

All Zones *with* DNSSEC via LGL

Figure 10: UDP server EDNS OK responses. The chart displays the percentage of UDP server EDNS OK responses for different EDNS versions and path lengths. The x-axis shows three groups of paths for EDNS versions 0:512, 0:1232, and 0:4096. The y-axis shows the percentage of responses (0% to 100%) and the number of samples (0 to 40K). The legend indicates that the grey bars represent 'UDP server edns ok'.

EDNS Version	Path Length	EDNS OK (%)	Number of Samples (K)
EDNS0:512	Path 1280 (no PMTUD)	~50%	~20K
	1280 (no PMTUD)	~50%	~20K
	1280 (no PMTUD)	~50%	~20K
	1500	~50%	~20K
EDNS0:1232	Path 1280 (no PMTUD)	~35%	~15K
	1280 (no PMTUD)	~35%	~15K
	1280 (no PMTUD)	~35%	~15K
	1500	~35%	~15K
EDNS0:4096	Path 1280 (no PMTUD)	~35%	~15K
	1280 (no PMTUD)	~35%	~15K
	1280 (no PMTUD)	~35%	~15K
	1500	~35%	~15K
EDNS0:512	Path 1280 (no PMTUD)	~50%	~35K
	1280 (no PMTUD)	~50%	~35K
	1280 (no PMTUD)	~50%	~35K
	1500	~50%	~35K
EDNS0:1232	Path 1280 (no PMTUD)	~35%	~30K
	1280 (no PMTUD)	~35%	~30K
	1280 (no PMTUD)	~35%	~30K
	1500	~35%	~30K
EDNS0:4096	Path 1280 (no PMTUD)	~35%	~30K
	1280 (no PMTUD)	~35%	~30K
	1280 (no PMTUD)	~35%	~30K
	1500	~35%	~30K

IPv6

Dual-Stack

Figure 10: UDP server EDNS OK responses. The chart displays the percentage of UDP server EDNS OK responses for different EDNS versions and path lengths. The x-axis shows EDNS versions (0:512, 0:1232, 0:4096) and path lengths (1500, 1280, 1280 (no PMTUD), 1280 (no PMTUD)). The y-axis shows the percentage of responses (0% to 100%) and the number of samples (0 to 40K). The legend indicates 'UDP server edns ok'.

EDNS Version	Path Length	Percentage of UDP server EDNS OK responses	Number of samples
EDNS0:512	Path 1500	~50%	~20K
	Path 1280	~50%	~20K
	Path 1280 (no PMTUD)	~50%	~20K
	Path 1280 (no PMTUD)	~50%	~20K
EDNS0:1232	Path 1500	~35%	~15K
	Path 1280	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
EDNS0:4096	Path 1500	~35%	~15K
	Path 1280	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
EDNS0:512	Path 1500	~50%	~30K
	Path 1280	~50%	~30K
	Path 1280 (no PMTUD)	~50%	~30K
	Path 1280 (no PMTUD)	~50%	~30K
EDNS0:1232	Path 1500	~35%	~15K
	Path 1280	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
EDNS0:4096	Path 1500	~35%	~15K
	Path 1280	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K
	Path 1280 (no PMTUD)	~35%	~15K

All Zones *with* DNSSEC not via LGI

Protocol	EDNS0 Size	Path 1280 (no PMTU)	Path 1280 (no PMTU)	Path 1500 (no PMTU)
IPv4	512	~50%	~50%	~50%
	1232	~45%	~45%	~45%
	4096	~45%	~45%	~45%
IPv6	512	~30%	~30%	~30%
	1232	~30%	~30%	~30%
	4096	~30%	~30%	~30%
Dual-Stack	512	~80%	~80%	~80%
	1232	~75%	~75%	~75%
	4096	~75%	~75%	~75%

IPv6

Dual-Stack

Figure 10 is a bar chart showing the percentage of paths with PMTU=1500 for IPv4, IPv6, and Dual-Stack configurations across different EDNS versions and path lengths. The Y-axis represents the percentage (%), ranging from 0% to 100%. The X-axis is divided into three main sections: IPv4, IPv6, and Dual-Stack. Each section contains three sub-sections for EDNS versions: EDNS0:512, EDNS0:1232, and EDNS0:4096. Within each EDNS version, there are three path lengths: Path 1280 (no PMTUD), Path 1280 (no PMTUD), and Path 1500. The bars are color-coded: light blue for Path 1280 (no PMTUD) and light orange for Path 1500. The chart shows that for IPv4 and IPv6, the percentage of paths with PMTU=1500 is generally low (around 25-50%) for all configurations. For Dual-Stack, the percentage is higher, ranging from approximately 30% to 80%.

Configuration	EDNS Version	Path Length / <th>Percentage (%)</th>	Percentage (%)
IPv4	EDNS0:512	Path 1280 (no PMTUD)	~50%
		Path 1280 (no PMTUD)	~50%
		Path 1500	~50%
	EDNS0:1232	Path 1280 (no PMTUD)	~35%
		Path 1280 (no PMTUD)	~35%
		Path 1500	~35%
	EDNS0:4096	Path 1280 (no PMTUD)	~35%
		Path 1280 (no PMTUD)	~35%
		Path 1500	~35%
IPv6	EDNS0:512	Path 1280 (no PMTUD)	~40%
		Path 1280 (no PMTUD)	~40%
		Path 1500	~40%
	EDNS0:1232	Path 1280 (no PMTUD)	~25%
		Path 1280 (no PMTUD)	~25%
		Path 1500	~25%
	EDNS0:4096	Path 1280 (no PMTUD)	~25%
		Path 1280 (no PMTUD)	~25%
		Path 1500	~25%
Dual-Stack	EDNS0:512	Path 1280 (no PMTUD)	~80%
		Path 1280 (no PMTUD)	~80%
		Path 1500	~80%
	EDNS0:1232	Path 1280 (no PMTUD)	~75%
		Path 1280 (no PMTUD)	~75%
		Path 1500	~75%
	EDNS0:4096	Path 1280 (no PMTUD)	~75%
		Path 1280 (no PMTUD)	~75%
		Path 1500	~75%

All Zones without DNSSEC via LGI

[illegible]

IPv6

Dual-Stack

[illegible]

All Zones without DNSSEC not via LGI

Figure 10 consists of three bar charts for IPv4, IPv6, and Dual-Stack traffic. Each chart shows the percentage of packets with a PMTU of 1500 for three destination IP addresses: EDNS0:512, EDNS0:1232, and EDNS0:4096. For each IP address, four paths are shown: Path 1280, Path 1280 (w/ PMTUD), Path 1280 (w/ PMTUD), and Path 1500. The y-axis represents the percentage of packets (0% to 100%) and the x-axis represents the path length. The legend indicates that the bars represent the percentage of packets with a PMTU of 1500.

Traffic Type	Destination IP	Path	% of Packets with PMTU = 1500
IPv4	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
IPv6	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
Dual-Stack	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%

IPv6

Dual-Stack

Figure 10 consists of three bar charts for IPv4, IPv6, and Dual-Stack traffic. Each chart shows the percentage of packets with a PMTU of 1500 for three destination IP addresses: EDNS0:512, EDNS0:1232, and EDNS0:4096. For each IP address, four paths are shown: Path 1280, Path 1280 (w/ PMTUD), Path 1280 (w/ PMTUD), and Path 1500. The y-axis represents the percentage of packets (0% to 100%) and the x-axis represents the path length. The legend indicates that the bars represent the percentage of packets with a PMTU of 1500.

Traffic Type	Destination IP	Path	% of Packets with PMTU = 1500
IPv4	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
IPv6	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
Dual-Stack	EDNS0:512	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:1232	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%
	EDNS0:4096	Path 1280	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1280 (w/ PMTUD)	~60%
		Path 1500	~60%