

(19) World Intellectual Property Organization
International Bureau



G00002



(43) International Publication Date
26 September 2002 (26.09.2002)

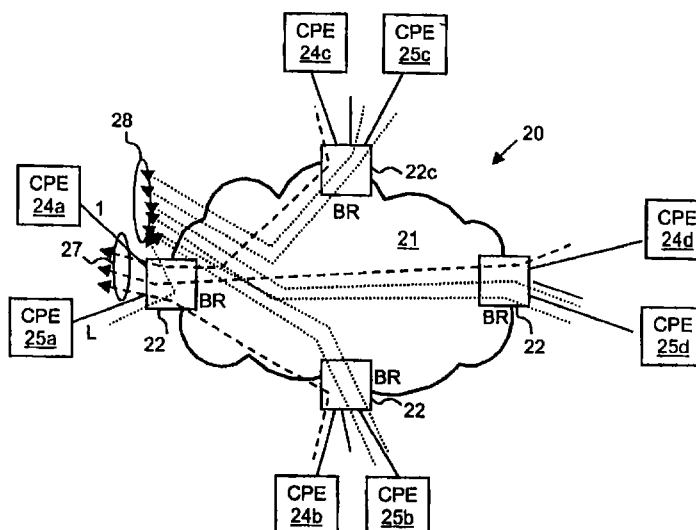
PCT

(10) International Publication Number
WO 02/076029 A1

- (51) International Patent Classification⁷: **H04L 12/28**
- (74) Agent: **GROLZ, Edward, W.**; Scully, Scott, Murphy & Presser, 400 Garden City Plaza, Garden City, NY 11530 (US).
- (21) International Application Number: **PCT/US02/08345**
- (22) International Filing Date: **20 March 2002 (20.03.2002)**
- (25) Filing Language: **English**
- (26) Publication Language: **English**
- (30) Priority Data:
- | | | |
|------------|-------------------------------|----|
| 60/276,923 | 20 March 2001 (20.03.2001) | US |
| 60/276,953 | 20 March 2001 (20.03.2001) | US |
| 60/276,955 | 20 March 2001 (20.03.2001) | US |
| 10/023,332 | 17 December 2001 (17.12.2001) | US |
- (81) Designated States (*national*): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZM, ZW.
- (84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- (71) Applicant: **WORLDCOM, INC.** [US/US]; 500 Clinton Center Drive, Clinton, MS 39056 (US).
- (72) Inventor: **MCDYSAN, David, E.**; 2159 Astoria Circle #104, Hemdon, VA 20170 (US).
- Published:
— with international search report

[Continued on next page]

(54) Title: **SYSTEM, METHOD AND APPARATUS THAT ISOLATE VIRTUAL PRIVATE NETWORK (VPN) AND BEST EFFORT TRAFFIC TO RESIST DENIAL OF SERVICE ATTACKS**



162162

(57) Abstract: A network architecture (20) in accordance with the present invention includes a communication network that supports one or more network-based Virtual Private Networks (VPNs). The communication network includes a plurality of boundary routers (22a-22d) that are connected by access links to CPE edge routers (24b-24d and 25a-25d) belonging to the one or more VPNs. To prevent traffic from outside a customer's VPN (e.g., traffic from other VPNs or the Internet at large) from degrading the QoS provided to traffic from within the customer's VPN, the present invention gives precedence to intra-VPN traffic over extra-VPN traffic on each customer's access link through access link prioritisation or access link capacity allocation, such that extra-VPN traffic can not interfere with inter-VPN traffic.



A2

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.