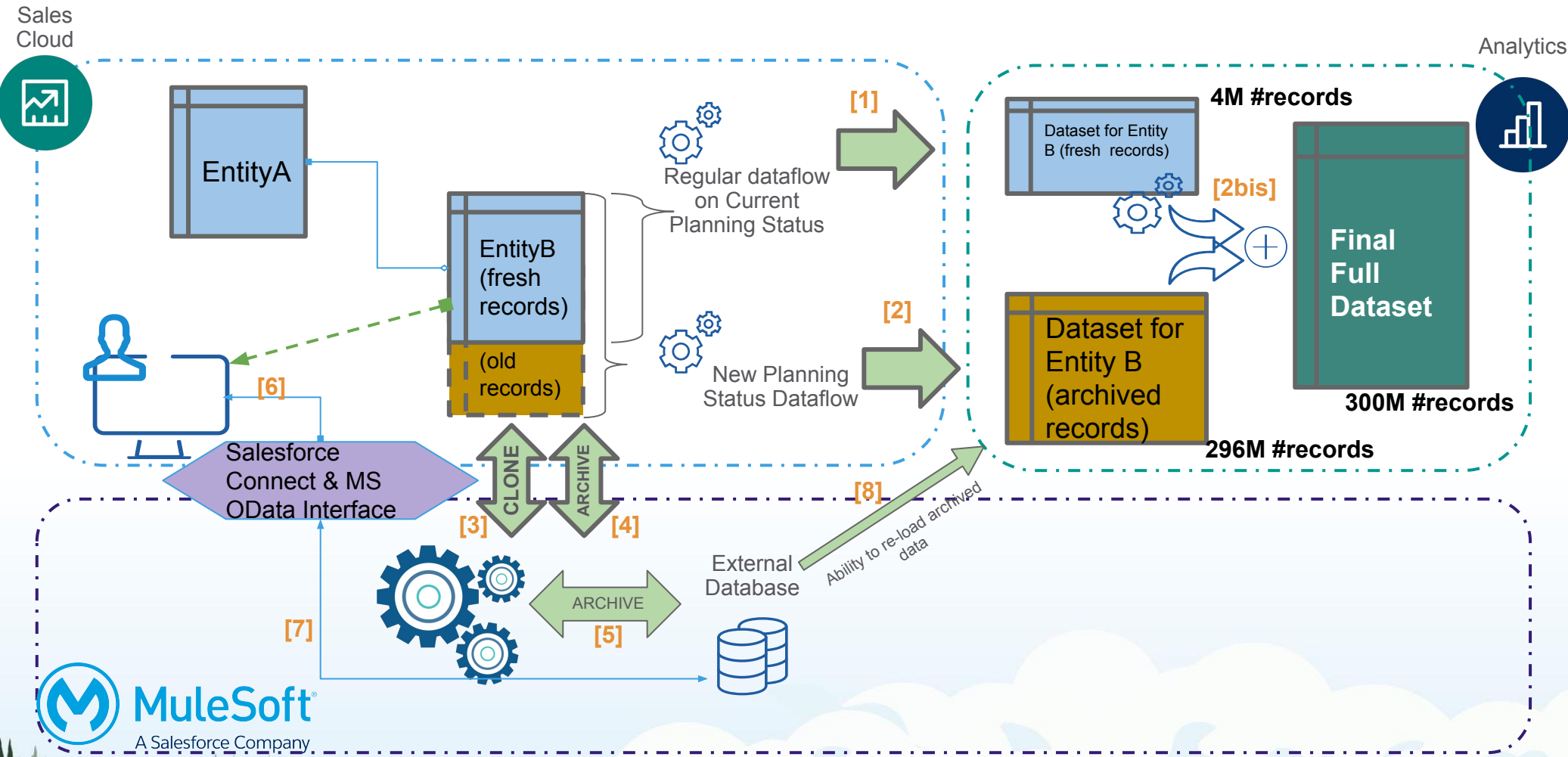
* Impacts reported are limited to the level of Implementation knowledge within the scope of the Org Assessment, detailed and additional impacts need to be assessed by the Marelli's technical team.

Additional Products needed:
Mulesoft CloudHub vCore
DLB (Dedicated Load Balancer)
External Database
Odata Interface
Salesforce Connect

Solution Wrap-up: Flows, Licenses Summary & Impact dependency analysis

Extended Architecture for Cloning Process and Archiving

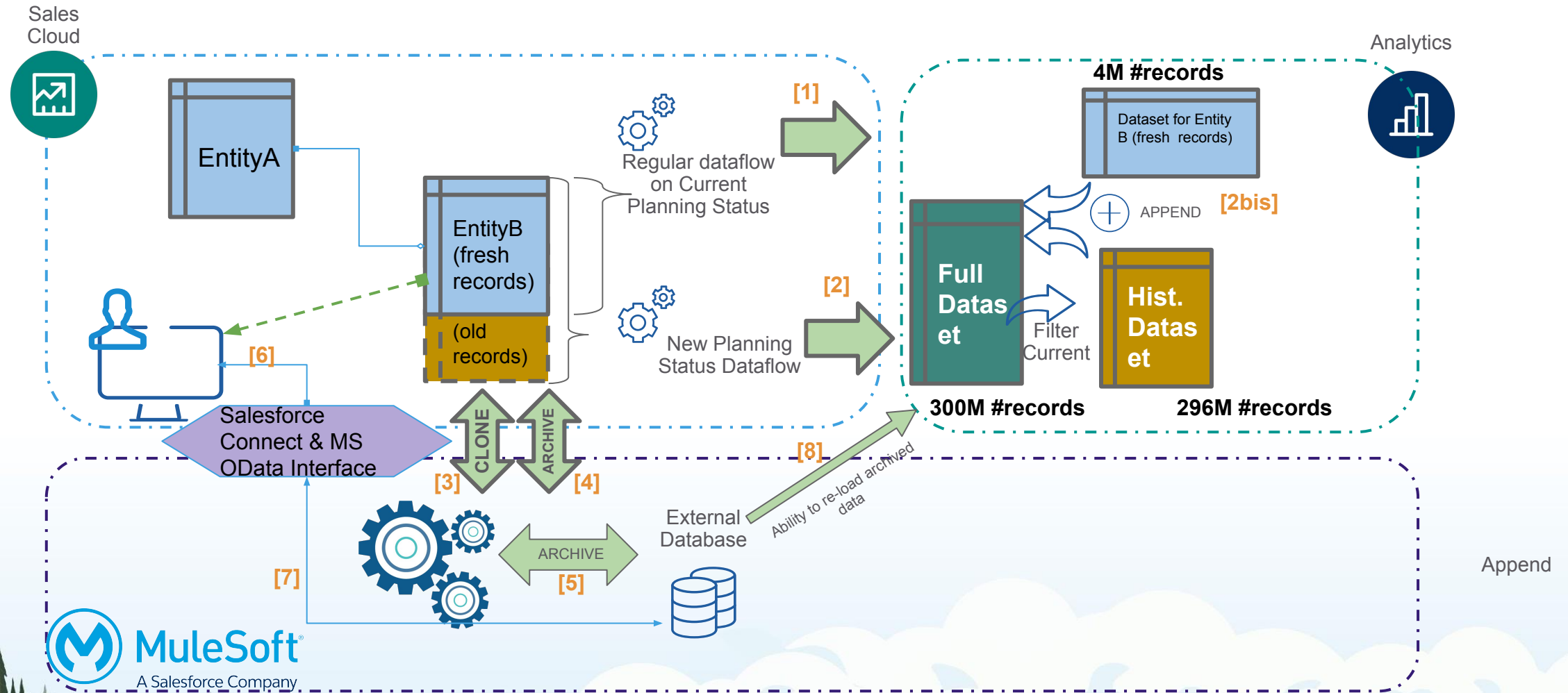
schema solution with Mulesoft + Odata Interface



Extended Architecture for Cloning Process and Archiving

(alternative dataflow approach)

schema solution with Mulesoft + Odata Interface



Solution Flows Summary (1/2)



ID	#Recommendation	Description	Type	Direction	Dimensions for licensing
[1]	5. Dataflow Architecture	Dataflow for “Current” Records	Analytics Dataflow	Sales Cloud → Einstein Analytics	#Analytics rows
[2] [2bis]	5. Dataflow Architecture	Dataflow for Monthly new “Frozen” Scenarios	Analytics Dataflow	Sales Cloud → Einstein Analytics	#Analytics rows
[3]	6. Implement ETL with Bulk APIs	Mulesoft to consume Bulk APIs for QUERY, INSERT, UPSERT (& DELETE)	Salesforce Bulk APIs	Mulesoft → Sales Cloud	#Salesforce data rows to be persisted in Sales Cloud



Solution Flows Summary (2/2)



ID	#Recommendation	Description	Type	Direction	Dimensions for licensing
[4]	7. Implement Archiving	Mulesoft to consume Bulk APIs for QUERY & DELETE of records in Sales Cloud	Salesforce Bulk APIs	Mulesoft → Sales Cloud	N.A,
[4]	7. Implement Archiving	Mulesoft to subscribe to DELETE Change Types	Platform Events	Mulesoft → Sales Cloud	#Delete Events/day
[5] [7]	7. Implement Archiving	Mulesoft to interface External Database for	TBD	Mulesoft → External Database	TBD
[6]	7. Implement Archiving	Sales Cloud to consume the Mulesoft OData Interface to read the Archived records	OData	Sales Cloud → Mulesoft	#Adapters to Connect with
[8]	7. Implement Archiving	Ability for Einstein Analytics to read Archived Data from External Database via Mulesoft	Anypoint Connector for Salesforce Analytics Cloud (Salesforce Analytics Connector)	Einstein Analytics → Mulesoft	TBC

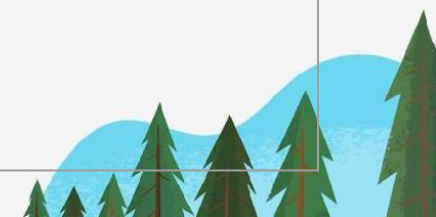


License/Infrastructure upgrade (1/3)



In the following table, the License Gap analysis based on new flows and approaches discussed and related sizing assumptions agreed.

License Type	Cloud	Ref. Recommendation	Sizing	Sizing Estimation assumptions	Notes
Data Storage	Sales Cloud	2.1 Volume: avoid ZERO records 6. Implement ETL with Bulk APIs	#PlanningStatus Scenarios: $1(\text{current}) + 2(\text{years}) * 18(\text{PS per Year}) = 37$ #Opptys per PS=45000 $\#YS \text{ per PS} = 8 * 45000 = 360k$ $\#Volumes \text{ per PS} = 360k * 12 * 70\% = 3M$ $\#records \text{ per PS} = 3M + 360k + 45k \approx 3.5M$ $\#tot \text{ records} = 3.5M * 37 \approx 130M$ $\text{DataStorage} = 130M * 2KB(\text{record size}) =$ 260GB	<ul style="list-style-type: none"> Keep up to 2 Years of Planning Statuses 18 Planning statuses per Year: 12 Rolling, 4 Quarter, 1 Budget, 1 5Y Business Plan 9 Business Lines 5000 Opptys per BL 8 Years avg between SOP and EOP, 30% of month forecasts not fulfilled 	Data Storage allocation is also granted by #User Licenses
Analytics Rows	Einstein Analytics	5. Review Dataflow Architecture	#PlanningStatus Scenarios: $1(\text{current}) + 5(\text{years}) * 18(\text{PS per Year}) = 91$ $\text{Rows} = \#Volumes \text{ per PS} = 360k * 12 * 70\% = 3M$ $\#Analytics \text{ Rows} = 2 * 3M * 91 =$ 546M	<ul style="list-style-type: none"> 5 Years of Panning Statuses Consume double of rows because of the need to have the basket dataset 	



License/Infrastructure upgrade (2/3)



License Type8	Cloud	Ref. Recommendation	Sizing	Sizing Estimation assumptions	Notes
Platform Events	Sales Cloud	6. Implement ETL with Bulk APIs	<50k Events/day	In the processes in place the delete or records is very limited across use-cases	1 record deletion=1Event 50k Events/day already included in Enterprise edition
Salesforce Connect	Sales Cloud	7. Implement Archiving	1 OData Connection exposing all needed databases/tables	One single database to store archived data	



License/Infrastructure upgrade (3/3)

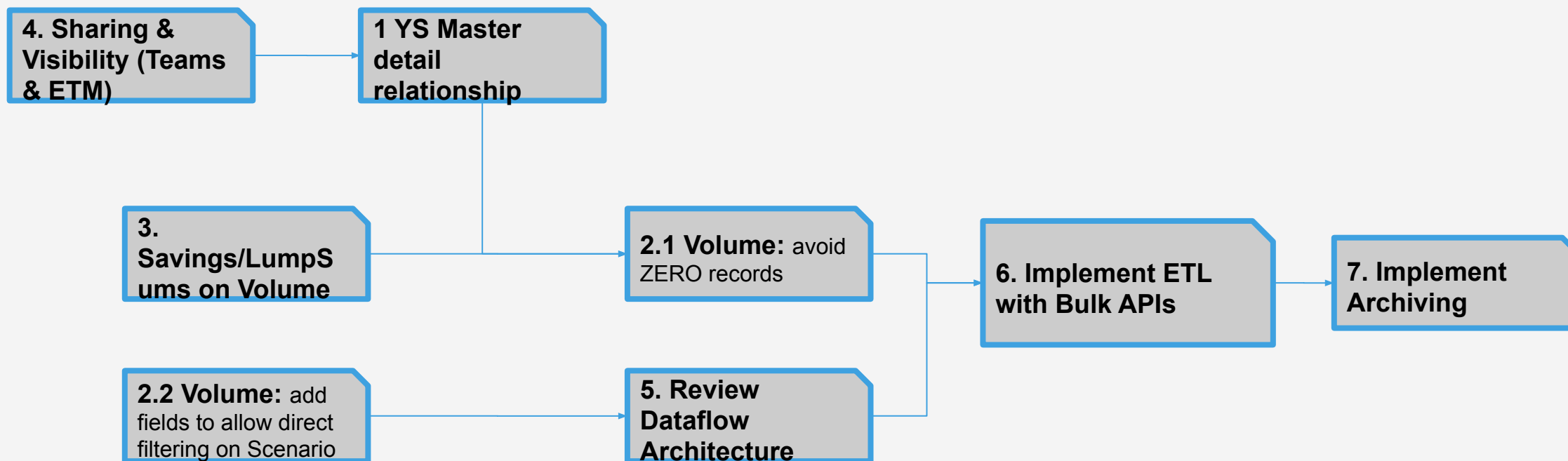


License Type	Cloud	Ref. Recommendation	Sizing	Sizing Estimation assumptions	Notes
Mulesoft	Mulesoft	6. Implement ETL with Bulk APIs	1 CloudHub vCore MS SFDC Connector	to support the cloning process (query/insert/upsert operations)	
Mulesoft	Mulesoft	7. Implement Archiving	1 CloudHub vCore DLB (Dedicated Load Balancer)	to support Archive process	If we want to guarantee higher security in the communications between SFDC and MuleSoft, at least for the oData, we need a DLB in order to manage mTLS trust certs.
External Database	N.A.	7. Implement Archiving	<p>#Opptys per PS=45000 #YS per PS=8*45000=360k #Volumes per PS=360k*12*70%=3M #records per PS=3M+360k+45k=~3.5M #tot records=3.5M*18=</p> <p>63M rows per Year</p>	<ul style="list-style-type: none"> 18 Planning statuses per Year: 12 Rolling, 4 Quarter, 1 Budget, 1 5YBusiness Plan 	<p>many connectors available in Mulesoft:</p> <ul style="list-style-type: none"> MySQL/Oracle/SQLServer/... (using the generic Database Connector) CassandraDB (NoSQL) MongoDB (NoSQL JSON-like documents) Neo4j (NoSQL Graph) Amazon RDS (best option is terms of performance would be to have it in AWS) + establish VPC Peering against the AWS hosting (\$/GB exchanged)

Impact* dependency analysis



Based on list of impacts for each recommendation and prerequisites within activities, the following represented dependencies between activities should be taken into consideration for better prioritization:



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A stylized illustration of a wooden sign on a stone wall in a forest setting. The sign is dark brown with a wood grain texture and is mounted on two small wooden posts. It is positioned on a low stone wall made of light brown and tan rectangular stones. The background features a bright blue sky with white, fluffy clouds. On the left, a green tree with a brown trunk is partially visible. On the right, a green pine tree is partially visible. In the foreground, there are several green bushes and plants. The overall style is clean and modern, with a focus on natural elements.

Next steps & requests

Next steps & requests



Given the recommendations detailed in this document, the following next steps and requests should be considered:

- submit the recommendations to Technical and Functional Teams for feedback and detailed design and solutioning
- plan a performance testing phase as part of the implementation plan for the given recommendations





thank
you

BLAZE
YOUR
TRAIL

salesforce

Back up slides



Copy Performances Proof of Concept Scenario Description



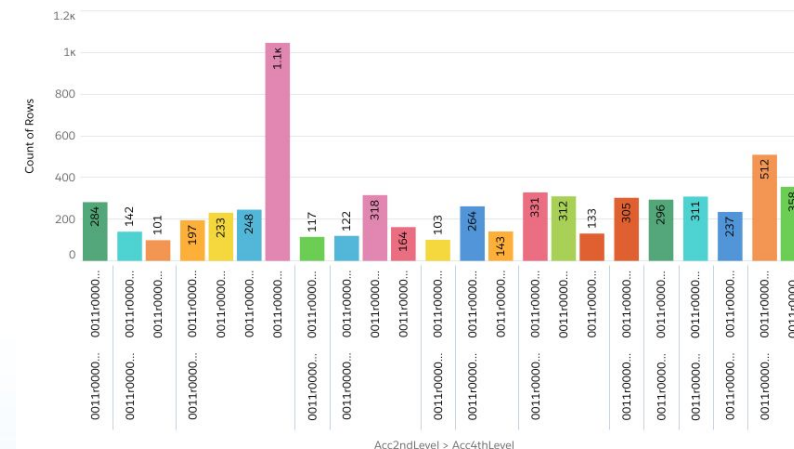
In order to evaluate possible benefits of extended data Architecture, a simplified scenario has been tested.

Scenario description

- 3 level entities: Opportunity → YearSummary → Volume, related as Marted-detail
- 9.000 opptys, 8 years each → 105 records per opportunity
- opportunities distributed across 2 level hierarchy accounts similar to distribution in Production

3 different approaches tested

- Clone with Apex, as per current implementation
- Clone with Heroku
- Clone with Bulk APIs (as per ETLs interfaces)



Salesforce Connect Limits (1/2)



Maximum external objects per org: 100

Maximum joins per query across external objects and other types of objects: 4

Maximum length of the OAuth token that's issued by the external system 4,000 characters

Maximum new rows retrieved by SOSL and Salesforce searches per hour: 100,000

- This limit doesn't apply to high-data-volume external data sources.

Maximum new rows retrieved or created per hour: 100,000

- This limit doesn't apply to:
 - High-data-volume external data sources
 - Rows that are retrieved only as search results and aren't opened or edited
 - Other rows that have already been retrieved

Maximum page size for server-driven paging: 2,000 rows

Refs.:

- https://help.salesforce.com/articleView?id=platform_connect_general_limits.htm&type=5



Salesforce Connect Limits (2/2)



General Limits for OData 2.0 and 4.0 Adapters

An org is limited to:

- 20,000 OData callouts per hour for Enterprise, Performance, and Unlimited editions. Higher limits are available on request.
- 1,000 OData callouts per hour for Developer Edition.

Maximum HTTP request size for OData: 8 MB

Maximum HTTP response size for OData: 8 MB

Maximum result set size for an OData query: 16 MB

Maximum result set size for an OData subquery: 1,000 rows

Refs.:

- https://help.salesforce.com/articleView?id=platform_connect_general_limits.htm&type=5

