

CA Test Data Manager

Roadmap

Arif Muhammad
Product Management - TDM

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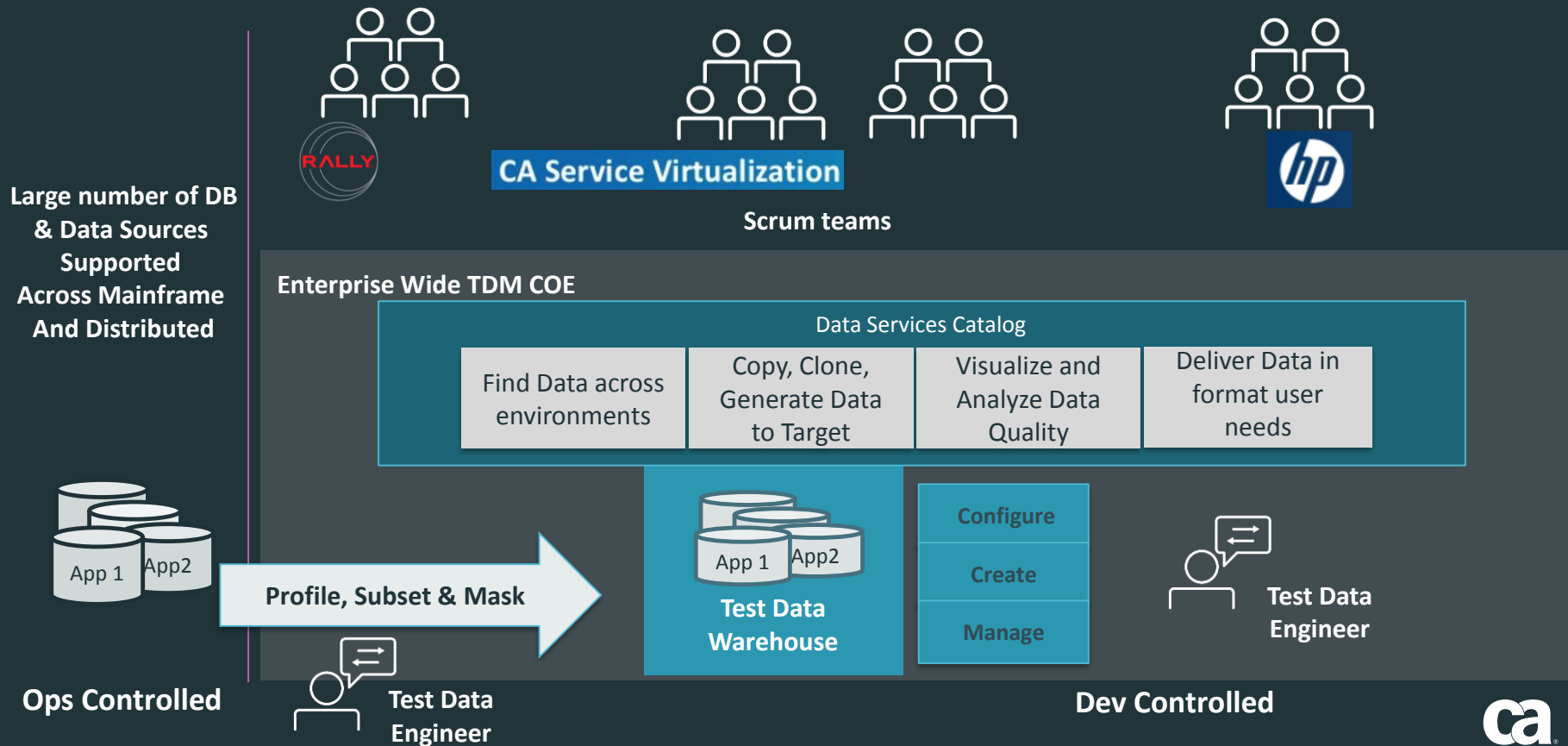
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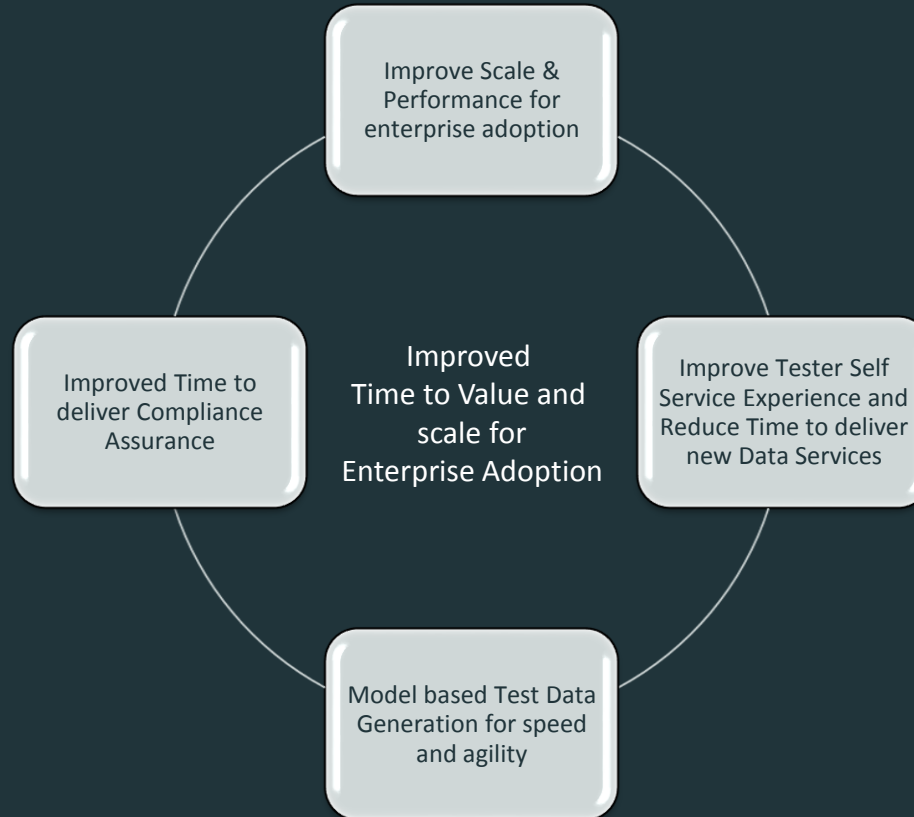
Agenda

- 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



CA TDM Strategic goals



CA Test Data Manager 4.0

Started Modernization of our Product Architecture

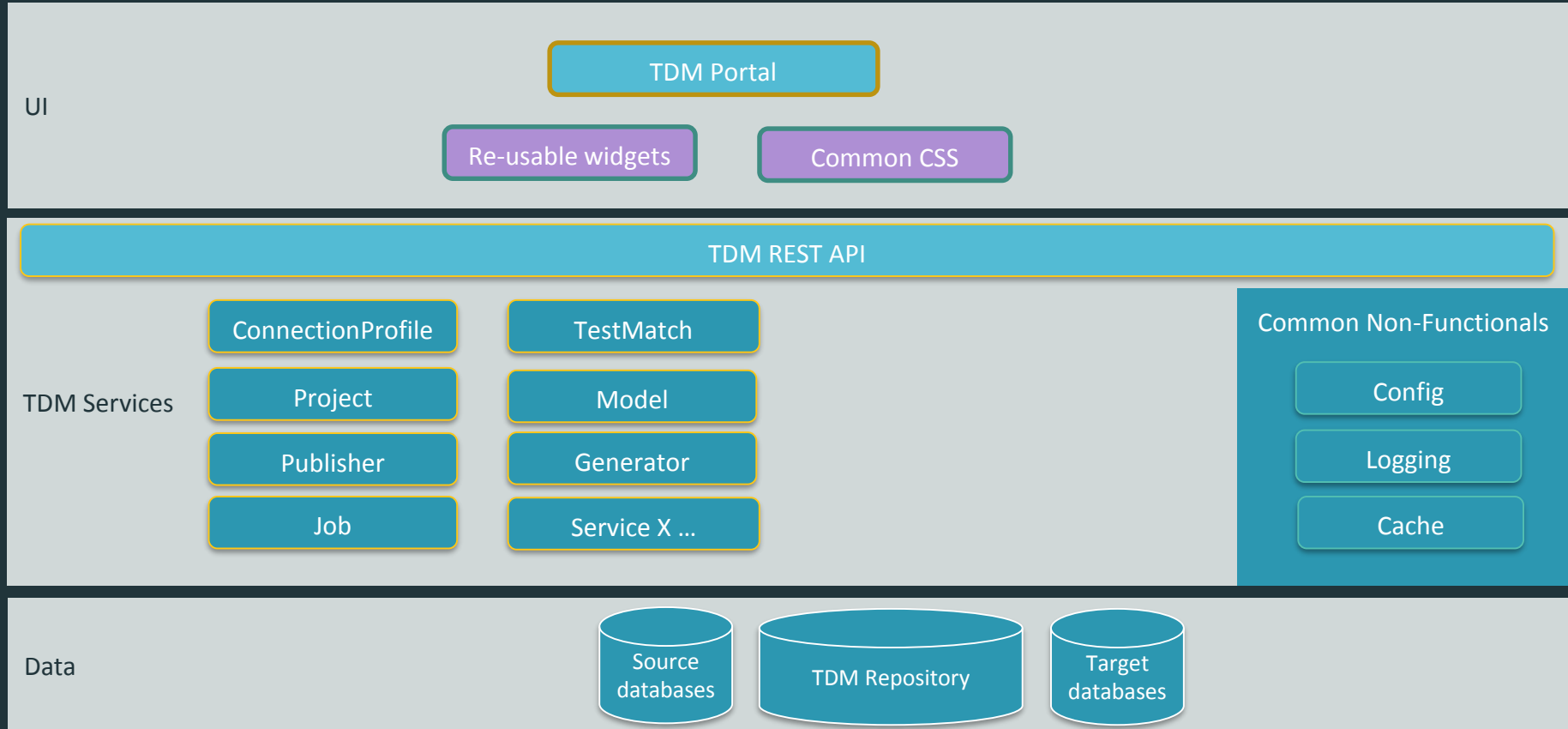
Technology

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

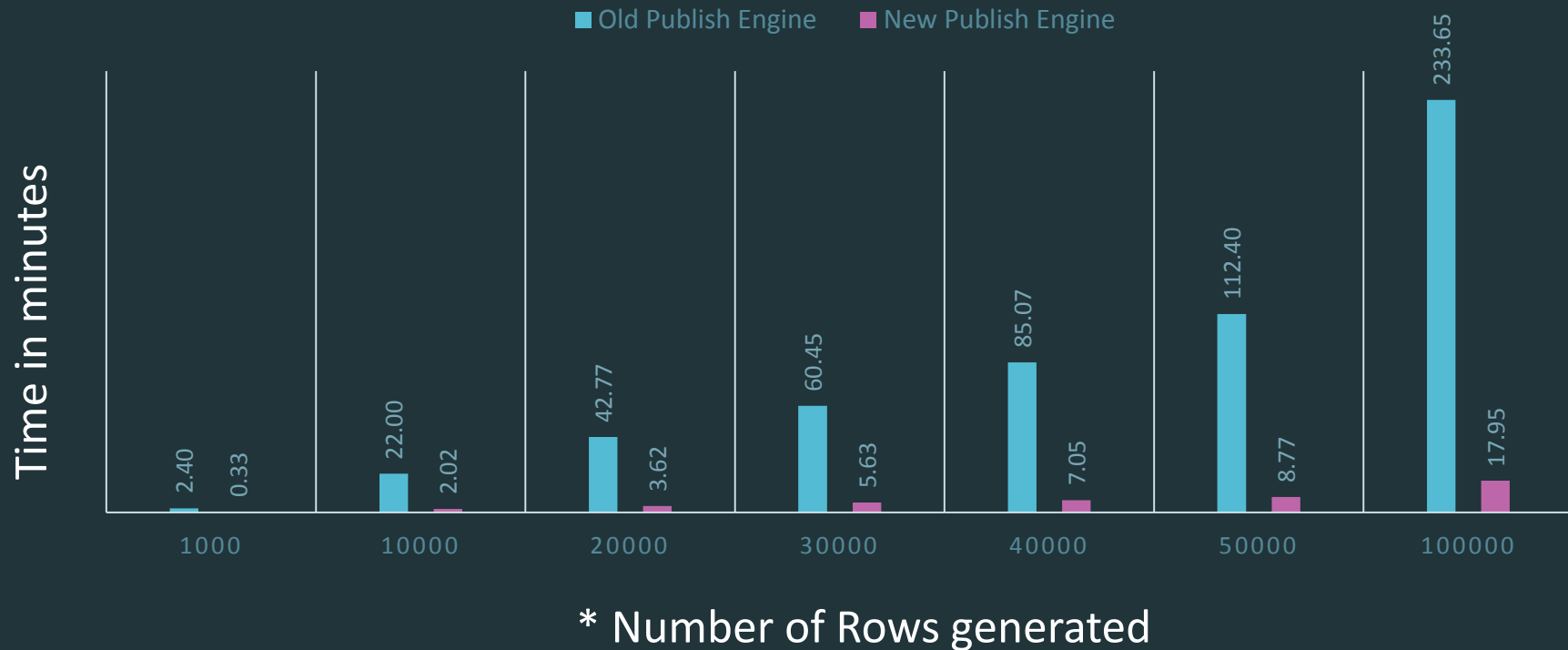
Product Architecture

- 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. On the left is a navigation menu with options: Modeling, Objects, Variables, Generators (selected), Orchestration, Self Service Flows, Self Service Catalog, Submitted Requests, and Configuration. The main panel shows the 'Generators > PO Generator' configuration. It includes a table with columns: Description, ID, Project, and Project Version. The data row shows 'PO Generator', '2387', 'Purchase Order', and '1.0'. Below this are buttons for 'SELECT TABLES' and 'ACTIONS'. The configuration area shows three sections: 'purchaseOrder_tdm_root', 'billTo', and 'items', each with a table of parameters. The 'purchaseOrder_tdm_root' table has columns Row, SHRED_ID, SHRED_GROUP_ID, and orderDate, with a single row containing a template value. The 'billTo' table has columns Row, SHRED_ID, SHRED_GROUP_ID, country, and name, with a single row containing template values and 'US' and 'Robert Smith'. The 'items' table has columns Row, SHRED_ID, and SHRED_GROUP_ID, with a single row containing a template value.

Description	ID	Project	Project Version
PO Generator	2387	Purchase Order	1.0

SELECT TABLES ACTIONS

purchaseOrder_tdm_root

Row	*SHRED_ID	SHRED_GROUP_ID	orderDate
1	@nextval(SHRED_ID_SEQ)@	~SHRED_GROUP_ID~	1999-10-01

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 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 includes buttons for 'REGISTER NEW OBJECT(S)', 'CREATE GENERATOR', and 'DELETE'. Below these buttons is a table listing various objects.

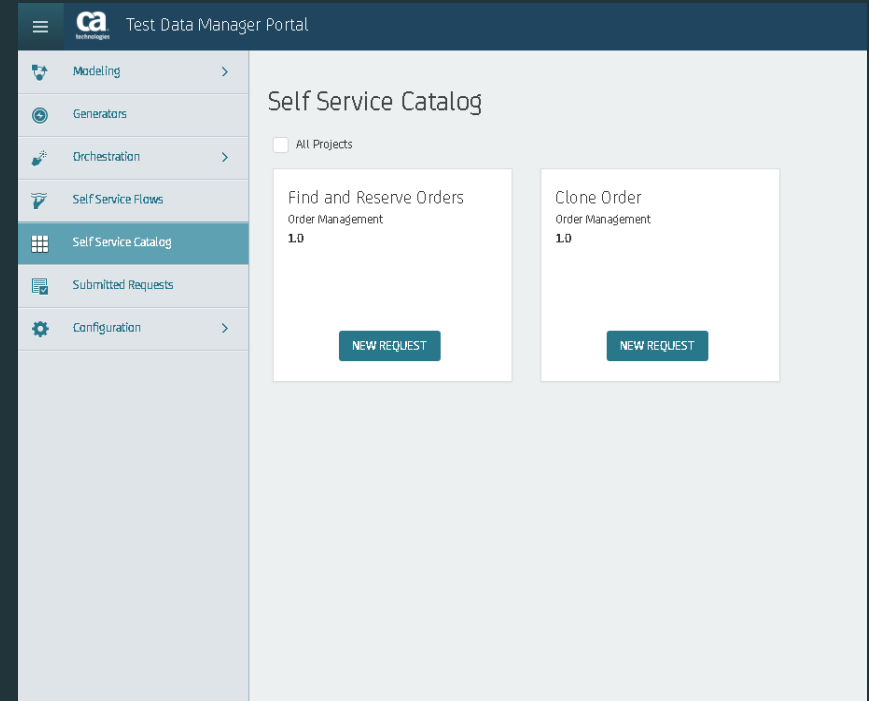
	ObjectID	Name	Type	Status	Con
<input type="checkbox"/>	1079	Categories	TABLE	Registered	
<input type="checkbox"/>	1080	CustomerCustomerDemo	TABLE	Registered	
<input type="checkbox"/>	1081	CustomerDemographics	TABLE	Registered	
<input type="checkbox"/>	1082	Customers	TABLE	Registered	
<input type="checkbox"/>	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	

At the bottom right of the table, there is a pagination control showing '1' and navigation arrows.

Tester Self Service

Enables agile team members submit data reservation requests

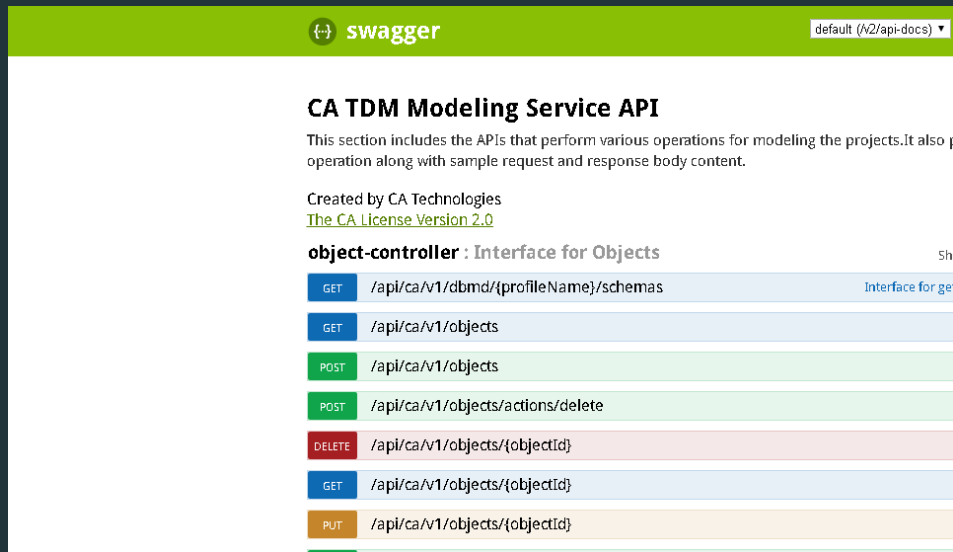
- New self-service interface that lets Testers dynamically request, reserve, and obtain the data they need to execute test cases
- New Job Engine that enhances the performance and eliminates the dependency on Remote Publish Engine
- Time-Based Request Scheduling
- Publish-Level Repeat Count



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.



swagger default (/v2/api-docs)

CA TDM Modeling Service API

This section includes the APIs that perform various operations for modeling the projects. It also provides an operation along with sample request and response body content.

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object-controller : Interface for Objects

Method	Endpoint	Description
GET	/api/ca/v1/dbmd/{profileName}/schemas	Interface for get
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 and the date is 2016/11/07. The application has a tabbed interface with the following tabs: 'Connection Profile', 'Get Remote Copybook Extract', 'Parse Copybook Extract', 'Extract Data', 'Mask Data', and 'Reload Data'. The 'Connection Profile' tab is currently active, showing a form titled 'Fill Details To Connect IMS DB'. The form contains the following fields and values:

- Connection Profile List: CAW_SRC (dropdown)
- Connection Profile Name: Source (text)
- User Space ID: TDMFM02.CAW (text)
- Server Name: ca31.ca.com (text)
- Port No: 9201 (text)
- User Name: TDMFM02 (text)
- Password: (masked with asterisks)
- SysPlex Name: PLEXC1 (text)
- Zos Name: CA31 (text)
- File Master Name: USER.CLIST(TDMFMV10) (text)
- IMS Env List: (empty dropdown)
- IMS ENV DataSet Name: (empty dropdown)
- Navigate Database: ☒ Using DBD (radio buttons)

A 'Fetch IMS Params' button is located to the right of the 'File Master Name' field.

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

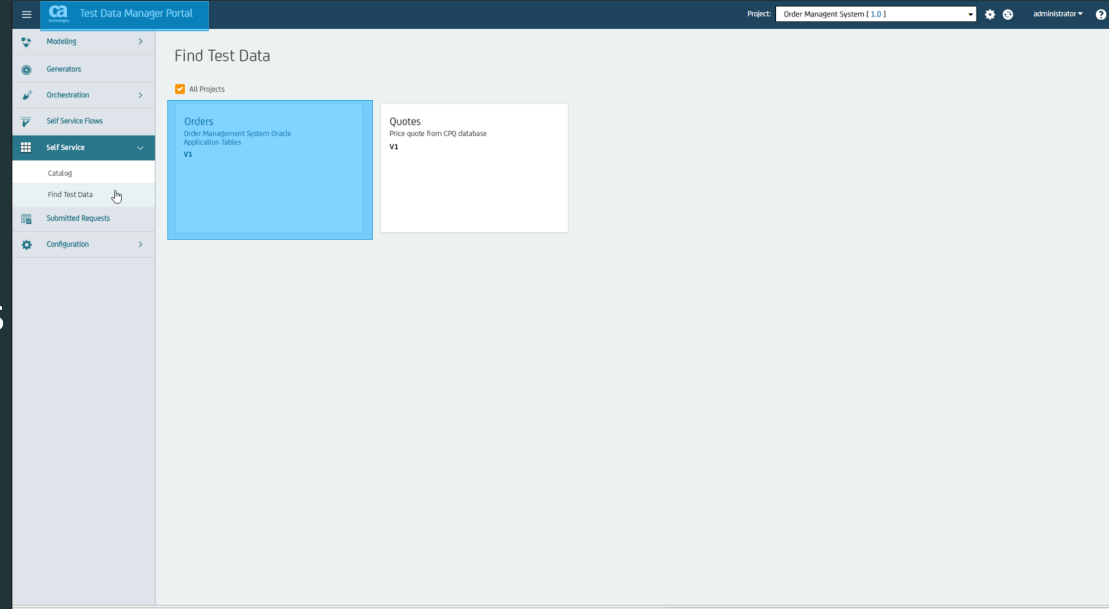
- Testers are looking for more interactive experience from Find & Reserve
 - Explore Business objects in different environments
 - Reserve
 - Copy/Clone
 - Generate

The screenshot displays the 'Test Data Manager Portal' interface. The left sidebar contains navigation links: Modeling, Generators, Orchestration, Self Service Flows, Sell Service (selected), Catalog, Find Test Data, Submitted Requests, and Configuration. The main content area is titled 'Find Test Data > Orders'. Below this, there's a section for 'Orders' with an 'Environment' dropdown set to 'UAT'. A placeholder for data filters is present. A 'GET DATA' button is visible. Below the button is a table with columns: OrderID, Product Name, Category Name, and Status. The table contains several rows of data, with some rows highlighted in orange. At the bottom right, there are 'RESERVE' and 'CANCEL' buttons.

OrderID	Product Name	Category Name	Status
121908	Vegemite	Vegemite	Available
122008	Cream	Cream	Reserved
122009	Cereals	Cereals	Reserved
122009	Crumbs	Crumbs	Available
122008	Tofu	Tofu	Available
122009	Pasta	Pasta	Available
122009	Milk	Milk	Available
122005	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

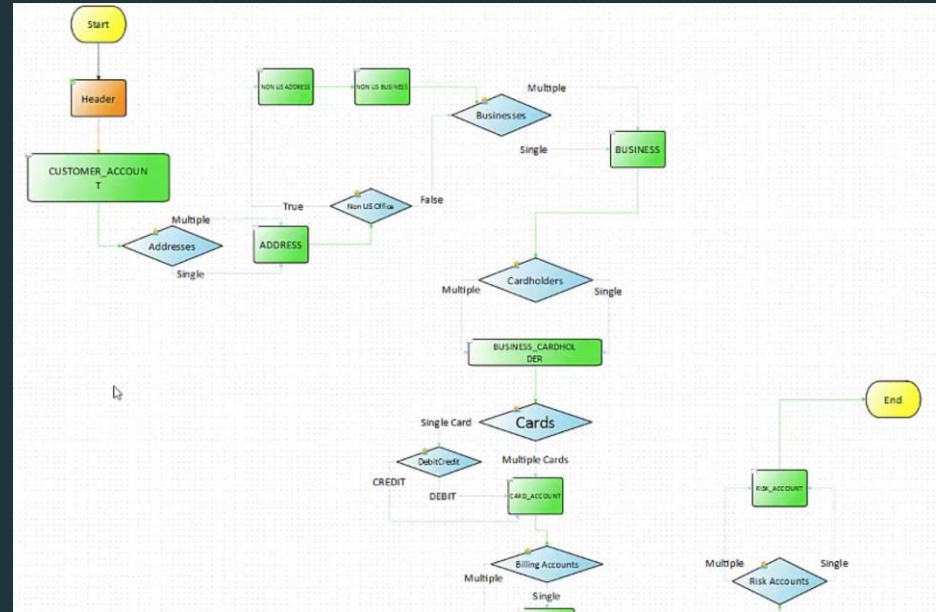


TDM 4.x – Copy & Clone Data service TDE Experience

- 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



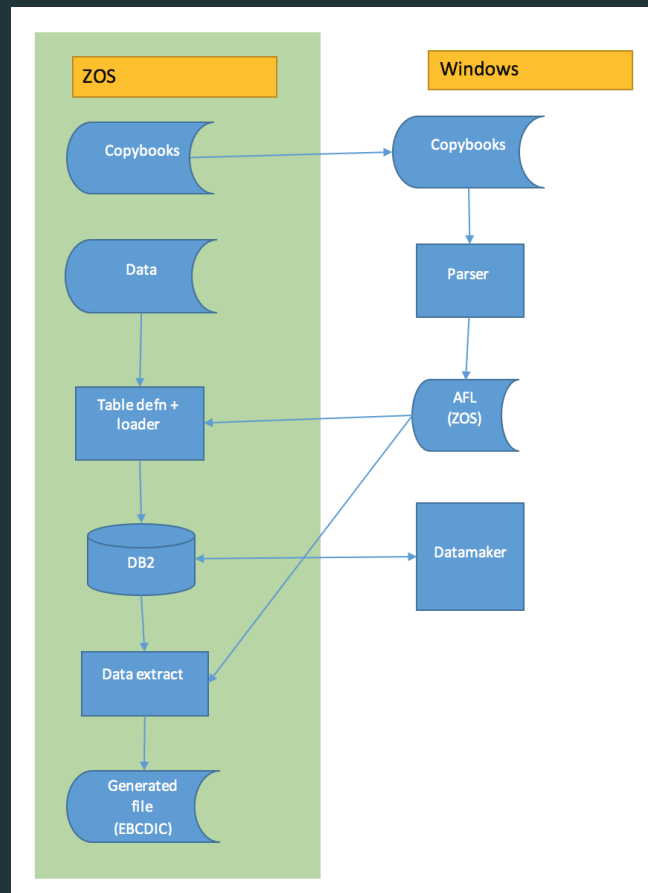
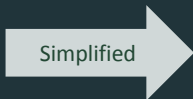
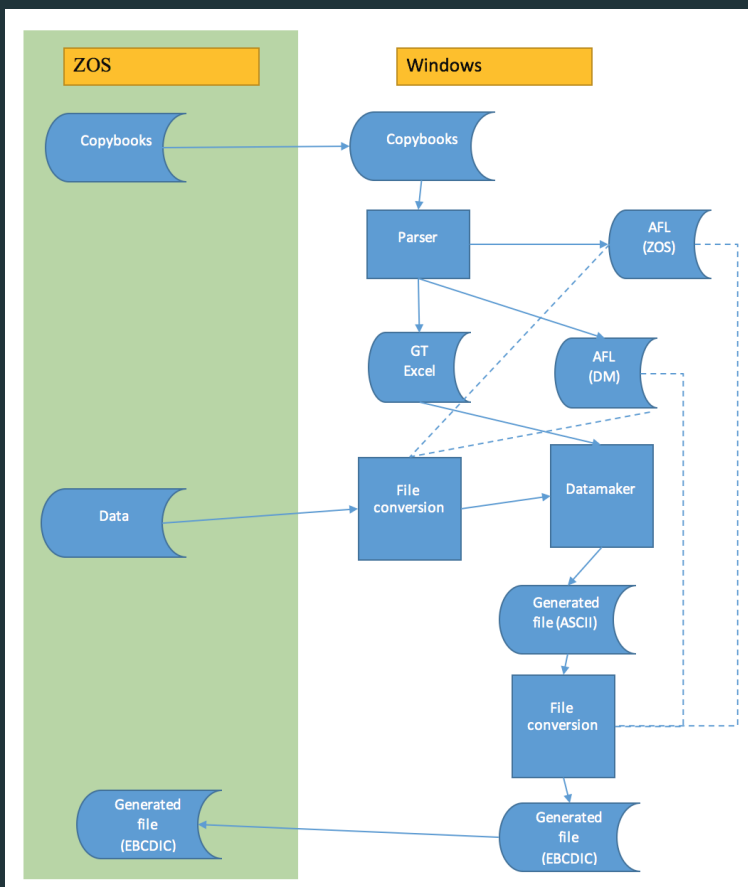
TDM 4.x - Improving Copybook parsing experience

- 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 shows a software window titled 'File Name:- Test3'. It features a toolbar with buttons: 'Configuration', 'New Definition', 'Open Definition', 'Update Copybooks', 'Display Tree', and 'Output Files'. The main area is divided into two panes. The left pane is empty. The right pane has a 'Record' tab selected. It contains the following fields:

- 'Record Name' with the value 'CBL-REC'.
- 'Parent Record' with a dropdown arrow.
- 'Move Before' with a dropdown arrow.
- 'Record Conditions' section containing a table with headers: 'Field', 'Comparison', 'Value', and 'AND/OR'. The table has two empty rows below the header.
- 'Update' and 'Cancel' buttons at the bottom.

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