**Real World Example from http://www.inetdaemon.com/tutorials/basic\_concepts/network\_models/osi\_model/real\_world\_example.shtml**

Due to popular demand, InetDaemon has written an operational example of how the [OSI model](http://www.inetdaemon.com/tutorials/basic_concepts/network_models/osi_model/index.shtml) can be used to describe what happens when you browse a [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) on a web site. This page you are reading is stored on our website and you are most probably using a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) to read this. We will use the [OSI model](http://www.inetdaemon.com/tutorials/basic_concepts/network_models/osi_model/index.shtml) to describe what happens when you click a link in a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) in your [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) and what happens as the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) receives, processes and responds to your request. This example assumes that you are on a [local area network](http://www.inetdaemon.com/tutorials/networking/lan/index.shtml) and that you are using an [Ethernet](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/index.shtml) card to communicate with the network. If you're on a dial-up [modem](http://www.inetdaemon.com/tutorials/computers/hardware/modems/index.shtml), it will work a little differently from the [data link layer](http://www.inetdaemon.com/tutorials/basic_concepts/network_models/osi_model/data_link.shtml) down. [Modem](http://www.inetdaemon.com/tutorials/computers/hardware/modems/index.shtml) communication is a bit more complicated. We won't cover that here.

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| **LAYER** | **EXAMPLE** | | **FUNCTION/ACTIVITY** |
| **APPLICATION** | [**Web Browser**](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) | | A [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) such as [Internet Explorer](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) or [Netscape](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) provides the means for your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) to contact a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) and download several files that go together to produce a single [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml).  You can request a [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) by typing in a [web address](http://www.inetdaemon.com/tutorials/www/general_concepts/url.shtml) (a [URL](http://www.inetdaemon.com/tutorials/www/general_concepts/url.shtml)) or by clicking a link in an open web page. The [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) is an **APPLICATION.** The [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) *application* gives you the means to select a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server,](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) contact the server and request a [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml). The [web browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) handles the process of finding the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) (the remote computer that has the [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) you want stored on it) , requesting the desired [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) and displaying all the files contained within the [web page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml). |
| **PRESENTATION** | [**HTTP**](http://www.inetdaemon.com/tutorials/www/web_server/http/index.shtml) | | The [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) handles **PRESENTATION** of the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) to the user by converting the files stored at the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) into formats used to display them on your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml).  Your [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) supports varous text formats (UNICODE and ASCII), image file formats (JPG, GIF, PNG, BMP), audio file formats (WAV, MP3, AIFF) as well as [Hypertext Markup Language](http://www.inetdaemon.com/tutorials/www/web_pages/html/index.shtml) [(HTML)](http://www.inetdaemon.com/tutorials/www/web_pages/html/index.shtml) and one or more scripting languages ([JavaScript](http://www.inetdaemon.com/tutorials/scripting/languages/JavaScript/index.shtml), JScript, VBScript). Conversion of data from one format to another is the job of the **PRESENTATION** layer. A [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) can convert these file formats into the local formats used on the local [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) for displaying images, playing sounds and displaying text; if it cannot, it often can launch an application which does understand the format. Much of the **PRESENTATION** layer conversions are handled in the program you're running. |
| **SESSION** | When you request a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml), a the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) opens a [TCP](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) connection to the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml). The [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) sends back the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) and closes the connection. Your [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) then parses the [HTML](http://www.inetdaemon.com/tutorials/www/web_pages/html/index.shtml) of the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml). Within the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) are instructions written in [HTML](http://www.inetdaemon.com/tutorials/www/web_pages/html/index.shtml) [tags](http://www.inetdaemon.com/tutorials/www/web_pages/html/tags.shtml) which tell the [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) where to find additional files to be displayed within the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) such as style sheets, sound files, images, movies, Flash files and applets. Your [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) automatically opens additional [TCP](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) connections to the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml). Each [TCP](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) connection is a **SESSION**. |
| **TRANSPORT** | [**TCP**](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) | | To communicate with a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) must open a [TCP](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) connection to the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) and request a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml). The [TCP](http://www.inetdaemon.com/tutorials/internet/tcp/index.shtml) connection breaks up the[web](http://www.inetdaemon.com/tutorials/www/index.shtml) [page](http://www.inetdaemon.com/tutorials/www/web_pages/index.shtml) into managable chunks, lables them with numbers so they can be reassembled in the correct order and **TRANSPORTS** the pieces across the correct **SESSION**. |
| **NETWORK** | [**IP**](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml) [**ARP**](http://www.inetdaemon.com/tutorials/networking/lan/arp.shtml) | | [Internet Protocol](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml) ([IP](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml)) is a **NETWORK** layer protocol that uses unique addresses for the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) and for your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml). [IP](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml) provides the means for your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) to determine whether the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) is a local [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) or a [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) located somewhere on the [Internet](http://www.inetdaemon.com/tutorials/internet/index.shtml). To reach a [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) on the [Internet](http://www.inetdaemon.com/tutorials/internet/index.shtml), [IP](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml) protocol also allows your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) to figure out how to reach the [Internet](http://www.inetdaemon.com/tutorials/internet/index.shtml) [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) via your [default gateway](http://www.inetdaemon.com/tutorials/internet/ip/routing/default_gateway.shtml). Your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) creates a message addressed to the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [server](http://www.inetdaemon.com/tutorials/www/web_server/index.shtml) with your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml)'s return [IP](http://www.inetdaemon.com/tutorials/internet/ip/index.shtml) [address](http://www.inetdaemon.com/tutorials/internet/ip/addresses/index.shtml). Your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) uses [ARP](http://www.inetdaemon.com/tutorials/networking/lan/arp.shtml) to figure out the [physical MAC address](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/mac.shtml) of the [default gateway](http://www.inetdaemon.com/tutorials/internet/ip/routing/default_gateway.shtml) and then passes the data to the **NETWORK** layer. |
| **DATA LINK** | [**E T H E R N E T**](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/index.shtml) | [**LLC**](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/llc.shtml) | Once the request from your [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [browser](http://www.inetdaemon.com/tutorials/www/web_browser/index.shtml) has been created it is sent to the network card. Once it reaches your network card it must be converted into a message that is sent from your [computer](http://www.inetdaemon.com/tutorials/computers/index.shtml) to the [default gateway](http://www.inetdaemon.com/tutorials/internet/ip/routing/default_gateway.shtml) which will forward the message to the Internet. At the **DATA LINK** layer, the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) [request](http://www.inetdaemon.com/tutorials/www/web_server/http/request/index.shtml) is inserted inside a network request to the [default gateway](http://www.inetdaemon.com/tutorials/internet/ip/routing/default_gateway.shtml). |
| [**MAC**](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/mac.shtml) |
| **PHYSICAL** | [**CSMA/CD**](http://www.inetdaemon.com/tutorials/networking/lan/ethernet/CSMA-CD.shtml) | The **physical** layer provides the means to transmit the [web](http://www.inetdaemon.com/tutorials/www/index.shtml) page request to the [default gateway](http://www.inetdaemon.com/tutorials/internet/ip/routing/default_gateway.shtml). |

Keep in mind that this entire system didn't spring into existence in a day, it took [decades](http://www.inetdaemon.com/tutorials/internet/history.shtml) for dozens of developments to come together to make the process of requesting, retreiving, delivering and displaying web pages possible.

- See more at: http://www.inetdaemon.com/tutorials/basic\_concepts/network\_models/osi\_model/real\_world\_example.shtml#sthash.ksELiicC.dpuf