

CHOOSING A WEB TREE COMPONENT

This article discusses tree widgets for navigation and considerations in choosing a tree element for a web site or web application.

Description of Available Tree Technologies

The main available tree technologies are:

- **Static HTML frame or page** with a tree of links. Site maps, simple directories and tables of contents are often presented this way. For an example see http://www.mironov.com/html/site_index.html.
- **Server-side ActiveX tree generator** that creates and sends a new HTML page or HTML frame each time the user opens or closes a folder. An example is at: <http://www.obout.com>.
- **Server-side PHP tree generator** that creates and sends a new HTML page or HTML frame each time the user opens or closes a folder. This can be seen by clicking on the "+" or "-" box in front of "Related Sites" on <http://www.mvermeulen.com>.
- **Client-side ActiveX tree widget.** In this case, the entire description of the tree is sent with one HTML page to be interpreted by an ActiveX plug-in. This plug-in "dynamically" changes the tree. Examples are rare because the ActiveX plug-in works only in Internet Explorer. However, I found <http://msdn.microsoft.com/library/>. If one accesses this site with Netscape, the navigation component is rendered as static HTML in a frame on the left.
- **Client-side Javascript tree widget.** This works like client-side ActiveX, but uses Javascript and doesn't require a plug-in. For an example, see: <http://www.blueshoes.org/en/framework/>. Note that browser compatibility is tricky because the version of Javascript in Internet Explorer has significant differences with Netscape and others.
- **Client-side Flash tree widget.** This is similar to the previous two technologies, but uses a Flash plug-in, from Macromedia. An example is: <http://www.flash-menus.com/supertree.shtml>. Unlike ActiveX, these Flash plug-ins are supported in non-Microsoft browsers.
- **Java tree widget.** Like Javascript, Java has shipped with almost all browsers since the mid 1990s. For browsers that do not have Java, a plug-in similar to Flash is available for free. Examples include <http://www.rockauto.com/applet.html> and the demos on <http://www.dataroo.com>. There are

two main types of Java applets, those that work only with Java 1.2 or more recent (and use the Swing UI controls) and those that work with earlier versions of Java, like that shipped with Microsoft Internet Explorer (which has Java 1.1.5). The examples on Rockauto.com and Dataroo.com work with both earlier and more recent versions of Java.

What is your Use Model?

There are many programs, scripts, and tools for creating navigation trees. Choosing the right one depends on the **use model** for the web page or web application. Specifically:

- Does the tree have **links** that need to be **visible to search engine** robots? If so, choose a static HTML tree and place it on a page without frames that can easily be found by search engine robots. If you want **search engine visibility and a dynamic tree**, present the page in two different ways (static HTML and a client-side widget).
- What level of **browser compatibility** is desired? eCommerce and other applications available to a broad public need broader compatibility than intranet applications used within a company. Extranet applications, used outside a company's firewalls, but by a restricted group users that log on with a password need an intermediate level of compatibility. HTML gives the best compatibility. Javascript, ActiveX, Flash, and Java compatibility depends upon how well a component supplier has tested and debugged his product.
- **How big or complex is the tree?** Large trees (with over 20 nodes or more than 3 levels) are cumbersome if with static HTML. Performance can also be an issue with server-side ActiveX or PHP. Client-side Java trees can be made extremely large (over 10,000 nodes) and still work fast.
- **What download size is acceptable?** Javascript, Flash, ActiveX, and Java require data and formatting to be downloaded to the client. This can take a time if the download size is large and user is on a dialup connection. 50-100 KB is a recommended maximum for dialup connections and 500KB is a recommended maximum for DSL connections.
- What **"look and feel"** is needed? Some approaches give more capability and flexibility in how nodes on the tree are presented and connected.

Comparison of Web Navigation Technologies

	Static HTML	Server-Side		Client-Side			
		ActiveX	PHP	ActiveX	Javascript	Flash	Java
Use Model:							
Search visibility	OK	Partial	Partial	No	No	No	No
Browser compatibility	No problem	No problem	No problem	Poor	PS	Plug-in	PS
Big complex trees	No	OK	OK	OK	OK	OK	Best
Download size	#nodes	PS & #nodes	#nodes	PS & #nodes	PS & #nodes	PS & #nodes	PS & #nodes
Look and feel	PS	PS	PS	PS	PS	PS	PS
Implementation:							
Server technology	Any	Microsoft	PHP	PS	PS	PS	PS
Database connection	PS	Microsoft	MySQL easy	Microsoft?	PS	PS	PS
Development system	PS	Microsoft	PS	Microsoft?	PS	PS	PS
Price	PS	PS	PS	PS	PS	PS	PS

Notes: PS means product specific. Different products using this technology vary greatly.
 #nodes means the download will also depend on the number of nodes to be downloaded. The download size per node varies greatly depending upon what technology and product is chosen.
 Plug-in means that an additional plug-in is required to function.. This is usually not a problem.

What is your Implementation?

It is also important to understand the infrastructure and application environment in which the tree component will be used. Key considerations are:

- **Server technology.** Some solutions work only with Microsoft (IIS or .NET) servers. Others work with Apache (Perl, PHP or Cold Fusion). Still others need a Java-based web application server. Some approaches are independent of server type.
- **Database or application connection.** Do you want a web application or database to generate the tree? Do you want data input or actions taken by the user to be passed back and change the tree?
- What **development environment** will you use to create you web site or web application?
- What **price** are you willing to pay?

Tradeoff matrix

The table above shows the tradeoffs between technologies and requirements. There are no clear winners for all situations.

Because of the lack of good solutions, Dataroo™ has decided to create one of their own. This product is called SurfTree™. This product uses client-side Java technology that is compatible with all Netscape browsers since Netscape 4.0, all Microsoft Internet Explorer browsers since 4.0, as well as the most commonly-

available browsers used on Linux, Unix and Apple products.

SurfTree™ is extremely easy to use. All data for the tree can be stored and manipulated using a spreadsheet. It supports up to 65,535 nodes on nine levels and has a variety of customization features to give the look and feel that matches the rest of your site. It is also easy to populate a SurfTree™ directly from a database such as MySQL, SQL Server, or Oracle.

SurfTree™ has been implemented in a way that makes it fast and easy to create trees with thousands of nodes. More significantly, SurfTree™ can work with all server-side technologies (PHP, Perl, ColdFusion, Java and Microsoft) and is compatible with all website development environments, including Dreamweaver.

SurfTree™ is available in two versions. A **free version** with advertising and a non-advertising version that is available for \$49/domain. OEM licensing is also available.

Conclusion

I hope you have found this brief helpful. Please feed back any questions or inputs by contacting <mailto:sales@dataroo.com>.