

Salesforce

Data Masking







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Objective



This paper provides an insight into Best Practices for protecting and securing the Salesforce sensitive PII data by implementing the Data Profiling and Data Remediation solution, thereby assuring the companies to ensure compliance with the GDPR, SOX Compliance and similar data privacy laws worldwide and maximize the business value



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Senior Enterprise Architect in ChainSys with 20+ years of experience specialized in Data Security and Compliance. Heavily engaged with the Global Clients to secure their sensitive data. Published several ML Algorithms for sensitive data identification and remediation. My current focus areas are Data Security and Compliance, Data Migration, Data Integration, Big Data, Master Data Management, Business Intelligence and Artificial Intelligence.

PII Salesforce Data Masking

BUSINESS EXPECTATIONS

Personal information or Personally identifiable information (PII) is any data that could potentially identify a specific individual. No company can claim 100% compliance, but they have to make "Good Faith Effort" to cover most of the ground. The new rules grant people more rights regarding how companies handle their personally identifiable information (PII), and it imposes heavy fines for non-compliance and data breaches--up to 4 percent of a company's yearly revenue.

For security teams, this means making sure that PII is adequately protected and that the proper reporting processes are in place. Companies are at high risk of significant fines, data breach, brand reputation, and potential loss of customers if they do not mitigate the risk of adhering to the proper compliance levels in all regions.

Making 'Zense' of data is a challenge for most companies. dataZense is an end-to-end analytics platform that integrates all of your company's data, secures it, and brings it to life through easy-to-use Dashboards. The Data Catalog helps look for needed data in an organization. dataZense® provides an end-to-end capability for Data Profiling, Data Remediation (Masking, Scrambling, and Encryption), and Data Governance.



PII Data Categories

Personal data are grouped in to two different categories Critical and Confidential Data Elements or Categories.

Critical Data Elements/Categories

Critical data elements are those elements by which you can directly identify individual/person such as their social security number, National Identifier, Visa Number, Passport Number, Employee Number etc.

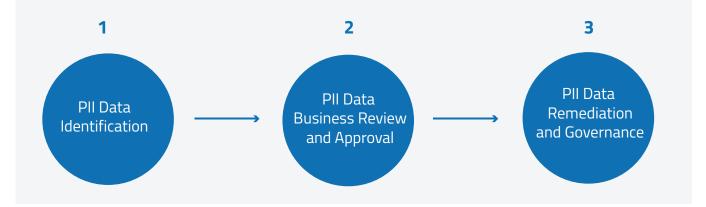
Confidential Data Elements/Categories

Confidential data elements are information which when combined other personal data elements can able to identify individual. E.g.: First name, Last Name, Date of Birth.

Salesforce PII Data Profiling and Data Masking

The PII Data Profiling and Data Masking within the dataZense application is broken out into the following three high level process

- PII Data Identification
- PII Business Review and Approval
- PII Data Remediation and Governance



PII Identification

Identify Systems considered for Sensitive Data Identification (PII) and run the Data profiling process to identify the PII Attributes. Provides the complete visibility of the identified PII data. i.e., Server, Instance, Database, Schema, Table, Column level details.

PII Business Review and Approval

The identified PII attributes will go through False-Positive / False-Negative analysis and approved for remediation

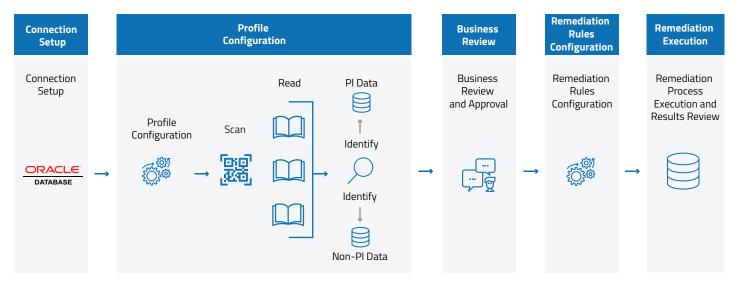
PII Remediation and Governance

The business approved PII attributes will be considered for remediation.

Remediation Options:

- Scramble the Data
- Mask the Data
- Remove Data (With capture of logs) remove from all production and non-production environments
- Keep the Data (Encrypt in all Non-Production environments)

High Level Architecture



Data Masking Process Steps

Steps to configure:

- Create a Connection to the Salesforce instance.
- Create a Data Security profile for scanning the Salesforce Instance.
- Business Review of scanned results and complete the Business validation of Approve/ Reject the PII Data.
- Create a Remediation Profile to configure the Remediation Rules for masking the data.
- Execute the configured Remediation Profile to mask the data and Review the masked results from the Salesforce Application and database.

Connection

Verifying the Source Connection:

Ensure that the respective Salesforce source connection is available. If not, create a new connection.

E (Smart Data Platform* D	ata Security		
SFDC Connection			+ 🗈 į i
Connection Q	General Information		
SFDC_APR Active:Yes Source: Yes Destination: Yes	Connection Name SFDC_CATERPILLAR_DEMO Display Name SFDC_CATERPILLAR_DEMO	Connect as Source Destination User Authentication Type Default User Only	SFDC Version 40.0 ~ Description Welcome#12lwNbuqnIJLBqUPwIN1JS4Ys
SFDC_CATERPILLAR_DEMO Active:Yes Source: Yes Destination: Yes	Sprint Name DEV Connection Information	Connection Status ¶	Å
SFDC_CONN_AGENT Active:Yes Source: Yes Destination: Yes	Authentication End Point https://login.salesforce.com/services/Soap/c Username	Max Bytes Per Batch 10000000 Max Rows Per Batch	Time Out 50000
SFDC_CONN_DEV Active:Yes Source: Yes Destination: Yes	salesforcedemo@chainsys.com Password Data Mart Information	10000 Organization ld 00D2w00000AjEZFEA3	
SFDC_CONN_FIT	Data Mart Information		

Profile Creation and Execution

Create a profile for scanning the Salesforce instance and execute.

E Smart Data Platform" Data Ser	curity			🗣 🔊 🖬 🔎 🛶
🔁 Create New Profile			🛛 Succe	ess < 🗈 🕨 🗄 🖂
Name CS_SALESFORCE_DEMO_PROF	Display Name CS_SALESFORCE_DEMO_PROFI	Description CS_SALESFORCE_DEMO_PROFILE	Selected Connections	Fetch Connections
Data Fetch Mode	Record Limit	Sampling Method	Search here	Include Q DEV Edit
Consider Previous Scanning Results◀ ♂ Yes ○ No	Connection Parallel Process	Table Parallel Process		
Auto Business Approval Required♥ ○ Yes ⊘ No	Auto Remediation Required♥ ○Yes ⓒ No			



Business Review

Review the scanned results and complete the Business validation by Approving or Rejecting the PII Data.

E (Smart Data Platform"	Data Security					•	Charleys
😔 Business Validation	and Approval			Export Approv	ed Results Bulk A	pproval Refresh Reset	
Data Security Profile CS_SALESFORCE_DEMO_PROFILE Schema Name SF_DEMO Server Name : SALESFORCE		Execution Details 12/07/2020 22:32:1 Table Name CP_EMPLOYEE_DE Instance Name :	TAILS	Connect Salesfo Status Pendin Database I	g Name: SALESFORC	E earch by Table Name, Column Nai	• • •
Table Name	Column Name	Possible Category	Match(%)	Category Name	Status	Sample	
CP_EMPLOYEE_DETAILS	REGION_OF_BIRTH	COUNTRY	100	COUNTRY	Approved	▼ View Data	
CP_EMPLOYEE_DETAILS	CREDIT_CARD_NUMB	CREDIT_CARD	100	CREDIT_CARD	Approved	✓ View Data	
CP_EMPLOYEE_DETAILS	NATIONAL_IDENTIFIER	NATIONALIDENTIFIER	100	NATIONAL_IDENTIFIER	Approved	v View Data	
CP_EMPLOYEE_DETAILS	EMAIL_ADDRESSES	EMAIL	100	EMAIL	Approved	View Data	
CP_EMPLOYEE_DETAILS	LAST_NAME	NAME	87	NAME	Approved	✓ View Data	
CP_EMPLOYEE_DETAILS	LEGAL_NAMES	NAME	88	NAME	Approved	v View Data	
CP_EMPLOYEE_DETAILS	VISA_NUMBER	VISA	100	VISA	Approved	View Data	
CP_EMPLOYEE_DETAILS	COUNTRY	COUNTRY	100	COUNTRY	Approved	View Data	
CP_EMPLOYEE_DETAILS	ADDRESS_1	LOCATION	28	ADDRESS	Approved	View Data	

Remediation Profile

Create a Remediation Profile to configure the Remediation Rules for masking the data.

II Remediation Config	Category Rule 99 Total								
Remediation Name	Search								
S_PII_REMEDIATION_PROFILE	Category	Category Type		Security Level		Remediation Type		Mask/Scramble Type	
escription S_PII_REMEDIATION_PROFILE	CLIENT APPLICATIONS AND OS	STRING	Ŧ	Confidential	Ŧ	Scramble	Ŧ	NA	Ŧ
	CONTACTS	STRING	v	Confidential	¥	Scramble	Ŧ	NA	v
pły To	CONTACTS COMMUNICATIONS	STRING	~	Confidential	-	Scramble	Ŧ	NA	-
ata Security 🗸		STRING	Ŧ	Confidential	Ŧ	Scramble	Ŧ	NA	Ŧ
	COUNTRY	STRING	Ŧ	On the Record	Ψ	Scramble	Ŧ	NA	Ψ
	CREDIT CARD	CREDIT CARD	Ŧ	Critical	Ŧ	Mask	Ŧ	KEEP_LAST4	Ŧ
	CREDIT CARD NUMBER	CREDIT CARD	v	Critical	Ŧ	Mask	Ŧ	KEEP_LAST4	Ψ
	CURRENT ADDRESS	STRING	Ŧ	Confidential	Ψ	Scramble	Ŧ	NA	w
	🗹 DATE	DATE	Ŧ	Confidential	Ŧ	Mask	Ŧ	DAY	Ŧ
	DATE OF BIRTH	DATE	Ŧ	Confidential	Ŧ	Mask	Ŧ	DAY	v
	DATE OF DEATH	DATE	Ŧ	Confidential	Ŧ	Mask	Ŧ	DAY	Ŧ
		IP ADDRESSES	Ŧ	Confidential	Ŧ	Delete	Ŧ	NA	Ŧ
	DIGITAL RECORDS OF PHYSICAL	STRING	Ŧ	Confidential	Ŧ	Scramble	Ŧ	NA	v
		STRING	Ŧ	Confidential	-	Scramble	-	NA	-

Remediation Execution

Execute the configured Remediation Profile to mask the data.

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Remediation Process Status

Category Name *	Re	gion		Country		Location				
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Remediation Status *		stance		Database		Schema Name	Schema Name			
Completed	- 10	istance	Q	Database	Q	Schema Name		Q Sea	rch Reset	
Remediation Profile Name	Server Nar	me Instance	Database	Schema Name	Table Name	Column Name	Category	Remediation	Status	Log
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE	CREDIT_CAR_	CREDIT CARD	Mask	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_CONTACT	DEBIT_CARD	CREDIT CARD	Mask	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE	EMAIL_ADDR	EMAIL	Mask	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_CONTACT_	EMAIL_ADDR	EMAIL	Mask	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE_	NATIONAL_I_	NATIONAL ID	Mask	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE_	ITIN_NUMBER	NATIONAL ID	Mask	Completed	
CS_SALESFORCE_DEMO_PROF.	Salesforce	Salesforce	VIS	SF_DEMO	CP_CONTACT	LAST_NAME	STRING	Scramble	Completed	
CS_SALESFORCE_DEMO_CROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_CONTACT	FIRST_NAME	STRING	Scramble	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_CONTACT_	BANK_ACCO	STRING	Scramble	Completed	
CS_SALESFORCE_DEMO_PROF.	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE	FULL_NAME	STRING	Scramble	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP_EMPLOYE	FIRST_NAME	STRING	Scramble	Completed	
CS_SALESFORCE_DEMO_PROF	Salesforce	Salesforce	VIS	SF_DEMO	CP CONTACT	LAST_NAME	STRING	Scramble	Completed	



Review Masked Results

Review the masked results from the Salesforce Application.

	All 🔻 Q. Search	
Sales Home Contacts V Employees V		
Contact Hertz, Mr. Conrad	1777 - Alter Charles Anna Charles Alter Alter Salter Community	NUSTE ANS THE
Hertz, Mr. Conrad 🔺		
ontact ID National Identifier Email Addresses 3092470 XXX-10-1457 XXXXXXXXXXX@gmail	.com	
SAME MIZEN MIZEN S		
Related <u>Details</u> News		
Contact Owner Chainsys Demo	First Name 4BQ6BG	2
Namo	National Identifier	
Hertz, Mr. Conrad	XXX-10-1457	1
Last Name JJTuz	Bank Account No FeOM-BIP-1-5BOakVv	1
Debit Card No	Credit Card No	
(XXXX-XXXX-XXX-2247	8012-45XX-XXXX-XXXX	1
Contact ID 13092470	Email Addresses XXXXXX.XXXXQ gmail.com	1
Account Name		

Dashboards PII Home Dashboard

Provides the high-level summary of Profiled and Remediated Databases

ChainSys	4 4 4 Scarred CB Petrolia PH DB Revealed DB . Period Data Service	1 Approved PII DB	1 Candyard Renediation Renediation Process Summery	50 • ANEX
NUM	0		0	
	AVER Caref	1 in 14 in 1	ANDR 1432 Causing	2 01 al 61 2
Pil Profiling Reports	Personal Data Summary Report.		Remediation Process Summary Report	
PII Remediation Reports	Details Q D B B		Details Q D B D	
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		MAGE NALE		AG3

Personal Data Count by PII Category

Provides the PII data count by each PII Category

							nal Data Sun						
Region				Categorywise PII Count									
Select Value			Ψ					Othe	era ADE				AGE
Country Select Value			×		ZPODE							BAIN: ACCOUNT N DITY COUNTRY CREDIT_CARD_NUM DATE BEBT_CARD_NUM LOATION NATIONALDENTIFIE CREANIZATION PHONENJANGER BALLEY BIATE_CR_PROVIN	
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ocation										24 DCATION			Others
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								TITLE 23					
ersonal Data Count t	by PII Category						ł	STATE_OR_PROVIN	22 Court BC				
Personal Data Count b Details	by PII Category						1	STATE_OR_PROVIN	22 QROANZATI	IDN			
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Supported Endpoints (Partial)

Oracle Sales Cloud, Oracle Marketing Cloud, Oracle Engagement Cloud, Oracle CRM On Demand, SAP C/4HANA, SAP S/4HANA, SAP BW, SAP Concur, SAP SuccessFactors, Salesforce, Microsoft Dynamics 365, Workday, Infor Cloud, Procore, Planview Enterprise One	Cloud Applications
Oracle E-Business Suite, Oracle ERP Cloud, Oracle JD Edwards, Oracle PeopleSoft, SAP S/4HANA, SAP ECC, IBM Maximo, Workday, Microsoft Dynamics, Microsoft Dynamics GP, Microsoft Dynamics Nav, Microsoft Dynamics Ax, Smart ERP, Infor, BaaN, Mapics, BPICS	Enterprise Applications
Windchill PTC, Orale Agile PLM, Oracle PLM Cloud, Teamcenter, SAP PLM, SAP Hybris, SAP C/4HANA, Enovia, Proficy, Honeywell OptiVision, Salesforce Sales, Salesforce Marketing, Salesforce CPQ, Salesforce Service, Oracle Engagement Cloud, Oracle Sales Cloud, Oracle CPQ Cloud, Oracle Service Cloud, Oracle Marketing Cloud, Microsoft Dynamics CRM	PLM, MES & CRM
Oracle HCM Cloud, SAP SuccessFactors, Workday, ICON, SAP APO and IBP, Oracle Taleo, Oracle Demantra, Oracle ASCP, Steelwedge	HCM & Supply Chain Planning
Oracle Primavera, Oracle Unifier, SAP PM, Procore, Ecosys, Oracle EAM Cloud, Oracle Maintenance Cloud, JD Edwards EAM, IBM Maximo	Project Management & EAM
OneDrive, Box, SharePoint, File Transfer Protocol (FTP), Oracle Webcenter, Amazon S3	Enterprise Storage Systems
HIVE, Apache Impala, Apache Hbase, Snowflake, mongoDB, Elasticsearch, SAP HANA, Hadoop, Teradata, Oracle Database, Redshift, BigQuery	Big Data
mangoDB, Solr, CouchDB, Elasticsearch	No SQL Databases
PostgreSQL, Oracle Database, SAP HANA, SYBASE, DB2, SQL Server, MySQL, memsql	Databases
IBM MQ, Active MQ	Message Broker
Java, .Net, Oracle PaaS, Force.com, IBM, ChainSys Platform	Development Platform 11

One Platform for your

End to End Data Management needs





Data Migration Data Reconciliation Data Integaration



Data Quality Management Data Governance Analytical MDM



Data Analytics Data Catalog Data Security & Compliance

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