



US006205527B1

(12) **United States Patent**
Goshey et al.

(10) **Patent No.:** **US 6,205,527 B1**
(45) **Date of Patent:** **Mar. 20, 2001**

(54) **INTELLIGENT BACKUP AND RESTORING
SYSTEM AND METHOD FOR
IMPLEMENTING THE SAME**

5,469,573 * 11/1995 McGill, III et al. 717/11
5,694,600 * 12/1997 Khenson et al. 713/2
5,713,024 * 1/1998 Halladay 717/11
5,754,782 * 5/1998 Masada 709/213

(75) Inventors: **Michael M. Goshey; Guido Maffezzoni; Gilbert Chang-Tying Wu**, all of San Jose; **Yen-Chung Lin**, Saratoga; **John D. Nguyen**, Milpitas, all of CA (US); **Roger A. Stoller**, Harwood Heights, IL (US); **Kristine N. Luong**, Santa Clara; **Robert S. Hudson**, San Jose, both of CA (US); **David A. Coleman**, Silverdale; **Dennis M. Sumners**, Port Orchard, both of WA (US); **Thanh T. Bui**, San Jose, CA (US); **Tony Fu**, Placentia, CA (US); **Tony G. Kwan**, Milpitas, CA (US)

OTHER PUBLICATIONS

Unknown, “*XactCopy*”, DuoCor, Inc., Nevada City, CA.

* cited by examiner

Primary Examiner—Do Yoo

Assistant Examiner—Nasser Moazzami

(74) *Attorney, Agent, or Firm*—Martine Penilla & Kim, LLP

(73) Assignee: **Adaptec, Inc.**, Milpitas, CA (US)

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

(21) Appl. No.: **09/110,783**

(22) Filed: **Jul. 6, 1998**

Related U.S. Application Data

(60) Provisional application No. 60/075,687, filed on Feb. 24, 1998.

(51) **Int. Cl.⁷** **G06F 12/00**

(52) **U.S. Cl.** **711/162; 717/11; 714/6**

(58) **Field of Search** 711/162, 161;
717/11; 709/213; 713/2

(56) **References Cited**

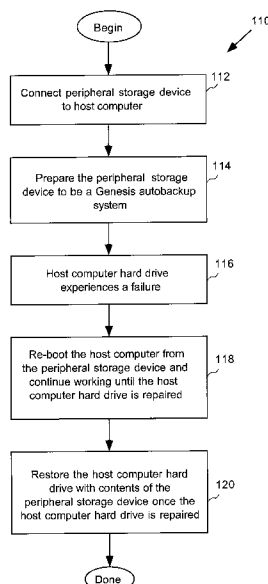
U.S. PATENT DOCUMENTS

5,269,022 * 12/1993 Shinjo et al. 713/2

ABSTRACT

Disclosed is an apparatus, a system, a computer readable media, and a method for protecting data of a computer system. The method includes: (a) connecting a peripheral storage device to the computer system; (b) preparing a storage media of the peripheral storage device to be a protection enabled media; (c) selecting a backup set of data stored in a hard drive of the computer system, the backup set of data includes a default set of boot files and operating system files; (d) creating a spare tire backup using file-based copying from the hard drive of the computer system to the storage media of the peripheral storage device; (e) enabling the peripheral storage device to incrementally copy portions of the backup set of data from the hard drive of the computer system during normal use; and (f) booting the computer system from the peripheral storage device when a failure occurs with the hard drive that disables normal booting. In this manner, the user can resume uninterrupted work from the spare tire backup of the peripheral storage device until the hard drive failure is repaired.

35 Claims, 21 Drawing Sheets



VSC 1004

IPR of U.S. Patent No. 6,931,558