

I believe that the reason local DNS and Google DNS are able to outperform my DNS resolver is due to DNS caching. Google DNS was instant on 6 out of the 10 sites which most likely is due to Google's high performance caching. Since my resolver doesn't utilize any caching and starts from the root server every time, it has higher query times than the other two. The local DNS has consistently low query times (most likely due to caching as well) but none as instant as Google's.

In conclusion, Google likely has very high performance DNS caching that allows for instant times on many domain queries, local DNS also utilizing caching but not is not as performant as Google's, and my DNS resolver, due to not implementing any form of caching, has much higher query times.