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Briston BS34 8QZ (GB).
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28 February 2008



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(54) Title: MANAGING DISK DRIVE REPLACEMENTS ON MULTIDISK HEADLESS APPLIANCES

(57) Abstract: A headless computer entity having a plurality of disk drives operates to self restore to a known state, upon failure of either a system disk drive containing an operating system of the computer entity, or failure of a data disk drive containing application data. Depending upon whether the system disk and/or the data disk are replaced by a replacement disk, the computer entity configures itself with either deletion of application data and the data disk. The computer entity determines whether a new replacement disk has been installed by comparing a signature of the system disk with a signature of the data disk. If a replacement disk is detected, then the digital signatures are set by the computer entity such that the system disk and data disk have a self consistent set of hardware specific digital signatures. Application data is returned to a known good state after deletion.

INTERNATIONAL SEARCH REPORT

International Application No
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A. CLASSIFICATION OF SUBJECT MATTER INV. G06F11/00 G06F11/14 G06F3/06 G06F9/445				
According to International Patent Classification (IPC) or to both national classification and IPC				
B. FIELDS SEARCHED				
Minimum documentation searched (classification system followed by classification symbols) G06F				
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched				
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, INSPEC, IBM-TDB, PAJ, WPI Data				
C. DOCUMENTS CONSIDERED TO BE RELEVANT				
Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.		
X	EP 0 869 426 A (COMPAQ COMPUTER CORP) 7 October 1998 (1998-10-07) column 6, line 15 - column 9, line 30; figures 7,8	1,19		
X	US 5 632 027 A (MCDERMOTT MICHAEL J ET AL) 20 May 1997 (1997-05-20) column 5, line 52 - column 6, line 23; figures 5,6	1,19		
A	EP 0 541 996 A (FUJITSU LTD) 19 May 1993 (1993-05-19) cited in the application column 4, line 13 - line 19	1,19		
A	US 5 708 776 A (KIKINIS DAN [US]) 13 January 1998 (1998-01-13) column 3, line 3 - line 36; figures 1,2	12,21		
-/--				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C.				
<input checked="" type="checkbox"/> Patent family members are listed in annex.				
° Special categories of cited documents :				
<table style="width: 100%; border: none;"> <tr> <td style="width: 50%; vertical-align: top; padding: 5px;"> *A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed </td> <td style="width: 50%; vertical-align: top; padding: 5px;"> *T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family </td> </tr> </table>			*A* document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family
A document defining the general state of the art which is not considered to be of particular relevance *E* earlier document but published on or after the international filing date *L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified) *O* document referring to an oral disclosure, use, exhibition or other means *P* document published prior to the international filing date but later than the priority date claimed	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention *X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone *Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art. *Z* document member of the same patent family			
Date of the actual completion of the international search <p style="text-align: center; font-weight: bold;">31 August 2007</p>	Date of mailing of the international search report <p style="text-align: center; font-weight: bold;">06/09/2007</p>			
Name and mailing address of the ISA European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Authorized officer <p style="text-align: center; font-weight: bold;">Absalom, Richard</p>			

INTERNATIONAL SEARCH REPORT

International Application No
PCT/GB2001/004766

C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT		
Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5 345 581 A (COMPARETTA CHRISTOPHER [US] ET AL) 6 September 1994 (1994-09-06) column 8, line 3 - line 32 -----	15,23
A	EP 0 901 073 A (ROLM SYSTEMS) 10 March 1999 (1999-03-10) -----	
A	EP 0 907 126 A (HEWLETT PACKARD CO) 7 April 1999 (1999-04-07) -----	
A	EP 1 024 434 A (HEWLETT PACKARD CO) 2 August 2000 (2000-08-02) -----	

INTERNATIONAL SEARCH REPORT

International application No.
PCT/GB2001/004766

Box I Observations where certain claims were found unsearchable (Continuation of item 1 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1. Claims Nos.:
because they relate to subject matter not required to be searched by this Authority, namely:

2. Claims Nos.:
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:

3. Claims Nos.:
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

Box II Observations where unity of invention is lacking (Continuation of item 2 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1. As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2. As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3. As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4. No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

Remark on Protest

- The additional search fees were accompanied by the applicant's protest.
- No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-11,14,16-19,20,22,24

Computing entity with signature check on a plurality of data storage devices, and in the case that they don't match, resetting the entity to a known state

2. claims: 12,13,21

Automatic installation of a data storage medium preconfigured with a primary operating system, a secondary operating system and a copy of said primary operating system

3. claims: 15,23

Computing entity with a first data storage device designated as a system device and a second data storage device configured as an application device: detection means to see if a device has been replaced following a last reset, and if so resetting said computing entity to a known state

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No
PCT/GB2001/004766

Patent document cited in search report	Publication date	Patent family member(s)	Publication date
EP 0869426	A	07-10-1998	JP 11039105 A
			US 6092169 A
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