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Woodhill et al.

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[54] SYSTEM AND METHOD FOR DISTRIBUTED STORAGE MANAGEMENT ON NETWORKED COMPUTER SYSTEMS USING BINARY OBJECT IDENTIFIERS

[75] Inventors: James R. Woodhill, Houston; Louis R. Woodhill, Richmond; William Russell More, Jr.; Jay Harris Berlin, both of Houston, all of Tex.

[73] Assignee: Legent Corporation, Pittsburgh, Pa.

[21] Appl. No.: 555,376

[22] Filed: Nov. 9, 1995

Related U.S. Application Data

- [63] Continuation of Ser. No. 85,596, Jul. 1, 1993, abandoned.
[51] Int. Cl. G06F 11/00
[52] U.S. Cl. 395/620; 395/610; 395/618; 395/200.03; 395/489; 395/497.04; 395/185.01; 395/183.17; 395/182.04; 395/180; 364/DIG. 1; 364/285; 364/285.1; 364/284.4
[58] Field of Search 395/610, 618, 395/620, 200.03, 489, 497.04, 185.01, 183.17, 182.04, 180; 364/DIG. 1

[56] References Cited

U.S. PATENT DOCUMENTS

Table with 4 columns: Patent Number, Date, Inventor, and Reference Number. Includes entries like 4,616,315 10/1986 Logsdon et al. 364/200, 5,133,065 7/1992 Cheffetz et al. 395/575, etc.

OTHER PUBLICATIONS

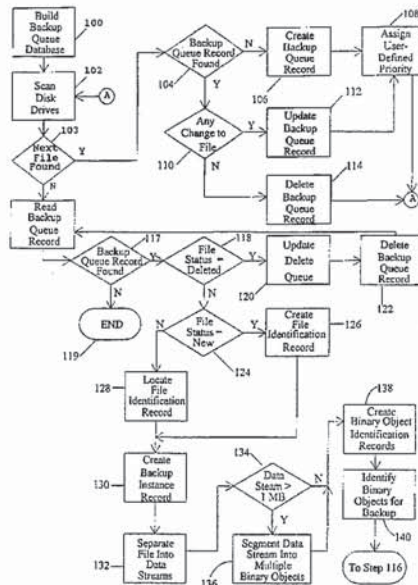
The 8th International Conference on Distributed Computing Systems, 13 Jun. 1988, San Jose, California pp. 471-479 (Relevant to claim No. 1, 2, 5, 8, 9, 18, 19) Daniel Barbara et al. 'Exploiting symmetries for low-cost comparison of file copies' see p. 471, right col., line 29-p. 472, left col., line 10 (Relevant to claim No. 3, 4, 6, 10-14, 20). Computer Technology Review, vol. 12, No. 10, Aug. 1992, Los Angeles US pp. 55-60 Daniel Masters 'Distributed Network Processing Speeds Up Network Backup' see p. 60, left col., line 18-line 31 (Relevant claim No. 10).

Primary Examiner—Paul V. Kulik
Assistant Examiner—Jean R. Homere
Attorney, Agent, or Firm—Kirkpatrick & Lockhart LLP

[57] ABSTRACT

The present invention is directed to a system and method for the distributed management of the storage space and data on a networked computer system wherein the networked computer system includes at least two storage devices for storing data files comprised of one or more binary objects. The distributed storage management system includes a device for selectively copying the binary objects stored on one of the storage devices to another of the storage devices and another device for calculating a current value for a binary object identifier for selected binary objects stored on the storage devices wherein the calculation of the binary object identifier is based upon the actual data contents of the associated binary object. The distributed storage management system further includes a device for storing the current value of the binary object identifier as a previous value of the binary object identifier, another device for comparing the current value of the binary object identifier associated with a particular binary object to one or more previous values of the binary object identifier associated with that particular binary object and a device for commanding the device for selectively copying binary objects in response to the device for comparing.

18 Claims, 14 Drawing Sheets



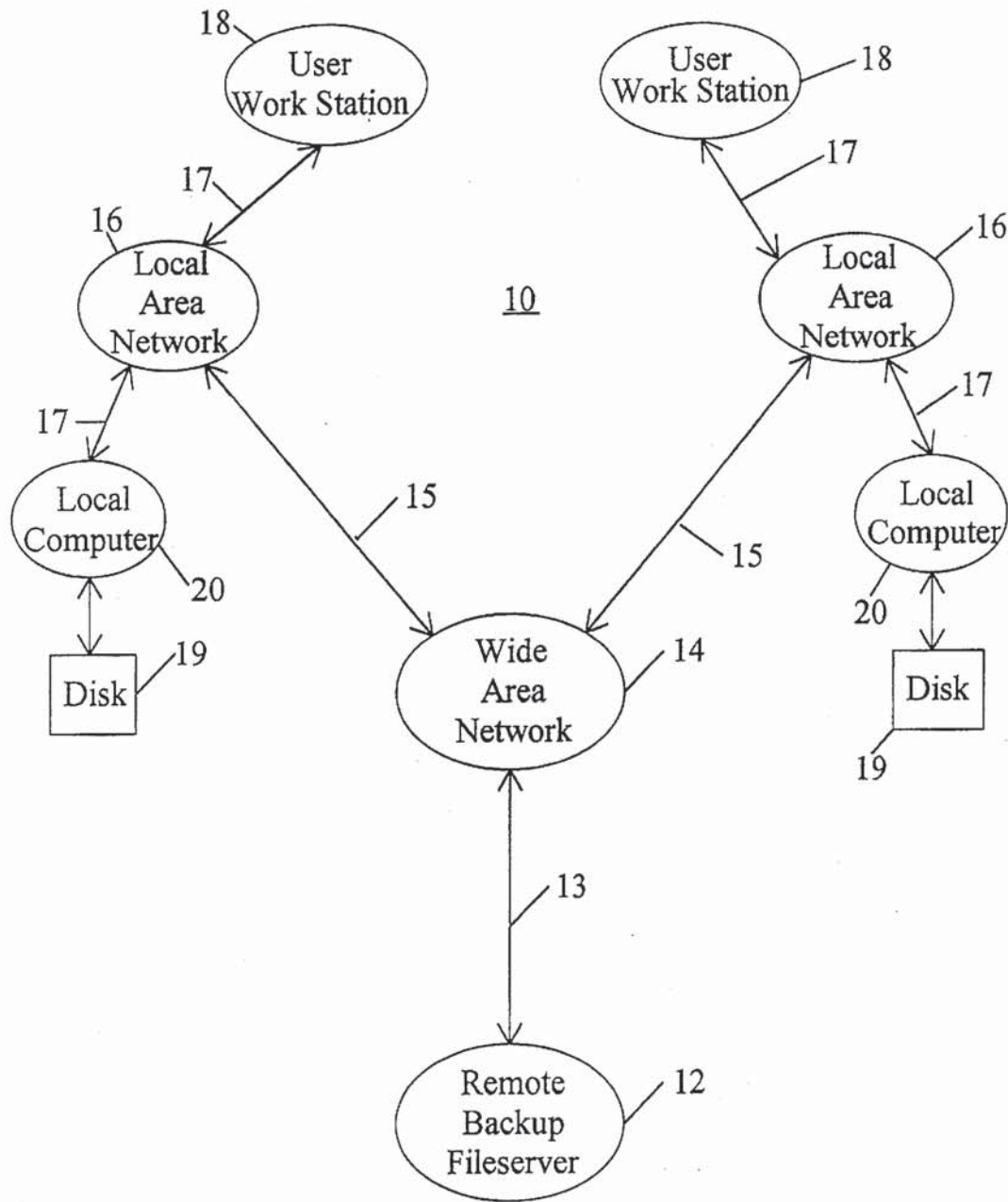


FIG. 1

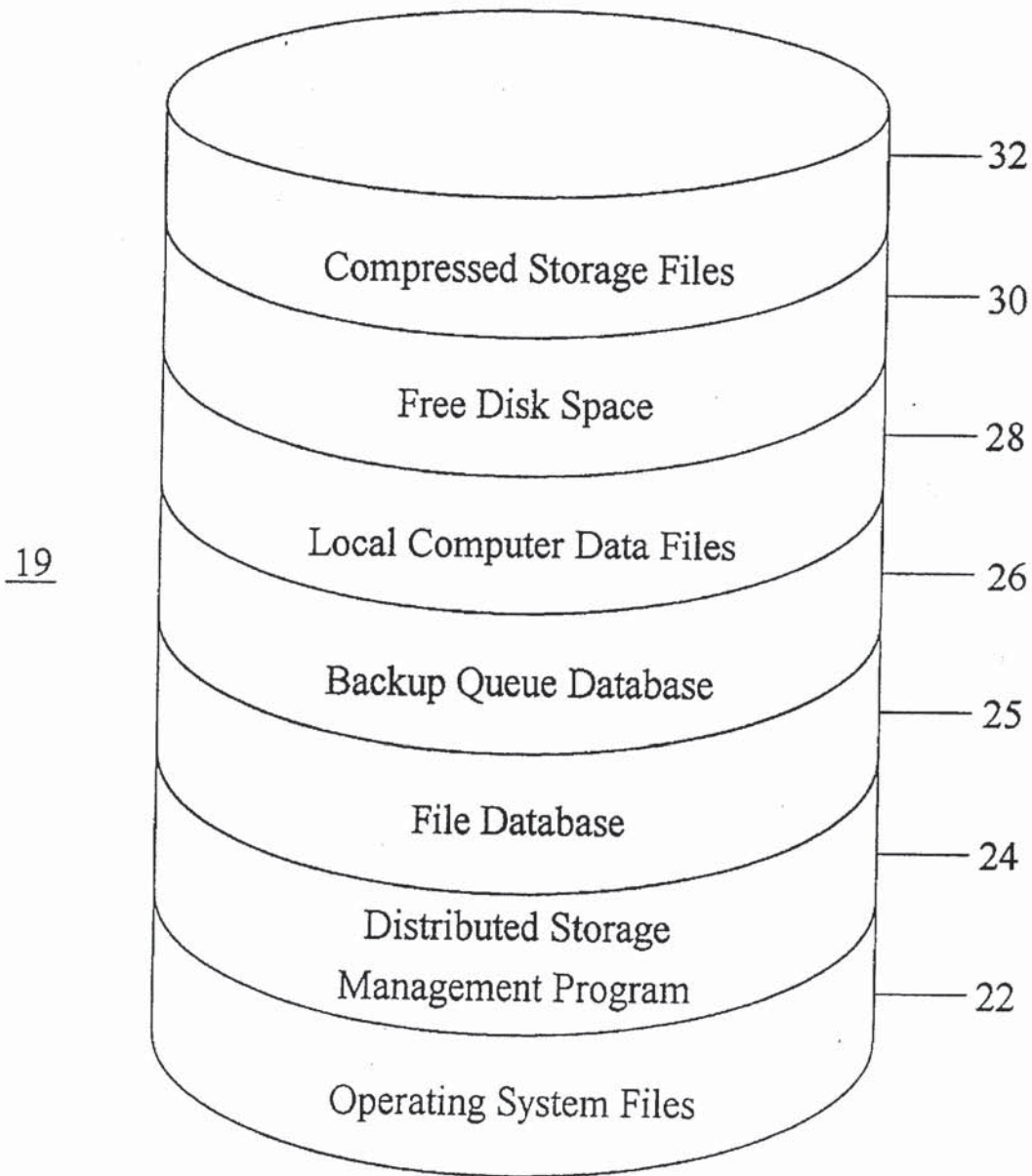


FIG. 2

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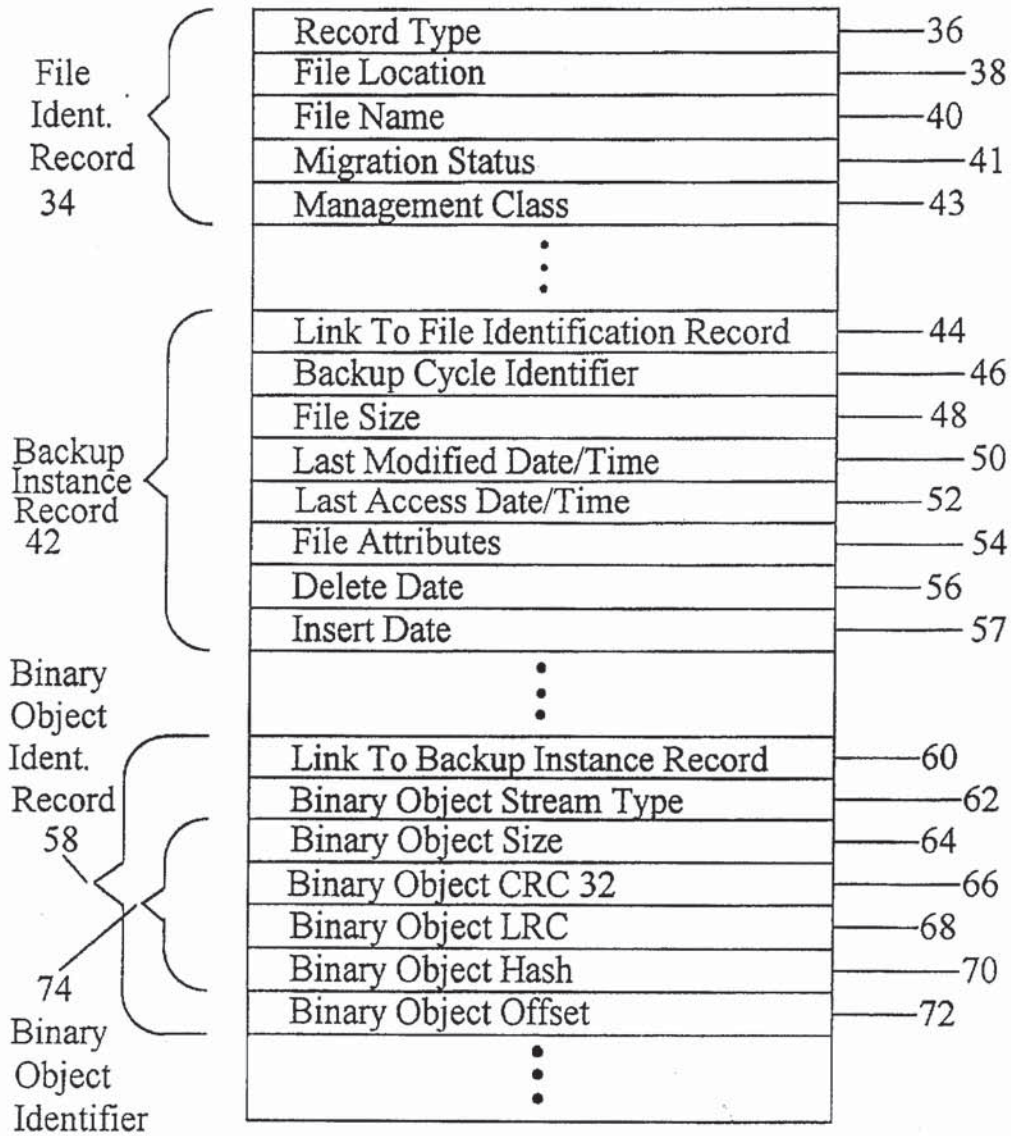


FIG. 3

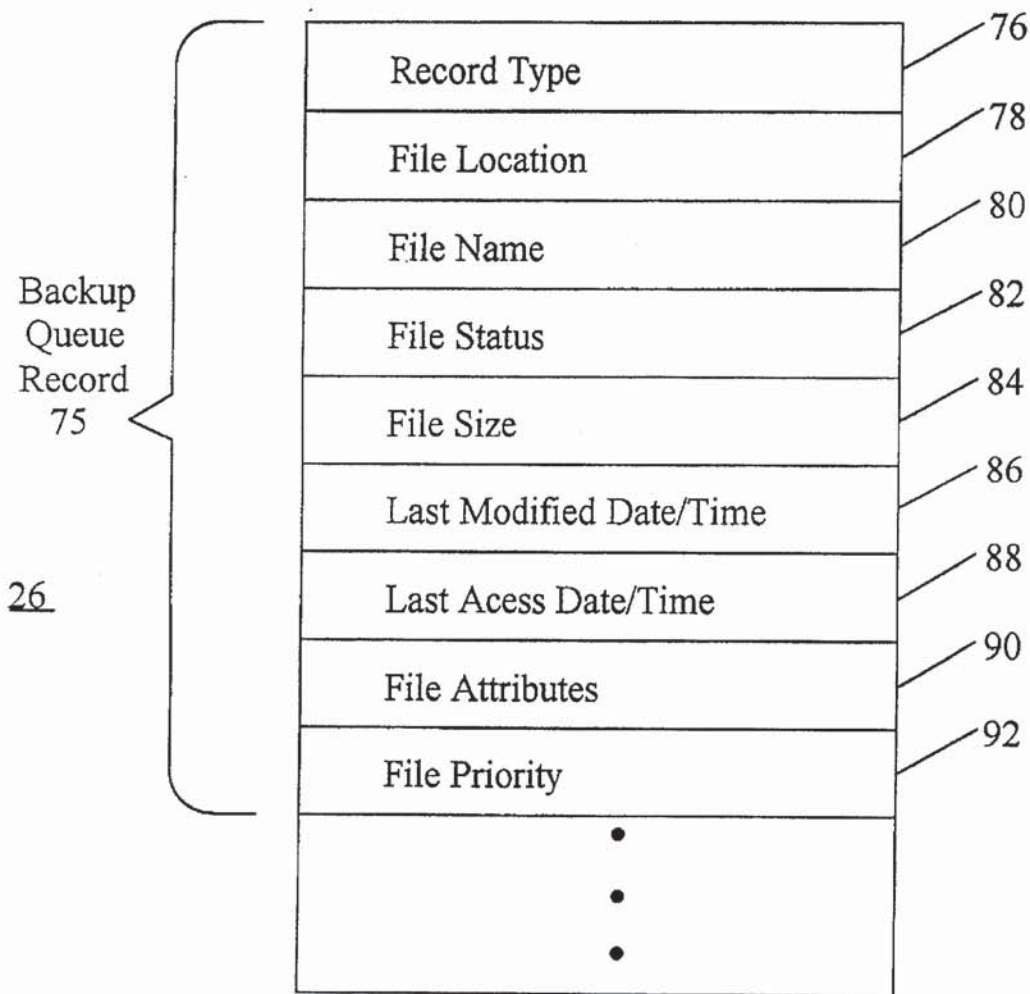


FIG. 4

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