

US007385924B1

(12) United States Patent Riddle

(54) ENHANCED FLOW DATA RECORDS INCLUDING TRAFFIC TYPE DATA

- (75) Inventor: Guy Riddle, Los Gatos, CA (US)
- (73) Assignee: Packeteer, Inc., Cupertino, CA (US)
- (*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 952 days.
- (21) Appl. No.: 10/676,383
- (22) Filed: Sep. 30, 2003
- (51) Int. Cl.
- G01R 31/08 (2006.01)
- (52) U.S. Cl. 370/235; 370/252; 370/389
- - See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

4,914,650	А	4/1990	Sriram
5,828,846	A *	10/1998	Kirby et al 709/238
6,003,077	Α	12/1999	Bawden et al.
6,023,456	Α	2/2000	Chapman et al.
6,046,980	А	4/2000	Packer
6,219,050	B1	4/2001	Schaffer
6,285,660	B1	9/2001	Ronen
6,397,359	B1	5/2002	Chandra et al.
6,584,467	B1	6/2003	Haught et al.
6,681,232	B1	1/2004	Sistanizadeh et al.

(10) Patent No.: US 7,385,924 B1

(45) **Date of Patent:** Jun. 10, 2008

6,701,359	B1	3/2004	Calabrez et al.
6,738,352	B1 *	5/2004	Yamada et al 370/238
6,798,763	B1	9/2004	Kimura et al.
6,894,972	B1 *	5/2005	Phaal 370/229
7,120,931	B1 *	10/2006	Cheriton 726/13
7,193,968	B1 *	3/2007	Kapoor et al 370/235
2002/0122427	A1	9/2002	Kamenisky et al.
2002/0143901	A1	10/2002	Lupo et al.
2003/0035365	A1	2/2003	Walsh et al.
2003/0112764	Al	6/2003	Gaspard et al.

* cited by examiner

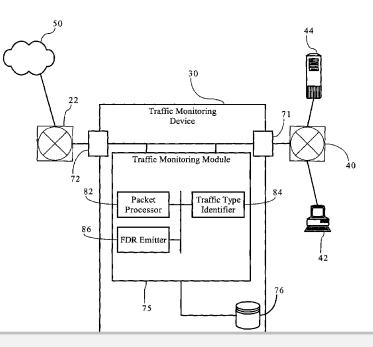
Primary Examiner—Doris H. To

Assistant Examiner—Ian N. Moore (74) Attorney, Agent, or Firm—Mark J. Spolyar

(57) **ABSTRACT**

Methods, apparatuses and systems directed to a flow-based, traffic-classification-aware data collection and reporting system that combine flow-based data collection technologies with enhanced traffic classification functionality to allow for analysis and reporting into aspects of network operations that prior art systems cannot provide. Embodiments provide enhanced views into the operation of computer network infrastructures to facilitate monitoring, administration, compliance and other tasks associated with networks. When a traffic flow terminates, a traffic monitoring device emits a flow data record (FDR) containing measurements variables and other attributes for an individual flow. A data collector gathers the flow data records and enters them into a database. A network management application can then query the database with selected commands to derive reports characterizing operation of the network suitable to diagnose problems or view conditions associated with the network.

26 Claims, 7 Drawing Sheets



D

Α

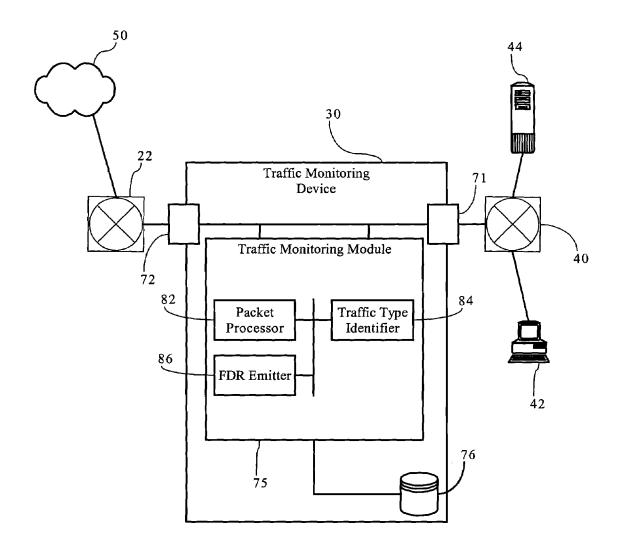
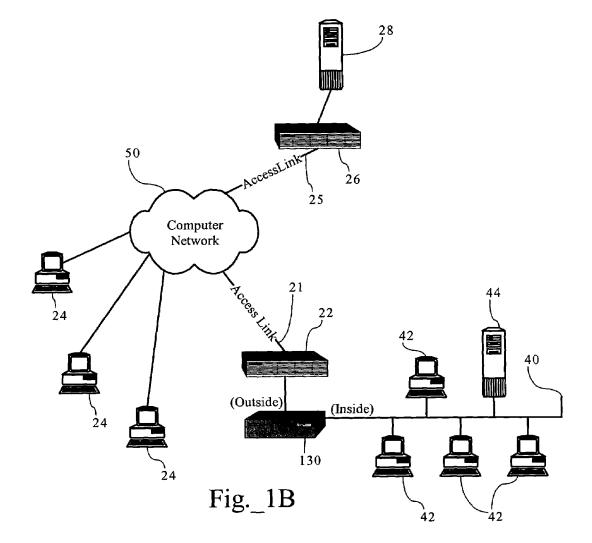


Fig._1A

OCKET LARM Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

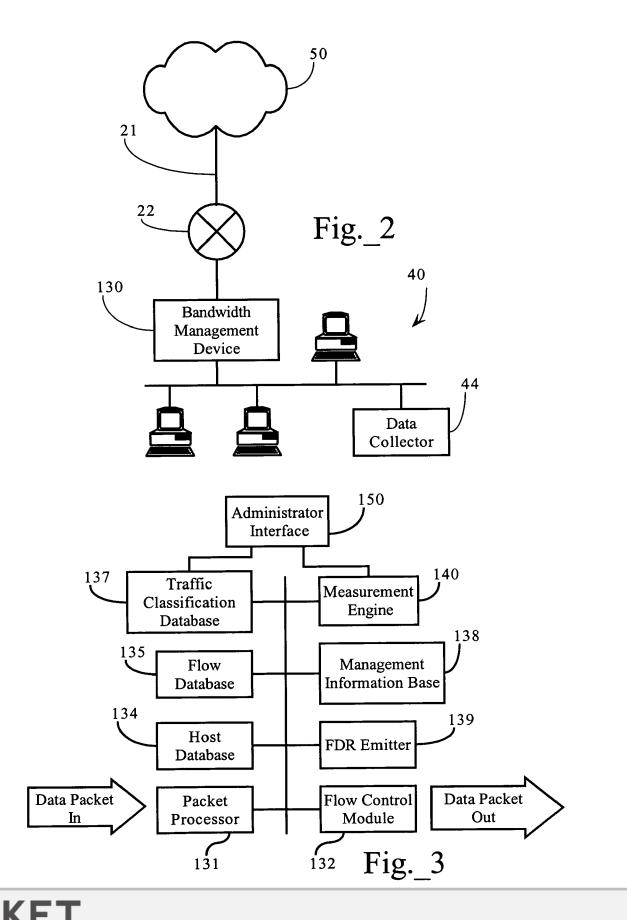


0)(

Δ

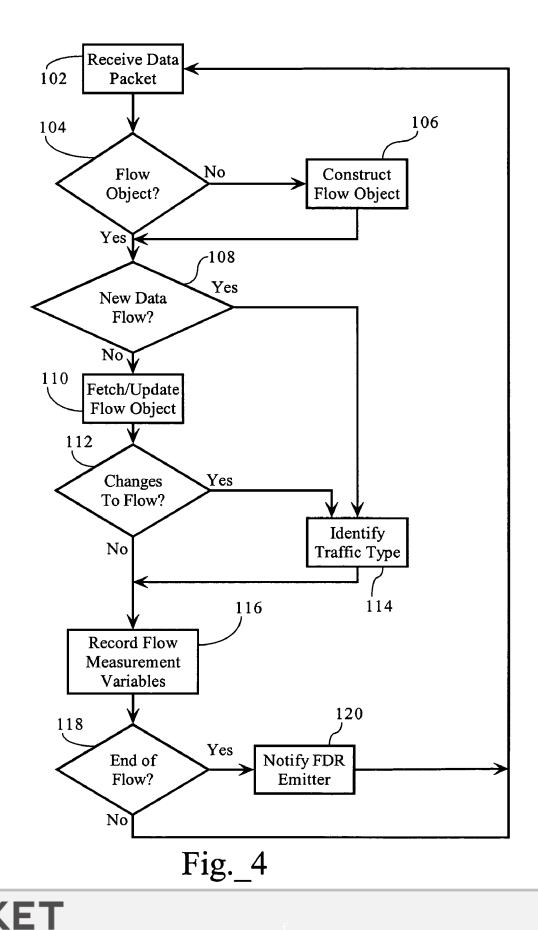
R

Α



R

Α



Find authenticated court documents without watermarks at <u>docketalarm.com</u>.

DOCKET A L A R M



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.