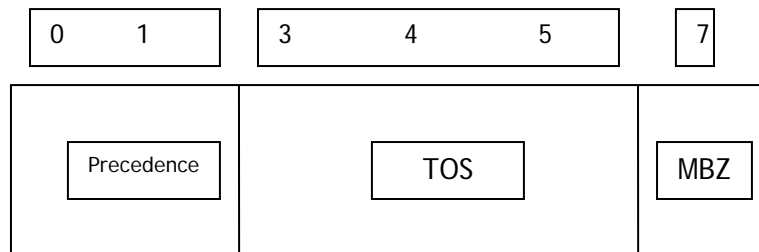

Type of Service (TOS)

Why it's on that new VoIP router you just purchased

You've just purchased a new home router that supports VoIP so you can "make the leap" to Voice over IP. But it has something on it for "quality of service" purposes, called Type of Service or (TOS) support. Why is that?

Type of Service or TOS is part of the Internet Protocol header. Developed by the International Engineering Task Force (IETF) in 1992, TOS is defined by RFC (Request for Comment) 1349 (updates 1248, 1247, 1195, 1123, 1122, 1060, 791). TOS is a facility that applications can use to tell the Internet Layer about how a particular packet should be handled. Basically, TOS tells the Internet layer which packets are more "important" or have precedence over other packets.

The TOS octet in the IP header consists of three fields:



The Precedence field communicates the importance of the packet, the TOS field how the network should decide to handle tradeoffs between throughput, delay, reliability and most and the MBZ (must be zero) field is unused.

There are 5 basic values for the TOS field. They are:

Minimize delay	1000
Maximize throughput	0100
Maximize reliability	0010
Minimize monetary cost	0001
Normal service	0000

So, in your new VoIP router, the importance of TOS support is that the router can tell the network to either minimize delay (voice is VERY delay sensitive) or maximize throughput (again to ensure better voice quality), while marking data packets (email, file transfer) for normal delivery.

There are more robust (and complex) methods of applying service quality within an IP-based network, however, you'll find that most "home" routers employ this simple, yet effective, scheme for telling the network that voice packets should be handled differently than data packets