



Cory Computer Systems

*563 Wesley Avenue, Suite A
Oakland, CA 94606 (510) 663-2465*

“Web Design with the Small Business in Mind”

Electronic Mail

Neither snow nor rain nor heat nor gloom of night stays these couriers from the swift completion of their appointed rounds.

- Herodotus, describing the Persian courier system about 500 B.C., inscribed on the General Post Office, New York City, U.S.A.

What is e-mail? In its simplest form, e-mail is an electronic message sent from one computer to another.

Follow the Trail

Just as a letter makes stops at different postal stations along its way, e-mail passes from one computer, known as a mail server, to another as it travels over the Internet. Once it arrives at the destination mail server, it's stored in an electronic mailbox until the recipient retrieves it.

Sending and Receiving Messages

To receive e-mail, you must have an account on a mail server. This is similar to having an address where you receive letters. One advantage over regular mail is that you can retrieve your e-mail from any location. Once you connect to your mail server, you download your messages to your computer.

To send e-mail, you need a connection to the Internet and access to a mail server that forwards your mail. The standard protocol used for sending Internet e-mail is called SMTP, short for Simple Mail Transfer Protocol. It works in conjunction with POP servers. POP stands for Post Office Protocol.

When you send an e-mail message, your computer routes it to an SMTP server. The server looks at the e-mail address (similar to the address on an envelope), then forwards it to the recipient's mail server, where it is stored until the addressee retrieves it. You can send e-mail anywhere in the world to anyone who has an e-mail address. Remember, almost all Internet service providers and all major online services offer at least one e-mail address with every account.

At one time, Internet e-mail was good only for text messages. You couldn't send attachments, such as formatted documents. With the advent of MIME, which stands for Multipurpose Internet Mail Extension, and other types of encoding schemes, such as UUencode, not only can

Electronic Mail

you send messages electronically, but you can also send formatted documents, photos, sound and video files. Just make sure that the person to whom you send the attachment has the software capable of decoding it.

E-mail messages are similar to letters, with two main parts:

The header contains the name and address of the recipient, the name and address of anyone who is being copied, and the subject of the message. Some e-mail programs also display your name and address and the date of the message.

The body contains the message itself.

Just like when sending a letter, you need the correct address. If you use the wrong address or mistype it, your message will bounce back to you--the old Return to Sender, Address Unknown routine.

When you receive an e-mail, the header tells you where it came from, how it was sent, and when. It's like an electronic postmark.

Unlike a letter, which is sealed in an envelope, e-mail is not as private. It's more like a post card. Messages can be intercepted and read by people who really shouldn't be looking at it. Avoid including any confidential information unless you have a way to encrypt it.

Internet e-mail addresses typically have two main parts:

jack@wedosigns.com

1. **User Name** (jack) that refers to the recipient's mailbox.

Then there's an at sign (@)

2. **Host Name** – wedosigns - also called the domain name. This refers to the mail server, the computer where the recipient has an electronic mailbox. It's usually the name of a company or organization.

The end of the domain name consists of a dot (".") followed by three or more letters (such as .com and .gov) that indicate the top-level domain (TLD). This part of the domain name indicates the type of organization or the country where the host server is located.

For e-mail addresses outside of the United States, there is often a two letter country code. For instance, **.ca** indicates Canada, **.uk** indicates the United Kingdom and **.mx** indicates Mexico.

Email Servers

Email servers exchange messages using the SMTP protocol. The email servers are hosted by your ISP or your corporate networking group. Examples are web hosting services, such as Hostcentric, IX Web Hosting, Host Excellence (website host and email server), AOL, Juno,

Electronic Mail

CompuServe, and EarthLink (what I call email-plus services), and Microsoft Exchange Server used in the corporate and enterprise environments.

Client applications log into the servers to send and receive user's email with one of several protocols, including the leading POP3, IMAP, and MAPI protocols. (AOL does not use either of these.)

Email Clients - Post Office Protocol 3

POP3 has become the most common email client connection protocol. The POP3 protocol enables any email program anywhere on the Internet to connect to any email server to perform the usual email functions, such as reading and sending, as long as they have a valid account and password. POP3 is an open Internet standard.

Email Clients - Internet Message Access Protocol

IMAP is less common but more richly featured than POP3. It is a more modern protocol than POP3, first developed at Stanford University in 1986.

Email Clients - Messaging Application Programming Interface

Microsoft Windows specific email interface is a standardized set of C functions originally developed by Microsoft and supported by many third party vendors for Windows platforms.

Basic Email Use

A sender (person) uses a mail agent (program) to compose a message, which contains the e-mail addresses of several recipients. The agent passes the message to a transport service for delivery to the mailboxes of the recipients, who each use their own agents to read the e-mail.

Client Applications

You have several choices for your email client application. All three major web browsers include a built-in email application. However, some people prefer to use a separate application designed specifically for email, since they often have a better focus and more features.

Outlook is the corporate standard from Microsoft. Eudora has been one of the most widely used email applications through the 1990's and into the first years of the new century. IncrediMail has received good reviews. Pegasus mail is a shareware application not recommended because of the complexity of the interface.

Configuration

Your email client needs to be correctly configured to work properly. The best advice for configuration of your email client application is to follow the instructions of your Internet Service Provider, who usually provide telephone help with setup of email, and are familiar with the configuration settings for most common email clients.

Each email application has a Settings, Options, Preferences, or similar menu item under the Edit or Tools menu. You should not change a setting unless you are sure that you should, particularly if the program is working fine as it is. The common settings are described below in alphabetical order:

Electronic Mail

Addresses

Two good rules:

1. **Paste addresses into your address book;**

You should copy and paste addresses into the To field instead of typing it for both ease of use and accuracy. Address typing mistakes are very easy to make. If it is an address you will use again, then you should always enter it in your address book.

2. **Enter the address to each email as the last step.**

Always enter the address last so you don't send an email before you're ready. You can't send an email by mistake that isn't addressed -- either by loss of concentration or inadvertent click.

Subjects

The Subject line ... should be suggestive enough of the contents of the article to enable a reader to make a decision whether to read the article based on the subject alone.

Always choose a meaningful subject.

One of the most important rules of good email netiquette is to enter a meaningful subject. In a typical long list of emails in an inbox, the subject line is the most prominent field, and a meaningful subject is the most useful pieces of information you can include with your email to make it convenient to process by the recipient and therefore deliver the message you wish to convey. Some examples of bad and good subjects are shown below:

Bad	Good
Misc	Free tickets to tonight's game!
Request	Request: Widget part number
Meeting	Team Building Session - All Hands

Composition

Emails are often written in an informal style, and are generally brief.

Sending

Reread your email before sending, spell-check, and never send an email while angry.

Reading

Sort your email by the date received, and check for new email automatically.

Replying

Email replies are usually informal, and often brief. Automatically transfer the person's email address into the "To:" field. Automatically put a copy of the original email in the reply email, with a reply character such as ">" in front of each line.

Forwarding

You can forward an email to someone else, and forward all of your email from one address to another.

Electronic Mail

Saving

You can easily manage your email if you set up a separate mailbox for each person you correspond with. Most messages take up very little space, but a deleted message can never be retrieved. You should save almost all messages, unless they are very large and of no interest.

The basic technique to saving email is to create separate mailboxes for each type of mail:

By name. Create a separate mailbox for each of your family and friends, labeled with their last name first so they will be stored in alphabetical order. For example, if you get email from John Smith, create a mailbox called one of the following, depending on how flexible your email program is:

Once you have read each incoming email, store it in the mailbox named for the person that sent it. This technique makes your email management very easy. A common mistake is to create mailboxes for projects -- but it is difficult to create the right set of project folders, or remember exactly what project an email was associated with if it was from someone that works on more than one project. But you can almost always remember who sent it, which is what makes the method work so well.

By subject. You can also create a certain number of mailboxes for email on specific subjects, such as the following, but as described above you should do this sparingly for only a few high profile and important topics:

Deleting

Email takes up very little space, so you should save all of your email.

You can delete any email that you really don't want usually by selecting it and pressing the Del key. However, in general, you should never delete an email. Once an email is deleted you can never retrieve it, but today's computers have so much disk space that you should be able to file and save your messages forever. Taking conservative figures, if you received 10 emails a day, on average each a full 2000 characters (bytes) in size, it would take 137 years of continuous use to fill up a one gigabyte disk.

$$1,000,000,000 / (365 * 10 * 2000) = 137$$

Receiving Attachments

Set your default download folder to something convenient.

If an attachment is an executable program, then you shouldn't run it unless it is sent by someone you trust and you were expecting it, since it could contain a virus. If you are running a virus scanner, then make sure it is set to scan files arriving by email, and it should keep you secure if you keep the virus database updated. If the attached file is a common program or utility that you want to use, then you should wish to find a known, trusted web page or other source and download it from there.

Electronic Mail

Redirecting

You can almost transparently redirect email you receive to another address. A redirect is similar in function to a forward, with differences: Mainly, the original email cannot be edited or changed in any way.

Web Email

Web based email provides access to your email from any web browser, anywhere.

Starting in the mid-1990's, many different companies began marrying two Internet technologies by serving email over the web. Because email transmission is typically very low bandwidth, many of these services were free or inexpensive, and still are. The systems provide access to email by logging onto a web based program with an address and password, and then producing a screen that looks something like an email program, with mailboxes and folders, reply and forward buttons, etc. The advantage of these services is that you don't need to carry anything with you as you move around -- you can check your email from any web browser, anywhere, even while traveling around the world.

The disadvantage of web based email services is that they don't have as many features as full desktop email applications. For example, they sometimes restrict the size of attachments you can process, and may not be as fast as an email application running directly on your computer where there is inherently less delay than when communicating with a web site across the Internet.

All you need to use these services from any web browser are your email address and password. If you use the same computer all of the time and have configured your browser to accept cookies, then you may have the option to save your password so you can access your email directly without having to log in each time.

Some web based sites also provide free POP3 access, so you can use a normal email program like Outlook or Eudora to access your email as well as the web browser.

Viruses

You should run the latest version of a virus protection program. If your email application is relatively up to date, and you are running a good virus protection program, then your email connection should be fairly safe from accepting or transmitting viruses. Nevertheless, there are enough vulnerable computers on the Internet that email is still the main transmission channel for viruses around the world. Email viruses spread in two main ways:

Attachments. Viruses commonly hide in programs sent as email attachments, and run when the user double-clicks on the program to start it. Therefore, you shouldn't run programs received as email attachments unless you have a virus protection program running and the attachment is from a trusted source.

For example, a greeting card program forwarded from a friend of a friend is not from a trusted source, and there is nothing to stop it from running malicious system programming code behind its animated presentation once you start it running on your machine. You should also be wary of

Electronic Mail

opening documents that might contain scripts and macros (see below). Some attachments will have two extensions to try and trick you into believing they are just a harmless data file and not a program, such as "coolpicture.jpg.exe".

Scripts. One of the first script viruses was a MIME virus that attacked older versions of programs like Netscape Mail, Microsoft Outlook, and Eudora, and could under certain rare conditions run a damaging program as soon as the email was simply opened. In a variation on an old hacker technique, the attached MIME file was given a very long name that then triggered a bug that allowed the end of the name to be run as a series of instructions, which could then be written to do damaging things to your computer. However, these early viruses remained theoretical, and a fix for the bug was quickly developed by email program vendors.

However, Visual Basic (VBasic) script viruses became very real, and have continued to do considerable damage across the Internet. VBasic is a very flexible and deeply powerful program development environment used by Microsoft for their operating system, office automation, and Internet applications. This means that VBasic viruses can run from anywhere in the Microsoft software architecture and affect the entire system, from email to operating system, giving them unprecedented reach and power.

The first widespread VBasic virus was **Melissa**, which brought down several of the largest corporations in the world for several days in late March 1999. Melissa traveled in a Microsoft Word document and was triggered when the document was opened, opened the associated Microsoft Outlook email program, read the user's email address book, and then sent copies of itself to the first fifty names. This clever architecture was quickly followed by many variants programmed by hackers around the world, including the KAK virus that triggered as soon as an email was opened, and the BubbleBoy virus that triggered as soon as the email was viewed in the preview pane.

If you upgrade your email program once and awhile, and run a virus protection program with an automatically updated database, then you should be safe from most script viruses. Also, select "No" if a document asks to enable macros when you open it, especially if you do not know who wrote them.