The Intranet

The term intranet refers to the fact that the web or other internet applications are being run completely on the inside of a private network often without a direct connection to the internet.

In recent development, the internet has become a common technology in most businesses, organizations and institutions. In view of this fact, most of these organizations have become accustomed to web browsers. This means that organizations could use web browsers to disseminating information. This information might not necessarily be accessed on the internet but on a local server set up to be accessed on the inside using an internet browser. Here, at UNIJOS, we have a server setup with thousands of documents occupying over 20 Gigabytes of Hard Disk space. These documents range from Literature to Technical Training documents donated by Cliff Missen from widernet.

One can imagine if all these documents were on printed paper, the sheer volume alone would scare one from browsing through to select a specific book. In fact, it is ergonomically and economically sound because one could save a lot of space and money. One could also do their bit for the environment by saving the trees – what Cliff usually refers to as "Dead Trees and Ink", i.e. printed documents.

Internet and Intranet Services

There are services that have being developed throughout internet and intranet history. Most of these services came about solving one problem or the other by programmers writing code and publishing it for other to benefit. These services include:

File Transfer Protocol (FTP)—Transfers files between computers.

Telnet—A way to send commands to another computer and receive the output.

Gopher—A menu-driven search engine for finding files by topic. Often used with Telnet.

Wide Area Information Servers (WAIS)—A search engine that finds files containing a particular text string.

News—A bulletin board service (BBS) that lets users post messages and read and respond to those posted by others.

Mail—A convention for encoding electronic mail messages for transmission over the network.

World Wide Web—A way to publish "pages" of information, including text, graphics, multimedia objects such as sound and video clips, and links to other pages.

John L. Gotip, Nigerian Universities Network, University of Jos
gotipj@unijos.edu.ng

Intranet Web Creation

There are five major topics related to deploying World Wide Web software on a corporate LAN:

Install and configure TCP/IP

Install software on the Web server

Install software on the Web client

Publish content on the Web server

Maintain the server's content

The TCP/IP Protocol Infrastructure

The Internet's standard network protocol is TCP/IP; the Internet's information sharing tools can use this protocol, and many require it. The first step in deploying an intranet is installing and configuring TCP/IP on the network's computers.

Each device node on the network is (or can be) assigned several TCP/IP configuration settings with dots separating four sections, including an IP address (such as 11.22.33.44) that identifies the node and its subnet, a subnet mask that the node uses to identify nodes on other subnets, and a default gateway to which the node sends frames destined for nodes on other subnets. You may have assigned these settings statically, or you may have installed the domain host configuration protocol (DHCP) service on a Windows NT Server computer to assign these settings when each device boots.

If users reference computers using host names instead of memorizing IP addresses, you have either entered common IP addresses and corresponding host names in HOSTS files on the computers, or you have configured a domain name service (DNS) to resolve host names to IP addresses dynamically. Similarly, if users reference computers using NetBIOS names, you have either entered addresses and names in LMHOSTS files on the computers, or you have configured the Windows Internet Naming Service (WINS) on a Windows NT Server computer.

Install Web Server Software

Technically, a Web server communicates with clients using the HyperText Transfer Protocol (HTTP). Web server and HTTP server are synonymous, which is why URLs identifying data on a Web server begin with "http" (for example, the Microsoft World Wide Web site is http://www.microsoft.com/).

John L. Gotip, Nigerian Universities Network, University of Jos
gotipj@unijos.edu.ng

HTTP, in turn, is a convention for sending messages over the TCP/IP network protocol. If you install TCP/IP on the client and server computers, the Web client and server software implement HTTP: you don't need to "install" an HTTP network protocol.

Web server software is typically a service written for a particular operating system. The Web server computer may be dedicated to this task, or it can also perform other tasks (if it runs other services) such as file, printer, or application serving.

Microsoft offers Web servers in two software products:

Internet Information Server (IIS)

IIS runs on Windows NT Server 3.51, service pack 3 and above. It includes Web, FTP, and Gopher server services, and is the preferred Web server platform for business use.

FrontPage Personal Web Server

FrontPage is a Web page authoring tool that includes a Personal Web Server component which lets people design and test pages on a single computer. FrontPage is not optimized for typical business use.

Install Web Client Software

The most important Web client software is a Web browser: an application that can communicate with a Web server using HTTP. There is a wide variety of Web browsers. Some are shareware, others cost money; some are text-based, most are graphical. Among the most popular browsers are Microsoft Internet Explorer, Netscape Navigator, and NCSA Mosaic.

Virtually all Web browsers can read and display documents written in the HyperText Markup Language (HTML). An HTML document describes a "page" which can contain text (with multiple fonts, and effects such as boldfacing, underlining, colors, and so on), references to graphics that the browser can display (typically GIF and JPEG formats), and hypertext links to other pages or other kinds of documents.

Hypertext links are the key to the Web's usefulness. Without them, a Web browser is little more than a read-only word processor. With them, a Web browser lets users navigate from one document to another by clicking a mouse, without starting another application and without worrying about server names, directories, or file names.

If you activate a URL that starts with "http" the computer tries to launch a Web browser to locate and possibly display the data that the URL identifies. If the browser cannot interpret the data, the browser starts another application to display the document. For example, if the URL points to an Excel spreadsheet, the browser starts Excel. Microsoft freely distributes Viewer applications that let a client display Word, Excel, PowerPoint, and Access documents without requiring the full-fledged applications.

John L. Gotip, Nigerian Universities Network, University of Jos
gotipj@unijos.edu.ng

If you activate an HTTP URL from another application, such as Exchange, the computer starts your Web browser and directs it to display the data identified by the URL. If you start the browser as a stand-alone application, it displays a default page (home page).

Author and Publish Content

The Web server and browser are of little use unless the server has documents to share. There are three ways to create (author) these documents (content):

Create a page (HTML document) that displays the information you want people to see

You can do this with a text editor (such as Notepad) and an HTML programming guide, or you can do it an easier way using an HTML page authoring tool: you type or draw the information you want to share, and the tool creates the HTML document for you. Such tools are available from Microsoft as part of Internet Information Server and FrontPage.

Use authoring tools to create a page from another document

Microsoft freely distributes application add-ins called Internet Assistants for Word, Excel, PowerPoint, Access, and Schedule+. These products help you convert existing documents into HTML.

Internet Information Server supplies the Internet Database Connector (IDC), an add-in required for any Web server to access a Microsoft SQL Server database. The Internet Database Connector helps you create Web pages "on the fly" from SQL Server data.

SQL Server 6.5 supplies a Web Assistant which helps you automatically create pages from database files, either on a schedule or when the data changes.

Create a page (by hand or with authoring tools) with a link to a non-HTML document that the client's applications can display

Maintain Content

Maintenance is a critical but frequently underestimated part of running a Web site. Links make the Web useful for users, but they increase the labor for authors and administrators.

For example, when you add a new document you may need to convert it to HTML, add links from existing pages to the new page, or (if the new document has been converted to HTML) add links to the new document. When you delete an existing document you must ensure that documents to which it was linked are still accessible, and ensure that other documents linked to the deleted one are updated. The latter tasks are also necessary when you rename or move a document.

Most page authoring tools, including Internet Information Server and FrontPage, include tools to help you track links and maintain your pages.

John L. Gotip, Nigerian Universities Network, University of Jos
gotipj@unijos.edu.ng

Conclusion

As with any other technical topic, the Internet's terminology is most easily understood when approached in a sequence and from a particular point of view. An article designed for a content provider would stress other tasks and relationships that represent a working subset of intranet design and functionality. A system administrator familiar with the ideas and terms discussed in this article is prepared to start designing, creating, and implementing an intranet.

John L. Gotip, Nigerian Universities Network, University of Jos
gotipj@unijos.edu.ng