



**Using the Deep Web:  
A How-To Guide for IT Professionals**

**Steven R Gruchawka**

**[admin@techdeepweb.com](mailto:admin@techdeepweb.com)**

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**TechDeepWeb.com**

## Abstract

**The deep Web contains 99% of the information content of the Web; however, most of this information is contained in databases and is not indexed by search engines.**

A complete approach to conducting research on the Web incorporates using surface search engines and deep web databases. Most users of the Internet are skilled in at least elementary use of search engines; however, skill in accessing the deep Web is limited to a much smaller population. A [video](#) made by the Office of Scientific and Technical Information describes one particular deep Web search engine developed for accessing multiple government databases; there are many others.

There are numerous books and articles on the deep Web (invisible Web or hidden Web) that do a terrific job of describing use of the deep Web for general audiences. The references cited on this website provide a good cross-section of these references. However, to the author's knowledge, there is nothing written about the deep Web that addresses the needs of the IT (information technology) professional and that is why this information was researched and presented on this website.

This website is intended as a pathfinder in locating IT information by describing some of the most useful search tools, portals and website available. The intention is not to be all inclusive but to limit selection to high quality resources. This approach is admittedly subjective and limited to the authors experience, research and input from readers. Reader input is welcome and encouraged to increase the usefulness of this ad-free, vendor-free website.

The deep Web is the fastest growing sector of the Web and it appears to be the "paradigm for the next generation Internet" (2005, Deep-Web FAQ, para. 35). It therefore is of key interest to many IT professionals. In fact, proper use of the deep Web can drastically reduce research time on a given project and yield higher quality information.

At present, the Internet is functionally divided into two areas:

- The surface Web contains 1% of the information content of the Web. Search engines crawl along the Web to extract and index text from HTML (HyperText Markup Language) documents on websites, then make this information searchable through keywords and directories.
- The deep Web contains 99% of the information content of the Web. Most of this information is contained in databases and is not indexed by search engines - technical and business reasons are obstacles. This information is made searchable by keywords only through the query engine located on the specific website of each database.

As the Web evolves the deep Web will become more easily accessible; however, at present to access deep Web information, one needs to go directly to the website containing the database of interest and use the website's query engine. To do this, you need to know the URL of the deep Web site. Considering there are over 200,000 deep Web sites (Bergman, M., 2001, p. 1. para. 5), it is a challenge to know which sites to use for a given research topic. This presentation is intended to be a guide to this vast ocean from an IT perspective, with emphasis on administration of Windows networks.

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## About the Author

The author has worked in management and in the field of information technology for over 18 years and has a MS degree from the University of Connecticut in Storrs, CT. His most recent position was IT director for the academic technologies department at Mitchell College in Connecticut. He is currently pursuing additional graduate work in information technology at Capella University and is a member of ACM, IEEE and MENSA.

## Companion Website

<http://www.techdeepweb.com>

A companion website to this paper was created, as a place to keep the information in this paper alive and current. Reader input is welcome and encouraged to increase the usefulness of this ad-free, vendor-independent website maintained for the benefit of the author's colleagues in the IT Profession. On this website is a PDF of the most recent version of this document and a HTM file of a matrix of all the links on the website. These two documents may be freely distributed for educational purposes provided they are presented in their entirety and not changed or altered in any way. To coordinate these documents with the website, a compromise needed to be made. In both documents the embedded hyperlinks are live when viewed on a computer. However, in print form, only the names of the sites appear and not the URLs. The author did some soul searching and decided it would be too time-consuming to update, edit and proof two versions of the PDF just to include the hundreds of URLs for printing. Most IT people would probably prefer to use the link matrix or website to visit linked sites and would not take the time to type in URLs from a printed copy. Therefore it seems a prudent use of the author's time to not include the URLs for printing which would require maintaining two separate documents with inherent synchronization issues. New sites will be added to the "new additions" button on the website. Then periodically, these will be integrated into the website and into updated PDF and HTM files for downloading. Another way of saying this is the downloadable files contain the entire website except for items under the "new additions" button.

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# Using the Deep Web: A How-To Guide for IT Professionals

## Overview

### Introduction

The Internet links computer networks and people across our planet. This USA author received a booklet of postcards with beautiful photos of Moscow from a programmer in Russia that he “met” online while troubleshooting an application. Several years ago the author’s wife’s daughter and her husband went on an African safari by invitation as the guests of Africans they met online. Twenty years ago, events like this did not happen to ordinary people, today they are commonplace thanks to the global reach of the Internet. The Internet allows us to share files, information and relationships.

This guide is meant to aid IT researchers in finding higher quality information in less time. In a simplified description, the Web consists of these two parts – the surface Web and the deep Web (invisible Web or hidden Web). The deep Web came into public awareness only recently with the publication of the landmark book by Sherman & Price (2001), “The Invisible Web: Uncovering Information Sources Search Engines Can’t See.” Since then, many books, papers and websites have emerged to help the searcher further explore this vast landscape.

Why the fuss? Don’t search engines and directories do everything needed by a researcher? Let’s explore this further. Search engines and directories provide great services, but they are limited. Search engines, index less than 1% of the Web (BrightPlanet, 2005, Deep Web FAQ). The remaining 99% of the Web is located in the deep Web. In addition, information in the deep Web is of higher quality, that is, less “noise” and more focused. If you are searching for information using only surface Web search engines, you are missing 99% of the content of the Web. Moreover, 95% of the deep Web is free publicly accessible information (Deep Web FAQ).

Today’s search engines are marvelous research tools; however, searches often yield more trash than treasure. Sifting through the junk to find the gems can consume large amounts of time. It is noteworthy that the majority of users are frustrated by search engines, Chamy (2000, para. 2) has found that “Web-rage is uncaged after twelve minutes of fruitless searching.” A typical keyword search may uncover millions of “hits.” Even fine tuning, by tweaking your keywords and using the advanced search features of search engines, can yield results that are less than desirable. More importantly, however, is the vast amount of information missed by search engines. It is in these situations where the deep Web can be of help. The deep Web is not a substitute for surface search engines, but a complement to a complete search approach.

The imagery used for the Web is a spider’s web that covers the planet. Search engines are the spiders that crawl all over the Web to extract and index text from websites. Hence, these search engines are called spiders or crawlers. Surface search engines crawl from static web page to static web page to extract text from HTML then index these words. Information stored in databases is not in a format these search engines can access. Databases are accessed dynamically by queries using the retrieval tools unique to the database. An analogy would be that surface search engines can see all the birds floating on the ocean, but can not see the fish. You need sonar to look through the depths of the water to see the fish and a fishing pole or net to catch the fish.

Bergman (2001) contrasts these two parts of the Web:

Surface Web	Deep Web
Millions of web pages	Over 200,000 databases
1 billion documents	550 billion documents
19 terabytes	7,750 terabytes

Broad shallow coverage	Deep vertical coverage
Results contain ads	Results contain no ads
Content unevaluated	Content evaluated by experts

If you know the URLs of deep Web databases and understand what information is contained in these databases, you can access the deep Web information. However, with hundreds of thousands of databases, and more being added daily, this can be a daunting task. Fortunately, elves on the Internet are busy at work creating portals to this information. Also, surface search engines are beginning to add small quantities of deep Web content to their searches.

An example of a deep Web resource would be the NLM Gateway sponsored by the [National Library of Medicine \(NLM\)](#). Go to this site and type in some keywords. The quality of the medical information you will find in seconds will surpass anything you can find by searching for hours on the surface Web. This example illustrates the value of the deep Web. The secret is in knowing where to look. Part of the purpose of this presentation is to guide IT professionals to some of the best places to find deep Web content.

## Tools and Websites

Various tools and websites from both the surface Web and the deep Web are included in this presentation. This is not a comprehensive listing, but a small select list of high quality resources for the field of information technology. To list everything available would not be possible, nor would it be helpful to the reader.

Distinguishing between surface and deep Web sites can sometimes be tricky; many websites have both surface and deep (database) content. Furthermore, some sites have both free and pay areas. Additionally, many general sites contain IT information. To simplify categorization and to provide ease of use for the reader, the websites were placed into categories that would be most useful to the IT professional. For example, membership in a pay site like [Educause](#) is only open to organizations and their employees, not to individuals; however, most of Educause's content is free to visitors, so Educause was placed under the *Free Site* category.

## Free vs. Pay Sites

Can you get valuable information for free? Of course you can! The infrastructure of our society is such that many services are paid for in indirect ways – there is a “give and take” that benefits society as a whole. Public libraries are “free” to patrons. Public education is “free” to students. However, these are paid for by taxes and donations. What people learn at “free” resources like these can ultimately give rise to creative endeavors that advance our society and improve the lives of citizens far beyond the price of the initial investment.

There are many “free” sources on the Web that follow this same spirit. While there are many free sources of excellent information, fee-based information sources are worth considering using a cost-benefit approach in their evaluation. How much is your time worth? How much time is saved and how valuable is the information to you? Each person needs to decide this for their self. The author has found the resources listed below most worthy of consideration.

## Internet History

The Internet and the Web are not synonymous - the Internet was born in 1970 while the Web began in 1990. The Web is one of many interfaces to the Internet. Some other interfaces are e-mail, FTP (File Transfer Protocol), telnet, newsgroups, file sharing, and databases. The Web is the graphical interface that has spurred the tremendous growth of the Internet. A very detail timeline of Internet history can be viewed at [Hobbes' Internet Timeline](#). The [Internet Society](#) has a PowerPoint presentation of Internet history showing photos and short biographies of the inspired thinkers that helped create the Internet.

Below a quick walk down memory lane for the Internet will help put Internet searching in perspective – dates in **orange** indicate key transitions periods (Hock, 2004, pp. 3-6; LivingInternet, 2005, *Internet History*; Sherman & Price, 2001, pp. 2-13):

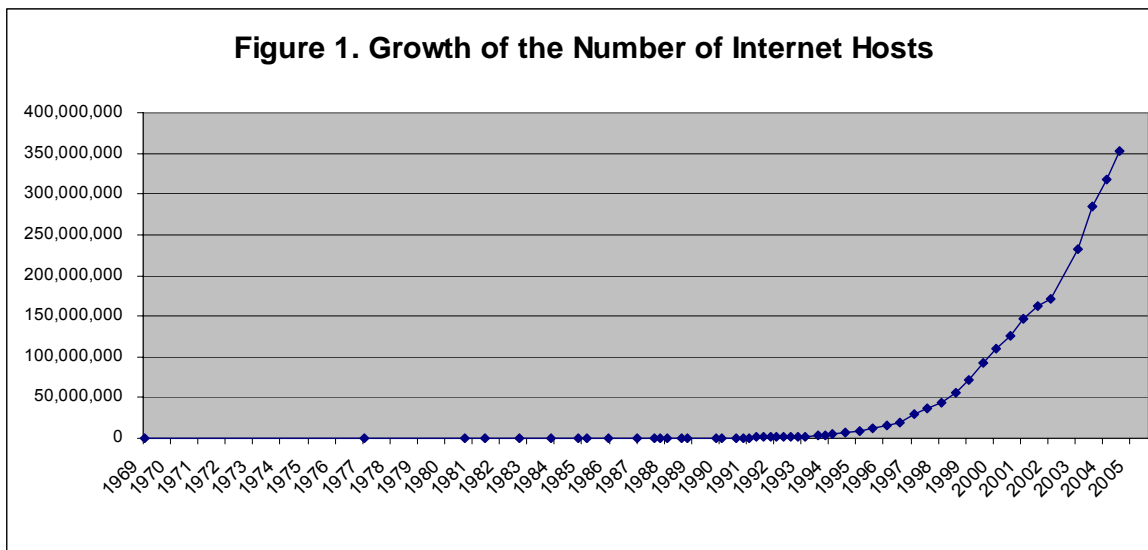
- 1844 The first telegraphic message was sent from near Baltimore to Washington - a distance of ~40 miles (About, n.d.).
- 1861 Western Union built its first transcontinental telegraph line in 1861 (About, n.d.).
- **1895** Henry Lafontaine and Paul Otlet began development of the Universal Decimal Classification which wanted to go one step beyond the Dewey Decimal System which guides readers to a book but no further. The next step was to “penetrate the boundaries of the books themselves, to unearth the “substance, sources and conclusions” inside.” Hence, the first “search engine” (Wright, 2003, para.13).
- **1957** The Sputnik satellite was launched by the Russians.
- **1958** As a result of Sputnik, Americans felt we were losing the space race and created ARPA (Advanced Research Projects Agency) to catch up and exceed the Russians.
- 1962 J.C.R. Licklider wrote paper envisioning a global connection of computers.
- 1966 Inspired by Licklider, Larry Roberts submitted a proposal to link computers.
- **Pre-1969** Computers were stand alone machines or terminals on a mainframe
- **1969** Larry Robert’s proposal lead to installation of the first node of the new computer network at UCLA founding ARPAnet (ARPA Network of the U.S. Department of Defense).
- 1970s Universities and defense contractors began connecting to ARPAnet.
- 1971 Fifteen Universities were now connected to ARPAnet.
- 1972-74 Commercial information databases like Dialog and Lexis went online with their dial-up services.
- 1973 DARPA (Defense Advanced Research Projects Agency) was initiated to communicate across linked networks. ARPAnet was just one network, whereas DARPA was a network of networks.
- 1979 CSnet (Computer Science Network) was created – funded by the NSF (U.S. National Science Foundation) - to link universities not a part of ARPAnet.
- 1983 TCP/IP (Transmission Control Protocol / Internet Protocol) replaced NCP (Network Control Program) on ARPAnet.
- 1984 NSF started construction of five regional supercomputing centers.
- 1986 LISTSERV mailing list management software was written by Eric Thomas who later founded the L-Soft company in 1994.
- **Pre-1990** Accessing a file required a Telnet connection to a known location, then FTP to fetch the file.
- **1990** Tim Berners-Lee, a contract programmer at the European Organization for Nuclear Research (CERN) high-energy physics laboratory in Geneva, Switzerland, created the tools that became the Web – a web client he called WorldWideWeb, HTML and URLs (Universal Resource Identifiers).
- 1990 ARPAnet was retired and absorbed into NSFnet. NSFnet was soon connected to CSnet, and then to EUnet (European Network), which connected research facilities in Europe.
- 1990 *Archie* was created – the first true search tool for files stored on FTP servers on the Internet.
- 1991 *Gopher* was created – the first browsable directory of files on the Internet.
- 1991 WAIS was created – a client on your computer that allowed you to search the Internet.

- 1992 *Veronica* was created – a centralized *Archie*-like search tool for *Gopher* files.
- **1993** Legislation was passed allowing commercial access to NSFnet. In the period 1993-2000 the Clinton-Gore administration championed use of the Internet, creating E-rate (\$6 billion) to fund Internet access for public schools and libraries, creating the 21st Century Research Fund (\$45 billion) to fund civilian scientific research, persuading the WTO (World Trade Organization) to allow duty-free Internet use, and overhauling the telecommunications act of 1934 to allow competition (Encyclopædia Britannica, 2005; State Science & Technology Institute, 2002 ; US Newswire 2000).
- 1993 *Jughead* was created – adding keyword search and Boolean operator capabilities to *Gopher* search.
- 1993 The Mosaic web browser was released by Marc Andreessen and Eric Bina.
- 1994 The Netscape web browser was released.
- 1994 Web traffic on the Internet exceeded Telnet traffic for the first time.
- **Pre-1994** People informed each other through e-mails about “cool sites” they found. There was no way to search directly.
- **1994** The first Web search engine, WebCrawler, was created by Brian Pinkerton. It was a software robot that collected the full text of web pages and stored them in a database that could be searched using keywords. As other robots were developed, they became known as “crawlers” or “spiders” searching the Web for websites.
- 1994 In addition to WebCrawler, EINst Galaxy, Lycos and Yahoo! search engines were created.
- 1995 Alta Vista, Excite, and InfoSEEK search engines were created. MetaCrawler, and SavvySearch metasearch engines were created – metasearch engines search several search engines simultaneously.
- 1995 The number of web packets exceeded the number of FTP packets over NSFnet.
- 1995 The Internet Explorer web browser was released by Microsoft.
- **1995** The U.S. National Science Foundation transferred funds and control of the Internet backbone to the private sector. This event and advent of web browsers fueled the dot.com explosion of the late 1990s.
- 1996 HotBot and LookSmart search engines were created.
- 1997 NorthernLight search engine was created.
- 1998 Google search engine and InvisibleWeb.com were created.

It is interesting that Tim Berners-Lee's friends at CERN gave him a difficult time saying his *WorldWideWeb* idea would never take off (Sherman & Price, 2001, p 11). For Berners-Lee the easy part was programming the tools, the hard part was convincing others to use the system. His tireless communication efforts to persuade others paid off, however, and the Web grew at an enormous rate as shown in Figure 1 (Internet Systems Consortium, 2005).

Search engines have been with us since 1994, and are a great improvement over their predecessors; however, until recently they suffered from the limitation of only finding and indexing web documents. One needs to use other methods to access a large share of the deep Web. Surface Web search engines have recently evolved so they are able to index PDF files and some of the dynamically generated content of the deep Web as well; however, as yet they only search a tiny portion of the deep Web.

One technical obstacle is the "spider trap." Through inadvertent or malicious programming, some query engines can capture spiders in endless loops wasting the resources of the search engine. Most search engines intentionally avoid query engines for this reason. A business obstacle is the time and money required to crawl the web. Even crawling "just" surface websites is not done to the full depth of larger websites. Each search engine makes a business decision on the depth it is willing to crawl each surface website to conserve time and money.



## Search Tools

### Overview

This section will discuss various tools that help make researching more productive on both the surface Web and the deep Web. The buttons to the right are links to various resources.

### Search Engines

There are numerous search engines for the surface Web. Which one should you use? Notess, G. (2002) periodically compares search results on various search engines. His finding is surprising; there is little overlap between various search engines. For a thorough surface Web search, you need to use multiple search engines. According to Search Engine Watch (Sullivan, 2005) these are the major search engines:

<a href="#">About</a>	Useful summary articles
<a href="#">Ask Jeeves</a>	High relevancy searches, owns Teoma
<a href="#">Gigablast</a>	Small but useful statistical result display
<a href="#">Google</a>	Large crawler and directory
<a href="#">LookSmart</a>	Human-compiled, owns WiseNut
<a href="#">Teoma</a>	Ask Jeeves-crawler, high relevancy
<a href="#">Yahoo!</a>	Crawler and tabs for images, video, etc.

These are derivatives of the above search engines; they use the engines indicated:

<a href="#">AllTheWeb</a>	Bought by Yahoo
<a href="#">AltaVista</a>	Yahoo-crawler and tabs
<a href="#">AOL Search</a>	Google-crawler
<a href="#">HotBot</a>	Ask Jeeves-crawler or Google-crawler
<a href="#">Lycos</a>	LookSmart directory, Yahoo crawler
<a href="#">MSN</a>	Yahoo crawler, Microsoft crawler pending

Netscape	Google-crawler
WiseNut	LookSmart owns

## Directory Browsing

Directory browsing is another way of searching the surface Web. Directories are assembled by human beings who use editorial judgment to make their selections. To search directories, one clicks through a hierarchical set of hyperlinks. These are some of the major directories:

Google
LookSmart
Yahoo!

## Metasearch Engines

Metasearch engines search several search engines simultaneously and combine the results. In theory it might seem you get broader coverage in this way. In practice, you lose precision because some metasearch engines cannot pass Boolean operators and most of the syntax does not work from the original engine (Schlein, 2004). These are popular metasearch engines:

Dogpile	Rated best
Kartoo	Visual output showing relations
Mamma	Crawlers, directories, specialty search sites
Vivisimo	Rated second best, organizes results

More metasearch engines can be found, with reviews, at the [Search Engine Watch](#) website. That website is also useful for finding various specialty search engines.

## Copernic Agent

*Copernic Agent* is a tool the author has found useful. It comes in three versions: freeware, personal, and professional. It will search using up to 90 search engines in 10 categories, then combine results, eliminate duplicates, eliminate broken links and prioritize the output. It installs as a client on your computer and goes beyond what metasearch engines can do (Hock, 2004).

## Specialized Search Engines

Specialized search engines search for databases by topic and help eliminate the "noise" associated with general search engines. In the "Case Studies" section of this presentation "Case Study #2" is an example showing how to use one of these specialty search engines. In the "Data Mining" section of this presentation many other "Specialized Search Engines" are listed that assist in finding websites with databases. Recall there are over 200,000 databases on the Web. This specialized search engines are a big help in finding databases of interest to your research.

## Deep Web Search Tools

If you do nothing else with the deep Web, learn how to use the three websites described below.

**CompletePlanet™** uses a query based engine to index 70,000+ deep Web databases and surface Web sites. Appendix A lists 60 of the largest deep Web databases which contain 10% of the information in the deep Web, or 40 times the content of the entire surface Web. These 60 databases are included in CompletePlanet's indexes. CompletePlanet is sponsored by BrightPlanet® Corporation, a leader in deep Web searches. The interface is intuitive and easy to use. You can do a keyword search on all 70,000+

databases to find which databases to use for your search. You can also browse by category, and then search databases of interest.

**ProFusion** is a combination of query based engine and a deep Web directory portal. The directory structure is accessed by clicking on Specialized Searches. With an account, you can setup custom "My Search Groups" to search customized lists of websites and/or databases of your choice. For example, you could create a group called Technology and add all the databases and websites of interest to you. This group is saved to your profile. You could then, at any future time, search this group on a research topic with keywords. This is a great time saver. Their query based engine is called SmartDiscovery®.

**SurfWax** also uses a site's existing search capability as part of the meta-search process to tap the deep Web. They use proprietary algorithms to interpret the site's search criteria (Boolean, etc). With an account, you can also setup custom **SearchSets** to search customized lists of websites and/or databases of your choice. SurfWax also has a news accumulator feature with over 50,000 news topics in 84 categories. This news accumulator feature is a godsend providing high quality results. These are some useful news accumulator categories: **all topics**, **networking**, **technology**, **telecommunication**, and **web services**. In addition this site has **WikiWax** which takes the online encyclopedia Wikipedia to the next level. WikiWax does advanced look-aheads on Wikipedia searches to speed your keyword choices.

## Finding Deep Web Resources

In addition to other methods discussed in this presentation, Schlein (2004) shares several techniques below to help the researcher find deep Web resources.

**Pre-emptive search:** to find deep Web databases, use a search engine or search a site containing both surface and deep Web content. For example, to find a database containing information on viruses use this search term (exact syntax may vary among search engines):

On **Google** or **InfoMine** search for:  
**virus (database OR repository OR archive)**

Hock (2004) has this additional method specific for the Teoma search engine:

On **Teoma** search for:  
**virus (resources OR meta site OR portal OR pathfinder)**

**Reverse-Link Searching:** Find out which pages link to a database you already find useful and see if those sites have further recommendations. To do this, use the "link" operator in the search engine. For example, Google uses "link:yourURL." If you want to find out what sites link to **NTIS**, type this in the **Google** search bar:

**link:http://www.ntis.gov**

**Find Experts:** When you do a search with Teoma, experts and enthusiasts for your keywords are listed to the right of the results column. Go to these sites and see what resources are recommended to help you "mine" for deep Web resources.

**Search by document type:** Search engines are now indexing heretofore "deep" files, like PDF files. In Google, by preceding your search terms with "filetype:ext" (where "ext" is the 3 character file extension), only those files will appear in the results. These are some examples of searches done in the **Google** search bar:

filetype:pdf virus	returns PDF files with "virus" in the text
filetype:doc virus	returns Microsoft Word files with "virus" in the text
filetype:ppt virus	returns Microsoft PowerPoint files with "virus" in the text
filetype:jpg virus	returns jpg files with "virus" in the filename

**More about Google:** When you do a search, the results are not only in the window you are viewing, but also simultaneously in the associated windows under the topics listed at the top of the search page, namely, *Web*, *Images*, *Groups*, *News*, *Froogle*, *Local*, etc. For example, if you search for the word "virus," under *Web* are the websites found for virus, under *Images* are the graphics found for virus, under *Groups* are the discussion groups on virus, etc. - all of this is available without you doing anything extra on your part other than click each topic link in succession.

Calishain (2005) gives these tips on Boolean modifiers using **Google**:

<b>AND</b>	is the default when using several keywords and is not needed
<b>+</b>	preceding a keyword means it must be included in results
<b>-</b>	preceding a keyword means it must not be included in results
<b> </b>	between words means <i>OR</i>
<b>~</b>	preceding a keyword means search that keyword and its synonyms

In addition to Boolean modifiers, you can go to a search engine's "Advanced Search" features. Each search engine has advanced features described in their help section. The advanced search in [Google](#), for instance, allows you to specify a date range, the file format, where keywords occur in results, language limitations, content filtering, topic specific searchers (government sites, university sites, Microsoft sites, Linux sites, etc.), etc. Google also has a built-in dictionary. If you type "define modifier" in the search bar. It will give you the dictionary definition of "modifier."

Go to the Google help section, for many more features.

## EndNote

[Endnote](#) is the standard tool used by millions of researchers for collecting, organizing and formatting references. One great feature is you can search deep Web databases from within *Endnote* and instantly import annotated references of your choice – a great time saver.

## RSS Feeds

To get current news from your favorite websites delivered automatically to your desktop, setup an RSS feed (Rich Site Summary, RDF Site Summary or Really Simple Syndication). To get started, you can choose to use the highly-rated [Pluck](#) RSS reader. It comes in a Web version and a client version. The Web version can be accessed from any computer but is much slower. The client version installs in your web browser and is fast. You can click the "Find Feed" button to select or "pluck" which feeds to use from a large directory.

Numerous other RSS readers are available. [Wikipedia](#) lists the websites of 130 readers and [Earthweb](#) provides the % market share of each of the most popular readers.

If you want to search for feeds rather than getting them from your favorite known websites or from the "Find Feed" button in Pluck, try these. [Chordata](#) allows you to drill-down a hierarchical directory structure to find quality-rated feeds. [Feedster](#) is a search engine for locating feeds by keywords.

## LISTSERV

[LISTSERV](#) is software by L-Soft for managing electronic mailing lists and discussion groups. Use the hyperlink shown to search for mailing lists by keywords. There are numerous IT mailing lists among the ~62,000 lists in this database.

## Newsgroups

There is a newsreader built into Outlook Express (not on Outlook 2003). The first step is you **MUST** make Outlook EXPRESS the default news program thru Internet Options – otherwise the News menu item will vanish from the Outlook 2003 Go menu (KB902929).

- 1) Open control panel Internet Options >Programs tab and set Outlook Express as the default for Newsgroups.
- 2) Drag the News command to the Go menu of Outlook 2003 using Tool >Customize >Commands.
- 3) In Outlook Express open menu item Tools >Accounts >News tab >ADD >News and enter your news (NTTP) server information obtained from your ISP.
- 4) It will then take a minute or so to find all the newsgroups.0

- 5) Pick the newsgroups you want to join.

## Primary Research and Reference Librarians

Answers to every question will not always be found online. Some questions can only be answered by talking with the right people (primary research). Sacks, R. (2001) interviews 12 experts in his book that are skilled in primary research and reveals their secrets. In this book, you can learn from these experts how to find the right people, how to conduct interviews, and how each method of research has its relative value depending on the question.

Reference librarians at your local library or college can be of tremendous help. They are skilled in accessing information from a wide variety of resources including the deep Web.

## Resources



These resources have received  
TechDeepWeb's Blue Ribbon  
**Best of the Web** Award.

Color code: [Hyperlinks](#) [Free Sites](#) [Pay Sites](#)

*The resources below are organized into these sections:*

**Utility Site Directories**

**Utility Download Sites**

**Utilities**

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**General References****Reviews of Hardware****Security**

## General

## Anti-Spyware - Enterprise

## Anti-Spyware - Home use

## Anti-Virus - Enterprise and Home Use

## IP Blocking

## Rootkits

**Tests****Unix****Website/Software Development**

## Utility Site Directories

ASP Members	ASP (Association of Shareware Professionals) Members list contains links of thousands of shareware providers arranged alphabetically and searchable by keywords.
Educational Software Directory	Educational Software Directory lists learning software.
Nerd's Heaven	Nerd's Heaven Directory lists shareware websites with descriptions.
Shareware Industry Awards	Shareware Industry Awards has an annual banquet honoring the best and brightest shareware in the industry. The winners are listed here.

## Utility Download Sites

CNET Download	CNET's Download.com has an elegant directory that arranges shareware by categories and allows keyword searching. Star ratings and reviews are provided for the better offerings.
Freshmeat	Freshmeat is the Web's largest index of Unix, cross platform, and Palm OS software.
IT Pro Downloads	Network Computing's IT Pro Downloads provides directory and keyword searches plus full reviews for each offering. Offerings are geared towards the interests of IT professionals.
MajorGeeks	MajorGeeks provides directory and keyword searches.
SharewareJunkies	SharewareJunkies is the oldest shareware site on the Web. Volunteers review every utility offered.
SimplytheBest	SimplytheBest provides a clear list of categories and good description of software.
Tucows	Tucows offers Windows, Linux, Mac, and PDA shareware. It offers category and keyword searching. Each offering is rated.
WinSite	WinSite is the largest Windows shareware site. Offerings are checked for viruses, and approved by humans.

## Utilities

Anti-Virus, anti-spyware, media players, Winzip, and other well known utilities are not included in this listing. The purpose of this listing is to showcase utilities outside of the awareness of the masses that are highly useful to IT professionals.

AccessEnum	AccessEnum by Sysinternals allows you to quickly view user accesses to a tree of directories or keys.
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Ace Utilities	<b>Ace Utilities is a suite of useful utilities that all operate from a central interface. It is lightning fast in opening a registry key from the context menu of the registry cleaner for manual editing of the registry. Ignore lists are easily configurable as *.ini files. The "Remove Junk Files" and "Erase Your History" are customizable. You can "Secure Delete" sensitive files. "Disk Analysis" works similarly to "TreeSize." All the preferences you set are exportable for backup. Jv16 and Ace Utilities are the two best registry cleaners available. Use with knowledge, caution and a good backup.</b>
Acronis True Image	<b>Acronis True Image is imaging software for home use that does a better job than the standard enterprise level packages not designed for this purpose. To use it boot the computer to the CD and choose a network drive or second local hard drive for the backup.</b>
Adobe Acrobat Reader	Adobe Acrobat Reader is freeware that allows you to read PDF files which is the standard for multi-platform document distribution. In the latest version, editing comments can be added to documents created with Adobe Acrobat 7.0 Professional or higher.
Archivarius 3000	<b>Archivarius 3000 indexes the full-text of PDF, Word, and e-mails for instant file content and file name searches. Searching through hundreds of thousands of files takes seconds. Features surpass competitors at an affordable price.</b>
BadCopy Pro	<b>BadCopy Pro recovers files from damaged media.</b>
Bart's Boot Disks	Bart Lagerweij's website can tell you how to make every kind of boot disk imaginable.
Belarc Advisor	Belarc Advisor is freeware that does an audit of your computer and lists all the installed software, hardware, users, and Microsoft updates. <b>They also have software that can be purchased to audit computers on a network.</b>
BIOS Agent	BIOS Agent gives detailed information on your BIOS and motherboard. You can also purchase BIOS through the utility from Unicore if the manufacturer no longer supplies updates.
BootIT NG	<b>BootIT NG is the best partitioning software available. If you desired, you could install 200+ operating systems {OS} on one computer and boot from any partition from any of 8 hard drives. As you may know, the MBR {Master Boot Record} only supports four primary partitions. BING, however, creates an extended-MBR {EMBR} and automatically shuffles the needed partition information into the MBR allowing up to 200+ primary partitions – each accessible automatically from a custom boot menu.</b>
Camtasia Studio	<b>Camtasia, from TechSmith, is screen recording software for making training tutorials.</b>
ClipCachePlus	<b>ClipCachePlus can hold multiple clips of text and graphics for later pasting. It does not have encryption but superb ease of use is its strong point. Use ClipCachePlus for routine transfers and "RoboForm" for passwords. ClipCachePlus includes a tool for cleaning text - linefeeds, special characters, tab indentations, etc.</b>
CoolTabs	<b>CoolTabs 2.0 creates tabs on the edges of your screen to store icons for launching applications, documents or URLs. Cleanup your desktop and sort icons by categories. Completely customizable and slick.</b>
Copernic Agent	Copernic Agent comes in three versions: freeware, <b>personal</b> , and <b>professional</b> . It will search using up to 90 search engines in 10 categories, then combine results, eliminate duplicates, eliminate broken links and prioritize the output. It installs as a client on you computer and goes beyond what metasearch engines can do.

CurrPorts	CurrPorts by Nirsoft lets you view which ports are in use and by what.
DLL Archive	DLL Archive by AnalogX searches through all the files on your system and lets you know if any of them contain references to a specific dll. Useful if you need to know if a dll is shared before deleting it during an uninstall.
DrTCP	DrTCP optimizes registry settings for faster downloads for your type of connection: T1, DSL, cable, satellite, dialup.
Editor2	Editor2 is a free notepad replacement installed along with the free trial download of xplorer2. It can handle larger file sizes and the search and replace functions are way faster than notepad on large files.
Endnote	<b>Endnote is the standard tool used by millions of researchers for collecting, organizing and formatting references. One great feature is you can search deep Web databases from within Endnote and instantly import annotated references of your choice – a great time saver.</b>
Filemon	Filemon by Sysinternals monitors file system activity in real time.
FolderMatch	<b>FolderMatch synchronizes files between any two locations on your network - it works fast and flawlessly on directories full of thousands of files. Locations can be saved. Setup a backup location for your files on another hard drive on the network and sync them manually with FolderMatch or automatically with FolderClone using a "set and forget" schedule.</b>
Hyena	<b>Hyena is favored by SysAdmins to simplify management of medium to large Windows networks.</b>
Iconoid	Iconoid saves the positions of icons on your desktop. When explorer.exe crashes and rearranges all the icons on your desktop, the click of one button on Iconoid will restore them to their saved locations. If desired, Iconoid can also hide all the icons on your desktop similar to Windows auto-hiding the taskbar.
Instant File Name Search	<b>Instant File Name Search indexes the files on your computer and provides very rapid file searches. Searching through hundreds of thousands of files takes seconds.</b>
ITR Client	ITR (Internet Traffic Report) Client by AnalogX runs in the systray and allows you to view the current status of the Internet globally. ITR uses a number indicator between 1 and 100, with 100 being the best.
jv16	<b>jv16 PowerTools is a top notch registry cleaner and system tuner with a slick clean interface. Numerous file utilities are also provided. Jv16 and Ace Utilities are the two best registry cleaners available. Use with knowledge, caution and a good backup.</b>
Lupus Rename	Lupus Rename is one of the best utilities for renaming a large number of files It gives you a preview of the output before you commit and is an exe file requiring no installation.
Macromedia Flash & Shockwave	Macromedia Flash and Shockwave freeware plug-ins for browsers allow complex media content to be displayed on web pages.
MagicNotes	<b>Magic Notes provides post-it notes for your desktop. It can also set alarms to alert you to appointments.</b>
Microsoft Shared Computer Toolkit	Shared Computer Toolkit for Windows XP secures computers used in public places.
MusicMatch	MusicMatch Jukebox is one of the more popular utilities for playing music on your PC.

Nero	<b>Nero has the best CD/DVD burning package with excellent auxiliary programs. Its "Nero BackitUp" utility is a great backup utility for home use. It will backup to DVDs.</b>
NetSnippets	<b>NetSnippets captures, cites, and organizes material found on the web for your research. Pointing it to a network file share will keep all computers synchronized with the same collected information.</b>
Netstat Live	Netstat Live by AnalogX allows real time monitoring of incoming and outgoing Internet and network traffic on the local computer and includes CPU usage so you know if slow downs are from your CPU or the network.
OpenOffice	OpenOffice.org by Sun Microsystems is freeware Office Suite "OpenOffice.org 2.0" with much of the functionality of Microsoft Office but with the advantage that it is open source. It is available for Windows, Linux, Solaris, and Mac OS X. It has been under development for 5 years and this release version is excellent and has won several awards. It is fully ODF compliant. Sun also offers a \$100 version called <b>Star Office</b> with more functionality, including additional fonts, templates, clipart and a database component.
Openwith	Enablesopenwithrightclick.reg is a reg file that will enable the "Open with..." option on your context menu. Useful, for example, if you have 6 programs than can edit a jpg file and you use all six under varying circumstances.
PacketMon	PacketMon by AnalogX allows you to capture packets like Netmon by Microsoft. PacketMon includes a powerful rule system that allows you to narrow down the packets it captures to ensure you get exactly what you are after, without having to dig through tons of unrelated information.
Powertoys for Win XP	Powertoys is a collection of Microsoft utilities, the most popular of which are TweakUI and ClearType Tuner. TwaekUI gives access to system settings that are not exposed in the Windows XP default user interface. ClearType Tuner allows tuning of text clarity on flat panel displays.
Process Identifier Script	Task Manager's processes tab can be difficult to decipher because it often shows many different instances of the same generic process name (e.g., Svchost.exe). Greg Shultz has created this script that will track down each service running inside the process, compile a list, sort it by PID, and then create and open a formatted Excel spreadsheet. You will need to save in .xls format to preserve the formatting. It can also track down spyware and viruses.
Procexp	Procexp (Process Explorer) by Sysinternals allows you to examine what processes are used by which programs. It is useful in tracking down dll issues.
Registry Compressor	<b>Registry Compressor backs up the registry, removes empty entries, compresses, and defragments the registry file.</b>
Regmon	Regmon by Sysinternals monitors registry activity in real time.
RoboForm	<b>Roboform is the ultimate for ease of use and 3DES encryption for password storage for visiting websites. Easily keeps track of hundreds of passwords and store them on a central server. Setup Window's "Offline Files" to automatically keep passwords up-to-date on your laptop. Useful if you have dozens to hundreds of online accounts. You need remember only one master password.</b>
RootkitRevealer	RootkitRevealer from Sysinternals looks for rootkits hidden in your OS. Other rootkit detection software can be found at <a href="#">Wikipedia</a> .
ShareEnum	ShareEnum by Sysinternals quickly reveals all shares on an IP address range or domain which you administer. Useful when looking for security holes.
ShellExView	ShellExView by Nirsoft lets you view all installed shell extensions and disable/enable any item.

SimpleOCR	SimpleOCR is the only freeware OCR (optical character recognition) available. Its OCR capabilities equal that of any others.
Slim Browser Lite	Slim Browser Lite is a tabbed multiple site freeware browser. The tool bars are compact using very little screen real estate. It is a slick and elegant full featured browser. This free plug in at the site is also useful: SpellCheker. It incorporates a large collection of powerful features like built in popup killer, FTP, RSS, skinned window frame, form filler, site group, quick search, auto login, hidden sites, built in commands and scripting, online translation, script error suppression, blacklist / whitelist filtering, URL Alias.
Snagit	<b>Snagit, from TechSmith, is an amazing full featured screen capture utility. It can convert screen capture to text.</b>
SnapFiles	SnapFiles tests and reviews every shareware/freeware tool before offering it. Additionally, they will not list any tools that contain spyware or advertising banners.
Snort	Snort is an open source network intrusion prevention and detection system utilizing a rule-driven language, which combines the benefits of signature, protocol and anomaly based inspection methods. It is available as freeware for the Unix platform. With millions of downloads to date, Snort is the most widely deployed intrusion detection and prevention technology worldwide and has become the de facto standard for the industry.
SpaceMonger	SpaceMonger quickly maps your hard drive giving a drawing to scale of disk usage. Very cool for visualizing your data.
Stardock Object Desktop	<b>Stardock Object Desktop is the ultimate in customizing the Win XP user interface. There is no limit to how you can design your desktop - more than eye candy, you can increase your computer's functionality.</b>
StartUpRun	StartUpRun, by Nirsoft is the best utility for controlling startup apps - set which to disable/enable.
SysExporter	SysExporter by Nirsoft allows you to grab data in list files in currently open apps.
Teleport Pro	<b>Teleport Pro downloads an entire website to your computer for offline viewing. The trial has 40 free uses.</b>
TreeSize	TreeSize quickly gives you a hierarchical folder view showing folder sizes in numbers and by bar graph. Quickly see which are your large folders taking up all your disk space.
TweakOL 2003	TweakOL 2003 (Microsoft Outlook 2003), from <a href="#">McDaniel Development</a> , configures hidden settings in Outlook.
UEStudio	<b>UEStudio is an award winning IDE (integrated development environment) that includes all the features of UltraEdit HTML editor plus native support for over 30 popular compilers, integrated CVS version control, built-in class browsing, language intelligence (like Intellisense), project converter, and a batch builder.</b>
Undelete	<b>Undelete by Diskeeper will undelete files.</b>
VMWare	<b>VMWare offers virtualization software for servers and workstations. This allows setting up multiple testing environments without requiring additional hardware. Applications and upgrades can be tested before implementing them onto production servers.</b>
VNC	VNC (Virtual Network Computing) is cross-platform remote control software allowing you to view or control a remote computer.

WinFlash Educator	<b>WinFlash Educator creates flashcard for study. It has a test generation, administration and scoring module as well.</b>
Xplorer2	<b>Xplorer2 is explorer.exe on steroids. It uses little resources and surpasses its competitors. A whole page could be devoted to the virtues of this utility. The author uses it daily and can't imagine juggling around hundreds of thousands of files without it. The double pane view simplifies file sorting and transfers. Clicking on any portion of a long path will take you directly to that folder. Tabs can be setup on the panes for folders you visit frequently.</b> There is a free lite version available as well.

## Articles & Databases

### IT - Articles & Databases

15 Seconds	15 Seconds provides a wealth of high quality information focused on servers.
ACM	<b>ACM (Association for Computing Machinery) is an association of information technology professionals and students worldwide with 80,000 members. The benefits of membership include association with peers, a large digital library of IT publications, and 450 free online courses in: software, programming, certification, and project management. These benefits are worth many times the \$190 annual dues - just one of the online courses, taken elsewhere, would cost more than the dues.</b>
Bitpipe	Bitpipe is a primary source for IT related whitepaper, webcasts, research guides and case studies. This site has tons of IT resources.
Black Box	Black Box is a vendor of networking equipment that provides many learning resources and superior support from their site.
CIO Council	Federal CIO (Chief Information Officers) Council oversees IT policies of the federal government. Most of the information on the site is accessible to the public. It is useful for papers on best practices in IT and vendor sources.
ComputerWorld	ComputerWorld has excellent coverage on 11 IT topics.
Earthweb	Earthweb covers IT management, networking, web development, hardware and systems, software development and IT news.
Edu College Planning	College Planning & Management is written for college decision makers who are involved with the business side of running a college/university. Solution oriented articles cover facility planning, safety, maintenance, business, technology, and finance.
Edu Syllabus	It provides in depth, aggressive coverage of specific technologies, their uses and implementations; eLearning and course management systems; presentation technologies; communication, portal, and security solutions all the important issues and trends for campus IT decision makers.
Edu T.H.E. Journal	T.H.E. Journal covers technology for K 12 education.
Edu University Business	University Business is a publication for presidents and other senior officers at colleges and universities throughout the United States covering management, enrollment, technology, academic affairs and legislation. The magazine covers current and emerging trends in all areas of university and college management. University Business is circulated to 42,000.

Educause	Educause is a “nonprofit association whose mission is to advance higher education by promoting the intelligent use of information technology” (para. 1). Although membership is only open to colleges and corporations serving the college IT market, the Educause website offers a wealth of information on IT best practices to visitors. Visitors can create a logon to access most of the content. Be sure to take the excellent “Tour” of the website to quickly learn where to find information.
EEVL Xtra	EEVL Xtra by Heriot Watt University in Edinburgh, Scotland provides cross-searching of 20 engineering, mathematics and computing databases, including content from 50 publishers, by keyword searching.
Elder Geek on Windows XP	Elder Geek on Windows XP contains a wealth of information on Windows XP.
eWeek	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the Topics link. Some of the key links are: <a href="#">Windows</a> , <a href="#">security</a> , <a href="#">IT management</a> , <a href="#">Linux</a> , and <a href="#">Macintosh</a> .
eWeek Windows	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the <a href="#">Topics</a> link. Some of the key links are: <a href="#">Windows</a> , <a href="#">security</a> , <a href="#">IT management</a> , <a href="#">Linux</a> , and <a href="#">Macintosh</a> .
Firewall.cx	Firewall.cx is a classy site for networking professionals and is recommended by Cisco Network Academy.
Gartner Group	<b>Gartner Group offers custom IT research and sells research reports. They employ 1,200 IT research analysts and consultants who advise executives answering more than 215,000 client questions every year. The home page has a listing of research categories entitled Research Fast Finder that link to the reports they offered. Prices are in the hundreds of dollars and vary depending on the report. A report costing \$1,400 could save tens of thousands of dollars on a project.</b>
IEEE	<b>IEEE (Institute for Electrical and Electronic Engineers), IEEE Computer Society is an association of electrical engineers, information technology professionals and students worldwide with 360,000 members. The benefits of membership include association with peers, a large digital library of IT publications, 800 free online courses in: software, programming, certification, and project management. These benefits are worth many times the \$325 annual dues - just one of the online courses, taken elsewhere, would cost more than the dues.</b>
Internet Society	Internet Society is an association of organizations and individuals in 180 countries for global cooperation in developing the Internet. Its mission statement is, "The mission of the Internet Society is to promote the open development, evolution, and use of the Internet for the benefit of all people throughout the world" (All About ISOC, Mission/Strategic Plan, para. 1). Among their operations, they offer network training to countries in the early stages of Internet development. This site can be searched by visitors for information related to the Internet.
ITarchitect	ITarchitect (formerly Network Magazine) provides access to articles from their current and back issues.
ITIL & ITSM	<b>ITIL &amp; ITSM provides documentation for IT best practices (IT Infrastructure Library &amp; IT Service Management). Cost is about \$200 per plan.</b>

<a href="#">ItToolBox</a>	ItToolBox is a collaborative network for the IT market where over 2 million professionals seek and provide actionable IT content that supports decisions throughout the IT lifecycle; from vendor selection to post implementation support.
<a href="#">ItWorld</a>	ItWorld has these portals to webcasts, whitepapers, news, and articles: <a href="#">general</a> , <a href="#">open source</a> , <a href="#">security</a> , <a href="#">small business</a> , <a href="#">storage</a> , <a href="#">utility computing</a> , and <a href="#">wireless</a> .
<a href="#">Lockergnome</a>	Lockergnome is a general technology resource.
<a href="#">Microsoft</a>	Microsoft is the main launch point to all of Microsoft. This home page is a model of clarity and ease of navigation to all the sub-launch points at Microsoft.
<a href="#">Microsoft IT Pro Resources</a>	Microsoft IT Pro Resources is the portal to Microsoft resources for IT Professionals.
<a href="#">Microsoft Office</a>	Microsoft Office is the portal to all Microsoft information on the Office Suite.
<a href="#">NCSTRL</a>	NCSTRL (Networked Computer Science Technical Reference Library) is a collection of research papers on networked computing from 90 universities and research centers.
<a href="#">OSTI</a>	The Office of Scientific and Technical Information (OSTI) has a deep Web search engine developed to search multiple free government databases.
<a href="#">Paul Thurrott's SuperSite for Window</a>	Paul Thurrott's SuperSite for Windows is the place to go for information on Microsoft's beta products.
<a href="#">Slipstick</a>	Slipstick is devoted to Outlook and Exchange issues.
<a href="#">SNMPLink</a>	SNMPLink.org is a good resource for information on SNMP (Simple Network Management Protocol).
<a href="#">TechAtlas</a>	TechAtlas provides IT planning tools for non-profit organizations.
<a href="#">TechRepublic</a>	TechRepublic offers free and fee-based ( <a href="#">TechProGuild</a> , \$90/yr) memberships. This site is for IT professionals and offers a wealth of free resources – online books, white papers, forums, mailing lists, and articles. They also sell tutorial CDs on system administration, project management, security, etc. These are the main portals on this website: <a href="#">Career Development</a> , <a href="#">CIO &amp; IT Management</a> , <a href="#">Data Management</a> , <a href="#">Desktops, Laptops &amp; OS</a> , <a href="#">Enterprise Applications</a> , <a href="#">How-To</a> , <a href="#">Network Admin</a> , <a href="#">Security</a> , <a href="#">Servers</a> , <a href="#">Software/Web Dev</a> , and <a href="#">Storage</a> .
<a href="#">TechSoup</a>	TechSoup provides IT planning tools for non-profit organizations.
<a href="#">WindowsITPro</a>	<b>WindowsITPro publishes five IT magazines with very practical articles on implementing technology: Windows IT Pro, SQL Server magazine, Exchange and Outlook Administrator, Windows Scripting Solutions, and Windows IT Security. They offer a fee-based subscription to access their entire digital library of past issues.</b>
<a href="#">WinXP Solution</a>	WinXP Solution is a rich site dedicated to Windows XP.
<a href="#">ZDnet BizTech Library</a>	<b>ZDnet BizTech Library contains 400,000 articles from 372 technology magazines, journals, and newsletters. The cost for a subscription is \$70/yr. Its companion free site is <a href="#">here</a>.</b>

### **General - Articles & Databases**

<a href="#">California Digital Library</a>	The California Digital Library is one of the largest digital libraries in the world and is freely accessible.
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Chronicle of Higher Education	Chronicle of Higher Education is a publication that has a wealth of resources for people involved with higher education.
CiteSeer.ist	CiteSeer.ist is a database of technical and scientific literature sponsored by the School of Information Sciences and Technology at Penn State University.
COS	COS (Community of Science) is a for profit corporation leading global resource for hard-to-find information critical to scientific research and other projects across all disciplines. COS aggregates information so less time and money is spent searching. Find funding with <b>COS Funding Opportunities</b> : search the world's most comprehensive funding resource, with more than 22,000 records representing nearly 400,000 opportunities, worth over \$33 billion. Identify experts and collaborators with <b>COS Expertise</b> : search among 500,000 profiles of researchers from 1,600 institutions throughout the world. Discover who's doing what -- current research activity, funding received, publications, patents, new positions and more. Promote your research with a <b>COS Profile</b> : showcase your research and expertise among researchers and scholars from universities, corporations and nonprofits in more than 170 countries. Membership is free to individuals and educational institutions.
DOAJ	The DOAJ (Directory of Open Access Journals) covers 1,803 free, full text, quality controlled scientific and scholarly journals. Of these 446 are searchable at article level.
Educator's Reference Desk	Educator's Reference Desk has 2,000+ lesson plans, questions and answers, and a directory of 3,000+ links to online education information.
Element K	<b>Element K provides online and printed courses for eight industries, including 2,400 courses related to information technology. These are the industries it covers: discrete manufacturing, education, financial services, hospitality, membership organizations, information technology, training centers, and process manufacturing.</b>
ERIC	ERIC (Education Resources Information Center) sponsored by the U.S. Department of Education, is the world's premier database of education literature.
FindArticles	LookSmart's FindArticles allows quick searching of 10 million full-text articles by keywords. These articles are in LookSmart's database and are not found on any other search engine.
FirstGov	FirstGov: The U.S. Government's Official Web Portal is a central source for government information, linking every federal agency and state government, and crawling all .gov domains. It has a simple yet powerful search tool. Public records are vastly distributed over thousands of sites. FirstGov is an excellent attempt at unifying these records, however, much information remains dispersed. Sankey, Flowers, & Weber (2004) organizes these sites into an excellent reference book. In addition there are 1,500 search firms that can be hired to research public records, including pre-employment screening firms – all 1,500 are listed <a href="#">here</a> .
HighBeam Research	<b>HighBeam Research contains 34 million documents from 3,000 sources. Sources include newspapers, magazines, books, transcripts, maps, images, encyclopedias, dictionaries, and almanacs. You can save articles to an online folder to read at a later time, or export them to Microsoft Word or PowerPoint. It costs \$100/yr and a 7-day free trail is available.</b>
InfoMine	InfoMine is a University-level deep Web research site sponsored by the University of California - Riverside, and the U.S. Department of Education. InfoMine was organized by librarians for ease of use and is one of the best academic resources available.

Library of Congress	Library of Congress is the largest library in the world with surface Web and deep Web resources.
MagPortal	MagPortal allows one to quickly search hundreds of magazines for full-text articles by keywords.
New York Public Library	New York Public Library is a huge library and the sitemap is well done.
NTIS	<b>NTIS (National Technical Information Service) offers a keyword searchable database of unclassified government-sponsored technical and scientific reports. Reports are downloadable. Most reports are under \$20.</b>
OAlster (Oyster)	OAlster is a project of the University of Michigan to create a collection of freely available, previously difficult-to-access, academically-oriented digital resources. It contains 5 million records from 535 institutions.
Public Record Sources	Public Record Sources lists 1,500 search firms that can be hired to research public records, including pre-employment screening firms.
Rand Corporation	The Rand Corporation is a nonprofit research organization that provides analysis and solutions to challenges facing the public and private sectors around the world. The search engine provides abstracts and some full-text reports. Reports not present may be obtained from libraries.
Scirus	Scirus is a search engine limited to scientific information, including IT. It indexes over 200 million science-specific web pages.
SearchEdu	SearchEdu contains over 20 million pages from university and educational sources.
STINET, Public	Public STINET (Scientific and Technical Information Network) provides free access to unclassified DOD (Department of Defense) research.

## **Business**

BNET	BNET offers business oriented whitepapers, webcasts, and case studies.
Center for Democracy & Technology	The Center for Democracy and Technology is a 501 (c) (3) non-profit public policy organization that "works to promote democratic values and constitutional liberties in the digital age. With expertise in law, technology, and policy, CDT seeks practical solutions to enhance free expression and privacy in global communications technologies." They keep you advised of legislation affecting the Internet.
CompanySleuth	Company Sleuth provides inside information scoured from the Internet on publicly traded companies.
EFF	"The EFF (Electronic Frontier Foundation) is a nonprofit group of lawyers, technologists, volunteers, and visionaries — working to protect our digital rights...From the Internet to the iPod, technologies of freedom are transforming our society and empowering us as speakers, citizens, creators, and consumers. These technologies are increasingly under attack, and the EFF is the first line of defense, protecting our civil liberties in the networked world." On this site are white papers and a searchable archive.
Federal Business Opportunities	Federal Business Opportunities was formerly the Commerce Business Daily; it posts RFPs (requests for proposals) for government contracts. This is the portal for providing your service to the Federal government.
Federal R&D Project Summaries	Federal R&D Project Summaries shows how federal research dollars are being spent.

Financial Times	<b>Financial Times provides business news, company profiles, and archives for \$10/month. It indexes over 10 million full-text articles from 2000 different European, Asian and American business sources.</b>
Foundation Center	<b>The Foundation Center provides information on 73,000 foundations, including grants.</b>
GuideStar	GuideStar provides information on 640,000 non-profit organizations including their recent tax returns.
LookSmart Companies	LookSmart's Companies directory.
SEC	The SEC (Securities and Exchange Commission) has information on companies in its Edgar database. See the link for a quick tutorial on Edgar.
Strong Numbers	Strong Numbers calculates cash values for a wide variety of items based on prices from over 5 million online eBay auctions each week – useful when shopping for equipment.
Technology Grant News	Technologies Grant News offers comprehensive information on grants. Subscription fee is \$35/yr.

## **Data Mining**

### **IT - Portals & Engines**

About-Technology	About provides a directory-type search for IT topics. It offers ~40 portals to basic IT information within these major categories: communication/networks, hardware, Internet/online, operating systems, programming, software, and tech biz/careers.
EnterpriselTplanet	EnterpriselTplanet provides links to resources for IT in the enterprise.
ITL	ITL (Information Technology Laboratory) is a division of NIST (National Institute of Standards and Technology). Their mission is to work with industry, research, and government organizations to make technology more usable, more secure, more scalable, and more interoperable. They develop the tests and test methods that both the developers and the users of the technology need to objectively measure, compare and improve their systems. Their primary portals are <a href="#">Security</a> , <a href="#">Information Access</a> , <a href="#">Math and Computational Science</a> , <a href="#">Software Testing</a> , <a href="#">Network Research</a> , and <a href="#">Statistical Engineering</a> .
ITPRC	ITPRC, since 1999 the ITPRC (Information Technology Professional's Resource Center) has provided links covering all aspects of networking and career management.
Jupitermedia	This website is a map to all of the IT websites managed by Jupitermedia.
MCP Magazine	MCP Magazine (Microsoft Certified Professional) has portals to information and articles.
SearchNetworking	Searchnetworking is a "networking specific search engine and portal. Provides focused search capabilities with links to relevant content, editorial insight and summaries, daily industry news and weekly technology tips delivered via email."
See Also	In the "General" sections, there are many websites listed that also have IT topics. In addition, the "Security" section has sites for data mining security topics.

### **Data Mining - Databases - Metasearchers**

These metasearchers search for your keywords in numerous databases.

CompletePlanet	CompletePlanet uses a query based engine to index 70,000+ deep Web databases and surface Web sites. Use it find deep Web databases that have content on your keywords.
ProFusion	ProFusion is a combination of query based engine and a deep Web portal with a directory structure. The directory structure is accessed by clicking on Specialized Searches. With an account, you can setup custom "My Search Groups" to search customized lists of websites and/or databases of your choice. For example, you could create a group called Technology and add all the databases and websites of interest to you. This group is saved to your profile. You could then, at any future time, search this group on a research topic with keywords. This is a great time saver. Their query based engine is called SmartDiscovery®.
SurfWax	SurfWax uses a site's existing search capability as part of the meta-search process to tap the deep Web. They use proprietary algorithms to interpretation the site's search criteria (Boolean, etc). With an account, you can setup custom SearchSets to search customized lists of websites and/or databases of your choice. SurfWax also has a news accumulator feature with over 50,000 news topics in 84 categories.

### **Data Mining - Databases - Finding Them**

Use these Resources to find database in your area of interest. Go to [SearchAbility](#) for a fuller description of many of these.

AllSearchEngines	AllSearchEngines provides general information about search engines, and maintains a collection of 500 special search engines. No keyword searching available.
Beaucoup	Beaucoup is one of the oldest specialized search engine guides. It lists over 2500 thoughtfully-selected specialized search engines, directories and indices. No keyword searching available. Some of the stronger categories are Reference and Education, and Family/Pets/Hobbies.
Collection of Special	A Collection of Special Search Engines was developed by librarians at Leiden University, Netherlands. Keyword searching for search engines is not available. Often, you'll find engines here that aren't included in other guides. Some of the subject areas covered especially fully are medicine, graphical images, and religion. Some unusual topics are included, for example, Astrophysics, Celebrities, and Classical Antiquity, Middle Ages, Medieval, Mediaeval.
Direct Search	DirectSearch is a mainly a scholarly search engine guide. It includes thousands of search engines. No keyword searching available.
FinderSeeker	FinderSeeker's strength is its coverage of search engines from even the smallest countries such as Azerbaijan and Kyrgyzstan. It also lists engines from individual cities and states of the US. FinderSeeker contains a search box and two drop-down menus. One of the drop-down menus contains the names of 27 subject categories. The other contains the names of about 160 countries. You can also search for a search engine by keyword.
Fossick	Fossick lists over 3,000 specialized search engines. No keyword searching available. Descriptions are included for each of the search engines. In order to see the description of a particular engine, move your mouse over its icon.
Freeality Internet Search	Freeality Internet Search contains hundreds of search engines. No keyword searching available.
LincOn	LincOn covers over 3000 specialized search engines.

QuickFound	QuickFound covers hundreds of search engines. No keyword searching available. It is especially strong on News, including news archives, U.S. Government and Military, and Reference tools.
Search Engine Colossus	Search Engine Colossus provides comprehensive access to search engines (both general and specialized) from over 100 countries.
Search Engine Guide	Search Engine Guide contains thousands of engines organized into categories and numerous subcategories. You can search for search engines by keyword. This useful information is located in the center of page surrounded on all sides by ads.
Search Engines Worldwide	Search Engines Worldwide specializes in regional search engines. It lists over 1,000 search engines from 138 countries.
Search Enginez	Search Enginez' directory of hundreds of specialized search engines, many of which are not often seen in specialized search engine guides. For example, in the People-Finding category there are court records, inmates, property ownership, and professional licenses.
SearchBug	SearchBug includes a small, well-crafted, specialized search engine collection which aims to cover the best specialized search engines on the web. It contains over 500 engines. Keyword searching for search engines is available. Search engine selection is consistently excellent. Although there are only between 10 and 20 search engines in most categories, they cover many important aspects of the subject.
Specialized Subject Indexes	Specialized Subject Indexes and Search Engines is a small-medium specialized search engine guide. The selection of search engines, while not comprehensive, is research-oriented and often somewhat different from those included in the usual guide and is useful for students and general researchers, as well as professionals.
Ultimate Search Engines	Ultimate Search Engines is heavily weighted toward regional search engines. It includes approximately 1500 engines and you can search for search engines by keyword.
Virtual Search Engines	Virtual Search Engines is a collection of over 1,000 search engines organized into 50 subject categories. Search engines in each category are listed alphabetically, with no subject subdivisions making it fast and uncomplicated to use. Descriptions convey the gist of each search engine.

### **Data Mining - Directories**

Academic Information	Academic Information has a directory structure for browsing an ocean of academic information.
BUBL Information Service	BUBL Information Service is a professionally-maintained directory that displays the most relevant resources for each topic. It has a wide scope and depth developed over many years.
Digital Librarian	Digital Librarian is a directory of hand selected links including these areas of interest to IT: <a href="#">Business &amp; Finance</a> , <a href="#">Calculators</a> , <a href="#">College &amp; University</a> , <a href="#">Computers</a> , <a href="#">Directories</a> , <a href="#">Education</a> , <a href="#">Electronic Texts</a> , <a href="#">Employment</a> , <a href="#">Images</a> , <a href="#">Internet</a> , <a href="#">Magazines &amp; Journals</a> , <a href="#">Non-Profits</a> , <a href="#">Reference</a> , <a href="#">Search Tools</a> , <a href="#">Statistics</a> , and <a href="#">Web Page Design</a> .
Google	Google's directory
Internet Public Library	The Internet Public Library has a good directory but poor search feature. It does "or" on multiple words and will not do an "and" function.

<a href="#">Invisible-Web</a>	Invisible-Web is the companion site for Sherman & Price (2001) which lists all ~1,000 of what the author considers the best deep Web sites. It offers a hierarchical directory of links to deep Web databases. Unfortunately, it only replicates the book and some links are now dead. Alternatively, a search engine for these same links is located <a href="#">here</a> .
<a href="#">Librarians' Index to the Internet</a>	Librarians' Index to the Internet is an outstanding directory of hand selected links including areas of interest to IT, namely: <a href="#">Business</a> , <a href="#">Computers</a> , <a href="#">Education</a> , <a href="#">Media</a> , <a href="#">Ready Reference &amp; Quick Facts</a> , and <a href="#">Technology</a> .
<a href="#">Library Index</a>	Library Index is a directory of libraries to help find library resources.
<a href="#">LibrarySpot</a>	LibrarySpot attempts to bring the best library and reference sites together with insightful editorial in one user-friendly spot. Sites featured are hand-selected and reviewed by an editorial team for their exceptional quality, content and utility. LibrarySpot has received more than 30 awards and honors. Most recently, Forbes selected LibrarySpot.com as a "Forbes Favorite" site, the best in the reference category, and PC Magazine named it one of the Top 100 Web Sites.
<a href="#">LookSmart Education</a>	LookSmart's Education directory.
<a href="#">LookSmart How-To</a>	LookSmart's How-To directory.
<a href="#">LookSmart Money</a>	LookSmart's Money directory.
<a href="#">LookSmart Science</a>	LookSmart's Sciences directory.
<a href="#">Repositories of Primary Sources</a>	Repositories of Primary Sources lists over 5000 websites describing holdings of manuscripts, archives, rare books, historical photographs, and other primary sources for the research scholar. All links have been tested for correctness and appropriateness. There is an index by country and state.
<a href="#">Resource Discovery Network</a>	Resource Discovery Network is a higher education portal to large academic collections.
<a href="#">Scout Report</a>	Scout Report has reviewed 6000 websites since 1994. It has high standards and only reports on the best of the Web. You can subscribe to this weekly report and receive it via e-mail. You can also search their archive by keyword.
<a href="#">Thunderstone</a>	Thunderstone is an index of sites not pages and attempts to focus on the quality of answers, not the quantity.
<a href="#">Top9</a>	Top9 lists the most popular websites in numerous categories. This allows you to find out quickly which websites are the most active for the topic you are researching.
<a href="#">Web Library</a>	Web Library is the companion site to Tomaiuolo (2004) where the author generously lists and keeps current all the links in this book entitled, "The Web Library: Building a World Class Personal Library with Free Web Resources." These links are worth browsing.
<a href="#">Webliminal</a>	Webliminal is the companion site for the book by Hartman & Ackermann (2005) entitled, "Searching and Researching on the Internet & the World Wide Web." This site lists all the links in the book and has a study guide for use by teachers, students and librarians.

WWW Virtual Library	WWW Virtual Library is the "oldest catalogue of the Web, started by Tim Berners-Lee, the creator of html and the Web itself, in 1991 at CERN in Geneva, Switzerland. Unlike commercial catalogues, it is run by a loose confederation of volunteers, who compile pages of key links for particular areas in which they are expert; even though it isn't the biggest index of the Web, the VL pages are widely recognized as being amongst the highest-quality guides to particular sections of the Web."
Yahoo!	Yahoo!'s directory.

### **Data Mining - Directories - User Edited**

Allows users to share their favorite sites and improve search results for their fellow Internet users worldwide - ad and spam free.

GoGuides	GoGuides submissions are qualified by staff editors or by contributors who pay a monthly membership fee of \$20-\$50.
IllumiRate	IllumiRate's directory is edited by users around the world. Sites are rated based on a number of criteria, including presentation, ease of use, and reliability of information offered. A user that wants to be an editor need to submit a short evaluation of any existing website to demonstrate their editing abilities.
JoeAnt	JoeAnt's directory is edited by users around the world. A user that wants to be an editor gets to choose one area of specialization for rating websites.
Zeal	Zeal, a part of LookSmart, lists any well developed site with at least some content that is free to the end user. Zeal combines community features with a professional editorial team. Additions to Zeal reach Internet users worldwide through the LookSmart network of top portals, ISPs, and search services including Lycos, InfoSpace, RoadRunner, CNET, Inktomi, and LookSmart.com. A user that wants to be an editor needs to pass a quiz on editing criteria before they can add or review sites.

### **Data Mining - FTP Search Engines**

FTPsearchengines	FTPsearchengines is a directory of FTP search engines. These FTP search engines only search for downloadable files.
Fileindexer	Fileindexer indexes 16 millions files from thousands of worldwide FTP servers.

### **Data Mining - Metasearch Engines**

Dogpile	Dogpile is rated best of the metasearch engines. It searches by combining results from a number of major search engines.
Kartoo	The Kartoo metasearch engine provides visual output showing relations between search results allowing further searching through these subcategories. This can be useful for many searches.
Mamma	Mama metasearch engine provides searches, directories, and specialty search sites of up to 14 search engines.
Search	Search.com allows you to select a subcategory of the web to search. This can reduce the amount of non-relevant results.
theinfo	Theinfo.com provides general metasearches and searches of subcategories of the Web.
Vivisimo	Vivisimo metasearch engine is rated best after Dogpile. It organizes results into sub-categories.

### **Data Mining - RSS Feeds**

<b>Chordata</b>	Chordata allows you to drill-down a hierarchical directory structure to find quality-rated RSS feeds.
<b>Feedster</b>	Feedster is a search engine for locating RSS feeds by keywords.

### **Data Mining - Search Engine Reviews**

<b>Search Engine Watch</b>	Search Engine Watch provides descriptions and reviews of search engines.
<b>SearchAbility</b>	SearchAbility reviews a specialized search engines that search for databases by topic. Recall there are over 200,000 databases on the Web. Specialized search engines are a big help in finding databases of interest to your research.

### **Data Mining - Search Engines**

<b>About</b>	The About search engine provides many useful portals and summary articles on a wide range of topics.
<b>Ask Jeeves</b>	The Ask Jeeves search engine yields high relevancy results. It owns the Teoma search engine.
<b>Gigablast</b>	Gigablast is a small search engine but provides useful sub-categories in the results for further data mining.
<b>Google</b>	The Google search engine has tabs for images, video, etc. and directory searching. It also has excellent full-featured advanced search features.
<b>LookSmart</b>	LookSmart is human-compiled search engine with high relevancy results. It owns the WiseNut search engine. It also has a directory structure accessed through several URLs.
<b>Teoma</b>	Teoma is owned by and uses the Ask Jeeves crawler providing high relevancy results.
<b>Yahoo!</b>	Yahoo searches have tabs for images, video, etc. and directory searching.
<b>Yahoo! Mindset</b>	Yahoo! Mindset divides search results into shopping and researching categories with a slider bar to control the relative mix of these two categories. This is a great way to filter our noise whether shopping or looking for information.

### **Jobs & Recruiting**

<b>About - Tech Jobs</b>	About provides an overview on searching for IT jobs with many tutorials.
<b>America's Job Bank</b>	America's Job Bank is the biggest and busiest job site that conveniently lists salary ranges, if available, in one column.
<b>Chronicle of Higher Education</b>	Chronicle of Higher Education is a publication that has a wealth of resources for people involved with higher education. This website, Educause, and HigherEdJobs are the three key sites where jobs in higher education are advertised.
<b>Educause</b>	Educause is a non-profit association with a wealth of resources for higher education. This website, the Chronicle of Higher Education, and HigherEdJobs are the three key sites where jobs in higher education are advertised.
<b>HigherEdJobs</b>	HigherEdJobs is focused exclusively on college and university positions. This website, Educause, and the Chronicle of Higher Education are the three key sites where jobs in higher education are advertised.

Monster	Monster is one of the most extensive job hunting databases. It scours other job databases and company sites to assemble a very complete composite. You can search by location and job title “information technology.”
O’Net	O’Net is the USA’s primary source of occupational information with details on skills required for each profession.
Salary.com	Salary.com is a respected source for salaries by occupation and location.
TechRepublic	TechRepublic offers free and fee-based ( <a href="#">TechProGuild</a> , \$90/yr) memberships. This site is for IT professionals and offers a wealth of free resources – online books, white papers, forums, mailing lists, and articles. They also sell tutorial CDs on system administration, project management, security, etc. The career portal is here: <a href="#">Career Development</a> .

## Macintosh

Apple for IT Pros	This is Apple’s portal for IT Professionals.
eWeek Macintosh	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the <a href="#">Topics</a> link. Some of the key links are: Windows, security, IT management, Linux, and Macintosh.
MacAddict	Mac Addict is a Mac enthusiast’s site and magazine with hardware and software reviews.
MacBuddy Links	MacBuddy has a listing of Mac links.
Macbuddy Security	MacBuddy has resources for security on the Mac OS.
MacEnterprise	MacEnterprise is a community of IT professionals collaborating on information and solutions for the deployment, management, and integration of Mac OS X client and server computers into multi platform enterprise computing environments.
MacNN	MacNN (Mac News Network) has operated since 1995 providing Macintosh and iPod news, reviews, discussion, tips, troubleshooting, links, and reviews. <i>MacNN</i> has a presence at almost every major Macintosh related conference to provide its readers with the most punctual news coverage possible.
MacReviewZone	MacReviewZone reviews Mac hardware and software.
MacRumors	MacRumors covers news and rumors for Macs.
MacWindows	MACINTOSH. MacWindows covers Mac Windows integration.
MacWorld	MacWorld has been covering all aspects of the Mac since Macs beginning in 1984.
Wozniak's Mac Links	Co-founder of Apple, Wozniak’s favorite Mac sites.

## Management

eWeek IT Management	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the <a href="#">Topics</a> link. Some of the key links are: Windows, security, IT management, Linux, and Macintosh.
FastCompany	FastCompany is not your typical business magazine. It has an informative website on leadership, innovation, and competitive advantage. Offerings include articles, guides, slide shows, top 50 leaders, and top ground-breaking companies.

<b>SIM</b>	<b>SIM (Society of Information Managers) is an association of 2,500 CIOs, senior IT executives, prominent academicians, consultants, and other IT leaders. The society holds the annual September SIMposium on IT management, and it offers publications. See the list of local chapters – if your location is covered by a local chapter, exchanging ideas with other CIO's offsets the \$285 annual dues.</b>
<b>TechRepublic</b>	TechRepublic offers free and fee-based ( <b>TechProGuild</b> , \$90/yr) memberships. This site is for IT professionals and offers a wealth of free resources – online books, white papers, forums, mailing lists, and articles. They also sell tutorial CDs on system administration, project management, security, etc. The management portal is here: <b>CIO &amp; IT Management</b> .
<b>See Also</b>	In the "Articles & Databases" section, there are many websites listed that also have management topics.

## **Media & Training**

<b>About-Technology</b>	About provides a directory-type search for IT topics. It offers ~40 portals to basic IT information with free tutorials in every section.
<b>Bill Gates's Website</b>	Bill Gates's website has videos and transcripts of his speeches.
<b>Internet Archive</b>	The Internet Archive is building a digital library of Internet sites and other cultural artifacts in digital form. Currently there are 80,000 movie and audio files, whose copyrights have expired.
<b>Michael Dell's Speeches</b>	Michael Dell's Speeches.
<b>Microsoft Webcast Archives</b>	Microsoft's webcast archives.
<b>SANS Institute</b>	<b>SANS Institute (SysAdmin, Audit, Networking, and Security) is a non-profit organization that provides high quality security training.</b>
<b>Singing Fish</b>	Singing Fish is a search engine that only indexes audio and video files. It is a great way to find free tutorials or speeches. Search for "Bill Gates" and you will find 74 items.
<b>SkillSoft</b>	<b>SkillSoft, 877-545-5763, provides online desktop software, business, and IT certification training, to individuals and organizations. They offer over 2,000 courses and offer subscriptions to four bundles: business, desktop, IT certification, and all three combined.</b>
<b>SoftLookup</b>	SoftLookup contains a wealth of written free IT tutorials.
<b>Specialized Solutions</b>	<b>Specialized Solutions, 800-942-1660, provides online desktop software, work safety, and IT certification training to individuals and organizations. They offer about 100 courses.</b>
<b>TechTutorials</b>	TechTutorials provides a wealth of written free tutorials on practical IT topics.
<b>Total Training</b>	<b>Total Training provides DVD training on Adobe and Macromedia products.</b>
<b>TV Portal Mediahopper</b>	TV Portal Mediahopper allows free access to ~1,000 TV stations around the globe. Many are in foreign languages, some are in English. These channels are played through Windows Media Player or Real Player from this website.
<b>UniversalClass</b>	<b>Universal Class offers online classes by experts in a wide variety of subjects. Each course has been reviewed by their staff. Prices are low.</b>

VTC	<b>VTC (Virtual Training Company) offers online software training with access to all their 43,000+ videos for 338 software products for \$30/month, or \$250/yr. There is a delay of several months between the release of a software update and the addition of updated training.</b>
Webcasts, ZDNet	Webcasts, Videocasts, and Audiocasts from ZDNet on current IT topics.
Webex	<b>Webex provides Web based online meetings without the need for an in-house server.</b>
Whiteboard Videos ZDNet	Whiteboard videos by ZDNet on current IT topics.
Windows Academy	<b>Windows Academy provides DVD training for various software products.</b>
See Also	In the "Articles & Databases" section, see <b>ACM and IEEE. They both offer hundreds of online courses in these categories that are free to members: certification, programming, project management, and software applications.</b>

## News

### IT News

SurfWax Networking	The SurfWax search engine has a build in news accumulator function that accumulates news on 56,000 topics from 4,200 news sources providing an excellent portal to current events on any topic.
SurfWax Technology	The SurfWax search engine has a build in news accumulator function that accumulates news on 56,000 topics from 4,200 news sources providing an excellent portal to current events on any topic.
SurfWax Telecom	The SurfWax search engine has a build in news accumulator function that accumulates news on 56,000 topics from 4,200 news sources providing an excellent portal to current events on any topic.
SurfWax Web Services	The SurfWax search engine has a build in news accumulator function that accumulates news on 56,000 topics from 4,200 news sources providing an excellent portal to current events on any topic.
Tech CIO	CIO (Chief Information Officers) is read by more than 140,000 CIOs and other information executives and provides comprehensive coverage. It serves over 12 million pages annually.
Tech Inquirer	The Inquirer provides technology news.
Tech Register	The Register provides technology news.
Tech SiliconValley	SiliconValley provides technology news.
TechWeb	TechWeb gives daily technical news including a video newscast of "Your Technology Minute."
VNUnet	VNUnet provides technology, news, reviews and downloads from the UK. VNU is active in more than 100 countries, and employs 38,000 people.

### General News

News Portal 1,800 sources	News Portal has links to 1,800 news sources on innumerable topics from drop down menus.
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NewsVoyager	NewsVoyager has links to all USA newspapers including links to sections within each paper.
Online Newspapers	Online Newspapers has links to newspapers around the globe.
Slate	Slate provides editorial insight on the day's news from a variety of writers.
SurfWax All Topics	The SurfWax search engine has a build in news accumulator function that accumulates news on 56,000 topics from 4,200 news sources providing an excellent portal to current events on any topic.
World Scientist	World Scientist gives global scientific news.

## People

### IT - People

AdminLife	AdminLife is a huge database of discussions related to issues encountered by Windows admins. Click on the discussions tab to see the hundreds of lists monitored. You can search for issues with keywords.
Computing	Computing has searchable IT forums by topics.
Experts Exchange	<b>Experts Exchange is a network of IT experts to help with issues. It costs \$10/month.</b>
IT Blog Watch	IT Blog Watch at ComputerWorld magazine summarizes numerous IT blogs.
Microsoft Chats	Microsoft Chats are scheduled chats with Microsoft experts. RSS feed for schedule is available.
Microsoft MVP Site	Microsoft MVP Site is a free connection with members of Microsoft's Most Valuable Professional (MVP) program. This is site rich with content.
Microsoft Support	Microsoft Support has free self-help and <b>help from Microsoft experts for a fee per incident.</b>
MrExcel	MrExcel Message Board is an excellent place to get your Excel questions answered.
TechSupportGuy	TechSupportGuy is a searchable forum for computer issues.

### IT - IRC

mIRC	mIRC is one of the most popular clients for IRC (Internet Relay Chat). IRC is a multi-user chat system, where people meet on "channels" to talk in real time, including technical discussions. IRC is the net's equivalent of CB radio. But unlike CB, Internet Relay Chat lets people all over the world participate in real-time conversations on any topic imaginable.
#Winprog	#Winprog is the premier Windows programming channel on the EFNet IRC network. The channel is comprised of professional software developers, talented college and highschool students, and novice programmers The primary focus is: C/C++ programming with the Win32 API or MFC.

### General - People

AllExperts	AllExperts is the "oldest & largest free Q&A service on the Internet." Search by keyword and get a list of experts willing to answer your questions at no charge (para. 1).
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ASAE	ASAE (American Society of Association Executives) is an association of 10,000 associations. When searching for information, sometimes the best method is to ask an expert in an association. At this link, select Gateway to Associations then search by keywords to find the websites of relevant associations. You can then call the association to find out who can help you with your question.
FreePint	FreePint is a network of 74,000 Internet researchers. A newsletter containing new website reviews and search tips is emailed every two weeks.
Google Groups	Google Groups is a free online community and discussion group service that offers the Web's most comprehensive archive of Usenet postings (more than a billion messages).
LISTSERV	LISTSERV is software by L-Soft for managing electronic mailing lists and discussion groups. Use the hyperlink shown to search for mailing lists by keywords. There are numerous IT mailing lists among the ~62,000 lists in this database.
Usenet Search Google	The full Usenet archive formerly maintained by Deja.com is now a part of Google, providing complete access to Usenet data since 1995 and the ability to add your own comments to the more than 650 million messages already posted. Google is committed to making Google Groups the best source of Usenet postings on the Web.

## Reference Material

### IT - References

AllWhols	AllWhols is the most complete whois service on the internet for finding owners of Internet domains.
AnswersThatWork	AnswersThatWork lists processes, their description, and which cause problems. There is a search function as well.
Assistive Technology Do it	Assistive Technology Do it at the University of Washington provides links to assistive resources.
Assistive Technology LD	Assistive Technology LD Resources at the Hamilton School at Wheeler School in Providence, RI provides links to resources for learning disabled individuals.
Assistive Technology Microsoft	Assistive Technology Microsoft provides links and information to assistive technology for disabled individuals.
Assistive Technology RESNA	Assistive Technology RESNA (Rehabilitation Engineering & Assistive Technology Society of North America) has as its purpose improving the potential of people with disabilities to achieve their goals through the use of technology. They serve that purpose by promoting research, development, education, advocacy and provision of technology; and by supporting the people engaged in these activities.
BIOS, Wim's	Wim's BIOS has a wealth of information on BIOS.
Bookpool	<b>Bookpool sells technical books at 45% off list price and service is fast.</b>
Dictionary, TechTarget	TechTarget Glossary is an online browsable glossary of computer and Internet terminology.
DLL-files	DLL-files has an alphabetical list of downloadable dll files.
Domain Codes	Domain Codes gives the meaning of domain and county codes in domain names.
Error messages	Error messages is Henri Leboeuf's site. Errors can be found alphabetically or by number and link to the error in Microsoft's knowledge base.

eSupport	eSupport sells BIOS for all motherboards. Useful if manufacturer is not supplying it. They have a free tool that extracts detailed information about your BIOS and motherboard.
EventID	EventID gives descriptions of event IDs.
Gratis	Gratis lists startup files and their description and divides them into four categories: necessary, useless, at your option, and dangerous. There is a search function as well. Gratis is the maker of RegRun Security Suite. For example, if you find a file called "bps.exe" executing during your startup, you can find out what it is at this website.
HIPPA	HIPPA (Health Insurance Portability and Accountability Act of 1996) information is on this site regarding the security and privacy of health information.
ITR	ITR (Internet Traffic Report) continuously monitors the flow of data on the Internet. You can download AnalogX's ITR client which installs an icon in your systray that gives you at a glance the status of the global Internet traffic without the need to open any websites.
KB Alert	KB Alert downloads the entire Microsoft KB (knowledge base) nightly and enhances it. It categorizes these articles by product and has an e-mail notification system that e-mails you when updates or additions are made to the technologies of interest to you. It has a fast search engine and for each product it shows you the "hot" topics, i.e. those most frequently viewed by readers in the past week.
Kelly's Korner Win XP	Kelly's Korner Win XP provides troubleshooting & registry tweaks. This rich website offers hundreds of <a href="#">registry tweaks</a> , a comprehensive list of <a href="#">MVP websites</a> , <a href="#">A to Z troubleshooting</a> , and more, by Kelly Theriot, MVP (Microsoft's Most Valuable Professionals).
Kernel32.dll errors	Kernel32.dll errors are here interpreted here on James Eshelman's website.
Lifehacker	Lifehacker Gina Trapani, coder and computer expert, saucily deciphers the latest in personal productivity technology and reveals the million ways hardware and software can improve our busy lives.
Microsoft HCL	Microsoft HCL (hardware compatibility list) is no longer maintained as a comprehensive reference by Microsoft. The "Windows Catalogs" have replaced it.
Microsoft KB	Microsoft KB (Knowledge Base) contains all technical support documents for Microsoft.
Microsoft Win Server 2003 Portal	Microsoft Windows Server 2003 Portal
Microsoft Win XP Portal	Microsoft Windows XP Portal
Minidumps Debugging	Minidumps Debugging describes how minidumps work, how to make an application create them when it crashes, and how to read them back with Visual Studio .NET.
OS Files	The OS Files gives a quick summary overview of all operating systems, including version histories.
PC Hell	PC Hell provides PC hints, and troubleshooting remedies.
Ports	Ports has a list of all ports numbers updated daily by IANA (Internet Assigned Numbers Authority).
Register	Register is one place of many to register domain names. This site offers many similar alternative names when the one you want is already taken.

Sarbanes Oxley	Sarbanes Oxley allows firms to stay abreast of the proposed and final rules and regulations issued by the SEC to implement the Sarbanes Oxley Act (SOX).
Server Files	Server Files lists software available by category for network admins and IT pros.
STOP error messages	STOP error messages are interpreted here on James Eshelman's website.
Subnetting Tutorial	Subnetting Tutorial is a presentation of how to address your TCP/IP network.
TimeLine Microsoft Windows	TimeLine Microsoft Windows gives a quick overview of Windows history.
TSSN	TSSN (Trade Show Search Network) is a trade show search engine. The site also provides a list of free magazines for professionals.
Uwhois	Uwhois provides whois searches by domain name or by IP Address.
Vendor List	Vendor List is provided by Microsoft listing addresses and phone numbers of hundreds of vendors.
Version Tracker	Version Tracker keeps you informed of the latest version numbers for a plethora of utilities.
Webopedia	Webopedia is an online dictionary for computer and Internet terminology.
Whatis	Whatis is an online dictionary for computer and Internet terminology.
Windows Support Center	Windows Support Center is James Eshelman's support guide. There are many links for data mining further.

### **General - References**

Almanac, Infoplease	Infoplease is an online almanac.
AwesomeStories	AwesomeStories tells the real story behind historic events, famous people, heroic exploits, legends, disasters, movies, plus topics of current and general interest. It uniquely uses the Internet to link its story content to hundreds of thousands of the world's best on line primary sources, showing relevant maps, pictures, artifacts, manuscripts and documents, in context, within each story. Some content is free and a full subscription is \$20/yr.
Better Business Bureau	This central Better Business Bureau portal will take you to local branches.
BigCharts	BigCharts provides free interactive charting of stocks and mutual funds.
Biography	Biography has the biographies of 25,000 people.
CIA World Factbook	CIA World Factbook has information on various countries.
Cosmic Clock	Cosmic Clock is a timeline of the history of the cosmos.
Creative Aerobics	Creative Aerobics provides brainstorming techniques that use advanced ideation and mind-set breaking techniques to develop powerful insights.
Creativity Portal	Creativity Portal is a search site dedicated to creativity.
CreativityForLife	CreativityForLife for a creative spark to get past a block. Visit this site for personal and workplace creativity articles to give you inspiration. <a href="#">Writer's Digest</a> selected this as one of the top 101 websites for writers.

Encyclopedia Ask The Brain	Ask The Brain has a unique approach giving one page of relevant information digested for your search topic. It is an automated encyclopedia assembling information from around the web on 200,000 topics. Results can be highly relevant and more diverse than you would find in a standard encyclopedia.
Encyclopedia Britannica Online	<b>Britannica Online Encyclopedia \$70/yr.</b>
Encyclopedia Encarta Online	<b>Encarta Online Encyclopedia \$30/yr</b>
Encyclopedia Wikipedia	Wikipedia is an editable online encyclopedia.
Encyclopedia World Book Online	<b>World Book Online Encyclopedia \$50/yr</b>
Encyclopedia, WikiWax	WikiWax by SurfWax takes Wikipedia to the next level. WikiWax does advanced look-aheads on Wikipedia searches to speed your keyword choices.
Environment Right-To-Know-Network	Right-To-Know-Network searches environmental databases and gives detailed information on EPA Toxics Release in your area. Search is done by entering city and state.
Global Voices Online	Global Voices Online translates and summarizes blogs from around the world into English. Learn what is on the minds of your neighbors in other countries.
Google Earth	Google Earth is a free client application that connects to Google's database to provide satellite views of locations around the planet. The level of detail is greater than Microsoft's terra server. You can zoom into addresses of your choice.
Hoaxes Snopes	Snopes Hoaxes identifies the veracity of stories and rumors floating around the Internet.
HowStuffWorks	HowStuffWorks provides free written tutorials on a wide range of topics.
iTools one stop research	iTools one stop research gives multiple search choices on a series of tabbed pages: web, video, discussions, dictionaries, newspapers, encyclopedias, biographies, and quotations.
Library Statistics	The Library Statistics program of the National Center for Education Studies allows you to locate library information and compare libraries for parameters of your choosing.
Medical Consumer IntelliHealth	Medical Consumer IntelliHealth gives consumer medical information.
Medical Drug Interactions	Medical Drug Interactions searches for adverse reactions due to medication combinations.
Medical NLM Scientific	Medical NLM Scientific gives scientific medical information.
MSN Virtual Earth	MSN Virtual Earth is similar to Google Earth giving satellite views of the earth. Additionally MSN Virtual Earth allows searches within the map area. For example, if you have your local area on the screen, you can search for all the pizza places within the map area. You can zoom in and out for less or more pizza places.
Museum Yellow Pages	Museum Yellow Pages, by the museum Research Board, allows finding museums by state or keyword in title.
NASA - Earth from Space	NASA photos of Earth from space - over 600,000 photos.
Phone 800 Directory	Phone 800 Directory searches for toll free numbers of organizations.

<a href="#">Pizza etc CitySearch</a>	CitySearch Best Pizza, etc is directory of pizza shops, restaurants, hotels, shopping, and movies.
<a href="#">Product Recalls</a>	Product Recalls is a database of recalls of defective products.
<a href="#">PubList</a>	PubList is the only Internet-based reference for over 150,000 domestic and international print and electronic publications including magazines, journals, e-journals, newsletters, and monographs. It is a quick way to a find publication title by keyword.
<a href="#">RefDesk</a>	RefDesk is a remarkable source of facts.
<a href="#">Rip off Report</a>	Rip off Report is a consumer reporting website & publication, by consumers, for consumers, to file & document complaints about companies or individuals who ripoff consumers.
<a href="#">Switchboard</a>	Switchboard is a phone directory.
<a href="#">Time</a>	What Time is It? Gives the current time for anywhere in the world.
<a href="#">Top 9 Web Rankings</a>	Top 9 ranks the top websites in numerous categories. It is useful if you want to find the most popular websites for a particular topic.
<a href="#">Tracking Consolidated</a>	Tracking Consolidated tracks packages shipped through Consolodated Freight.
<a href="#">Tracking DHL</a>	Tracking DHL tracks packages shipped through DHL.
<a href="#">Tracking EMS Intl</a>	Tracking EMS Intl tracks packages shipped through EMS.
<a href="#">Tracking FedEx</a>	Tracking FedEx tracks packages shipped through FedEx.
<a href="#">Tracking UPS</a>	Tracking UPS tracks packages shipped through UPS.
<a href="#">Tracking USPS</a>	Tracking USPS tracks packages shipped through USPS.
<a href="#">Travel Safety</a>	Travel Safety provides information on various countries and any hazards associated with travel within that country.
<a href="#">Yellow Pages Global</a>	Yellow Pages Global finds contact directories for different countries.
<a href="#">Yellow Pages USA</a>	Yellow Pages USA is a USA contact directory.
<a href="#">Weather Radar Loop USA</a>	Weather Radar Loop USA
<a href="#">Weather Yahoo!</a>	Weather Yahoo!
<a href="#">Zip codes USPS</a>	Zip codes USPS

## ***Reviews of Hardware***

Each site reviews different hardware so if you are looking for a review on a specific motherboards, video card, etc., you need to check all these sites.

<a href="#">About</a>
<a href="#">AnandTech</a>
<a href="#">Ars Technical</a>
<a href="#">Cnet</a>
<a href="#">Digit-Life</a>
<a href="#">MaximumPC</a>
<a href="#">Motherboards</a>
<a href="#">Neoseeker</a>
<a href="#">Sharkyextreme</a>

Tom's Hardware Guide
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WhiningDog
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ZDnet
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## Security - IT

About - NetSecurity	About provides an overview of the basics of security. The directory is in the left column.
ASIS	<b>ASIS is an international organization of security professionals, including managers and directors of security with 33,000 members. Membership fee is \$100/yr.</b> They produce <b>Security Management</b> magazine which provides free online access to their back issues.
Astalavista	Astalavista "is one of the world's most popular and comprehensive computer security web sites. Astalavista.com was originally founded in 1997, by a hacker computer enthusiast. The name of the site came from the unforgettable line in the Terminator 2 movie - "Hasta Lavista baby". Since then, the site became the underground's most respected and well maintained portal for anything you ever wanted to know about hacking and security. The enormous database, the constant updates, the unique nature of the content published, the new services and features, all offered for free, turned Astalavista.com into what it is today - a cult! Our site is visited by home and enterprise users, universities, government and military institutions on a daily basis, we are currently attracting more than 100,000 unique visitors per day, making the site an extremely popular security portal." <b>The members only area is located here.</b>
CERT	CERT is a federally funded security R&D (research and development) center at Carnegie Mellon University in Pittsburgh, PA. CERT's goals are "to respond to major security incidents and analyze product vulnerabilities,...To ensure that appropriate technology and systems management practices are used to resist attacks on networked systems and to limit damage and ensure continuity of critical services in spite of successful attacks,...and to analyze the state of internet security and convey that information to the system administrators, network managers, and others in the internet community."
CIS	"The Center for Internet Security (CIS) is a non-profit enterprise whose mission is to help organizations reduce the risk of business and e-commerce disruptions resulting from inadequate technical security controls." They offer free CIS Benchmarks which enumerate security configuration settings and actions that "harden" your systems and represent a prudent level of due care and best-practice. Consensus among hundreds of security professionals worldwide has defined these particular configurations. The Benchmarks are widely accepted by U.S. government agencies for FISMA compliance, and by auditors for compliance with the ISO standard as well as GLB, SOX, HIPAA, FIRPA and other the regulatory requirements for information security.
CSI	<b>CSI (Computer Security Institute) is a membership organization specifically dedicated to serving and training the information, computer and network security professional. Membership is \$224/year.</b> They have an archive of free <b>webcasts</b> on security topics.
CSRC	CSRC (Computer Security Resource Center) is a subdivision of NIST (National Institute of Standards and Technology). Their mission is to improve information systems security by sharing information. They offer keyword searching of their database.
Enterprise Security Today	Enterprise Security Today provides information on Intrusion Detection, Firewalls, Viruses, Spam, Spyware, and news for Windows, Linux, and mobile users.

eWeek Security	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the <a href="#">Topics</a> link. Some of the key links are: Windows, security, IT management, Linux, and Macintosh.
Foundstone	Foundstone, a division of McAfee, is a key player in the security field. The founders are authors of the security bible "Hacking Exposed." This company offers a whole range of security solutions including education and free security tools.
Government Security	Government Security provides articles, forums, and links on security.
Honey Pots	Honey Pots and its linked companion sites provide tutorials and whitepapers on security issues.
I3P	The Institute for Information Infrastructure Protection (The I3P) is a Consortium that includes academic institutions, federally-funded labs and non-profit organizations that brings experts together to identify and help mitigate threats aimed at the U.S. information infrastructure. It has a keyword searchable database and a directory of organizations that work in the area of cyber security.
IBM Security Resource Center	IBM Security Resource Center provides security resources and links.
ICSA Labs	ICSA Labs is an independent division of Cybertrust, has been the security industry's central authority for research, intelligence, and certification testing of products. ICSA Labs sets standards for information security products and certifies over 95% of the installed base of anti-virus, firewall, IPSec, cryptography, and PC firewall products in the world today. On their site are lists of security products that have been certified.
Information Security Magazine	Information Security Magazine provides full access to security articles in all current and back issues.
InfoSysSec	InfoSysSec is a comprehensive portal for Information System Security Professionals. Yahoo editors say it is the best of it kind. Sample security policies can be found <a href="#">here</a> .
InfoSysSec Security Auditing	InfoSysSec Security Auditing portal has tons of information on intrusion detection and security auditing of systems.
ISF	<b>The ISF (Information Security Forum) is an independent, not-for-profit, international association of over 260 companies - including 50% of Fortune 100 companies - and public sector organizations, which fund and cooperate in the development of practical research about information security. Provides authoritative best-practice material and tools, developed with US\$75 million already invested, to member companies.</b> It provides two free sample reports for visitors on the home page - the ISF Security Standard and a Windows 2000 Security Checklist.
ISSA	<b>ISSA (Information Systems Security Association) is a not-for-profit, international organization of information security professionals and practitioners. Membership dues are \$95/year.</b>
ItWorld Security	ItWorld has these portals to webcasts, whitepapers, news, and articles: <a href="#">general</a> , <a href="#">open source</a> , <a href="#">security</a> , <a href="#">small business</a> , <a href="#">storage</a> , <a href="#">utility computing</a> , and <a href="#">wireless</a> .
Metasploit Project	Metaspolits Project lists current exploits for performing penetration testing and IDS signature development.
Microsoft Security Portal	Microsoft Security Portal is Microsoft's launch point for security coverage for Windows systems by category – home user, small business, IT professional, and developer.

<a href="#">Online Security</a>	Online Security is an informational and tutorial site on security.
<a href="#">RSA Security</a>	RSA Security provides products to protect online identities and digital assets and has a strong reputation built on a 20-year history. They put on the annual RAS Security Conference to share information and exchange ideas on technology trends and best practices in identity theft, hacking, cyber-terrorism, biometrics, network forensics, perimeter defense, secure web services, encryption and related topics.
<a href="#">SANS Institute</a>	SANS Institute (SysAdmin, Audit, Networking, and Security) provides highly regarded security training and resources. These are some useful places on this site: <a href="#">resource portal</a> , <a href="#">reading room</a> , <a href="#">sample security policies</a> , <a href="#">security checklists</a> , <a href="#">Security Policy Project</a> , <a href="#">webcasts upcoming</a> , <a href="#">webcasts archive</a> and the quarterly list of <a href="#">Top-20 security vulnerabilities</a> .
<a href="#">SANS Portal</a>	This is the main portal to SANS information.
<a href="#">SANS Sec Policy Project</a>	The SANS Security Policy Resource page is a consensus research project of the SANS community. The ultimate goal of the project is to offer everything you need for rapid development and implementation of information security policies. This page will continue to be a work in-progress and the policy templates will be living documents.
<a href="#">SANS Webcasts Archive</a>	SANS Webcasts Archive lists past SANS webcasts available for viewing.
<a href="#">SANS Webcasts Upcoming</a>	SANS Webcasts Upcoming lists the SANS webcasts scheduled for the near future.
<a href="#">SearchSecurity</a>	SearchSecurity lists security whitepapers by category. It is a subset of <a href="#">Bitpipe</a> IT resources.
<a href="#">Security Management Magazine</a>	Security Management Magazine is published by ASIS, an international organization of security professionals with 33,000 members. It provides free online access to their back issues.
<a href="#">SecurityDocs</a>	SecurityDocs is a directory of network security white papers.
<a href="#">SecurityFocus</a>	SecurityFocus is a vendor-neutral site that provides objective, timely and comprehensive security information to all members of the security community, from end users, security hobbyists and network administrators to security consultants, IT Managers, CIOs and CSOs. It has over 18 million page views a month and 2.5 million unique users annually.
<a href="#">TechRepublic Security Portal</a>	TechRepublic offers free and fee-based ( <a href="#">TechProGuild</a> , \$90/yr) memberships. This site is for IT professionals and offers a wealth of free resources – online books, white papers, forums, mailing lists, and articles. They also sell tutorial CDs on system administration, project management, security, etc. The security portal is here: <a href="#">Security</a> .
<a href="#">Vmyths</a>	Vmyths provides information on virus hoaxes.
<a href="#">Windows Security</a>	Windows Security is a rich resource for all topics related to computer and network security issues on Windows systems. It includes articles, security tests, forums, newsletters, tutorials, white papers, and links.

### **Security - Anti-Spyware - Enterprise**

<a href="#">CounterSpy</a>	CounterSpy by Sunbelt Software is as rated the best enterprise anti-spyware managed by a central console by PC Magazine and Network Computing Magazine.
<a href="#">Spy Sweeper</a>	Spy Sweeper by Webroot is as rated a close second enterprise anti-spyware by PC Magazine and Network Computing Magazine. All other enterprise spyware products were rated a step down from these top three.

Trend Micro	Trend Micro Anti-Spyware is rated as the best enterprise anti-spyware managed by a webpage by PC Magazine and Network Computing Magazine.
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### **Security - Anti-Spyware - Home Use**

Ewido	Ewido Security Suite is a well respected anti-spyware product for individual computer use.
Spybot S&D	Spybot Search and Destroy is a well respected anti-spyware product for individual computer use. It sets kill bits to stop spyware, even when no definition is yet available.
Spyware Eliminator	Spyware Eliminator by Aluria is a well respected anti-spyware product for individual computer use.
Anti Spyware Good Bad Ugly	Spyware Warrior provides information on real and bogus anti-spyware products. Many products are scams, so do your research before spending your money.
Ad Aware	Ad-Aware by Lavasoft is a well respected anti-spyware product for individual computer use.
CounterSpy	Counter spy by Sunbelt Software is a well respected anti-spyware product for individual computer use.
Hijackthis	Hijackthis by Merijn displays the active processes in your system that can be analyzed for spyware.
PC-cillin	PC-cillin by Trend Micro is a well respected anti-spyware product for individual computer use.
Spy Sweeper	Spy Sweeper by Webroot is a well respected anti-spyware product for individual computer use.
SpywareBlaster	SpywareBlaster is a well respected anti-spyware product for individual computer use. It sets kill bits to stop spyware, even when no definition is yet available.
Spywaredata	Spywaredata provides a high quality freeware scanner to check your system for spyware against their extensive online database. Results are analyzed and removal methods are suggested. Use it to verify the effectiveness your anti-spyware software. The author of this page developed the anti-spyware for AOL and Aluria.

### **Security - Anti-Virus - Enterprise & Home Use**

McAfee	McAfee is one of the three top enterprise anti-virus providers. They also offer a version for home use.
Symantec	Symantec is one of the three top enterprise anti-virus providers. They also offer a version for home use.
Trend Micro	Trend Micro is one of the three top enterprise anti-virus providers. They also offer a version for home use.

### **Security - IP Blocking**

Bleeding Edge of Snort	Bleeding Edge of Snort lists ~4,000 locations known to spread spyware. These can be entered in DNS black holes, Internet Options restricted sites, or into the local host file.
IE-SpyAd	IE-SpyAd is Eric Howes' anti-spyware portal and is one of the most complete available. The current version of IE-SpyAd, a restricted site list, can be downloaded <a href="#">here</a> . Enter these in DNS black holes, Internet Options restricted sites, or into the local host file.

Someonewhocares	Someonewhocares lists ~4,000 locations known to spread spyware. These can be entered in DNS black holes, Internet Options restricted sites, or into the local host file.
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### Security - Rootkits

Rookit Revealer	Rookit Revealer by Sysinternals scans for rootkits on your system. Rootkits can be malware installed invisibly in your operating system.
UnHackMe	<b>UnHackMe by Greatis Software scans for rootkits and trojans on your system. Rootkits can be malware installed invisibly in your operating system.</b>

### Tests

ISP Speed Test	ISP Speed Test tests the actual speed of your internet connection.
Javascript Test	Javascript Test lets you know if java is installed and functioning on your browser.
nmap free scan	Nmap free scan will scan you computer or network with nmap and report security issues to you at no charge.
Scan Alert	Scan Alert is a service that conducts complex scanning of your website daily for security holes and certifies it "Hacker-Safe." Over 65,000 websites use this service to protect against identity theft and credit card fraud. Under "Shoppers" merchants are listed that certified "Hacker-Safe." This list provides peace of mind to shoppers.
Tune Clear Type	Tune Clear Type allows you to fine tune your flat panel display for clear type text.
Your IP address	Your IP address is will display the IP address of your computer as seen from the Internet.

### Unix

eWeek Linux	eWeek has in depth coverage on ~30 IT topics. These topics are listed in the lower left of the home page and on the <a href="#">Topics</a> link. Some of the key links are: Windows, security, IT management, Linux, and Macintosh.
HCL Red Hat	HCL Red Hat (hardware compatibility list)
Linux Journal	Linux Journal has tips and tricks, in depth tutorials, concise product reviews, and insights from leading Linux personalities. It was started in 1994.
LinuxPlanet	LinuxPlanet from JupiterMedia provides tutorials, reviews, reports, news, and discussions on Linux.
Linux Security	Linux Security is a comprehensive site with a slick interface.
LinuxWorld Magazine	LinuxWorld Magazine, by Sys-Con Publishing, provides free access to back issues, resources and tutorials.
Open Group	<b>Open Group is a vendor and technology neutral consortium that works with customers, suppliers, consortia and other standard bodies to establish policies, share best practices, facilitate interoperability, develop consensus, and evolve and integrate specifications and open source technologies.</b>
Rutgers Resources	Rutgers Resources and basic instructions on Unix.

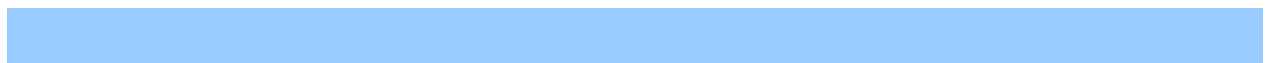
<b>SysAdmin</b>	SysAdmin magazine is a journal for Unix and Linux system administrator. The website provides online access to a sampling of articles from back issues.
<b>UNIX Links</b>	UNIX Links by Open Group.
<b>UNIX Tutorial</b>	UNIX Tutorial for beginners by the University of Surrey, UK.
<b>Unixrealm</b>	Unixrealm, created in 1999, is a source of information, mainly for systems administrators and other people who have to deal with computers on a daily basis. The idea came from the owners own frustration of constantly looking for information on twenty different search engines.
<b>UnixReview</b>	UnixReview, by CMP, provides access to back issues plus information on various flavors of Unix and server management articles.

## **Website/Software Development**

<b>About - Web Design</b>	About provides an overview of the basics of Web design. The directory is in the left column. About also offers these programming portals: <a href="#">C/C+</a> , <a href="#">Delphi</a> , <a href="#">Java</a> , <a href="#">JavaScript</a> , <a href="#">PHP/MySQL</a> , <a href="#">Perl/PHP</a> , and <a href="#">Visual Basic</a> .
<b>Broadband Reports</b>	Broadband Reports covers many areas of residential and SMB broadband - news, forums, tests, tools. Under Security>Port Information, users comment on troublesome ports. Forums have over 8 million entries. Under Tests are reports on lossy routers over the past 3 weeks. Under Security>Slow scan, you can test your connection for vulnerabilities.
<b>Host Count</b>	Host Count monitors ~6000 Web hosting companies by market share (top 20 and top 50) and provides a quick profile and links to these. You can also search by keyword to find a Web host by name and get its stats.
<b>Macromedia Developer's Journal</b>	Macromedia Developer's Journal, by Sys-Con Publishing, provides extensive resources and tutorials for Macromedia products.
<b>Marketingtool</b>	Marketingtool has a large listing of website designers by state.
<b>Reallybig</b>	Reallybig has resources for website developers including how-to guides and graphics.
<b>TechRepublic Web Dev Portal</b>	TechRepublic offers free and fee-based ( <a href="#">TechProGuild</a> , \$90/yr) memberships. This site is for IT professionals and offers a wealth of free resources – online books, white papers, forums, mailing lists, and articles. They also sell tutorial CDs on system administration, project management, security, etc. The software/Web development portal is here: <a href="#">Software/Web Dev</a> .
<b>W3 Schools</b>	The largest web developer's free training site on the net with lots of working examples, quizzes, source code, and thousands of cut-and-paste examples, for quick and easy learning. It provides a collection of HTML, CSS, JavaScript, DHTML, XML, XHTML, WAP, ASP, SQL tutorials. "At W3Schools, you can study everything you need to learn, in an accessible and handy format."
<b>Web Host Industry Review</b>	Web Host Industry Review (WHIR) provides in depth analyses on Website hosts and offers extensive guidance.
<b>Web Master's Den</b>	Web Master's Den has resources for website developers, including graphics.
<b>WebMonkey</b>	WebMonkey has resources for website developers - including how-to guides and graphics.

## Writing

Dictionary	Dictionary.com has the unique feature of offering possible spellings when you mis-spell a word. Other online dictionaries do not do offer this.
Dictionary AcronymFinder	Dictionary AcronymFinder
Dictionary HyperDictionary	HyperDictionary is an online dictionary and thesaurus.
Dictionary Medical	Dictionary Medical
Dictionary Merriam-Webster	Merriam-Webster is an online dictionary and thesaurus.
Dictionary Slang	Dictionary Slang
Guide to Grammar & Writing	Guide to Grammar & Writing has drop down menus to speed finding the writing topic needed.
OWL	OWL (Purdue's Online Writing Lab) provides resources to improve writing skills.
Phrase Finder	Phase Finder has the meanings and origins of phrases, sayings, idioms, clichés and quotes.
Quotes Yahoo	Yahoo Quotes give access to many sources of quotations for writing or speeches.
Writer's Digest	Writer's Digest helps writers get published by providing many resources.
Writing Tools	Fifty Writing Tools to help you in writing.



## Case Studies

### Case Study #1 - Deep Web Database - Network Security

As an example of applying some of the principles in this presentation, let's do a search on "network security" using a surface search engine and a deep Web database.

First let's do a surface search on [Google](#). The result is 42 million hits. I don't really have time to look at 42 million hits, even a million might take a while ☺. Realistically, I'll look at the first 100 or so and perhaps adjust my keywords then search again. The results show too many vendor sites and only a few dozen sites that might have good information. These results were above average for ten minutes of work. However, I will need to evaluate these few dozen sites and that could take a few hours – maybe I will find something useful among these, maybe not.

Now let's try a deep Web site like [Educause](#), again using the same keywords, "network security." There are 2,620 hits. I look at the first hundred or so and none of these are vendors. There are however many PDF files that look like they contain useful information. The first hit says, "Welcome to the Computer and Network Security Web site, developed by the EDUCAUSE/Internet2 Computer and Network Security Task Force" (para. 5). Going to this link, it says, "The Web site is intended to be a focal point of information and resources on computer and network security for the higher education community. The navigation on the left will lead you to content determined to be most relevant by the Task Force" (para. 1). I go to the "About Task Force" link and it tells me this task force has 36 members, lists their names, positions and contact information, tells me they have been working together on this project for the past five years, and their goal is stated as "actively promotes effective practices and solutions for the protection of information assets and critical infrastructures" (para. 1). Now, I go back to the main page. This page is the hub of access to all the resources assembled for security, including best practices, reports, seminars and a cyber security forum.

Comparing the quality of the results between the two methods, for this search, the deep Web results have more substance and credibility. Of course this will not always be the case. The surface and deep Web each have their advantages and disadvantages depending on the search topic. You need both aspects of the Web plus a phone to call people (not all information is on the Web). In this example, within three minutes, the deep Web search revealed a goldmine of high-quality information very relevant to the search topic.

### Case Study #2 - Specialized Search Engines - PDA Security

As another example of applying some of the principles in this presentation, let's do a search on "PDA security" using data mining with a specialized search engine.

Specialized search engines search for databases and help eliminate the "noise" associated with general search engines. For example, using the specialized search engine [Beaucoup](#) to search on the keyword "security" finds 69 sites having security databases. Going to one of these 69 websites, [SANS](#), and doing a keyword search on "security mobile handheld" yields 8 hits. The first hit is a PDF file entitled "S.C.O.R.E Personal Digital Assistant Audit Checklist, July 2005." This is precisely what was sought. It gives a checklist for securing PDAs and a list of vendors that provide security devices for PDAs in these categories: user authentication, anti-virus, theft protection, file encryption, firewall, virtual private, network, data integrity, device enterprise management, and device backup.

As a bonus, in this search we have learned that the SANS website has security checklists available that will help with a wide variety of security concerns besides PDAs. SANS is a website we will want to visit again in the future.

Beaucoup is just one of many specialized search engines. You may need to try several before you find a database that will answer your needs. Additional specialized search engines are listed in the "Data Mining" section of this presentation.

## Conclusion

At present, the Internet is functionally divided into two areas – 1% of the information content is in the surface Web and 99% is in the deep Web. Search engines index the surface Web but only access the deep Web to a very limited degree. As the Web evolves more of the deep Web will become more easily available; however, at present one must directly access deep Web sites through their query engines. To do this, you need to know the URL of the deep Web site. Considering there are over 200,000 deep Web sites, and more are being continuously added, it is a challenge to know which sites to use for a given research topic. This paper has presented many avenues to assist IT professionals in finding IT information in the deep Web.

## Appendix A: 60 Largest Deep Web Sites

The entire text and table below is reprinted with permission from BrightPlanet® (2005, *Largest deep-web™ sites*).

### Largest Deep-Web™ Sites

The table below indicates that the 60 known, largest Deep-Web™ sites contain data of about 750 terabytes (HTML included basis), or roughly 40 times the size of the known surface Web. These sites appear in a broad array of domains from science to law to images and commerce. We estimate the total number of records or documents within this group to be about 85 billion.

By nature, this listing is preliminary and likely incomplete, since we lack a complete census of Deep-Web sites. This inability today to identify all of the largest Deep-Web sites should not be surprising. The awareness of the Deep-Web is a new phenomenon and has received little attention.

<u>Name</u>	<u>Type</u>	<u>Web Size (GBs)</u>	<u>Rec Num (000)</u>
National Climatic Data Center (NOAA)	Public	366,000	41,012,794
NASA EOSDIS	Public	219,600	24,607,676
National Oceanographic (combined with Geophysical) Data Center (NOAA)	Public/Fee	32,940	3,691,151
Alexa	Public (partial)	15,860	1,777,221
Right-to-Know Network (RTK Net)	Public	14,640	1,640,512
MP3.com	Public	4,300	481,844
Terraserver	Public/Fee	4,270	478,483
HEASARC (High Energy Astrophysics Science Archive Research Center)	Public	2,562	287,090
US PTO - Trademarks + Patents	Public	2,440	3,000
Infomedia (Carnegie Mellon Univ.)	Public (not yet)	1,830	205,064
Alexandria Digital Library	Public	1,220	1,600
JSTOR Project	Limited	1,220	136,709
10K Search Wizard	Public	769	1,068
UC Berkeley Digital Library Project	Public	766	2,403
SEC Edgar	Public	610	1,000
US Census	Public	610	68,355
NCI CancerNet Database	Public	488	54,684
Amazon.com	Public	461	18,000
IBM Patent Center	Public/Private	345	9,881
NASA Image Exchange	Public	337	306
InfoUSA.com	Public/Private	195	14,100
Betterwhois (many similar)	Public	152	11,900
GPO Access	Public	146	16,405
Adobe PDF Search	Public	143	1,678
Internet Auction List	Public	130	6,000
Commerce, Inc.	Public	122	12,000
Library of Congress Online Catalog	Public	116	12,000
Sunsite Europe	Public	98	10,937
Uncover Periodical DB	Public/Fee	97	8,800
Astronomer's Bazaar	Public	94	3
eBay.com	Public	82	4,076
REALTOR.com Real Estate Search	Public	60	1,300
Federal Express	Public (if shipper)	53	3,300
Integrum	Public/Private	49	20,000
NIH PubMed	Public	41	11,000
Visual Human (NIH)	Public	40	4,482
AutoTrader.com	Public	39	1,550
UPS	Public (if shipper)	33	2,050
NIH GenBank	Public	31	5,355

AustLi (Australasian Legal Information Institute)	Public	24	100
Digital Library Program (UVa)	Public	21	2,200
<b>Subtotal Public and Mixed Sources</b>		<b>673,035</b>	<b>74,628,077</b>
DBT Online	Fee	30,500	4,000,000
Lexis-Nexis	Fee	12,200	2,600,000
Dialog	Fee	10,980	1,230,384
Genealogy - ancestry.com	Fee	6,500	500,000
ProQuest Direct (incl. Digital Vault)	Fee	3,172	50,000
Dun & Bradstreet	Fee	3,113	75,000
Westlaw	Fee	2,684	572,000
Dow Jones News Retrieval	Fee	2,684	55,000
infoUSA	Fee/Public	1,584	126,700
Elsevier Press	Fee	570	889
EBSCO	Fee	481	750
Springer-Verlag	Fee	221	344
OVID Technologies	Fee	191	298
Investext	Fee	157	2,474
Blackwell Science	Fee	146	227
GenServ	Fee	106	19,352
Academic Press IDEAL	Fee	104	162
Tradecompass	Fee	61	6,835
INSPEC	Fee	16	6,500
<b>Subtotal Fee-Based Sources</b>		<b>75,469</b>	<b>9,246,915</b>
<b>TOTAL</b>		<b>748,504</b>	<b>83,874,991</b>

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