

## Joanne Wall

---

**From:** [REDACTED]  
**Sent:** Tuesday, April 12, 2016 12:56 PM  
**To:** Scott Jordan; Jessica Almond; Jennifer Tatel; Lisa Hone  
**Subject:** FW: IP addresses, domain names and CPNI

Thank you folks. (b) (5)

T

**From:** vinton cerf [mailto:(b) (6)]  
**Sent:** Tuesday, April 12, 2016 12:54 PM  
**To:** [REDACTED]  
**Subject:** Re: IP addresses, domain names and CPNI

ah, that's a different interpretation (which IP addresses did the customer visit) - i see how this can be treated as CPNI. I thought the customer's IP address was the target of the policy and that's no longer very precise. The same might be said for the IP addresses the consumer visits but I can see that binding any such list to a particular subscriber seems like a privacy issue.

v

On Tue, Apr 12, 2016 at 12:46 PM, [REDACTED]@fcc.gov> wrote:

Vint –

Sorry to be slow in getting back to you. Things have been popping here.

The issue about which we are asking in the NPRM is what information should be considered CPNI (defined as info related to a telecommunications service that is made available to the carrier by the customer by virtue of the carrier-customer relationship).

The issue is not about whether an IP address or a domain name is public, but rather the confidentiality of the list of IP addresses and domain names that a customer visits. That's the telephone analogy that I use; that currently the list of telephone numbers that a customer calls is treated as CPNI. What the NPRM proposes to do is to treat the list of IP addresses and domain names that a customer visits as CPNI if a broadband ISP collects them from a customer's network traffic.

As always, I appreciate your thoughts. I hope this helps

T

**From:** vinton cerf [mailto:(b) (6)]  
**Sent:** Friday, April 08, 2016 10:45 AM  
**To:** \*\* \*\*/@fcc.gov>  
**Subject:** IP addresses, domain names and CPNI

Tom,

on the surface this makes no sense to me. IP addresses are not like telephone numbers and domain names are even farther afield - unless they are personal identifiers like joeblow@info and even then they are public information - how can they possibly be CPNI?

this is what I am reacting to:

Here's a link to the docket page: [https://apps.fcc.gov/edocs\\_public/Query.do?numberFld=16-39&numberFld2=&docket=&dateFld=&docTitleDesc=](https://apps.fcc.gov/edocs_public/Query.do?numberFld=16-39&numberFld2=&docket=&dateFld=&docTitleDesc=)

---

1. *Internet Protocol (IP) Addresses and Domain Name Information.* We propose to consider both source and destination IP addresses as CPNI in the broadband context.[1] An IP address is the routable address for each device on an IP network,[2] and BIAS providers use the end user's and edge provider's IP addresses to route data traffic between them.[3] As such, IP addresses are roughly analogous to telephone numbers in the voice telephony context, and the Commission has previously held telephone numbers dialed to be CPNI.[4] Further, our CPNI rules for TRS providers recognize IP addresses as call data information.[5] IP addresses are also frequently used in geo-location.[6] As such, we believe that we should consider IP addresses to be "destination" and "location" information under Section 222(h)(1)(A).[7] Similarly, we propose to consider other information in Internet layer protocol headers to be CPNI in the broadband context, because they may indicate the "type" and "amount of use" of a telecommunication service. We seek comment on this proposed interpretation.

2. Similarly, we propose to consider the domain names with which an end user communicates CPNI in the broadband context. Domain names (e.g., "[www.fcc.gov](http://www.fcc.gov)") are common monikers that the end user uses to identify the endpoint to which they seek to connect. Domain names also translate into IP addresses, which we propose to consider CPNI. We therefore propose to treat domain names as destination and location information. We seek comment on this proposed interpretation.

---

[1] As discussed further below, IP addresses would also fall under our proposed definition of PII. *See infra* para. 62.

[2] *See* Internet Engineering Task Force, The Internet Numbers Registry System, RFC 7020 (2013), <https://tools.ietf.org/html/rfc7020> (discussing non-reserved globally unique unicast IP addresses assigned through the Internet Numbers Registry System).

[3] *See, e.g.,* Kurose & Ross, *supra* n. 65, at 130, 331-63.

[4] *See* 2007 CPNI Order, 22 FCC Rcd at 6931, para. 5.

[5] 47 CFR § 64.5103(c).

[6] A BIAS provider is inherently capable of geo-locating an IP address; in the case of fixed broadband Internet access service, the provider knows the customer's physical address, and in the case of mobile broadband Internet access service, the provider knows the geo-location of the cell towers to which the customer's device connects and can use this to determine the customer's device location.

[7] *See* CDT White Paper.