

By: April 2008, Editor, Software Reviews

## Switch or Router?

### *Get the appropriate network device for your LAN*

Browsing the network forums on the Internet I came across lots of stupid questions and even more stupid answers. At one point a "networkly retarded" guy (these are his own words) was asking for some help for choosing between a hub, a switch or a router in order to connect the two computers he had to the Internet without too much fuss. One of the answers was extremely funny and misleading. The "good samaritan" there guided our net-tard towards buying a hub as it offered great protection and the computers will connect to the Internet with no problems. The poor guy went to the IT depot and bought a hub (he must have searched a lot for one) and after trying it he came back to the forum saying it did not work and that the computers were communicating perfectly between each other but there was no WAN available. Another samaritan gave him the idea of buying a network switch, as it would definitely solve the problem. The net-tard went back to the IT shop and got himself a network switch. Obviously it did not work either so he bought a router. Problem solved. Why all this hassle? Because he did not snoop around the Internet for appropriate advice and because it was more comfortable to be handed the solution than read about the properties of network hubs, switches and routers. The hubs and switches are great for creating a LAN (well, switches, as hubs are extinct in my opinion). The connection between the computers is stable and the transfer rates are high (the dual-speed hubs supported speeds of even 100Mb). The trouble with the hubs is that you cannot connect two computers to the Internet with it. You will also need another network adapter installed on one of the computers in order to get the Internet connection from the modem. This way, the computer with the Internet connection will function as a gateway for the other one and share the WAN connection. The same happens with network switches. They also need a gateway for Internet connection sharing. The difference is that while hubs operate using a broadcast model (in a larger network, when two computers communicate with each other, the hub will pass through all the traffic of the network), switches can determine the individual traffic and send the data only to the computer that needs it. This is because of the virtual circuit model used. To put it simpler, switches do not have a big mouth and keep the "conversation" between the computers involved. In the case of the switches, the data packets are inspected the minute they are received in order to detect the source and destination. After the sender and receiver have been established, the switch will forward the packets accordingly. Routers represent the smartest way of connecting an entire LAN to the Internet. You need no supplementary network cards (it is a layer 3 gateway itself) and it is highly configurable for protecting your LAN. Nowadays, routers provide DHCP and proxy support. More than this, the routers offer integrated firewalls for protecting your LAN. A huge step in networking has been made with routers. This is the most convenient device to connect the home network to the Internet without much hassle. All you need is some minimum information from your ISP (global IP address, DNS, gateway address) and you are done. And as most ISPs have DHCP servers, all this data will be appended to your router automatically without you making any modification. The features incorporated in the router include creating DMZs (demilitarized zones - a network between LAN and WAN) which is a great way of protecting the data in the SOHO network. Illegal access to your network stops in the DMZ and there will be no damage. As switches and routers have very close prices, in SOHO networks it is simpler to have the computers directly connected to a router. With the expansion of Wi-Fi technology and the incorporated access points in the routers, things are getting less and less complicated and setting up a home network has become a trivial task. The bottom line is that the aforementioned user in distress should have looked better before buying first the hub (I can't imagine where he could find one), then the switch, to ultimately find the appropriate device he needed, the router. For a two computer LAN, a router will do just fine and you won't get a headache configuring it. As for wireless networking support of routers, I stand by my opinion and choose the wired alternative for its stability and inexpensiveness.