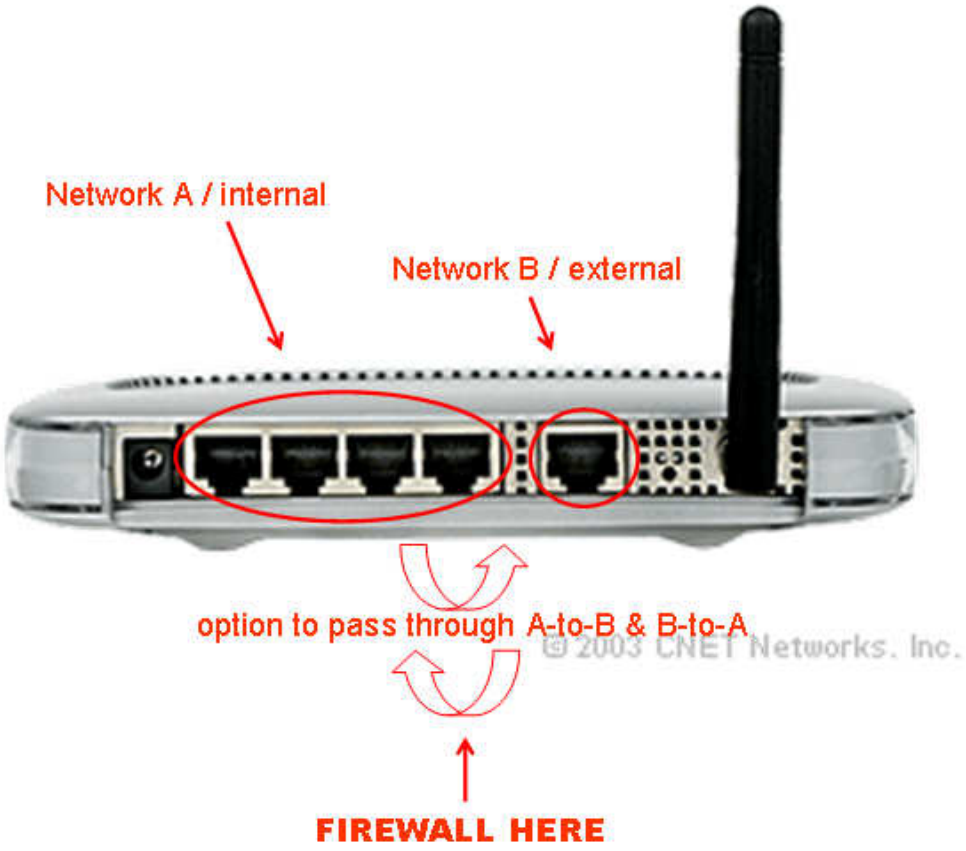
Firewalls in commercial routers

Small commercial routers also have firewall capabilities. They are computers that have two interfaces (NICs). One connects to network A and the other to network B.



Network B is usually the internet, and users plug the cable from the router for network B into a connectivity source like an ISP-provided cable or DSL "modem." The other interface connects to a built-in hub which has sockets on the back of the router for (typically) 4 additional computers to connect. They, collectively with the router, comprise network A. It is usually the owner's internal home LAN.

~~A router such as the one pictured above is connected to the internet. You can connect to it. Do so by pointing a browser at~~ *not currently up, plese ignore*

http://107.193.80.66:8080

(The pictured router is a Netgear WGR614 is pictured, while the one actually online is a Linksys BEFSR41.) When asked for login credentials give user name "admin" and password p$PU2c4j ("passwords scientifically proven unbreakable too clever for John"). Examine the main menu along the left side.

By contrast with the Windows firewall whose protection target is the machine on which it is running, the router firewall's protection target isn't the router itself. Rather it's trying to protect the other computers connected to its network A. It's about pass-through control. Or in iptables language, about the FORWARD chain. Windows is about the INPUT chain.

By default computers in network A can send anything out to network B, and those on network B can send nothing in to network A. But the router can create firewall rules making exceptions to either. The menu options for that are "Security," submenu "Filter" to disable insiders reaching outside, and "Applications & Gaming," submenus "Port Range Forwarding" and "Port Triggering" to enable outsiders reaching inside. The former prevents A from sending certain traffic to B, and the latter lets B send certain traffic in to A.

While logged in to the router, click those two options and explore the resulting dialogs. You are free to create and delete firewall/forwarding rules to get the flavor of this interface. It resembles that of Windows. Otherwise however please remember you are a tourist here and please don't touch the exhibits or otherwise

alter the device's configuration. This router has no internal computers connected to it and is not in actual use so nothing is at risk, except the experience of your fellow students.