
IEEE 802.1p

Folks that are in the market for a new switch or router with switch ports for their home network will find the specification sheets filled lists of standards that the devices support. Among them might very well be IEEE 802.1p.

IEEE 802.1p is designed to allow switches to prioritize traffic (voice, video, data, etc) as well as perform dynamic multicast filtering. The 802.1p header has a 3 bit prioritization field that provides for 8 traffic classes, for which the IEEE has made the following recommendations. Seven, the highest priority, should be used for network-critical traffic such as routing information and routing table updates. Six and five are for delay sensitive applications, like voice and video, while four through one provide for controlled-load applications such as streaming multimedia and "business critical" applications down to "loss eligible" traffic. Value zero is used as a "best effort" default and is used automatically if no other value is present.

The standard is an extension of 802.1Q VLAN tagging and works with that standard. VLANs are created to secure traffic and filter it. The VLAN tag consists of two parts - a 12 bit VLAN ID and the 802.1p's 3 bit prioritization field.

IEEE 802.1p can be used not only on your home LAN, but also in tandem with newer business Ethernet services that are available from a number of service providers. If you need speed - and want to control how your bandwidth is used - especially if you're using IP voice and video - IEEE 802.1p is a standard you'll need to know about, and use!