Environmental Information Exchange Network

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

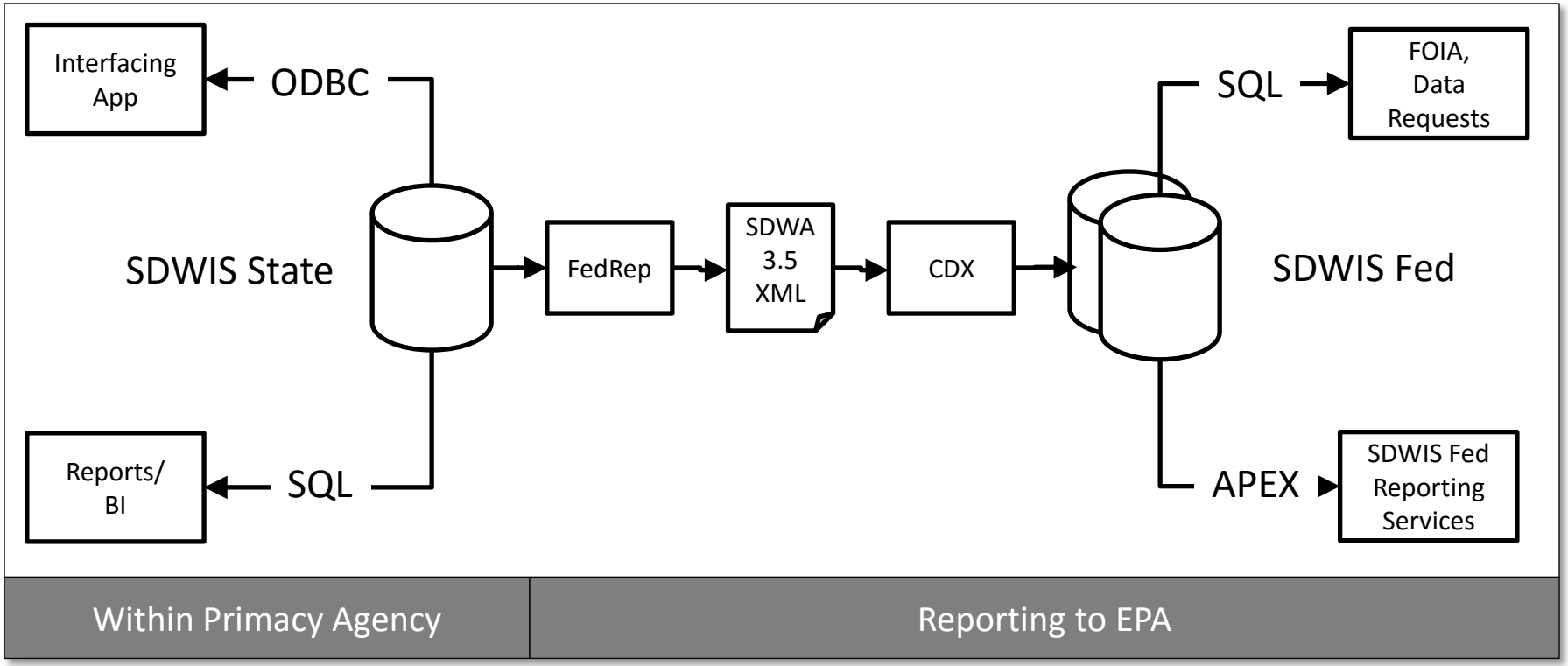
ABSTRACT

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.

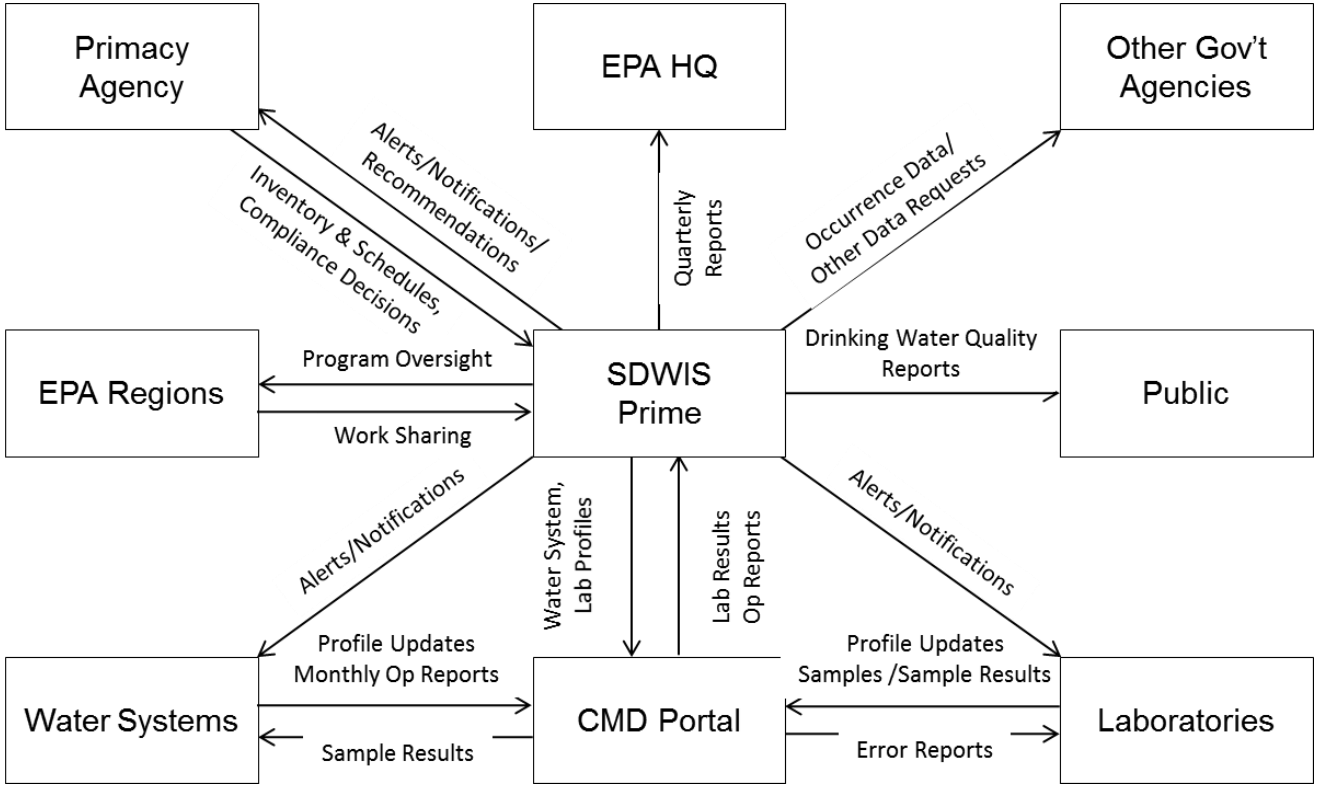
Agenda

- 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)

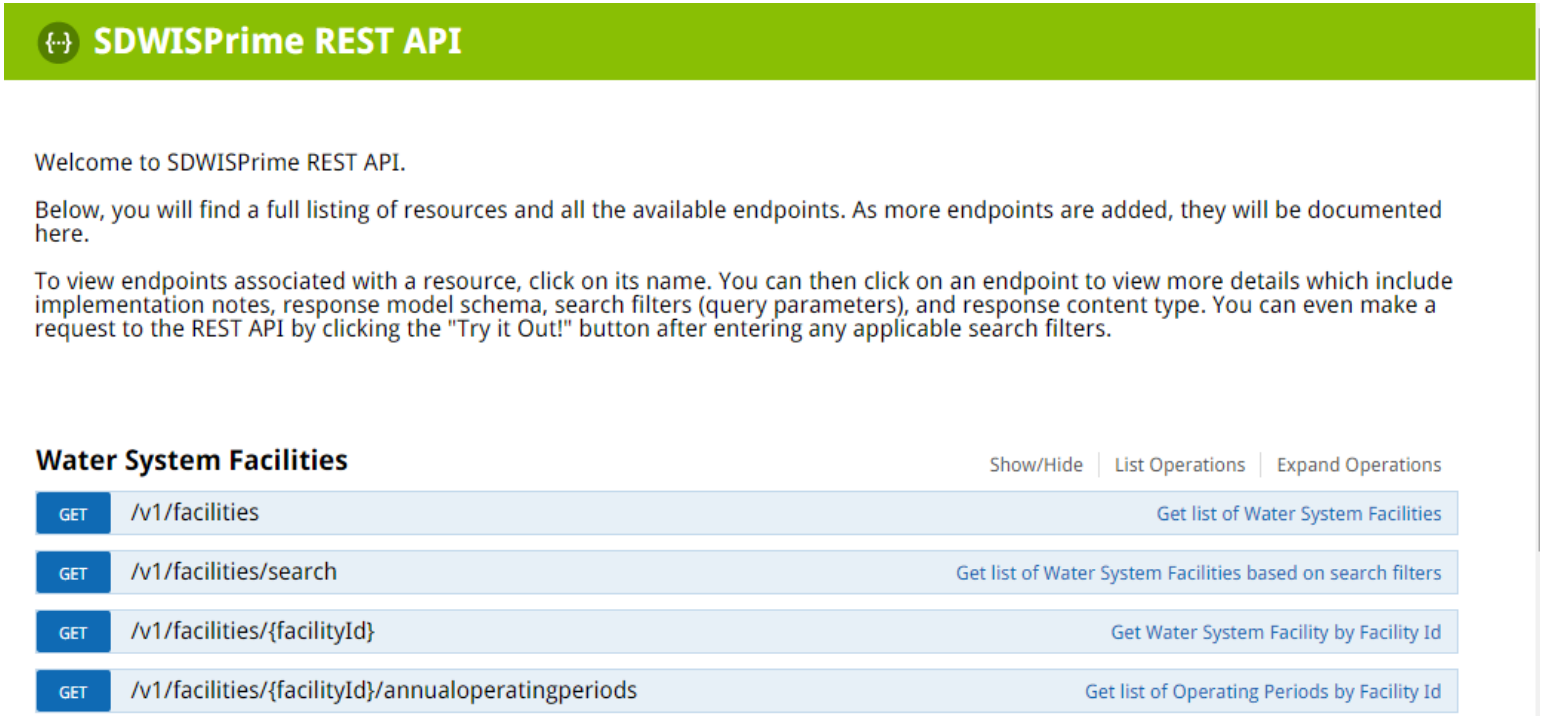
- Water Systems
  - Status, address, contacts, service type, etc.
- Legal Entities
  - Lab certifications, addresses, etc.
- Facilities
  - Facility type, operating periods, location, etc.

Using Swagger

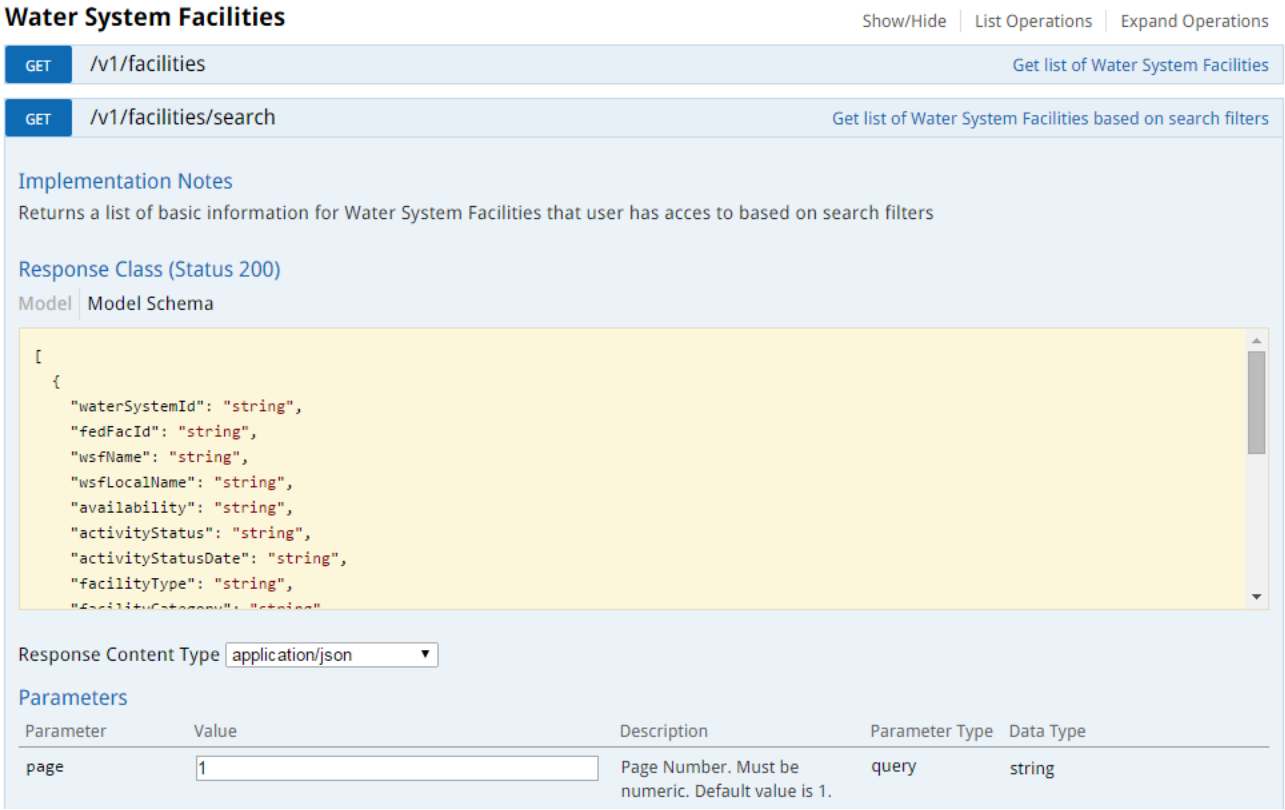
- Open source ReST API framework
- User interface for documenting and demonstrating ReST API calls

  https://sdwisprime.induscorp.com/PrimeWebService
- Requires user id and password

Swagger Demo



Facilities Search



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"

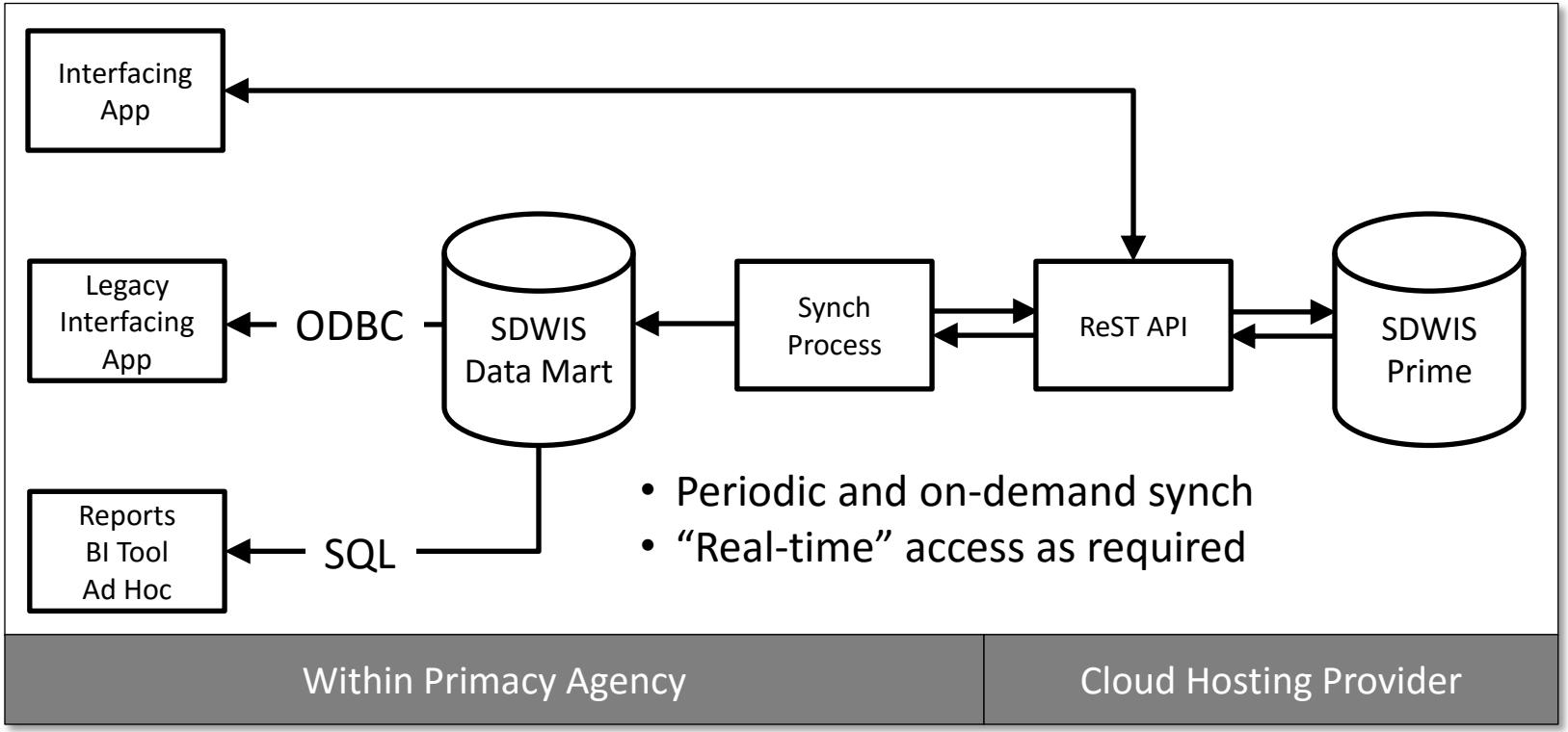
Cloud Issues

- 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?

Greg Fabian
fabian.Gregory@epa.gov