EN-NODE ADMINISTRATOR'S GUIDE (.NET VERSION)

Version: 2.5

October 2, 2012

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Revision History

Version	Date	Created By	Reviewed By	Description
2.5	10/02/2012	Charlie Tsai	Charlie Tsai	Updated to company contact information

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1 Introduction

1.1 Document Purpose

The purpose of this document is to provide instructions to Node Administrators and Data Flow Administrators on the configuration and administration of the EN-Node application. A companion document, called the ***EN-Node Data Flow Developer's Guide***, is also available and provides instructions on data flow development. Data flow developers looking for instructions on how to build data flows and plug them into EN-Node should use the ***Data Flow Developer's Guide***.

1.2 Terms and Definitions

In this document the following terms and acronyms are used:

General Terms	
Term	**Definition**
Web Method	The processing that a Web Service performs when invoked. In this document, it refers to one of the ten Web Methods that all Exchange Network Nodes implement as defined by the Node Specifications and Protocol Versions 1.1 and 2.0.
Handler	A set of code that executes the logic for a particular Web Method. There is one handler for each Web Method.
Operation	A specific implementation of a Web Method, usually defined by the set of parameters passed in to a particular Web Method that differentiates the type of request. *(For example, the Submit Web Method has the signature (<securityToken>, <transactionID>, <dataflow>, <flowOperation>, <recipient>, <notificationURI>, <documents>). Each allowable setting for the dataflow parameter (e.g. - NEI, NEICritHap, FRSMonthly, etc) defines a unique* ***operation*** *for the Submit* ***Web Method****.)* As such, each Handler can have many Operations.
Domain	A logical grouping of related Operations on which to base data flow administration through the EN-Node Administration console (e.g.: NEI, FRS, RCRA, etc). Every operation is tied to one and only one Domain.
Task	A service that has an associated schedule which determine the interval at which it is executed. Tasks are executable and can be executed either on a recurring schedule using the Node Admin Console, or on demand by a Node or Domain Administrator.
NAAS	Network Authentication and Authorization Services. A set of centralized security services hosted by EPA for performing authentication and service authorization of Node users.

1.3 Overview of EN-Node Components

EN-Node provides a one-stop solution for creating, deploying, managing, scheduling, and interacting with Web service-based Exchange Network data flows. As a Web services engine, it allows other trading partners to interact with your environmental data in a secure and consistent manner. The diagram below shows the EN-Node software suite components:

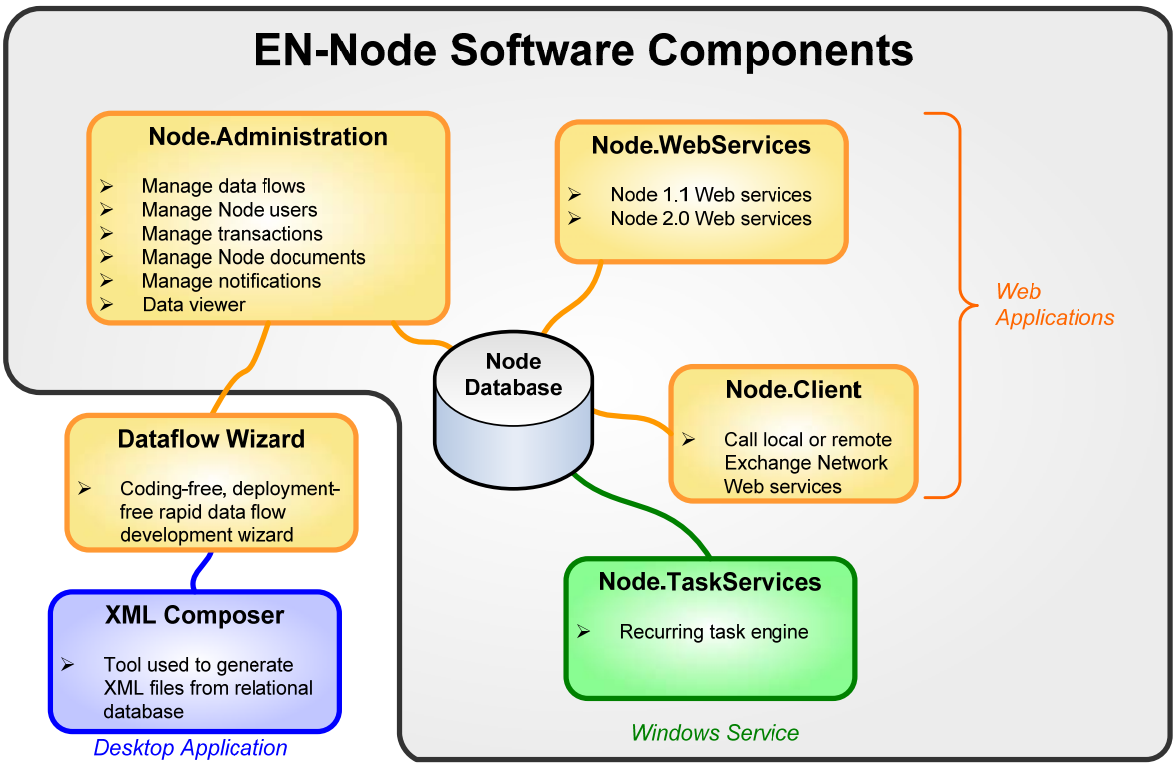


Figure 1-1 Components of Node

Each of these components is described briefly below:

- **Node.Administration:** A web-based graphical interface that allows Node and Data Flow administrators to configure the Node and manage data flows. The Node.Administration Console allows administrators to: create and maintain dataflow plug-ins, manage security access to dataflows, review node activity logs, initiate inbound or outbound data transfers (either on-demand or recurring schedules), and browse inbound or outbound data (in raw or parsed format). This is the primary application that the Node's host agency will interact with.
- **Node.WebServices:** The core Web Services engine that controls the logic for responding to Web Service requests on the Node, providing the web services outlined in the Exchange Network 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 your own node. 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 Dataflow Administrator for a particular data flow.

1.4 Available Web Services

The Node comes preconfigured with ten standard Web services, as defined in the Node 1.1 and 2.0 specifications. These Web services include[1]:

- **Authenticate:** Authenticates a user using a supplied credential.
- **Download:** Provides a means for retrieving documents from a Node. These can either be documents associated with a previous transaction or general documents available for download.
- **GetServices:** The GetServices method is a function in the Admin interface. It allows requesters to query services provided by a Network Node.
- **GetStatus:** Provides transaction tracking of web service requests. Once submitted, a transaction enters into different processing stages. The GetStatus method offers a web service requester a way of querying the current state of the transaction.
- **NodePing:** A utility method for determining whether a Node is accessible.
- **Notify:** The Notify method has three (3) intended uses: document notification, event notification, and status notification
- **Query:** This method is intended to run a series of predefined information requests that return data in an XML instance document that conforms to a predefined standard schema.
- **Solicit:** The Solicit method performs a requested operation asynchronously in the background. It is designed especially for queries that may take a long time.
- **Submit:** Provides a generic way of sending one or more payloads to a service provider.
- **Execute:** The Execute method is a generic web service extension that allows a node to offer additional services

[1] For more information on the Node Web Services, please refer to the Node Version 1.1 or 2.0 Specifications at: http://www.exchangenetwork.net.

1.5 Overview of How EN-Node Processes Web Service Requests

When a web service request is received by the Node, it is processed as indicated in the diagram below:

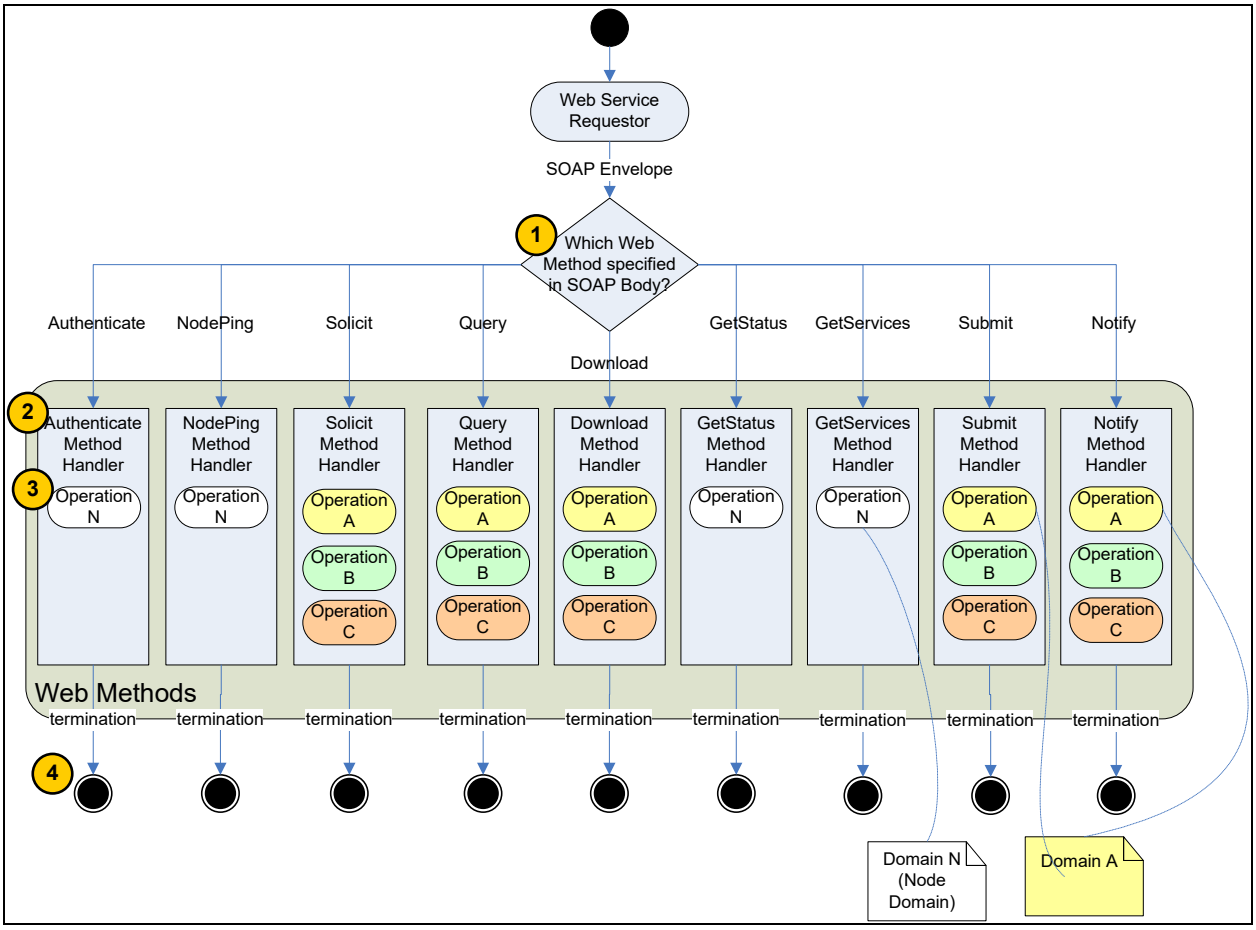


Figure 1-2: EN-Node Overview

1. When a request for any of the Web services listed in Section 1.4 is received at the Node address, the Node will read the Web Method identified in the SOAP body.

2. Based on the Web Method that is specified, the request will be routed to the appropriate Handler. The "handler" determines the logic/approach by which a Web Service request will be handled.

3. Within each Handler, multiple Operations can be defined that execute a specific sequence of logic. These Operations are defined by and organized by Domain Administrators.

4. After the operation is completed, a response is returned to the Web service requester.

Although each of the ten Web Services has its own Handler, they are all derived from one generic base Handler. The Generic Handler contains the generic logic that EN-Node executes regardless of the Web Service that is invoked. The generic handler has the following behavior:

- Generates a transaction ID each time a new Web Service request is made on the EN-Node
- Initiates logging of the Web Service request to track the status of the request

- Attempts to authorize the request to ensure that the person making the request has the appropriate security rights. The user could either be a locally managed user or NAAS-managed user. EN-Node distinguishes the two types of users by issuing different prefixes for their security token. During authorization, if the token is expired, then the authorization request will fail.
- Once authorization is completed, the EN-Node searches for and executes logic in a particular order. The order in which a dataflow is executed depends on how that dataflow was created:
    - **Dataflows created using the Dataflow Wizard:**
        - The dataflow is executed in the order as defined in the Data Flow Wizard. See Data Flow Developer's Guide for more information.
    - **Dataflows created using traditional Plug-In Approach:**
        - All Plug-Ins registered as "Pre-Processes" for the Operation are executed in sequential order
        - EN-Node then executes the registered Process for the Operation and returns the invocation response value to the requestor as per Node specifications.
        - Once the Web Service method has been processed, EN-Node then executes in order, any Post-Processes registered for the Operation.

2 Node Administration Using the Administration Console Dashboard

The Node Administration Console is the main interface for Node Administrators to configure the Node and Domain Administrators (or Data Flow Developers) to configure data flows. It can be run by loading the following page:

- .NET: http://<<InstallLocation>>/Node.Administration
- Java: http://<<InstallLocation>>/Node.Administration/Page/Entry/Login.jsp

2.1 Admin Console Dashboard Overview

When the Node Administration Console is initialized, the user is brought to the login page. You must have an Administration Console Account to access the Admin Console. Simply enter your username and password and click login to enter the utility. The login page is shown below in **Error! Reference source not found.**.

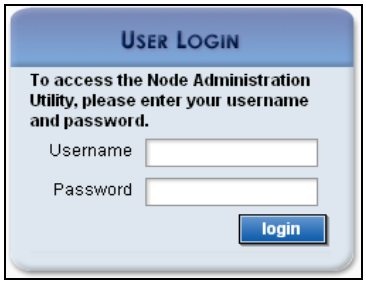


Figure 2-1: Node Administration Utility Login Page

After the user has correctly entered the username and password, the user is brought to the Administration Console Dashboard. The Administration Console Dashboard provides a one-stop location to access all Node and dataflow administration tasks, as shown in the figure below:

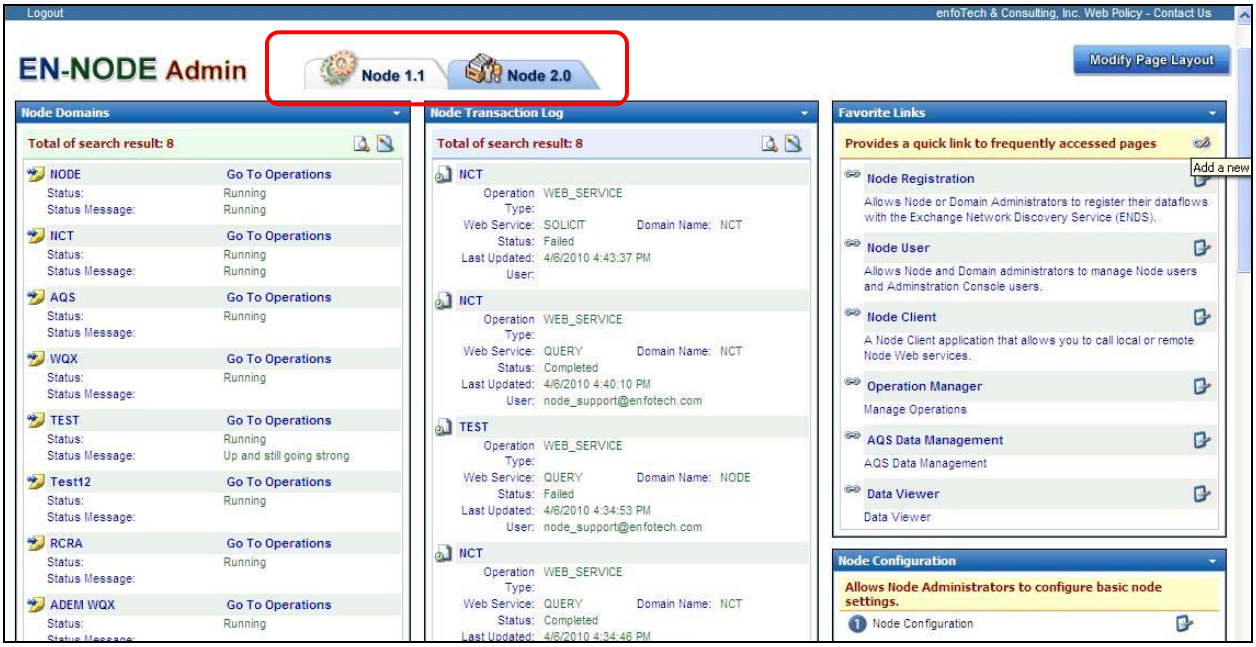


Figure 2-2: Admin Console Dashboard

The Admin Console Dashboard provides 2 tabs to allow you to manage Node 1.1 and Node 2.0 web services using the same application.

Before proceeding further, we will take a closer look at the layout of the Node Administration Console Dashboard. 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. **See Section 2.3 for more details.**
- **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. **See Section 2.4 for more details.**
- **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. **See Section 2.7 for more details.**
- **Node Documents:** provides the capability to search, upload, or download any documents that are stored in the Node. This can either be documents submitted to the Node or prepared for outgoing submission. **See Section 2.8 for more details.**
- **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). **See Section 2.5 for more details.**
    - **Node Registration:** allows Administrator to add/update data service's meta data to the EN-Node. **See Section 2.9 for more details.**
    - **Node Client:** A link to access Node.Client Application.
    - **Operation Manager:** allows Node Administrators to generate, review, upload and/or submit XML files to a specified endpoint from EN-Node. **See Section 2.6 for more details.**
- **Node Status:** displays the status of the Node and lists any current running background processes. **See Section 2.12 for more details.**
- **Scheduled Tasks:** allows the user to view the logs for scheduled tasks. **See Section 2.10 for more details.**
- **Node Notifications:** allows the user to view a listing of any notifications received from other Nodes. **See Section 2.11 for more details.**

2.2 Modifying the Admin Console Dashboard Layout

The layout and display of the Web Parts can be modified by clicking on the 

button in the top right corner, which puts the console into Edit Mode. Once this is clicked, a left panel will appear and display any Web Parts that aren't being displayed and lets you add them to the Console.

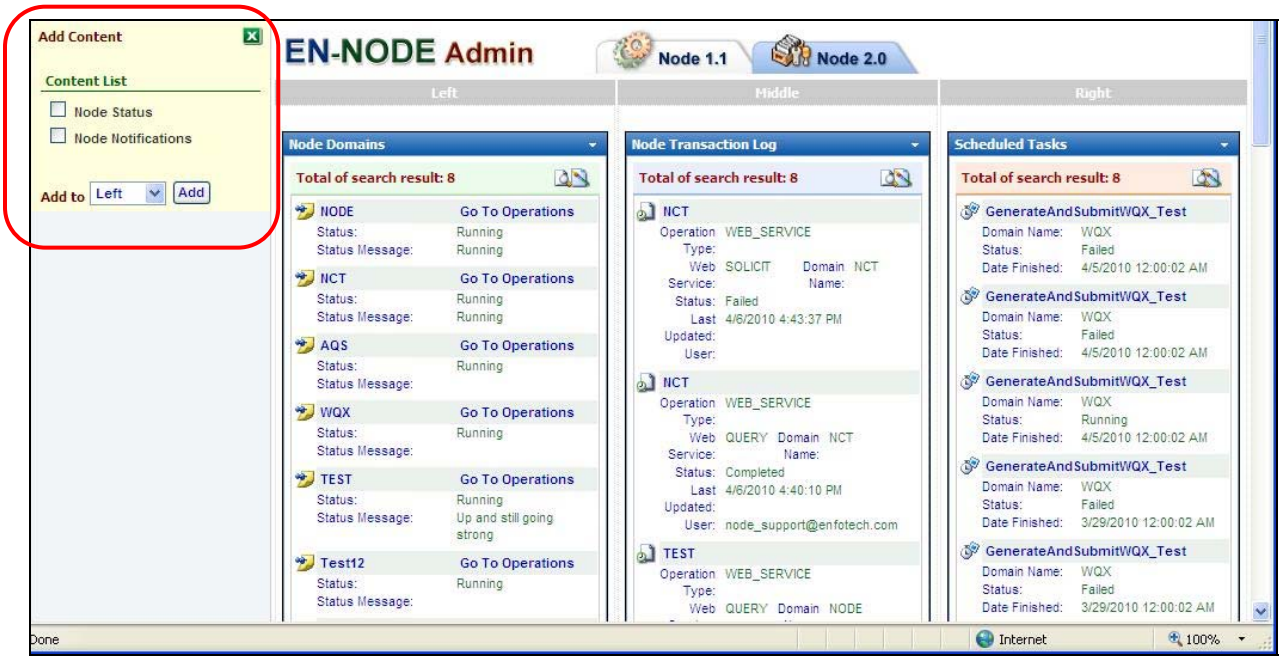


Figure 2-3: Admin Console in Edit Mode

Click the checkbox for the Web Part you wish to add, indicate which area of the screen you wish to add it to (Left, Right or Middle), then click the "Add" button.

While in Edit Mode, you can also drag-and-drop any Web Part to its desired location on the screen.

Clicking the Green "X" in the left panel will exit the Console from Edit Mode and save your changes. Any changes you make will be saved and used for future times you log into the Admin Console.

2.3 General Node Configuration Settings

The **Node Configuration** Web Part is accessible only to Node Administrators and allows them to control general node settings. Node settings are broken down into the links shown below:

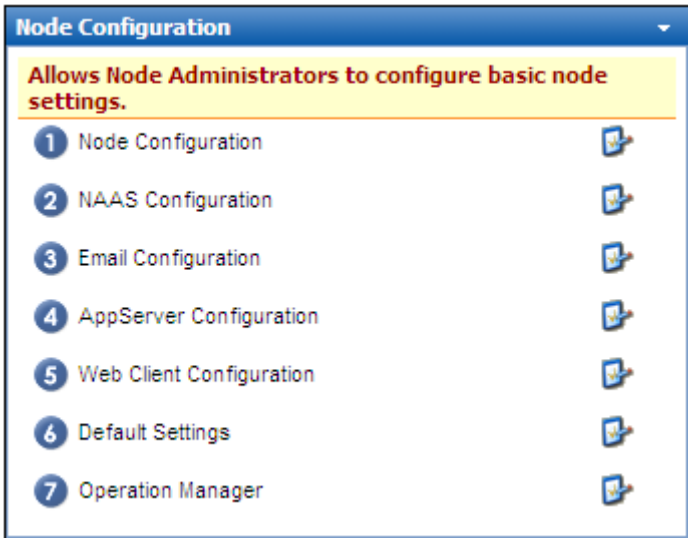


Figure 2-4: Node Configuration Web Part

Each of these settings is described below.

Node Configuration:

- Node Identifier: Unique identifier of the Node as defined by EPA-CDX. This is used when making web service calls to NAAS. If unsure, contact CDX to determine your Node's unique Node Name.
- Node Status: Allows the Administrator to start and stop the node
- Node Status Message: Specify a message indicating the status of the Node that is displayed when users access the Node Status page.
- Token Life Time: The amount of time, in seconds, before a security token expires
- Node Address: The URL of the WebServices endpoint for the EN-Node *(Note: this particular entry has separate values for Node 1.1 and Node 2.0. The value you see depends on which tab at the top of the Node Administration Console is selected.)*

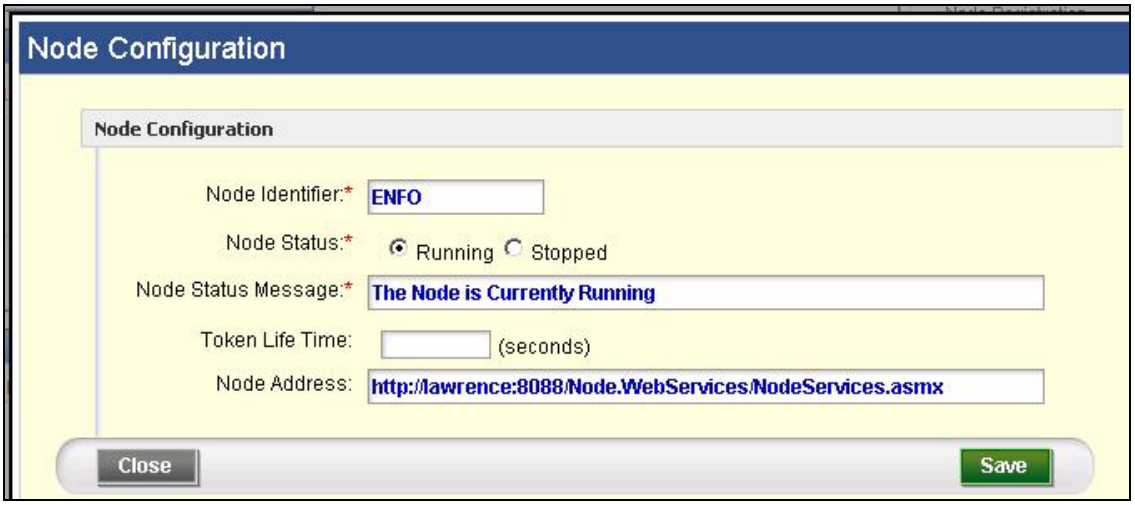


Figure 2-5: Node Configuration

NAAS Configuration:

This page contains information to configure the Node's interaction with EPA-CDX's NAAS server. Correctly configuring the eNode to point to the EPA NAAS services allows the eNode to offer integrated NAAS services such as NAAS account management and service authorization control.

- Node Administrator User ID / Password: The Name, User ID (email address) and password for the NAAS Administrator for your Node. If you are unsure about this account, contact EPA-CDX.
- NAAS Authentication Server Address: The URL or IP address of EPA's NAAS Authentication Web Service
- NAAS User Management Server Address: The URL or IP address of EPA's NAAS User Management Web Service
- NAAS Policy Management Server Address: The URL or IP address of the NAAS Policy Management Web Service

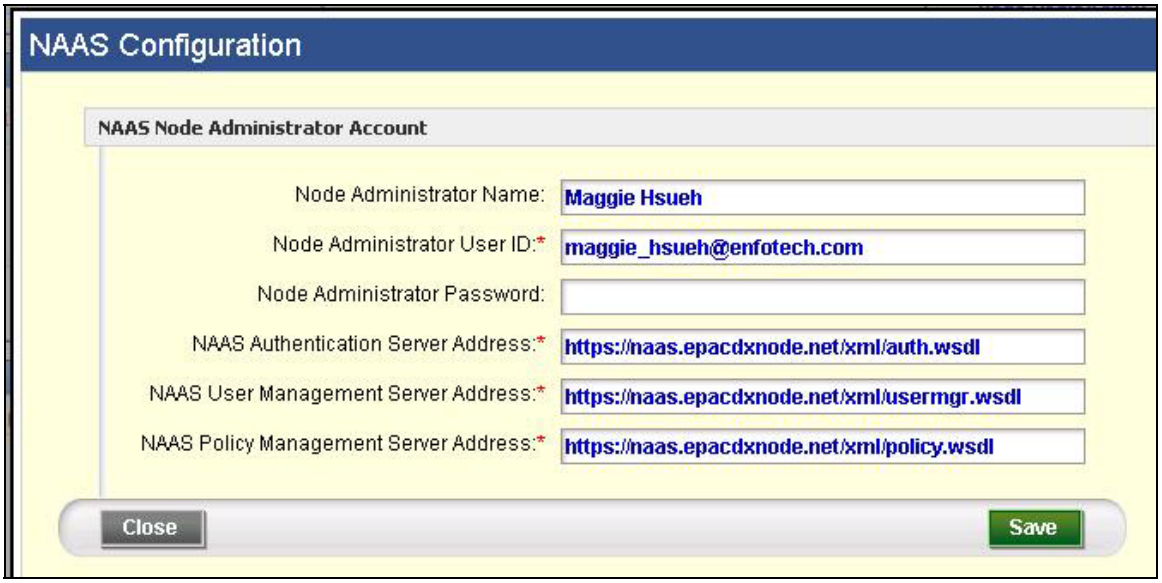


Figure 2-6: NAAS Configuration

Email Settings:

As shown in the figure below, this page allows the Admin to specify the general email settings. Correct configuration is essential to ensure that the eNode can send out emails, which is done during user account creation and, depending on how a data flow is configured, may also be done during data flow operation. This includes:

- Email Server Configuration: The admin has the ability to configure the following server email server information:
  - Email Server Host
  - Email Server Port
  - Email Server User ID
  - Email Server User Password
- User Account Email Configuration: Used to control the behavior of emails sent out from the eNode any time a new user is created or the user's password is changed.
- Task Status Email Configuration: Used to control the behavior of emails sent out from the eNode any time an eNode task is completed.

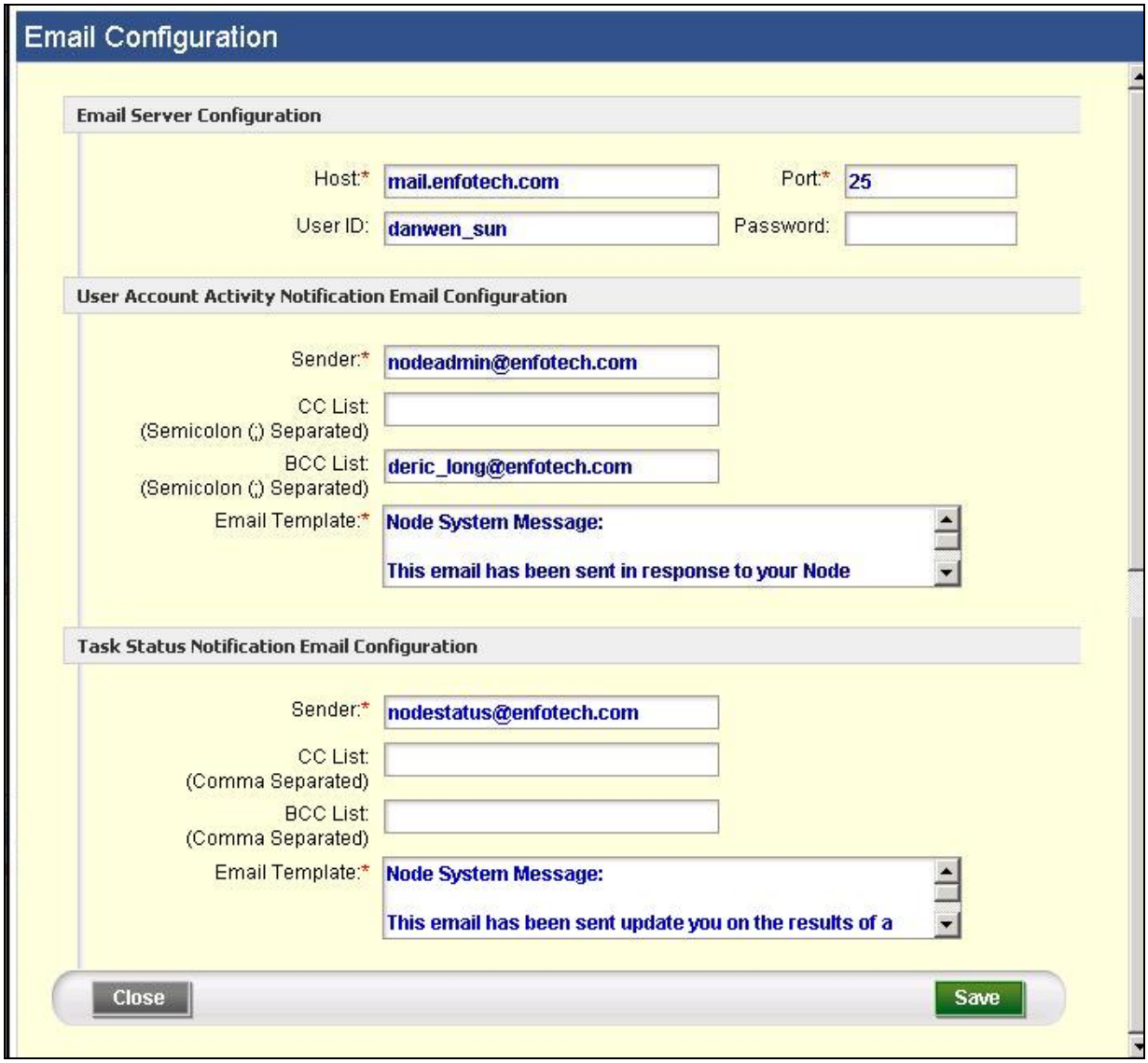


Figure 2-7: Email Settings

Application Server Configuration:
As shown in the figure below, this allows for configuring the application server settings. This includes:

- Proxy Server: Set the outbound proxy server settings if your node server needs to access a proxy to access the internet.
- Application server logging level: Allows you to define the level of exception logging that will be written to the Node logging text files. This is separate from typical Node transaction logging and it intended to capture exceptions/debugging. Different log levels can be defined for the 4 eNode application components:
    - Node Administration Application
    - Node Client Application
    - Node Task Service
    - Node Web Services

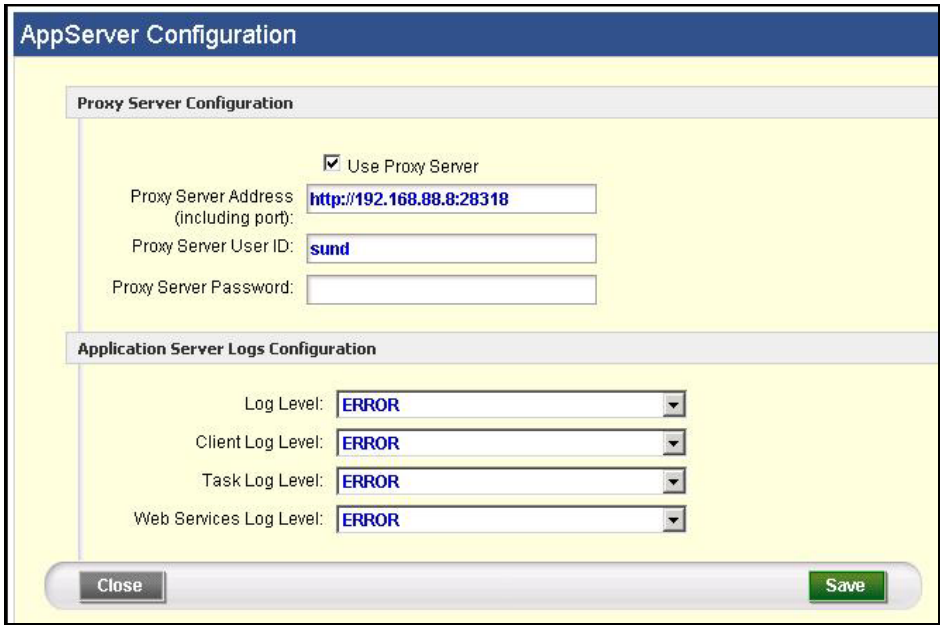


Figure 2-8: Application Server Settings

Web Services Client Configuration:

Allows the Administrator to specify the default Node WebService endpoint URLs that will appear when people use the Node Client application. These URLs will then be displayed as default URLs that can be selected while using the Node Client application.

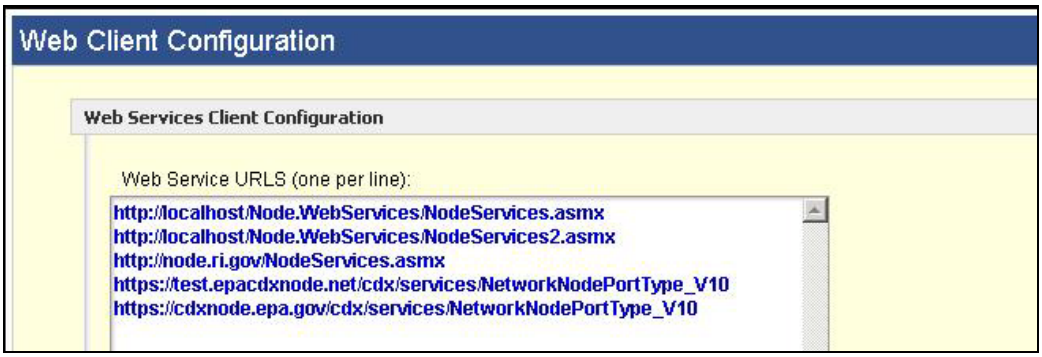


Figure 2-9: Client Settings

System Default Setting:

This option under the Node Configuration web part controls the search engine functions within the Node Administration Console Dashboard.

- Default Row Number for Searching: allows Administrator to set the maximum number of records that can be retrieved from the Node Database when performing searches in Web Parts such as Node Transaction Log or Node Documents. This setting is here for application performance handling.
- Default Top Number: Defines the maximum number of records that will display by default in each webpart.
- Default Page Size: Defines how many records will appear on each page when searching data such as Node Transaction Logs. If more records are returned while searching, data will be paged.

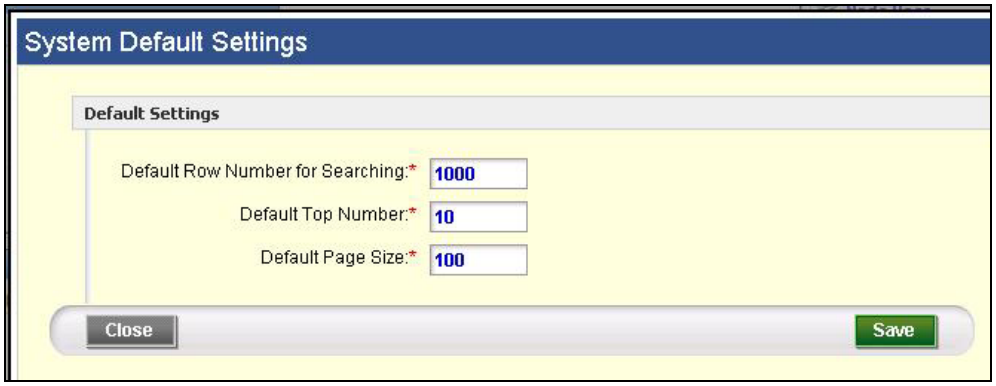


Figure 2-10: System Default Settings

Operation Manager:

The Operation Manager configuration page allows Administrators to identify and configure operations that can be manually executed by the Domain Administrator through the Node Administration application. The Operation Manager is useful anytime a Node Admin wants to create a customized page for performing one or more of the following actions:

- Manually initiate the generation of XML files (i.e. "Generate")
- Manually upload files such as XML files to the Node (i.e. "Upload")
- Manually submit XML files to an external partner such as EPA (i.e. "Submit")

The Operation Manager configuration page is shown here:

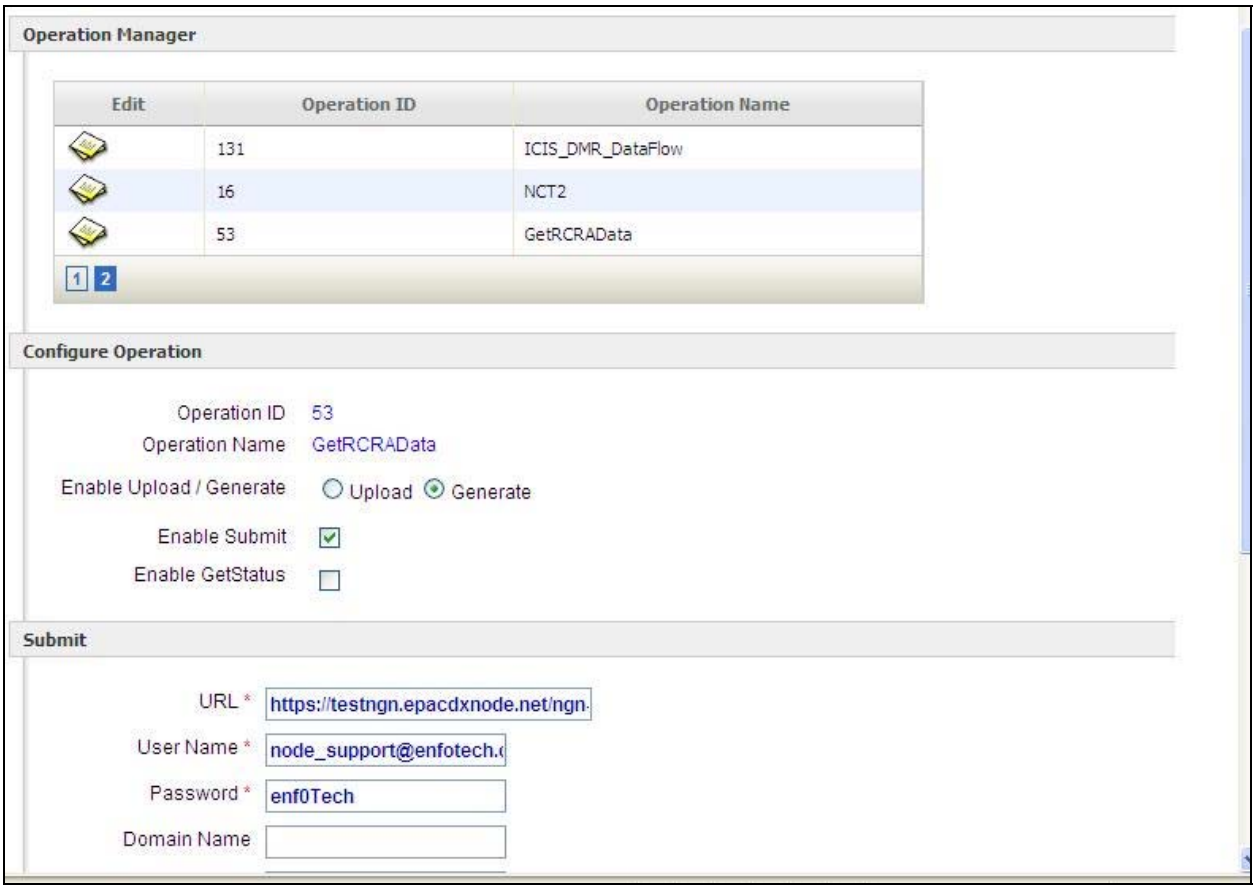


Figure 2-11: Operation Manager Settings

The Operation Manager Configuration page lets Admin set the following configuration settings:

- Configure Operation: Allows Administrator to define what can be performed under the operation (upload is used to load files into the database; generate is used to generate a file from the database; and submit is used to submit a file to the specified endpoint).
- Upload: Defines the parameters to be added for an uploaded file
- Submit: Defines the submission endpoint and the security information needed to successfully submit to the specified address.
- Style Sheets: Allows Administrators to upload style sheets to view data with
- Validation Rule: Defines any validation rules that should be applied to the uploaded file

2.4 Domain and Data Flow Administration

The **Node Domains** Web Part allows Node and Domain Administrators to search, view, and edit details about Domains, create new Domains, and manage operations on the Domains. As stated earlier, a Domain is a collection of operations (or dataflows). Operations are organized into domains to facilitate security management. *(For example, you may have 3 web service operations called GetDrinkingWaterResults, GetDrinkingWaterInventory, and GetDrinkingWaterViolations. By grouping these 3 operations into a domain, you can setup 1 domain administrator who would be able to manage all 3 operations.)*

In the Node Domain Web Part, Node Administrators will be able to see all Domains, whereas Domain Administrators will only be able to see the domains they are associated with.

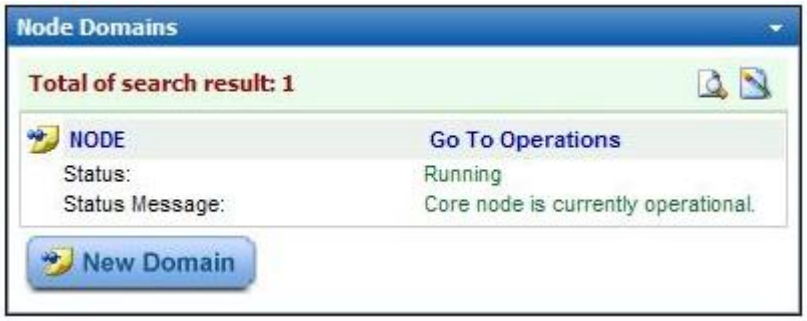


Figure 2-12: Domain Management

If many domains are listed, you can click the search icon  to display the domain search screen.

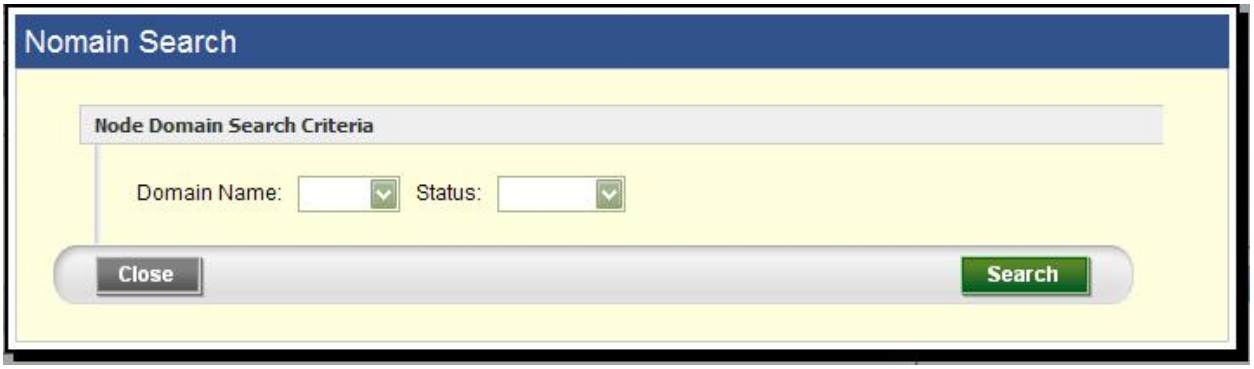


Figure 2-13: Domain Management Search Screen

Selecting the Domain name and Status from the dropdown menus and clicking on the Search button will display a list of Domains that satisfy the search criteria specified.

Note: Node Administrators can leave the Domain name drop-down blank to list all domains registered on the Node.

By clicking on the Domain name link, the Domain details screen will be displayed, as shown here:

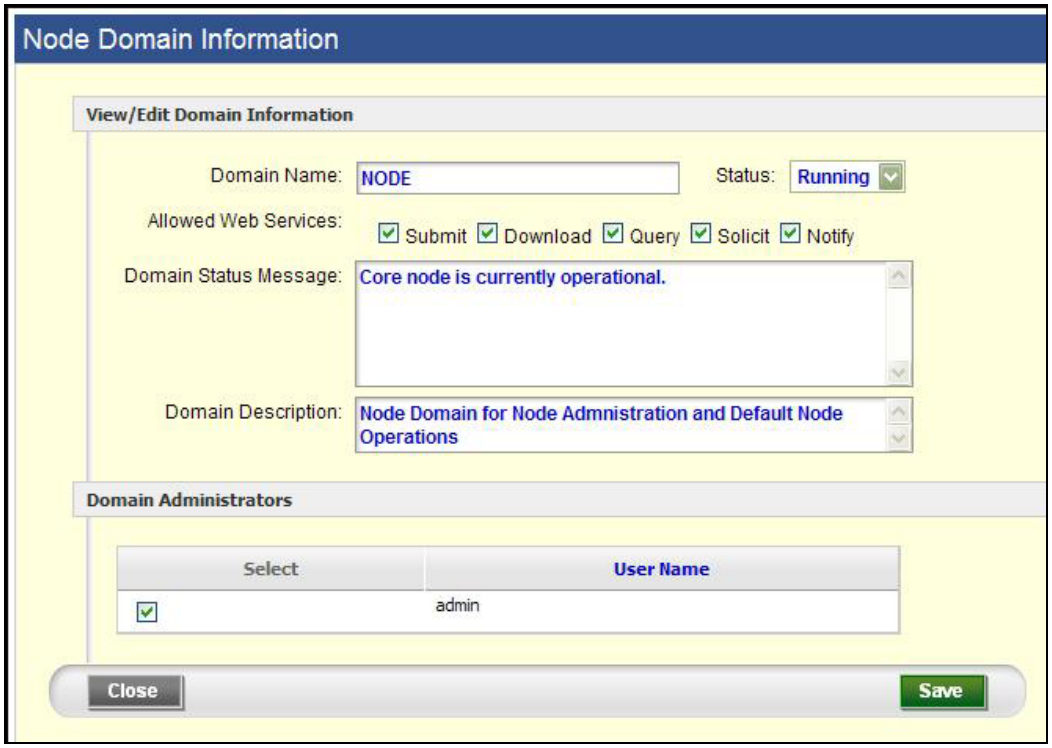


Figure 2-14: Domain Details Screen

The Domain Details page displays details about the domain:

- **Domain name:** The name of the domain assigned by the Node Administrator while creating the domain. This field is not editable once created.
- **Domain Status:** This allows the Domain Administrator to set the Domain to either Active (Running) or Inactive (Stopped) Status.
- **Allowed Web Services:** This displays the restricted set of Web Services that a Domain Admin is allowed to create when creating operations under this domain. This allows the Node Administrator to restrict which web services a Domain Administrator can create.
- **Domain Status Message:** This is a message that the Domain Admin can set for the Domain. This message will appear when a user views the Domain's status at the Node Status page.
- **Domain Description:** Provides a general description of the Domain.
- **Domain Administrators:** Allows the Node or Domain Admin to define which Admin Console users can be a Domain Admin for this domain.

All the modifications made could be saved by clicking on the Save button.

2.4.1 Create New Domain

Administrators can create new Domains by clicking on the 

button which will bring up the following screen:

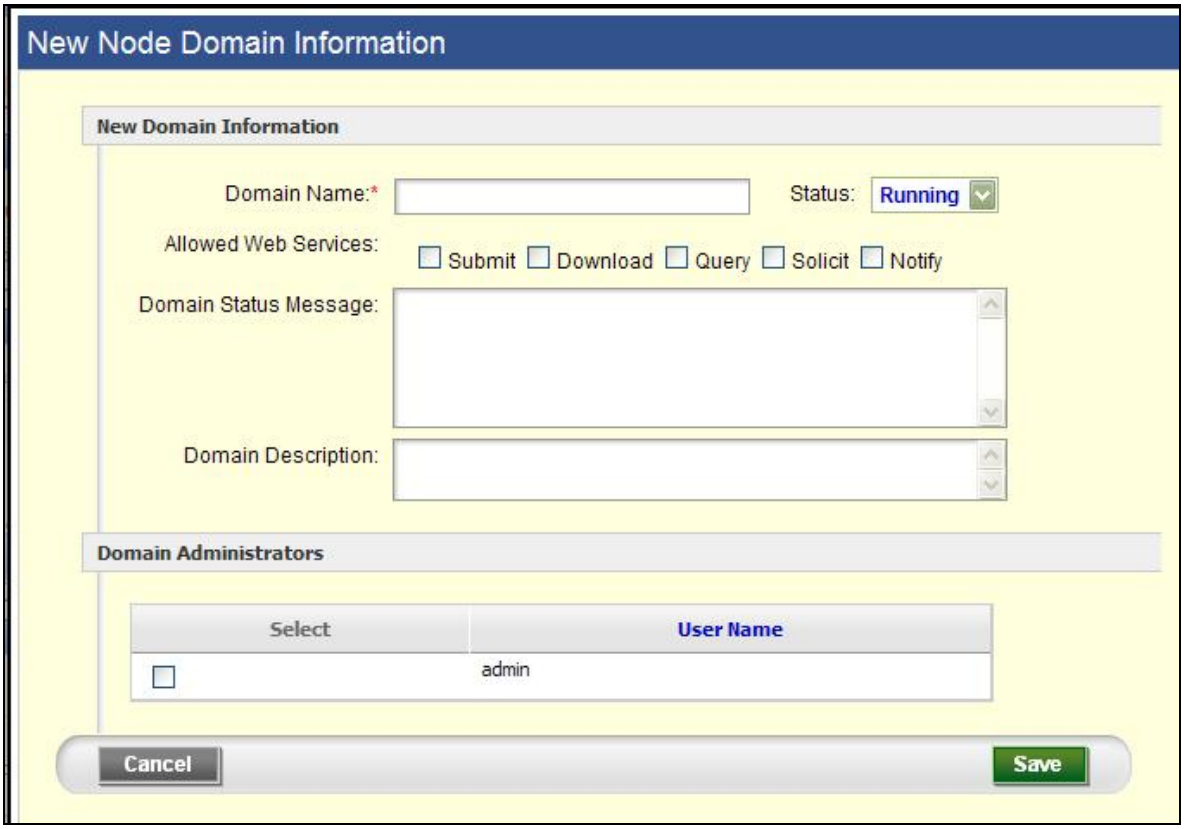


Figure 2-15: Create New Domain Screen

On this screen, Administrators could fill in the following details for the new Domain to be created:

- Domain name (required field)
- Domain Status
- Allowed Web Services
- Domain Status Message
- Domain Description
- Add/remove Domain Administrators associated with the Domain

See the previous section for a description of each of these fields. Upon filling up all the necessary details, the Domain can be created by clicking on the 

button.

2.4.2 Operations Management

In order to add a new dataflow to the Node, you must create a new operation. To do so, click on the "Go To Operations" link in the Node Domain Web Part, as shown here:

Figure 2-16: Domain Management - Go To Operations

This will take the Admin to the Operations Management screen as shown below:

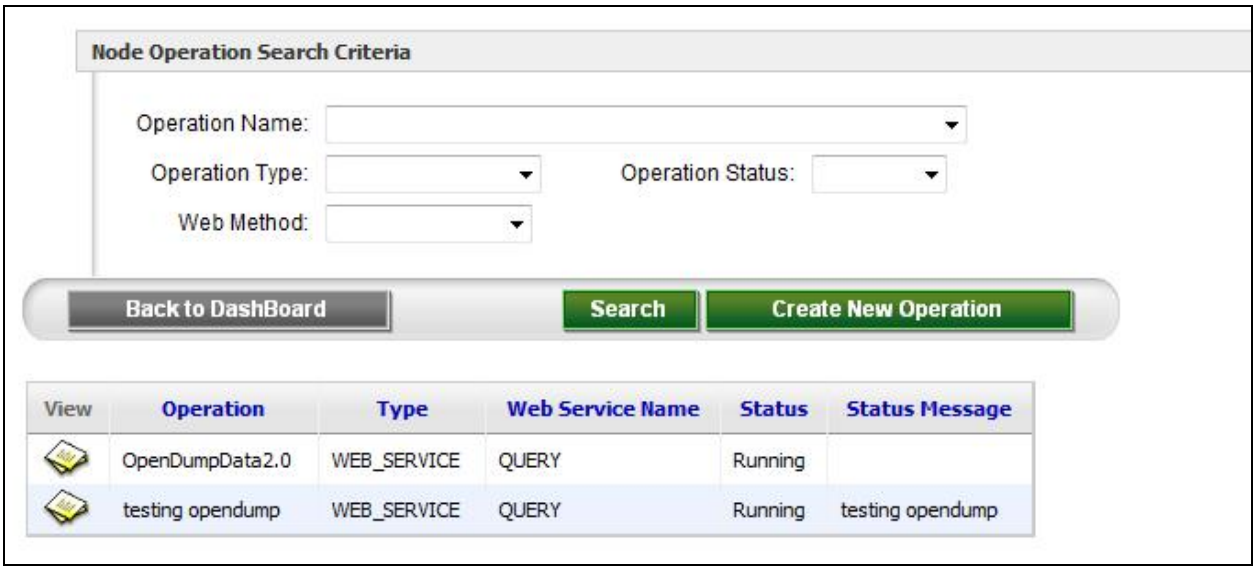


Figure 2-17: Operations Management

On this page, the Administrators can view, edit, and create Operations for the Domain. This page also allows searching for Operations through the following criteria:

- Operation Name
- Operation Type: Web Service or Scheduled Task
- Web Method used in the Operation
- Status: Active or Inactive

If any operations exist in the list, you can click on the view icon  to view/edit the operation details:

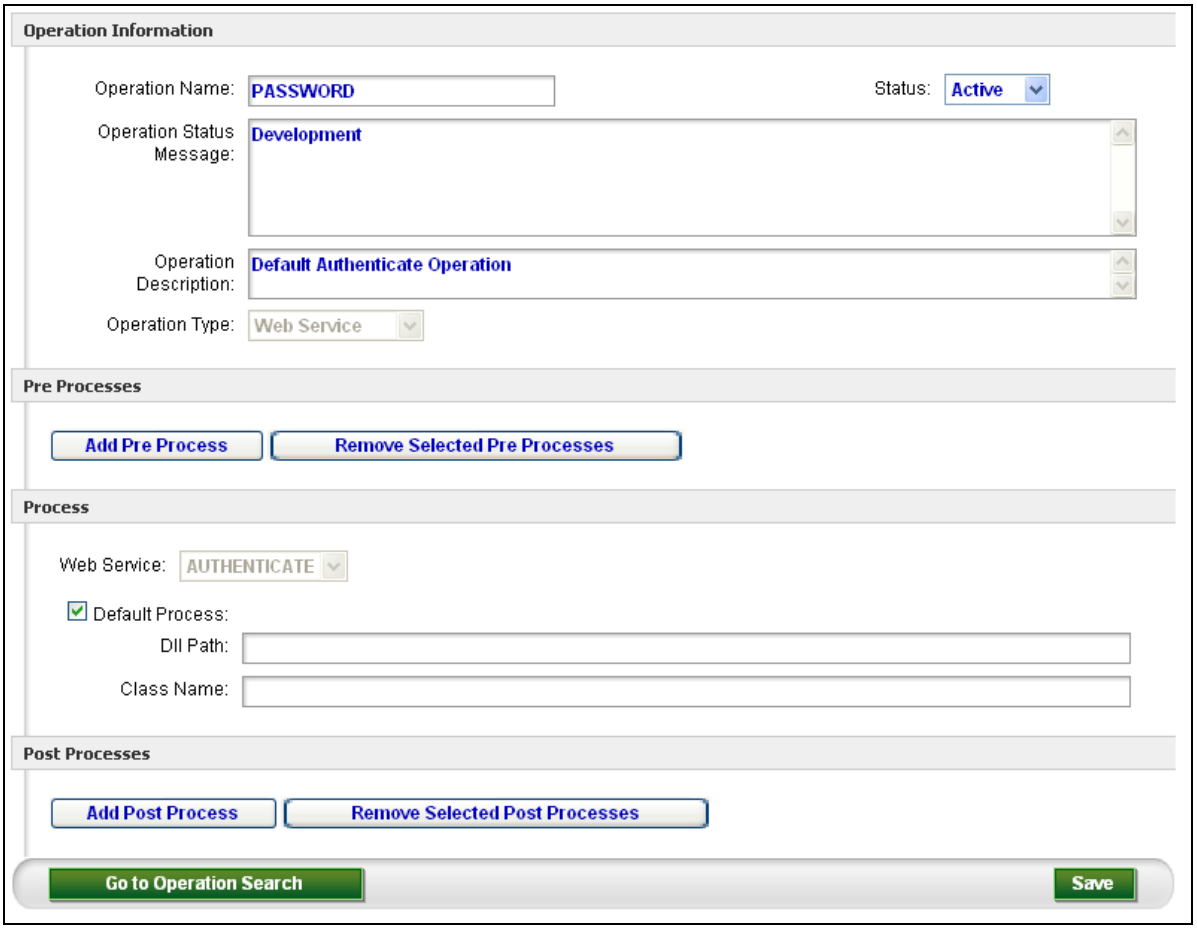


Figure 2-18: Operation Details

This screen allows you to edit the following information:

- Operation Name: The name of the operation. This field is not editable once created.
- Operation Status: Set the status of the Operation as either running or stopped.
- Operation Status Message: Specify Operation Status Message, which will be displayed in the Node Status page.
- Operation Description: Specify a description of the operation
- Operation Type: Indicates whether this operation is a Web Service or Task Service.
- Publish Service Indicator: if you check this checkbox, then the service will be included in the node's listing of services when someone calls the GetServices web service on your node. This has a direct relationship on which services are published in the Exchange Network Discovery Service (ENDS), which is EPA's centralized directory of published Exchange Network services. If you wish to have this operation published in ENDS, make sure this checkbox is checked.
- Require explicit access to execute this operation: if you check this checkbox, then users must be explicitly granted NAAS access on a user-by-user basis in order to call the web service. On the other hand, if you do not check this checkbox, any NAAS user will be able to call this service. Note that this only applies to Queries and Solicits.

  Technical details: when you check this checkbox, the Node sets the following DENY policy in NAAS which will restrict access to any NAAS user except those with an explicit PERMIT policy for this operation (PERMIT policies are set at the User Management screen – see next section):

```
<item>
    <Node type="xsd:string">[your node ID]</Node>
```

```
        <Subject type="xsd:string">any</Subject>
        <Method type="xsd:string">[query or solicit]</Method>
        <Request type="xsd:string">[operation name]</Request>
        <Params type="xsd:string">any</Params>
        <Action type="xsd:string">deny</Action>
    </item>
```

- Web Service/Task Details:
    - Non-Data Flow Wizard Flows: Add/remove pre-processes and post-processes (for a Web Service Operation) or parameters (for a Scheduled Task Operation) if this data flow wasn't created using the Data Flow Wizard.
    - Data Flow Wizard Flows: Shows a link to load the Data Flow Wizard

The changes made to the Operation could be saved by clicking on the Save button.

Non Data Flow Wizard Flows:

For a Web Service Operation, if the "Default Process" checkbox is checked, the Operation implements the "DEFAULT" Operation on the "NODE" domain. If this is unchecked, a text field will appear on the screen where the user can enter the Class name that will define the process. New pre-processes and post-processes could be added to the Operation by selecting either the Add Pre Process or the Add Post Process buttons, then entering the DLL Path (for .NET Node) and the class name as shown here and clicking the Add button as shown in the following diagram.

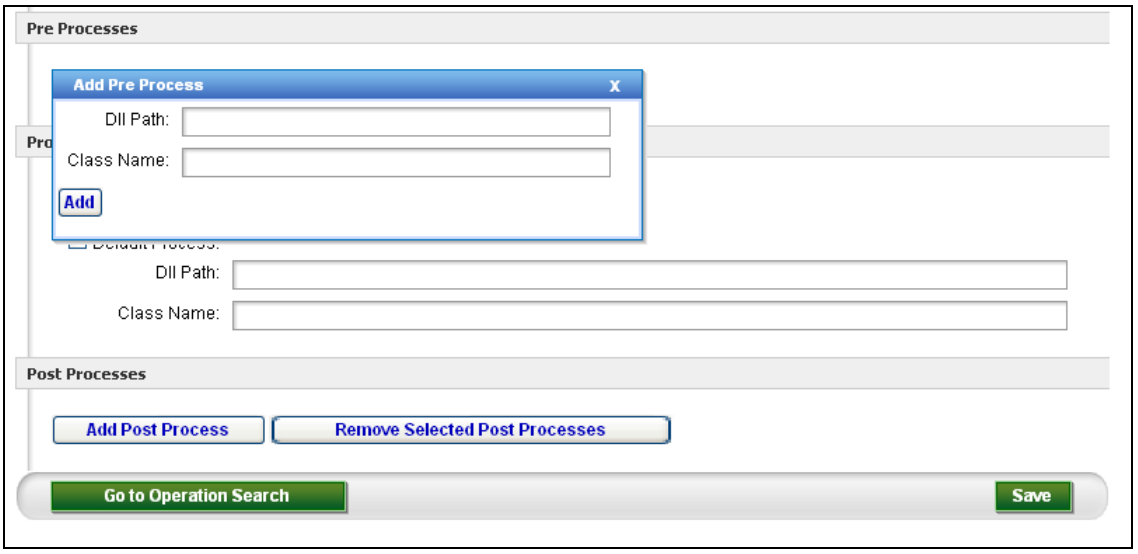


Figure 2-19: Add Pre Process

Administrators can create new Operations by clicking on the Create New Operation button on the Operations Management page. This will display the following screen:

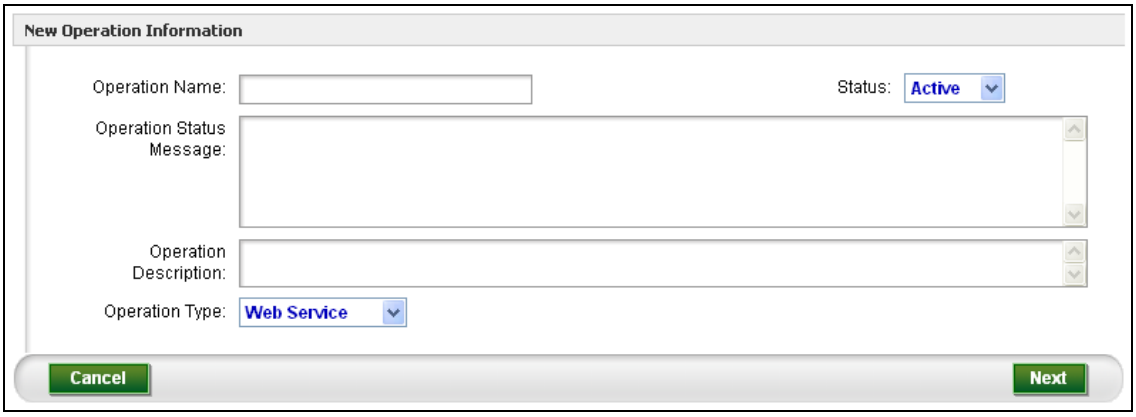


Figure 2-20: Create New Operation

Dataflows can be added by following this flowchart. For additional details about adding a data flow, please refer to the ***Data Flow Developer's Guide***.

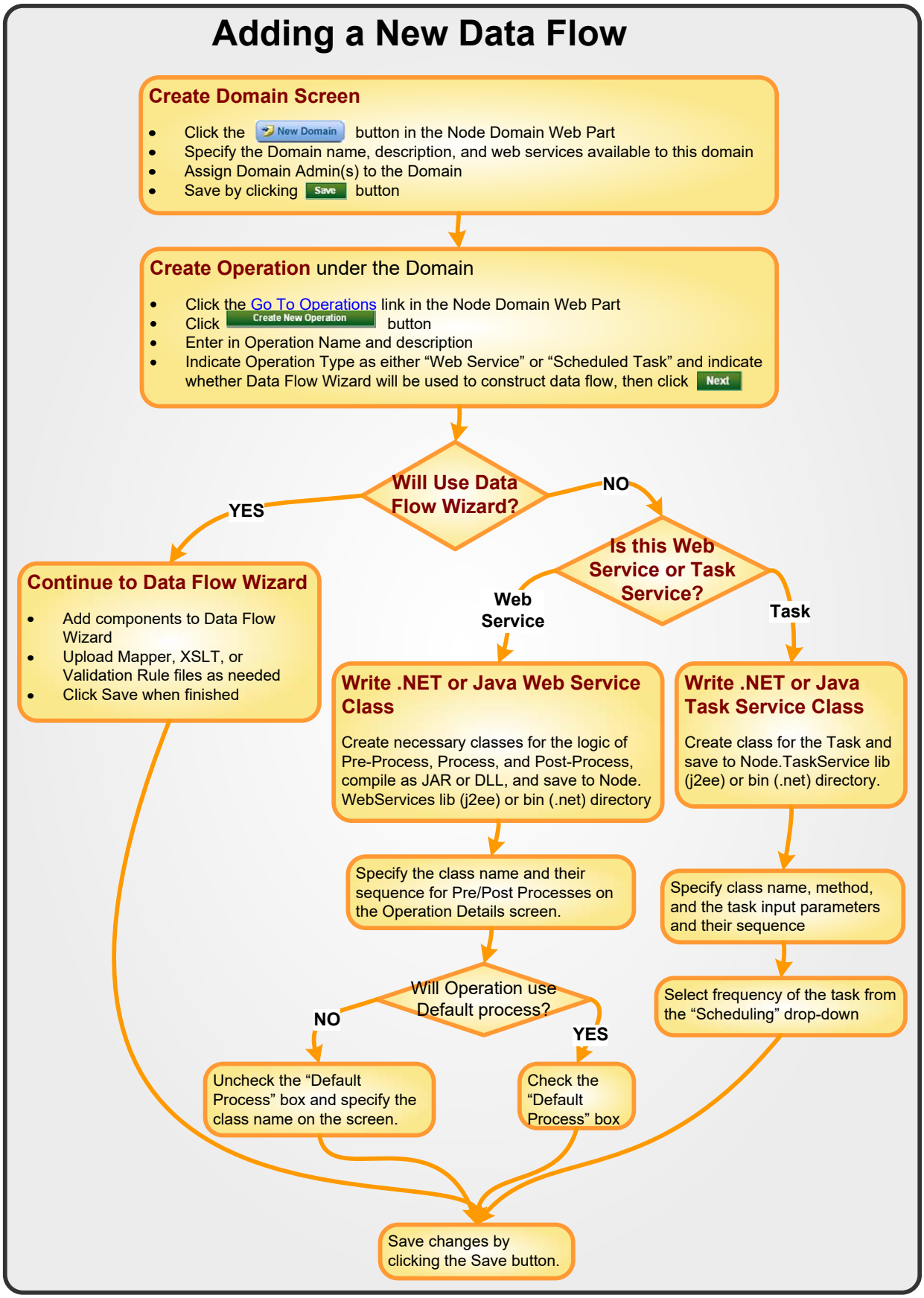


Figure 2-21: Steps for Adding a New Flow

2.5 User Management

The EN-Node manages 3 different types of users:

User Account Types	
Term	**Definition**
Admin Console Users	User who can log in to the Node Administration Console. This consists of: • **Node Admin:** A category of Admin Console User that administers the overall operations of the Node, including Node configuration, user management (Node users and Domain Administrators), and data flow configuration. • **Domain Admin:** A category of Admin Console User that administers one or more domains who can add/update/delete operations within their domain and add/update/remove Node users from their domain.
NAAS Users	Users that could use Web Services on the Node and are created and managed through EPA's central NAAS service[2].
Locally Managed Node Users	Users that could use Web Services on the Node and are created and managed at the local Node User who can have privileges to call one or more Web Services on the Node, according to the security policies assigned by the Node and Domain Administrators. Node users can be classified as either NAAS managed Node Users or Locally managed Node Users.

To create or manage the users listed in the table above, access the User Management screen by clicking on the "Node User" link in the Favorite Links Web Part as shown below:

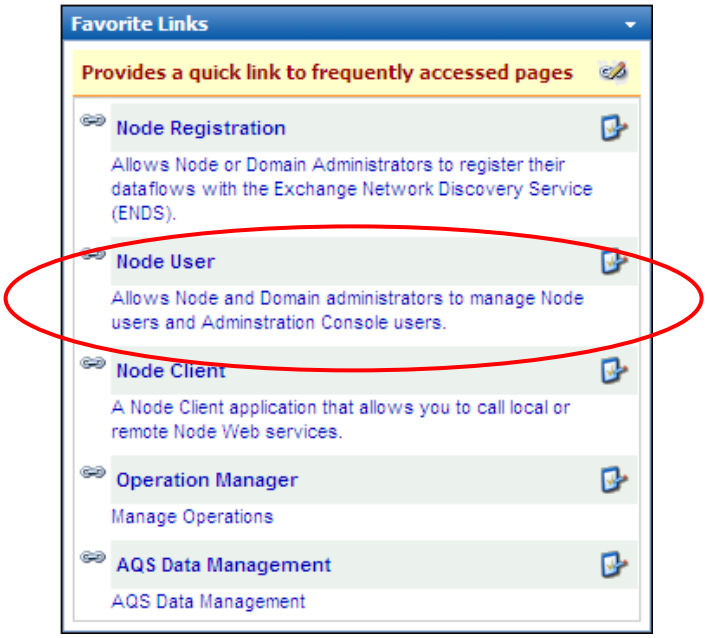


Figure 2-22: Accessing User Manager through Favorite Links

[2] NAAS stands for Network Authentication and Authorization Service, and is a service hosted by EPA's Central Data Exchange. It provides a central mechanism for managing Node account information and Node access rights. Domain Administrators are encouraged to use NAAS to manage their Node users.

The User management screen allows Administrators to search, view and add users of all the 3 types mentioned above. NAAS users are managed (behind the scenes) directly through NAAS although the User Management screen does provide the ability to create NAAS users. The other users are stored in database table SYS_USER_INFO.

Under user management, Domain Administrators will be able to view only those users associated to their Domains.

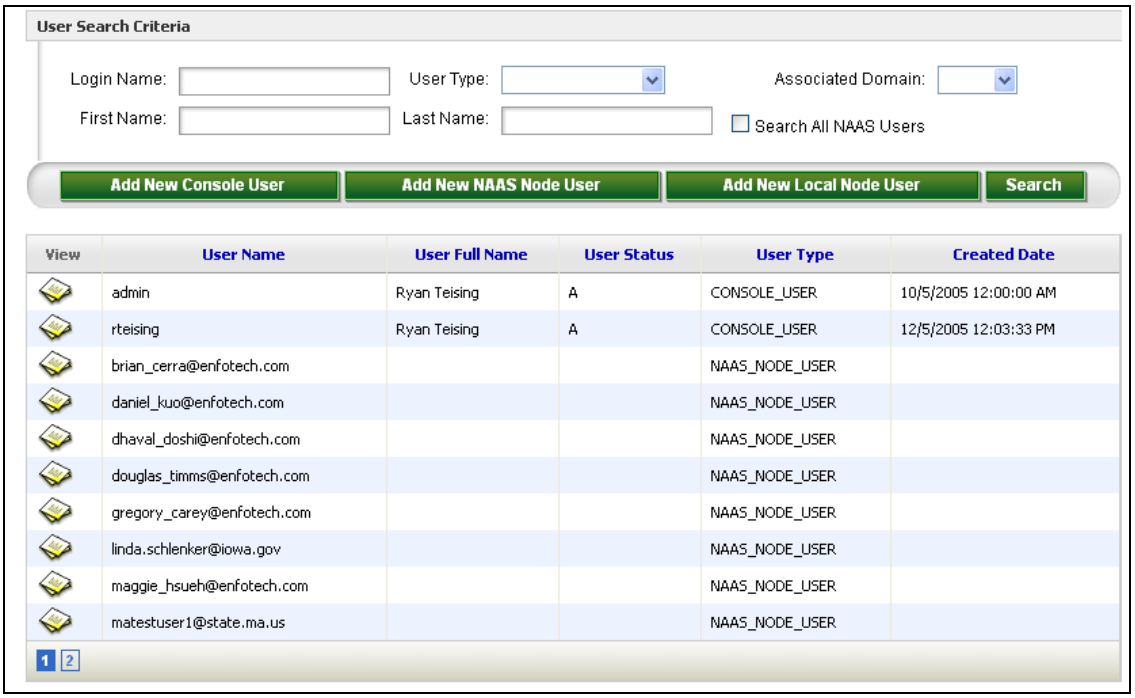


Figure 2-23: User Management Main Page

The figure above shows the main page for User management. At this page the user can search for users using the following criteria:

- Login Name
- User Type: which can be either "Local User", "NAAS User", and "Console User"
- Associated Domain (Lists only those Domains that are assigned to the Domain Admin)
- First/Last Name
- Search All NAAS Users: This will show all the NAAS users in the nation, including those who do not have rights on the Node. This is useful when you need to associate an existing NAAS user to your node's dataflow. Caution: this query sometimes may take some time to return data.

At the User Management Main Page, clicking on the 

button allows the Administrator to create new Node Administrators or Domain Administrators.

A new NAAS node user can be created by clicking on the 

button.

Similarly, a new local node user could be created by clicking on the 

button.

Clicking the 

button will return the results meeting the entered criteria. The user can leave search fields blank to return all entries or enter partial strings.

2.5.1 Viewing User Details

The Admin can click on the view icon,  , in the leftmost column to view details of the User and modify it as needed. The details that are displayed and the options that are available upon clicking on the icon depend on the category of the user that was specified: Console User, Local Node User, or NAAS Node User.

Console User Details:

The Console User Details screen allows the Administrator to setup details for additional Admin Console Users. General account information can be edited, as shown here:

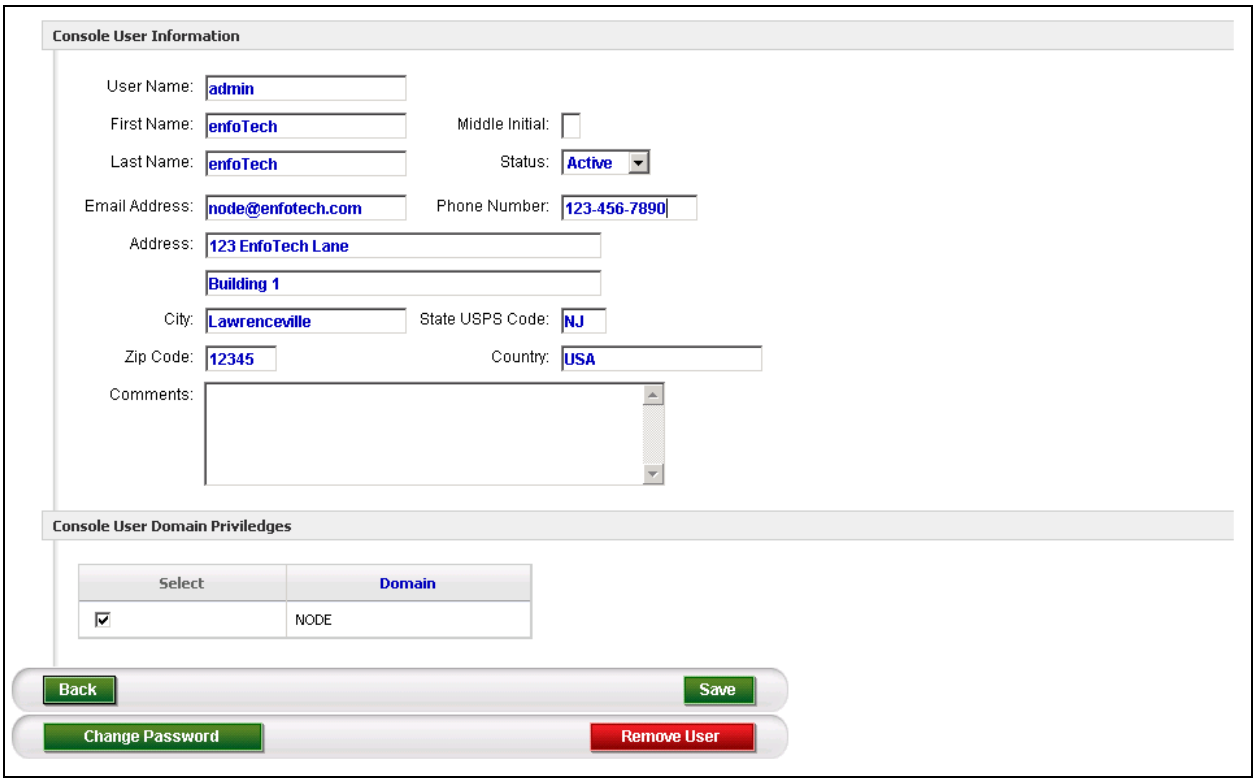


Figure 2-24: User Management: Console User Details

The Admin could be assigned to one or more domains (that the Domain Admin has rights to) by checking the boxes next to the Domains listed at the bottom of the page. The updated information is saved using the 

button. The user could change their password by clicking the 

button. Once the button is clicked, a new password is system generated and emailed to the Node/Domain Administrator's Email address. The Administrator may remove the Admin Console User by clicking the 

button, which will inactivate the User's account and prevent the User from accessing the EN-Node system.

NAAS and Local Node User Details:

Details for NAAS and locally managed Node users can be managed. In particular you can assign the accounts rights to one or more operations.

- **For Query and Solicit services**, the default authorization behavior depends on the "Require explicit access to execute this operation" setting that is set on the Edit Operation page.

  - "Require Explicit Access"=TRUE (checked), then the Node Administrator must explicit grant rights to specific NAAS users on this screen.
  - "Require Explicit Access"=FALSE (unchecked), then the operation will allow access to any NAAS users and any permissions set on the User Management page will be ignored.
- **For all other services**, EN-Node prevents a node user from being able to access a web service until they are explicitly granted rights.

There are some differences between Local Node Users and NAAS Node Users, as described here:

Local Node Users:

- Can have more information edited as opposed to NAAS users
- Can be set to active or inactive
- The user could change the password by clicking the 

button. Once the button is clicked, a new password is generated by the system and sent to the user's Email address.

NAAS Node users:

- Since the NAAS users are not stored in the local database, the information showed for the NAAS users is only the user name (which is their email address) and the associated operations they have rights to.
- This information is pulled from EPA's NAAS server by performing Web service calls to NAAS. The associated domains and operations could be managed at this screen but as mentioned above, these modifications would be handled via NAAS. This will directly update the information stored on EPA's NAAS server by making a Web service call to NAAS.

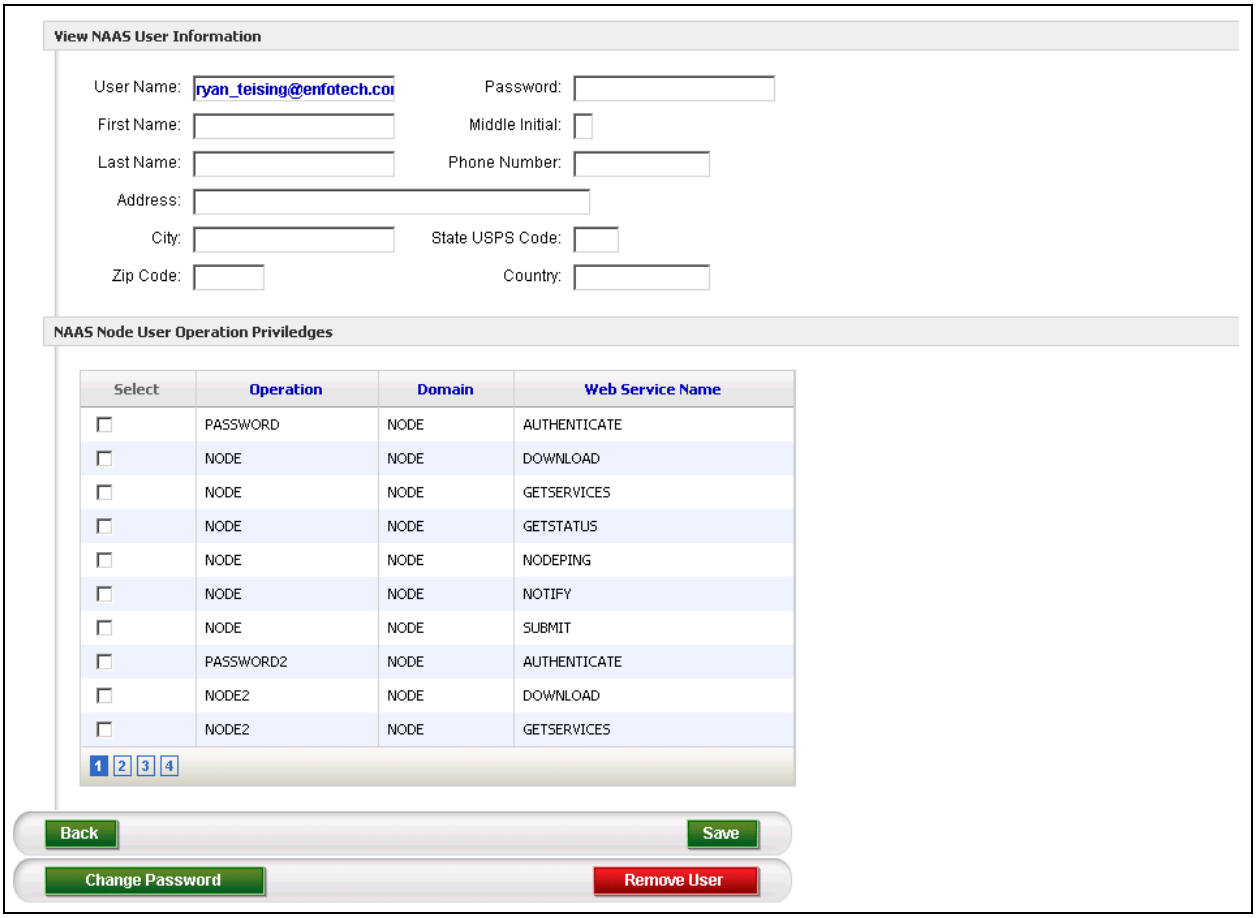


Figure 2-25: User Management - Local User Details

The updated information could be saved using the Save button. The Administrator may remove the User from the system by clicking the Remove User button.

2.6 Operation Manager

From the Operation Manager screen, Administrators have the ability to select an Operation and perform the appropriate Generate, Upload and Submit tasks configured for the operation.

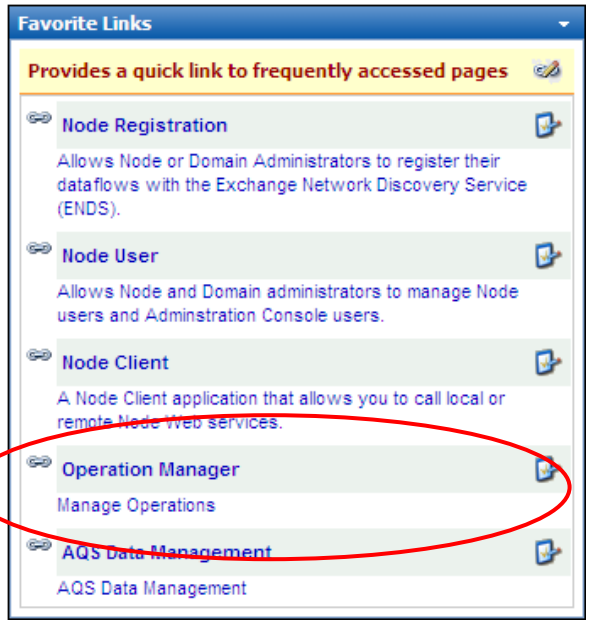


Figure 2-26: Accessing User Manager through Favorite Links

By clicking on the link name, the following operation transaction screen will be displayed:

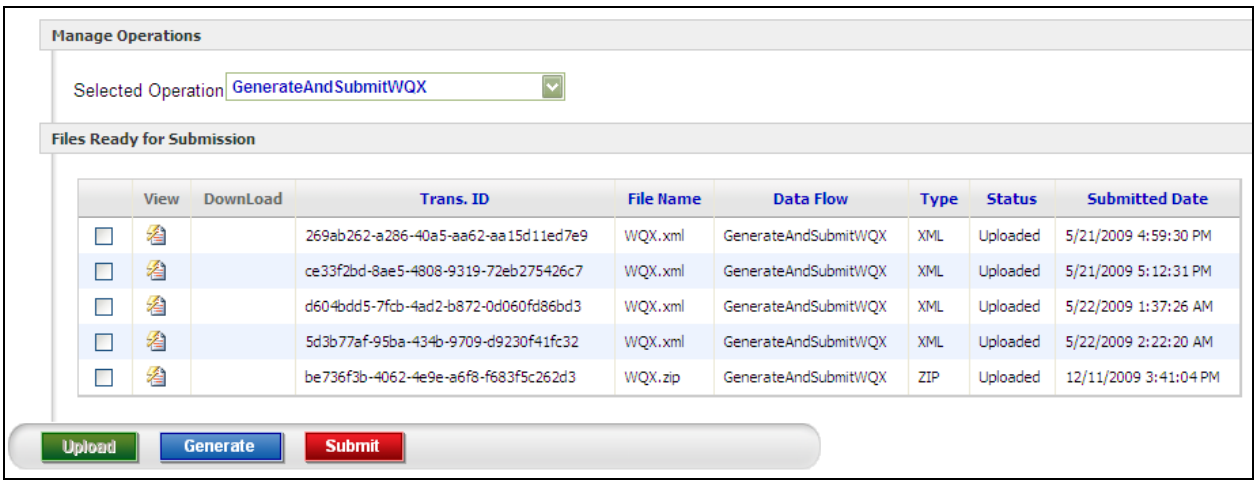


Figure 2-27: Operation Manager Transaction Screen

On this screen, the Administrator can:

- Review past files generated for the operation
- Review downloaded error reports
- Upload a file to parse into the database (if operation is configured to allow for this)
- Generate a file from the database (if operation is configured to allow for this)
- Submit a generated file to the EPA (if operation is configured to allow for this)

2.7 Viewing the Node Monitoring Log

The Node Transaction log stores a history of all instances where the operations of the Node were invoked, or attempted to be invoked. In addition, any task logging that has been logged to the EN-Node logging tables can be viewed here. This screen is populated by pulling data from the Node_Operation_Log, Node_Operation_Log_Parameter, and Node_Operation_Log_Status tables.

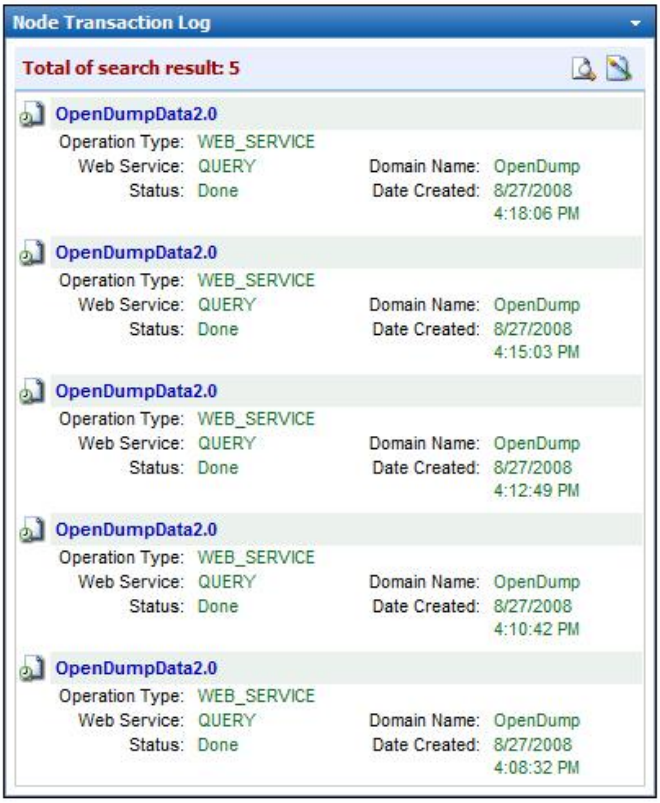


Figure 2-28: Node Transaction Log Initial Screen

By click on the icon  , the search screen will be shown:

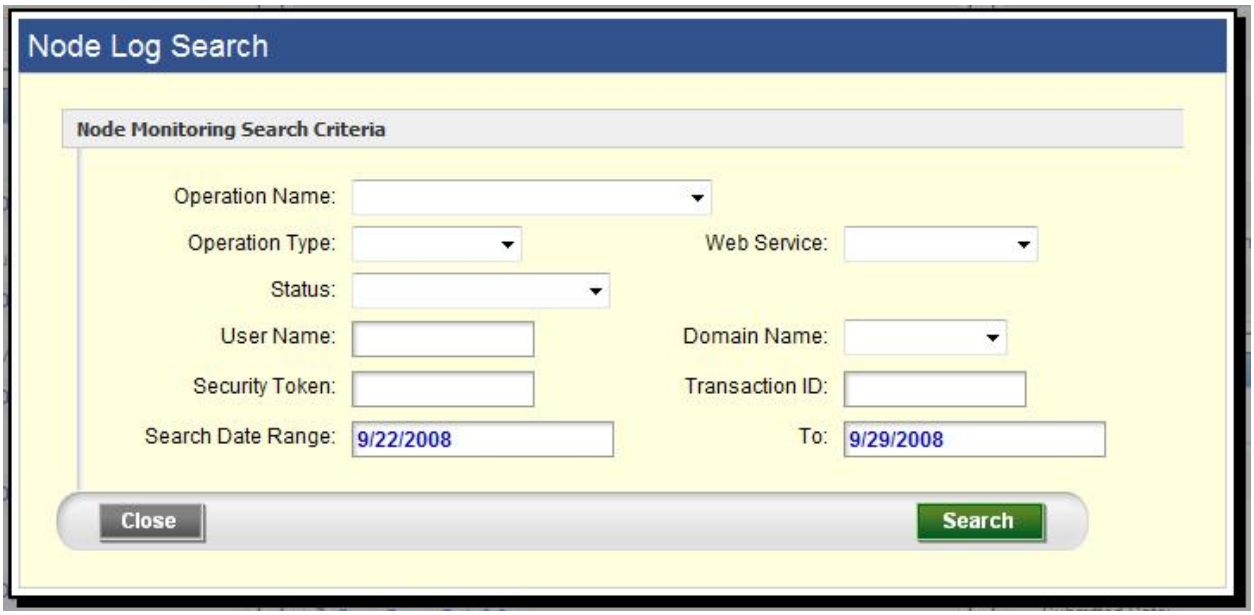


Figure 2-29: Node Transaction Log Search Screen

At this screen the user can search the Node Transaction Log based on:

- Operation Name
- Operation Type
- Web Service Name
- Status (corresponds to the current status of an Operation)
- Domain Name (for Domain Administrators, this will be limited to only those Domains controlled by the Admin)
- User Name
- Security Token
- Transaction ID
- Date range

Clicking on the Search button will return the results, meeting the entered criteria, to the Node Transaction Log Web Part. The user can leave all fields blank to return all entries or use the % symbol as a wildcard.

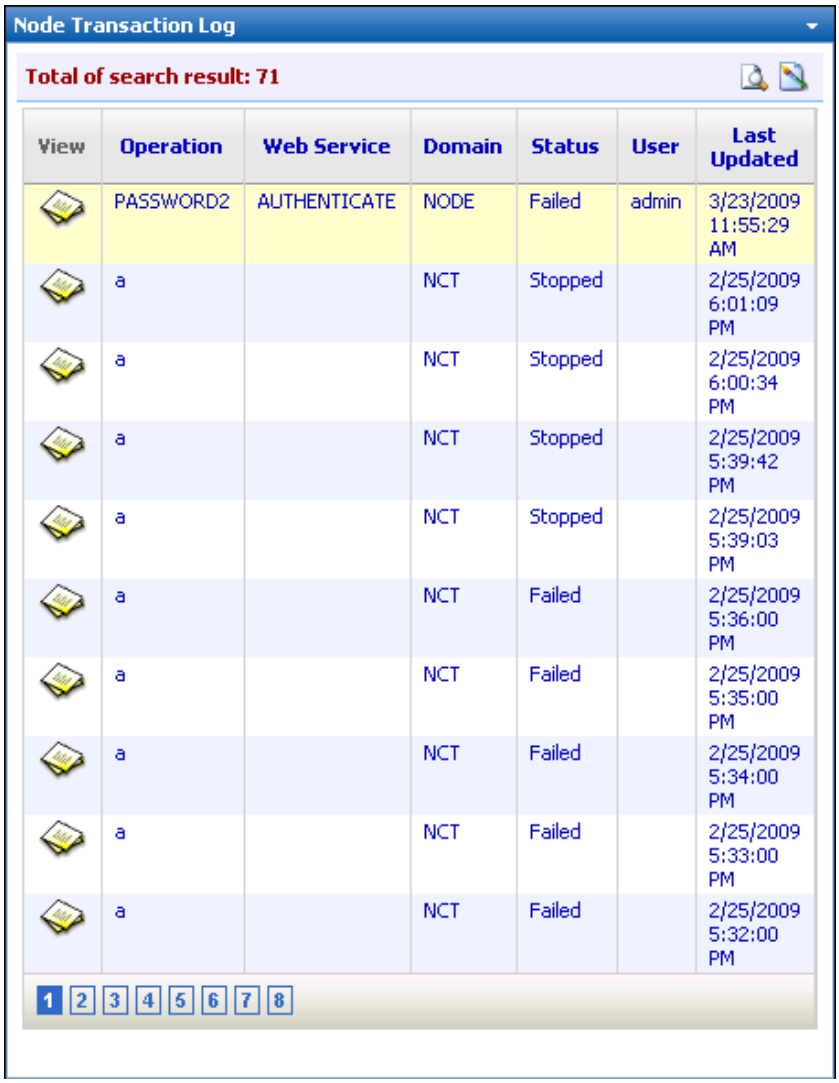


Figure 2-30: Node Transaction Log Search Result Screen

Within the returned list of log results, the user can click on the icon  , to view further details of the operation. The Web Part displays the following attributes:

- Operation Name
- Transaction ID: the unique transaction ID generated by the Node for the specific Node request
- Domain Name: the domain to which the logged operation belongs
- Host Name: The name of the host (if known) that is making the web service request
- Starting Date / Time for the Web service request: Date / Time a task started (for scheduled operations) or the Date / Time the service request was made
- End Date/Time: Date / Time a task completed (for scheduled operations) or the Date / Time the service request response was made
- Operation Type: The type of operation, either Web Service, or Scheduled Operation
- Web Service Name: For WEB_SERVICE operation types, the web service that is being invoked.
- Security Token: The security token issued to the requester during authentication
- User Name: the name of the user (if known) that is making the web service request
- Requester IP: The IP address of the requester
- Node Operation Transaction Parameters
- Node Operation Transaction Status History

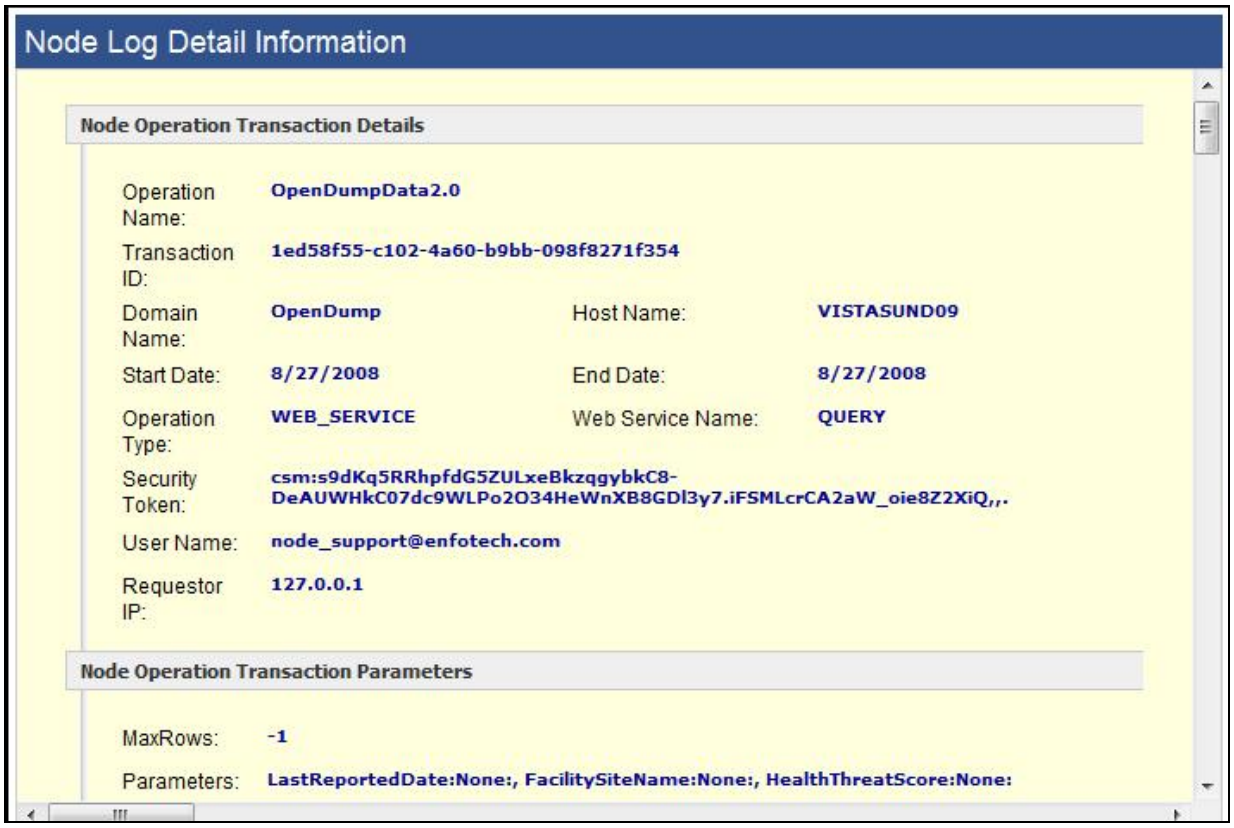


Figure 2-31: Node Transaction Log Detail Screen

The Close button takes the user to the list of results that were sorted before viewing the details of the operation. The Node Transaction log detail can also can be accessed by clicking on the name of the log after selecting on the  icon of the Web Part.

2.7.1 Additional Logging

The majority of Node activity will be tracked under the Node Monitoring section of the Node Administration Console. However, there may be times when a Node administrator needs to check some detailed Exception logs. This may be the case during a troubleshooting exercise. In this case, four additional log files can be retrieved from the Node Server for each component of the Node:

- NodeAdministrationLog.txt
- NodeClientLog.txt
- NodeTaskLog.txt
- NodeWebServicesLog.txt

The directory location and filename of these log files could be modified from the Web.config or Node.TaskHandler.exe.config file present in each component of the Node. As an example, the text for the location and filename for the NodeAdministrationLog.txt is shown below as a portion of the web.config file.

```
<appSettings>
      <add key="LOG_PATH" value="C:\log\AdminLog.txt"/>
</appSettings>
```

2.8 Document Management

The Document Management screen keeps track of the files stored in the EN-Node database. This could include files that have been uploaded to the node from external users, or made available on the node for download.

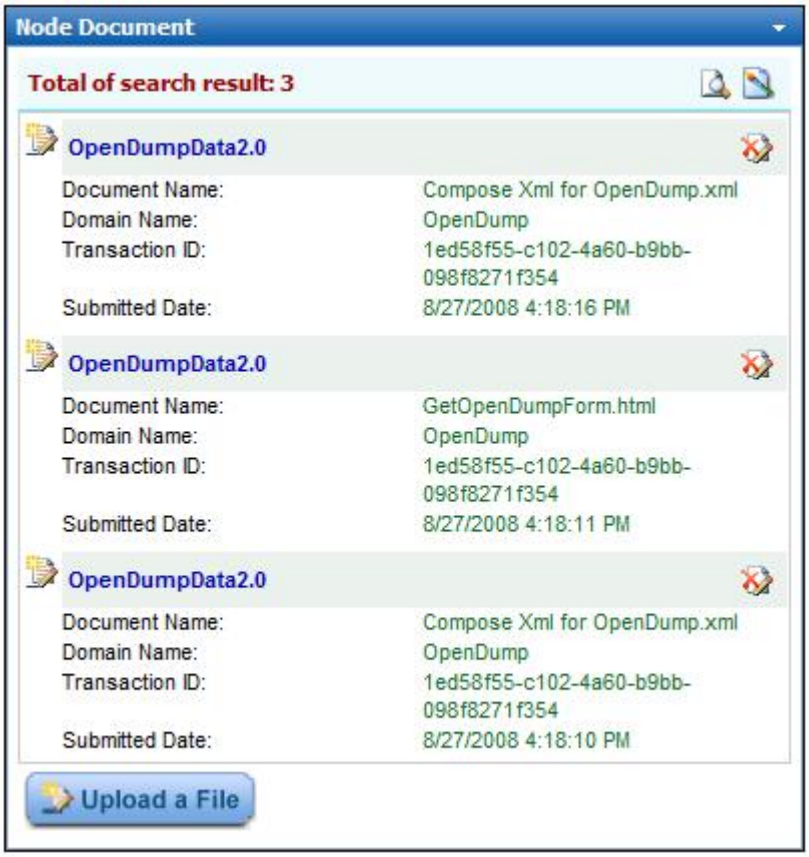


Figure 2-32: Document Management initial Screen

By clicking on the icon  , the following search screen will be shown:

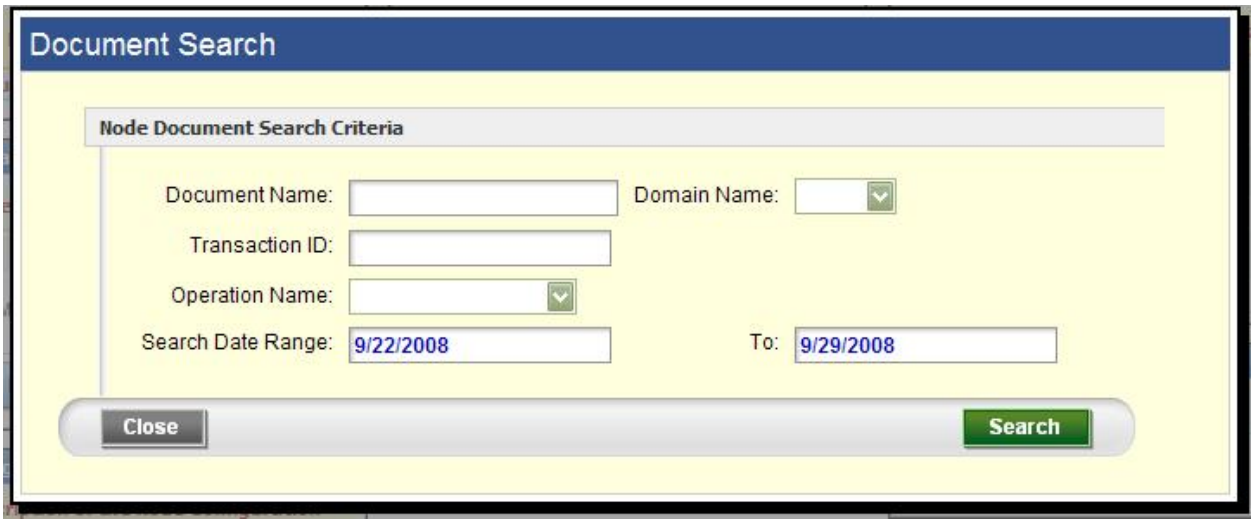


Figure 2-33: Node Document Search Screen

The Document search screen allows the Domain Administrators to search, upload, download, and view details for Node documents. To search for documents, the following search criteria are available:

- Document Name
- Domain Name (Lists only Domains assigned to the Domain Admin)
- Transaction ID
- Operation Name
- Date Submitted Range

To upload a new document, click on the 

button. This will bring the user to a new page as shown below:

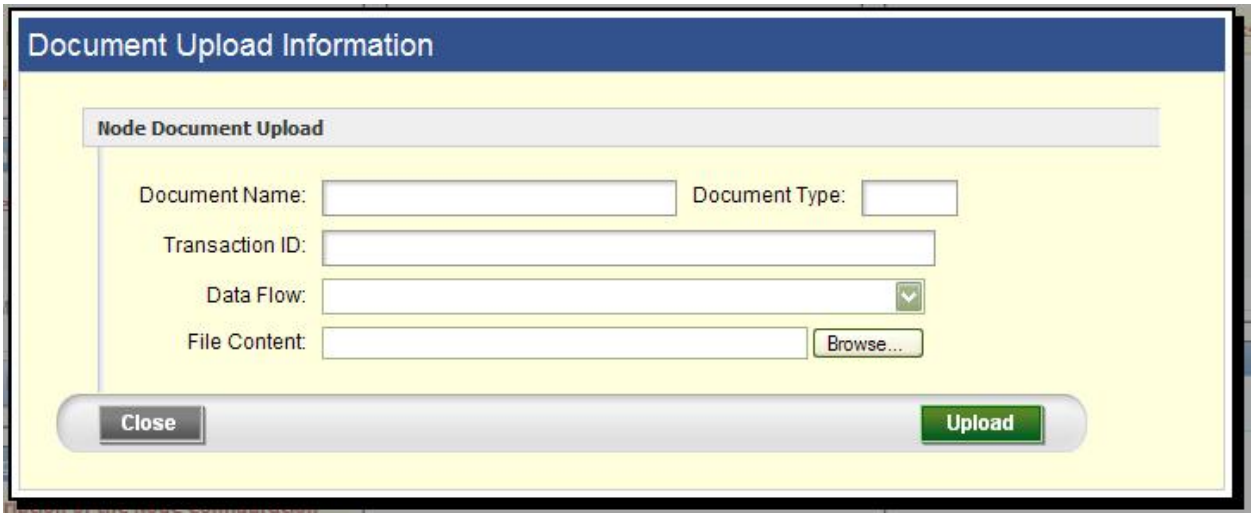


Figure2-34: Node Document: Upload File

At the Upload screen, Domain Administrators can specify the Document Name, Document Type (xml, text, zip currently supported), Transaction ID, Data flow name (lists only those data flows to which the Domain Admin has rights) and upload the file location using the Browse button. If the Domain Admin is uploading a document to make it available for download by an external user, it is important to specify the transaction ID or document name: the ID or name will need to be supplied by the external user when they are ready to download the document from the node.

Edit File Properties: When the Domain Admin clicks on the view icon, , on the Node Document search results grid, a new page is displayed, as shown below.

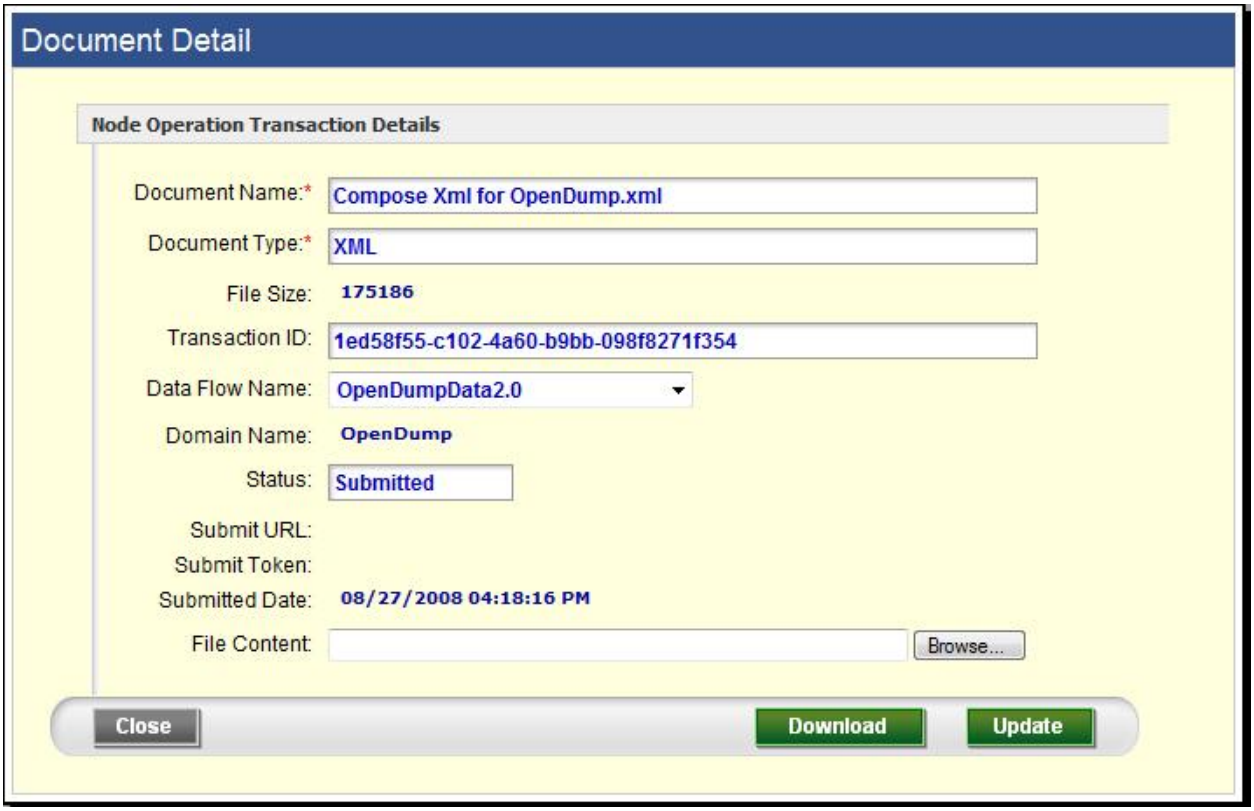


Figure 2-35: Node Document detail Screen

On this screen, the Admin can edit the following properties:

- Document Name
- Document Type
- Transaction ID
- Data Flow Name
- Status
- File Content location (this will replace the existing file)

All the changes made are saved by clicking the 'Update' button.

The file can also be downloaded from this screen by clicking the 'Download' button. The document detail also can be access through the Top function and then clicking on the File Name as shown in the following figure:

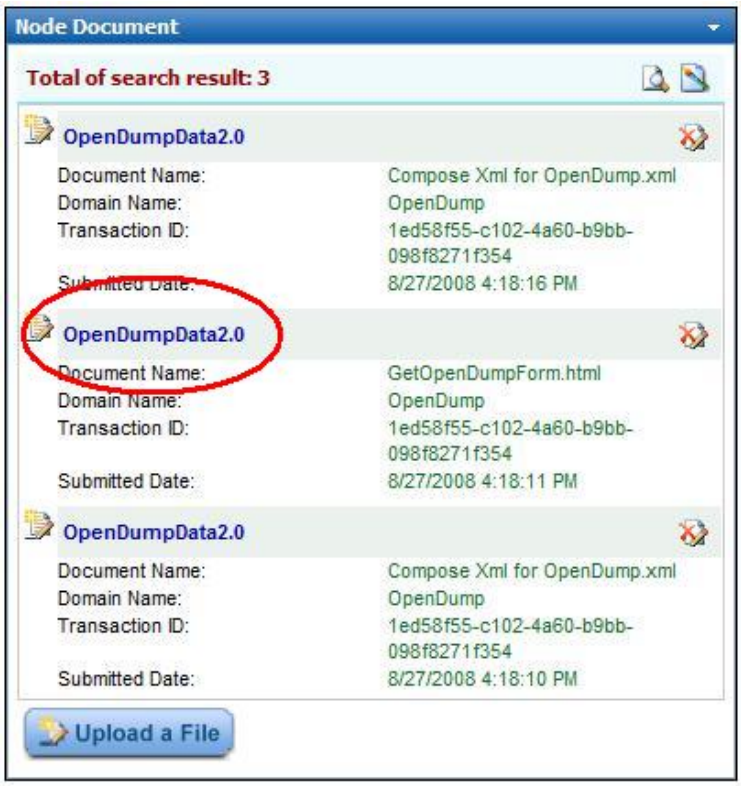


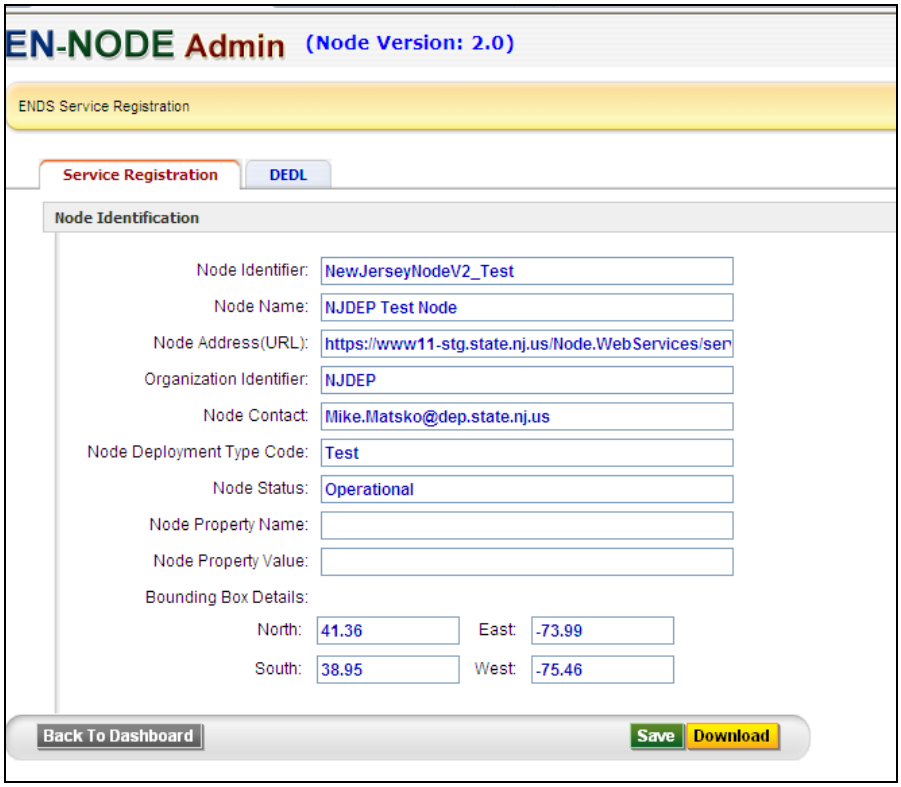
Figure 2-36: Accessing Document detail screen by click file name

2.9 Node Registration

The Node Registration link allows the Node Administrator to define registration needed to support both the GetServices web method (used to register your Node's service at EPA's ENDS registry) and for generating DEDL XML files, which can also be registered at EPA's ENDS registry.

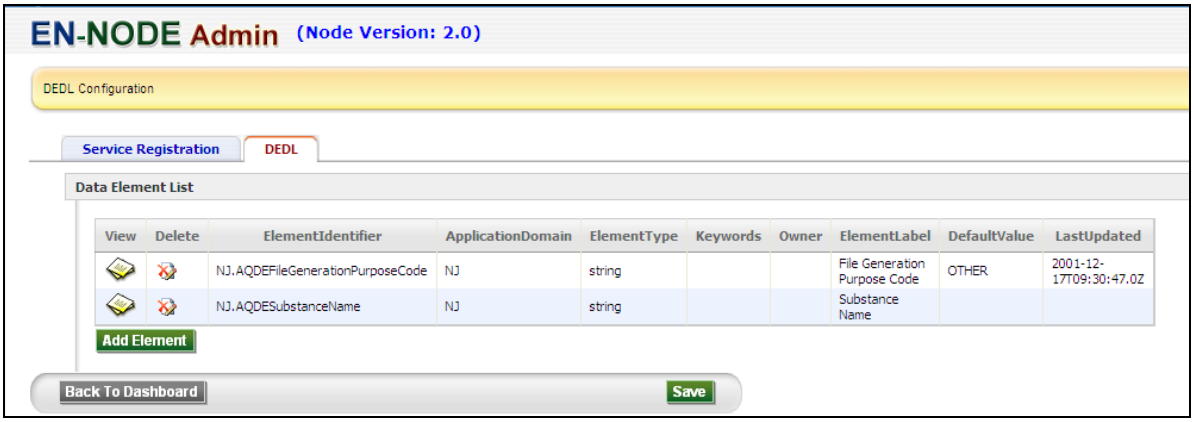
To clarify what these files are used for:

- **GetServices (also may be referred to as ENDS):** An XML file that describes your Node, Node location, listing of services, and (for Query and Solicit services) lists the service parameters
- **DEDL:** Allows you to further describe your service parameters, by specifying things such as parameter drop-down values, validation logic, human readable parameter labels, defines parameter data type, required indicator, multi-select indicator, etc.. This is especially useful if you want your services to appear in the EN Browser.



This screen provides 2 tabs:

- **Service Registration:** where you configure general information about your node.
  - **Note:** Important to note that the information provided here is only to populate the GetServices XML output, and is not used for other purposes.
  - **Note:** the information on this tab will change depending on whether you are on Tab 1.1 or Tab 2.0 in the Node Administration Console. You should configure this for both tabs if you support Node 1.1 and Node 2.0 servics.
  - **Download Button:** allows you to download an XML file that is the same XML file that would be returned if someone called a GetServices on your Node. This will dynamically join the general node information (from the first tab) with the node's service listing (which is pulled from the Domain/Operation configuration page).
- **DEDL (Data Element Definition Language):** allows you to define the DEDL information for your services, as shown here:



The following document is helpful in understanding what needs to be filled out here (especially if you are filling this out so it will be displayed in the EN Browser):
http://www.enbrowser.net/enbrowser/ClientBin/HowToPublishData.pdf

The PDF is a good source for describing each of the fields on this page. However, there are certain special fields that deserve additional description here:

- **Dynamic Parameter Values:** you may have parameters that have a valid value list that is highly dynamic. (For example if you have a service that allows a user to filter data based on Project Name, and new projects are added weekly). In this case, it is too time consuming to manually maintain the valid values list. In these cases you can point the Node to a database table or view from which the list of valid values can be pulled. Then, this list can be regenerated and the resulting DEDL file can be submitted to EPA.

  To use dynamic parameter values set:

  - **Data Source Type:** set to "DBMS"
  - **Access Statement:** set to a comma separated string consisting of:
    1. COLUMN NAME of field to display to user
    2. COLUMN NAME of field to pass to Node
    3. TABLE or VIEW NAME
    4. (optional override) COLUMN NAME of field used to filter table or view
    5. (optional override) value of column from #4 above used to filter table or view

  Here is an example: `CHARACTERISTIC_NAME, CHARACTERISTIC_CD, VIEW_WQDE_RESULT, RESULT_STATUS_IDENTIFIER, Final`

  If any Data Element Definitions have these 2 conditions listed above met, then when the DEDL XML file is generated, it will retrieve the parameter lookup values from the database and refresh the DEDL XML file with the latest set of values. (The Access Statement values will then be removed from the DEDL XML prior to submission to EPA to protect against any potential SQL Injection attacks.

2.10 Scheduled Tasks

The Scheduled Tasks Web Part lists all instances that a Task has run on the Node.

2.11 Node Notifications

The Node Notifications Web Part lists all notifications that have been sent to the node using the notificationURI feature. If a Web service (originating either from your Node or another Node) such as a

Submit provides your node's web service endpoint in the notificationURI parameter, your node will be notified. This notification will appear in the Node Notifications Web Part.

2.12 Node Status

The Node Status Web Part shows the status of the Node and also displays all threads that are currently running in the background. This is useful to know if any long-running task or web service is currently running or has timed out or terminated unexpectedly.

3 Node Database Details

Please refer to the ***Data Flow Developer's Guide*** for the following:

- Database ER diagram
- Data dictionary
- Configuring Database Connection Settings