Node or Node Client: To be or not to be

Environmental Information exchange Network

TECHNOLOGY SUMMARY

Node:
- Full two-way functionality**
- More expensive
- More likely to need contractor help to set up

Node Client:
- Limited one-way functionality*
- Much less expensive - maybe free
- Very likely to be set up without assistance

INSIDE THIS GUIDE:

Technical Differences

What might work for you

Node 2.0 information

Node client resources

Who Can I Talk To?

What is the difference?

If you are new to the Exchange Network (EN) and have chosen to share your data using something other than a web tool (e.g., WQX Web), this guide will:

- help you understand two other options,
- offer some advice on choosing between them, and
- provide links to obtain further information.

Start by thinking of the EN like the system of land-line telephones. There are two major categories of phones that are like the different technologies used to share data:
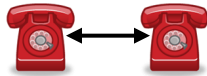
STANDARD HOUSE PHONE = NODE

Just like a household phone, a node allows you to make a call (submit and download data) AND get incoming calls (receive and respond to requests for data). This allows anyone to share data with anyone else at any time.

A **node** requires a server - specifically designed to process requests and deliver data to other computers - and special node software. This **two-way functionality uses the Internet to connect your internal database to other EN partners and allows you to:

1. submit/download data, and
2. _automatically_ respond to data requests ("publishing").

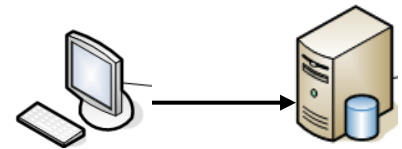All of this happens regardless of the type of node on the other end.

PAY PHONE = NODE CLIENT

Just like a pay phone, a node client ONLY allows you to make a call (submit and download data). This option can be much less expensive and faster to implement.

A **node client** requires only a typical desktop computer, special node client software and an internet connection. This *limited one-way functionality allows you to use the EN to:

1. submit/download data.

Notice, a node client can't respond to requests for data from other partners (that is, it can't "publish" data).

Functions	Node	Client
Submit/download data	Yes	Yes
Automatically receive and respond to requests for data	Yes	**No**

Is a node client enough for you?

Your choice should be driven by a data management system that works for you and your data exchange needs. If funding is an issue, you can start with a node client and plan to upgrade once adequate funding is obtained. A **node client** may be sufficient if you:

- Use the EN infrequently, and primarily to _manually_ submit data and reports to EPA
- Are not interested in providing access to your data to other partners, and/or
- Mainly use the Exchange Network to obtain data from EPA or other partners.

Examples of how node clients are currently being used include:

⇒ Tribal partners on the West Coast submit water quality and air quality data to EPA.

⇒ Emergency responders in the Midwest download data on potential hazards from multiple states, integrate and map it.

⇒ States and Tribes in the Pacific Northwest ask each other's nodes for ambient water quality data and perform real-time analysis on the returned data sets.

Do you need a node instead?
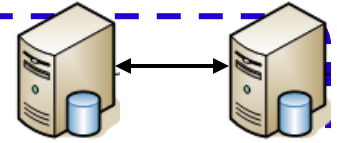
Although node clients can be right for some, a node allows you to automate many tasks, have a constant presence on the EN and may help to reinforce the government-to-government relationship that Tribes have with the United States. Specifically, you will need a **node** if you want to:

- Submit data automatically to EPA or other partners on a pre-arranged schedule, or
- Provide data automatically to EPA or other partners when they request it.
- Share specific, perhaps culturally-relevant, data ONLY with other Tribes on the EN

TRIBAL CONTACT INFORMATION

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Cost Difference

Currently, software to set up either a node or node client is available for FREE.

There has always been free node client software but it used to cost from $20,000 to $100,000 to set up a node. Here are some considerations to keep in mind:

$ Sharing an existing node is cheaper than having your own.

$ Nodes and node clients require the same cost to make a copy of your data in the right format ("mapping") - like water quality data to WQX. This may be a large part of a project budget.

$ Using a data management system that is already "mapped" to the right format can save money.

Look around and ask others about existing resources!

$ It's much easier to set up a node client without contractor assistance.

$ Servers cost a lot to purchase and maintain.

$ You may need outside expertise to help you set up the necessary security on a node.

$ Relying on outside entities to manage/share/ report your data can be a large long-term financial and programmatic cost.

Additional Resources

INFORMATION ON NODES

The Exchange Network has recently upgraded to Node 2.0. Check out the Exchange Network Website for information on the specifications, protocols, and code necessary to make a node operate seamlessly with other nodes and node clients on the Exchange Network.

For more information, see "The Node 2.0 Business Value Guide" at www.exchangenetwork.net/node/Node2BusinessValueGuide.doc.
The "Deploy a Node" link can be found at www.exchangenetwork.net/node/index.htm

INFORMATION ON NODE CLIENTS

Several types of node client applications are available:

Stand-alone clients can be downloaded to a desktop

Web clients work from an Internet browser. Typically, someone will host this node client for you (e.g. EPA or another partner). Nothing is available to install locally.

Client functionality characterizes a different file format like, for example, a spreadsheet as being able to perform some of the functions of a node client. This means, for example, that a spreadsheet has some tools in it that would let users download data through the Exchange Network directly into a spreadsheet-based model.

Links to several user-friendly node client applications are available on the Exchange Network Website. More are on the way. A node client software developer kit (SDK) is also available to help partners integrate node client requests into their applications.

For more information, see the Exchange Network Clients page for links to sample node clients: www.exchangenetwork.net/node/network_clients.htm.