# IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

| | | |
|---|---|---|
| In re Patent of: | Smethurst et al. | |
| U.S. Patent No.: | 7,224,668 | |
| Issue Date: | May 29, 2007 | Atty Docket No.: 40963-0006IP2 |
| Appl. Serial No.: | 10/307,154 | |
| Filing Date: | Nov. 27, 2002 | |
| Title: | CONTROL PLANE SECURITY AND TRAFFIC FLOW MANAGEMENT | |

## DECLARATION OF DR. BILL LIN

1. My name is Dr. Bill Lin. I am a professor of electrical and computer engineering at the University of California, San Diego. I understand that I am submitting a declaration in connection with Inter Partes review ("IPR") proceedings before the United States Patent and Trademark Office for U.S. Patent Number 7,224,668 ("the '668 Patent").

2. I have been retained on behalf of Arista Networks, Inc. ("Arista"). My compensation is not based on the outcome of my opinions.

3. I have reviewed the '668 Patent, including the claims of the patent in view of the specification and the file history. In addition, I have reviewed the following documents:

- U.S. Patent No. 6,246,680 ("Frazier")
- European Patent App. Publication No. 1,128,609 A2 ("Cherian")
- Newton's Telecom Dictionary, CMP Books, 17th ed. 2001.
- U.S. Patent No. 6,460,146 ("Moberg")
- Joe Habraken, Practical Cisco Routers, QUE Corporation, 1999 ("Habraken")
- George C. Sackett, Cisco Router Handbook, McGraw-Hill, 2000 ("Cisco Router Handbook")
- U.S. Patent No. 7,860,999 ("Lavian")
- U.S. Patent No. 7,127,526 ("Duncan")
- U.S. Patent No. 6,876,654 ("Hegde")
- IETF RFC 792, "Internet Control Message Protocol," retrieved from http://www.rfc-editor.org/rfc/rfc792.txt ("IETF RFC 792")

- IETF RFC 1812, "Requirements for IP Version 4 Routers," retrieved from http://www.rfc-editor.org/rfc/rfc1812.txt ("IETF RFC 1812")

4. My curriculum vitae ("CV") is provided as an Exhibit.

5. I received a Bachelor of Science in Electrical Engineering and Computer Sciences from University of California, Berkeley in May 1985; a Masters of Science in Electrical Engineering and Computer Sciences from the University of California, Berkeley in May 1988; and a Ph.D. in Electrical Engineering and Computer Sciences from the University of California, Berkeley in May 1991.

6. I served as the Head of Research of the Systems Control and Communications Group of IMEC Research Laboratory, Leuven, Belgium from February, 1992 – December, 1996. I also have served or am currently serving as Associate Editor or Guest Editor on 2 ACM or IEEE journals, an Associate Editor on the International Journal of Embedded Systems, as General Chair on 4 ACM or IEEE conferences, on the Organizing or Steering Committees for 6 ACM or IEEE conferences, and on the Technical Program Committees of over 40 ACM or IEEE conferences.

7. I am a named inventor on five patents in the field of computer networking, and have published over 160 journal articles and conference papers in top-tier venues and publications.

8. The '668 Patent issued from U.S. application number 10/307,154, which was filed on November 27, 2002. The '668 Patent does not include a priority claim. It is therefore my understanding that the filing date of November 27, 2002 (hereinafter the "Critical Date") represents the earliest possible priority date to which the '668 Patent is entitled.

9. A person of ordinary skill in the art as of the Critical Date (hereinafter a "POSITA") would have had a Masters of Science Degree (or a similar technical Masters Degree, or higher degree) in an academic area emphasizing computer networking or, alternatively, a Bachelor Degree (or higher degree) in an academic area emphasizing the design of electrical, computer, or software engineering with several years of experience in computer network engineering and the design of computer networks. Additional education in a relevant field, such as computer science, computer engineering, or electrical engineering, or industry experience may compensate for a deficit in one of the other aspects of the requirements stated above.

10. I am familiar with the knowledge and capabilities of one of ordinary skill in these areas, and notably with designing computer communications networks and computer architecture problems, including the design of data networks, high-performance switches and routers, many-core processors and systems-on-chip, and ASIC chip designs and studying their interaction with people in experimental and real-world environments. Specifically, my experience working with industry, with undergraduate and post-graduate students, with colleagues from academia, and with engineers practicing in industry has allowed me to become directly and personally familiar with the level of skill of individuals and the general state of the art. Unless otherwise stated, my testimony below refers to the knowledge of one of ordinary skill in the fields as of the Critical Date, or before.

11. This declaration is organized as follows:

## I. Brief Overview of the '668 Patent

12. The '668 patent describes an internetworking device, such as a router, that routes packets received at the device towards their destination. An internetworking device 100 of the '668 patent is illustrated in Figure 1:

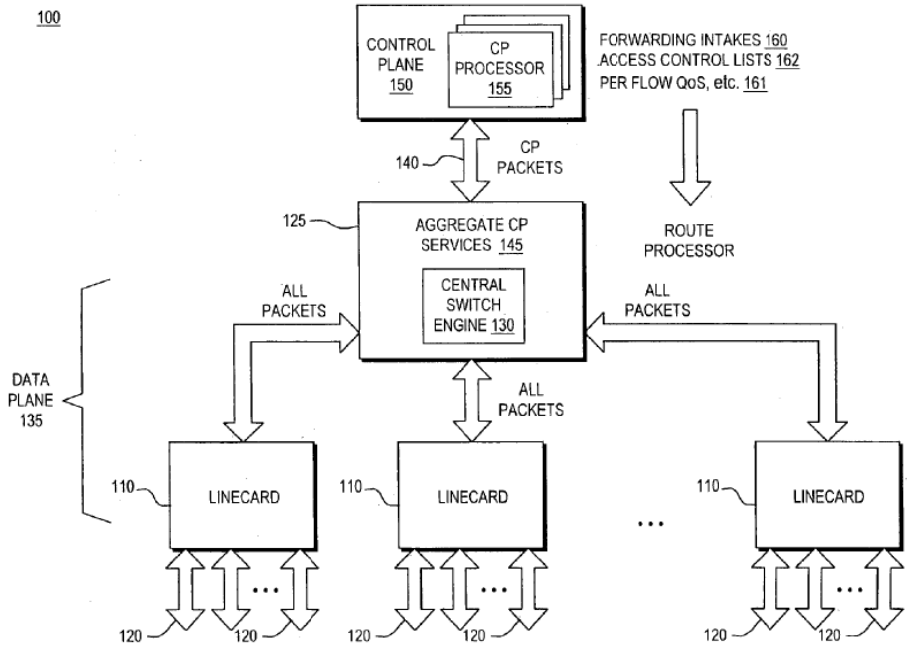


FIG. 1

13. The internetworking device 100 includes two logical components: a data forwarding plane 135 (i.e., data plane) and a control plane 150. The '668 Patent at 3:22-34; 5:5-21. The data plane 135 is composed of physical interface ports 120, line cards 110, and a central switch engine 130. *Id.* at 5:5-9. The data plane 135 passes along, or "forwards," packets received at the port interfaces 120 toward their ultimate destination. *Id.* at 1:54-56; 3:23-26; 5:8-9. The control plane 150 is "a collection of processes" 155 and is responsible for higher layer

functions of the device, such as control and configuration of the internetworking device 100. *Id.* at 1:56-59; 3:26-31; 4:58-61; 5:10-23.

14. The internetworking device 100 applies port services to packets passing through the internetworking device 100. *Id.* at 6:1-44; 6:67-7:14. Port services are a set of policies or rules that are applied to the packets. *Id.* at 4:3-8; 6:4-7; 6:24-27; 9:1-4. Port services may include Quality of Service processing or packet rate-limiting. *Id.* at 4:6-8; 6:4-23. For example, "one policy may be to rate limit Telnet SYN packets to a specific rate that is a tolerable rate determined through a specific hardware configuration." *Id.* at 4:6-8. Port services may be defined using class maps, policy maps, or access control lists. *Id.* at 7:19-20; 7:46-47.

15. The internetworking device applies different port services to different packet types. *Id.* at 3:56-58; 6:16-18; 6:41-43. Some of the packets received by the internetworking device are "normal transit packet[s]," which are destined for other devices connected to the internetworking device. *Id.* at 7:3-8. Other packets, however, are "control plane packets," which are packets that are destined for the control plane and that are used by the control plane to control and configure the internetworking device. *Id.* at 6:57-63; 5:56-58; 7:8-14. For example, "protocol control packets" may be destined for the control plane. *Id.* at 5:30-31; 8:34-49.

16. The internetworking device 100 includes "normal input and output port services" that are applied to normal transit packets. *Id.* at 6:41-43. The internetworking device 100 also includes control plane port services that are specifically for control plane packets. *See id.* at 7:5-14; 9:1-6. These control plane port services are applied only to packets destined to the control plane and not to normal transit packets that are forwarded out of the device. *See, e.g.*, *id.* at 3:56-58; 6:16-18; 6:41-43; 7:5-14.

DOCKET ALARM

# Explore Litigation Insights

Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts

Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research

With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips

Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

## API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

**LAW FIRMS**
Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

**FINANCIAL INSTITUTIONS**
Litigation and bankruptcy checks for companies and debtors.

**E-DISCOVERY AND LEGAL VENDORS**
Sync your system to PACER to automate legal marketing.