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Blackwell et al.

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(54) **METHOD AND APPARATUS FOR CORRELATION OF EVENTS IN A DISTRIBUTED MULTI-SYSTEM COMPUTING ENVIRONMENT**

OTHER PUBLICATIONS

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Chalmers , Message system, Sep. 8, 1997, p. 1.*
IBM, An Introduction to Messaging and Queuing, 1993, 1995.*
Borland, API guide, 1999.*
Marc Verhiel , MQSeries Standards and Guidelines, Oct. 1, 1999.*
System Engineering, MQSeries Integrator, Jun. 7, 1999.*
"An Introduction to Messaging and Queuing", IBM MQSeries, Jun., 1995, pps. III-VIII, 1-35.
IBM Technical Disclosure Bulletin—Method of Tracing Events in Multi-threaded OS/2 Applications, vol. 36, No. 09A, Sep. 1993-entire article.

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

* cited by examiner

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(51) **Int. Cl.**
G06F 9/00 (2006.01)

(52) **U.S. Cl.** **719/327**

(58) **Field of Classification Search** **703/328;**
719/328

See application file for complete search history.

(57) **ABSTRACT**

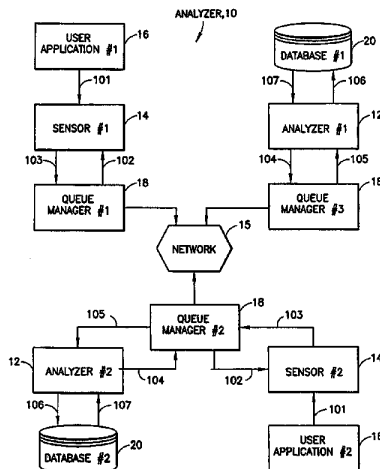
A method and system is disclosed for monitoring an operation of a distributed data processing system. The system can include a plurality of applications running on a plurality of host processors and communicating with one another, such as through a message passing technique. The method includes steps executed in individual ones of the plurality of applications, of (a) examining individual ones of generated API calls to determine if a particular API call meets predetermined API call criteria; (b) if a particular API call meets the predetermined API call criteria, storing all or a portion of the content of the API call as a stored event; (c) processing a plurality of the stored events to identify logically correlated events, such as those associated with a business transaction; and (d) displaying all or a portion of the stored API call content data for the logically correlated events.

(56) **References Cited**

U.S. PATENT DOCUMENTS

5,583,761 A	12/1996	Chou	395/798
5,737,393 A *	4/1998	Wolf	379/88.13
5,768,577 A *	6/1998	Kleewein et al.	707/10
5,857,190 A *	1/1999	Brown	707/10
5,889,518 A *	3/1999	Poreh et al.	345/804
5,941,996 A *	8/1999	Smith et al.	714/47
5,956,507 A	9/1999	Shearer, Jr. et al.	395/674
6,181,364 B1 *	1/2001	Ford	725/32
6,381,606 B1 *	4/2002	Carpenter et al.	707/100
6,484,150 B1 *	11/2002	Blinn et al.	705/26
6,625,117 B1 *	9/2003	Chen et al.	370/227

36 Claims, 18 Drawing Sheets



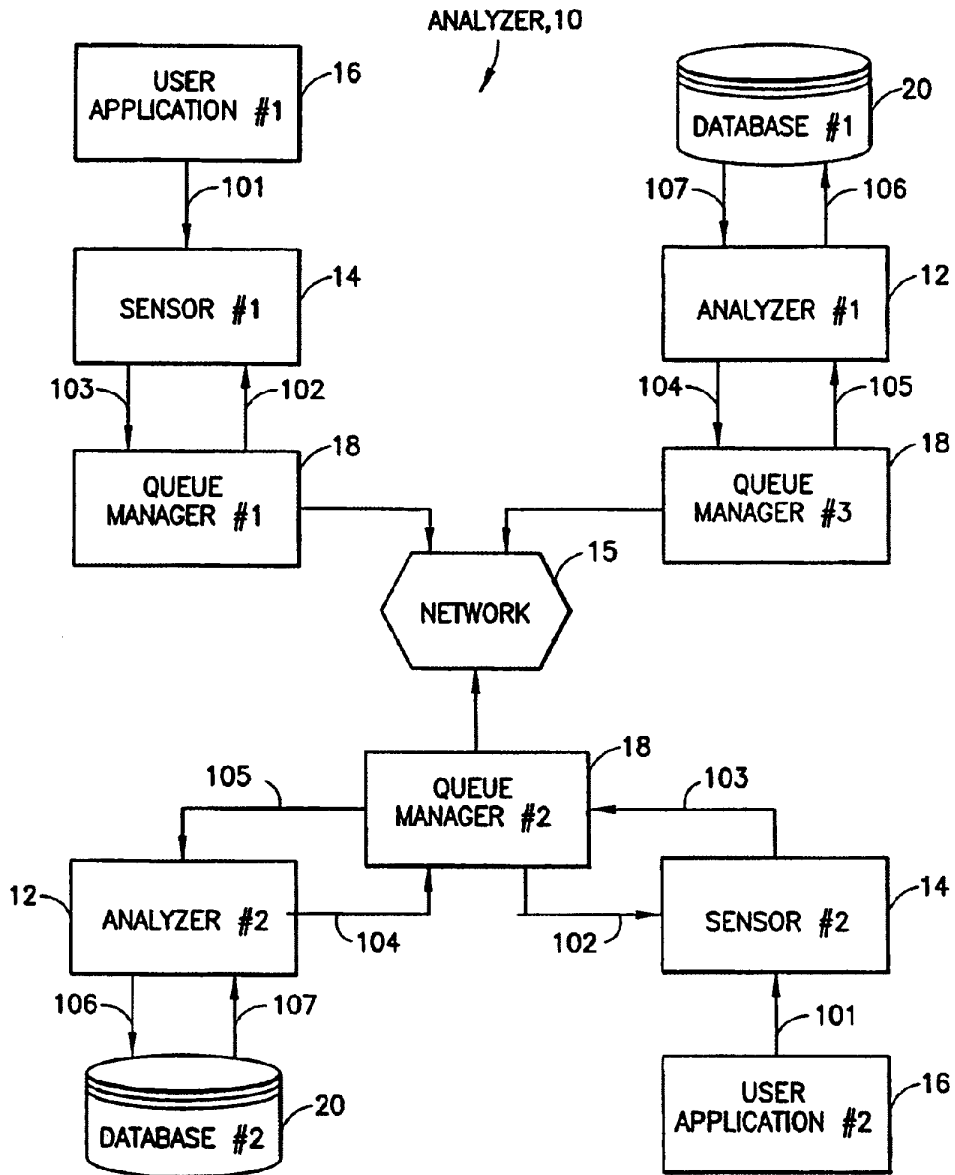


FIG. 1

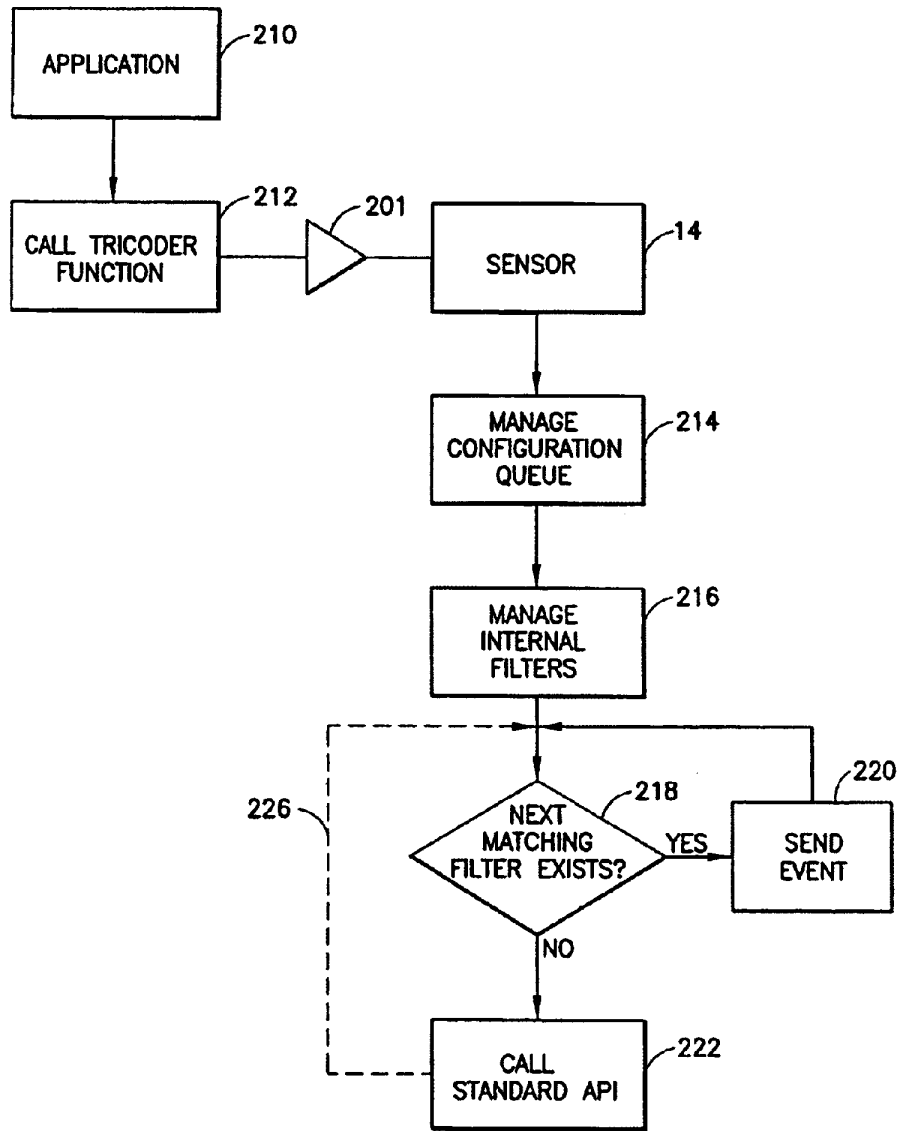


FIG.2

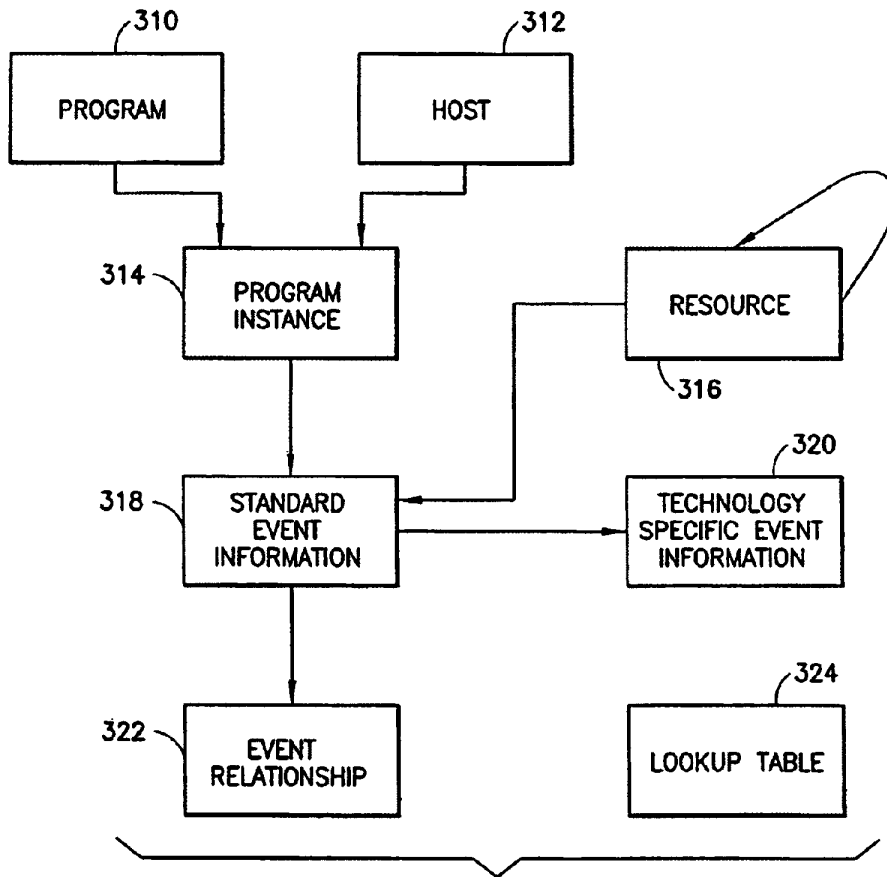


FIG.3

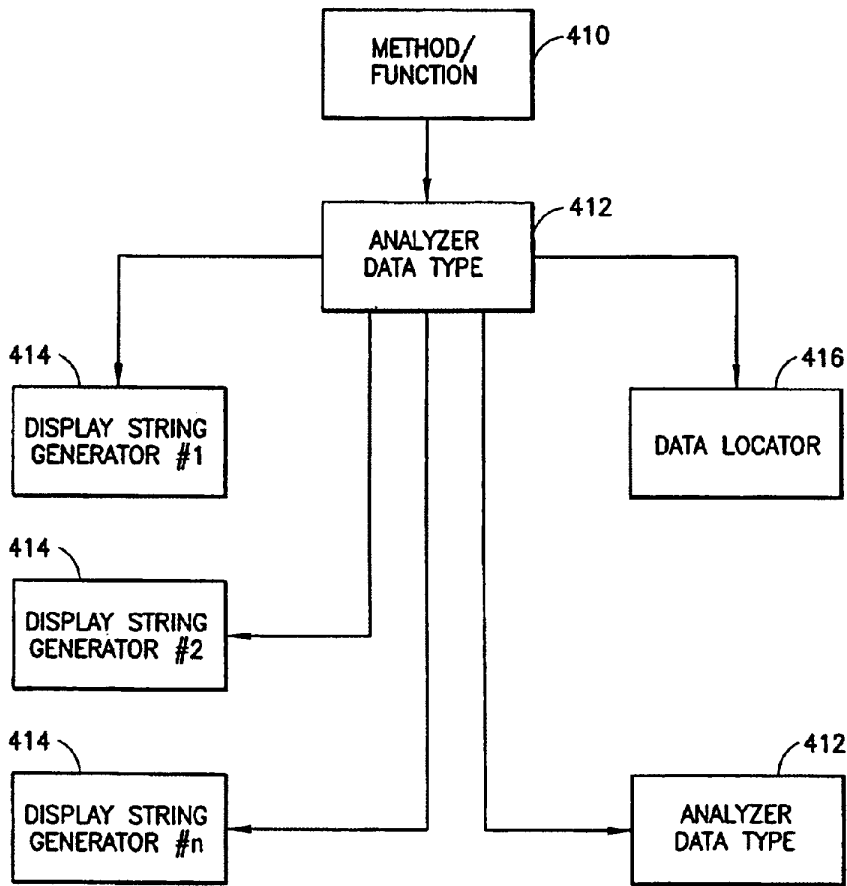


FIG.4

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