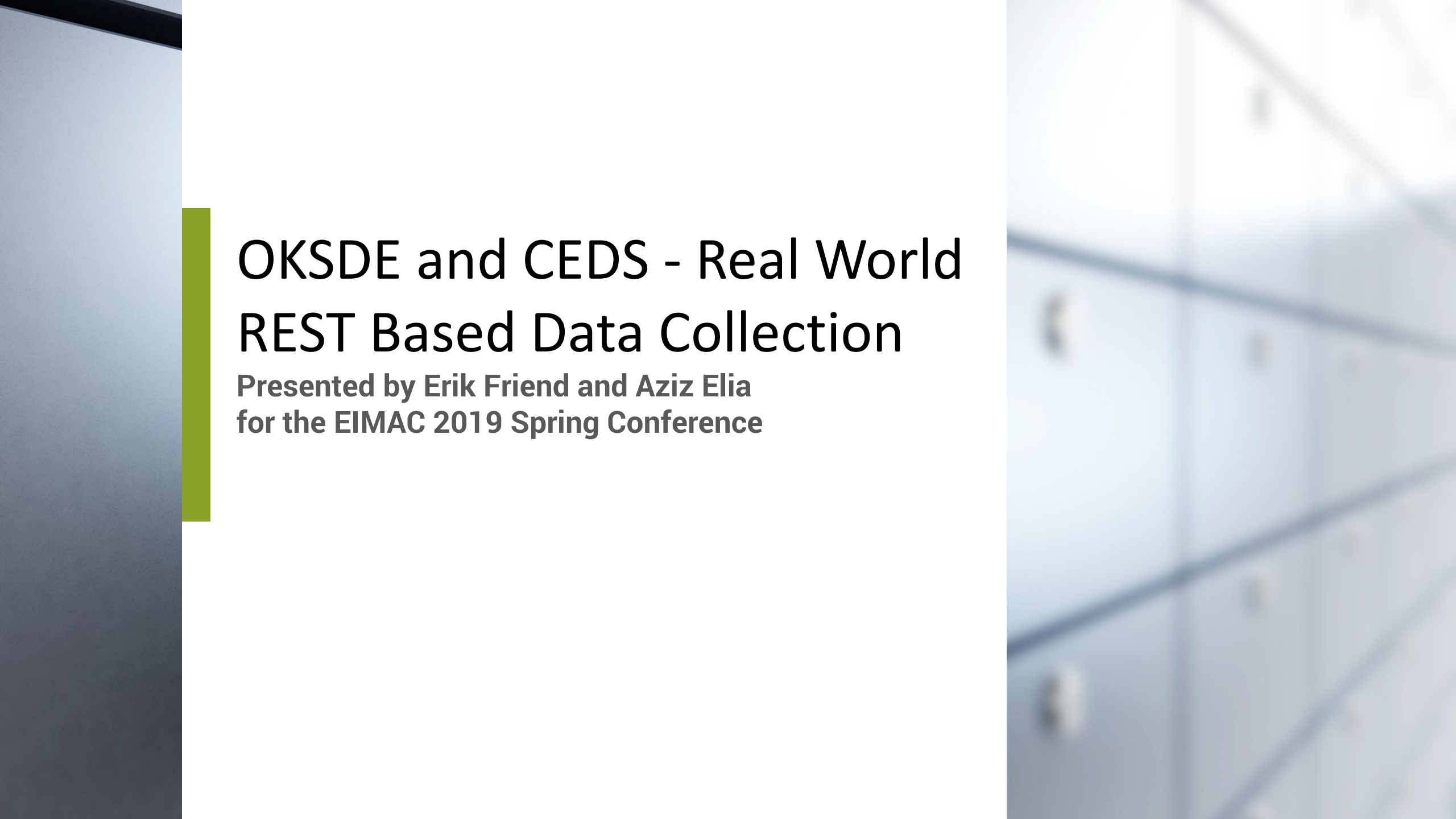




OKSDE and CEDS - Real World REST Based Data Collection

Presented by Erik Friend and Aziz Elia
for the EIMAC 2019 Spring Conference



PROJECT HISTORY

HISTORY

The WAVE project began in response to legislation from the state government in the 2005-2006 school year that required all school district to report student data using the SIF protocol and standards.

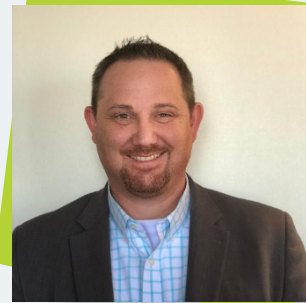
The state enlisted CPSI to create a solution at the state that would withstand the demand of keeping up with state reporting via SIF. This system would need to handle incoming data in real time from over 544 school districts across the state. This would mean being able to handle millions of records.

CPSI delivered a system that has been in use for over 13 years and has continued to move forwards, leveraging new technologies and staying ahead of the game.

MEET THE PRESENTERS

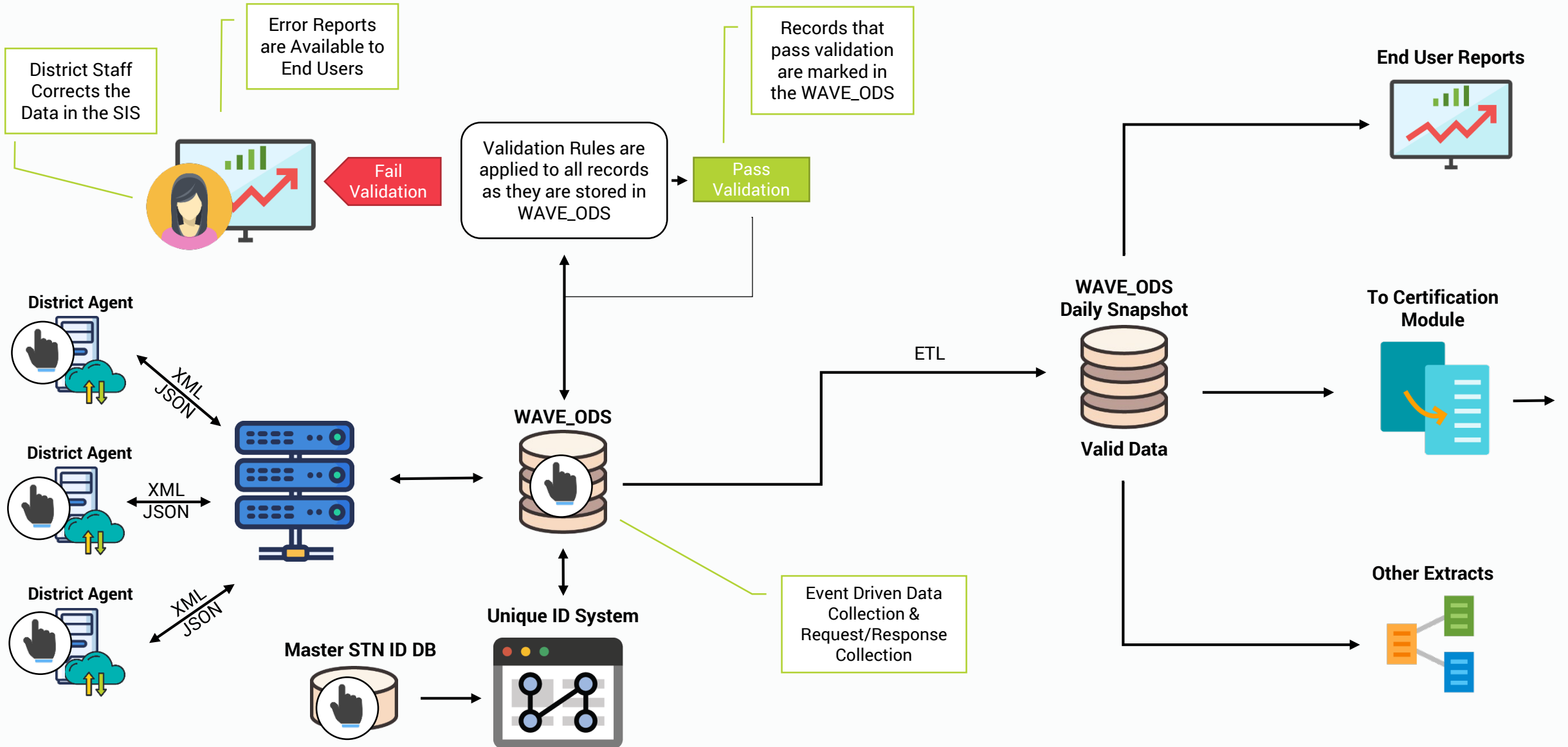


**Aziz
Elia**
Chief Software
Architect

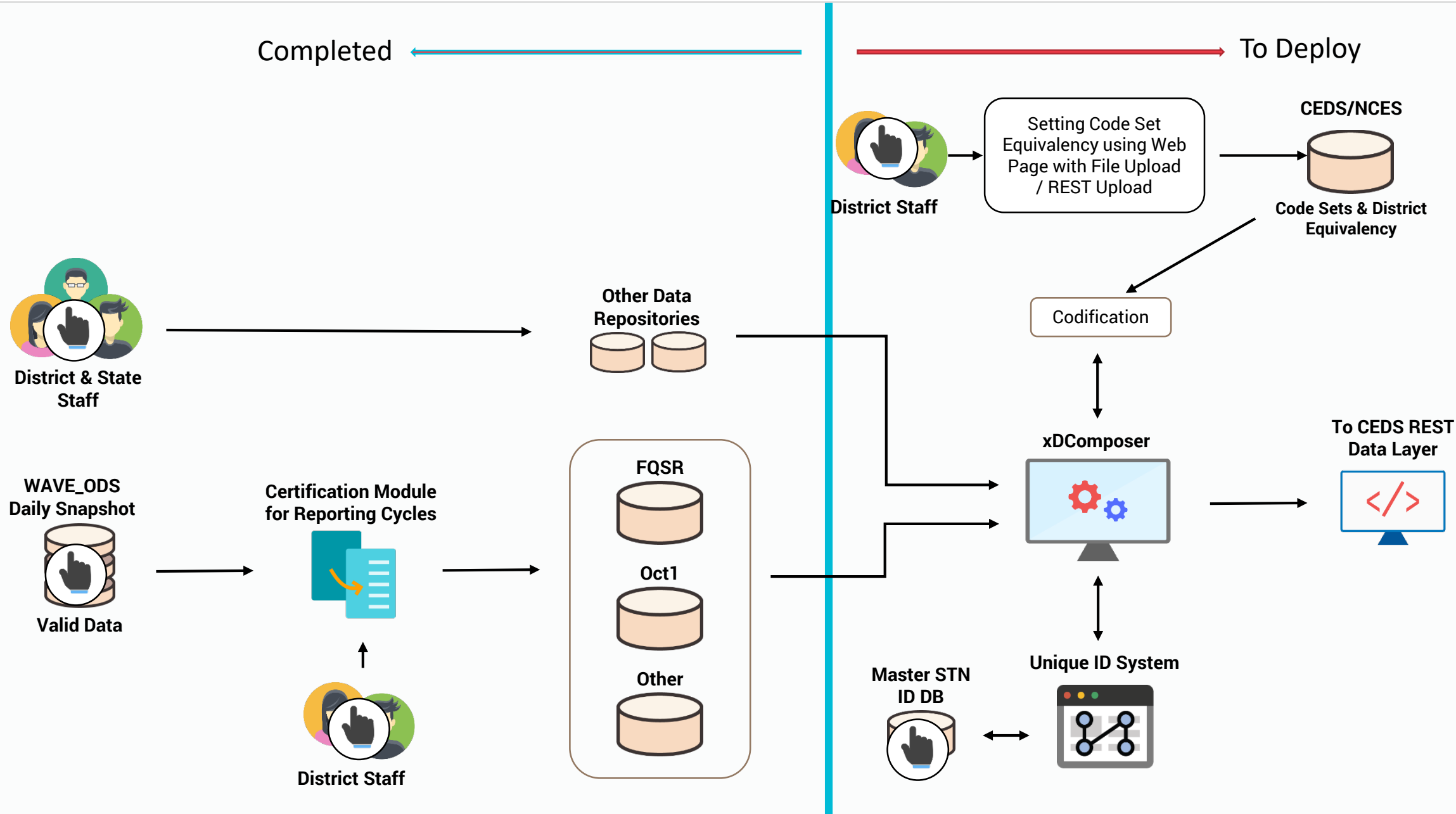


**Erik
Friend**
Chief Data Officer
at OKSDE

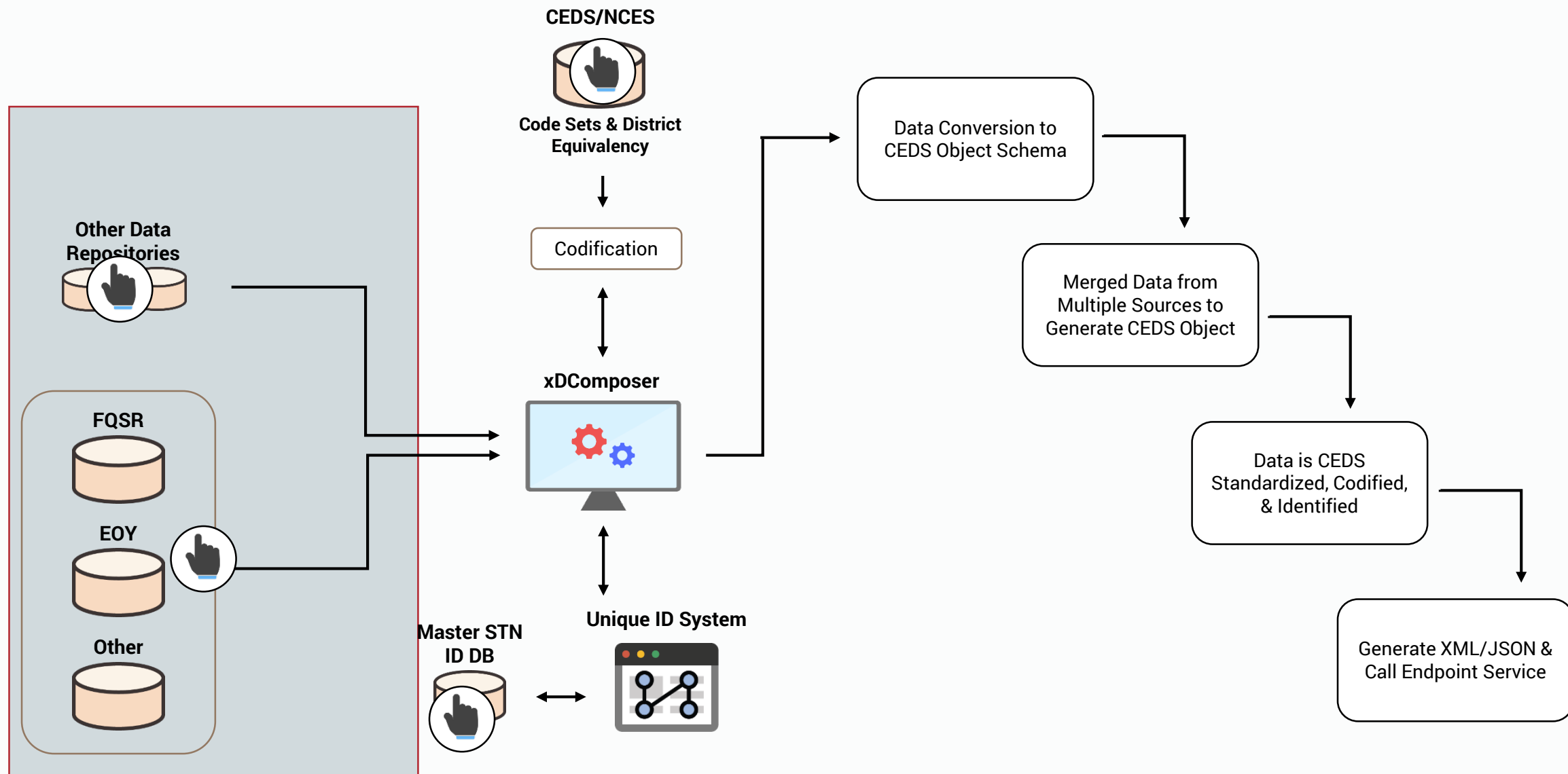
System Data Flow Overview



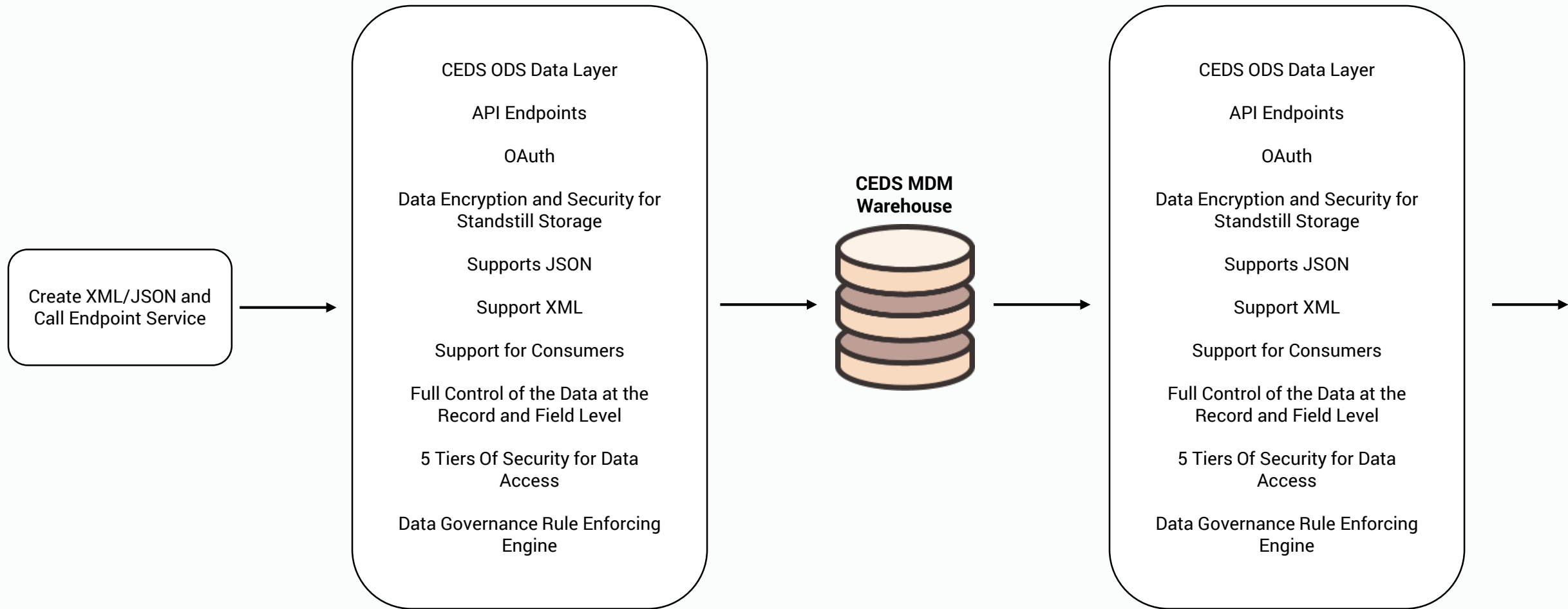
System Flow – Part 2



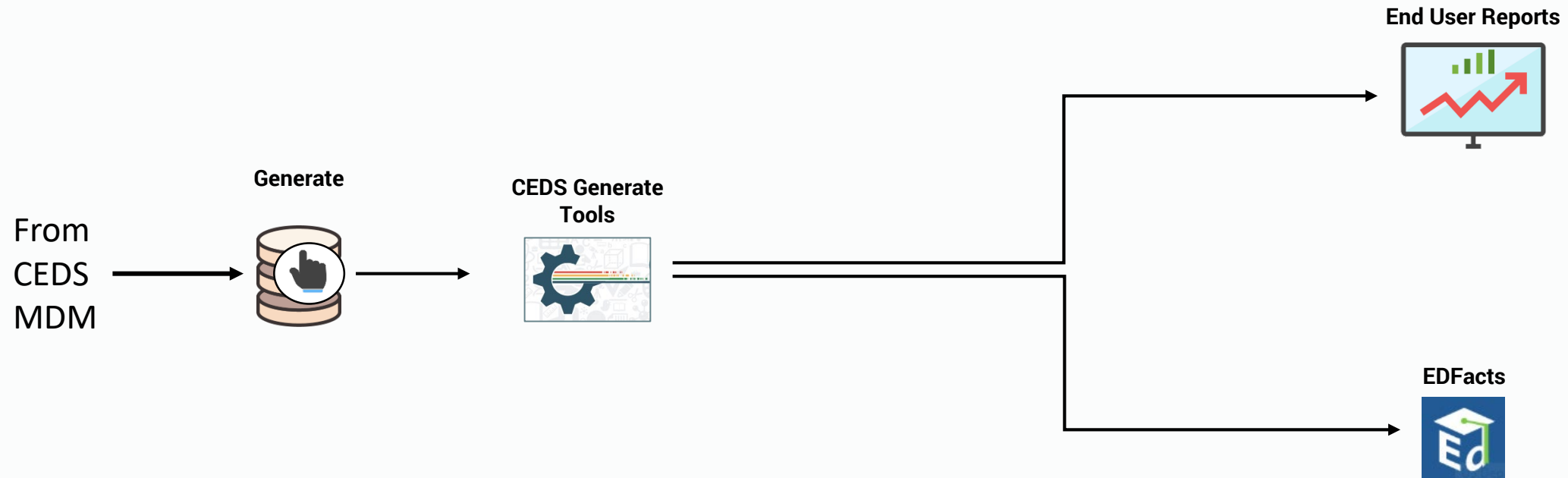
System Flow – Part 3



System Flow – Part 4



System Flow – Part 5



SIF Objects Included

- AttendanceCodeInfo
- CalendarDate
- CalendarSummary
- DisciplineIncident
- LEAInfo
- RoomInfo
- RoomType
- SchoolCourseInfo
- SchoolInfo
- SectionInfo
- StaffAssignment
- StaffPersonal
- StudentAttendanceSummary

- StudentContact
- StudentDailyAttendance
- StudentPersonal
- StudentSchoolEnrollment
- StudentSectionEnrollment
- TermInfo
- MarkInfo
- MarkValueInfo
- SectionMarkInfo
- StudentSectionMarks
- GradingCategory

Total Number of Records Updated and Entered to the Wave ODS on a Weekly bases both via Real Time Events and the Request Response Process.

46,000,000 +

WAVE ODS Record Stats

990 GB

Total DB Size for
Wave ODS
2017-2018
School Year

971,492

Student Personal
Records

1,558,145

Student School
Enrollment Records

1,488,723

Student Section Marks
Records

20,763,414

Student Personal
Extended Elements
Records

3,225,081

Student School
Enrollment Extend
Element Records

837,516

Student Section
Enrollment Records

WAVE ODS Average Weekly Requests

8,810 Average Total Requests per Week	1,973 ODS01 Average Requests Per Week	1,920 ODS02 Average Requests Per Week	1,524 ODS03 Average Requests Per Week
	1,943 ODS04 Average Requests Per Week	1,450 ODS05 Average Requests Per Week	5 Total Servers

Wave ODS Validation Stats

Number of Validations by Object

- **141** Student Personal
- **44** Student School Enrollment
- **30** Staff Personal
- **27** Section Info
- **26** Staff Assignment
- **25** Calendar Summary
- **21** School Info
- **20** School Course Info
- **17** LEA Info
- **17** Student Attendance Summary
- **14** Term Info
- **11** Student Contact
- **8** Student Daily Attendance
- **8** Help Desk
- **8** Calendar Date
- **7** Student Section Enrollment
- **4** Attendance Code Info
- **2** Student Section Marks
- **2** Validation Errors
- **1** Student Academic Record

433 Total Validations

971,492 Student Personal Records x 141 Validations =

136,980,372

Validation Checks for Student Personal

1,558,145 Student School Enrollment Records x 44 Validations =

65,558,380

Validation Checks for Student School Enrollment

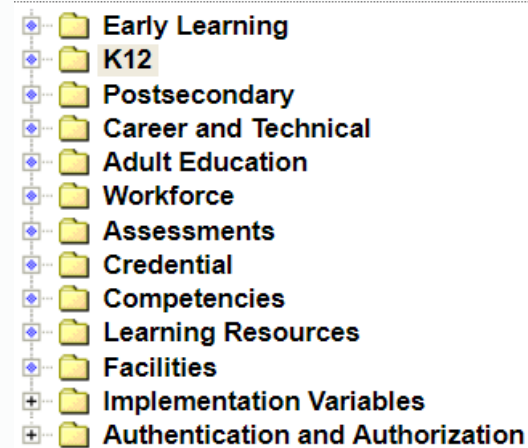
1,488,723 Student Section Marks Records x 2 Validations =

2,977,446

Validation Checks for Student Section Marks

Why Choose the CPSI CEDS Solution (1)

- The CEDS Generate Tool combined with the CPSI CEDS Generate Solution simplifies Ed-Facts reporting. ***This saves your state time and money.***
- API Support for the full CEDS Data Model



- The CPSI CEDS Generate Solution provides rapid installation and configuration so you can get started fast.
- Your team can manage and maintain your implementation.
- Stay up-to-date with new CEDS spec releases for both the CEDS Generate ODS and the CEDS Generate Data Loader with our easy to use schema management tools.

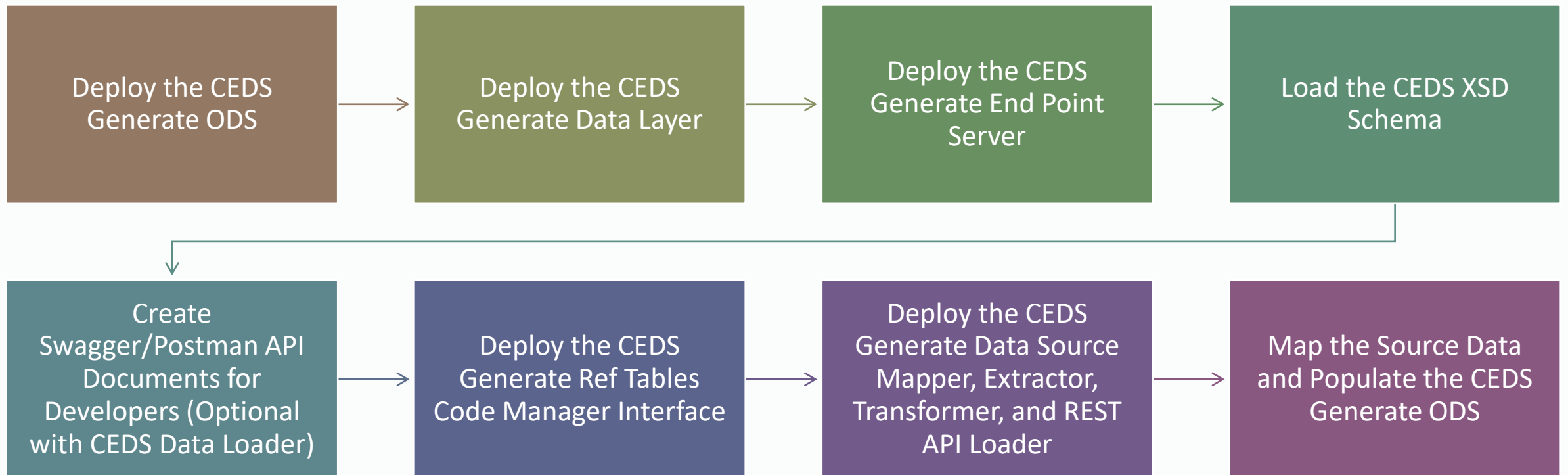
Why Choose the CPSI CEDS Solution (2)

- Improved data automation and reporting saves time and money.
- The CPSI CEDS Data Loader can connect to all data repositories and files no matter what format or spec they were created in. This means you don't have to worry about your source data matching the CEDS spec in order for you to use it in your implementation.
- We know security and privacy are of the utmost importance. Our solution supports data encryption and security for data at rest and in motion.
- Take control of your data with record level and field level data control.
- The CPSI CEDS Solution supports five tiers of security for data access. This means you will be in full control of data security at all times.
- The CPSI CEDS Solution also acts as a Data Governance Rule Enforcing Engine. This add a whole new layer of control and helps states to implement their data governance policies.



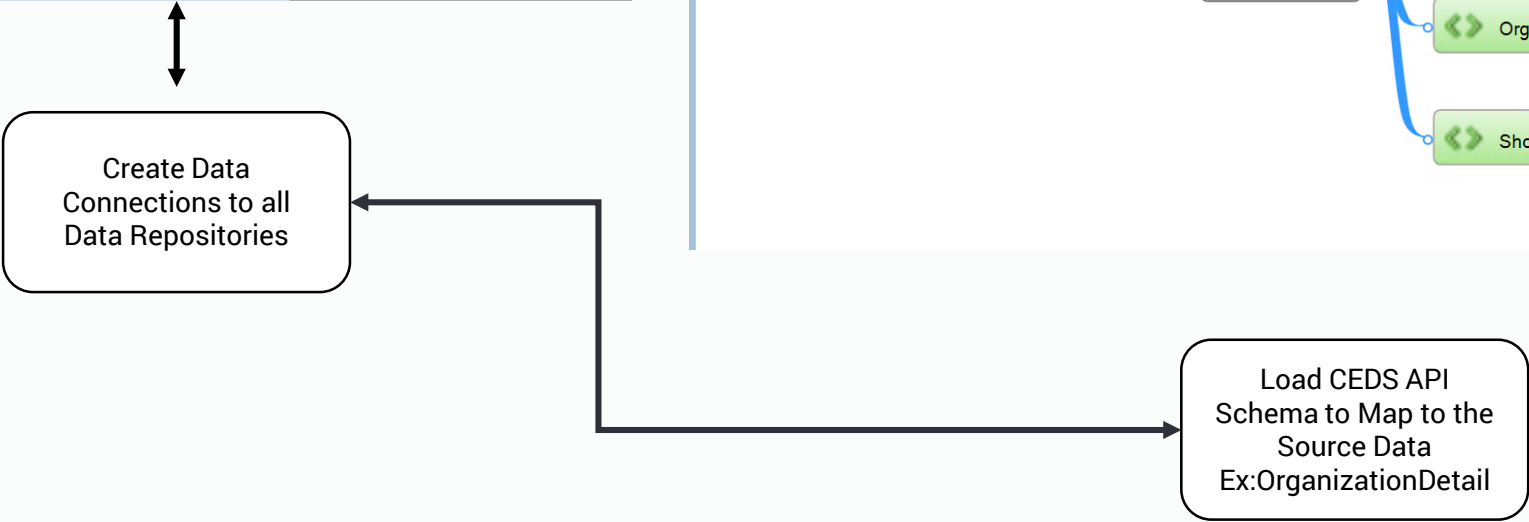
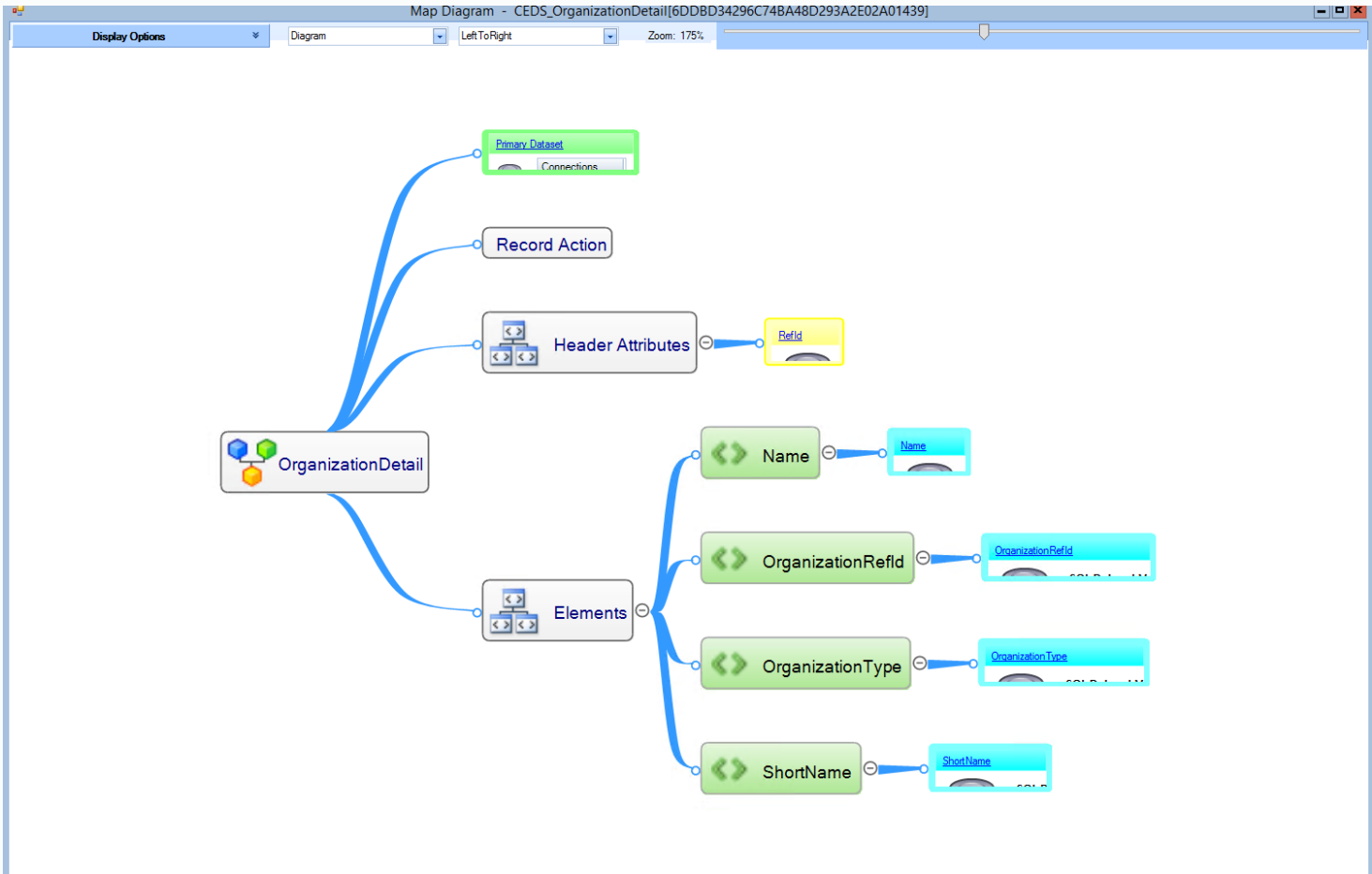
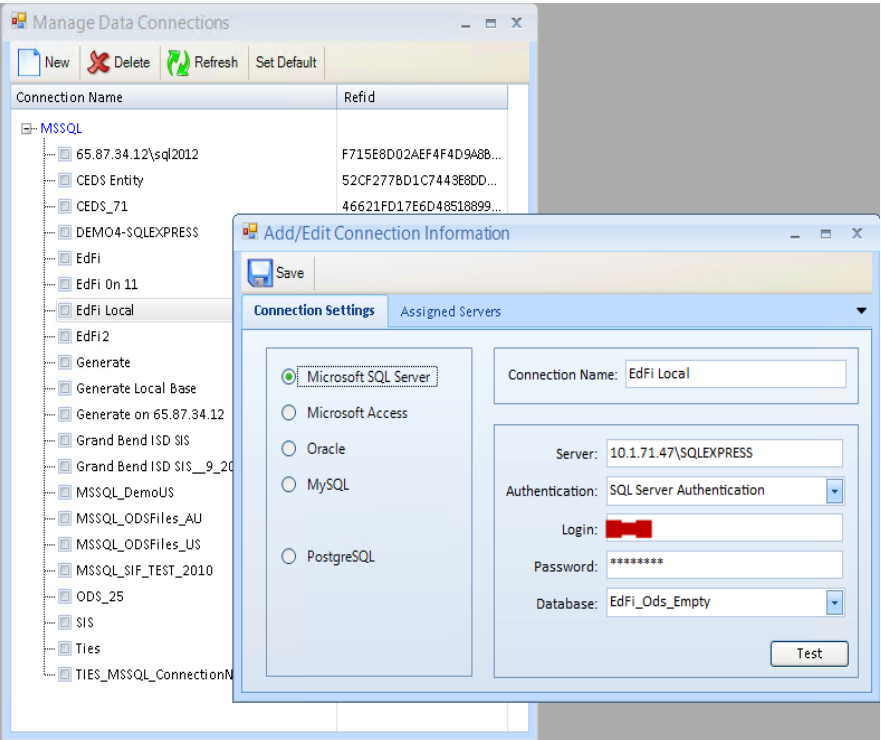
TECHNICAL PRESENTATION

Deployment Quick Start for the CPSI CEDS Solution



How Data is Moved

CPSI CEDS Generate Solution: Define Connections & Load CEDS Schema Properties



CPSI CEDS Generate Solution: Connect to the Source Data & Define the Data Sets

Open Data Connections and select tables and fields from the Data Source/Sources. No coding is required just drag and drop tables and select fields.

Save as a Data Set

Map Properties - CEDS_OrganizationDetail[6DD8D34296C74BA48D293A2E02A01439]

SavePublishImport XML ObjectMap DiagramMap XMLPII Values

GeneralData Set (DB)XML LayoutPreview

DS GeneralDS BuilderDS Column NamesDS PreviewDB Backend UpdateSynch DS

Refresh SQL Intellisense

Select edfi.EducationOrganization.EducationOrganizationId,
edfi.EducationOrganization.NameOfInstitution,
edfi.EducationOrganization.ShortNameOfInstitution,
edfi.EducationOrganization.WebSite,
edfi.EducationOrganization.OperationalStatusTypeId,
edfi.EducationOrganizationCategoryType.ShortDescription,
edfi.EducationOrganizationCategoryType.Description,
edfi.EducationOrganizationCategoryType.CodeValue
From edfi.EducationOrganization
Inner Join edfi.EducationOrganizationCategory
On edfi.EducationOrganization.EducationOrganizationId =
edfi.EducationOrganizationCategory.EducationOrganizationId

Main

EducationOrganization (edfi)

EducationOrganizationId int
StateOrganizationId nvarchar(6)
NameOfInstitution nvarchar(75)
ShortNameOfInstitution nvarchar(255)
WebSite nvarchar(255)
OperationalStatusTypeId int
Id uniqueidentifier
LastModifiedDate datetime
CreateDate datetime

EducationOrganizationCategory (edfi)

EducationOrganizationId int
EducationOrganizationCategoryTypeId int
CreateDate datetime

EducationOrganizationCategoryType (edfi)

EducationOrganizationCategoryTypeId int
ShortDescription nvarchar(450)
Description nvarchar(1024)
CodeValue nvarchar(75)
Id uniqueidentifier
LastModifiedDate datetime
CreateDate datetime

Properties

Datasource properties

Objectedfi.EducationOrganization

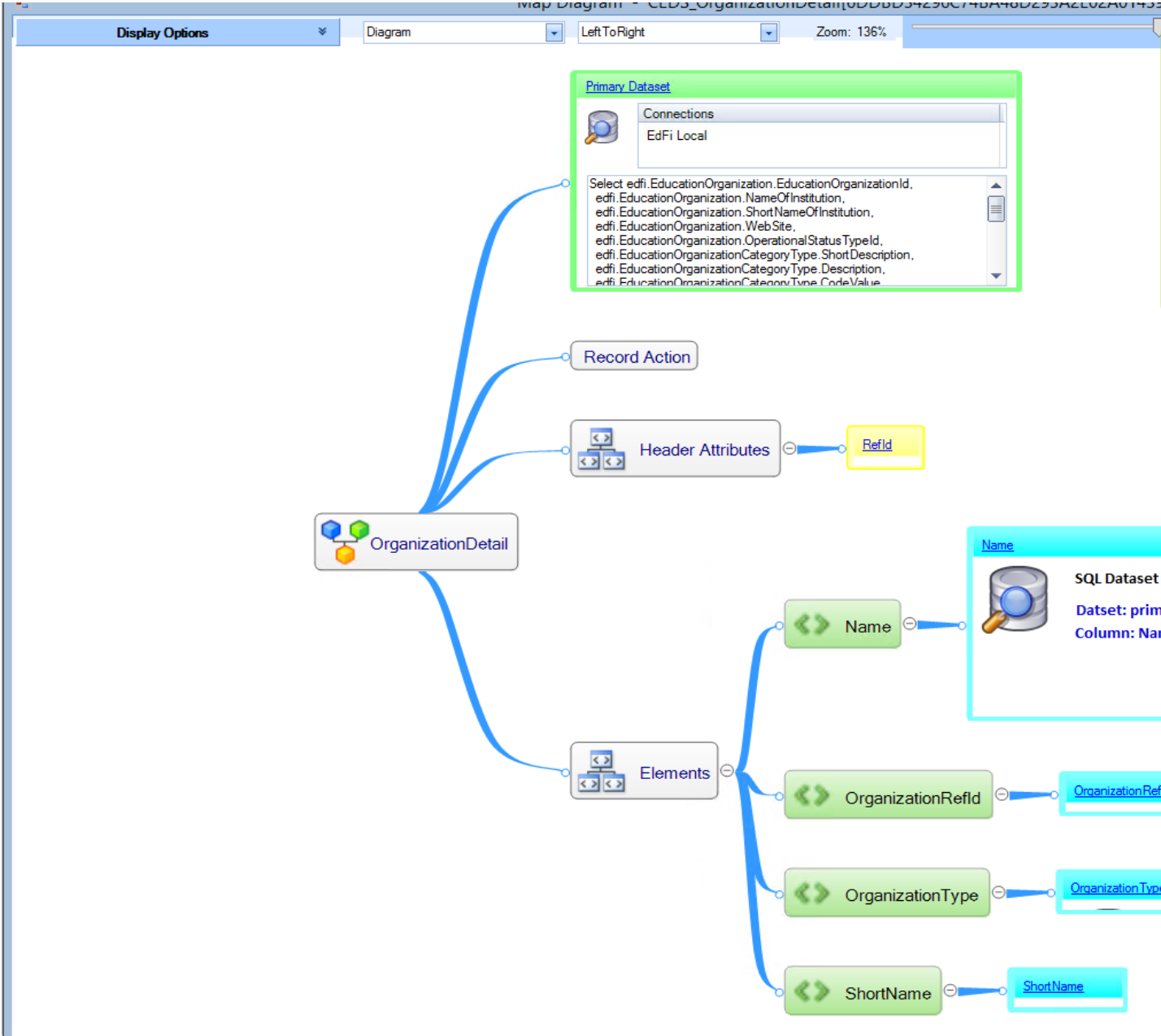
Alias

edfi

AcademicHonorC
AcademicSubject
AcademicSubject
AcademicWeek
AccommodationD
AccommodationT
Account
Account
Account
Achieve
AchievementCate
Actual
AdditionalCreditT
AddressType
AdministrationEnv
AdministrativeFun
AdministrativeFun
Assessment
AssessmentCatego
AssessmentCatego
AssessmentConte
AssessmentConte
AssessmentFamily

Visible	Expression	Column Name	Sort Type	Sort Order	Aggregate	Grouping	Criteria	Or...	Or...	Or...
☒	edfi.EducationOrganizati...					☐				
☒	edfi.EducationOrganizati...					☐				
☒	edfi.EducationOrganizati...					☐				
☒	edfi.EducationOrganizati...					☐				
☒	edfi.EducationOrganizati...					☐				

CPSI CEDS Generate Solution: Map CEDS API Schema to Source Defined Data Sets



Select the Dataset.

Map CEDS Elements to the EdFi Dataset Element.

Set the Properties for translations and validations (if needed).

Element-Attribute Properties

Name: Name Field Type: SQL Dataset

Default Value: * Output Type: String

Translation: * Format: Standard

Validation: * RefId Table: *

Encryption: None

☐ Object Key Field ☐ Natural Key Field ☐ Right Trim ☐ Left Trim ☐ Suppress Empty

Parameter Source: File Dataset primary

Dataset Name: primary

Position: NameOfInstitution

CPSI CEDS Generate Solution: Define the Data Extraction Properties

Map Properties - CEDS_OrganizationDetail[6DDBD34296C74BA48D293A2E02A01439]

Save Publish Import XML Object Map Diagram Map XML PII Values

General Data Set (DB) XML Layout Preview

Name: CEDS_OrganizationDetail Version: 8.0 Refid: 6DDBD34296C74BA48D293A2E02A01439

Description:

Map Control: ☒ Primary ☐ Secondary

Object Publish: ☐ Publish ALL ☐ Publish ALL - NO LOGGING ☒ Publish UNIQUE ☐ Publish ALL (RANDOM KEYS - NO LOG KEY CHECK)

Queue Output: ☐ XML ☒ JSON ☐ Suppress JSON Root File Output: ☐ XML ☐ JSON ☐ API Access

Message Type: ☒ Event ☐ Request

XML Wrapper: None

Group: CEDS

Package Identifier: CEDS

Transport Specification: JSON

Transport Method: Web Service (REST)

Publish Interval: 0 HRS 15 MINS

Synch Interval: 24 HRS 0 MINS

Synchronize Object: ☐ Yes ☒ No Date Added: 12/13/2018 Date Modified: 12/13/2018

Synchronize Threshold: 0 A setting of 0 is defined as the synchronize threshold will be ignored

Secondary Map	Active

Mapping Properties allow Controls for:

- Publishing (Full and Delta)
- Publishing Interval
- Output Type JSON, XML or Both
- Event or Request
- Manage Crosswalks

CPSI CEDS Generate Solution: Schedule & Distribute the Data Load from Source to CEDS

The screenshot displays the 'Manage Data Publishing Schedule' application. The main window shows a list of maps on the left and a detailed view of a selected map on the right. The 'Configure Service Instance' dialog box is open, showing settings for 12 threads.

Map List (Left Panel):

Map Name	Map Type	Map Refid
All		
ActivityRecognition	Database	8C813358C...
AeCourse	Database	68A6F435D...
Course	Database	DB35B211A...
Course	Database	B4F0F9562...
LocalEducationAge...	Database	7B149DC36...
Organization	Database	334DAC3A7...
student	Database	7A15060B4...
Template	Database	41F982D17...
Uktest	Database	8FA956A93...
UserProfile	Database	31EF04D84...

Map Details (Right Panel):

Map Name	Map Type
DEMO3	
Thread 1	
Thread 2	
CEDS_OrganizationDetail	Database
Thread 3	
Thread 4	
Thread 5	
Thread 6	
Thread 7	
Thread 8	
Thread 9	
Thread 10	
Thread 11	
Thread 12	

Configure Service Instance Dialog:

Service Poll Intervals:

Thread	hrs	mins	secs	Check to enable debug
Thread Manager	0	0	10	☐ Thread Manager
Thread 1	0	0	10	☐ Thread 1
Thread 2	0	0	10	☐ Thread 2
Thread 3	0	0	10	☐ Thread 3
Thread 4	0	0	10	☐ Thread 4
Thread 5	0	0	10	☐ Thread 5
Thread 6	0	0	10	☐ Thread 6
Thread 7	0	0	10	☐ Thread 7
Thread 8	0	0	10	☐ Thread 8
Thread 9	0	0	10	☐ Thread 9
Thread 10	0	0	10	☐ Thread 10
Thread 11	0	0	10	☐ Thread 11
Thread 12	0	0	10	☐ Thread 12

Synch Thread:

☐ Enable Synch Thread

Thread 1: 0 hrs 0 mins 10 secs ☐ Synch Thread

Server: DEMO3

Buttons: Apply, Cancel

Tooltip: Double click to manage service settings...

Schedule the Data Mapping Extraction to run via the Service Manager. The Service Manager uses 12 threads to send data in parallel and can support 24 services running in parallel with 12 threads each.

CPSI CEDS Generate Solution: Data Preview

Map Properties - OrganizationDetail[49E7AB14E9634F3197219CEB780739BA]

SavePublishImport XML ObjectMap DiagramMap XMLPII Values

GeneralData Set (DB)XML LayoutPreview

RefreshDisplay WrapperDisplay JSONPreviousNextConnectionsRecords: 1 - 7 [7]

RefId	Name	OrganizationRefId	RefOrganization...
c87df088-faa3-...	Demo District 2	c87df088-faa3-4...	LEA
05481245-e4e2...	Grand Bend ISDS ...	05481245-e4e2-...	K12School
d6889502-e82c...	Grand Bend ISDS ...	d6889502-e82c-...	K12School
d123c7b7-a64d...	Grand Bend ISDS ...	d123c7b7-a64d-...	K12School
587d0e19-012...	Grand Bend ISDS ...	587d0e19-012e-...	K12School
ad96d9b6-179...	Grand Bend ISDS ...	ad96d9b6-1790-...	K12School
a582b7e8-32c2...	Grand Bend ISDS	a582b7e8-32c2-...	LEA

```
{  "OrganizationDetail": {    "@RefId": "bf496ae9-621a-422c-b14d-0a3897860035",    "Name": "Demo District 2",    "OrganizationRefId": "c87df088-faa3-4186-933b-281125b8a7b8",    "RefOrganizationType": "LEA"  }}
```

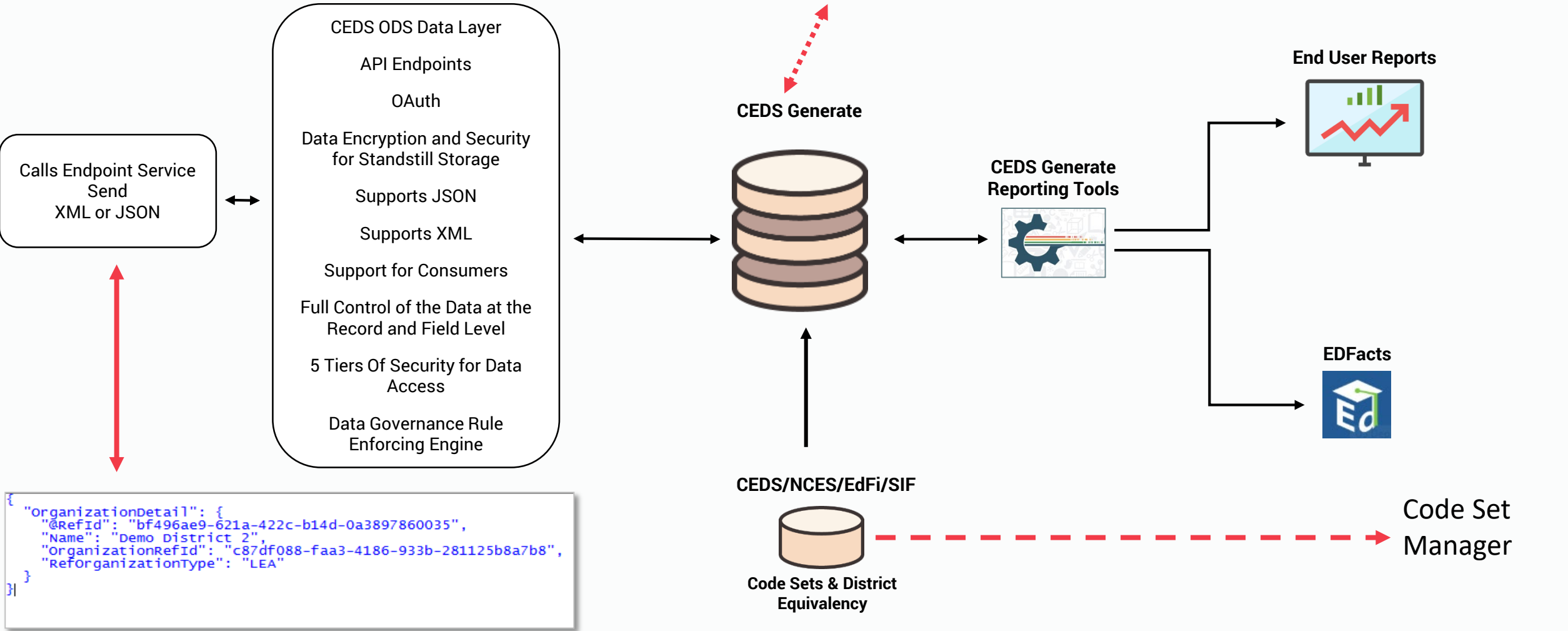
Preview the data in the Generate API Schema model. Data can be viewed as JSON or XML. When data is published via the REST Service, all crosswalk references between APIs are populated.

```
{  "organizationDetail": {    "@RefId": "bf496ae9-621a-422c-b14d-0a3897860035",    "Name": "Demo District 2",    "OrganizationRefId": "c87df088-faa3-4186-933b-281125b8a7b8",    "RefOrganizationType": "LEA"  }}
```

To CEDS
Generate
End Point
Server

CPSI CEDS Generate Solution: The Data Flow

Results										Messages	
	OrganizationDetailId	OrganizationId	Name	RefOrganizationTypeId	ShortName	RecordStartDate Time	RecordEndDate Time	RefId	CreateDate	ObjectXML	
1	1	1	Demo District 2	1	NULL	NULL	NULL	BF496AE9-621A-422C-B14D-0A3897860035	2019-04-24 16:42:24.117	<OrganizationDetail xmlns="http://www.cpsild.co...	
2	2	2	Grand Bend ISDS Elementary School	10	NULL	NULL	NULL	644B2FED-5D7D-4D14-89E5-0778B4B63B5C	2019-04-24 16:42:24.163	<OrganizationDetail xmlns="http://www.cpsild.co...	
3	3	3	Grand Bend ISDS HS	10	NULL	NULL	NULL	B3DA2CEE-35FC-44F5-93CA-C67C3FF7F0B1	2019-04-24 16:42:24.163	<OrganizationDetail xmlns="http://www.cpsild.co...	
4	5	5	Grand Bend ISDS High School	10	NULL	NULL	NULL	160A47E4-F72E-414D-BB7D-7796C79ECD73	2019-04-24 16:42:24.177	<OrganizationDetail xmlns="http://www.cpsild.co...	
5	6	6	Grand Bend ISDS Elementary School	10	NULL	NULL	NULL	A3EC4BE4-BB8D-48B6-832F-47928EB1A60D	2019-04-24 16:42:24.177	<OrganizationDetail xmlns="http://www.cpsild.co...	
6	7	7	Grand Bend ISDS	1	NULL	NULL	NULL	062D03D6-8BD7-43AA-AFF9-1347D0E2C8A1	2019-04-24 16:42:24.177	<OrganizationDetail xmlns="http://www.cpsild.co...	



Managing Code Sets

CPSI CEDS Generate Solution: Code Set Ref Table Manager for CEDS Generate ODS

Reference Table Manager
CEDS Data Collection Solution

Home
Welcome Host

Portal Setup

API Management

Manage Local Code Sets

Logout

Connection Setup

Web Service Setup

Manage Users

Change Password

Reference Table Manager
CEDS Data Collection Solution

Home
Welcome Host

Portal Setup

API Management

Manage Local Code Sets

Logout

Add/Edit API Calls

List APIs

Organization Setup

List Organizations

Reference Table Manager
CEDS Data Collection Solution

Home
Welcome Host

Portal Setup

API Management

Manage Local Code Sets

Logout

Add and Edit API Calls

Select Organization
State DOE

Select the Table to Modify
Select Table Name

Updating Table :

Page Size : 10

Sort Order

Code

RefAbsentAttendanceCategorys

RefAcademicAwardLevels

RefAcademicHonorTypes

RefAcademicRanks

RefAcademicSubjects

RefAcademicTermDesignators

Showing 0 to 0 of 0 entries

Search:

ion

Local Code

JurisdictionRefId

Action

No data available in table

Previous

Next

The Code Set Manager allows the definition of the transforms between the code sets in the source and the code sets in the Ref Tables of the Generate ODS.

CPSI CEDS Generate Solution: Code Set Ref Table Manager for CEDS Generate ODS

Reference Table Manager
CEDS Data Collection Solution

Home
Welcome Host

Portal Setup▼API Management▼Manage Local Code SetsLogout

Add and Edit API Calls

Upload Record ⓘ

Select OrganizationState DOE▼

Select the Table to ModifyRefAcademicAwardLevels▼

↺

Select File Type to Download the records to:CSV▼

Download Now

Updating Table : RefAcademicAwardLevels

Post and/or Put All ⓘ

Page Size : 100 ▼

Search:

Sort Order	Code	Definition	Description	Local Code	JurisdictionRefId	Action
1.00	01	Postsecondary award, certificate, or diploma of less than 1 academic year is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of less than 1 academic year	PS Award 1	c87df088-faa3-4186-933b-281125b8a7b8	Post
2.00	02	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years			Edit Post
3.00	03	Associate's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Associate's Degree			Edit Post
4.00	04	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years			Edit Post
5.00	05	Bachelor's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a	Bachelor's Degree			Edit

The Ref Table Manager allows the entry of the translation code sets via screen edits and POST calls.

CPSI CEDS Generate Solution: Code Set Ref Table Manager for CEDS Generate ODS

Reference Table Manager
CEDS Data Collection Solution

Portal Setup▼ API Management▼ Manage Local Code Sets Logout

Add and Edit API Calls

Select OrganizationState DOE▼

Select the Table to ModifyRefAcademicAwardLevels▼

Select File Type to Download the records to:CSV▼

Download Now

Updating Table : RefAcademicAwardLevels

Post and/or Put All

Page Size : 100▼

Search:

Sort Order	Code	Definition	Description	Local Code	JurisdictionRefId	Action
1.00	01	Postsecondary award, certificate, or diploma of less than 1 academic year is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of less than 1 academic year	PS Award 1	c87df088-faa3-4186-933b-281125b8a7b8	Edit Put Delete
2.00	02	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years	PS Award 2	c87df088-faa3-4186-933b-281125b8a7b8	Post
3.00	03	Associate's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Associate's Degree			Edit Post
4.00	04	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years			Edit Post
5.00	05	Bachelor's Degree is the category of award conferred by a college, university, or other	Bachelor's Degree			

Edited Records can be updated via a PUT call or deleted via the Delete call.

CPSI CEDS Generate Solution: Code Set Ref Table Manager for CEDS Generate ODS

Manage all local code sets by downloading a CSV or text file and editing the local code values. Upload your files to the tool.

“Post and/or Put All”

Reference Table Manager
CEDS Data Collection Solution

Home
Welcome Host

Portal Setup▼ API Management▼ Manage Local Code Sets Logout

Add and Edit API Calls

Upload Record ⓘ

Select OrganizationState DOE▼

Select the Table to ModifyRefAcademicAwardLevels▼

↺

Select File Type to Download the records to:CSV▼

Download Now

Updating Table : RefAcademicAwardLevels

Post and/or Put All ⓘ

Page Size : 100 ▼

Search:

Sort Order	Code	Definition	Description	Local Code	JurisdictionRefId	Action
1.00	01	Postsecondary award, certificate, or diploma of less than 1 academic year is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of less than 1 academic year	PS Award 1	c87df088-faa3-4186-933b-281125b8a7b8	Edit Put Delete
2.00	02	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years	PS Award 2	c87df088-faa3-4186-933b-281125b8a7b8	Edit Put Delete
3.00	03	Associate's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Associate's Degree			Edit Post
4.00	04	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years			Edit Post

RefAcademicAward.....C...

⬅

Show all ✕

CPSI CEDS Generate Solution: Code Set Ref Table Manager for CEDS Generate ODS

RefAcademicAwardLevels.csv - Excel

FileHomeInsertPage LayoutFormulasDataReviewViewHelpTell me what you want to do

CutCopyFormat Painter

Clipboard

Calibri11

Font

Wrap Text

Alignment

General

Number

Conditional Formatting

Format as Table

Cell Styles

Styles

InsertDeleteFormat

Cells

AutoSum

Fill

Clear

Editing

Sort & Find & Filter

Select

G4

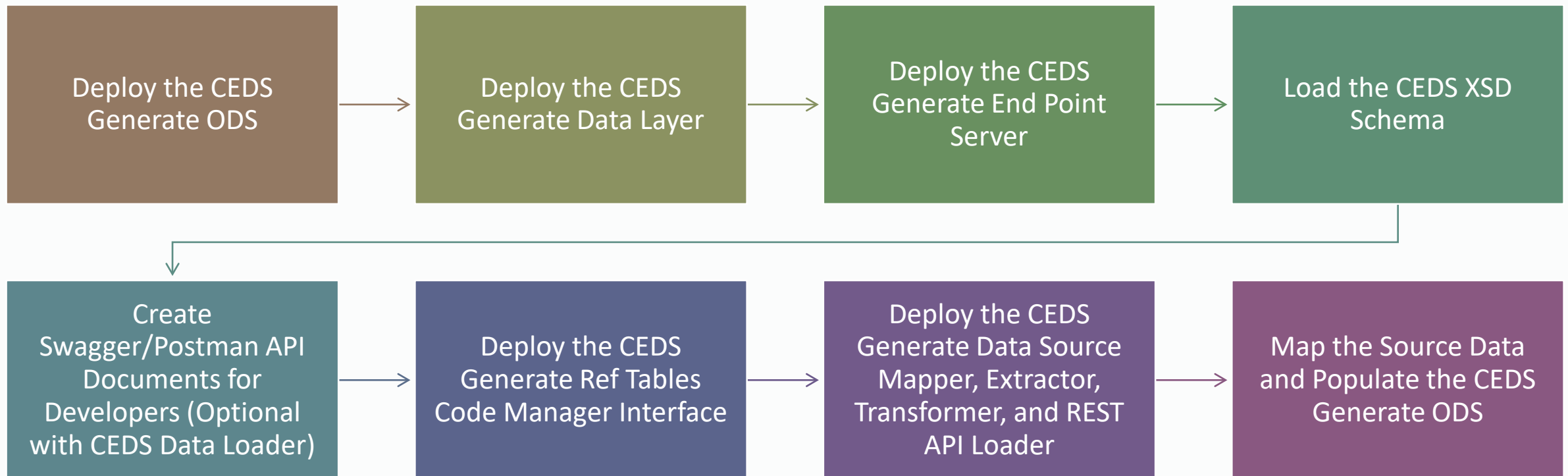
	A	B	C	D	E	F	G	H	I	J	K	L
1	SortOrder	Code	Definition	Description	LocalCode	JurisdictionRefId						
2		1	Postsecondary award, certificate, or diploma of less than 1 academic year is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of less than 1 academic year	PS Award 1							
3		2	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 1 but less than 2 academic years	PS Award 2							
4		3	Associate's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Associate's Degree	Associate Degree							
5		4	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Postsecondary award, certificate, or diploma of at least 2 but less than 4 academic years	PS Award 2-4							
6		5	Bachelor's Degree is the category of award conferred by a college, university, or other postsecondary education institution as official recognition for the successful completion of a program of study.	Bachelor's Degree	Bachelor Degree							
			Postbaccalaureate Certificate is the category of award conferred by a college,									

RefAcademicAwardLevels

Update the Local Code column and upload the file for batch style updates.

How to Deploy the CEDS Generate ODS Using the SQL Scripts

Deployment Quick Start for the CPSI CEDS Solution

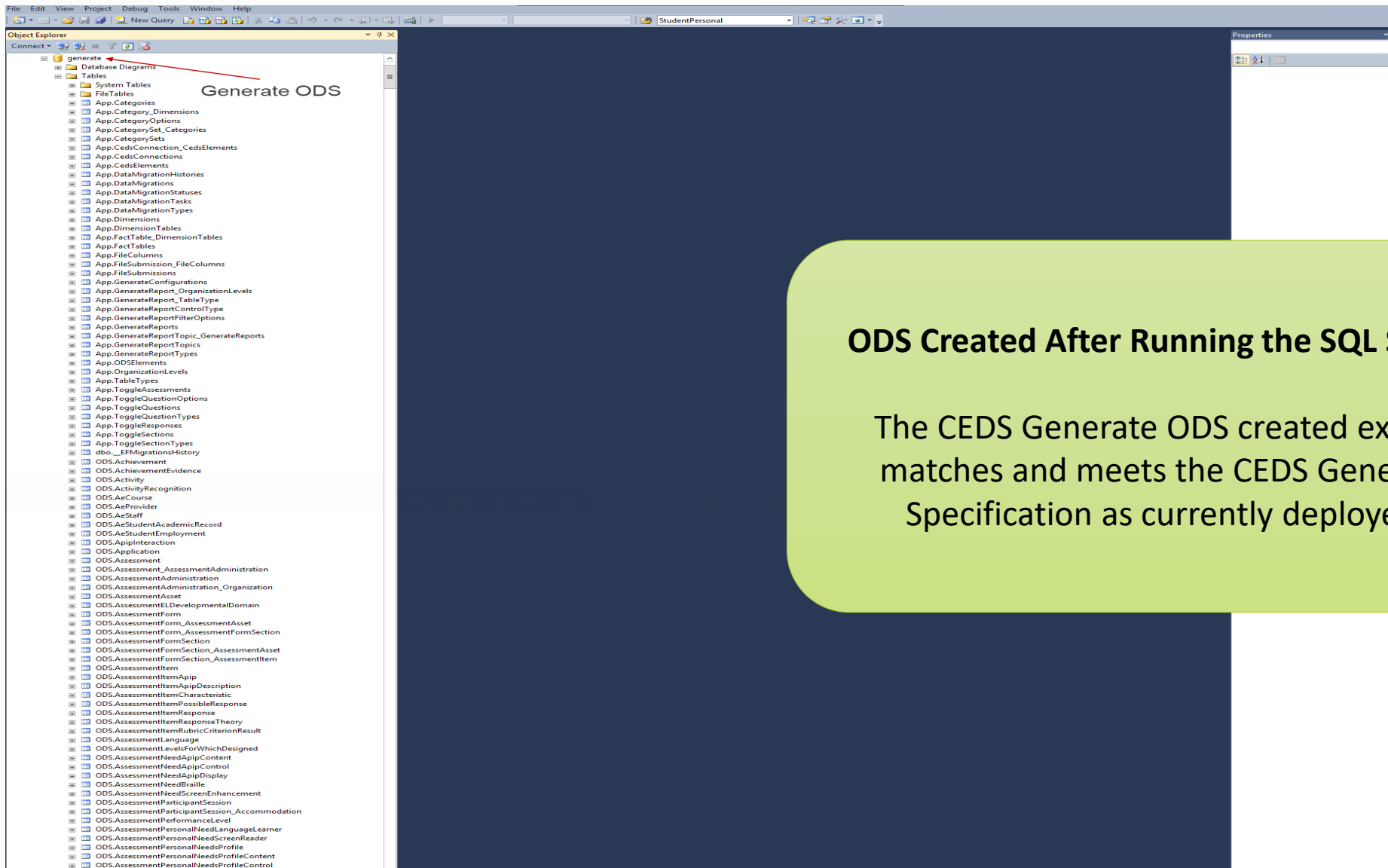


Deploying the CEDS Generate ODS

 1. Generate_DB and CPSI fixes (run once)	4/26/2019 8:25 AM	Microsoft SQL Ser...	6,601 KB
 2. Cascade deletion triggers (can run multiple times)	4/26/2019 8:29 AM	Microsoft SQL Ser...	400 KB
 3. CPSI extentions (can run multiple times)	4/26/2019 8:29 AM	Microsoft SQL Ser...	14,795 KB
 4. Inserts into Ref-tables (run once)	4/26/2019 8:29 AM	Microsoft SQL Ser...	11,502 KB

1. Run the Scripts in Sequence. This will create the Generate ODS for the current Generate Schema Spec being used. Adheres 100% to the CEDS Specifications.
2. Script 2 thru 4 can be run on New or existing Generate ODS's to extend the Schema to prepare for REST API Access
3. These processes takes 7 to 12 minutes based on the SQL server performance

Deploying the CEDS Generate ODS



ODS Created After Running the SQL Scripts

The CEDS Generate ODS created exactly matches and meets the CEDS Generate Specification as currently deployed.

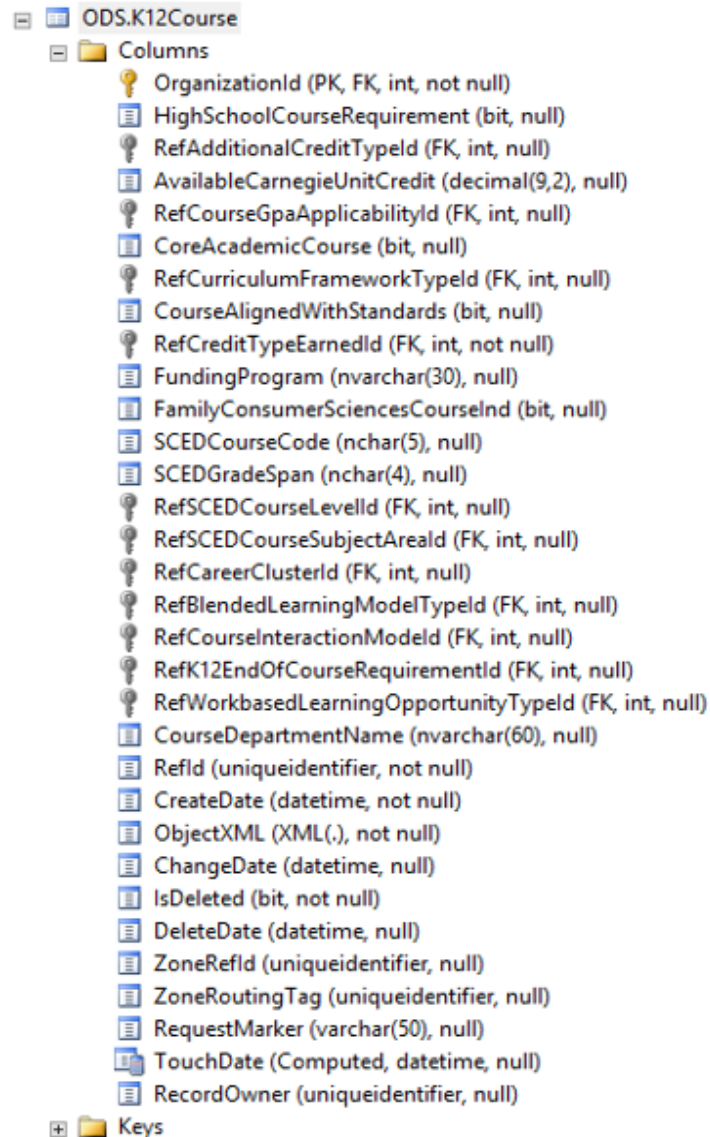
Deploying the CEDS Generate ODS

Example of the CEDS Generate Tables

The K12Course table maintains 100% compliance with the CEDS Generate Schema.

CPSI Schema Extensions are used by the Data Layer for data tracking

CEDS Generate ODS Base Schema Structure



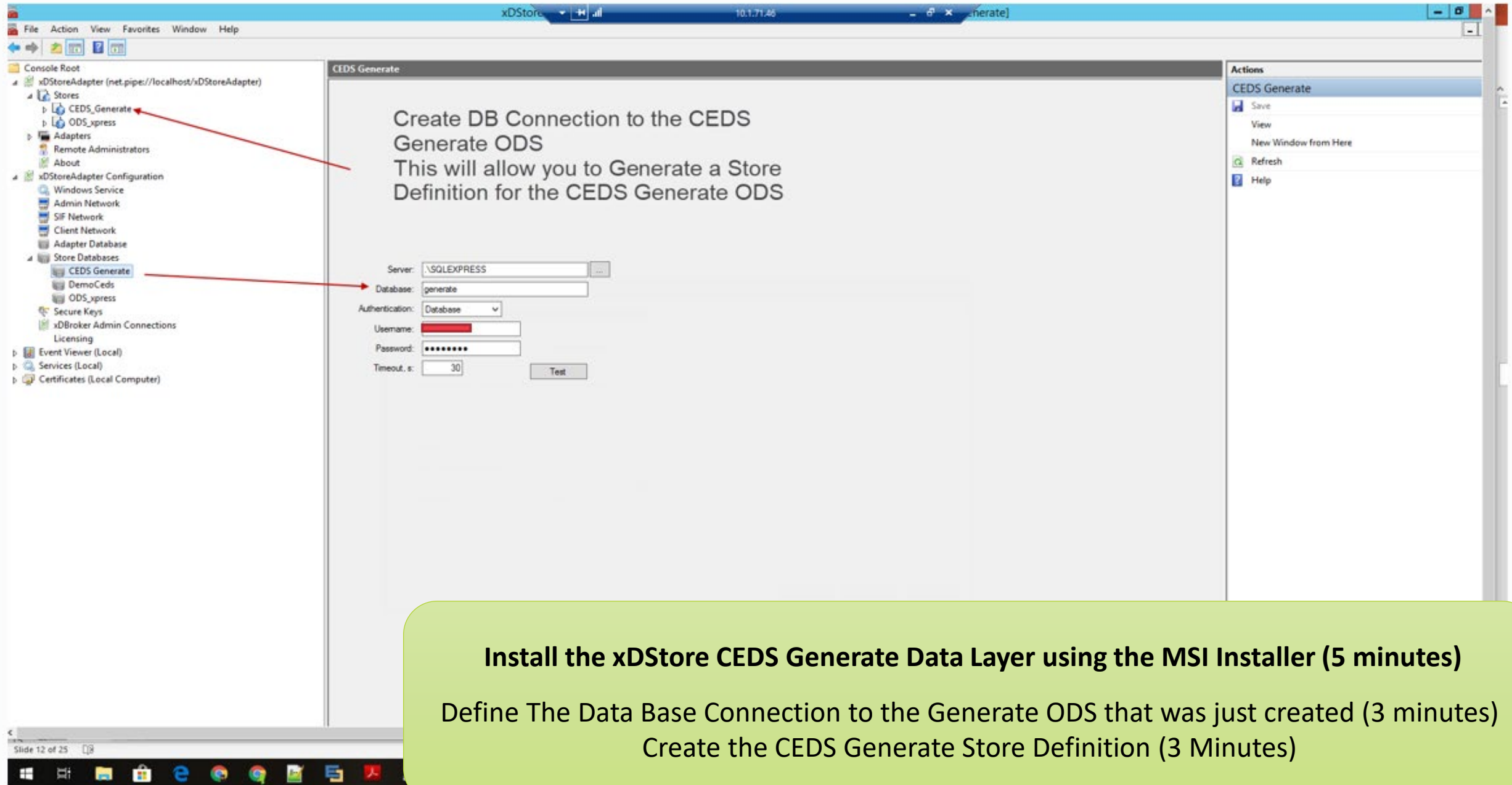
Columns
OrganizationId (PK, FK, int, not null)
HighSchoolCourseRequirement (bit, null)
RefAdditionalCreditTypeId (FK, int, null)
AvailableCarnegieUnitCredit (decimal(9,2), null)
RefCourseGpaApplicabilityId (FK, int, null)
CoreAcademicCourse (bit, null)
RefCurriculumFrameworkTypeId (FK, int, null)
CourseAlignedWithStandards (bit, null)
RefCreditTypeEarnedId (FK, int, not null)
FundingProgram (nvarchar(30), null)
FamilyConsumerSciencesCourseInd (bit, null)
SCEDCourseCode (nchar(5), null)
SCEDGradeSpan (nchar(4), null)
RefSCEDCourseLevelId (FK, int, null)
RefSCEDCourseSubjectAreaId (FK, int, null)
RefCareerClusterId (FK, int, null)
RefBlendedLearningModelTypeId (FK, int, null)
RefCourseInteractionModelId (FK, int, null)
RefK12EndOfCourseRequirementId (FK, int, null)
RefWorkbasedLearningOpportunityTypeId (FK, int, null)
CourseDepartmentName (nvarchar(60), null)
RefId (uniqueidentifier, not null)
CreateDate (datetime, not null)
ObjectXML (XML(.), not null)
ChangeDate (datetime, null)
IsDeleted (bit, not null)
DeleteDate (datetime, null)
ZoneRefId (uniqueidentifier, null)
ZoneRoutingTag (uniqueidentifier, null)
RequestMarker (varchar(50), null)
TouchDate (Computed, datetime, null)
RecordOwner (uniqueidentifier, null)

Keys

RefId (uniqueidentifier, not null)	→ Advisory ID of the Record for the REST API's
CreateDate (datetime, not null)	→ Create Date
ObjectXML (XML(.), not null)	→ Pre-formed XML for Rapid REST Response
ChangeDate (datetime, null)	→ Change Date
IsDeleted (bit, not null)	→ Deleted Bit
DeleteDate (datetime, null)	→ Delete Date
ZoneRefId (uniqueidentifier, null)	→ Data Connection Identifier
ZoneRoutingTag (uniqueidentifier, null)	→ Data Route Identifier
RequestMarker (varchar(50), null)	→ Batch Response Identifier
TouchDate (Computed, datetime, null)	→ Last Touch Date-Time. Used to prevent Old Data from updating current data
RecordOwner (uniqueidentifier, null)	→ Data Owner

Installation and Configuration of the ODS Data Access Layer Server Software with the xDStore

Deploying the CEDS Generate ODS Data Access Layer with xDStore CEDS



The screenshot displays the xDStore CEDS Generate application. The left sidebar shows the 'Console Root' with a tree view. Under 'xDStoreAdapter (net.pipe://localhost/xDStoreAdapter)', the 'Stores' folder is expanded, showing 'CEDS_Generate' and 'ODS_xpress'. A red arrow points from 'CEDS_Generate' in the tree to the main configuration area. Another red arrow points from the 'CEDS Generate' folder in the 'Store Databases' section to the same main area. The main area is titled 'CEDS Generate' and contains the text: 'Create DB Connection to the CEDS Generate ODS This will allow you to Generate a Store Definition for the CEDS Generate ODS'. Below this text are input fields for 'Server' (set to '.\SQLEXPRESS'), 'Database' (set to 'generate'), 'Authentication' (set to 'Database'), 'Username' (redacted), 'Password' (redacted), and 'Timeout, s' (set to 30). A 'Test' button is located at the bottom right of the input fields. The right sidebar shows an 'Actions' menu with options: 'CEDS Generate', 'Save', 'View', 'New Window from Here', 'Refresh', and 'Help'. The bottom status bar indicates 'Slide 12 of 25'.

Install the xDStore CEDS Generate Data Layer using the MSI Installer (5 minutes)

Define The Data Base Connection to the Generate ODS that was just created (3 minutes)

Create the CEDS Generate Store Definition (3 Minutes)

Deploying the CEDS Generate ODS Data Access Layer with xDStore CEDS

The screenshot displays the xDStore CEDS application interface. On the left, the 'Console Root' tree shows the project structure, with 'CEDS_Generate' and 'Object Services' highlighted. A red arrow points from the 'Object Services' node in the tree to the 'Object Services' table. The table lists various object services with columns for 'Object Service Name', 'Store', 'Allowed', 'Adapter', 'Query', 'Create', 'Update', 'Delete', and 'Events'. The 'AeCourses' row is selected. On the right, the 'Actions' pane shows options for 'Object Services' and 'AeCourses'. A green callout box contains the following text:

The Data Access Layer will then read the generate the DB design and the DB schema as well as generate the REST based web services for each table.

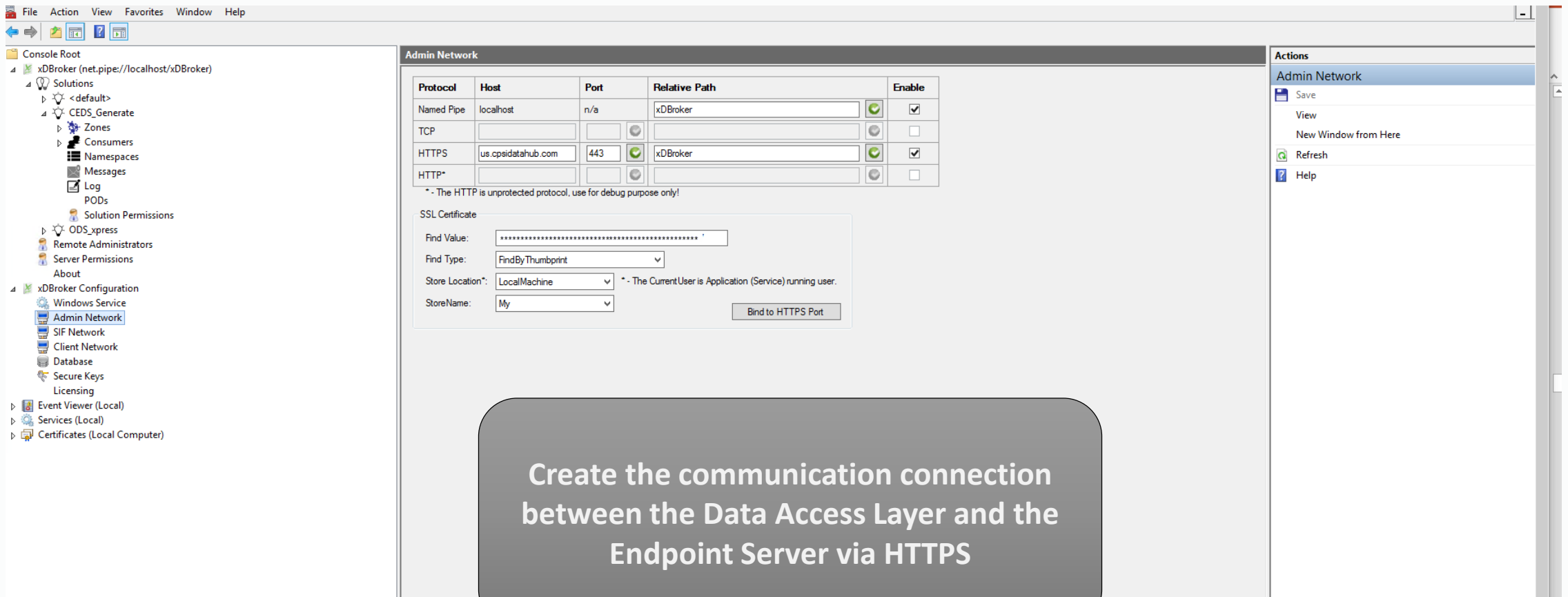
Object Service Name	Store	Allowed	Adapter	Query	Create	Update	Delete	Events
AchievementEvidences	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
Achievements	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
ActivityRecognitions	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
Activities	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AeCourses	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AeProviders	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AeStaffs	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AeStudentAcademicRecords	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AeStudentEmployments	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
ApiInteractions	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
Applications	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
Assessment_AssessmentAdmin...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentAdministration_Org...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentAdministrations	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentAssets	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentELDevelopmentalD...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentForm_AssessmentA...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentForm_AssessmentF...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentForms	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentFormSection_Asses...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentFormSection_Asses...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentFormSections	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemApiDescriptions	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemApis	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemCharacteristics	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemPossibleRespo...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemResponses	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemResponseTheor...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItemRubricCriterion...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentItems	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentLanguages	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentLevelsForWhichDesi...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentNeedApiContents	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentNeedApiControls	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentNeedApiDisplays	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentNeedBrailles	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentNeedScreenEnhanc...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentParticipantSession_...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentParticipantSessions	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentPerformanceLevels	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentPersonalNeedLang...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentPersonalNeedScree...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentPersonalNeedsProfi...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish
AssessmentPersonalNeedsProfi...	Yes	Yes	Yes	Respond	Respond	Respond	Respond	Publish

Installation and Configuration of the REST Endpoint Server Software with the xDBroker CEDS

Deploying the CEDS Generate ODS End Point Server (xDBroker)

Install the xDBroker CEDS Generate End Point Server Software using the MSI Installer.

Create the Generate End Point to the Data Layer Services connection over Https Secure Transport.



The screenshot shows the xDBroker Configuration console with the 'Admin Network' configuration window open. The console tree on the left shows the hierarchy: Console Root > xDBroker (net.pipe://localhost/xDBroker) > Solutions > CEDS_Generate > Admin Network. The 'Admin Network' window contains a table for configuring network connections.

Protocol	Host	Port	Relative Path	Enable
Named Pipe	localhost	n/a	xDBroker	☒
TCP				☐
HTTPS	us.cpsidatathub.com	443	xDBroker	☒
HTTP*				☐

* - The HTTP is unprotected protocol, use for debug purpose only!

SSL Certificate

Find Value:

Find Type:

Store Location*: * - The Current User is Application (Service) running user.

StoreName:

Actions

- Admin Network
- Save
- View
- New Window from Here
- Refresh
- Help

Create the communication connection
between the Data Access Layer and the
Endpoint Server via HTTPS

Deploying the CEDS Generate ODS End Point Server (xDBroker)

Use the xDStore CEDS Configurator to generate the xDBroker REST End-Point for the CEDS Data Loader (REST Based)

The screenshot displays the xDBroker console interface. On the left, the 'Console Root' tree shows the hierarchy: xDBroker (net.pipe://localhost/xDBroker) > Solutions > CEDS_Generate > Consumers > 255901 > Generate_Postman > Postman_255901101 > CEDS_Generate_Data_Loader. A red arrow points from this entry to the 'CEDS_Generate_Data_Loader Properties' dialog box. The dialog box has a 'Consumer' tab with the following fields: Consumer Name (CEDS_Generate_Data_Loader), Consumer Secret (masked with dots), Description (empty), Enabled (checked), Reason Consumer is disabled (empty), Environment Pre-register required* (unchecked), Create Environment on OAuth2 Token request** (unchecked), User Authentication required (unchecked), On Environment exists (Session Token) (ReturnOldToken), and Default Zone (Generate_Zone_Broker). The 'Services' table in the background lists various services and their permissions.

Name	Type	Query	Create	Update	Delete	Provide	Subscribe
AchievementEvidences	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
Achievements	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
ActivityRecognitions	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
Activitys	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
AeCourses	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
AeProviders	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
AeStaffs	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
AeStudentAcademicRecords	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
AeStudentEmployments	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
ApiInteractions	Object		Allowed	Allowed	Allowed	By: xDStoreAdapte...	
Applications	Object						
Assessment_AssessmentAdmin...	Object						
AssessmentAdministration_Org...	Object						
AssessmentAdministrations	Object						
AssessmentAssets	Object						
AssessmentELDevelopmentalID...	Object						
AssessmentForm_AssessmentA...	Object						
AssessmentForm_AssessmentF...	Object						
AssessmentForms	Object						
AssessmentFormSection_Asses...	Object						
AssessmentFormSection_Asses...	Object						
AssessmentFormSections	Object						
AssessmentItemApipDescriptions	Object						
AssessmentItemApips	Object						
AssessmentItemCharacteristics	Object						
AssessmentItemPossibleRespo...	Object						
AssessmentItemResponses	Object						
AssessmentItemResponseTheor...	Object						
AssessmentItemRubricCriterion...	Object						
AssessmentItems	Object						
AssessmentLanguages	Object						
AssessmentLevelsForWhichDesi...	Object						
AssessmentNeedApipContents	Object						
AssessmentNeedApipControls	Object						
AssessmentNeedApipDisplays	Object						
AssessmentNeedBrailles	Object						

Deploying the CEDS Generate ODS End Point Server

Review the REST API Service Endpoints that were created by the configurator and Set the Access Permissions to the API's as needed

The screenshot displays the xDBroker console interface. On the left, the 'Console Root' tree shows the hierarchy: xDBroker (net.pipe://localhost/xDBroker) > Solutions > <default> > CEDS_Generate > Zones > Consumers > 255901 > Generate_Postman > Postman_255901101 > CEDS_Generate_Data_Loader > Zones > environment-global > Generate_Zone_Broker > Services. A red arrow points from 'Services' to the main table. Another red arrow points from 'environment-global' to the table. The main table lists REST services with columns: Name, Object, Supported, Allowed, Allowed, Allowed, Allowed, By: xDStoreAdapte..., Supported. A 'Properties for Multiple Items' dialog is open, showing 'Allowed Actions' and 'Update' checkboxes. The 'Allowed Actions' are: Query, Create, Update, Delete, Provide, Subscribe, Admin. The 'Update' actions are: Query, Create, Update, Delete, Provide, Subscribe, Admin. The 'Create', 'Update', and 'Delete' checkboxes are checked. The 'Properties for Multiple Items' dialog has buttons: OK, Cancel, Apply, Help.

REST Services Provided as EndPoints

Name	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AchievementEvidences	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
Achievements	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
ActivityRecognitions	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
Activitys	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AeCourses	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AeProviders	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AeStaffs	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AeStudentAcademicRecords	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AeStudentEmployments	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
ApiInteractions	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
Applications	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
Assessment_AssessmentAdmin...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentAdministration_Org...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentAdministrations	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentAssets	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentELDevelopmentalD...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentForm_AssessmentA...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentForm_AssessmentF...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentForms	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentFormSection_Asses...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentFormSection_Asses...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentFormSections	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemAipDescriptions	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemAips	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemCharacteristics	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemPossibleRespo...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemResponses	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemResponseTheor...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItemRubricCriterion...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentItems	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentLanguages	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentLevelsForWhichDesi...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentNeedAipContents	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentNeedAipControls	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentNeedAipDisplays	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentNeedBrailles	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentNeedScreenEnhanc...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentParticipantSession_...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentParticipantSessions	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentPerformanceLevels	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentPersonalNeedLang...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentPersonalNeedScree...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentPersonalNeedsProfi...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported
AssessmentPersonalNeedsProfi...	Object	Supported	Allowed	Allowed	Allowed	Allowed	By: xDStoreAdapte...	Supported

Deploying the CEDS Generate ODS End Point Server (xDBroker)

Load the CEDS Generate XSD Schema provided by CPSI to manage message validations, data examples in JSON and XML, code set translations and REST API services definitions/names.

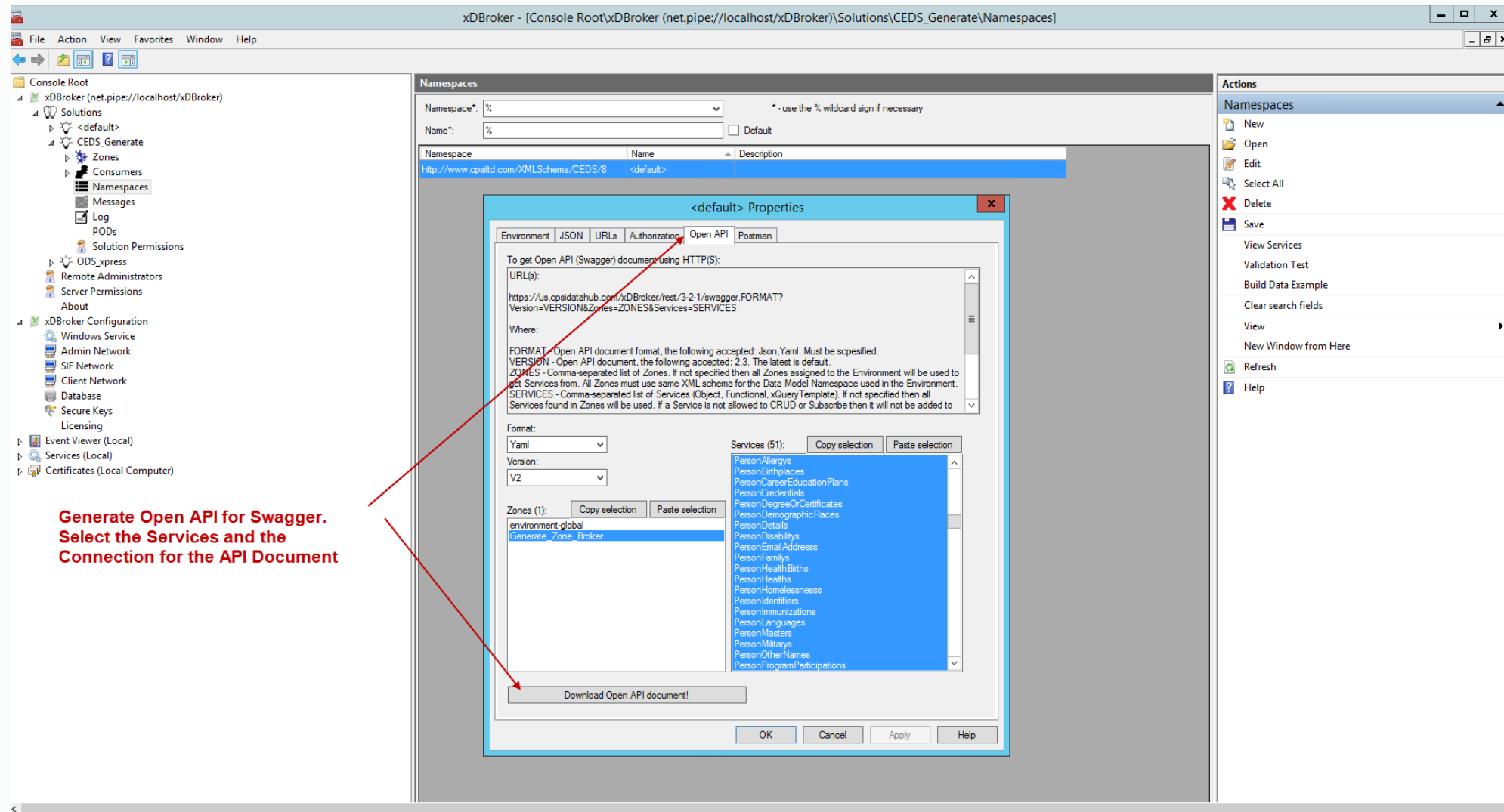
The screenshot displays the xDBroker console interface. On the left, the 'Console Root' tree shows the project structure, including 'Solutions', 'CEDS_Generate', and 'Namespaces'. The main pane shows the 'Namespaces' configuration for 'http://www.cpsiltd.com/XMLSchema/CEDS/8'. The 'XML Schema' tab is active, showing the 'CEDS Generate Schema' with its description and schema set. A red arrow points from the 'Load from XSD file' button to a file explorer window titled 'Select single XSD file which is stand-alone or root of bunch of schemas'. The file explorer shows the file 'CedsSchema.xsd' selected in the 'CEDS Generate XML Schema' directory. The console also displays the XML schema definition for the CEDS Generate Schema, including namespace declarations and schema elements.

Load the XSD Schema into the End Point Server to Provide:

- Validation Services
- XML and JSON Data Samples
- Swagger YAML and XML API Files
- Postman API Collections

Deploying the CEDS Generate ODS End Point Server

Use the xDBroker Interface to generate the “Open API Documents” for all the CEDS REST API’s. These documents can be JSON or YAML and are used in the “Swagger Editor”.



Deploying the CEDS Generate ODS End Point Server

The Open API documents are used by SIS and other vendors as well as State DOE personnel to implement a full REST based CEDS Data Collection Solution. This is used when the State decides to use a single data model for collection and reporting. The CEDS ODS replaces the current data collection ODS. (SIF, Ed-Fi, & Others)

Swagger Editor

File Edit Generate Server Generate Client

```
1  swagger: '2.0'
2  info:
3    title: xDBroker OpenAPI document
4    description: 'Generated for the Solution/Consumer/Environment: CEDS_Generate/255901/<default>. Environment is
    configured for Wrapped Infrastructure and DataModel JSON objects. Environment is configured to Accept
    incoming @xmlns JSON property.'
5    version: '1.7.2'
6    host: us.cpsidatashub.com
7    basePath: /xDBroker/rest/3-2-1
8    schemes:
9      - https
10   paths:
11     '/Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}':
12       post:
13         operationId: Create_OrganizationAccreditations
14         consumes:
15           - application/json
16         parameters:
17           - in: body
18             name: body
19             required: true
20             schema:
21               $ref: '#/definitions/OrganizationAccreditationsMsg'
22         responses:
23           '200':
24             $ref: '#/responses/CreateObjectResponse'
25           '400':
26             $ref: '#/responses/ErrorResponse'
27           '401':
28             $ref: '#/responses/ErrorResponse'
29           '403':
30             $ref: '#/responses/ErrorResponse'
31           '404':
32             $ref: '#/responses/ErrorResponse'
33           '405':
34             $ref: '#/responses/ErrorResponse'
35           '413':
36             $ref: '#/responses/ErrorResponse'
37           '500':
38             $ref: '#/responses/ErrorResponse'
39           '503':
40             $ref: '#/responses/ErrorResponse'
41         security:
42           - Bearer_auth:
43             - solution="CEDS_Generate" environment=""
44       put:
45         operationId: Update_OrganizationAccreditations
46         consumes:
47           - application/json
48         parameters:
49           - in: body
50             name: body
```

xDBroker OpenAPI document

[Base URL: us.cpsidatashub.com/xDBroker/rest/3-2-1]

Generated for the Solution/Consumer/Environment: CEDS_Generate/255901/. Environment is configured for Wrapped Infrastructure and DataModel JSON objects. Environment is configured to Accept incoming @xmlns JSON property.

Schemes
HTTPS

Authorize

default

POST /Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

PUT /Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

DELETE /Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

GET /Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

HEAD /Requests/OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

POST /Requests/OrganizationCalendarCrisiss;zoneId={zoneId};contextId={contextId}

PUT /Requests/OrganizationCalendarCrisiss;zoneId={zoneId};contextId={contextId}

DELETE /Requests/OrganizationCalendarCrisiss;zoneId={zoneId};contextId={contextId}

GET /Requests/OrganizationCalendarCrisiss;zoneId={zoneId};contextId={contextId}

Deploying the CEDS Generate ODS End Point Server

The Open API documents when loaded into the Swagger Editor provide for API testing and for developing REST based clients for the CEDS ODS. The Swagger Editor can generate clients for .NET, Java, Python, php, perl and many other coding languages.

The screenshot displays the Swagger Editor interface. The left pane shows the OpenAPI definition for the `Update_OrganizationAccreditations` endpoint. The center pane shows a dropdown menu for selecting a client language. The right pane shows the details for the selected endpoint, including its description, example value, and parameter content type.

Swagger Editor Menu: File, Edit, Generate Server, Generate Client

OpenAPI Definition (Left Pane):

```
17 -   - in: body
18 -     name: body
19 -     required: true
20 -     schema:
21 -       $ref: '#/definitions/OrganizationAccred
22 - responses:
23 -   '200':
24 -     $ref: '#/responses/CreateObjectResponse'
25 -   '400':
26 -     $ref: '#/responses/ErrorResponse'
27 -   '401':
28 -     $ref: '#/responses/ErrorResponse'
29 -   '403':
30 -     $ref: '#/responses/ErrorResponse'
31 -   '404':
32 -     $ref: '#/responses/ErrorResponse'
33 -   '405':
34 -     $ref: '#/responses/ErrorResponse'
35 -   '413':
36 -     $ref: '#/responses/ErrorResponse'
37 -   '500':
38 -     $ref: '#/responses/ErrorResponse'
39 -   '503':
40 -     $ref: '#/responses/ErrorResponse'
41 - security:
42 -   - Bearer_auth:
43 -     - solution="CEDS_Generate" environment=
44 - put:
45 -   operationId: Update_OrganizationAccreditations
46 -   consumes:
47 -     - application/json
48 -   parameters:
49 -     - in: body
50 -       name: body
51 -       required: true
52 -       schema:
53 -         $ref: '#/definitions/OrganizationAccreditationsMsg'
54 -   responses:
55 -     '200':
56 -       $ref: '#/responses/UpdateObjectResponse'
57 -     '400':
58 -       $ref: '#/responses/ErrorResponse'
59 -     '401':
60 -       $ref: '#/responses/ErrorResponse'
61 -     '403':
62 -       $ref: '#/responses/ErrorResponse'
63 -     '404':
64 -       $ref: '#/responses/ErrorResponse'
65 -     '405':
```

Language Client Dropdown (Center Pane):

ada	eiffel	jaxrs-cxf-client	scala	typescript-inversify
akka-scala	elixir	jmeter	scala-gatling	typescript-jquery
android	elm	kotlin	scalaz	typescript-node
apex	erlang-client	lua	swagger	
bash	flash	objc	swagger-yaml	
clojure	go	perl	swift	
cpprest	groovy	php	swift3	
csharp	haskell-http-client	powershell	swift4	
csharp-dotnet2	html	python	tizen	
cwiki	html2	qt5cpp	typescript-angular	
dart	java	r	typescript-angularjs	
dart-jaguar	javascript	ruby	typescript-aurelia	
dynamic-html	javascript-closure-angular	rust	typescript-fetch	

Endpoint Details (Right Pane):

OrganizationAccreditations;zoneId={zoneId};contextId={contextId}

Description:

Example Value | Model:

```
{
  "OrganizationAccreditations": {
    "@xmlns": "string",
    "OrganizationAccreditation": [
      {
        "@RefId": "651ac7a5-7e3c-ce02-daeb-793d0fa4c7ea",
        "AccreditationAwardDate": "2019-04-29",
        "AccreditationExpirationDate": "2019-04-29",
        "AccreditationStatus": true,
        "OrganizationRefId": "176c36ee-1b49-7a49-a05c-8dbaab77ca03",
        "RefAccreditationAgency": "string",
        "SeekingAccreditationDate": "2019-04-29",
        "XdTouchDate": "2019-04-29T12:56:48.6241534-05:00",
        "XdOrgId": "string",
        "XdCodeSetSpecs": {
          "@defaultSpec": "string",
          "node": [
            {
              "@XPath": "@Xuq",
              "@spec": "string"
            }
          ]
        }
      }
    ]
  },
}
```

Parameter content type: application/json

Parameters:

- zoneId** * required: string (path). Zone ID. Omit or use "DEFAULT" to specify Zone's default (unnamed) Context.
- contextId** * required: string (path). Context ID. Omit or use "DEFAULT" to specify Context's default (unnamed) Zone.

Deploying the CEDS Generate ODS End Point Server

The Chrome Postman Collections and Environment can be generated by the xDBroker and exported as JSON documents that are then loaded into the Postman REST test-bed application. Once the collection is loaded, the end-user can start testing and working with all the CEDS REST API's provided in the collections.

The screenshot shows the xDBroker Configuration window. On the left is a tree view of the configuration structure. The main area displays the 'Namespaces' tab, which includes a table of namespaces and a dialog box for the selected namespace.

Console Root

- xDBroker (net.pipe://localhost/xDBroker)
 - Solutions
 - <default>
 - CEDS_Generate
 - Zones
 - Consumers
 - Namespaces
 - Messages
 - Log
 - PODs
 - Solution Permissions
 - ODS_xpress
 - Remote Administrators
 - Server Permissions
 - About
 - xDBroker Configuration
 - Windows Service
 - Admin Network
 - SIF Network
 - Client Network
 - Database
 - Secure Keys
 - Licensing
 - Event Viewer (Local)
 - Services (Local)
 - Certificates (Local Computer)

Namespaces

Namespace: % * - use the % wildcard sign if necessary
Name: % ☐ Default

Namespace	Name	Description
http://www.cpsiltd.com/XMLSchema/CEDS/8	<default>	

<default> Properties

Environment | JSON | URLs | Authorization | Open API | Postman

Authorization Method:

Download Postman Environment! *

* - This file contains connection information. It must be stored in secure place!

Layout Sets:

Zone:

Services (49):

- OrganizationFederalAccountabilitys
- OrganizationFinancials
- OrganizationIdentifiers
- OrganizationIndicators
- OrganizationLocations
- OrganizationOperationalStatus
- OrganizationPersonRoles
- OrganizationPolicies
- OrganizationProgramTypes
- OrganizationRelationships
- Organizations
- OrganizationTechnicalAssistances
- OrganizationTelephones
- OrganizationWebistes
- PODActivityEducationLevels
- PeerRatingSystems
- Person_AssessmentPersonalNeedsProfiles
- PersonAddress
- PersonAllergys
- PersonBirthplaces

Download Postman Collection!

OK Cancel Apply Help

Actions

Namespaces

- New
- Open
- Edit
- Select All
- Delete
- Save
- View Services
- Validation Test
- Build Data Example
- Clear search fields
- View
- New Window from Here
- Refresh
- Help

Generate Postman Enviornments and API Collection. Download and load into Postman to test and work with the CEDS REST API's

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Namespace	Name	Description
http://www.cpsiltd.com/XMLSchema/CEDS/8	<default>	

<default> Properties

Environment | JSON | URLs | Authorization | Open API | Postman

Authorization Method: Bearer

Download Postman Environment! *

* - This file contains connection information. It must be stored in secure place!

Layout Sets: Json

Zone: Generate_Zone_Broker

Services (49):

- OrganizationFederalAccountabilitys
- OrganizationFinancials
- OrganizationIdentifiers
- OrganizationIndicators
- OrganizationLocations
- OrganizationOperationalStatus
- OrganizationPersonRoles
- OrganizationPolicies
- OrganizationProgramTypes
- OrganizationRelationships
- Organizations
- OrganizationTechnicalAssistances
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- PeerRatingSystems
- Person_AssessmentPersonalNeedsProfiles
- PersonAddress
- PersonAllergys
- PersonBirthplaces

Download Postman Collection!

OK Cancel Apply Help

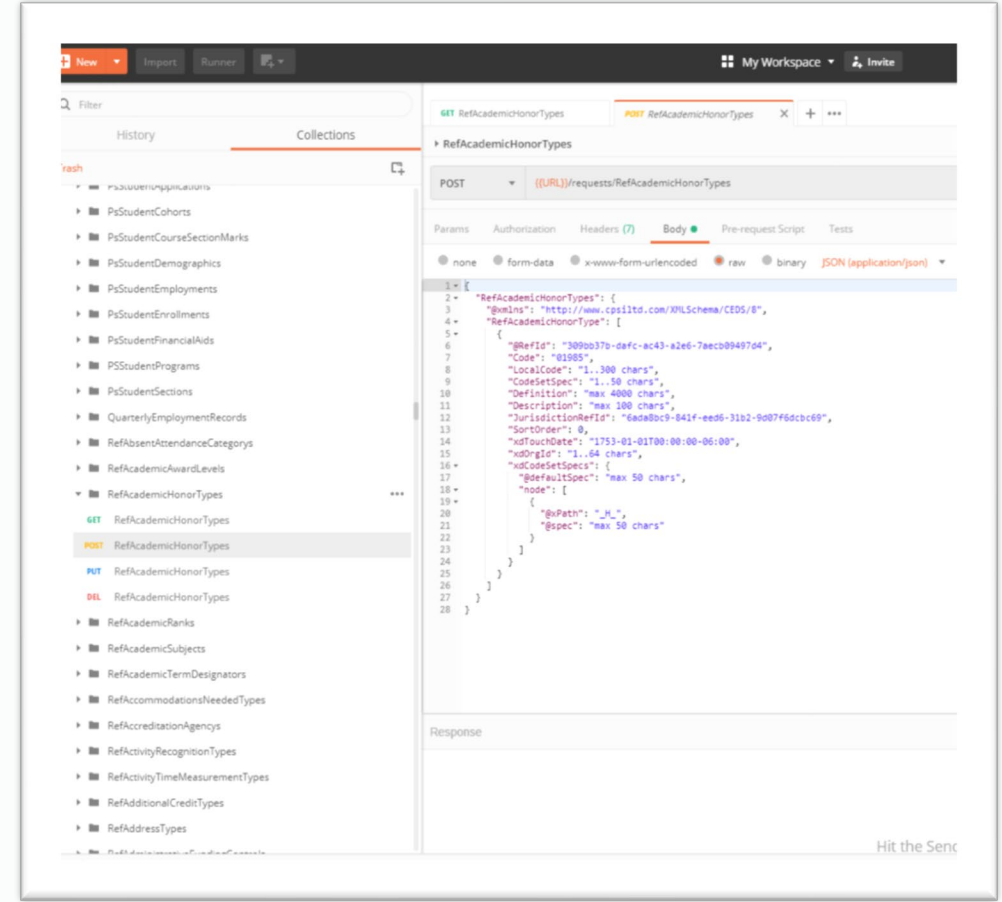
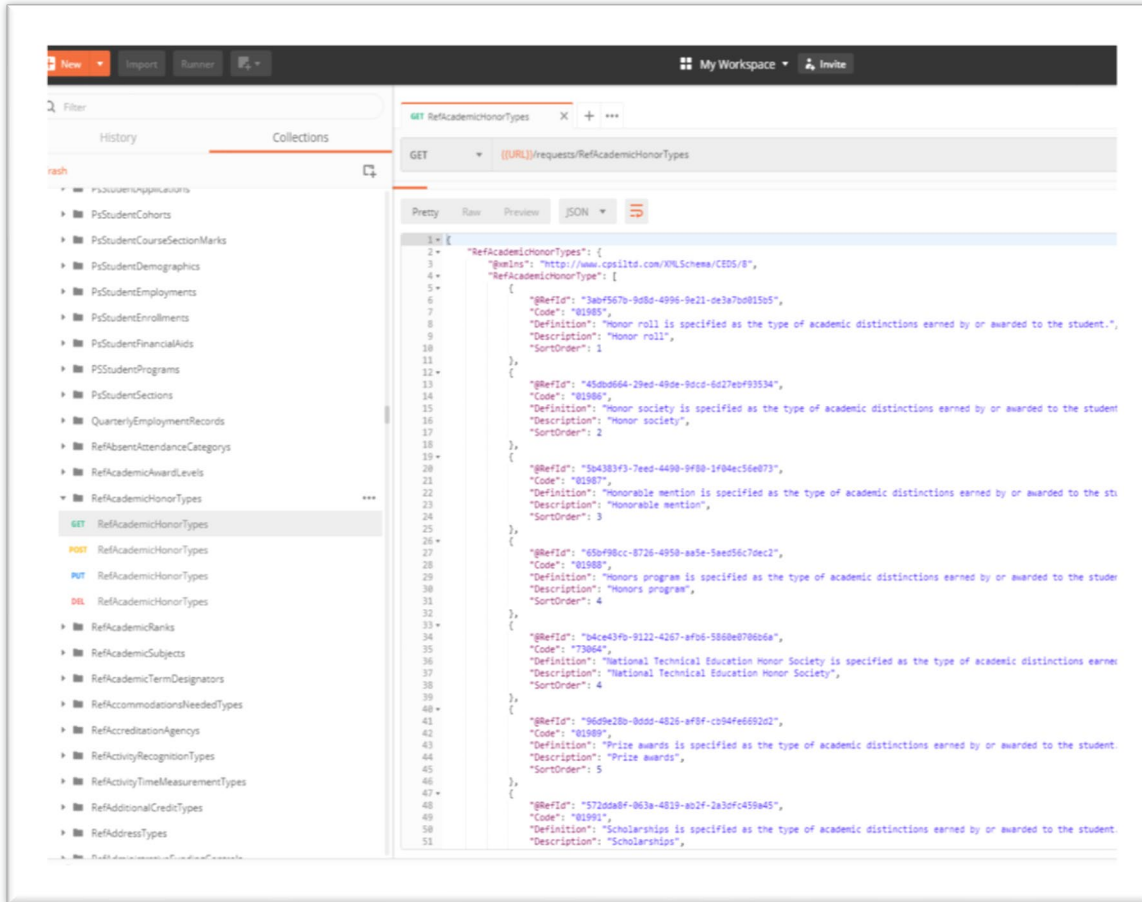
Actions

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Generate Postman Enviornments and API Collection. Download and load into Postman to test and work with the CEDS REST API's

Deploying the CEDS Generate ODS End Point Server (xDBroker)



The Chrome Postman Collections provide ready access to the CEDS Generate APIs. The Environment provides OAuth2.0 Authentication. The collections support GET, POST, PUT and Delete functions. All API's are preloaded with data for testing.

Q&A

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downloadable from our website at:

Visit <https://cpsiltd.com/eimac>

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