

Environmental Information



EN2015

SDWIS Prime ReST API Update

Trang Le, *USEPA Office of Water*

2015 Exchange Network National Meeting

Supporting the Business of Environmental Protection

September 29–October 1, 2015
Sheraton Philadelphia Society Hill Hotel
Philadelphia, Pennsylvania

<http://www.exchangenetwork.net/en2015>

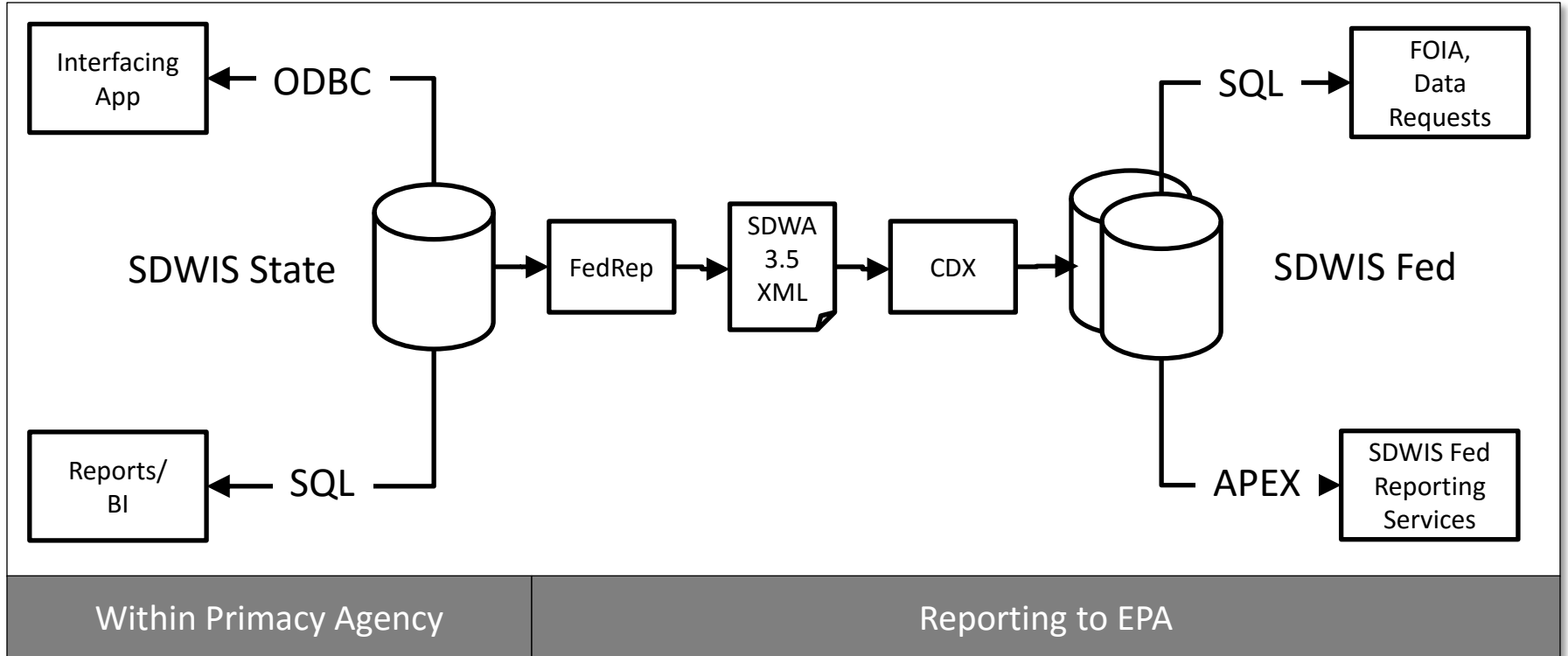
ABSTRACT

SDWIS Prime is a centralized, cloud-based application that will replace the legacy SDWIS State system. While development is still underway, the project team has deployed the first version of a ReST API for drinking water data in a test environment. This work has also raised questions about implementing reporting services in the cloud.

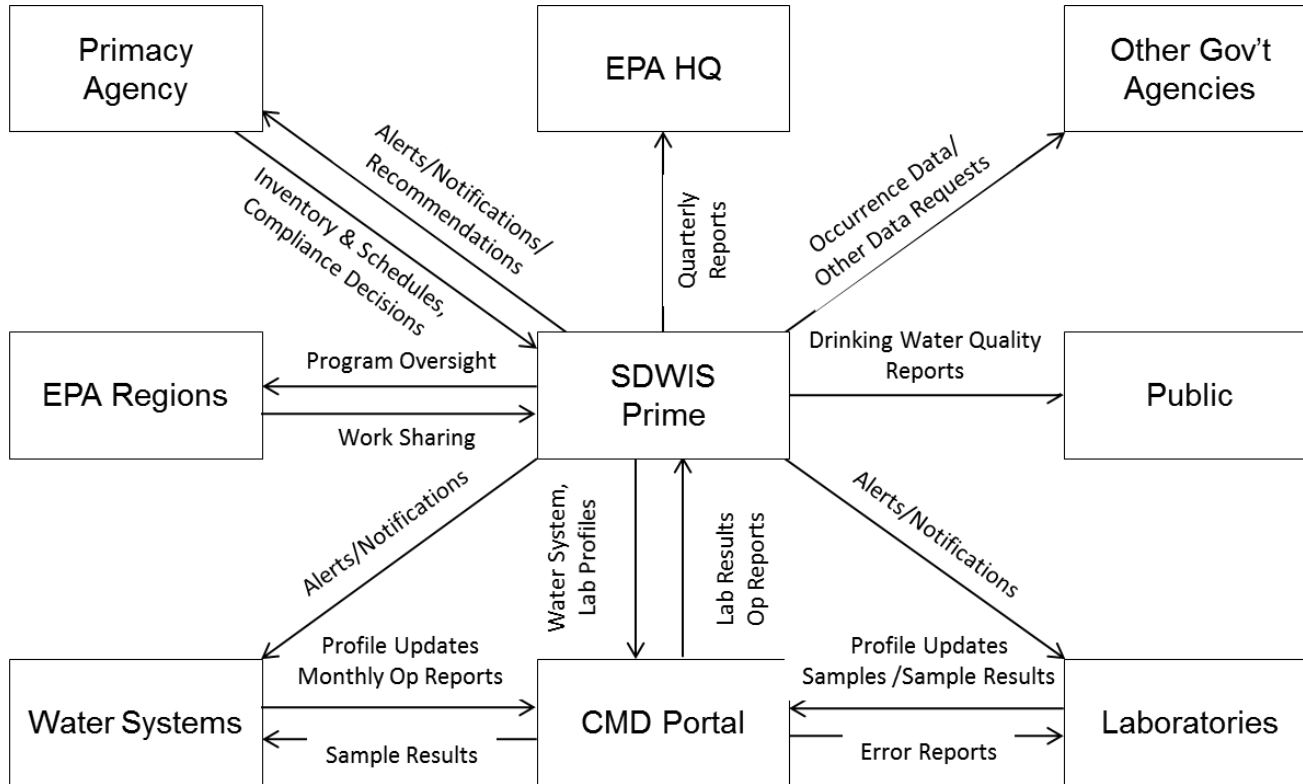
Agenda

- SDWIS Prime Overview
- Current and Future SDWIS Data Exchanges
- SDWIS Prime ReST API Version 1.0
- Cloud Issues with Interfacing Apps
- Reporting Services and the Cloud

Current SDWIS “Data Exchanges”



Future SDWIS Data Exchanges



SDWIS Prime Cloud Issues

- ODBC security
- Uncertain future of Microsoft Access
- Ad hoc queries using SQL
- Replacing SQL and ODBC with a ReST API
- Centralized database structure & performance

SDWIS Prime ReST API v.1.0

- “First draft API” developed winter 2015
- Undergoing state review
 - Several state reports modified to use ReST API calls instead of ODBC
 - Sample MS Access code for calling ReST API
- Will revise the API based on state feedback

ReST API Endpoints (so far)

- Water Systems
 - Status, address, contacts, service type, etc.
- Legal Entities
 - Lab certifications, addresses, etc.
- Facilities
 - Facility type, operating periods, location, etc.

Using Swagger

- Open source ReST API framework
- User interface for documenting and demonstrating ReST API calls

<https://sdwisprime.induscorp.com/PrimeWebService>

- Requires user id and password

Swagger Demo

SDWISPrime REST API

Welcome to SDWISPrime REST API.

Below, you will find a full listing of resources and all the available endpoints. As more endpoints are added, they will be documented here.

To view endpoints associated with a resource, click on its name. You can then click on an endpoint to view more details which include implementation notes, response model schema, search filters (query parameters), and response content type. You can even make a request to the REST API by clicking the "Try it Out!" button after entering any applicable search filters.

Water System Facilities

Show/Hide | List Operations | Expand Operations

GET	/v1/facilities	Get list of Water System Facilities
GET	/v1/facilities/search	Get list of Water System Facilities based on search filters
GET	/v1/facilities/{facilityId}	Get Water System Facility by Facility Id
GET	/v1/facilities/{facilityId}/annualoperatingperiods	Get list of Operating Periods by Facility Id

Facilities Search

Water System Facilities

Show/Hide | List Operations | Expand Operations

GET /v1/facilities

Get list of Water System Facilities

GET /v1/facilities/search

Get list of Water System Facilities based on search filters

Implementation Notes

Returns a list of basic information for Water System Facilities that user has access to based on search filters

Response Class (Status 200)

Model | Model Schema

```
[
  {
    "waterSystemId": "string",
    "fedFacId": "string",
    "wsfName": "string",
    "wsfLocalName": "string",
    "availability": "string",
    "activityStatus": "string",
    "activityStatusDate": "string",
    "facilityType": "string",
    "facilityCategory": "string"
  }
]
```

Response Content Type

Parameters

Parameter	Value	Description	Parameter Type	Data Type
page	<input type="text" value="1"/>	Page Number. Must be numeric. Default value is 1.	query	string

PWSID X11050010 Facilities

Try it out! [Hide Response](#)

Request URL

```
https://sdwisprime.induscorp.com/PrimeWebService/api/v1/facilities/search?page=1&rowPerPage=50&waterSystemId=X11050010&callback=ca
```

Response Body

```
{
  "status": 0,
  "count": 6,
  "totalCount": 6,
  "rowPerPage": 50,
  "page": 1,
  "resultList": [
    {
      "wsFacility": {
        "waterSystemId": "X11050010",
        "fedFacId": "X110419",
        "wsfName": "Fac Name for 5363074",
        "wsfLocalName": "Local Fac Name for 5363074",
        "availability": "E",
        "activityStatus": "I",
        "activityStatusDate": "2002-01-01T05:00:00.000+0000",
        "facilityType": "WL",
        "facilityCategory": "S",
        "link": [
          {
```

“X1” is a test state located in test EPA “Region 11”

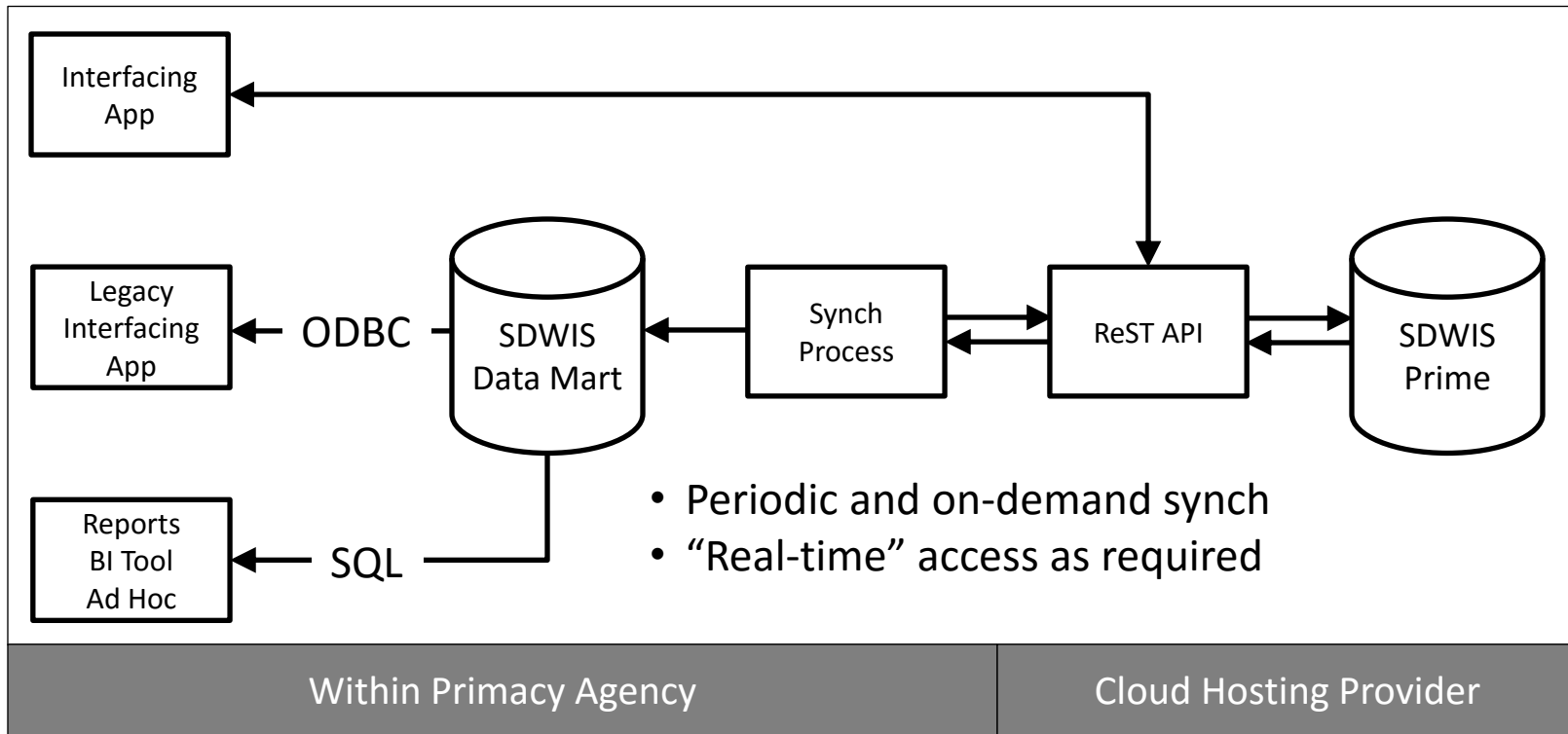
Cloud Issues

- Using SQL for ad hoc queries
 - Centralized SDWIS Prime database optimized for transaction processing and not querying
- Replace ODBC calls with ReST API, but...
 - ReST API endpoints that “join” data like SQL
- Database performance - TBD

Cloud Reporting Services

- Many SDWIS interfacing applications are “canned” reports using database queries
- Option:
 - Build an extensive ReST API “mimicking” expected database “joins”, or
 - Offload reporting to local data marts

Local Data Mart Concept



Local Data Mart

- Pro
 - Preserves ODBC investment, ad hoc queries
 - Business intelligence (BI) tool selection
 - Addresses apps requiring “real time” access to data
- Con
 - Hosting cost for state
 - Velocity of data mart refresh (how fast/slow?)

Questions?

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