PPPoE

PPP over Ethernet (PPPoE)

PPP over Ethernet is a popular encapsulation method for IP packets in the ADSL world. It can be used when a computer or router/NAT is connected to an ADSL (Asymmetric Digital Subscriber Line) modem over Ethernet. While both Ethernet and ADSL are naturally "always on" technologies, the designers of ADSL service decided that a login/logout procedure was desired for broadband. Maybe this was to preserve the experience of "logging on to the Internet" that home users were used to in the dialup/modem world. It also permits multiple logically separate connections over the same ADSL modem, and enables time-based charging schemes.

In the ADSL world, PPPoE sessions are typically transported through a carrier's access network as ATM (Asynchronous Transfer Mode) VCs (virtual circuits).

The principal performance issue with PPPoE is that the use of PPP encapsulation reduces the available MTU to 1492 bytes, which can cause connectivity issues when Path MTU Discovery fails. For this reason, ADSL router/NAT devices often re-write TCP's *maximum segment size* (MSS) field to a lower value.

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