

Using CDX and the Exchange Network Services

US Environmental Protection Agency
Office of Environmental Information

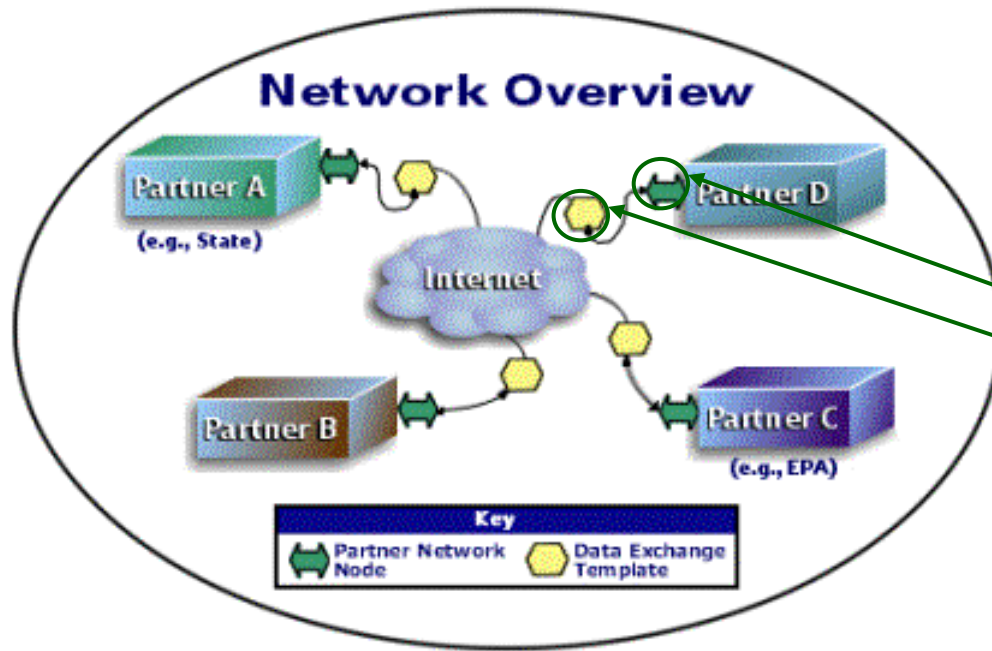


Topics

- What is the Exchange Network?
- Network Nodes and Web Services
- Setting Up and Using Services
- Exchange Network Governance

What is the Exchange Network?

An Internet and standards-based method for exchanging environmental information between partners

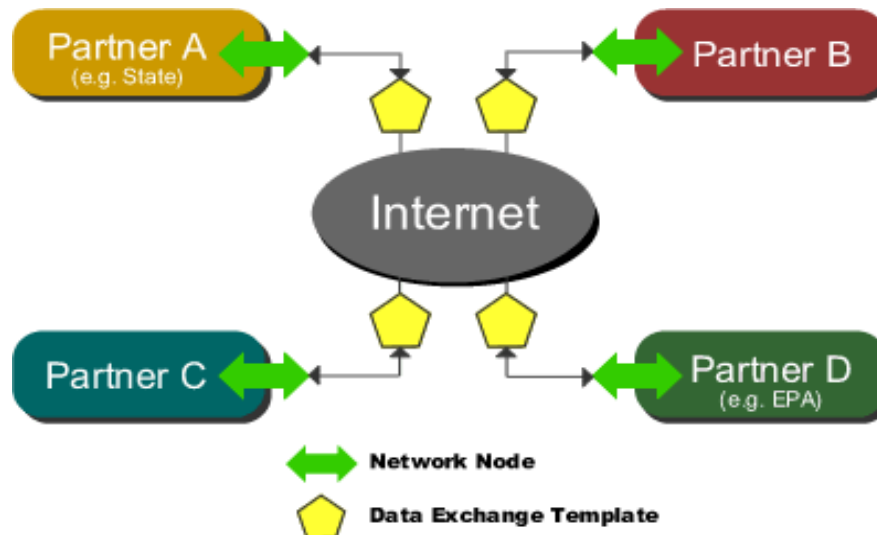


Key Components

- Data Standards and Standard Protocols
- Nodes
- XML Schema/Registry
- Trading Partner Agreements
- Grant Program

Purpose of Network

- Supports automated exchange of data
- Enables timely and accurate exchange
- Reduces reporting burden
- Improves data quality



Types of Data Exchanges on the Network

State-to-EPA

- Facility Data to FRS
- Water Quality Data to WQX
- Drinking Water Data to SDWIS
- Haz Waste Data to RCRAInfo
- Air Emissions Data to NEI
- Air Quality Data to AQS

EPA-to-State

- TRI Data Submissions
- Substance and Chemical Data
- Facility Data from FRS
- Air Quality Data

State-to-State

- Water Quality Data
- Hazardous Waste Transporters
- Air Quality Data
- Homeland Security Data

Intrastate

- Environmental Data to Health Departments
- Drinking Water Labs to States
- Homeland Security/Law Enforcement Data
- County Water Data

What is a Network Node?

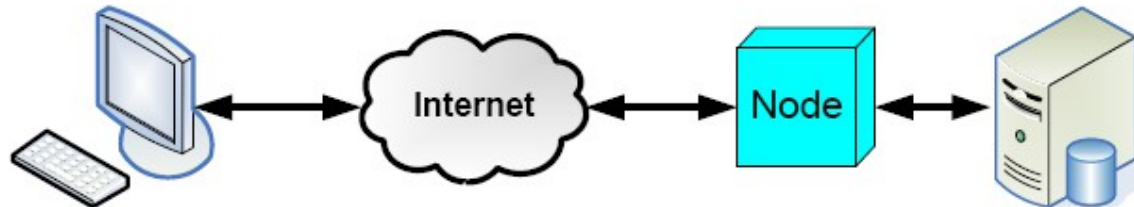
*“A simple environmental information **Web service** that initiates requests for information, processes authorized queries, and sends/receives the requested information in a standard format.”*

- Is a Server accessible on the Web
- Complies with the protocols to ensure secure exchanges
- Sends and receives standards-based messages
- Returns requested information as XML
- Each partner has only one Node

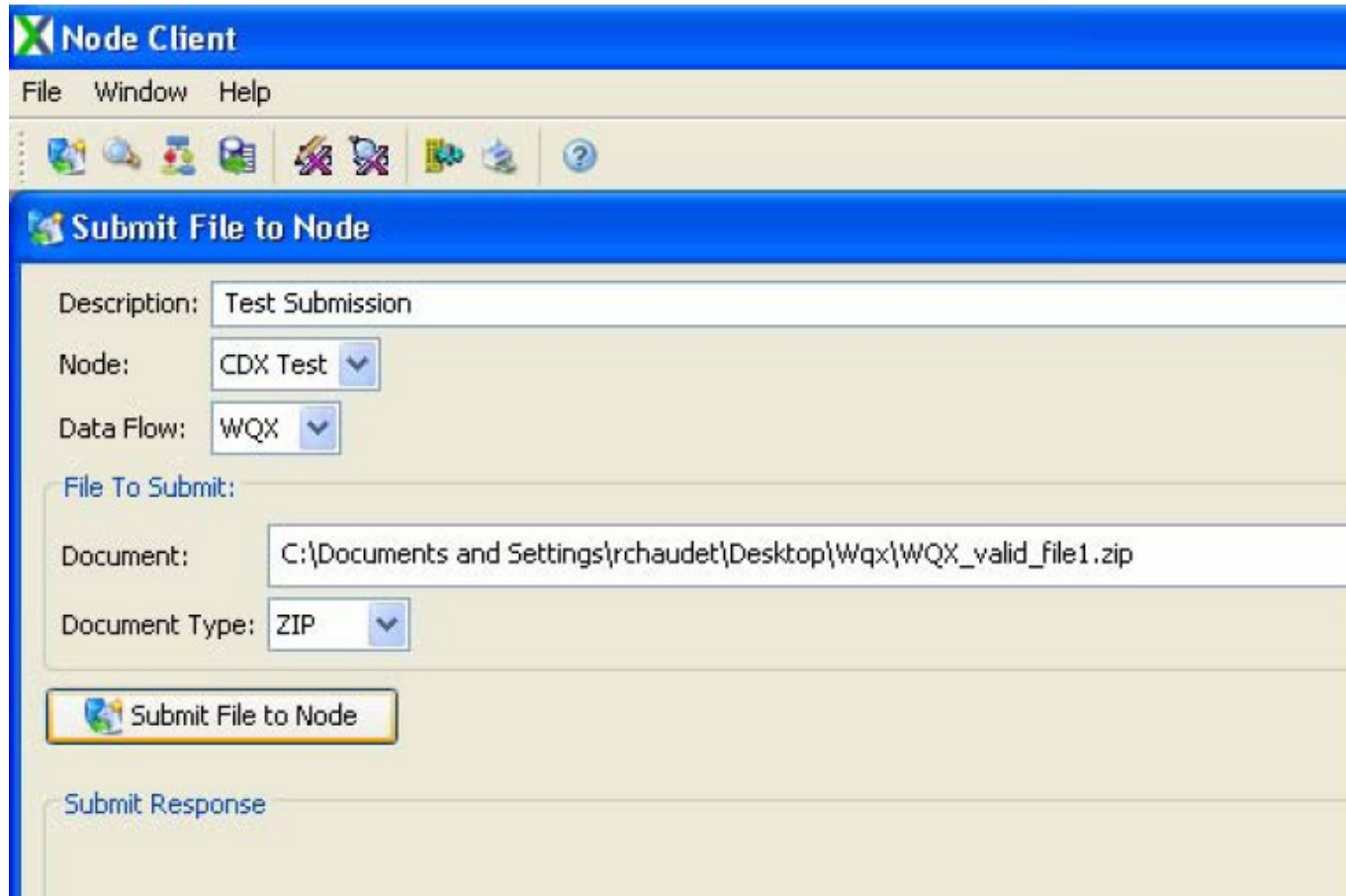


Node Client Applications

- Simplify access to services on full Network Nodes
 - Cannot listen (and respond) to requests from other nodes
- Human-to-Machine interaction
- Easy to install and use
- Available in .NET and JAVA versions
- Node Client Software Developer Kit (**SDK**) - simplifies integrating Node client functions (web service calls) with just a few lines of script



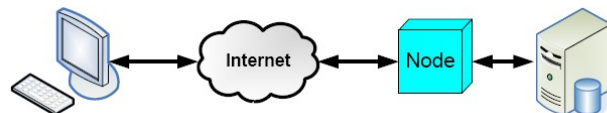
Node Client EPA JAVA/VelocityEngine



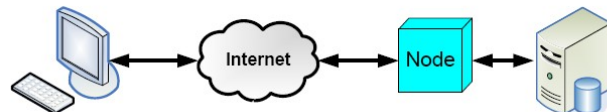
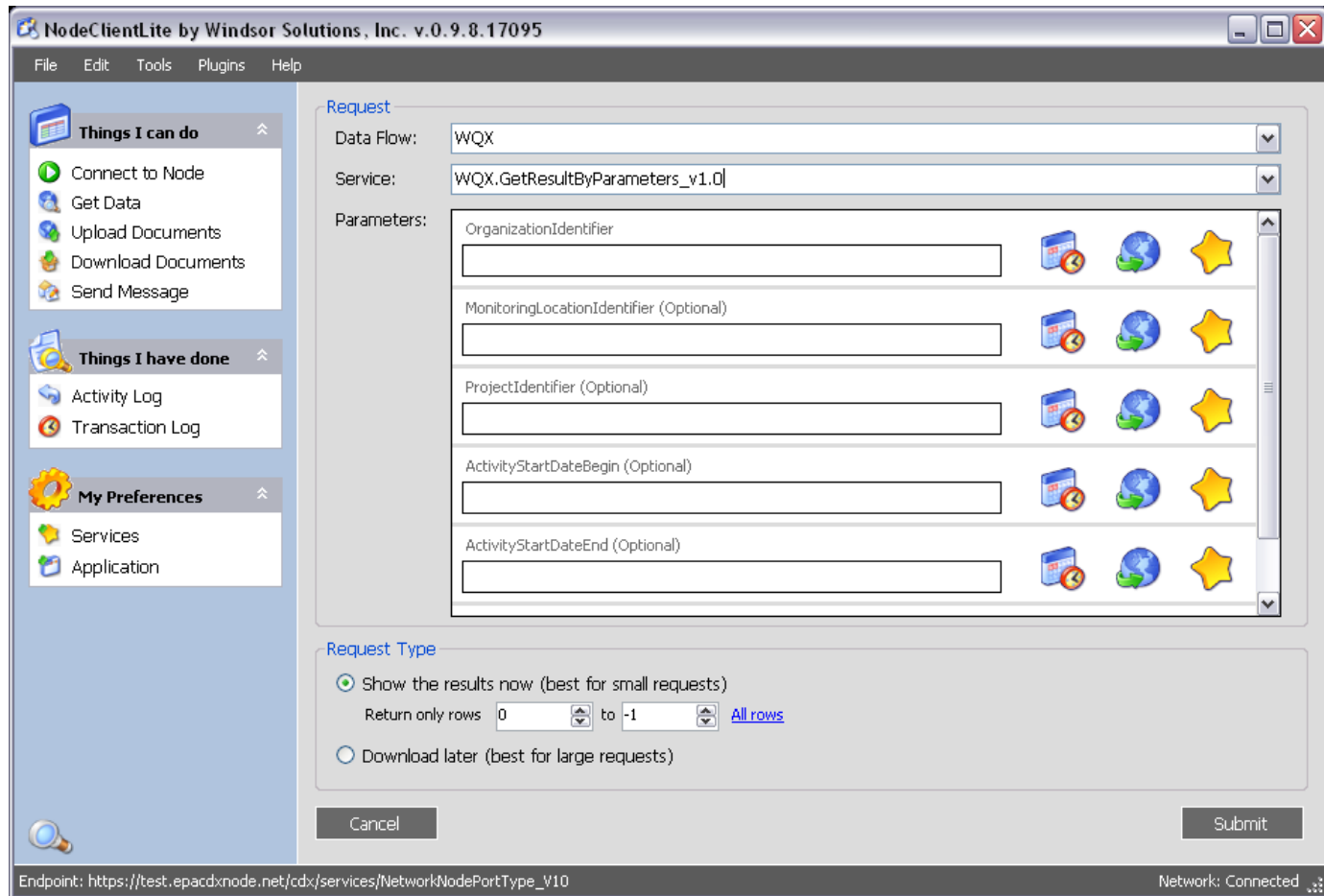
The screenshot shows the 'Node Client' application window. The title bar reads 'Node Client'. The menu bar includes 'File', 'Window', and 'Help'. Below the menu bar is a toolbar with various icons. The main area is titled 'Submit File to Node' and contains the following fields:

- Description: Test Submission
- Node: CDX Test (dropdown menu)
- Data Flow: WQX (dropdown menu)
- File To Submit: (label)
- Document: C:\Documents and Settings\rchaudet\Desktop\Wqx\WQX_valid_file1.zip
- Document Type: ZIP (dropdown menu)

At the bottom of the form, there is a button labeled 'Submit File to Node' and a section labeled 'Submit Response'.



Node Client Lite (Windsor -.NET)



Network Desktop (EPA -.NET)

Network Desktop Client

File Tools Security Options Help

Home Query Wizard Submit Wizard QA Wizard History

Exchange Network Submit Wizard

This page allows you to select a data flow and a document to be submitted. The transaction ID parameter is optional, it is used only if the file is associated with a previous submission.

Choose File to Submit

1 2 3

Submit

Choose an Endpoint:

Transaction ID:

Exchange:

Document:

Document Type: XML ZIP Other

Previous Next

Heartland Emergency Response Client (HERE)

The screenshot displays the HERE Client Help application interface. The main window is titled "HERE Smart Client - BETA (Build #20070808.1)" and contains a dashboard with several sections:

- Application Status:** Shows Network Status as Connected, Site Record Count as 94169, and Last Updated On as 3/18 11:01 AM. A button "Click to map all sites" is present.
- Data Status by Source:** A table listing data sources and their counts:

Livestock	5,943
Public Water Supply	01
Remediation	2,076
Solid Waste	855
Tanks	15,303
Wastewater	2,397

MO	3/18 11:01 AM
Chemical Storage	7,018
Livestock	631
Public Water Supply	15,697

NE	3/18 11:01 AM
Air	3,517
Chemical Storage	5,357
- Saved Searches:** A dropdown menu showing "Sample Facility" with "Load" and "New" buttons.
- Data Snapshots:** A bar chart titled "Top 10 record counts by environmental Interest". The x-axis categories are Chemicals, Public W, Livestoc, Tanks, Air, Wastew, Remedia, Solid W, and Hazardo. The y-axis ranges from 0 to 40,000.
- Tasks:** A task named "Data Download" with a description "Default data download task." and "Last Run: 2007-08-07 09:29" and "Next Run: 2007-08-07 09:29". A "New" button is at the bottom right.

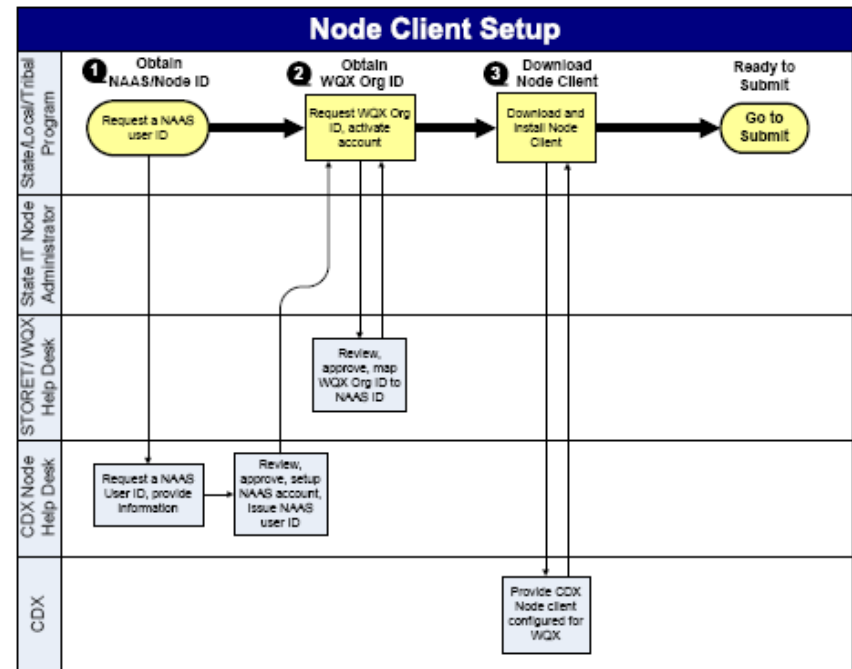
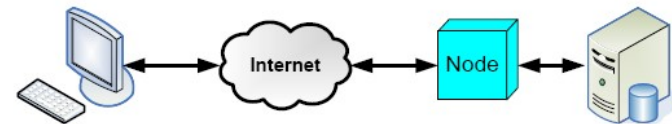
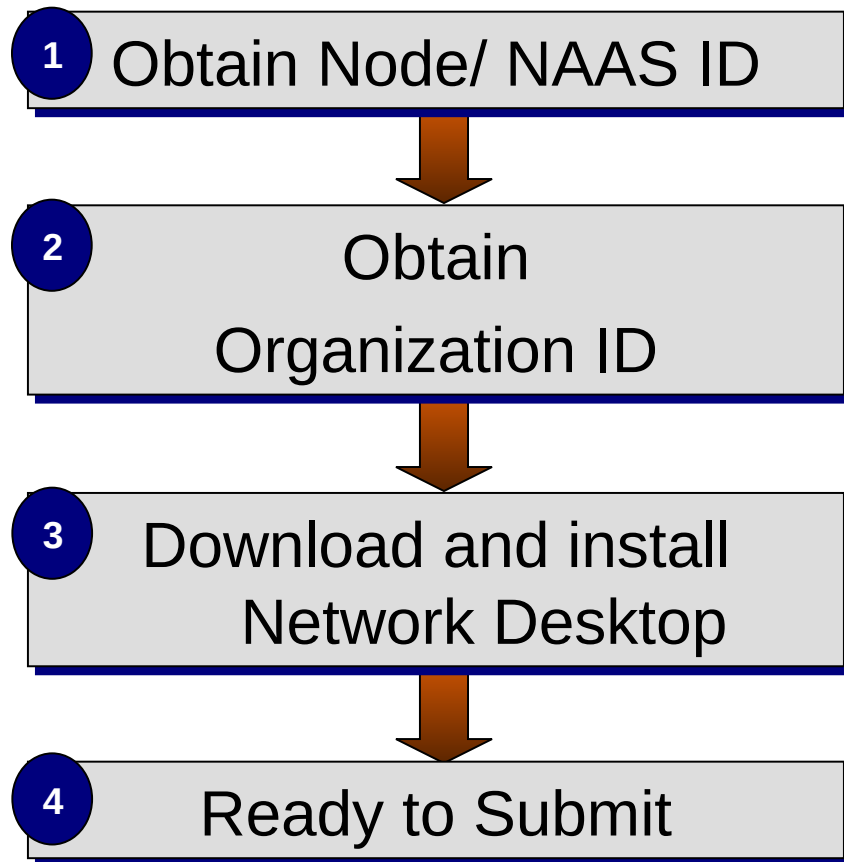
The interface also includes a navigation pane on the left with "Contents" and "Index" tabs, and a menu bar with "File", "Edit", "Sites", "Tools", and "Help". The status bar at the bottom shows "Current NAAS Identity: client@windsorsolutions.com" and "Connected: Yes".

Web Service

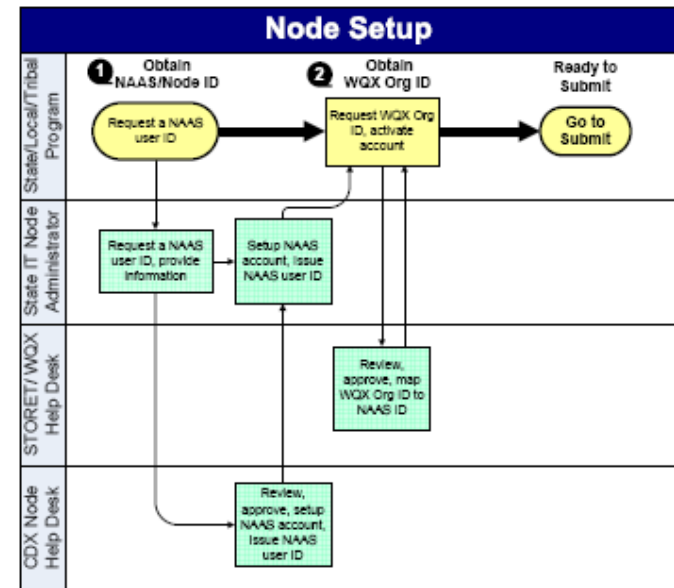
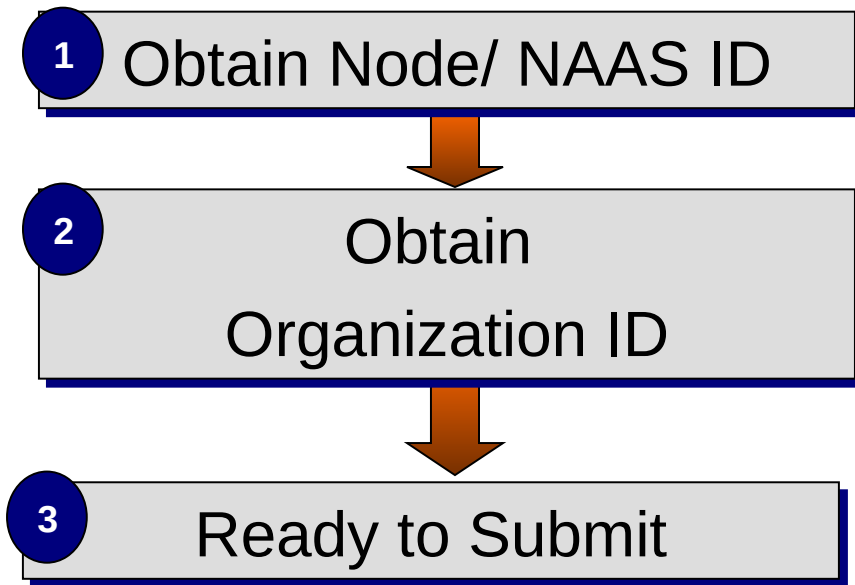
- Definition: Information sources/application components whose functionality and interfaces are exposed to consumers using ***standard messaging protocols*** including:
 - Extensible Markup Language (XML) for the payload or file,
 - Simple Object Access Protocol (SOAP) as a wrapper for the payload,
 - Web Services Description Language (WSDL) for network exchange functions and services, and
 - Hypertext Transfer Protocol (HTTP) for secure communication via the internet

Basically: A machine readable Email message

Network Desktop Setup



Network Node Setup

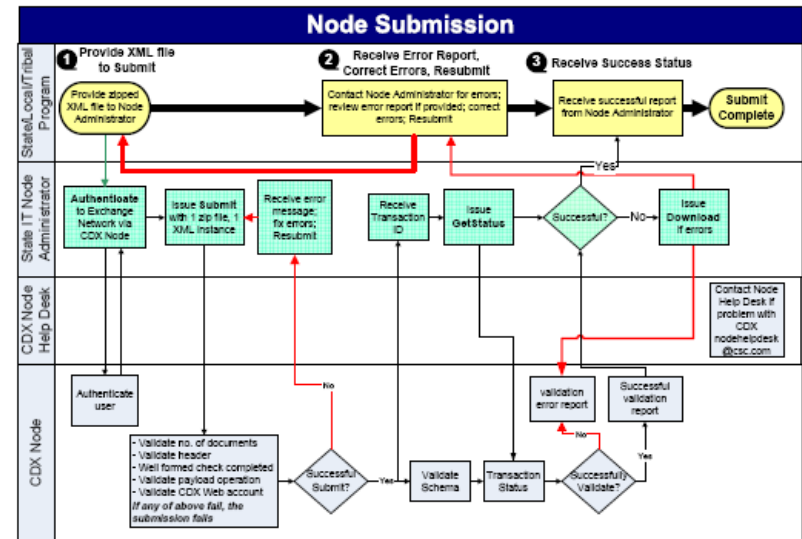


Network Node Submission

1 Provide XML File to Submit to Node Administrator

2 Receive Error Report from Node Administrator, Correct Errors, Resubmit*

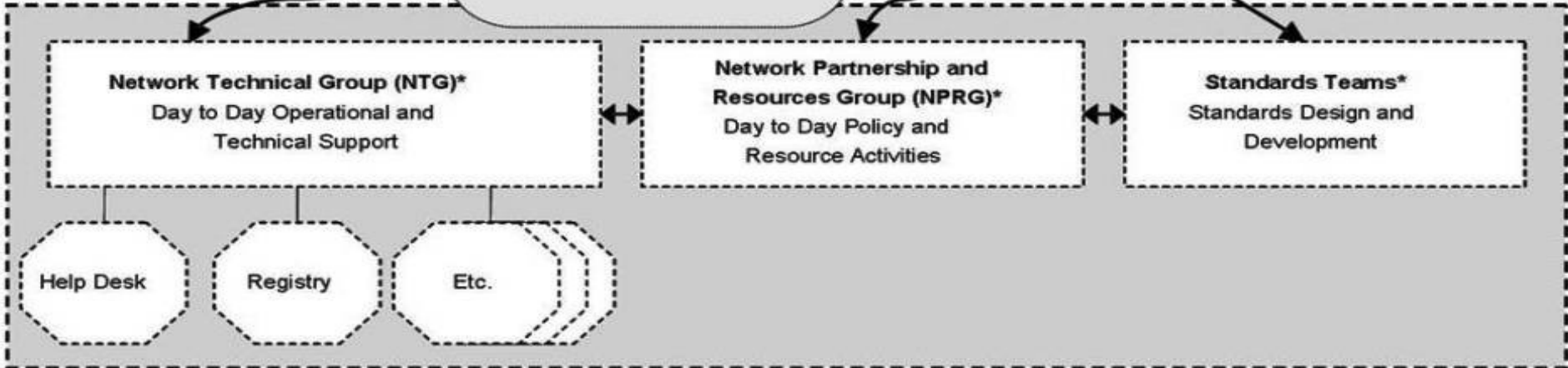
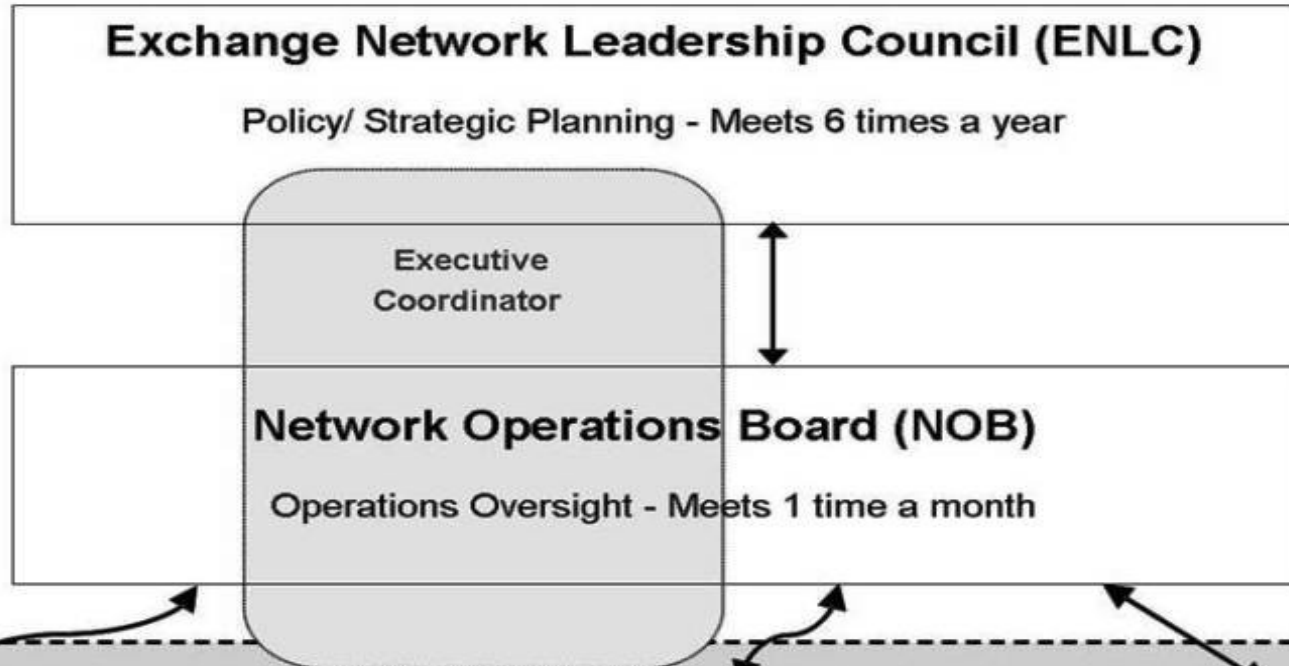
3 Receive Success Status from Node Administrator



Talk to Your Node Administrator!

*Node 2.0 can send e-mail status to user

Exchange Network Governance



Resources

- EPA Exchange Network
<http://www.epa.gov/exchangenetwork>
- Exchange Network
<http://www.exchangenetwork.net>
<http://www.exchangenetwork.net/node/>
- CDX
<http://www.epa.gov/cdx/>
- Node Help Desk
 - nodehelpdesk@csc.com
 - 1-(888)-890-1995