

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent of: Munger *et al.*
U.S. Patent No.: 7,490,151 Attorney Docket No.: 38868-0006IP1
Issue Date: Feb. 10, 2009
Appl. Serial No.: 10/259,494
Filing Date: Sep. 30, 2002
Title: ESTABLISHMENT OF A SECURE COMMUNICATION LINK BASED
ON A DOMAIN NAME SERVICE (DNS) REQUEST

DECLARATION OF DR. ROCH GUERIN

1. My name is Dr. Roch Guerin. I am the chair of the Computer Science & Engineering department at Washington University in St. Louis. I have been asked to offer technical opinions relating to U.S. Patent No. 7,490,151, and prior art references relating to its subject matter. My current *curriculum vitae* is attached and some highlights follow.

2. I earned my diplôme d'ingénieur (1983) from École nationale supérieure des télécommunications, in Paris, France. Thereafter, I earned my M.S. (1984) and PhD (1986) in electrical engineering from The California Institute of Technology in Pasadena, California.

3. Prior to becoming a professor in engineering, I held various positions at the IBM T.J. Watson Research Center. Specifically, from 1986 to 1990, I was a research staff member within the Communication Department, where I worked to design and evaluate high-speed switches and networks. From 1990 to 1991, I was a research staff member within the IBM High Performance Computing and Communications Department, where I worked to develop and deploy an integrated broadband network. From 1992 to 1997, I was the manager of Broadband Networking within IBM's Security and Networking Systems Department, where I led a group of researchers in the area of design, architecture, and analysis of broadband networks. One of the projects on which I worked, for example, led to U.S. Patent No. 5,673,318, which regards "[a]

method and system for providing data authentication, within a data communication environment, in a manner which is simple, fast, and provably secure,” and of which I am a named inventor.

See U.S. Patent No. 5,673,318, abstract. From 1997 to 1998, I was the manager of Network Control and Services within IBM’s Security and Networking Systems Department, where I led a department responsible for networking and distributed applications, including topics such as advance reservations, policy support, including for Resource Reservation Protocol (RSVP), quality of service (QoS) routing , and security, and integrated switch and scheduling designs.

4. I have been a professor of engineering for the past fifteen years. As such, but prior to becoming the chair of the Computer Science & Engineering department at Washington University in St. Louis, I was the Alfred Fitler Moore Professor of Telecommunications Networks (an honorary chair) in the Department of Electrical and Systems Engineering at the University of Pennsylvania. As a professor of engineering, I have taught many courses in networking, including Advanced Networking Protocols (TCOM 502), which addressed, among other things, virtual private networks.

5. I have authored over fifty journal publications, including “On the Feasibility and Efficacy of Protection Routing in IP Networks,” which was honored with the IEEE INFOCOM 2010 Best Paper Award. I have been named a Fellow by both the IEEE and ACM, and, from 2009 to 2012, I was the Editor-in-Chief of the IEEE/ACM Transactions on Networking. Furthermore, I am a named inventor on over thirty issued U.S. patents.

6. I am familiar with the content of U.S. Patent No. 7,490,151 (the “‘151 patent”). In addition, I have considered the various documents referenced in my declaration as well as additional background materials. I have also reviewed certain sections of the prosecution history of the ‘151 patent, the prosecution histories of reexamination control numbers 95/001,697 and

95/001,714; and the claim construction orders from *VirnetX Inc. v. Microsoft Corp.*, Docket No. 6:07CV80 (E.D. Tex.) and *VirnetX Inc. v. Cisco Systems, Inc. et al.*, Docket No. 6:10cv417 (E.D. Tex.).

7. Counsel has informed me that I should consider these materials through the lens of one of ordinary skill in the art related to the '151 patent at the time of the invention, and I have done so during my review of these materials. I believe one of ordinary skill as of February 15, 2000 (the priority date of the '151 patent) would have a Master's degree in computer science or computer engineering, or in a related field such as electrical engineering, as well as about two years of experience in computer networking and in some aspect of security with respect to computer networks. I base this on my own personal experience, including my knowledge of colleagues and others at the time.

8. I have no financial interest in either party or in the outcome of this proceeding. I am being compensated for my work as an expert on an hourly basis. My compensation is not dependent on the outcome of these proceedings or the content of my opinions.

9. My opinions, as explained below, are based on my education, experience, and background in the fields discussed above.

10. This declaration is organized as follows:

- I. Brief Overview of the '151 Patent
- II. Terminology
- III. Aventail and Combinations Based on Aventail
- IV. Kiuchi and Combinations Based on Kiuchi
- V. Publication and Authenticity of Requests For Comment (RFCs)
- VI. Conclusion

I. Brief Overview of the ‘151 Patent

11. The ‘151 patent is generally directed to a “establishment of a secure communication link based on a domain name service (DNS) request.” Ex. 1001, Title. The ‘151 patent includes 16 claims, of which claims 1, 7, and 13 are independent.

12. A section of the ‘151 patent’s specification, titled “B. Use of a DNS Proxy to Transparently Create Virtual Private Networks,” describes “the automatic creation of a virtual private network (VPN) in response to a domain name server look-up function,” with reference to FIGS. 25-27. Ex. 1001 at 36:58-60. In the example embodiment, the ‘151 patent describes that a “specialized DNS server traps DNS requests and, if the request is from a special type of user (e.g., one for which secure communication services are defined), the server does not return the true IP address of the target node, but instead automatically sets up a virtual private network between the target node and the user.” Ex. 1001 at 37:33-38.

13. In the case of standard “DNS requests that are determined to not require secure services (e.g., an unregistered user), the DNS server transparently ‘passes through’ the request to provide a normal look-up function.” Ex. 1001, at 37:43-46. On the other hand, if access to a secure site has been requested, the system described in the ‘151 patent “determines whether the user has sufficient security privileges to access the site,” and, if so, transmits a message requesting that a virtual private network be created between the client and the secure target site. *See* Ex. 1001 at 37:60 to 38:2. The ‘151 patent describes that the various functions of the DNS proxy, DNS server, and gatekeeper can be performed on the same or different machines. *See* Ex. 1001 at 37:54-56, 38:22-24, 38:30-32.

II. Terminology

14. I have been informed that claim terminology must be given the broadest reasonable interpretation during an IPR proceeding. I have been informed that this means the claims should be interpreted as broadly as their terms reasonably allow, but that such interpretation should not be inconsistent with the patent's specification. I have been informed that this may yield interpretations that are broader than the interpretation applied during a District Court proceeding, such as the pending *VirnetX Inc. v. Microsoft Corp.* litigation

15. I have been informed that it would be useful to provide some guidance in this proceeding with respect to certain terms, and I have been asked to consider the term below and its corresponding construction. As part of that, I considered this term's context within the claim, use within the specification, and my understanding of how one of ordinary skill in the art would understand the term around the time of the purported invention under the broadest reasonable construction standard.

16. In particular, I have considered whether a broadest reasonable construction of "client" would be broad enough to cover "a computer or program from which a data request to a server is generated." I believe that it would, since such an interpretation is not inconsistent with the '151 patent's specification. Indeed, the '151 application describes both "client computers" and "client applications." *See* Ex. 1001 at 15:61-62, 37:1-3. Moreover, the proposed interpretation is consistent with the understanding one of ordinary skill in the art would ascribe to this term when looking for the broadest reasonable construction. *See* M. Chatel, *Classical versus Transparent IP Proxies*, RFC 1919 at 1, 5 (Mar. 1996); *see also* R. Fielding *et al.*, *Hypertext Transfer Protocol -- HTTP/1.1*, RFC 2068 at 10 (Jan. 1997).

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