INVENTION DISCLOSURE

1. **Invention Title: DHCPv6 Router and Host Distinction**

2. **Invention Summary.**
This invention uses information from DHCPv6 requests to determine if the requestor is a router or a host.

3. **Invention Description**.

a. Describe the invention in detail.
When a DHCPv6 server receives a DHCP request with both an IA_NA and IA_PD request, it will assume that the requestor is acting as a router and provide IA_NA response (IPv6 address) from a router range of addresses. When a DHCPv6 server receives a DHCP request which contains only an IA_NA option, it will assume that the requesting device is a host and provide an IA_NA response (IPv6 address) from a host range of addresses.

b. Why was the invention developed? What problem(s) does the invention solve? How is it better?
This invention was developed while we were developing the "Overlay" home network when we needed to find a way to distinguish between routers and hosts at the DHCP server level in order to provide different types of devices addresses from different ranges or types.

c. Briefly outline the potential commercial value and customers of the invention.
There are several immediate use cases:

1) An MSO who wants to hand IPv6 out only to individual hosts but not to routers.
2) An MSO who wants to hand out CGN addresses only to hosts but not to routers.
3) An in-home overlay network that builds a ULA network between routers and then must hand GUA to hosts.

4. **HOW is this invention different from existing products, processes, systems?**
Today there is no method for a DHCP server to distinguish between routers and hosts when making address assignments.