Controlling UDP Fragmentation

Marten Seemann, IETF 122

draft-seemann-tsvwg-udp-fragmentation

Socket Options

	Linux	macOS	Windows
IPv4	**IP_MTU_DISCOVER**: IP_PMTUDISC_PROBE or IP_PMTUDISC_DO	**IP_DONTFRAG**: 1	**IP_DONTFRAGMENT**: 1
IPv6	**IPV6_MTU_DISCOVER**: IPV6_PMTUDISC_PROBE or IP_PMTUDISC_DO	**IPV6_DONTFRAG** 1	**IPV6_DONTFRAG** 1
dual stack	both options apply independently	**IPV6_DONTFRAG** controls both IPv4 and IPv6	controlled by the IP_DONTFRAGMENT option

Linux: IP_PMTUDISC_PROBE vs IP_PMTUDISC_DO

IP_PMTUDISC_PROBE / IPV6_PMTUDISC_PROBE:

- prevent fragmentation by the sender, and set DF on IPv4
- **enable** processing of ICMP packets by the kernel

IP_PMTUDISC_DO / IPV6_PMTUDISC_PROBE:

- prevent fragmentation by the sender, and set DF on IPv4
- **disable** processing of ICMP packets by the kernel