Facility Flow in Wisconsin DNR

- FRS update:
  - Web Service: Solicit, then Submit
  - GetFacilitiesByChangeDate
    - ('WI','2004-01-01', url)
- Pre-authenticated at NAAS

Wisconsin's Node Architecture

Outer Firewall

Web Services - Oracle 9iAS 9.0.3

Application Services

J2EE Container

Node Infrastructure
Flow-specific Plug-ins
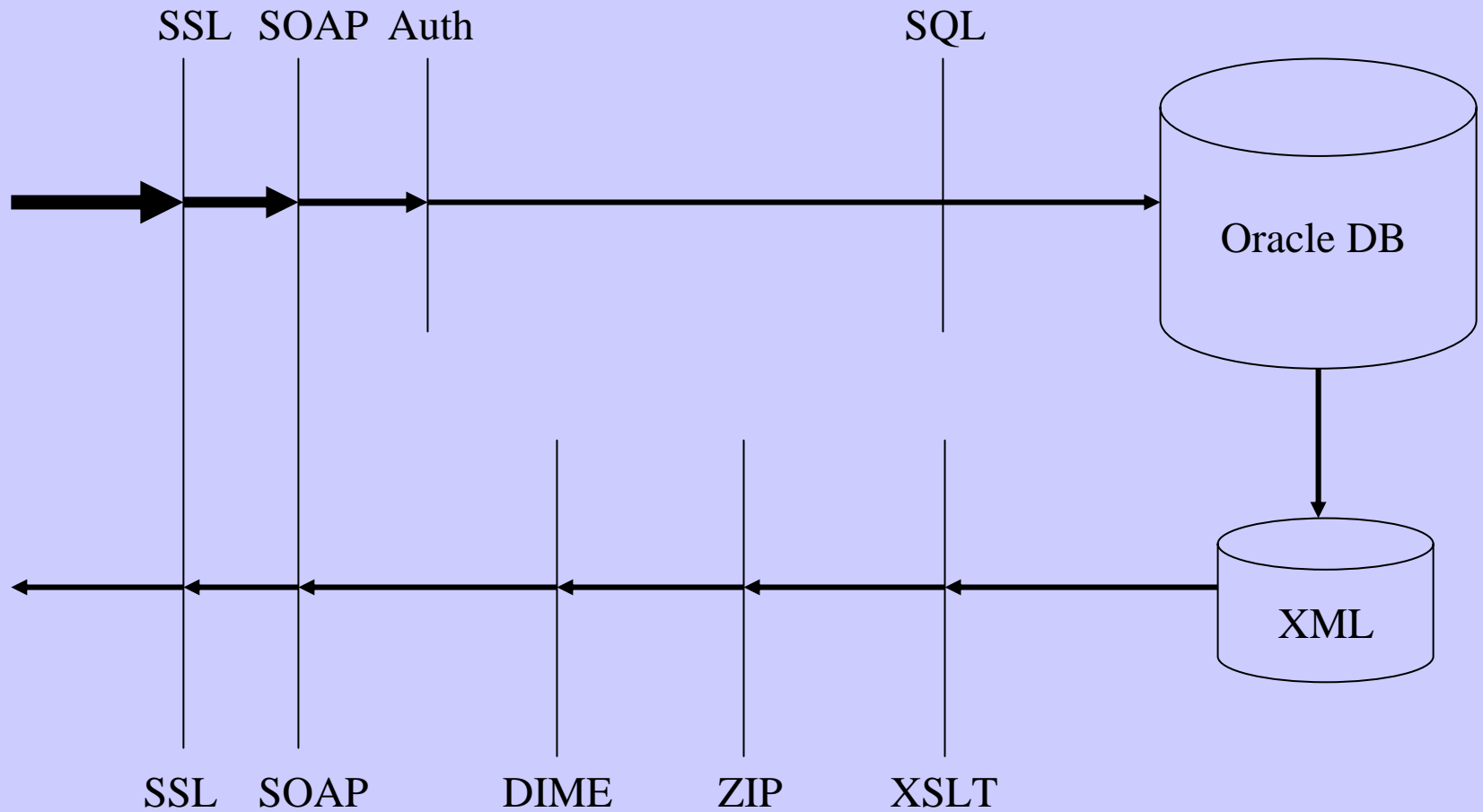Batch Client
User Web Client

Inner Firewall

Oracle 9i

DB functions

Node Data Model

Target Data Model

Flow "Events"

SSL SOAP Auth   SQL

                                                                    Oracle DB

                                                                    XML

SSL   SOAP   DIME   ZIP   XSLT

Request to Wisconsin node

- Web Server verifies acceptable message

- Application server handles SSL

- Java Container holds node functions
  - Extract payload from SOAP envelope
  - Validate Token
  - Perform Request

SSL

SOAP Envelope

SOAP Header

Identifies Language
Identifies Namespace
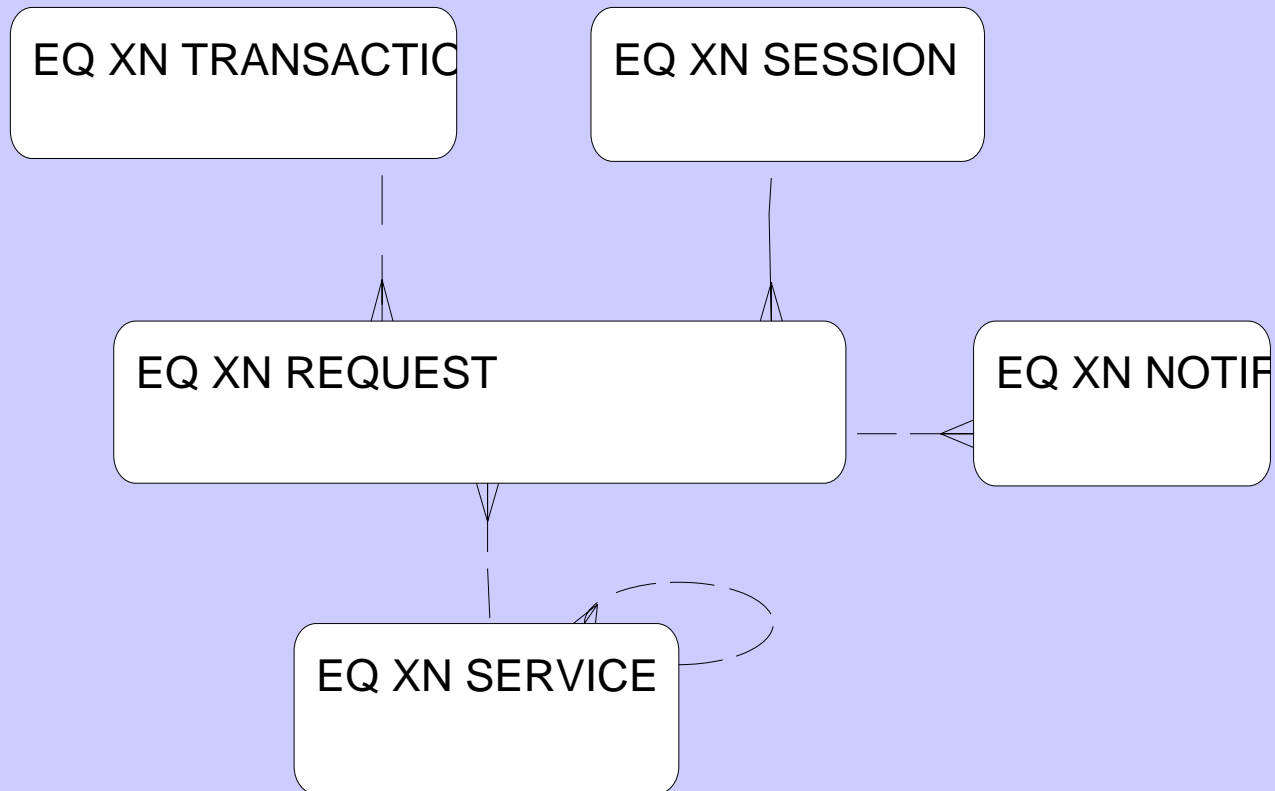
SOAP Body

Security Token
Return URL
Request
Parameters

Verisign

Certificate

Process Request

- Get authentication token, method, parameters, url from the payload

- WI Node Client runs Validate method against NAAS

- Wisconsin node data model used for tracking

Wisconsin Node Data Model

Java Packages

- Node Infrastructure package
- NAAS Security package
- Plugin Framework
- FRS Plugin
- Test Plugin

Processing Solicit Request

- Transaction table: insert record, save query parameters and status

- Generate *Transaction ID* for Transaction record.

- Response SOAP message
  - Received, Transaction ID=

Target Data Model - ESR
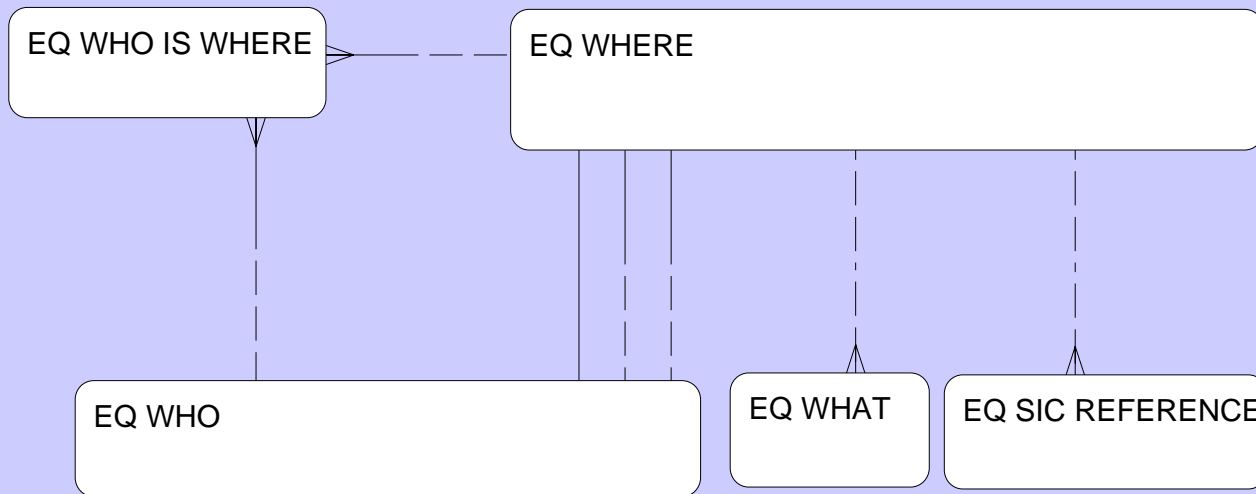
Mapping ESR to FRS

- WHERE: *Facility, Alternative Name, Geographic Location*
- WHO: *Individual, Organization, Mailing Address*
- WHO_IS_WHERE: *Affiliation*
- SIC_REFERENCE: *SIC, NAICS*
- WHAT: *Environmental Interest*

Jump to ESR to show our data, or use next two slides.

File Edit View Data Navigate Lookup Window Help

Site Information

1 Row Retrieved

FID	Site Name	Loc Addr	Ci
438039360	STORA ENSO NA NIAGARA MILL	1101 MILL ST	NIAGARA

New Query

View Fact Page

FID Assignment

Core | ESR Contacts | Src Contacts | SIC Codes | Geo Locators | Src Systems | **Regulatory** | Env Fees | Finan Trans

Program Name	Type	Value	Description
SOLID/HAZARDOUS WASTE MAN	SPILL ID	0438380135	START DT: 10/20/1999, END
SOLID/HAZARDOUS WASTE MAN	SPILL ID	0438368677	START DT: 08/09/2000, END
AIR EMISSIONS MANAGEMENT SY	USEPA AIR PROGRAM	WI438039360	NEI
LAB CERTIFICATION	Status	Active	INDUSTRIAL LAB, WISCONSIN
TOXICS RELEASE INVENTORY	ID NUMBER	WID057670135	EPA 1 ID
TOXICS RELEASE INVENTORY	ID NUMBER	WI0000752	NPDES ID
TOXICS RELEASE INVENTORY	ID NUMBER	54151NGRFW1101M	TRI ID
TOXICS RELEASE INVENTORY	USEPA TRI REPORTER	54151NGRFW1101M	TRIS
LAB CERTIFICATION	ID NUMBER	WI00975	EPA LAB ID
LAB CERTIFICATION	ID NUMBER	EN550	STATE LAB OF HYGIENE ID
LAB CERTIFICATION	ID NUMBER	WI0000752	EPA PERMIT ID
LAB CERTIFICATION	Inspection	Last On-Site Evaluation	: 06/20/2001, REPORT ISSUE
WASTE WATER	USEPA WASTEWATER FACILI	WI0000752	PCS
WASTE WATER	PERMIT	0000752	Specific (Industrial), STATUS: C
AIR EMISSIONS MANAGEMENT SY	Latest Year of Air Data Available	2003	

Insert

Delete

Save

Ready

Start | Microso... | Exchan... | Micro... | Inbox - ... | WDNR -... | ESR 3.4... | Micro... | 1:38 PM

File   Edit   View   Data   Navigate   Lookup   Window   Help

Site Information

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New Query

View Fact Page

FID Assignment

Core | ESR Contacts | **Src Contacts** | SIC Codes | Geo Locators | Src Systems | Regulatory | Env Fees | Finan Trans

Program Name	WhoWhere Type	Name Key	Start Date
AIR EMISSIONS MANAGE	Responsible Corporate Official	WEINBAUER JAMES D	
AIR EMISSIONS MANAGE	DNR Emission Inventory Contact	FARLEY MICHELLE	
AIR EMISSIONS MANAGE	Facility Air Management Contact	MCKEON-RUEDIGER ANN	
AIR EMISSIONS MANAGE	Owns/Operates the Facility	STORA ENSO NORTH AMERICA - WATER QUAI	
AIR EMISSIONS MANAGE	Facility Billing Contact	MCKEON-RUEDIGER ANN	
ENVIRONMENTAL LICEN	Wastewater operator	SCHMUTZLER DAVID W	
ENVIRONMENTAL LICEN	Wastewater operator	LEWENS STEVEN J	
ENVIRONMENTAL LICEN	Wastewater operator	SPARAPANI BRIAN LEE	
ENVIRONMENTAL LICEN	Wastewater operator	WILDENBERG REBECCA A	
ENVIRONMENTAL LICEN	Wastewater operator	GARVAGLIA TODD M	
ENVIRONMENTAL LICEN	Wastewater operator	LINDSTROM KEITH	
ENVIRONMENTAL LICEN	Wastewater operator	DIEHN KENNETH P	
ENVIRONMENTAL SITE F	Fact System Data Review Contact	HERMAN DANIEL M	
LAB CERTIFICATION	CONTACT & BILL	MCCULLOCH JEFF	
LAB CERTIFICATION	Laboratory Director	ANDERSON JASON	

Insert

Delete

Save

Ready

Start | Microso... | Exchan... | Micro... | Inbox - ... | WDNR - ... | ESR 3.4... | Micros... | 1:17 PM

Asynchronous Processing

- Once-Daily Batch Client checks Transaction Table for actions that need to be performed

- Build Key List query based on Request Parameters

- Key List results stored in reusable *Query List* table

Retrieving Facility Data

- Stored Procedure SQL query for consolidated schema from Key List
- XML-SQL Utility (XSU) generates XML from SQL query results

Processing the SQL XML

- XSLT: Maps ESR data to FRS Schema
  - element names, etc.
  - Create XML header
- FRS XML from the application server transaction table as XML
- Update Transaction table - Status=Ready

Submitting Back to CDX

- Same Once-Daily Node Client Program checks Transaction Table
  - "Ready" transactions
- Authenticate against NAAS
  - get authentication token

Submit, continued

- Get payload
- Apply utilities: ZIP, then DIME, then SOAP
- Submit to *url* with token, transaction ID and stored payload
- Receive response
- Mark the transaction as being complete.

Jump to FRS for the other end of the flow, or use the next two slides

File   Edit   View   Favorites   Tools   Help

Back   Search   Favorites   Media

Address http://oaspub.epa.gov/enviro/fii_query_dtl.disp_program_facility?p_registry_id=110002433322   Go

U.S. Environmental Protection Agency

Facility Registry System (FRS)

Recent Additions | Contact Us | Print Version   EF Search: [   ] GO

EPA Home > Envirofacts > FRS > Report

Facility Detail Report

Report an Error

FRS

Facility Name:	STORA ENSO NA NIAGARA MILL
Location Address:	1101 MILL ST
Supplemental Address:	
City Name:	NIAGARA
State	WI
County Name:	MARINETTE
ZIP/Postal Code:	541511432
EPA Region:	05
Congressional District Number:	08
Legislative District Number:	

Internet

Start | Deleted It... | Microsoft ... | Microsoft P... | EPA - Envi... | ESR | Stora Enso... | 9:02 AM

STATE MASTER	WI-ESR - 8913 Data Source is WI-ESR	is Stora Enso North America Corp Type: Private , Phone: , DUNS: Address: Po Box 8050,Wisconsin Rapids,WI AIR: FACILITY AIR MANAGEMENT CONTACT is Ann Mckeon-Ruediger Title: , Phone: , email: Address: Po Box 8050,Wisconsin Rapids,WI AIR: RESPONSIBLE CORPORATE OFFICIAL is James D Weinbauer Title: , Phone: , email: Address: Po Box 8050,Wisconsin Rapids,WI HAZARDOUS WASTE: HAZARDOUS WASTE CONTACT is Linda S Somer Title: , Phone: , email: Address: Po Box 8050,Wisconsin Rapids,WI TRI: PUBLIC CONTACT is Timothy E. Laatsch Title: , Phone: , email: TRI: TECHNICAL CONTACT is James D Weinbauer Title: , Phone: , email: WASTEWATER: AUTHORIZED REPRESENTATIVE is F. Andrew Gilbert, Jr.

Positive Features

- It works, (we think)
- It's extensible: we can easily add different queries and flows or modify parameters
- It takes advantage of DB horsepower
- It's *Pure Java*; we're not using many application-server features (except for XSU)
- consolidated schema ensures referential integrity

Negative Features

- XSLT for large files is memory-intensive (we're using 1.5GB on the application server)

- Uses (proprietary) Oracle XSU tool

Room for Improvement?

- More stable environment (may be Websphere, though still J2EE)
- More Flows!
- Very interested in bi-directional flows!
- User client for our ad hoc use and for facilities!

Questions?

Transferability- alternative DNC, Mapping, Node table structure

Components? Oracle 9iAS 9.0.3, Apache Axis, Java pieces - Eclipse, JUnit, Ant.

Cost so Far? - $192,565

hardware, software, people, training

Want More Information?

Tom Aten

Project Manager

608-267-7638

thomas.aten@dnr.state.wi.us