Explaining DMZ’s and Port forwarding as it pertains to home networking and broadband routers

**Ports:** Applications running on TCP/IP open connections to other computers using something called ports. Ports allow multiple applications to reside on a single computer - all talking TCP/IP. Ports are another set of numbers AFTER the standard IP address. Applications often hide these port numbers to reduce the complexity of TCP/IP. Example: web services (HTTP) reside on port 80 by default. To reach this web site, you could type http://www.homenethelp.com:80 into your browser. The 80 is the default port number for the HTTP protocol so typing it is not necessary. There are 65535 available ports. Here is a list of ports in [Wikipedia](https://en.wikipedia.org/wiki/List_of_TCP_and_UDP_port_numbers).

**Port Forwarding:** A broadband router or other NAT application (like ICS) creates a firewall between your internal network and the internet. A firewall keeps unwanted traffic from the internet away from your LAN computers. A ‘tunnel’ can be created through your firewall so that the computers on the Internet can communicate to one of the computers on your LAN on a single port. This is handy for running web servers, game servers, ftp servers, or even video conferencing. This is called port forwarding. One of your computers could run a web server (port 80) while another computer could run an FTP server (port 23) - both on the same IP address.

**DMZ:** This is a feature that is included on some routers but is not in Internet sharing software. A DMZ allows a single computer on your LAN to expose ALL of its ports to the Internet. When doing this, the exposed computer is no longer ‘behind’ the firewall.

**Port Forwarding vs DMZ**
A DMZ is far easier to set up than port forwarding but exposes your entire computer to the Internet. Sometimes TCP/IP applications require very specialized IP configurations that are difficult to set up or are not supported by your router. In this case, placing your computer in the DMZ is the only way to get the application working. Placing a computer in the DMZ should be considered ‘temporary’ because your firewall is no longer able to provide any security to it.

Port forwarding can sometimes be difficult to configure, but provides a relatively safe way of running a server from behind a firewall. Since only a single port (or small series of ports) is exposed to the Internet, the computer is easier to secure. Additionally, port forwarding allows you to run multiple kinds of servers from different computers on your lan. (see above diagram) Many broadband routers have special port forwarding configuration screens for standard applications (FTP, WWW, Mail, etc) and special screens for custom applications.