

# CA Test Data Manager

Roadmap

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# Agenda

**1 CA TEST DATA MANAGEMENT OVERVIEW AND GOALS**

**2 DELIVERED – CA TDM 4.0: DATA GENERATION AT HIGHER SPEED**

**3 CA TDM 2017 - MAJOR THEMES**

**4 WHAT TO EXPECT IN 4.1**

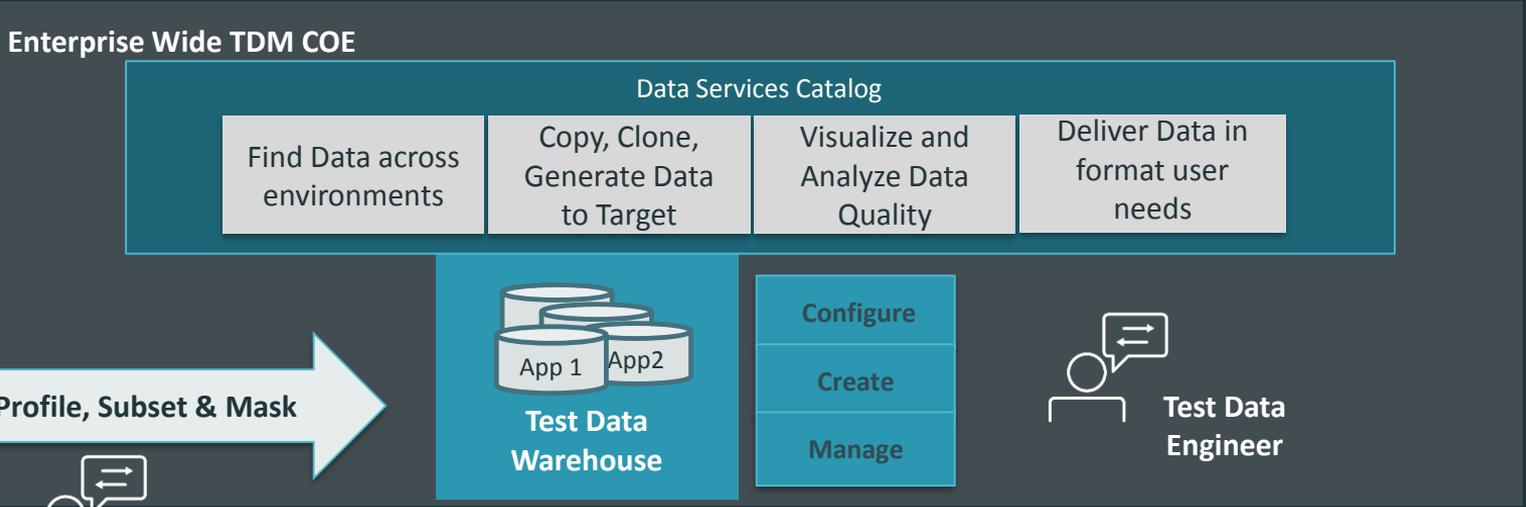
**5 OVERALL ROADMAP**

**6 Q&A**

# Transforming TDM Practice from federated to Enterprise wide CoE



Large number of DB & Data Sources Supported Across Mainframe And Distributed

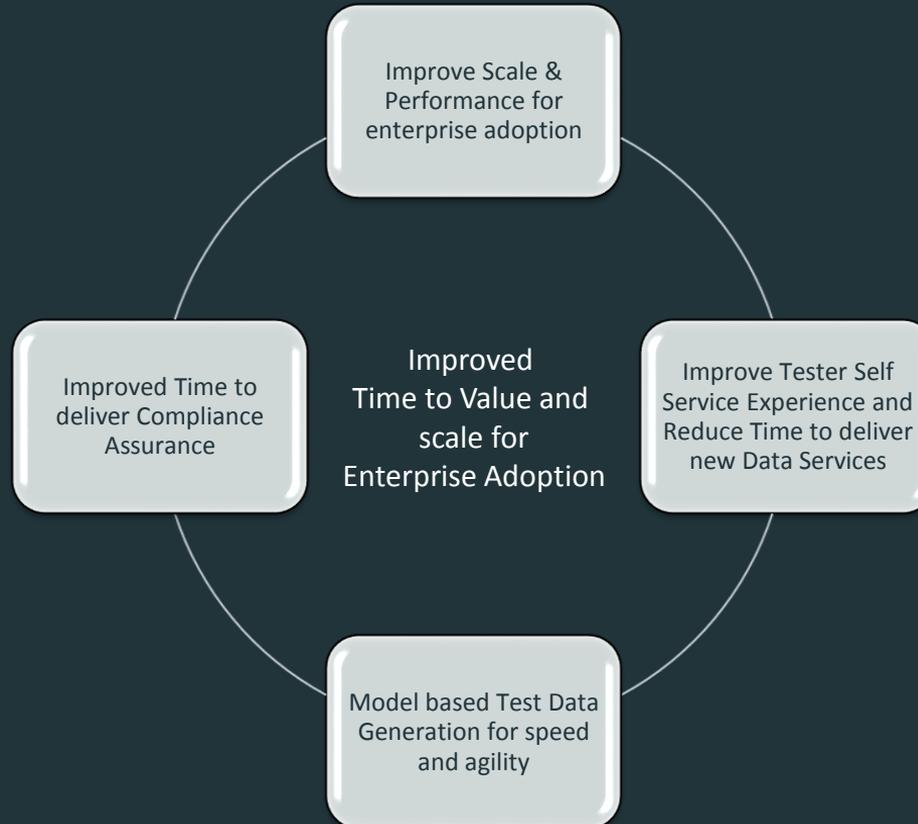


Ops Controlled



Dev Controlled

# CA TDM Strategic goals



# CA Test Data Manager 4.0

# Started Modernization of our Product Architecture

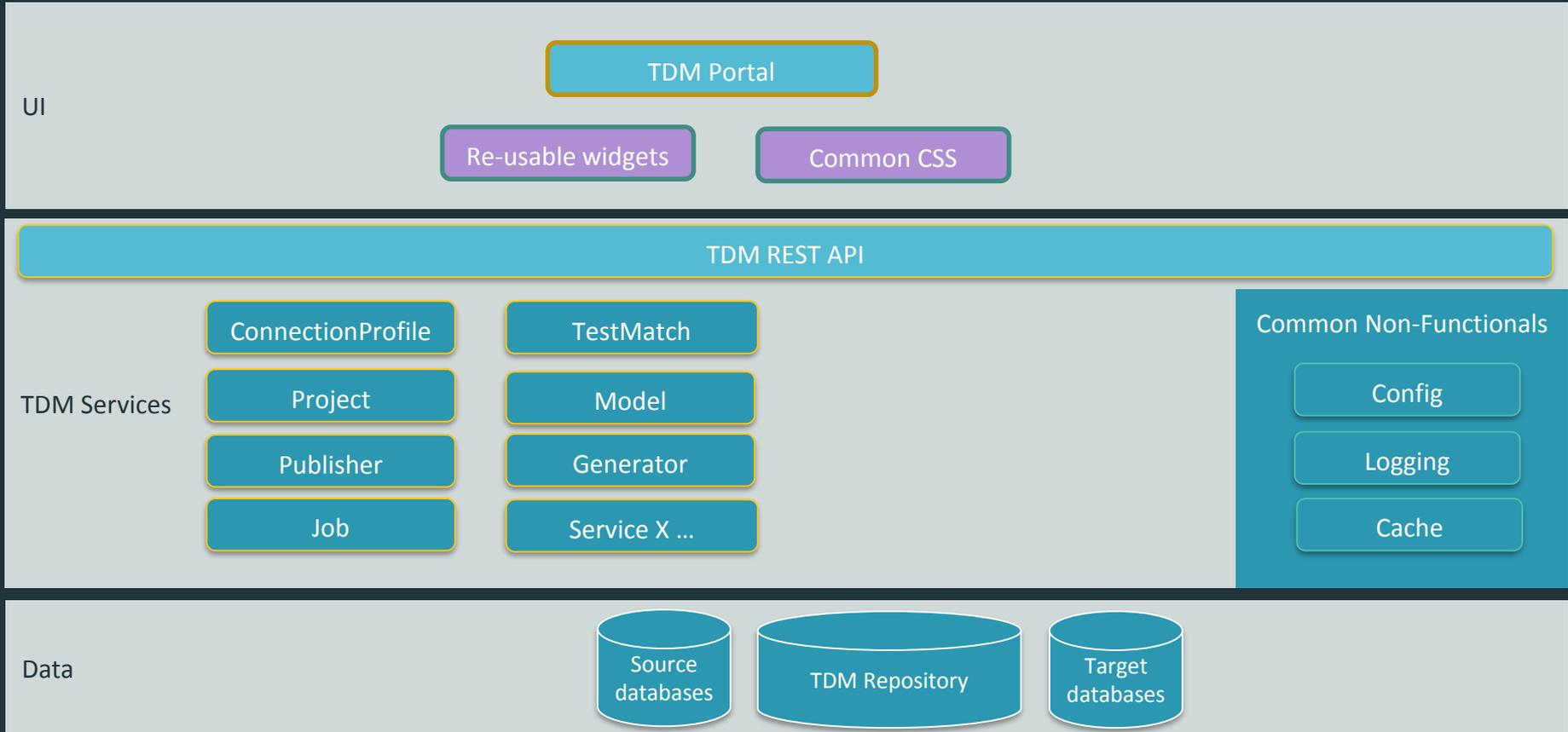
## Technology

- Modern Service Oriented Architecture
- Support REST APIs
- Broader Platform support

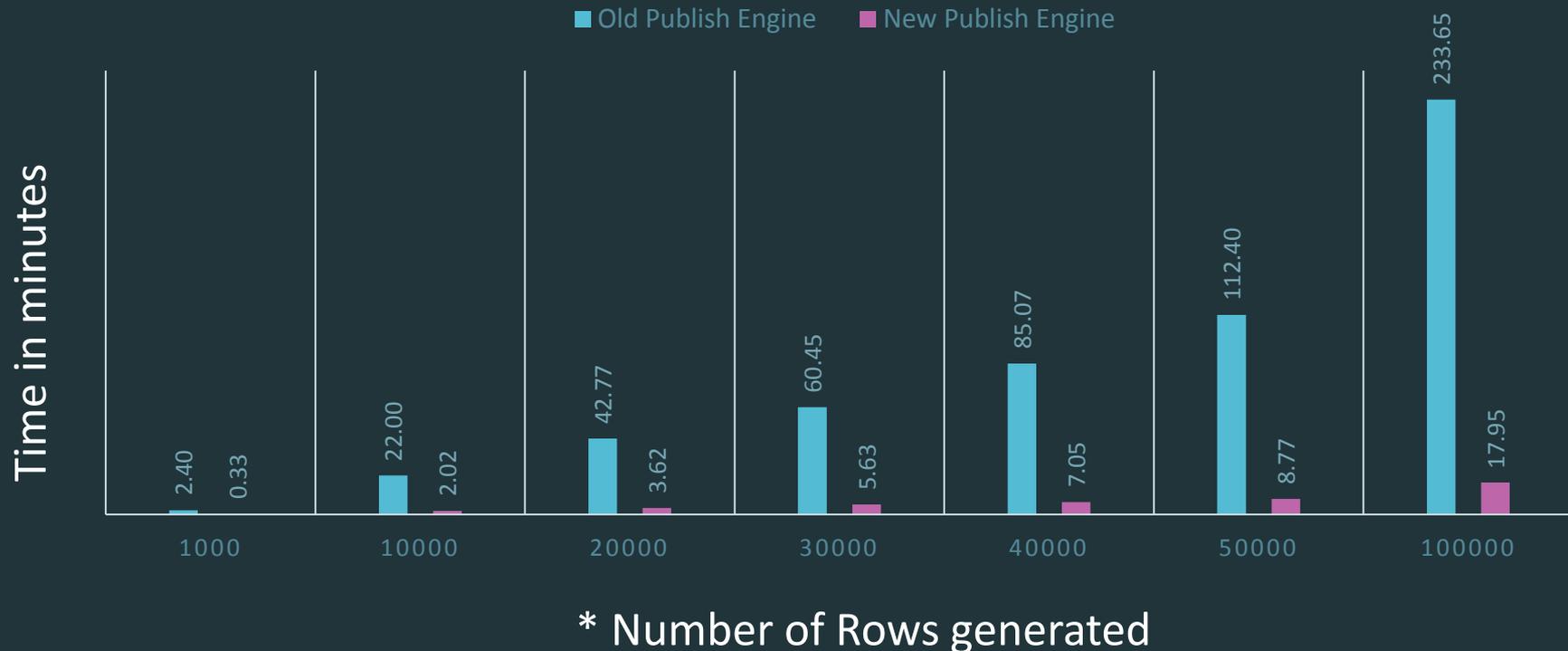
## Product Architecture

- Improved Scalability & Performance
- Rapid deployment
- Ease of Integration via Open APIs
- Supportability

# CA TDM – New Service Oriented Architecture



# Huge improvement in data Publish performance



\* Based on simple 72 column single table, numbers vary with varying schema complexities

# Flat File Data Generation

Generate synthetic data for applications that rely on non-relational database sources

- Support for wide variety of formats including XML, XSD, WSDL URI, JSON and RR Pairs
- Support for cyclic references
- Include additional schema information in the generated XML files
- XSD column constraint validation

The screenshot displays the 'Test Data Manager Portal' interface. The left sidebar contains navigation options: Modeling, Objects, Variables, Generators (selected), Orchestration, Self Service Flows, Self Service Catalog, Submitted Requests, and Configuration. The main content area shows the 'Generators > PO Generator' configuration. It includes a table with the following data:

Description	ID	Project	Project Ver
PO Generator	2387	Purchase Order	1.0

Below the table are 'SELECT TABLES' and 'ACTIONS' buttons. The configuration details for 'purchaseOrder\_tdm\_root' are shown as follows:

purchaseOrder\_tdm\_root

Row	*SHRED_ID	SHRED_GROUP_ID	orderDa
1	@nextval(SHRED_ID_SEQ)@	~SHRED_GROUP_ID~	1999-10

billTo

Row	*SHRED_ID	SHRED_GROUP_ID	country	name
1	@nextval(SHRED_ID_SEQ)@	~SHRED_GROUP_ID~	US	Robert Smith

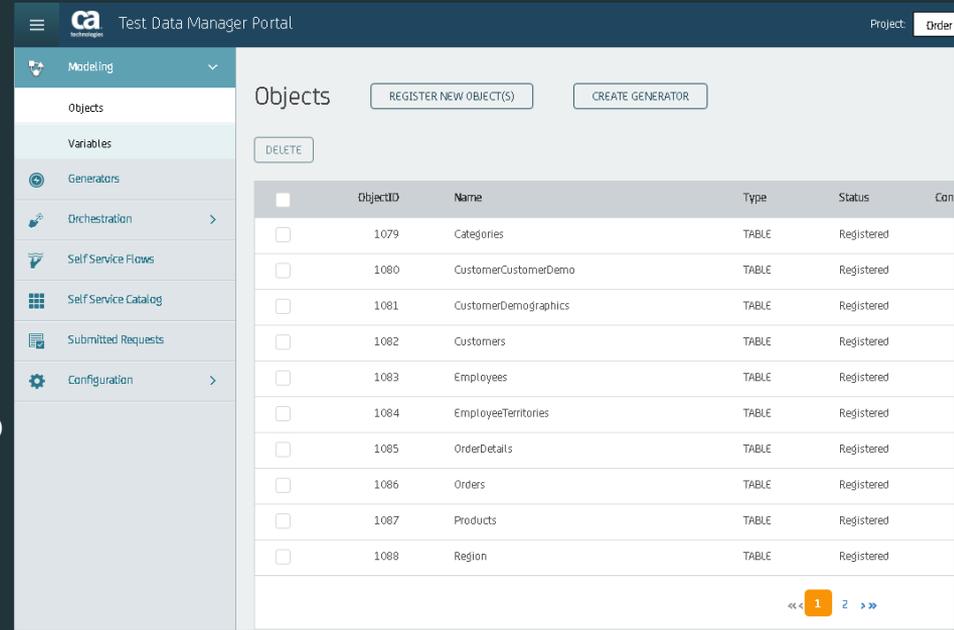
items

Row	*SHRED_ID	SHRED_GROUP_ID
1	@nextval(SHRED_ID_SEQ)@	~SHRED_GROUP_ID~

# CA TDM Portal

Modern web interface to complement Data maker

- Project and Version management capability
- Comprehensive variable management capability at project, version, generator and repository (new) levels
- Manage and maintain connection profiles to relational sources
- REST API support



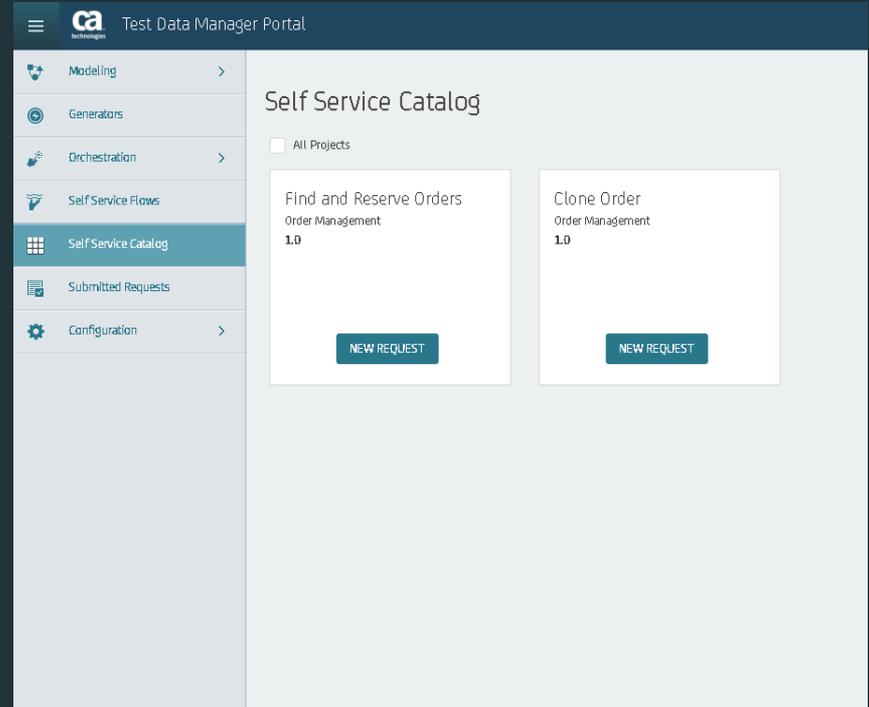
The screenshot displays the CA Test Data Manager Portal interface. The top navigation bar includes the CA Technologies logo, the text "Test Data Manager Portal", and a "Project" dropdown menu. The left sidebar contains a navigation menu with the following items: Modeling (selected), Objects, Variables, Generators, Orchestration, Self Service Flows, Self Service Catalog, Submitted Requests, and Configuration. The main content area is titled "Objects" and features three buttons: "REGISTER NEW OBJECT(S)", "CREATE GENERATOR", and "DELETE". Below these buttons is a table listing objects with columns for ObjectID, Name, Type, Status, and Connection. The table contains 10 rows of data, all with a status of "Registered".

<input type="checkbox"/>	ObjectID	Name	Type	Status	Conn
<input type="checkbox"/>	1079	Categories	TABLE	Registered	
<input type="checkbox"/>	1080	CustomerCustomerDemo	TABLE	Registered	
<input type="checkbox"/>	1081	CustomerDemoGraphics	TABLE	Registered	
<input type="checkbox"/>	1082	Customers	TABLE	Registered	
<input type="checkbox"/>	1083	Employees	TABLE	Registered	
<input type="checkbox"/>	1084	EmployeeTerritories	TABLE	Registered	
<input type="checkbox"/>	1085	OrderDetails	TABLE	Registered	
<input type="checkbox"/>	1086	Orders	TABLE	Registered	
<input type="checkbox"/>	1087	Products	TABLE	Registered	
<input type="checkbox"/>	1088	Region	TABLE	Registered	

# Tester Self Service

Enables agile team members submit data reservation requests

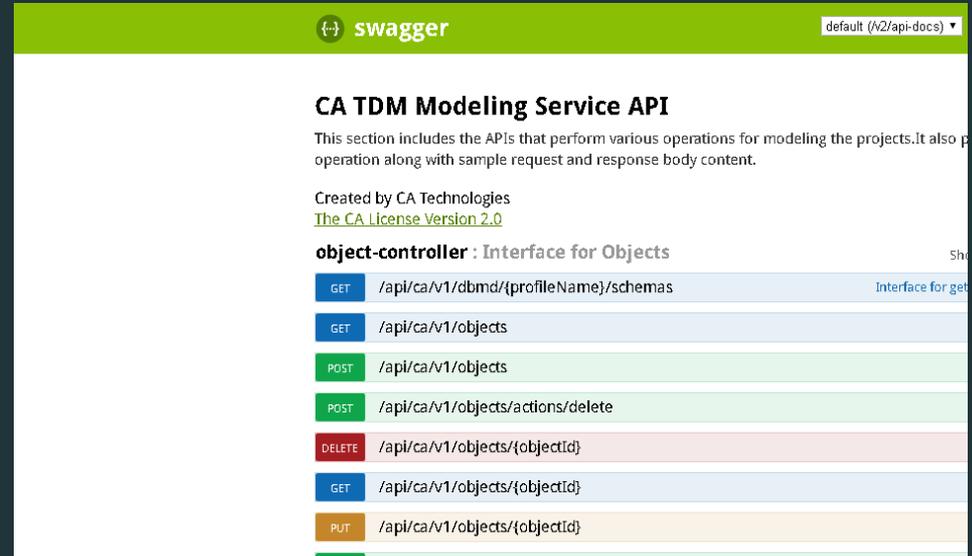
- New self-service interface that lets Testers dynamically request, reserve, and obtain the data they need to execute test cases
- New Job Engine that enhances the performance and eliminates the dependency on Remote Publish Engine
- Time-Based Request Scheduling
- Publish-Level Repeat Count



# REST API

Enable external systems to configure, execute, and monitor various CA TDM operations

- API support across multiple TDM services
  - TDMProjectService
  - TDMGeneratorService
  - TDMJobService
  - TDMPublisherService
- Swagger enabled APIs to enable interactive documentation, client SDK generation and discoverability.



The screenshot shows the Swagger UI for the CA TDM Modeling Service API. The header is green with the Swagger logo and a dropdown menu set to 'default (/v2/api-docs)'. The main content area is white and contains the following information:

- CA TDM Modeling Service API**
- This section includes the APIs that perform various operations for modeling the projects. It also provides sample request and response body content.
- Created by CA Technologies
- [The CA License Version 2.0](#)
- object-controller : Interface for Objects**
- A list of API endpoints with their methods and paths:
  - GET /api/ca/v1/dbmd/{profileName}/schemas
  - GET /api/ca/v1/objects
  - POST /api/ca/v1/objects
  - POST /api/ca/v1/objects/actions/delete
  - DELETE /api/ca/v1/objects/{objectId}
  - GET /api/ca/v1/objects/{objectId}
  - PUT /api/ca/v1/objects/{objectId}

# CA TDM – Mainframe enhancement delivered in 4.0

- Significantly improve usability of Masking IMS DB
- Reduced manual back and forth between mainframe and distributed

The screenshot displays the 'CA TDM Copybook Parser' application window. The title bar indicates the version is 0.0.0.0 dated 2016/11/07. The application has a menu bar with options: 'Connection Profile', 'Get Remote Copybook Extract', 'Parse Copybook Extract', 'Extract Data', 'Mask Data', and 'Reload Data'. The main content area is titled 'Fill Details To Connect IMS DB' and contains the following fields:

- Connection Profile List: CAW\_SRC (dropdown)
- Connection Profile Name: Source (text input)
- User Space ID: TDMFM02.CAW (text input)
- Server Name: ca31.ca.com (text input)
- Port No: 9201 (text input)
- User Name: TDMFM02 (text input)
- Password: \*\*\*\*\* (password input)
- SysPlex Name: PLEXC1 (text input)
- Zos Name: CA31 (text input)
- File Master Name: USER.CLIST(TDMFMV10) (text input) with a 'Fetch IMS Params' button to its right.
- IMS Env List: (dropdown menu)
- IMS ENV DataSet Name: (dropdown menu)
- Navigate Database:  Using PSB  Using DBD

Moving  
forward

# CA TDM 4.x – Major themes

## Tester Self Service

- Interactive Test data search
- Simplified Reserve
- Enterprise class copy & clone
- Enterprise class custom actions via Javelin
- Advanced data search via data shopping
- Coverage analysis - data visualization for Testers

## Enhanced Mainframe

- Support for larger Copy book structures
- Enhanced Copy book parsing to improve usability
- Reduce Distributed-Mainframe back and forth by using DB2 as Synthetic Data Staging
- Unified consistent masking for non-MF and Mainframe environments

## Compliance Assurance

- PII Discovery customizable Content packs
- Improved audit and reporting for masking process
- Advanced masking job track ability
- Extend platform support

# TDM 4.x – Transforming Tester Experience

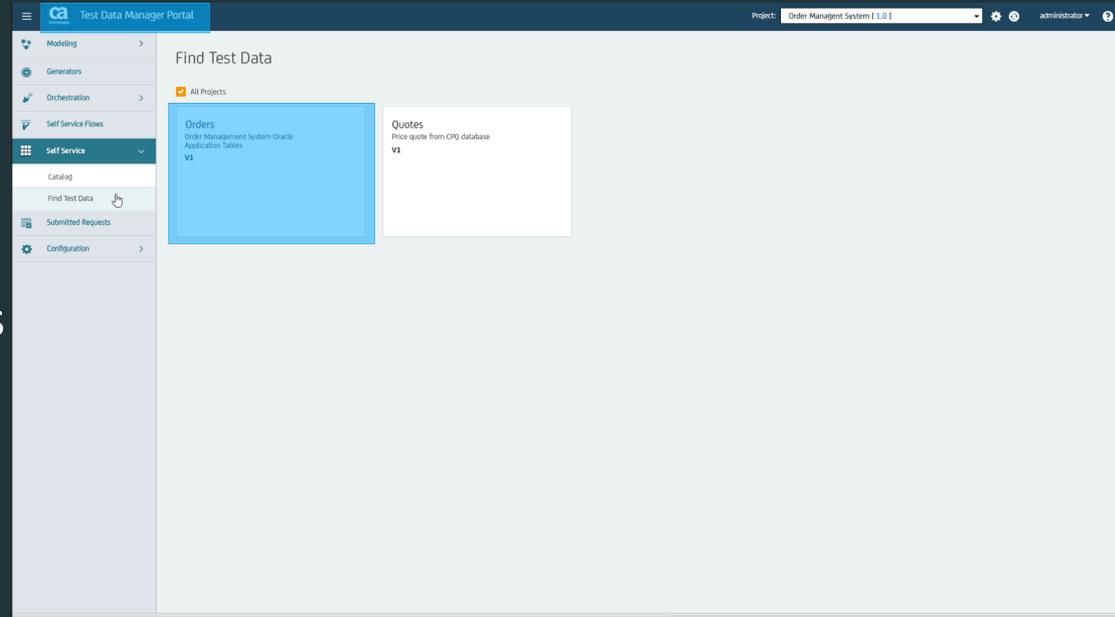
- Testers are looking for more interactive experience from Find & Reserve
  - Explore Business objects in different environments
  - Reserve
  - Copy/Clone
  - Generate

The screenshot shows the 'Test Data Manager Portal' interface. The main content area is titled 'Orders' and displays a table of data. The table has the following columns: OrderID, Product Name, Category Name, and Status. The data is filtered by Environment 'LMT'. The table shows 8 rows of data, with the first and fourth rows highlighted in orange. The first row is selected with a checkmark. The table is paginated to 100 items per page. The page includes a 'GET DATA' button and 'RESERVE' and 'CANCEL' buttons at the bottom right.

OrderID	Product Name	Category Name	Status	
<input checked="" type="checkbox"/>	121938	Vegemite	Vegemite	Available
<input type="checkbox"/>	122018	Cream	Cream	Reserved
<input type="checkbox"/>	122019	Cereals	Cereals	Reserved
<input type="checkbox"/>	122029	Crumbs	Crumbs	Available
<input checked="" type="checkbox"/>	122018	Tofu	Tofu	Available
<input type="checkbox"/>	122019	Pasta	Pasta	Available
<input type="checkbox"/>	122029	Milk	Milk	Available
<input type="checkbox"/>	122055	Butters	Butters	Available

# TDM 4.x – TDE Experience

- TDE Likes to make new business objects available to Testers quickly
  - Model Test Data Objects
  - Define Environments
  - Publish new set of objects as service

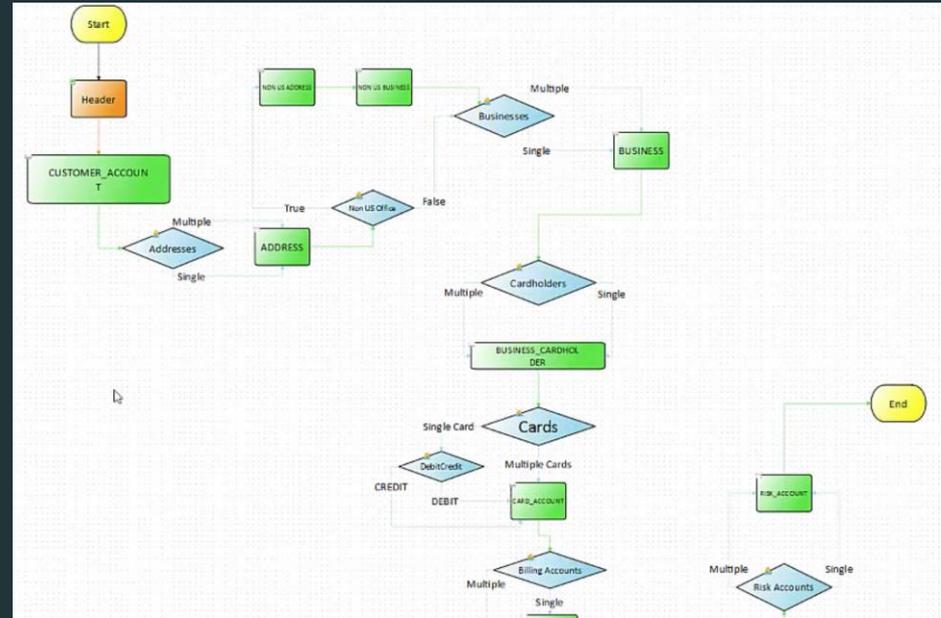


# TDM 4.x – Copy & Clone Data service TDE Experience

- Today to setup copy/clone is a tedious task which spans across subset and DM data assistant accelerator.
- Goal is to help TDE setup copy and clone service via wizard based process
- Improve maintainability
  - Generate more maintainable TDM Content
  - Reconciled schema version changes

# TDM/ArD integrated – Model based Data Gen (DataBuilder)

- Model based approach to data generation via ArD and TDM integration
- Generate scripts to create and find the correct data based on the model

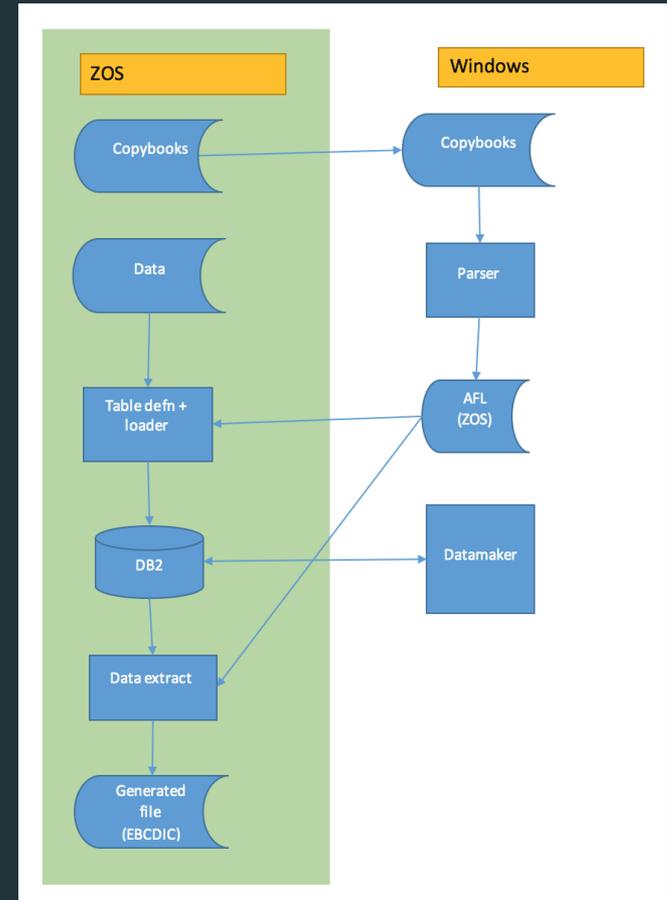
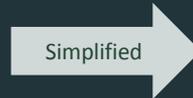
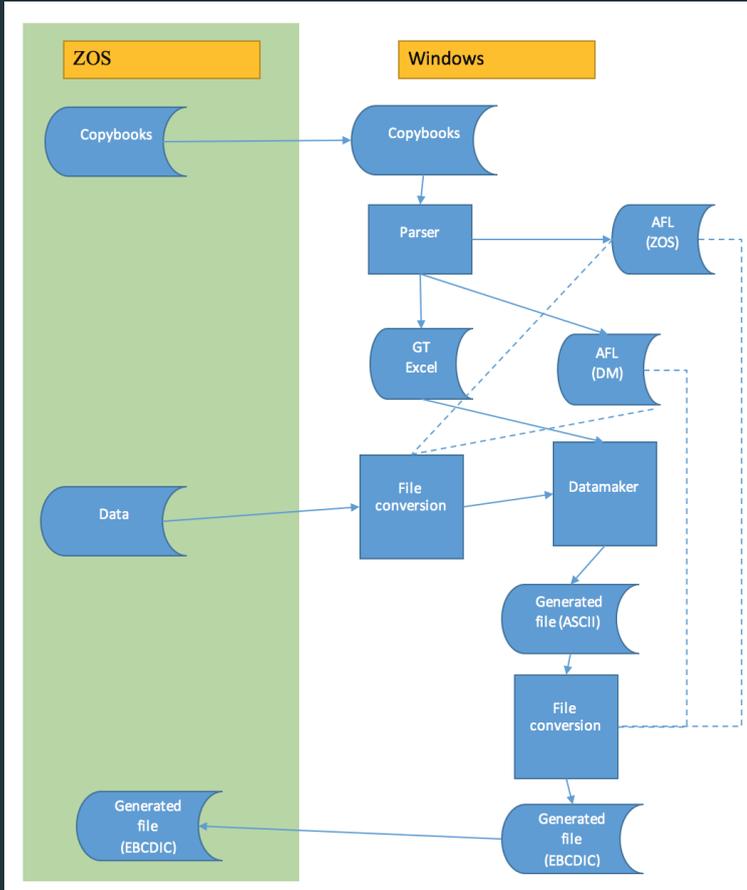


# TDM 4.x - Improving Copybook parsing experience

- Copy Book parser enhancements
  - Specify pre-parse replacements, eg to replace “:DM:” with spaces, or to replace tab characters with spaces
  - Resolve COPY/INCLUDE statements automatically
  - Represent redefined or redefining variables by separate structures for data generation

The screenshot displays the 'Record' configuration window in the TDM 4.x Copybook parser. The window title is 'File Name:- Test3'. At the top, there are several buttons: 'Configuration', 'New Definition', 'Open Definition', 'Update Copybooks', 'Display Tree', and 'Output Files'. The main area is divided into two sections. The top section, labeled 'Record', contains a 'Record Name' field with the value 'CBL-REC', a 'Parent Record' dropdown menu, and a 'Move Before' dropdown menu. Below this is a 'Record Conditions' section, which is a table with four columns: 'Field', 'Comparison', 'Value', and 'AND/OR'. The table is currently empty. At the bottom of the window, there are 'Update' and 'Cancel' buttons, followed by a text input field.

# TDM 4.x - Enhance Mainframe File Gen usability



# TDM 4.x – Reusable PII discovery content

- Discovering PII is first step towards compliance assurance
- What to discover can be regional, country and industry specific
- Allowing field, customers and partners to build and maintain PII discovery content that can be re-used will help scale
- Create, maintain, import and export PII Discovery and Masking content packages containing
  - PII Discovery templates e.g. Regex to identify SSN etc.
  - Automated recommended masking function for each discovered PII

# Roadmap: CA Test Data Manager

	Delivered	Planned	Under Consideration
Product/Releases	CA Test Data Manager 4.0	CA Test Data Manager 4.1	CA Test Data Manager 4.x
Marquee Features	<ul style="list-style-type: none"> <li>Improved data generation performance via 64bit Data Generation Engine – Advance functions</li> </ul>	<ul style="list-style-type: none"> <li><b>Mainframe usability enhancements</b> <ul style="list-style-type: none"> <li>Improve Copybook Parsing usability</li> <li>Enhanced Copy book based file generation usability</li> </ul> </li> <li><b>Tester Self Service</b> <ul style="list-style-type: none"> <li>Interactive Test Data Find</li> <li>Interactive Find &amp; Actions: Reserve, Release</li> <li>Test Data Find and Reserve APIs</li> </ul> </li> <li><b>Enhance maintainability</b> of TDM content using Global parametrized custom macros</li> </ul>	<ul style="list-style-type: none"> <li><b>Data Generation</b> support for Hadoop HBase</li> <li>Improve <b>XML Generation usability</b> via Enforce XSD restrictions</li> <li><b>Auto expiring</b> data reservations</li> <li><b>Enhanced Copy/Clone service generation</b> with improved maintainability and performance</li> <li>Copy/Clone and custom actions from Tester Self service</li> <li>TDM content promotions</li> <li>Advanced data discovery to Reduce time and errors in setting up Test data services</li> <li>Data dictionary for ease of Test Data Service maintenance</li> <li>Audit reporting for Compliance assurance</li> <li>Masking support for Hadoop HBase</li> <li>Container delivery of TDM</li> <li>Enhanced data masking and Subsetting with better track ability and reporting</li> </ul>
	Currently GA		



Q & A

# Major Drivers for CA TDM

## Compliance

- GDPR
- Industry specific regulation

## Testing Efficiencies

- Agile Adoption
- Test Automation

## Automated Consistent Data

- Across multiple data sources
- Distributed to mainframe to business apps