DATA EXCHANGE NODE: REQUEST FOR INFORMATION RESPONSE

RFI#: EHS90078

Prepared for

West Virginia Department of Health & Human Resources

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1 Introduction

enfoTech & Consulting, Inc. (enfoTech) is pleased to provide the following information in response to West Virginia Department of Health and Human Resources' (WVDHHR) Request for Information. Based on our preliminary understanding of your requirements, we have provided information on the three major components of the proposed solution:

1 Exchange Network Node
2 Laboratory-to-State data submission mechanism
3 Exchange of source water protection information

Our information packet includes the following components:

1. Technical Information **(Section 2)**
   - Exchange Network Node **(2.1)**
   - Accept electronic submissions from laboratories **(2.2)**
   - Exchange source water protection information **(2.3)**
2. Overview of Company Qualifications **(Section 3)**

enfoTech has been a widely recognized leader in developing Exchange Network Node solutions since 2002. We were a member of the Node beta workgroup in 2002 and since that time have implemented over 40 Exchange Network data flows for 14 state and tribal partners. We have developed a strong working relationship with state and tribal partners for Node and Node data flow development. We have been actively participating in/contributing to the Exchange Network core technology innovation and development, especially for the Node 2.0.

We have also specialized in developing laboratory-to-state drinking water e-Reporting systems, having developed electronic drinking water (e-DWR) e-Reporting solutions for New Jersey DEP, Ohio EPA, Rhode Island DOH, and Michigan DEQ. enfoTech was the original author of the e-DWR XML schema for this purpose.

Finally, we have experience in exchanging source water protection geospatial information, having implemented a similar project for Massachusetts DEP & EPA Region 1 for the exchange of geospatial source water area data.

2 Technical Information

2.1 Exchange Network Node

2.1.1 Overview

enfoTech has developed an Exchange Network node in both .NET and Java environments that is compatible with the Node 2.0 specifications. This product is currently marketed as the e-Node2008 Software Suite and is available for purchase as a Commercial off the Shelf (COTS) product. The e-Node2008 Software Suite consists of a series of software components identified in the diagram below:

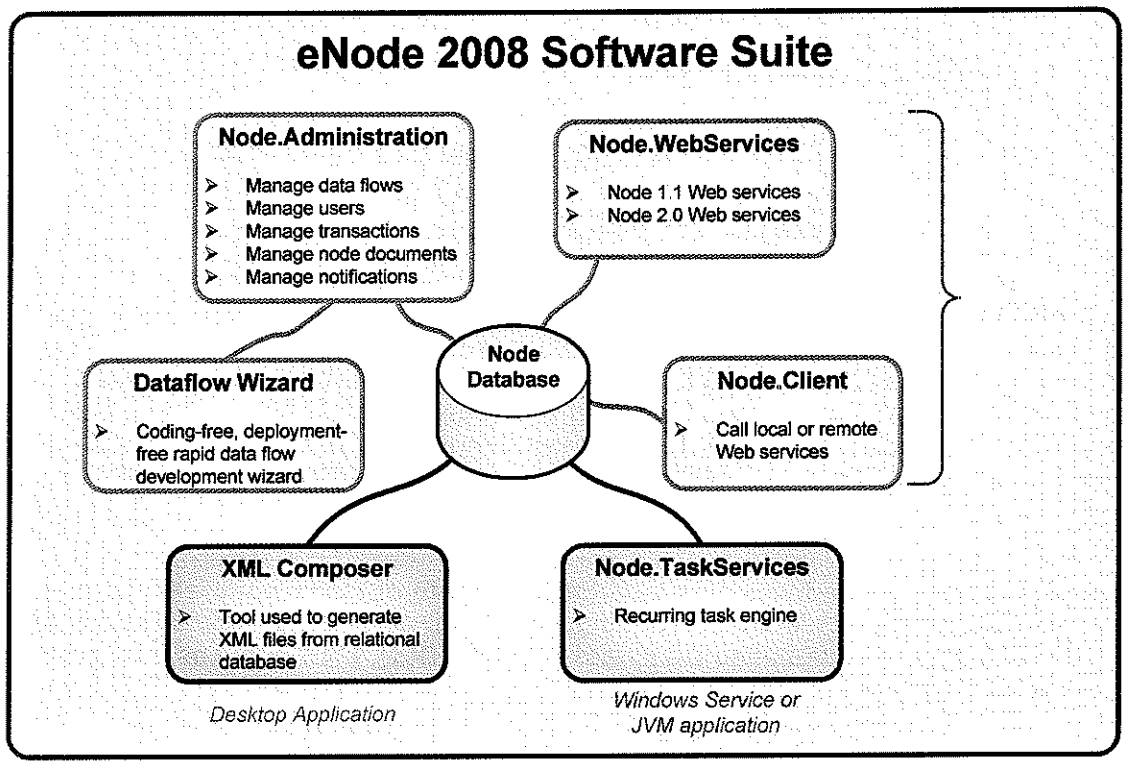


Figure 2-1 Components of the e-Node2008 Software Suite

Each of these components is described briefly below:

- **Node.Administration:** A Web interface that allows Node and Domain administrators to configure the Node and manage data flows. The Node.Administration application serves as an interface to configure the Node.WebServices, Node.TaskServices, Node.Client, and (if applicable) Dataflow Wizard applications.
- **Node.WebServices:** A Web Service engine that controls the logic for responding to Web Service requests on the Node, providing the web services outlined in the Node 1.1 and 2.0 Specifications. When responding to a Web service request, Node.WebServices will execute logic plugged in for a particular data flow.
- **Node.Client:** A simple Web interface that allows individuals to invoke Node 1.1 or 2.0 Web Services on any Node, including the e-Node2008. This application can be useful for either testing your Node functionality, or can serve as a simple Node client to invoke Web services on other Nodes.

- **Node.TaskServices:** Provides the capability to execute tasks on a scheduled basis, which allows you to schedule and initiate Web service exchanges. These scheduled tasks typically involve the invocation of Web Services on other Nodes, such as EPA's Node. The scheduled tasks are defined by the task plug-in and are configured by a Domain Admin for a particular data flow.
- **Dataflow Wizard:** An optional add-on for e-Node2008 that allows data flow developers to rapidly create new dataflows with minimal coding and deployment required by using a drag-and-drop interface to select the actions to be performed in the data flow.
- **XML Composer:** An optional add-on for e-Node2008 that provides a user interface to map XML data structures such as XML schema or XML instance files to database structures to allow rapid development of XML composition or decomposition procedures.

2.1.2 Typical Node System Requirements

The eNode system has the following minimum hardware requirements:

Web/App Server(s):

Table 1: Web/App Server's Hardware Requirements

Web Server	Minimum Requirements	Recommended System
Load Balancing	Not Required	Network Load Balancing
Processor	Pentium IV 2.4 GHz or higher	Pentium IV 2.8 GHz or higher
Memory	1 GB of RAM	2 to 4 GB of RAM or higher
Disk Space	20 GB free hard disk space	40 GB free hard disk space or higher

eNode(.NET) will run on Microsoft IIS web server; eNode(Java) can run on any J2EE compatible application server, and has been tested on most major Java application servers such as WebLogic, WebSphere, Tomcat, SunOne, and JRun.

Node Database Server:

Table 2: Node Database Server's Hardware Requirements[1]

Database Server	Minimum Requirements	Recommended System
Cluster Server	Not Required	Cluster Server with RAID 5 Storage Array
Processor	Pentium IV 2.4 GHz or higher	Pentium IV 2.8 GHz or higher
Memory	1 GB of RAM	4 GB of RAM or higher
Disk Space	40 GB free hard disk space	80 GB free hard disk space or higher

[1] This is a generic recommendation Memory/Processor specifications will vary depending on the amount of data

Currently, our e-Node 2008 has been tested to work with the following Node data sources:

Platform	Node Data Sources
.NET	• Oracle 9i or later • SQL Server 2000 or later
Java	• Oracle 9i or later

Please note that the discussion above is meant for the Node database (not the database platform of the source data). Both our .NET and Java Nodes are capable of flowing data from many different database platforms. There is no limitation in the source backend databases for dataflows, since custom coding can be written for the dataflow plug-in in either C# or Java to pull from the particular non-traditional database. For example, we implemented the RCRA Data Flow for Texas to pull data from their Ingres database.

2.1.3 Node Documentation

The following documentation is typically included for a customer:

1. **Node Installation Guide (.NET):** Provides instructions on how to install the .NET Node application and database. Includes an identification of minimum requirements and high-level application architecture.
2. **Node Installation Guide (Java):** Provides instructions on how to install the Java Node application and database. Includes an identification of minimum requirements and high-level application architecture.
3. **Node Administration Guide:** Provides instructions on how to administer the .NET and Java Nodes
4. **Node User's Guide:** Provides instructions on how to use the Node Client application to call web services. This document is typically useful for external partners that need to interact with a State's Node by either soliciting data from or submitting data to the Node.
5. **Node Data Flow Developer's Guide:** Provides instructions for data flow developers on how to develop new node data flows and add them to the Node.

2.1.4 Node Installation & Training

Node installation can either be conducted remotely (via VPN access) or via an onsite visit. We recommend a 1-day onsite visit for first time installation, which can be coupled with Node training services.

2.1.5 Node Administration

A robust Node Administration dashboard is provided, as shown here:

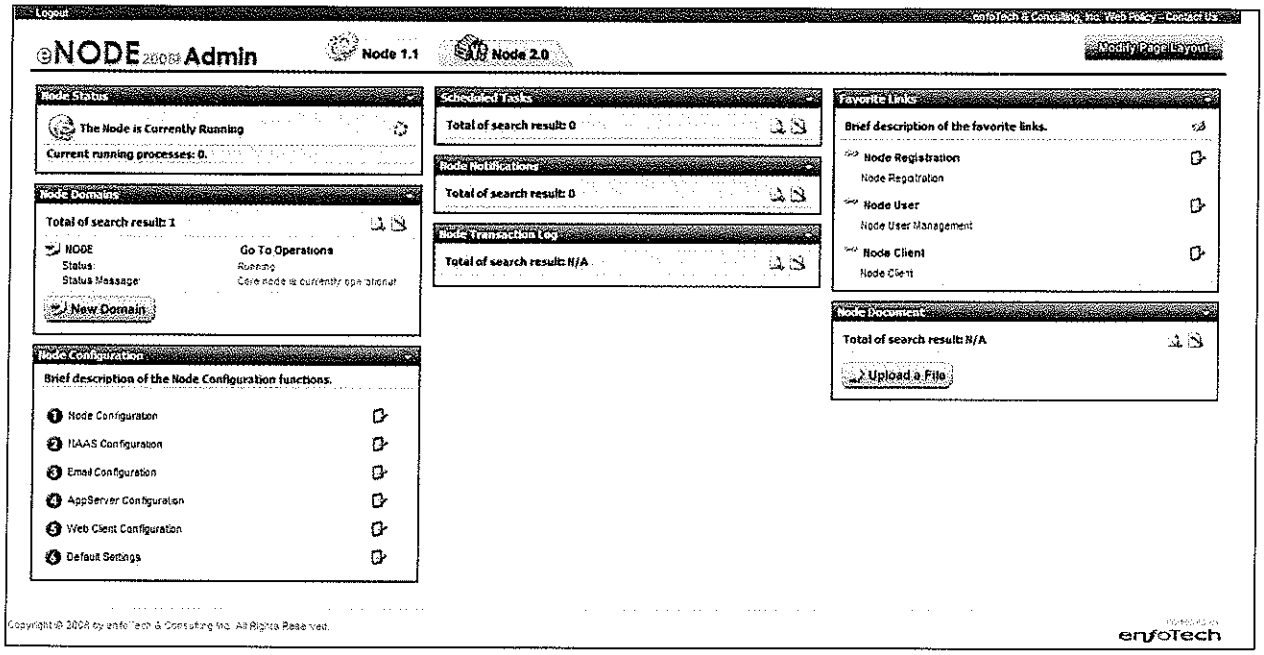


Figure 2-2 Node Administration Dashboard

The Node Administration Dashboard consists of a collection of configurable Web Parts. A brief description of each Web Part is given below:

- **Node Configuration:** allows the Node Administrator to control general node settings. This page is accessible only to Node Administrators.
- **Node Domains:** allows Node Administrators to create and manage Domains. This menu option also provides Node and Domain Administrators with the ability to create and manage operations (i.e. dataflows) under the domains.
- **Node Monitoring (Node Transaction Log):** allows the user to view a log of all activity captured by the Node. Node Administrators can view logging for all data flows, while Domain Administrators can only see logging for the domains they have access to. This web part allows viewing of logging for web service requests as well as Scheduled Tasks.
- **Node Documents:** provides the capability to search, upload, or download any documents that are stored in the Node. This can be documents either submitted to the Node or prepared for outgoing submission.
- **Favorite Links:** allows Node Administrator to add any URL for easy access. The following links are provided by default:
    - Node Users: allows Administrators to create and manage users (both Node Users and Administration Console Users).
    - Node Registration: allows Administrator to add/update data service's meta data to the e-Node2008.
    - Node Client: A link to access Node.Client Application.
- **Node Status:** Display the status of the Node and lists any current running background processes.
- **Scheduled Tasks:** allows the user to view the logs for scheduled tasks.
- **Node Notifications:** allows the user to view a listing of any notifications received from other Nodes.

2.1.6 Node WebServices (1.1 and 2.0)

The Node.WebServices application provides simultaneous support for both Node 1.1 and Node 2.0 specifications. Because two separate Node 1.1 and Node 2.0 end-points must be maintained, the Node installation instructions call for two copies of Node.WebServices application to be deployed (typically Node.WebServices and Node.WebServices2 directories).

Even though there are two separate Node end-points, both Node 1.1 and Node 2.0 data flows can be administered using the same Node Administration Console. Users simply need to click the tab at the top of the screen corresponding to the Node version they wish to administer:

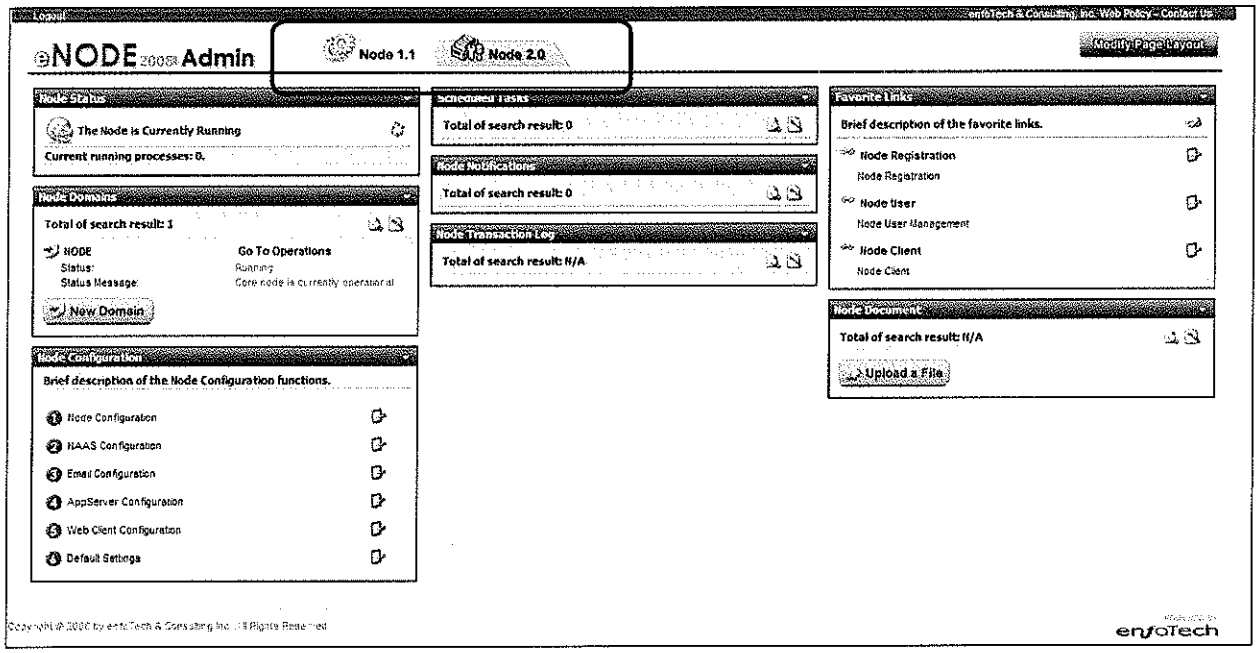


Figure 2-3 Node Administration Supporting Node 1.1 and Node 2.0 Data Flow Administration

Two options are available regarding the Node database. A separate Node 1.1 and Node 2.0 database can be set up, or they can reuse the same database. This is managed via one configuration setting during Node installation.

In addition, backward compatibility is achieved by allowing data flows built in Node 2.0 to make Node 1.1 web service calls and vice versa.

2.1.7 Adding & Configuring Exchange Network Data Flows

enfoTech's e-Node2008 Software Suite is designed to allow data flows to be plugged into the Node without modifying the code of the core node solution. There are two primary mechanisms for Node data flow development. They are:

1. Non-Data Flow Wizard
2. Data Flow Wizard

The pros and cons of developing the data flow using the Data Flow Wizard are listed below:

- Data Flow Wizard:
  - Pros:
    - Rapid data flow development
    - No J2EE or .NET coding knowledge required
    - No need for file deployment on application server
    - Migration of flows from TEST to PROD is easier
    - More easily able to share solution with other e-Node customers
  - Cons:
    - If complex logic is required, Data Flow Wizard may require additional programming support to accommodate the flow's complexity
    - High-level data flow processing control (instead of low-level) might not be appealing to developers
    - Less control over processing performance

2.1.8 Data Flow Wizard

The Data Flow Wizard is an optional add-on to the Node Administration Console. When implemented, data flow developers have the option to add new data flows according to the traditional method outlined in Section 2.1.7, or by using the Data Flow Wizard.

The Data Flow Wizard allows data flow developers to create Node 1.1 or Node 2.0 data flows (including tasks) without any coding or deployment. An innovative drag-and- drop interface allows data flow developers to drag available services into the Web Service Orchestration Path (shown here) to define the order of steps that will occur.

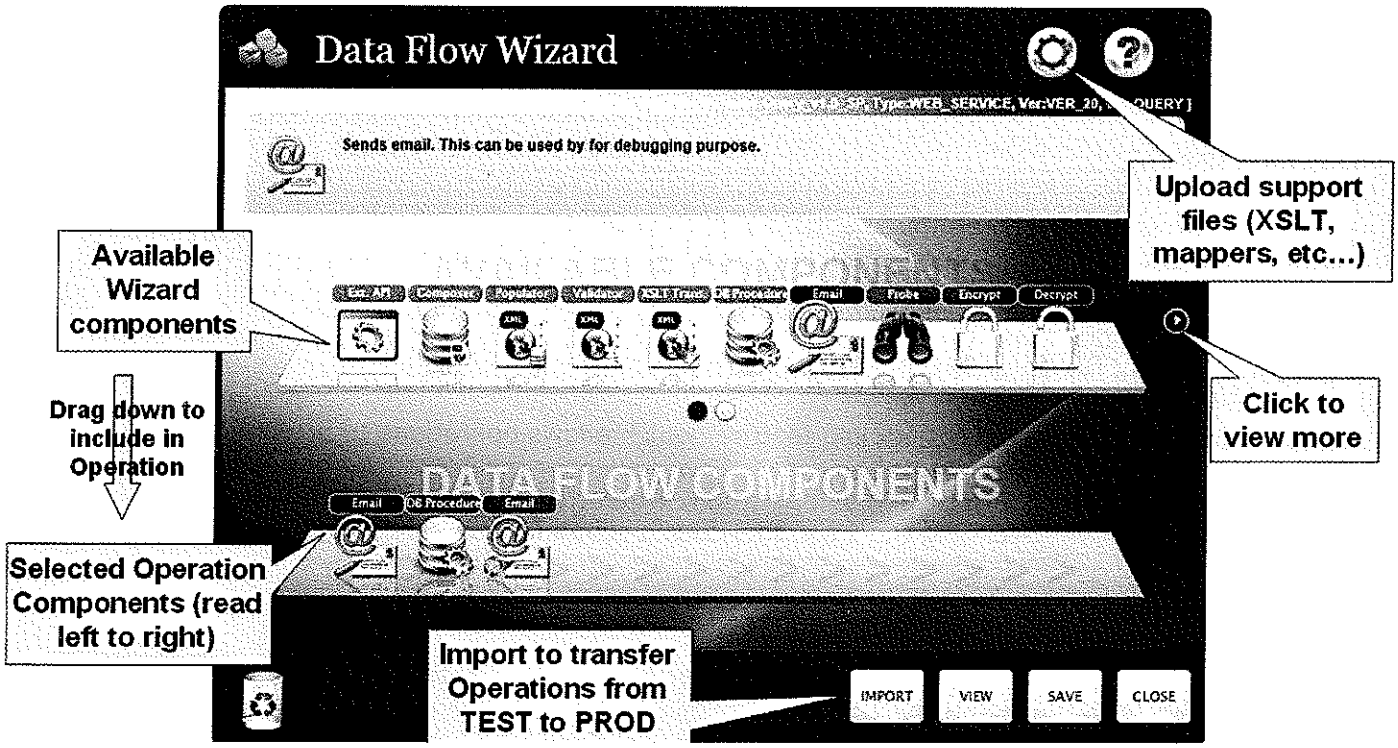


Figure 2-4 Data Flow Wizard

Available pluggable components include:

- **XML Composer**
- **XML Validate**
- **XML Transform**
- **Stored procedure calls**
- **Web Service calls**
- **Email Notification**
- **Encrypt/Decrypt**
- **Compress/Decompress**
- **Probing**
- **External API**

2.1.9 Non-Data Flow Wizard

Steps involved to plug-in a data flow using the non-Data Flow Wizard are provided below:

Step 1: Create a Domain: To add a new dataflow to the Node, the Node Administrator will first need create a Domain. A Domain is a collection of operations (or dataflows). Operations are organized into domains to allow for operation management. (For example, you may have 3 web service operations called GetDrinkingWaterResults, GetDrinkingWaterInventory, and GetDrinkingWaterViolations. By grouping these 3 operations into 1 domain, you can set up 1 domain administrator who would be able to manage all 3 operations.)

Step 2: Create Operation: After a Domain is created, a new Operation can be created. An "Operation" is the equivalent of a "Data Flow".

Step 3: Writing Custom Web Service or Task Service Classes: In order to write custom code that you want to plug in to the Node, the Data Flow Developer will need to write custom code in either .NET (for .NET Node) or Java (for Java Node).

This mechanism has been a proven solution to allow 3rd party vendors to plug data flows into the e-Node solution. The mechanism described in this section applies to the creation of both Node 1.1 and Node 2.0 data flows.

2.1.10 Node Task Scheduler

The e-Node includes a task scheduling feature, which allows operations to be scheduled to occur at a recurring frequency. When a data flow developer creates a new data flow, he can choose for this operation to be a Task operation. When this is specified, the administrator has many options in specifying the frequency of the scheduled task operation.

2.1.11 Node Client

The Node Client is the main interface for a user to access the call Web Services supplied by a target Node. After entering the Node Client, there is a list of the nine Web Services that can be performed on the left hand side of the screen. To invoke any of the services, click the corresponding button in this section of the screen:

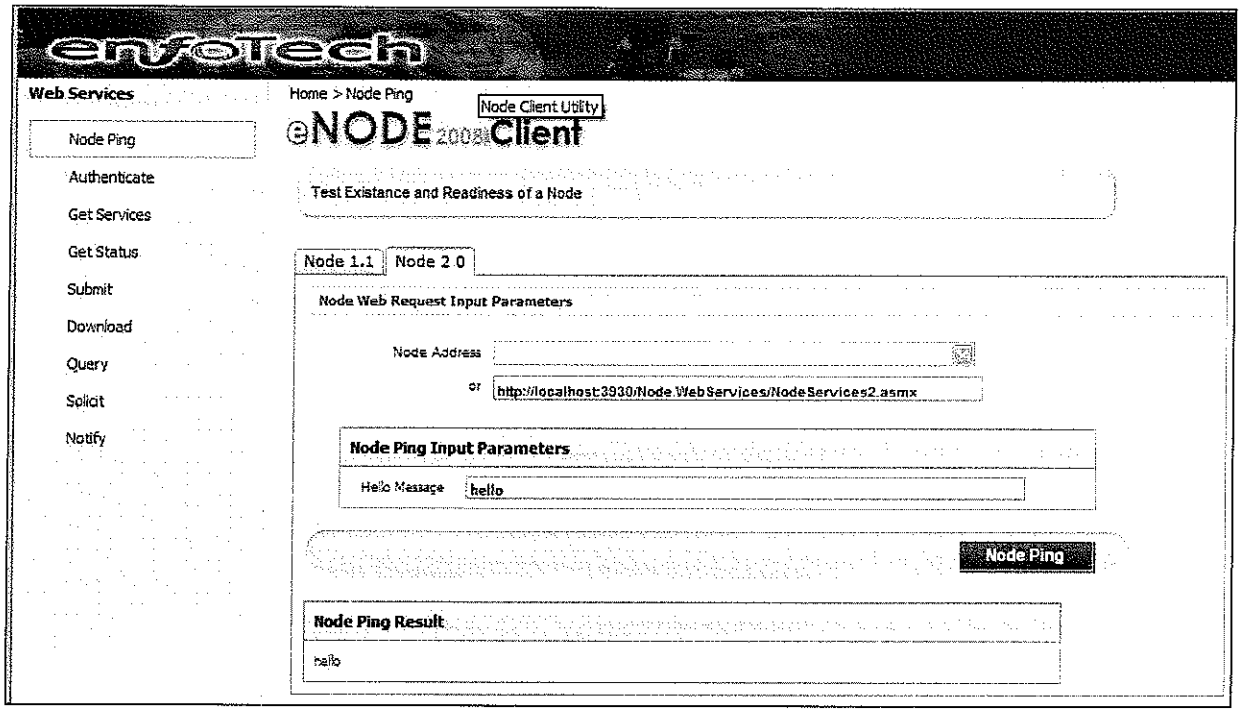


Figure 2-5 User Management - Local User Details

The Node Client supports interaction with both Node 1.1 and Node 2.0 Web Services.

2.1.12 Java Version

We have always maintained both .NET and Java versions of our e-Node software. During the upgrade process to Node 2.0 compatibility, the .NET Node was upgraded first and completed in September 2008. Our Java Node was completed in December 2008 using the .NET design as a template. As a result, the look-and-feel of our Java solution is very similar to our .NET solution. The following diagram shows the technologies used in each tier of the Java Node:

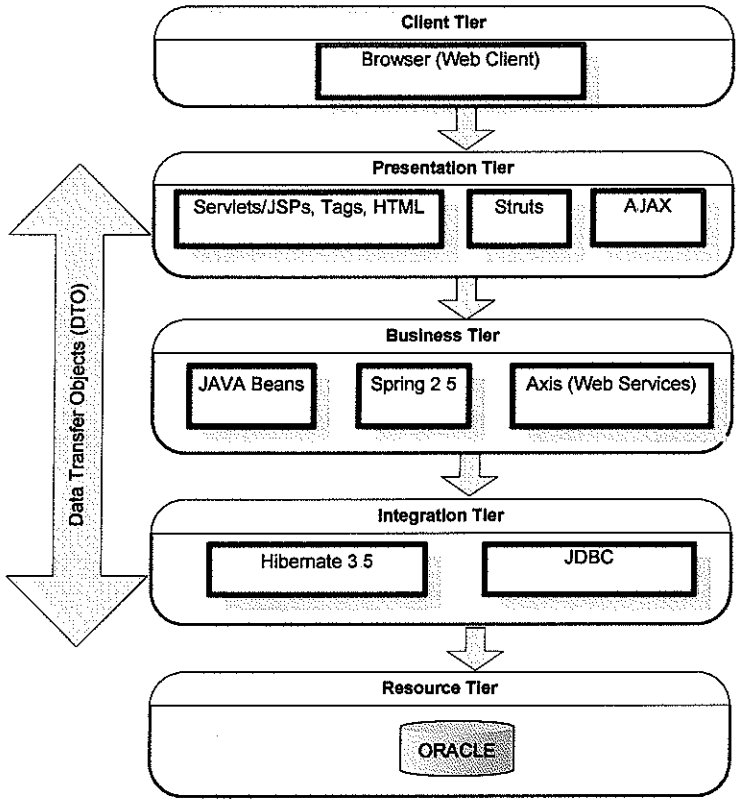


Figure 2-6 Java e-Node Technologies

The following diagram shows the Java Node Admin Dashboard:

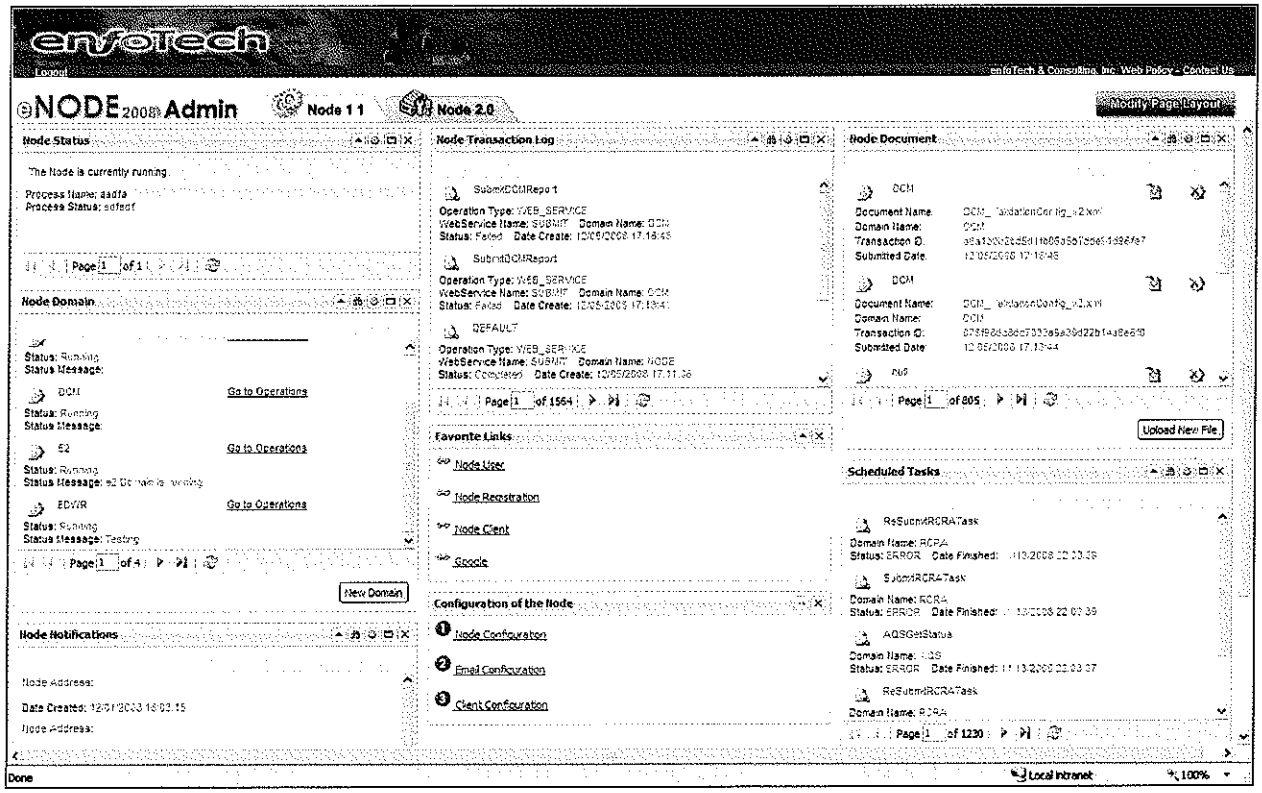


Figure 2-7 Java Version of Node Administration Dashboard

2.1.13 XML Composer

The XML Composer is an optional add-on tool that provides a user interface to allow data flow developers to populate XML files by mapping a relational data source (including MS Access, Oracle, or SQL Server) to an XML target structure. The XML Composer supports complex relational-to-XML mapping features such as nested looping, unlimited if..then conditional branching, transformation, multiple mapping nodes, and mapping to specific XML node indices. This add-on is especially useful for individuals who need to construct XML files, but do not have .NET, Java, or stored procedure development expertise.

An example screen is shown here:

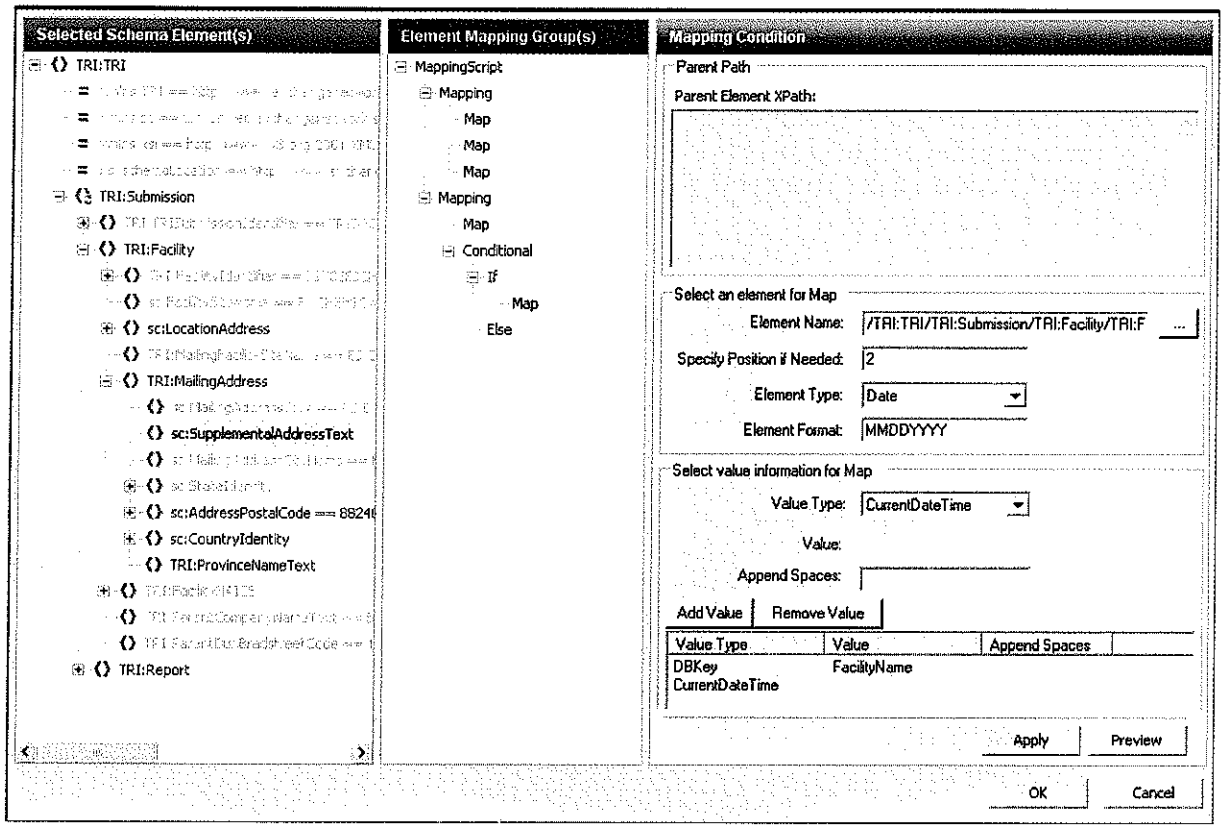


Figure 2-8 XML Composer

2.2 Accept electronic submissions from laboratories

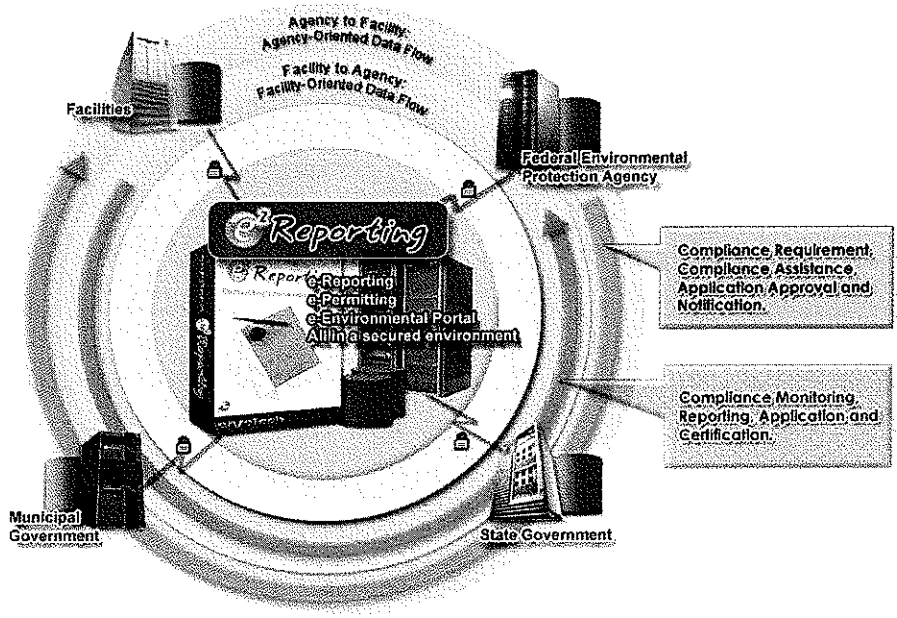
enfoTech has developed e-Reporting solutions for the reporting of laboratory drinking water data for New Jersey DEP, Ohio EPA, Rhode Island DOH, and Michigan DEQ. The solution we have provided to these states to support the electronic reporting is the E2 system, which is a secure XML and internet based application.

(A) Enterprise e-Reporting Solution:

The E2 system is a secure XML and internet based application that provides electronic submission capabilities for environmental reporting information. The E2 system provides regulatory agencies with effective and easy to use functions for registering, tracking, and accepting electronic reports and similar documents for their regulated facilities and activities. The E2 system provides an alternative to submitting paper-based reports that is faster,

more efficient, and less burdensome for both the regulated facility and the agency. The E2 system:

- Serves as an "electronic filing cabinet" to manage reporting requirements provided by the Agency and receives/stores submitted reports.
- Is flexible enough to be configured for a variety of reporting types, such as Groundwater Monitoring, Discharge Monitoring Reports, Drinking Water Reports, and ambient Water Quality Monitoring.
- Simplifies the reporting submission processes for facilities by providing one site to access electronic report forms and submit reports online.
- Allows agencies to configure facility and users; and supports different access levels to allow a user to view, prepare, or certify reports.
- Allows facilities to print blank reporting forms with permit limit data and allows many different options for facilities to submit report data either by manual entry or by uploading.
- Allows facilities to access submitted report information.
- Can be easily integrated with other applications to directly import reporting requirements or export reporting data for regulated facilities.

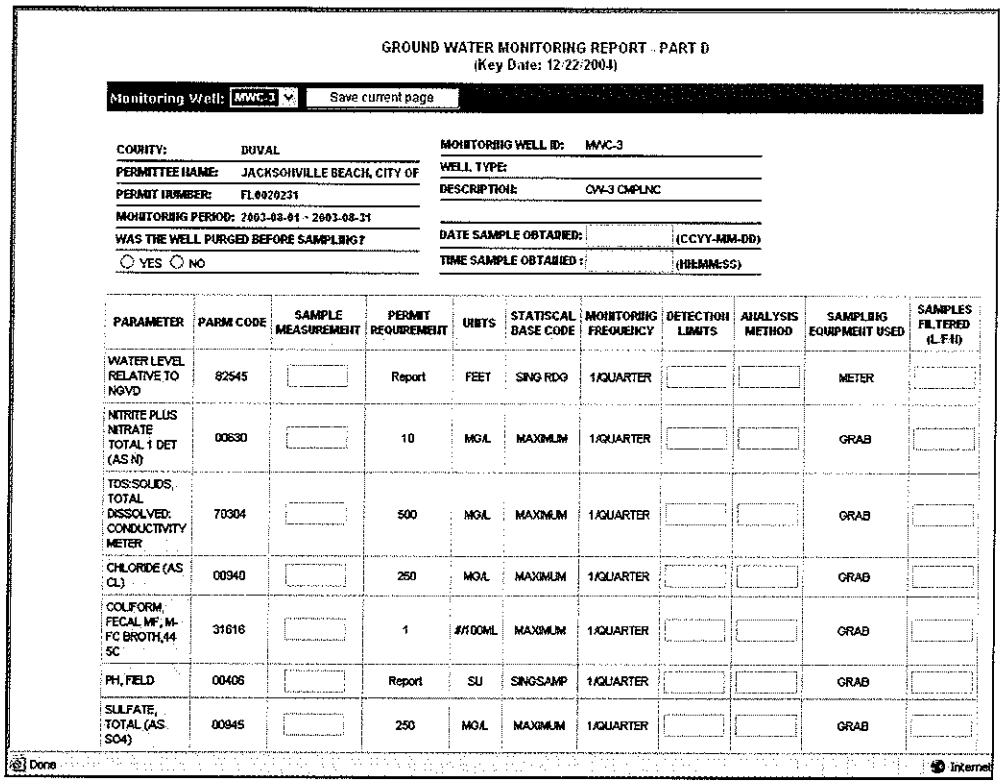


E2 System Overview

(B) Comprehensive e-Reporting Capabilities

The E2 Reporting System offers users three options for submitting laboratory e-DWR Reports electronically:

- **Online Web form Entry:** The user can prepare and submit an electronic report by data entering report information into a series of online entry web forms. This option is best suited for data reporters without their own eReport generation capabilities. The following screen shows an example of online webform entry for Groundwater monitoring:



GROUND WATER MONITORING REPORT - PART B
(Key Date: 12/22/2004)

Monitoring Well: MWC-3 Save current page

COUNTY: DUVAL
PERMITTEE NAME: JACKSONVILLE BEACH, CITY OF
PERMIT NUMBER: FL0020231
MONITORING PERIOD: 2003-08-01 - 2003-08-31
WAS THE WELL PURGED BEFORE SAMPLING?
YES NO

MONITORING WELL ID: MWC-3
WELL TYPE:
DESCRIPTION: CW-3 CMPLNC
DATE SAMPLE OBTAINED: (CCYY-MM-DD)
TIME SAMPLE OBTAINED: (HH:MM:SS)

PARAMETER	PARM CODE	SAMPLE MEASUREMENT	PERMIT REQUIREMENT	UNITS	STATISCAL BASE CODE	MONITORING FREQUENCY	DETECTION LIMITS	ANALYSIS METHOD	SAMPLING EQUIPMENT USED	SAMPLES FILTERED (Y,F,N)
WATER LEVEL RELATIVE TO NGVD	82545		Report	FEET	SING RDG	1/QUARTER			METER	
NITRITE PLUS NITRATE TOTAL 1 DET (AS N)	00630		10	MG/L	MAXIMUM	1/QUARTER			GRAB	
TDS:SOLIDS, TOTAL DISSOLVED: CONDUCTIVITY METER	70304		500	MG/L	MAXIMUM	1/QUARTER			GRAB	
CHLORIDE (AS CL)	00940		250	MG/L	MAXIMUM	1/QUARTER			GRAB	
COLIFORM, FECAL MF, M-FC BROTH,44 5C	31616		1	#/100ML	MAXIMUM	1/QUARTER			GRAB	
PH, FIELD	00400		Report	SU	SINGSAMP	1/QUARTER			GRAB	
SULFATE, TOTAL (AS SO4)	00945		250	MG/L	MAXIMUM	1/QUARTER			GRAB	

Done Internet

- **Excel XML File Generation:** The user can download a blank Microsoft Excel Template file provided by the E2 Reporting System to prepare data offline. The Excel Template file contains a macro which will generate an XML File for the user, which can then be uploaded to the E2 Reporting System using the same approach as the XML File Upload option above. Alternatively, the user can use the Data Checker in E2 to validate submissions prior to submission to the system.
- **XML File Upload:** The user can prepare data offline in a predefined XML Schema format and upload the XML file to the E2 Reporting System.

(C) Data Standards–Based Submissions

The E2 System is an XML driven application system. All reporting forms are created and built based on XML Schema. Using the XML approach for data flow development has the following advantages:

- **Standardizing the reporting data flow:** XML schema data elements in the E2 System are based on reusable XML Schema data blocks from the Exchange Network's Core Reference Model and the Environmental Data Standard Council's Environmental Data Standards. Those data elements are developed by the Exchange Network workgroups to flow the data among different parties and different sources. With the reusable XML schema components (i.e., CRM data blocks), the data can be easily transported in a consistent manner and interpreted among various parties in a standard fashion.
- **Ease of expansion:** Adding a new data element or a new data flow to the E2 System becomes easy and fast by reusing common XML schema components or extensions of the common XML schema components. When a new data element is introduced to a data flow, we simply extend the common XML schema components (i.e., data blocks in CRM) by adding new data elements or business

logic. Extensions of the common XML schema components WILL NOT affect the existing data flows. If a new flow is needed for the E2 System, it will be mapped to the existing XML schema components (or extensions of those existing components).

- **Portable in different platforms:** Since the XML is a standard language which can be interpreted by any system, the XML instance file which contains the data can be transported to many systems and platforms.
- **Ease for data exchanges/transport among different systems:** XML based data flow provides the possibility of using Web Services to exchange/transport the reporting data among the State databases.
- **Ease to transform to various data formats:** The submitted reporting form is actually an XML file, therefore, by applying different style sheets, the form can be transformed to various formats: HTML, ASCII, XML file with a different structure, Excel, etc.

E2 adopts most of the EPA approved schema for electronic reporting. The schema registry information is available from the following link: http://oaspub.epa.gov/emg/xmlsearch$.startup

(D) CROMERR-Compliant User Account and e-Submission Security:

The E2 software will operate, without any additional effort or actions from the user, in compliance with the EPA's CROMERR requirements.

E2 is mature and at its 3rd release. It was used by the CROMERR workgroup as a reference system in 2002-2003 during the rule development. In addition, the E2 was used by MDEQ to work with EPA as a pilot project for CROMERR compliance review and compliance certification application process. From 12/2005 to 6/2006, enfoTech supported MDEQ to work with EPA to develop the nation's 1st CROMERR compliance certification package. The package consists of 21 documents to support the CROMERR compliance certification. During the process, we have successfully verified and documented E2's functions/procedures to meet CROMERR requirements. In particular, the following requirements have been successfully reviewed, met and documented in the certification application package.

1. Identity proofing of registrant
2. Determination of registrant's signing authority
3. Issuance (or registration) of a signing credential in a way that protects it from compromise
4. Electronic signature agreement
5. Binding of signatures to document content
6. Opportunity to review document content before submission
7. Opportunity to review certification statements and warnings
8. Transmission error checking and documentation
9. Opportunity to review copy of record
    a. Notification that copy of record is available
    b. Creation of copy of record in a human-readable format
10. Procedures to address submitter/signatory repudiation of a copy of record
11. Procedures to flag accidental submissions
12. Automatic acknowledgment of submission
13. Credential validation
    a. Determination of credential ownership
    b. Determination that credential is not compromised
14. Signatory authorization

15. Procedures to flag spurious credential use
16. Procedures to revoke/reject compromised credentials
17. Confirmation of signature binding to document content
18. Creation of copy of record
   a. True and correct copy of document received
   b. Inclusion of date and time of receipt
   c. Inclusion of other information necessary to record meaning of document
   d. Ability to be viewed in human-readable format
19. Timely availability of copy of record as needed
20. Maintenance of copy of record

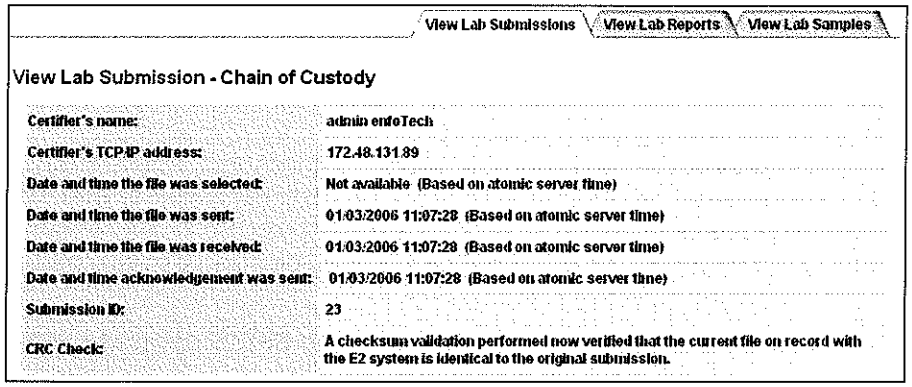
On 12/8/2006, EPA issued a confirmation to MDEQ to confirm that MDEQ CROMERR compliance package is complete under the 40 CFR Part 3, Section 3.1000.

(F) E2 Major Functionalities Overview:

The following table lists major functionalities of the E2 system:

Featured Functions for Data Reporters	
User Account Management	• Users can edit account fields as determined by program staff. • "Forgot Password" function allows user to retrieve lost password by email. • Users can reset their password at any time
Data Reporting Group Association	• User can quickly access the facility/water system/laboratory information that is currently associated with his/her account • User may manage the facility/laboratory association if allowed by the agency.
Reporting Options	E2 system provides four different report submission options: • Print a blank PDF report and submit the report by paper. • Fill out web entry form, and submit the report electronically through E2 • Store the reporting data in an Excel file, and copy-paste it into E2 online web entry form. • Download reporting requirements in XML format from E2, and upload the XML reporting file online
Automatic Email Notification	Email will be automatically triggered on various critical events in the E2 system, which includes: • User account related information: to ensure the security of all user account information, users will be notified via registered Email for all account related activities including: Email updates, password resets, requesting a PIN, etc. • Report submission receipt (received by state agency) • Report status update (accepted or rejected by state agency)

Featured Functions for Data Reporters	
Report Wizard	Complete step-by-step guidance to help a user fill out reporting forms • Online Help provides detailed instructions on filling out each field • File Uploading wizard allows electronic submission for report supplemental materials • Dynamic data validation is performed before submission • Report Review step allows a user to review reporting data and uploaded attachments prior to final submission step • Error messages are easy to understand and are displayed on the fields where errors occur which helps the user quickly correct the invalid data • Form certifying step ensures that only authorized personnel can submit the reports to the E2 system
Attachment Uploading with Automatic Virus Scan	• If facility user wishes to submit supplemental files along with their submission, he/she can submit them electronically using E2 via attachment uploading functions. • Virus scan will be automatically performed by the E2 system during the uploading process. If a virus is detected, the file will be removed from the system immediately and a message will be displayed on the web page to notify the user. • Certain restrictions for file uploading may be applied as required by the program. For instance, the issuing agency may restrict the maximum file size that can be accepted electronically, or the file types that can be accepted or viewed by the issuing agency. XML based design makes the configuration as easy as one step.
Saving Multiple Unfinished Reports	A facility user is not required to complete the report in one session. Instead, a user may save his/her draft in the E2 system, and come back to finish it in the Edit an Open Report module at a later time.

Featured Functions for Data Reporters	
Chain of Custody and Submission Receipt	For each submitted report, the E2 system will keep a Chain-of-Custody as well as a submission receipt • Chain-of-Custody records the submitter's name, submission date and time, submission ID, etc. • Submission receipt provides a summary of submitted report, including report type, uploaded attachments, etc. A unique submission ID will be assigned to each successfully submitted report.  View Lab Submissions | View Lab Reports | View Lab Samples View Lab Submission - Chain of Custody Certifier's name: admin enfoTech Certifier's TCP/IP address: 172.48.131.89 Date and time the file was selected: Not available (Based on atomic server time) Date and time the file was sent: 01/03/2006 11:07:28 (Based on atomic server time) Date and time the file was received: 01/03/2006 11:07:28 (Based on atomic server time) Date and time acknowledgement was sent: 01/03/2006 11:07:28 (Based on atomic server time) Submission ID: 23 CRC Check: A checksum validation performed now verified that the current file on record with the E2 system is identical to the original submission.
Submittal History Tracking	When a revision is submitted, E2 will automatically link it to the previous submission. In E2, a user can track all related historical submission and view the submission details.
Submitting Revised Submission	E2 allows a user to submit a revision after original submission. Modified data is tracked in E2 and displayed for easy identification.
Submission Reminder	E2 provides submission reminders to a user based on the reporting requirements defined in each month. A user can easily identify how many and which reports are to be submitted before the due date.
On-Time Submission Checking and Notification	E2 can perform an on-time submission check. If the submission is past the due date, a warning email will be automatically sent to the facility user and/or program staff.
Three-Level Certifying Roles for Submitting a Report	Secure and flexible Rights feature allows administrators to delegate a facility user appropriate role in electronic report submission process. There are three levels for users: • View - Allows user to view reports that have been electronically submitted • Prepare - Allows user to both view reports and enter report data without certifying or submitting a report • Certify - Allows user to view, fill out reports and certify reports to be submitted electronically.

2.3 Exchange of Source Water Protection Information

enfoTech worked with EPA Region 1 and Massachusetts DEP to develop a mechanism to manage and exchange State Source Water Protection Area (SWPA) information. This information had previously been stored in 4 separate Access Databases, each maintained by a separate MassDEP Staff member. Under the previous process, comparison and upkeep of universal SWPA information was cumbersome and required intimate knowledge of all sources of SWPA data. enfoTech was hired to design, develop, and implement a new "Integrated" SWPA data management web application, dubbed I-Protect, to foster a more efficient and consolidated business process for the MassDEP regulation of Source Water Protection Areas.

From a high level perspective, the I Protect Web Application allows state staff members with appropriate rights to do the following:

- View Existing/Proposed SWPA Records and Associated Information including Maps, Protection Actions, Potential EPICS/FMF Threats, and Potential Contamination Sources.
- Edit SWPA Data including Existing/Proposed SWPA Records, Protection Actions, and Potential Contamination Sources.
- Add Proposed SWPA records to the EPICS database expansion
- Exchange geospatial information with external partners such as EPA Region 1 using Exchange Network Nodes.

As part of this project, enfoTech developed a Source Water Protection Area (SWA) XML schema, by building off the XML Schema previously created by EPA.

The diagram below shows the data exchange mechanism implemented by MassDEP, which was an "on-demand" solicit mechanism. WV may consider implementing a similar data exchange or may opt for a different exchange mechanism:

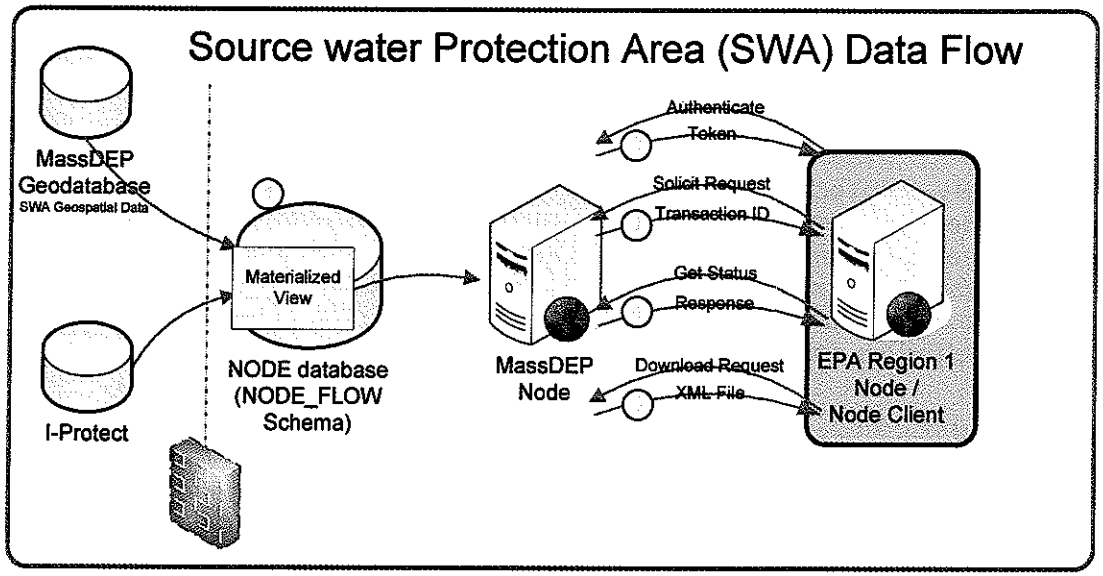


Figure2-10: SWA Data Flow Process Overview

The following table identifies some of the information included in this SWA data exchange:

SWA Information

- SWA Identifier
- SWA Status
- SWA Type
- SWA Geospatial Information

PWS Information

- PWS ID
- PWS System Name
- PWS Primary Locality and Region
- Identifier
- SWA Type

SWA Characteristics

- Potential Sources of Contamination
  - Source Description
  - Source Quantity Description
  - Comments
- Regulated Facilities located within SWA
  - State Facility Identifier
  - Facility Site Name
  - Facility Site Type
  - Facility Status
- Groundwater Study Details (for Zone II SWAs)
  - Delineation Method
  - Initiating Program
  - Aquifer Type
  - Zone II Study Submission Date
  - Zone II Study Approval Date
- IWPA Radius w/Units (for IWPA SWAs)
- Pumping Rate Details (for Zone II and IWPA SWAs)
  - Pumping Rate
  - Pumping Rate Unit
  - Pumping Rate Type
- Safe Yield w/Units (for Watershed SWAs)

3 Company Qualifications

3.1 Corporate Profile

Founded in 1994, enfoTech & Consulting, Inc. is a software and consulting company dedicated to the development, support, and implementation of computer systems committed to solutions for environmental and health compliance applications. We provide software solutions and consulting services to help our customers manage compliance and increase productivity. enfoTech's turnkey system solutions have proven to be a critical component of effective and informed decision-making for our clients.

Since 2001, enfoTech has been actively involved with States, ECOS, and the USEPA partners to support the National Environmental Information Exchange Network (Exchange Network). We participate in the development of Exchange Network Nodes, environmental data standards, Core Reference Model, XML schema, DET Design Policy, and XML Registry. Our past EN project experiences will be very valuable to this project.

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3.1.1 Node Experience

enfoTech is one of the early pioneers to work with EPA and states to implement the Exchange Network Node and to provide technical input for the Node technical specifications. enfoTech was a member of the Node Beta workgroup in 2002 that worked with states to create and refine the original Node specifications. We have been involved in the Node construction since 2002 and have successfully implemented Nodes and Node data flows for 14 states and tribes, as indicated in the following diagram:

EnfoTech Exchange Network Node and Node Data Flow Implementation Experience