EXCHANGE NETWORK
SHARED SERVICES
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#EN2017
http://www.exchangenetwork.net/en2017
ABSTRACT

Shared Services are no longer a concept or idea but in production where Exchange Network partners depend on services in order to fulfill business needs they have in common with other partners. EPA has worked with States and Tribes to focus on and develop a range of services where this commonality exists.

At this session, we will share four selected services that are in varying stages of maturity. In collaboration with our E-Enterprise and Exchange Network partners, we will continue to seek out efficiencies and improve upon the shared services concept and principles.
TOPICS

• Virtual Exchange Services- Implementation Experience

• Shared CROMERR Services- Advanced Services and Business Processes

• Reusable Component Services- Demonstration and User Feedback Experience

• Laws and Regulations Services- Concept, Demonstration and Feedback
Virtual Exchange Services (VES)
Background

• The VES is a cloud-based platform designed to minimize the burden of building data exchanges by using standard templates that define processing.
• VES has been in service for two years.
• Partners can use VES to supplement or replace existing nodes.
• The exchanges (e.g. ICIS-Air) are configured, not installed.
• Partners can start quickly using the VES web application wizards and powerful dataflow import functions.
• New features, such as dataflow definitions and services, are shareable.
Why VES?

• Provides a low cost option for partners to exchange data
• Eliminates the need for partner node HW/SW
• Streamlines development and maintenance of dataflows
  • Updates to templates are made centrally
• Minimizes the support staff needed for a node
  • You just need a database person
What are the Virtual Exchange Services?

• A “data exchange as a service” platform that hosts partner services for States, Tribes, Regions, Agencies, Industry, etc.
• Partners no longer deal with the complexities of development, data formatting, dataflow logistics, notifications, etc.
• Partners import exchanges (pre-filled forms) from a template for each dataflow they deploy.
• The system generates REST and SOAP services based on the imported templates/forms.
What’s New in VES?

• Upgraded cloud infrastructure - tripled the processing power
• Added new Q/A service to speed testing of dataflows
• Optimized XML creation processes to speed throughput of large submissions
• Upgraded to .Net Workflow v4.5
• Added support for ORACLE stored procedures in the workflow process
• Implemented shared transaction report system (scheduled reports)
What’s New in VES?

• Added custom header storage support
• Implemented owner messaging (notifications/messages to all owners)
• Enhanced security policy module (access control managed by owners)
• Added support for tasks with dynamic parameters (rolling dates or date ranges)
• Implemented workflow persistence and pending transaction recovery
• Added automatic REST URL generation for Query Services
VES

Partner Environment

Admin

Local Staging Tables

Production Database

Import Services From Template

Internet Service Bus Or VPN

Staging data loaded to either Local or in the cloud

Azure Cloud

Virtual Exchange Services

Cloud-based Staging Tables

Exchange Network/ CDX/ Other Users

REST/ SOAP/ FTP ..

Submissions

Reports

Notifications

Production Database

Staging data loaded to either Local or in the cloud
Division of Labor for VES

What You Do

- Call Node Help Desk
  - Get a Node administrator account
  - Set up a “Getting Started” meeting with VES Team
- Establish a secure connection to staging data
- Import exchange – e.g., AQS
- Map your data to the Staging Database
- Review documentation

What VES Does For You

- Creates REST and SOAP Services
- Schedules data exchange
- Authenticates
- Pulls data from staging
- Formats data to XML
- Sends submission to CDX
- Logs activities
- Checks status
- Collects processing reports
- Sends notifications to you
Configuring a Service in the VES Admin Tool
REST Services

- Virtual Exchange Services support REST type services for publishing data
- GetCountyCode – actual REST service on my Chris Clark Production VES
- This is what the REST service URLs look like for my VES REST services
- JSON format:
  - https://virtualnode.cloudapp.net/nodedataservice?node=ChrisClarkProductionNode&Dataflow=RESTServices&request=GetCustomerList&CustomerId=B&format=json
- XML format:
Partners and Dataflows

- Hualapai Tribe: WQX
- San Joaquin Valley Air District: ICIS AIR
- Jefferson County Health Dept: ICIS Air
- Klamath Tribe: WQX
- Alabama: ICIS-AIR
- Georgia: ICIS-AIR, EIS
- Region 1: Storm 3 Buoy Flow, SPCC Tanks
- Tennessee: ICIS-AIR, ICIS NPDES
- Texas: AQS, FRS
- Maine: ICIS Data Access (Export)
- Gold Systems: WQX, ICIS-AIR, AQWMS
- New Hampshire: FRS, AQS, etc.
- South Dakota: TRI-OUT, ICIS-AIR, EIS
- Pacific States Marine Fisheries Commission: Fishery information publishing service

Potential New Organizations
OR, CT, VT, PA, CDC, Chesapeake Bay Program,
St. Regis Mohawk Tribe
Data Exchanges Supported

• AQS 3.0
• ICIS-AIR
• FACID v3.0 (FRS)
• E-Beaches
• EIS
• EMTS v3.0
• ENDS v2.0
• ICIS-NPDES
• SDWIS
• ATTAINS
• CAFO
• SPCC v1.1 (Region 1)
• ICIS-DA
• Buoy Data (Region 1)
• TRI (OUT)
• UIC
• WQX v2.1
• CROMERR
• OWIR_ATT
• RCRA 5.2,5.3
• Radon
• Fishery Information Service
### Dataflow Reference Packages

<table>
<thead>
<tr>
<th>AQS</th>
<th>BioMonitoring</th>
<th>eBeach</th>
<th>EIS</th>
<th>EMTS</th>
<th>FACID</th>
</tr>
</thead>
<tbody>
<tr>
<td>ICIS-AIR</td>
<td>OWIR</td>
<td>RCRA</td>
<td>SPCC</td>
<td>UIC</td>
<td>WQX</td>
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<tr>
<td>BeachNotification</td>
<td>AQS v3.0</td>
<td>ICIS-NPDES</td>
<td>CAFO</td>
<td>NHDEvent</td>
<td>Radon</td>
</tr>
</tbody>
</table>

### Documents

- **Getting Started with Virtual Exchange Service**
- **Virtual Exchange Service Admin Guide**
- **Virtual Exchange Service Connectivity**
- **Virtual Exchange Service Connector Installation Guide**
- **Virtual Exchange Service Lab Guide**

### Tools

- **VESConnector installer**
Questions/Discussion

Contact Information:
nodehelpdesk@epacdx.net
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Shared CROMERR Services

April 24, 2017
Shared CROMERR Services Update

CROss-Media Electronic Reporting Rule (CROMERR)

40 CFR electronic reporting standards for states, tribes, local governments and U.S. EPA

Shared CROMERR Services

- Advanced Web tools
- Source Code
- Web services,
- Documentation and procedures pre-approved by the CROMERR Technical Review Committee (TRC)

Standards for collaboration, information integrity, reducing time, burden and costs.

http://www.exchangenetwork.net/shared-cromerr-services-ipt/
Shared Services Advancements

IPT/Charter
- Sep '12
- 2013

Web Services
- Tool kit
- DEMO TOOL
- First Production Partners

Support Services
- CROMERR Toolkit
- Access Authority
- Baseline CROMERR Checklist & Attachments
- Contractual and Project Planning Package
- Development Toolkit
- Example Shared CROMERR Demo Application

Advanced Services
- Advanced Provisioning Services
- Retrieve Roles
- Retrieve Roles for Data Entry and Partner Provisioning
- Advanced User Information Services
- Authenticate User
- Retrieve User
- Advanced User Services
- Advanced Organization Services
- Retrieve Organization
- Create Partner Organization
- Update Partner Organization
- Retrieve Partner Organization
- Retrieve Partner Organization by External ID

E-Enterprise Services
- E-Portal Bridge
- Advanced Services
- First Advance Partners

Charter
- Web Services

E-mail: sharedcromerrservices@epacdx.net
Charter
Tool kit
DEMO TOOL
Service Desk
2013 2014 2015 2016 2017
Shared Services Adoption

Web Services

2013

2014

2015

2016

2017

E-Portal Integration

Charter

Sep '12

2013

2014

2015

2016

2017

Service Adoption
"Build your own Reporting System"
CROMERR Web Services (5 Standard Categories)

Open Source: https://encromerrdev.epacdxnode.net/shared-cromerr-download/action/public/login
Training Demo: https://dev.epacdx.net/SharedCromerrServicesDemo
Web Services: http://encromerrdev.epacdxnode.net/shared-cromerr-ws/services
Recent Service Adoption Successes

• Oklahoma Department of Environmental Quality 09/15/2016
  Mujiba Zaman - mujiba.zaman@deq.ok.gov

• Iowa Department of Natural Resources 01/05/2017
  LeAnn Larsen - LeAnn.Larsen@dnr.iowa.gov

• Ohio Environmental Protection Agency 02/03/2017
  Pelayo Montoto - pelayo.montoto@epa.ohio.gov
Advanced Tools:  https://dev.epacdx.net/EpaSharedServicesPortal/
Web Services:  https://encromerrdev.epacdxnode.net/shared-cromerr-ws/services
Service Model Decisions:

- Register then Prepare?
- Forms eSigned Directly?
- Third Party Forms signed separately?
- High Volume or 1-Time Use?
System/Service Integration

State/Local System
- Registration
- Login
- Org. Mgmt
- Form Prep
- eSign Docs
- File Upload
- Help Desk
- Doc Review

Web Services Only
- Signature Device
- eSign ESA & Return
- Authenticate/Authorize
- Add, Retrieve
- eSign CoR & Return
- eSign Save & Return CoR
- Retrieve CoR
- Re-Validate CoR
- Retrieve CoR

Web Services Record Keeping
- Log User Id/Pswd Hash
- Id Proof, return & log
- Offer Log Signature Device (Question/Answer)
- eSign Save & Return ESA
- eSign ESA & Return

Advanced Web Web Services & Record Keeping
- Registration
- Login
- Org Mgmt.
- eSign Docs
- File Upload
- Help Desk
- Doc Review

Single Sign On (Get/Validate Token)

Business Process Model

E - ENTERPRISE

Single Sign On

E - E - N - T - E - R - P - R - I - S - E
Identity Proofing Services & Invoicing

- Partner
- Partner System
- Web Service Calls
- SaaS
- Partner Account
- Authentiate
- Lexis
- SCS Help Desk
- Configure Account
- SCS Acct
- Lexis Partner Acct
- Lexis Partner Acct (& Rules of Behavior)
- Invoice
- Partner Finance Dept.
- LexisNexis
- Partner
- LexisNexis Id-Proof Pass/Fail Detail
- LexisNexis Id-Proof Use Summary
- Advanced CROMERR
- Forms:
  - Permissible Use
  - Permissible Addendum
  - Government Application
  - Contract
Shared Services Demo

• https://e-enterprise.gov/eenterprise-new

• https://dev.epacdx.net/EpaSharedServicesPortal/
Questions/Discussion
Reusable Component Services

Cataloging Sharing Services
System Of Registries

The System of Registries (SoR) is a resource for environmental system developers and enterprise architects. It also provides environmental program managers and users of environmental information with automated services to enable better understanding of environmental terminology and data used by the Agency.

Data standards are an integral part of these services. Information about data standards may be accessed on the separate Data Standards Web Site.
RCS – Shared Services Catalog
RCS – Shared Services Catalog

• Catalog of IT assets and services including:
  • REST web services
  • SOAP web services
  • XML schema
  • data flows
  • web services
  • software tools
  • code libraries
  • widget tools

• Catalog for US EPA, States, Tribes, and other partners
RCS – Shared Services Catalog

- RCS record for each IT asset or service
  - Basic information about the service
  - Title, description, contact, documentation

- Enables and promotes sharing and reuse of information and assets
  - Sharing information can range from reuse to exchanging information
  - One state can learn from another state about lessons learned in developing a particular tool

- Can show relationships between assets
  - For example, a REST web service is related to a system, which is related to a widget
RCS – Shared Services Catalog

DEMO
Questions/Discussion
Chemical Laws & Regulations

Source: US Environmental Protection Agency

Find federal laws and regulations related to chemicals. As state and local partners join, more resources will be available. Learn how it works.

Enter chemical name or CAS #

Trichloroethylene

Search chemicals

Powered by EPA Substance Registry Service and Laws & Regulations Service

My Favorites

1 Chemicals

64-17-5: Ethanol (Ethanol)  Remove

1 Laws / Regulations

Questions/Discussion
For More Information

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