

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**POWER OF ATTORNEY TO PROSECUTE APPLICATIONS BEFORE THE USPTO**

I hereby revoke all previous powers of attorney given in the application identified in the attached statement under 37 CFR 3.73(c).

I hereby appoint:

Practitioners associated with Customer Number:

**83559**

OR

Practitioner(s) named below (if more than ten patent practitioners are to be named, then a customer number must be used):

Name	Registration Number

Name	Registration Number

As attorney(s) or agent(s) to represent the undersigned before the United States Patent and Trademark Office (USPTO) in connection with any and all patent applications assigned (or to be assigned) to the undersigned, according to the USPTO assignment records or assignments documents attached to this form in accordance with 37 CFR 3.73(c).

Please change the correspondence address for the application identified in the attached statement under 37 CFR 3.73(c) to:

The address associated with Customer Number:

**83559**

OR

Firm or Individual Name			
Address			
City	State	Zip	
Country			
Telephone	Email		

Assignee Name and Address: **Symantec Corporation**  
**350 Ellis Street**  
**Mountain View, CA 94043**

A copy of this form, together with a statement under 37 CFR 3.73(c) (Form PTO/AIA/66 or equivalent) is required to be filed in each application in which this form is used. The statement under 37 CFR 3.73(c) may be completed by one of the practitioners appointed in this form, and must identify the application in which this Power of Attorney is to be filed.

**SIGNATURE of Assignee of Record**

The individual whose signature and title is supplied below is authorized to act on behalf of the assignee

Signature	<i>Angela Ziegenhorn</i>	Date	<i>March 3, 2013</i>
Name	<i>Angela Ziegenhorn</i>	Telephone	<i>916-783-3098</i>
Title	<i>Sr Director</i>		

This collection of information is required by 37 CFR 1.31, 1.32 and 1.33. The information is required to obtain or retain a benefit by the public which is to be paid by the USPTO to process an application. Confidentiality is governed by 35 U.S.C. 402 and 37 CFR 1.13 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22315-1450. DO NOT SEND FEES OR COMPLETED FORMS TO: INFO ACQUIRE/SO. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22315-1450.

Under the Paperwork Reduction Act of 1996, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**

Applicant/Patent Owner: Peter Jaffe, Bruce Bramhall

Application No./Patent No.: 6,931,558 Filed/Issue Date: August 16, 2005

Title: COMPUTER RESTORATION SYSTEMS AND METHODS

Symantec Corporation, a corporation

(Place of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that, for the patent application/patent identified above, it is (choose one of options 1, 2, 3 or 4 below):

- 1.  The assignee of the entire right, title, and interest.
- 2.  An assignee of less than the entire right, title, and interest (check applicable box):
  - The extent (by percentage) of its ownership interest is \_\_\_\_\_%. Additional Statement(s) by the owners holding the balance of the interest must be submitted to account for 100% of the ownership interest.
  - There are unspecified percentages of ownership. The other parties, including inventors, who together own the entire right, title and interest are:

[Empty box for listing other parties in option 2]

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

- 3.  The assignee of an undivided interest in the entirety (a complete assignment from one of the joint inventors was made). The other parties, including inventors, who together own the entire right, title, and interest are:

[Empty box for listing other parties in option 3]

Additional Statement(s) by the owner(s) holding the balance of the interest must be submitted to account for the entire right, title, and interest.

- 4.  The recipient, via a court proceeding or the like (e.g., bankruptcy, probate), of an undivided interest in the entirety (a complete transfer of ownership interest was made). The certified document(s) showing the transfer is attached.

The interest identified in option 1, 2 or 3 above (not option 4) is evidenced by either (choose one of options A or B below):

- A.  An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel \_\_\_\_\_, Frame \_\_\_\_\_, or for which a copy thereof is attached.
- B.  A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as follows:

1. From: Peter Jaffe, Bruce Bramhall To: The Kernel Group, Inc.

The document was recorded in the United States Patent and Trademark Office at Reel 015023, Frame 0697, or for which a copy thereof is attached.

2. From: The Kernel Group, Inc. To: Veritas Operating Corporation

The document was recorded in the United States Patent and Trademark Office at Reel 014156, Frame 0758, or for which a copy thereof is attached.

This collection of information is required by 37 CFR 3.73(c). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 13 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

**STATEMENT UNDER 37 CFR 3.73(c)**3. From: Raymond C. Schafer To: Veritas Operating CorporationThe document was recorded in the United States Patent and Trademark Office at  
Reel 016049, Frame 0027, or for which a copy thereof is attached.4. From: Veritas Operating Corporation To: Symantec CorporationThe document was recorded in the United States Patent and Trademark Office at  
Reel 019872, Frame 0979, or for which a copy thereof is attached.5. From: Veritas Operating Corporation To: Symantec Operating CorporationThe document was recorded in the United States Patent and Trademark Office at  
Reel 027810, Frame 0462, or for which a copy thereof is attached.6. From: Symantec Operating Corporation To: Symantec CorporationThe document was recorded in the United States Patent and Trademark Office at  
Reel 027771, Frame 0922, or for which a copy thereof is attached. Additional documents in the chain of title are listed on a supplemental sheet(s). As required by 37 CFR 3.73(c)(1)(i), the documentary evidence of the chain of title from the original owner to the assignee was, or concurrently is being, submitted for recordation pursuant to 37 CFR 3.11.

(NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, to record the assignment in the records of the USPTO. See MPEP 302.08)

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Angela Ziegenhorn  
Signature03-05-13  
DateAngela Ziegenhorn, Sr Director  
Printed or Typed NameSymantec Corp.  
Title or Registration Number

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	15127592
<b>Application Number:</b>	09998246
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4233
<b>Title of Invention:</b>	COMPUTER RESTORATION SYSTEMS AND METHODS
<b>First Named Inventor/Applicant Name:</b>	Peter Jeffe
<b>Correspondence Address:</b>	B. NOEL KIVLIN CONLEY, ROSE & TAYON, P.C. P.O. BOX 398 - AUSTIN TX 78767-0398 US 5124773830 -
<b>Filer:</b>	Joseph J. Richetti
<b>Filer Authorized By:</b>	
<b>Attorney Docket Number:</b>	KRNL:001
<b>Receipt Date:</b>	05-MAR-2013
<b>Filing Date:</b>	30-NOV-2001
<b>Time Stamp:</b>	21:33:40
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	POA.pdf	140130 <small>73fd1e5e835096bb7aff4d6b83f306e9b7c8162</small>	no	1

**Warnings:**

**Information:**

2	Assignee showing of ownership per 37 CFR 3.73.	558_statement.pdf	234894 <small>31db6e42f55609085f85182e4d35c2c12a65e9fb</small>	no	2
---	--	-------------------	---	----	---

**Warnings:**

**Information:**

<b>Total Files Size (in bytes):</b>			375024		
-------------------------------------	--	--	--------	--	--

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

COPY

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> P.O. Box 1450 Alexandria, VA 22313-1450	<b>REPORT ON THE FILING OR DETERMINATION OF AN ACTION REGARDING A PATENT OR TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court Northern District of California -- San Jose Division on the following 3/23

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.):

ORIGINAL  
 FILED  
 APR 20 2009  
 U.S. DISTRICT COURT  
 SAN JOSE, CALIF.

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT Northern District of California -- San Jose Division
PLAINTIFF Symantec Corporation		DEFENDANT Veeam Software Corporation
CV 12-01035		
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,093,086	8/15/2006	Symantec Corporation
2 6,931,558	8/16/2005	Symantec Corporation
3		
4		
5		

In the above—entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3		
4		
5		

In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

<b>TO: Mail Stop 8</b> <b>Director of the U.S. Patent &amp; Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been  
 filed in the U.S. District Court Northern District of California on the following     Patents or     Trademarks:

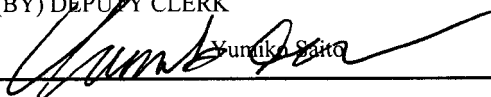
DOCKET NO. CV 12-01035 SI	DATE FILED 2/29/12	U.S. DISTRICT COURT Northern District of California
PLAINTIFF SYMANTEC CORPORATION		DEFENDANT VEEAM SOFTWARE CORPORATION
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 6,931,558		
2 7,093,084		
3		
4		
5		

In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY <input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK HOLDER OF PATENT OR TRADEMARK
1	
2	
3	
4	
5	

In the above—entitled case, the following decision has been rendered or judgement issued:

<b>DECISION/JUDGEMENT</b> Case consolidated to 12-cv-0700-SI, and this case was terminated.
--

CLERK Richard W. Wicking	(BY) DEPUTY CLERK  Yunika Saito	DATE May 29, 2012
-----------------------------	--	----------------------

Copy 1—Upon initiation of action, mail this copy to Commissioner    Copy 3—Upon termination of action, mail this copy to Commissioner  
 Copy 2—Upon filing document adding patent(s), mail this copy to Commissioner    Copy 4—Case file copy

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

UNITED STATES DISTRICT COURT  
NORTHERN DISTRICT OF CALIFORNIA

SYMANTEC CORPORATION,

Plaintiff,

vs.

VEEAM SOFTWARE CORPORATION

Defendant.

Case No. 3:12-cv-00700 SI

**[PROPOSED] ORDER RELATING AND  
CONSOLIDATING CASES**

SYMANTEC CORPORATION,

Plaintiff,

vs.

VEEAM SOFTWARE CORPORATION

Defendant.

Case No. 5:12 cv 1035

IT IS HEREBY ORDERED:

1. *Symantec Corporation v. Veeam Software Corporation*, Case No. 3:12-cv-00700 SI and *Symantec Corporation v. Veeam Software Corporation*, Case No. 5:12 cv 1035 are related cases within the meaning of Civil Local Rule 3-12(a). Pursuant to Civil Local Rules 3-12 and 7-



1 11, *Symantec Corporation v. Veeam Software Corporation*, Case No. 5:12 cv 1035 shall be  
2 assigned to the Honorable Susan Illston.

3 2. *Symantec Corporation v. Veeam Software Corporation*, Case No. 3:12-cv-00700  
4 SI, and *Symantec Corporation v. Veeam Software Corporation*, Case No. 5:12 cv 1035, are  
5 consolidated for all purposes into one action, and Case No. 5:12 cv 1035 shall be administratively  
6 closed.

7 3. All future filings shall be made in, and bear the caption of, *Symantec Corporation*  
8 *v. Veeam Software Corporation*, Case No. 3:12-cv-00700 SI.

9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25  
26  
27  
28

DATED: 3/7/12



By: \_\_\_\_\_  
Hon. Susan Illston  
United States District Judge

ORIGINAL

AO 120 (Rev. 08/10)

TO: <b>Mail Stop 8</b> <b>Director of the U.S. Patent and Trademark Office</b> <b>P.O. Box 1450</b> <b>Alexandria, VA 22313-1450</b>	<b>REPORT ON THE</b> <b>FILING OR DETERMINATION OF AN</b> <b>ACTION REGARDING A PATENT OR</b> <b>TRADEMARK</b>
---	---

In Compliance with 35 U.S.C. § 290 and/or 15 U.S.C. § 1116 you are hereby advised that a court action has been filed in the U.S. District Court **Northern District of California - San Jose Division** on the following

CV 12-00700

Trademarks or  Patents. (  the patent action involves 35 U.S.C. § 292.);

EDL

DOCKET NO.:	DATE FILED 2/13/2012	U.S. DISTRICT COURT Northern District of California - San Jose Division
PLAINTIFF SYMANTEC CORPORATION		DEFENDANT VEEAM SOFTWARE CORPORATION
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,093,086	8/15/2006	SYMANTEC CORPORATION
2 6,931,558	8/16/2005	SYMANTEC CORPORATION
3 7,191,299	3/13/2007	SYMANTEC CORPORATION
4 7,254,682	8/7/2007	SYMANTEC CORPORATION
5		

In the above entitled case, the following patent(s)/ trademark(s) have been included:

DATE INCLUDED	INCLUDED BY	HOLDER OF PATENT OR TRADEMARK
	<input type="checkbox"/> Amendment <input type="checkbox"/> Answer <input type="checkbox"/> Cross Bill <input type="checkbox"/> Other Pleading	
1		
2		
3		
4		
5		

In the above entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK <b>RICHARD W. WIEKING</b>	(BY) DEPUTY CLERK <b>THELMA NUDO</b>	DATE <b>FEB 13 2012</b>
------------------------------------	---	----------------------------

Copy 1—Upon initiation of action, mail this copy to Director    Copy 3—Upon termination of action, mail this copy to Director  
 Copy 2—Upon filing document adding patent(s), mail this copy to Director    Copy 4—Case file copy

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Applicant:  
Peter Jeffe, Bruce Bramhall,  
and Raymond Charles Schafer

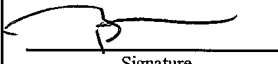
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

Atty. Docket No.: 5760-00801

Patent No.: 6,931,558  
Issued: August 16, 2005

Serial No.: 09/998,246  
Filed: November 30, 2001

For: Computer Restoration  
Systems and Method

****CERTIFICATE OF E-FILING TRANSMISSION****	
I hereby certify that this correspondence is being transmitted via electronic filing to the United States Patent and Trademark Office on the date shown below	
B. Noël Kivlin	
Printed Name	
	8-25-08
Signature	Date

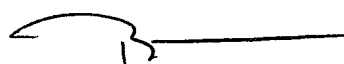
**REQUEST FOR STATUS OF REPRINTING OF PATENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

The inventorship was incorrectly printed on the above-identified patent. On January 19, 2006, the following items were sent to the U.S. Patent Office on January 19, 2006:

- (1) Original Letters U.S. Patent No. 6,931,558, entitled "Computer Restoration Systems and Method", issued August 16, 2005.
- (2) Certificate of Correction issued December 6, 2005, indicating correction of the inventorship to PETER JEFFE, BRUCE BRAMHALL and RAYMOND CHARLES SCHAFER.

Applicants hereby respectfully request the Patent Office to notify Applicant as to the status of this matter.

Respectfully submitted,  
  
B. Noël Kivlin  
Attorney for Applicant  
Reg. No. 33,929

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
(512) 853-8840  
Date: 8-25-08

## Electronic Acknowledgement Receipt

<b>EFS ID:</b>	3834925
<b>Application Number:</b>	09998246
<b>International Application Number:</b>	
<b>Confirmation Number:</b>	4233
<b>Title of Invention:</b>	COMPUTER RESTORATION SYSTEMS AND METHODS
<b>First Named Inventor/Applicant Name:</b>	Peter Jeffe
<b>Correspondence Address:</b>	B. NOEL KIVLIN CONLEY, ROSE & TAYON, P.C. P.O. BOX 398 - AUSTIN TX 78767-0398 US 5124773830 -
<b>Filer:</b>	B. Noel Kivlin/Karen Ashby
<b>Filer Authorized By:</b>	B. Noel Kivlin
<b>Attorney Docket Number:</b>	KRNL:001
<b>Receipt Date:</b>	25-AUG-2008
<b>Filing Date:</b>	30-NOV-2001
<b>Time Stamp:</b>	16:53:00
<b>Application Type:</b>	Utility under 35 USC 111(a)

### Payment information:

Submitted with Payment	no
------------------------	----

### File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Request for status of Application	VRTS0164_status_request.pdf	34071 39795fc337300f253706edcc848feca7de56da76	no	1

**Warnings:**

**Information:**

**Total Files Size (in bytes):** 34071

**This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.**

**New Applications Under 35 U.S.C. 111**

**If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.**

**National Stage of an International Application under 35 U.S.C. 371**

**If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.**

**New International Application Filed with the USPTO as a Receiving Office**

**If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.**

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,931,558 B1  
DATED : August 16, 2005  
INVENTOR(S) : Peter Jeffe, Bruce Bramhall and Raymond Charles Schafer

Page 1 of 1

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

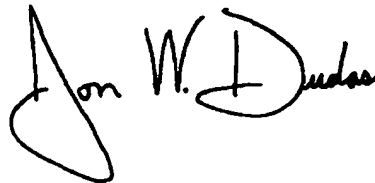
Title page,

Item [75], Inventors, should read as following:

-- **Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer** --.

Signed and Sealed this

Sixth Day of December, 2005

A handwritten signature in black ink, reading "Jon W. Dudas". The signature is written in a cursive style with a large, looped initial "J".

JON W. DUDAS  
*Director of the United States Patent and Trademark Office*

ccc



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant:  
Peter Jeffe, Bruce Bramhall,  
and Raymond Charles Schafer

Atty. Docket No.: 5760-00801

Patent No.: 6,931,558  
Issued: August 16, 2005

Serial No.: 09/998,246  
Filed: November 30, 2001

For: Computer Restoration  
Systems and Method

§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below:

B. Noël Kivlin  
Signature of Representative

October 14, 2005  
Date

Signature

TRANSMITTAL LETTER

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Transmitted herewith for filing in the captioned case are the following:

- (1) Form PTO-1050, **submitted in duplicate**. Errors which occur at important points in the captioned patent or which may otherwise affect the understanding or interpretation of the patent are thereon corrected.
- (2) A return postcard to acknowledge receipt of these materials. Please stamp and return this postcard to the undersigned.

Certificate  
OCT 21 2005  
of Correction

OCT 24 2005

All of the errors shown in PTO-1050 are due to Patent Office oversights. A Certificate of Correction is requested under 35 U.S.C. § 254. Applicants believe that no fees are required, however, should any fees be required, please deduct them from Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 501505\5760-00801.

Respectfully submitted,



B. Noël Kivlin  
Attorney for Applicant  
Reg. No. 33,929

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
(512) 853-8840  
Date: October 14, 2005

OCT 24 2005



UNITED STATES PATENT AND TRADEMARK OFFICE

**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,931,558

DATED : August 16, 2005

INVENTOR(S) : Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**In the Inventorship:**

The inventors are:

Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer

MAILING ADDRESS OF SENDER:  
B. Noël Kivlin, Esq.,  
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
5760-00801

PATENT NO. 6,931,558

**Certificate of Correction (PTO Form 1050)**

OCT 24 2005

UNITED STATES PATENT AND TRADEMARK OFFICE

**CERTIFICATE OF CORRECTION**

PATENT NO. : 6,931,558

DATED : August 16, 2005

INVENTOR(S) : Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**In the Inventorship:**

The inventors are:

Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer

MAILING ADDRESS OF SENDER:  
B. Noël Kivlin, Esq.,  
MEYERTONS, HOOD, KIVLIN, KOWERT & GOETZEL, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
5760-00801

PATENT NO. 6,931,558

**Certificate of Correction (PTO Form 1050)**

OCT 24 2005



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov



Bib Data Sheet

CONFIRMATION NO. 4233

<b>SERIAL NUMBER</b> 09/998,246	<b>FILING OR 371(c) DATE</b> 11/30/2001 <b>RULE</b>	<b>CLASS</b> 713	<b>GROUP ART UNIT</b> 2116	<b>ATTORNEY DOCKET NO.</b> KRNL:001
------------------------------------	---	---------------------	-------------------------------	--

**APPLICANTS**  
 Peter Jeffe, Austin, TX;  
 Bruce Bramhall, Austin, TX;  
 Raymond Charles Schafer, 4407 Oak Cree Drive, TX;

**\*\* CONTINUING DATA \*\*\*\*\***

**\*\* FOREIGN APPLICATIONS \*\*\*\*\***

**IF REQUIRED, FOREIGN FILING LICENSE GRANTED**  
**\*\* 12/12/2001**

Foreign Priority claimed <input type="checkbox"/> yes <input type="checkbox"/> no	<b>STATE OR COUNTRY</b> TX	<b>SHEETS DRAWING</b> 5	<b>TOTAL CLAIMS</b> 17	<b>INDEPENDENT CLAIMS</b> 5
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged	Examiner's Signature	Initials		

**ADDRESS**  
 B. NOEL KIVLIN  
 CONLEY, ROSE & TAYON, P.C.  
 P.O. BOX 398  
 AUSTIN, TX 78767-0398

**TITLE**  
 COMPUTER RESTORATION SYSTEMS AND METHODS

<b>FILING FEE RECEIVED</b> 584	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
-----------------------------------	---	---

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail**  
 JUN 09 2005

**Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**(703) 746-4000**

or **Fax**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 03/30/2005

B. NOEL KIVLIN  
 CONLEY, ROSE & TAYON, P.C.  
 P.O. BOX 398

AUSTIN, TX 78767-0398

06/10/2005 CNGUYEN1 00000029 501505 09998246

01 FC:1501 1400.00 DA  
 02 FC:8001 24.00 DA

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

B. Noël Kivlin	(Depositor's name)
<i>[Signature]</i>	(Signature)
6-6-05	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,246	11/30/2001	Peter Jeffe	KRNL:001	4233

TITLE OF INVENTION: COMPUTER RESTORATION SYSTEMS AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES <i>No</i>	\$700 <i>\$1,400.</i>	\$0	\$700 <i>1,400.</i>	06/30/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
PERVEEN, REHANA	2116	713-002000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).  
 Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.  
 "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list  
 (1) the names of up to 3 registered patent attorneys or agents OR, alternatively,  
 (2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1. Meyertons Hood Kivlin Kowert & Goetzl, P.C.  
 2. B. Noël Kivlin  
 3.

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

VERITAS Operating Corporation

Mountain View, CA

Please check the appropriate assignee category or categories (will not be printed on the patent):  Individual  Corporation or other private group entity  Government

4a. The following fee(s) are enclosed:

- Issue Fee
- Publication Fee (No small entity discount permitted)
- Advance Order - # of Copies 8

4b. Payment of Fee(s):

- A check in the amount of the fee(s) is enclosed.
- Payment by credit card. Form PTO-2038 is attached.
- The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number 501505/5760-00801 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
- b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature *[Signature]*  
 Typed or printed name B. Noël Kivlin

Date 6-6-05  
 Registration No. PTO # 33,929

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.







NOTICE OF ALLOWANCE AND FEE(S) DUE

7590 03/30/2005

B. NOEL KIVLIN  
CONLEY, ROSE & TAYON, P.C.  
P.O. BOX 398  
AUSTIN, TX 78767-0398

EXAMINER

PERVEEN, REHANA

ART UNIT PAPER NUMBER

2116

DATE MAILED: 03/30/2005

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,246	11/30/2001	Peter Jeffe	KRNL:001	4233

TITLE OF INVENTION: COMPUTER RESTORATION SYSTEMS AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$0	\$700	06/30/2005

**THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.**

**THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE REFLECTS A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE APPLIED IN THIS APPLICATION. THE PTOL-85B (OR AN EQUIVALENT) MUST BE RETURNED WITHIN THIS PERIOD EVEN IF NO FEE IS DUE OR THE APPLICATION WILL BE REGARDED AS ABANDONED.**

**HOW TO REPLY TO THIS NOTICE:**

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL should be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). Even if the fee(s) have already been paid, Part B - Fee(s) Transmittal should be completed and returned. If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

**IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.**

**PART B - FEE(S) TRANSMITTAL**

Complete and send this form, together with applicable fee(s), to: **Mail** **Mail Stop ISSUE FEE**  
**Commissioner for Patents**  
**P.O. Box 1450**  
**Alexandria, Virginia 22313-1450**  
**or Fax** **(703) 746-4000**

**INSTRUCTIONS:** This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

7590 03/30/2005

B. NOEL KIVLIN  
 CONLEY, ROSE & TAYON, P.C.  
 P.O. BOX 398  
 AUSTIN, TX 78767-0398

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

**Certificate of Mailing or Transmission**

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (703) 746-4000, on the date indicated below.

_____ (Depositor's name)
_____ (Signature)
_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,246	11/30/2001	Peter Jeffe	KRNL:001	4233

TITLE OF INVENTION: COMPUTER RESTORATION SYSTEMS AND METHODS

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$700	\$0	\$700	06/30/2005

EXAMINER	ART UNIT	CLASS-SUBCLASS
PERVEEN, REHANA	2116	713-002000

<p>1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).</p> <p><input type="checkbox"/> Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.</p> <p><input type="checkbox"/> "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.</p>	<p>2. For printing on the patent front page, list</p> <p>(1) the names of up to 3 registered patent attorneys or agents OR, alternatively, _____ 1</p> <p>(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed. _____ 2</p> <p>_____ 3</p>
--	---

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE \_\_\_\_\_ (B) RESIDENCE: (CITY and STATE OR COUNTRY) \_\_\_\_\_

Please check the appropriate assignee category or categories (will not be printed on the patent) :  Individual  Corporation or other private group entity  Government

<p>4a. The following fee(s) are enclosed:</p> <p><input type="checkbox"/> Issue Fee</p> <p><input type="checkbox"/> Publication Fee (No small entity discount permitted)</p> <p><input type="checkbox"/> Advance Order - # of Copies _____</p>	<p>4b. Payment of Fee(s):</p> <p><input type="checkbox"/> A check in the amount of the fee(s) is enclosed.</p> <p><input type="checkbox"/> Payment by credit card. Form PTO-2038 is attached.</p> <p><input type="checkbox"/> The Director is hereby authorized by charge the required fee(s), or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).</p>
--	---

5. Change in Entity Status (from status indicated above)

a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.  b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

The Director of the USPTO is requested to apply the Issue Fee and Publication Fee (if any) or to re-apply any previously paid issue fee to the application identified above. NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature \_\_\_\_\_ Date \_\_\_\_\_

Typed or printed name \_\_\_\_\_ Registration No. \_\_\_\_\_

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.





UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

Table with 5 columns: APPLICATION NO., FILING DATE, FIRST NAMED INVENTOR, ATTORNEY DOCKET NO., CONFIRMATION NO.
09/998,246 11/30/2001 Peter Jeffe KRNL:001 4233

7590 03/30/2005
B. NOEL KIVLIN
CONLEY, ROSE & TAYON, P.C.
P.O. BOX 398
AUSTIN, TX 78767-0398

EXAMINER

PERVEEN, REHANA

ART UNIT PAPER NUMBER

2116

DATE MAILED: 03/30/2005

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 532 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 532 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571) 272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at (703) 305-8283.

**Notice of Allowability**

<b>Application No.</b>	<b>Applicant(s)</b>	
09/998,246	JEFFE ET AL.	
<b>Examiner</b>	<b>Art Unit</b>	
Rehana Perveen	2116	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

- 1.  This communication is responsive to Correction of Inventorship filed on 12/6/04 & Amdt filed on 3/7/05.
- 2.  The allowed claim(s) is/are 1-23.
- 3.  The drawings filed on 22 April 2002 are accepted by the Examiner.
- 4.  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a)  All   b)  Some\*   c)  None   of the:
    - 1.  Certified copies of the priority documents have been received.
    - 2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    - 3.  Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

- 5.  A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  - 6.  CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
    - (a)  including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
      - 1)  hereto or 2)  to Paper No./Mail Date \_\_\_\_\_.
    - (b)  including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
- 7.  DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

- 1.  Notice of References Cited (PTO-892)
- 2.  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3.  Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date \_\_\_\_\_
- 4.  Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 5.  Notice of Informal Patent Application (PTO-152)
- 6.  Interview Summary (PTO-413), Paper No./Mail Date \_\_\_\_\_
- 7.  Examiner's Amendment/Comment
- 8.  Examiner's Statement of Reasons for Allowance
- 9.  Other \_\_\_\_\_

***Inventorship***

In view of the papers filed 06 December 2004, it has been found that this nonprovisional application, as filed, through error and without deceptive intent, improperly set forth the inventorship, and accordingly, this application has been corrected in compliance with 37 CFR 1.48(a). The inventorship of this application has been changed with the addition of Raymond Charles Schafer to the list of the inventors.

The application will be forwarded to the Office of Initial Patent Examination (OIPE) for issuance of a corrected filing receipt, and correction of Office records to reflect the inventorship as corrected.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rehana Perveen whose telephone number is 571-272-3676. The examiner can normally be reached on Monday - Thursday 8:00am - 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 571-272-3670. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rehana Perveen  
Primary Patent Examiner  
Technology Center 2100



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

**\*BIBDATASHEET\***

CONFIRMATION NO. 4233

Bib Data Sheet

SERIAL NUMBER 09/998,246	FILING DATE 11/30/2001  RULE	CLASS 713	GROUP ART UNIT 2116	ATTORNEY DOCKET NO. KRNL:001
-----------------------------	---------------------------------------	--------------	------------------------	---------------------------------

APPLICANTS

Peter Jeffe, Austin, TX;  
 Bruce Bramhall, Austin, TX;

\*\* CONTINUING DATA ..... *Elp*  
 60/250,200 filed on 11/29/00

\*\* FOREIGN APPLICATIONS ..... *Elp*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED \*\* SMALL ENTITY \*\*  
 \*\* 12/12/2001


Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY TX	SHEETS DRAWING 5	TOTAL CLAIMS 17	INDEPENDENT CLAIMS 5
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance				
Verified and Acknowledged Examiner's Signature: <i>[Signature]</i> Initials: _____				

ADDRESS  
 B. NOEL KIVLIN  
 CONLEY, ROSE & TAYON, P.C.  
 P.O. BOX 398  
 AUSTIN, TX  
 78767-0398

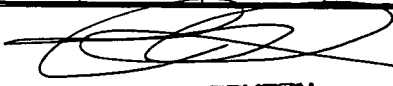
TITLE  
 Computer restoration systems and methods

FILING FEE RECEIVED 584	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other <input type="checkbox"/> Credit
----------------------------	---	---

**BEST AVAILABLE COPY**

<b>Issue Classification</b> 	<b>Application No.</b> 09/998,246	<b>Applicant(s)</b> JEFFE ET AL.	
	<b>Examiner</b> Rehana Perveen	<b>Art Unit</b> 2116	

ISSUE CLASSIFICATION										
ORIGINAL				CROSS REFERENCE(S)						
CLASS	SUBCLASS			CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)					
713	340			714	2	7	13	15		
INTERNATIONAL CLASSIFICATION										
G	0	F	1124							
			/							
			/							
			/							
			/							

<del>_____ (Assistant Examiner) (Date)</del>	 <b>REHANA PERVEEN</b> <b>PRIMARY EXAMINER</b> (Primary Examiner)	<b>Total Claims Allowed: 23</b>
<i>C. Beaman</i> (Legal Instruments Examiner)	(Date) <i>3/23/05</i>	
		O.G. Print Claim(s) 1
		O.G. Print Fig. 3

<input checked="" type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
Final	Original	Final	Original	Final	Original	Final	Original
1	1		31		61		91
2	2		32		62		92
3	3		33		63		93
4	4		34		64		94
5	5		35		65		95
6	6		36		66		96
7	7		37		67		97
8	8		38		68		98
9	9		39		69		99
10	10		40		70		100
11	11		41		71		101
12	12		42		72		102
13	13		43		73		103
14	14		44		74		104
15	15		45		75		105
16	16		46		76		106
17	17		47		77		107
18	18		48		78		108
19	19		49		79		109
20	20		50		80		110
21	21		51		81		111
22	22		52		82		112
23	23		53		83		113
	24		54		84		114
	25		55		85		115
	26		56		86		116
	27		57		87		117
	28		58		88		118
	29		59		89		119
	30		60		90		120
							121
							122
							123
							124
							125
							126
							127
							128
							129
							130
							131
							132
							133
							134
							135
							136
							137
							138
							139
							140
							141
							142
							143
							144
							145
							146
							147
							148
							149
							150
							151
							152
							153
							154
							155
							156
							157
							158
							159
							160
							161
							162
							163
							164
							165
							166
							167
							168
							169
							170
							171
							172
							173
							174
							175
							176
							177
							178
							179
							180
							181
							182
							183
							184
							185
							186
							187
							188
							189
							190
							191
							192
							193
							194
							195
							196
							197
							198
							199
							200
							201
							202
							203
							204
							205
							206
							207
							208
							209
							210



## WEST Search History

[Hide Items](#)[Restore](#)[Clear](#)[Cancel](#)

DATE: Wednesday, March 23, 2005

<b>Hide?</b>	<b>Set Name</b>	<b>Query</b>	<b>Hit Count</b>
		<i>DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L6	L5 same (sav\$4 or restor\$4)	1
<input type="checkbox"/>	L5	(client near2 (disc or disk) near2 configur\$7)	12
<input type="checkbox"/>	L4	L3 same client	2
<input type="checkbox"/>	L3	L2 same configur\$7	68
<input type="checkbox"/>	L2	(sav\$4 or restor\$4) near3 (device or peripheral or disc or disk) near3 state	1168
<input type="checkbox"/>	L1	(sav\$4 or restor\$4) near3 (device or peripheral or disc or disk)	31112

END OF SEARCH HISTORY



[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)[Generate Collection](#)[Print](#)

L5: Entry 9 of 12

File: USPT

May 26, 1998

DOCUMENT-IDENTIFIER: US 5758165 A

TITLE: Local area network and network operating system for formatting a client disk and installing a client operating system

Detailed Description Text (17):

Server disk 203 contains the disk images which are to be copied onto client disks 208. A different disk image is required for each different configuration that is to be written onto client disk 208.

Detailed Description Text (20):

It will be obvious to one skilled in the art that schemes could be employed to reuse portions of disk image files in initializing client disks 208 without departing from the sprit of scope of the present invention. Likewise, empty portions of client disks 208 could be algorithmically generated rather than copied. If there are a large number of configurations of large client disks, then such optimizations may be significant.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#)   [Fwd Refs](#)   [Previous Doc](#)   [Next Doc](#)   [Go to Doc#](#)

[Generate Collection](#)   [Print](#)

L5: Entry 7 of 12

File: USPT

May 20, 2003

DOCUMENT-IDENTIFIER: US 6567774 B1

TITLE: Method and system for configuring and updating networked client stations using a virtual disk and a snapshot disk

Detailed Description Text (13):

The snapshot disks are mapped to the master configuration identifier files on virtual disk 22. The snapshot disks are exported to client stations which are to be configured using the snapshot, and the client stations are configured accordingly. Pointers contained in the snapshot.disks permit configuration information, as appropriate, to be retrieved from the servers 16 and installed in the local memories 13 of the client stations 12.

CLAIMS:

14. A system for configuring and updating the configuration of networked client stations, comprising: one or more storage devices including respective configuration information for configuring client stations connected via a network to each other and to the one or more storage disk devices, wherein each of the client stations is configurable with respective configuration information; one or more virtual disks respectively containing configuration information identifiers each including a representation of respective configuration information and mapping information pointing to corresponding one or more of the locations in the storage devices where the respective configuration information is stored; and, a logical copy of each of the one or more virtual disks from which a second virtual disk is respectively created for updating the configuration of any of the client stations; wherein each of the client stations obtains respective configuration information with the one or more virtual disks and the configuration information identifiers therein, and each client station obtains an updated version of the configuration information with the second virtual disk.

[Previous Doc](#)   [Next Doc](#)   [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L5: Entry 6 of 12

File: USPT

Jun 1, 2004

DOCUMENT-IDENTIFIER: US 6745286 B2

TITLE: Interface architecture

Detailed Description Text (282):

One advantage achieved by the aforementioned distributed configurations is that they may provide increased data protection and/or fault tolerance. For example, if the replicated server node 150 fails or becomes unavailable, the second replicated server node 151 can handle client requests without service interruption. Another advantage achieved by using this interconnected arrangement is that alternative server node access paths 165 can be created where identical data can be read simultaneously from the two or more interconnected server nodes 150, 151. Thus, if one server node 150 in the cluster is busy and unavailable, another redundant server node 151 can service client requests to increase data throughput and accessibility. As with the single server node configuration, a plurality of clusters 160 may be present and accessible to the clients 110. Similarly, the clusters 160 can be configured to present a single disk image to the clients 110 to facilitate interaction by the end users of the distributed file storage system 100.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)[Generate Collection](#)[Print](#)

L5: Entry 3 of 12

File: USPT

Nov 30, 2004

DOCUMENT-IDENTIFIER: US 6826566 B2

TITLE: Identifier vocabulary data access method and system

Detailed Description Text (638):

In some implementations, in which browser has access to writing of files to the local disk, the Java Client downloads the configuration files and its own code to the Client's local computer, so that in future connections this is no longer necessary except when the versions on the server are more recent than the local ones.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

2116 JFW



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246  
Filed: November 30, 2001  
Inventor(s):  
    Jeffe, et al.

Examiner: Perveen, Rehana  
Group/Art Unit: 2116  
Atty. Dkt. No: 5760-00801

§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

Title: COMPUTER  
        RESTORATION  
        SYSTEMS AND METHOD

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

\_\_\_\_\_  
B. Noël Kivlin  
Printed Name  
\_\_\_\_\_  
Signature                      3-2-05  
Date

**RESPONSE TO OFFICE ACTION OF  
DECEMBER 2, 2004**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

This paper is submitted in response to the Office Action of December 2, 2004, to further highlight why the application is in condition for allowance.

Please amend the case as listed below.

**IN THE CLAIMS:**

Please amend the claims as shown below.

1. (Currently amended) A device restoration system, for restoring a client device to a state prior to a major failure, comprising:

a server device;

a network communicatively interconnecting the client device and the server device;

a storage manager accessible to the server device for saving the state, wherein the state includes ~~a machine configuration state~~ client disk configuration information; and

a network boot in which the server device causes the client device to boot.

2. (Currently amended) A method of restoring a client device of a network on failure of the client device, wherein the network includes a server computer, comprising the steps of:

booting the client device via a network boot;

creating a boot program for operation on the client device;

configuring the client device according to the boot program and a saved configuration state including client disk configuration information;

copying a file to the client device in accordance with a configuration from the step of configuring.

3. (Original) The method of claim 2, wherein the steps of booting, creating, configuring, and copying are performed through communications over the network between the client device and the server computer.

4. (Original) The method of claim 2, wherein the step of booting is performed by a boot server of the network.

5. (Original) The method of claim 2, wherein the step of creating is performed by the server computer and the boot program is communicated to the client device
6. (Original) The method of claim 2, wherein the step of configuring the client device is performed by a file server of the network and a storage manager.
7. (Original) The method of claim 2, wherein the step of copying is performed by a storage manager server of the network.
8. (Original) The method of claim 2, further comprising the step of:  
storing an image of the client device via a storage manager application of a server device of the network.
9. (Original) The method of claim 8, wherein the step of storing is performed by a standard storage manager application and includes backup of the configuration state of the client computer.
10. (Original) The method of claim 9, wherein the step of booting is performed by a boot server of the network; the step of creating is performed by a restore server of the network; the step of configuring is performed by a file server of the network and a storage manager server of the network; and the step of copying is performed by the file server and the storage manager.
11. (Currently amended) A method of restoring a client device of a network, the network including a server device having a storage manager application, comprising the steps of:  
backing up configuration data including client disk configuration information, as well as application and data files, by the storage manager application;  
and  
restoring the backed up configuration data, as well as application and data files, from the step of backing up, to the client device over the network.

12. (Original) The method of claim 11, further comprising the step of: booting the client device via a standard network boot.
13. (Original) The method of claim 12, further comprising the step of:  
supplying to the client device a boot program; and  
using the boot program at the client device to perform the step of restoring.
14. (Original) The method of claim 11, wherein the client device is remote from the storage manager application.
15. (Original) The method of claim 12, wherein the step of booting is initiated remote from the client device.
16. (Currently amended) A device restoration system, for restoring a client device to a state prior to a major failure, comprising:  
a controlling device connected to the client device, for resetting the client device;  
a storage manager communicatively connected to the client device, for saving the state, wherein the state includes ~~a machine configuration state~~ client disk configuration information; and  
a boot program for operating the client device, communicatively connected to the storage manager, and causing the client device to boot with the state.
17. (Currently amended) A method of restoring a client device on failure of the client device, comprising the steps of:  
saving a state of the client device, including client disk configuration information, prior to the failure;  
resetting the client device;  
booting the client device; and  
configuring the client device according to the state from the step of saving.



18. (New) A system comprising:  
backup software; and  
a restoration server;  
wherein the backup software is configured to create one or more backups of a client device,  
wherein at least one backup of the one or more backups comprises client disk  
configuration information; and  
wherein, following a failure of the client device, the restoration server is configured to:  
perform a network boot of the client device; and  
restore a client disk configuration using the client disk configuration information.
19. (New) The system of claim 18, wherein the restoration server is further configured  
to copy a boot image to the client device over a network.
20. (New) The system as recited in claim 18, wherein the restoration server is further  
configured to mount one or more files at the client device over a network.
21. (New) The system as recited in claim 20, wherein the one or more files include an  
operating systems configuration file.
22. (New) The system as recited in claim 18, wherein the restoration server is further  
configured to reestablish one or more logical volumes at the client device.
23. (New) The system as recited in claim 18, wherein the restoration server is further  
configured to set up one or more file systems at the client device.

## REMARKS

Claims 1 – 17 were pending in the present application. Claims 1, 2, 11, 16 and 17 have been amended. Claims 18 – 23 have been added. Claims 1 – 23 remain pending in the present application

Claims 1 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoggarth et al. (U.S. Patent Number 6,535,976, hereinafter ‘Hoggarth’) in view of Chou et al (U.S. Patent Number 6,065,123, hereinafter ‘Chou’), further in view of Mergard (U.S. Patent Number 6,530,050). Applicant respectfully traverses this rejection and requests reconsideration. Applicant has nevertheless amended independent Claims 1, 2, 11, 16 and 17.

Amended Claim 1 recites a storage manager accessible to a server device for saving the state of a client device, wherein the state includes **client disk configuration information**.

As noted by Applicant in a response to the previous Office Action, Hoggarth discloses a method of booting a client data processing system attached to a control data processing system, wherein the client system issues an initial program load request onto a network, and wherein in response to the initial program load request, bootstrap code is transferred to the client from the control system to cause the client to boot (Abstract). As acknowledged by the Examiner, Hoggarth does not teach saving a state of a client device.

Chou discloses a computer system with unattended on-demand availability including power saving features (Abstract). **Applications** may periodically save their operational states to guard against power failures and crashes in the computer system disclosed by Chou (Abstract). The lines cited by Examiner (Column 23, line 52 – Column 24, line 18) describe checkpoint services available **to applications**, allowing the InstantON servicing agent to restart selected **applications** that had earlier registered with

the InstantON servicing agent. Chou does not teach or suggest saving client disk configuration information.

Mergard also does not teach or suggest saving client disk configuration information. Mergard discloses a utility program to configure a memory with configuration states of peripheral devices of a microcontroller (Column 2, lines 38-41). Mergard teaches saving **hardware register values for microcontroller peripheral devices** using **hardware scan path circuitry** to sequentially shift configuration scan data from a microcontroller peripheral device into an external memory (Column 4, lines 16-39). In the lines cited by the Examiner, Mergard addresses the difficulty of reading and writing to or from particular registers when saving/restoring peripheral state using routines run by an execution unit (Column 5, lines 57-59, Column 6, lines 5-8), and teaches using the configuration scan path (i.e., hardware scan path circuitry) to resolve these difficulties.

Applicant can find no teaching or suggestion in either Hoggarth, Chou or Mergard, taken singly or in combination, of saving **client disk configuration information**, as recited in amended Claim 1 of the present application. Accordingly, Applicant respectfully submits that amended Claim 1 patentably distinguishes over the art cited by the Examiner.

Amended independent Claim 2 recites configuring a client device according to the boot program and a **saved configuration state including client disk configuration information**. Amended independent Claim 11 recites **backing up configuration data including client disk configuration information**. Amended independent Claims 16 and 17 similarly recite saving a state of a client device, **including client disk configuration information**. For at least the reasons cited above, amended independent Claims 2, 11, 16 and 17 are also believed to patentably distinguish over the art cited by the Examiner. As Claims 3-10 and 12-15 depend upon amended independent Claims 2 and 11, Claims 3 – 10 and 12 – 15 are also believed to patentably distinguish over the cited art.

New independent Claim 18 recites backup software configured to create one or more backups of a client device, wherein at least one backup of the one or more backups comprises client disk configuration information; and a restoration server configured to restore a client disk configuration using the client disk configuration information following a failure of the client device. Support for new independent Claim 18 and dependent Claims 19 – 23 is found at least in lines 16 – 18 of page 11 of the present application, as well as in Figures 4, 5, 6 and the accompanying descriptions.

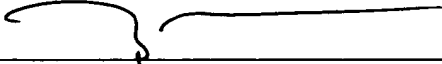
Accordingly, Applicant submits that independent Claims 1, 2, 11, 16, 17 and 18, as well as the remaining pending dependent claims, are in condition for allowance.

**CONCLUSION**

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-00801/BNK.

Respectfully submitted,

  
\_\_\_\_\_  
B. Noël Kivlin  
Reg. No. 33,929  
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.  
P.O. Box 398  
Austin, TX 78767-0398  
Phone: (512) 853-8800

Date: 3-2-05



2/11/04  
 Patent


IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246  
 Filed: November 30, 2001  
 Inventor(s):  
 Peter Jeffe  
 Bruce Bramhall  
 Raymond Charles Schafer

§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

Examiner: Perveen, Rehana  
 Group/Art Unit: 2116  
 Atty. Dkt. No.: 5760-00801  
 Confirmation No.: 4233

Title: COMPUTER  
 RESTORATION  
 SYSTEMS AND  
 METHOD

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8	
DATE OF DEPOSIT:	12/11/04
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated above and is addressed to:	
Commissioner for Patents Alexandria, VA 22313-1450	
 Derrick Brown	

PETITION FOR CORRECTION OF INVENTORSHIP (37 CFR 1.48(a))

Commissioner for Patents  
 ATTN: SUPERVISORY EXAMINER  
 Alexandria, VA 22313-1450

Dear Sir:

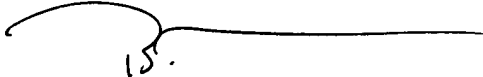
This is a petition for correction of an error in nonjoinder of an inventor in the above patent application. It is respectfully requested that the PTO correct the error. The correct inventorship is Peter Jeffe, Bruce Bramhall, and Raymond Charles Schafer.

Enclosed herewith is:

1. A statement from the person being added as an inventor that the inventorship error occurred without any deceptive intention on his part.

2. A statement from the assignee of the above parties agreeing to the change of inventorship.
3. A fee authorization in the amount of \$130.00 for the fee set forth in 37 CFR § 1.17(i) and the fee for recording the Assignment(s).
4. A Declaration by each actual inventor.
5. An assignment(s) to be recorded from the added inventor.

Respectfully Submitted,



B. Noël Kivlin  
Reg. No. 33,929  
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
700 Lavaca, Suite 800  
Austin, Texas 78701-3102  
Phone: (512) 853-8840  
Date: 12-1-04  
pet.inventorship



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246 §
Filed: November 30, 2001 §
Inventor(s): §
Peter Jeffe §
Bruce Bramhall §
Raymond Charles Schafer §
Title: COMPUTER §
RESTORATION §
SYSTEMS AND §
METHOD §

Examiner: Perveen, Rehana
Group/Art Unit: 2116
Atty. Dkt. No.: 5760-00801
Confirmation No.: 4233

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8
DATE OF DEPOSIT: 12/1/04
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated above and is addressed to:
Commissioner for Patents Alexandria, VA 22313-1450
Derrick Brown

STATEMENT IN REGARD TO CHANGE IN INVENTORSHIP BY INVENTOR BEING ADDED

Commissioner for Patents
Alexandria, VA 22313-1450

I, Raymond Charles Schafer, the person being added as inventor to the above patent application, do hereby state that the inventorship error occurred without any deceptive intention on my part.

27 Sept, 2004
Date

Raymond Charles Schafer





PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246
Filed: November 30, 2001
Inventor(s): Peter Jeffe, Bruce Bramhall, Raymond Charles Schafer

Title: COMPUTER RESTORATION SYSTEMS AND METHOD

Vertical line of section symbols (§§§§§§§§§§§§§§§§§§§§)

Examiner: Perveen, Rehana
Group/Art Unit: 2116
Atty. Dkt. No.: 5760-00801
Confirmation No.: 4233

CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8
DATE OF DEPOSIT: 12/1/04
I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated above and is addressed to:
Commissioner for Patents
Alexandria, VA 22313-1450
Derrick Brown

STATEMENT OF AGREEMENT TO CHANGE IN INVENTORSHIP BY ASSIGNEE

Commissioner for Patents
Alexandria, VA 22313-1450

VERITAS Operating Corporation, owner by assignment of the above patent application, in the assignments being recorded concurrently herewith and the assignments recorded in the PTO on November 26, 2003 at reel/frame 014156/0758 and reel/frame014156/0772, hereby agrees to the change in inventorship requested in the accompanying petition. I, Joseph T. FitzGerald, have the authority to act on behalf of VERITAS Operating Corporation.

11/19/04
Date

Signature of Joseph T. FitzGerald
Joseph T. FitzGerald
Title: Vice President, Intellectual Property
VERITAS Operating Corporation



PATENT

THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246 §  
 Filed: November 30, 2001 §  
 Inventor(s): §  
 Peter Jeffe §  
 Bruce Bramhall §  
 Raymond Charles Schafer §  
 Title: COMPUTER §  
 RESTORATION §  
 SYSTEMS AND §  
 METHOD §

Examiner: Perveen, Rehana  
 Group/Art Unit: 2116  
 Atty. Dkt. No.: 5760-00801  
 Confirmation No.: 4233

CERTIFICATE OF MAILING  
 UNDER 37 C.F.R. §1.8

DATE OF DEPOSIT: 12/1/04

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail on the date indicated above and is addressed to:

Commissioner for Patents  
 Alexandria, VA 22313-1450

*[Signature]*  
 Derreck Brown

FEE AUTHORIZATION

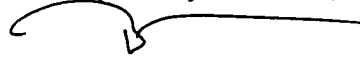
Commissioner for Patents  
 P.O. Box 1450  
 Alexandria, VA 22313-1450

The Commissioner is hereby authorized to charge the following fee to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5760-00801:

Fee: Petition for Correction of Inventorship  
 Amount: \$130.00  
 Attorney Docket No.: 5760-00801

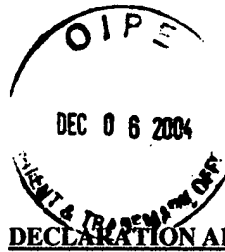
The Commissioner is also authorized to charge any extension fee or other fees which may be necessary to the same account number.

Respectfully Submitted,



B. Noël Kivlin  
 Reg. No. 33,929  
 ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
 700 Lavaca, Suite 800  
 Austin, Texas 78701-3102  
 Phone: (512) 853-8840  
 Date: 12-1-04



5760-00801  
VRTS-0164

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "COMPUTER RESTORATION SYSTEMS AND METHODS," the specification of which:

- is attached hereto.
- was filed on November 29, 2001 as Application Serial No. 09/998,246 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed:

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> (mm/dd/yy)	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> (mm/dd/yy)
60/250,200	11/29/00

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Parent Application No.</u>	<u>Filing Date (mm/dd/yy)</u>	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

I hereby revoke any previous Powers of Attorney and appoint

Joseph T. FitzGerald	Reg. No. 33,881
John Brigden	Reg. No. 40,530
Julie Stephenson	Reg. No. 41,330

*each of said attorneys being employed by Veritas Software Corporation; and*

Mark K. Brightwell	Reg. No. 47,446	Mario J. Lewin	Reg. No. 54,268
Kay A. Colapret	Reg. No. 52,759	Lawrence J. Merkel	Reg. No. 41,191
Stephen J. Curran	Reg. No. 50,664	Eric B. Meyertons	Reg. No. 34,876
Mark R. DeLuca	Reg. No. 44,649	Neal E. Persky	Reg. No. 53,452
Heather L. Flanagan	Reg. No. 54,101	Liza Philip	Reg. No. 51,352
Russell Henrichs	Reg. No. 50,354	David W. Quimby	Reg. No. 39,338
Erik A. Heter	Reg. No. 50,652	Rory D. Rankin	Reg. No. 47,884
Jeffrey C. Hood	Reg. No. 35,198	Gareth Sampson	Reg. No. 52,191
Rajiv Jauhari	Reg. No. 55,850	Chris Thompson	Reg. No. 43,188
B. Noël Kivlin	Reg. No. 33,929	Mark S. Williams	Reg. No. 50,658
Robert C. Kowert	Reg. No. 39,255		

*each of said attorneys or agents being a member or an associate of the firm of Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C., as attorney or agent for so long as they remain with such company or firm, with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.*

Please direct all communications to:

B. Noël Kivlin  
Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
Phone: (512) 853-8800

5760-00801  
VRTS-0164

I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Peter Jeffe

Inventor's Signature:  Date: 10-5-04

City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US

Post Office and Residence Address: 1613 Patterson Rd., Austin TX 78748 33  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Bruce Bramhall

Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

City and State (or Foreign Country) of Residence: Pflugerville, TX Citizenship: US

Post Office and Residence Address: 202 Applewood Dr., Pflugerville, TX 78660  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Raymond Charles Schafer

Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_

City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US

Post Office and Residence Address: 4407 Oak Cree Drive, Austin, TX 78727  
(Include number, street name, city, state and zip code)



5760-00801  
VRTS-0164

**DECLARATION AND POWER OF ATTORNEY**

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "COMPUTER RESTORATION SYSTEMS AND METHODS," the specification of which:

- is attached hereto.
- was filed on November 29, 2001 as Application Serial No. 09/998,246 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> (mm/dd/yy)	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> (mm/dd/yy)
60/250,200	11/29/00

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Parent Application No.</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

I hereby revoke any previous Powers of Attorney and appoint

Joseph T. FitzGerald	Reg. No. 33,881
John Brigden	Reg. No. 40,530
Julie Stephenson	Reg. No. 41,330

*each of said attorneys being employed by Veritas Software Corporation; and*

Mark K. Brightwell	Reg. No. 47,446	Mario J. Lewin	Reg. No. 54,268
Kay A. Colapret	Reg. No. 52,759	Lawrence J. Merkel	Reg. No. 41,191
Stephen J. Curran	Reg. No. 50,664	Eric B. Meyertons	Reg. No. 34,876
Mark R. DeLuca	Reg. No. 44,649	Neal E. Persky	Reg. No. 53,452
Heather L. Flanagan	Reg. No. 54,101	Liza Philip	Reg. No. 51,352
Russell Henrichs	Reg. No. 50,354	David W. Quimby	Reg. No. 39,338
Erik A. Heter	Reg. No. 50,652	Rory D. Rankin	Reg. No. 47,884
Jeffrey C. Hood	Reg. No. 35,198	Gareth Sampson	Reg. No. 52,191
Rajiv Jauhari	Reg. No. 55,850	Chris Thompson	Reg. No. 43,188
B. Noël Kivlin	Reg. No. 33,929	Mark S. Williams	Reg. No. 50,658
Robert C. Kowert	Reg. No. 39,255		

*each of said attorneys or agents being a member or an associate of the firm of Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C., as attorney or agent for so long as they remain with such company or firm, with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.*

Please direct all communications to:

B. Noël Kivlin  
Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
Phone: (512) 853-8800

5760-00801  
VRTS-0164

I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Peter Jeffe  
Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US  
Post Office and Residence Address: 1613 Patterson Rd., Austin TX 78746  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Bruce Bramhall  
Inventor's Signature: *Bruce Bramhall* Date: 9-27-2007  
City and State (or Foreign Country) of Residence: Pflugerville, TX Citizenship: US  
Post Office and Residence Address: 202 Applewood Dr., Pflugerville, TX 78660  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Raymond Charles Schafer  
Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US  
Post Office and Residence Address: 4407 Oak Cree Drive, Austin, TX 78727  
(Include number, street name, city, state and zip code)





5760-00801  
VRTS-0164

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "COMPUTER RESTORATION SYSTEMS AND METHODS," the specification of which:

- is attached hereto.
- was filed on November 29, 2001 as Application Serial No. 09/998,246 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> (mm/dd/yy)	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> (mm/dd/yy)
60/250,200	11/29/00

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Parent Application No.</u>	<u>Filing Date (mm/dd/yy)</u>	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

I hereby revoke any previous Powers of Attorney and appoint

Joseph T. FitzGerald	Reg. No. 33,881
John Brigden	Reg. No. 40,530
Julie Stephenson	Reg. No. 41,330

*each of said attorneys being employed by Veritas Software Corporation; and*

Mark K. Brightwell	Reg. No. 47,446	Mario J. Lewin	Reg. No. 54,268
Kay A. Colapret	Reg. No. 52,759	Lawrence J. Merkel	Reg. No. 41,191
Stephen J. Curran	Reg. No. 50,664	Eric B. Meyertons	Reg. No. 34,876
Mark R. DeLuca	Reg. No. 44,649	Neal E. Persky	Reg. No. 53,452
Heather L. Flanagan	Reg. No. 54,101	Liza Philip	Reg. No. 51,352
Russell Henrichs	Reg. No. 50,354	David W. Quimby	Reg. No. 39,338
Erik A. Heter	Reg. No. 50,652	Rory D. Rankin	Reg. No. 47,884
Jeffrey C. Hood	Reg. No. 35,198	Gareth Sampson	Reg. No. 52,191
Rajiv Jauhari	Reg. No. 55,850	Chris Thompson	Reg. No. 43,188
B. Noël Kivlin	Reg. No. 33,929	Mark S. Williams	Reg. No. 50,658
Robert C. Kowert	Reg. No. 39,255		

*each of said attorneys or agents being a member or an associate of the firm of Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C., as attorney or agent for so long as they remain with such company or firm, with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.*

Please direct all communications to:

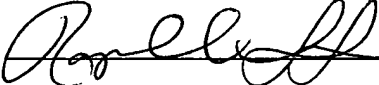
B. Noël Kivlin  
Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
Phone: (512) 853-8800

5760-00801  
VRTS-0164

I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Peter Jeffe  
Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US  
Post Office and Residence Address: 1613 Patterson Rd., Austin TX 78746  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Bruce Bramhall  
Inventor's Signature: \_\_\_\_\_ Date: \_\_\_\_\_  
City and State (or Foreign Country) of Residence: Pflugerville, TX Citizenship: US  
Post Office and Residence Address: 202 Applewood Dr., Pflugerville, TX 78660  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Raymond Charles Schafer  
Inventor's Signature:  Date: 27 Sept, 2004  
City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US  
Post Office and Residence Address: 4407 Oak Cree Drive, Austin, TX 78727  
(Include number, street name, city, state and zip code)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,246	11/30/2001	Peter Jeffe	KRNL:001	4233

7590 12/02/2004  
B. NOEL KIVLIN  
CONLEY, ROSE & TAYON, P.C.  
P.O. BOX 398  
AUSTIN, TX 78767-0398

EXAMINER

PERVEEN, REHANA

ART UNIT PAPER NUMBER

2116

DATE MAILED: 12/02/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

<b>Application No.</b> 09/998,246	<b>Applicant(s)</b> JEFFE ET AL.	
<b>Examiner</b> Rehana Perveen	<b>Art Unit</b> 2116	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 26 October 2004.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-17 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 22 April 2002 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All b)  Some \* c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/26/04.
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_

***Response to Amendment***

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoggarth et al, Patent No. 6,535,976, in view of Chou et al, Patent No. 6,065,123, further in view of Mergard, Patent No. 6,530,050.

Hoggarth et al and Chou et al were cited as prior art in the previous office action.

As to claims 1 and 16, Hoggarth et al teach a server device, a network communicatively interconnecting a client device and the server device, a storage manager accessible to the server device (col. 6 lines 7-40), a controlling device connected to the client device for resetting the client device (col. 2 lines 56-61), and a network boot in which the server device causes the client device to boot (col. 6 lines 7-40).

However, Hoggarth et al do not expressly teach the storage manager saving a state prior to a major failure, wherein the state includes a machine configuration state.

Chou et al teach a storage manager saving a state prior to a major failure (col. 23 line 52 – col. 24 line 18). Chou et al do not expressly teach the state including a machine configuration state.

Art Unit: 2116

Mergard teaches saving and restoring a state, the state including a machine configuration state (col. 5 line 54 – col. 6 line 52).

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Hoggarth et al, Chou et al, and Mergard because Chou et al's state saving feature prior to a major failure and Mergard's saving a machine configuration state, when incorporated into Hoggarth et al's network communication system of clients and server, would have enabled improved integrity of the overall system and improved throughput by quickly allowing to return to operational state preceding a major failure.

Claims 2-15 and 17 are directed to the method of system claims 1 and 16. Hoggarth et al, Chou et al, and Mergard, in combination, teach the system as set forth in claims 1 and 16. Therefore, Hoggarth et al, Chou et al, and Mergard, also in combination, teach the method as set forth in claims 2-15 and 17.

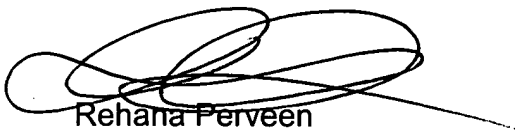
### ***Response to Arguments***

Applicant's arguments with respect to claims 1-17 have been considered but are moot in view of the new ground(s) of rejection.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rehana Perveen whose telephone number is 703-305-8476. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703-308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rehana Perveen  
Primary Patent Examiner  
Technology Center 2100



<b>Notice of References Cited</b>	Application/Control No. 09/998,246	Applicant(s)/Patent Under Reexamination JEFFE ET AL.	
	Examiner Rehana Perveen	Art Unit 2116	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-6,530,050 B1	03-2003	Mergard, Jim	714/726
B	US-6,243,831 B1	06-2001	Mustafa et al.	714/24
C	US-			
D	US-			
E	US-			
F	US-			
G	US-			
H	US-			
I	US-			
J	US-			
K	US-			
L	US-			
M	US-			

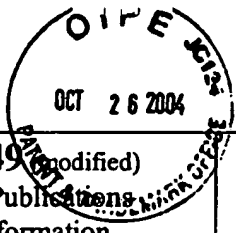
**FOREIGN PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
N					
O					
P					
Q					
R					
S					
T					

**NON-PATENT DOCUMENTS**

*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
U	
V	
W	
X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



<b>Form PTO-1449 (modified)</b> List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)	ATTY. DKT. NO. 5760-00801  APPLICANT: Jeffe, et al.  FILING DATE: 11/30/01	SERIAL NO. 09/998,246  GROUP: 2116
---	--	--

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE APPROPRIATE
<i>JH</i>	B1	6,802,025	10/5/04	Thomas, et al			
<i>JH</i>	B2	6,785,695	8/31/04	Hamilton, II et al			

**FOREIGN PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATIO YES/NO

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**


EXAMINER:  DATE CONSIDERED: 11/9/04

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent own  
 Information Disclosure Statement--PTO 1449 (modified)



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
 United States Patent and Trademark Office  
 Address: COMMISSIONER FOR PATENTS  
 P.O. Box 1450  
 Alexandria, Virginia 22313-1450  
 www.uspto.gov

**\*BIBDATASHEET\***

CONFIRMATION NO. 4233

Bib Data Sheet

SERIAL NUMBER 09/998,246	FILING DATE 11/30/2001  RULE	CLASS 713	GROUP ART UNIT 2116	ATTORNEY DOCKET NO. KRNL:001
-----------------------------	---------------------------------------	--------------	------------------------	---------------------------------

APPLICANTS

Peter Jeffe, Austin, TX;

Bruce Bramhall, Austin, TX;

\*\* CONTINUING DATA \*\*\*\*\*

60/250,200 filed on 11/29/00

\*\* FOREIGN APPLICATIONS \*\*\*\*\*

IF REQUIRED, FOREIGN FILING LICENSE GRANTED

\*\* SMALL ENTITY \*\*

\*\* 12/12/2001

Foreign Priority claimed <input type="checkbox"/> yes <input checked="" type="checkbox"/> no	STATE OR COUNTRY TX	SHEETS DRAWING 5	TOTAL CLAIMS 17	INDEPENDENT CLAIMS 5
35 USC 119 (a-d) conditions met <input type="checkbox"/> yes <input checked="" type="checkbox"/> no <input type="checkbox"/> Met after Allowance	Verified and Acknowledged Examiner's Signature: _____ Initials: _____			

ADDRESS

B. NOEL KIVLIN  
 CONLEY, ROSE & TAYON, P.C.  
 P.O. BOX 398  
 AUSTIN, TX  
 78767-0398

TITLE

Computer restoration systems and methods

FILING FEE RECEIVED 584	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:	<input type="checkbox"/> All Fees <input type="checkbox"/> 1.16 Fees ( Filing ) <input type="checkbox"/> 1.17 Fees ( Processing Ext. of time ) <input type="checkbox"/> 1.18 Fees ( Issue ) <input type="checkbox"/> Other _____ <input type="checkbox"/> Credit
----------------------------	---	---

**BEST AVAILABLE COPY**



## WEST Search History





DATE: Tuesday, November 16, 2004

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
		<i>DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>	
<input type="checkbox"/>	L7	L6 same restor\$7	3
<input type="checkbox"/>	L6	(sav\$4 near3 (hardware or device or machine) near3 configur\$9 near3 (setting or state))	12
<input type="checkbox"/>	L5	(sav\$4 near2 (hardware or device or machine) near2 configur\$9 near2 (setting or state))	6
<input type="checkbox"/>	L4	L2 with restor\$5	8
<input type="checkbox"/>	L3	L2 same restor\$5	15
<input type="checkbox"/>	L2	(sav\$4 near2 configur\$9 near2 state)	47
<input type="checkbox"/>	L1	(configur\$9 near2 state)	9028

END OF SEARCH HISTORY

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

Generate Collection

Print

L7: Entry 2 of 3

File: USPT

Jun 5, 2001

DOCUMENT-IDENTIFIER: US 6243831 B1

TITLE: Computer system with power loss protection mechanism

Detailed Description Text (17):

In the S3 sleeping state, all device configurations are saved in RAM by the operating system, and the operating system directs device drivers and BIOS to turn off all devices. Then, RAM is reduced to a lower power state. Upon return from S3, full power is restored to RAM, all devices are turned back on and reconfigured to the state they were in before S3 was entered by the device drivers and BIOS.

Detailed Description Text (18):

The S4 sleeping state is the lowest power state because RAM is turned off, in contrast to the S1, S2, and S3 sleeping states, where RAM continues to be powered. In the S4 sleeping state, all device configurations are saved to RAM under the direction of the operating system. Then, the operating system saves RAM to a hibernation file somewhere in a non-volatile storage medium. The operating system then powers down the computer system S, except for trickle current, in some cases. Resume from the S4 state results from a variety of events, dependent upon designer choices. For example, an incoming fax or phone call may trigger a return from S4. When resume occurs, the contents of the hibernation file are restored to RAM by the operating system, and all devices are re-powered and reconfigured to the pre-S4 state.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

End of Result Set



Generate Collection

Print

L7: Entry 3 of 3

File: USPT

Dec 31, 1996

DOCUMENT-IDENTIFIER: US 5590315 A

TITLE: Method and apparatus for simulating user input device presence in a computer system

## CLAIMS:

8. A method of preventing the loss of device configuration on standby in a computer system including a processor, a first device port capable of being powered down for coupling to a first physical user input device and controller circuitry for communicating between the processor and the first device port and for receiving device configuration command characters from the processor, the configuration command characters being suitable for altering the configuration of the first physical user input device, which in turn is configurable by the configuration command characters but is incapable of providing its configuration state to the controller circuitry, the method comprising the steps of:

(a) capturing in the computer system predetermined device configuration command characters directed to the first device port from the processor;

(b) saving in the computer system a device configuration state of the physical user input device as indicated by the device configuration command characters captured in step (a);

(c) powering down the device port;

(d) powering up the device port; and

(e) resending said device configuration command characters responsive to the device configuration state saved in the computer system at step (b) to the first device port to restore the device configuration state to the physical user input device.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L5: Entry 1 of 6

File: USPT

Aug 10, 2004

DOCUMENT-IDENTIFIER: US 6775728 B2

TITLE: Method and system for concurrent handler execution in an SMI and PMI-based dispatch-execution framework

Detailed Description Text (41):

As discussed above, SMM Nub 24 is responsible for coordinating activities while the processors are operating in SMM. The various functions and services provided by one embodiment of SMM Nub 24 are graphically depicted in FIG. 7. These functions and services include synchronizing all of the processors for multiprocessor configurations, saving the machine state, including floating point registers, if required, and flushing the cache, as provided by function blocks 134, 136, and 138. The SMM Nub also provides a mode switching function 140 that switches the processor mode from real mode to protected mode; as discussed above with reference to block 130. Mode switching function 140 also enables the processor's internal cache. Other functions provided by SMM Nub 24 include setting up a call-stack in SMRAM 26, maintaining list of handlers 46, and maintaining handler queue 48, as depicted by function blocks 142, 144, and 146.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)



[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L4: Entry 1 of 8

File: USPT

Jul 13, 2004

DOCUMENT-IDENTIFIER: US 6763327 B1

TITLE: Abstraction of configurable processor functionality for operating systems portability

## CLAIMS:

2. A software library as in claim 1, wherein the areas of processor configurability include save and restore of configurable processor state.

14. A method as in claim 13, wherein the first and second configurations include parameters for processor configurability, the parameters including two or more of save and restore of configurable processor state, co-processor initialization and control, interrupts, timers, instruction caches, processor data caches, processor debug features, and instruction stream disassembly.

15. A method of designing a configurable processor, the configurable processor having a first instruction set architecture portion that is not configurable and a second instruction set architecture portion that is user-configurable, the configurable processor being able to execute software intended for a desired operating system, the method comprising: automatically providing a common software interface to a plurality of different operating systems, including the desired operating system; receiving a desired configuration for the configurable processor, the desired configuration specifying parameters for configuration of the second instruction set architecture portion of the configurable processor, the parameters including two or more of save and restore of configurable processor state, co-processor initialization and control, interrupts, timers, instruction caches, processor data caches, processor debug features, and instruction stream disassembly; automatically generating an abstraction layer based on the received configuration; and building a software implementation using the common software interface and the abstraction layer, the software implementation being executable together with the desired operating system on the configurable processor.

16. A system for designing a configurable processor, the configurable processor having a first instruction set architecture portion that is not configurable and a second instruction set architecture portion that is user-configurable, the configurable processor being able to execute software intended for a desired operating system, the system comprising: a common software interface to a plurality of different operating systems, including the desired operating system; a user interface for receiving a desired configuration for the configurable processor, the desired configuration specifying parameters for configuration of the second instruction set architecture portion of the configurable processor, the parameters including two or more of save and restore of configurable processor state, co-processor initialization and control, interrupts, timers, instruction caches, processor data caches, processor debug features, and instruction stream disassembly; means for automatically generating an abstraction layer based on the received configuration; and means for building a implementation using the common software interface and the abstraction layer, the software implementation being executable together with the desired operating system on the configurable processor.

[First Hit](#) [Fwd Refs](#) [Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[Generate Collection](#) [Print](#)

L4: Entry 3 of 8

File: USPT

May 8, 2001

DOCUMENT-IDENTIFIER: US 6230259 B1  
TITLE: Transparent extended state save

CLAIMS:

1. A microprocessor, comprising:

a microprocessor core, including:

a standard register file; and

an extended register file;

wherein said microprocessor core is configured to execute standard instructions that use said standard register file, but not said extended register file;

wherein said microprocessor core is further configured to execute extended instructions that use said extended register file; and

wherein said microprocessor core is further configured to receive interrupts or exceptions; and

an extended state save circuit coupled to said microprocessor core, wherein said extended state save circuit is configured to restore, in response to a return from an interrupt or exception, a state of the extended register file for a process using said extended instructions if said interrupt or exception was received during execution of said process.

2. The microprocessor as recited in claim 1, wherein said extended state save circuit is further configured to restore said state from a saved version of said state if another process using said extended instructions was executed after said interrupt or exception and before said return.

3. The microprocessor as recited in claim 2, wherein said extended state save circuit is further configured to restore said state as the current state of said extended register file if no other process using said extended instructions was executed after said interrupt or exception and before said return.

7. The microprocessor as recited in claim 6, wherein said extended state save circuit is configured to compare the contents of said buffer identification register to the saved identifier for the process being executed when the interrupt or exception was received and restore the state of the extended register file from the memory buffer identified by the saved identifier if the saved identifier differs from the contents of said buffer identification register upon return from said interrupt or exception.

16. The microprocessor as recited in claim 1, wherein said microprocessor core is configured to execute an instruction for returning to a process using said extended instructions, wherein in response to said instruction for returning to a process using said extended instructions, said extended state save circuit is configured to

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L4: Entry 4 of 8

File: USPT

Oct 24, 2000

DOCUMENT-IDENTIFIER: US 6138194 A

TITLE: Apparatus for sensing movement of a bus card and automatically removing power from the bus card

Brief Summary Text (14):

In another embodiment of the present invention, the controller is configured to detect an insertion of the bus card into the bus connector by monitoring the movement sensor, and to reset the bus card upon detection of the insertion. In a variation on this embodiment, the controller is configured to reset the bus card to an initial state. In another variation, the controller is configured to save state from the bus card to the computer system before removing power from the bus card, and to reset the bus card by restoring the state from the computer system to the bus card.

## CLAIMS:

1. An apparatus for removing connections to a bus card in a computer system when the bus card is inadvertently removed from the computer system while the computer system is operating, comprising:

a bus connector, for receiving the bus card;

a power conductor coupled to the bus connector, to provide an electrical coupling between the bus card and a power source;

a power switch coupled between the power conductor and the bus connector, to selectively provide power to the bus card in the bus connector;

a movement sensor positioned to be in communication with the bus card when the bus card is mounted in the bus connector, for sensing a movement of the bus card from the bus connector; and

a controller coupled between the movement sensor and the power switch, for activating the power switch to remove power from the bus card when the movement sensor detects the movement of the bus card from the bus connector;

wherein the controller is configured to detect an insertion of a new bus card into the bus connector by monitoring the movement sensor, and to reset the new bus card upon detection of the insertion; and

wherein the controller is configured to save a state from the bus card to the computer system before removing power from the bus card, and to reset the new bus card by restoring the state from the computer system to the new bus card.

11. An apparatus for removing connections to a bus card in a computer system when the bus card is inadvertently removed from the computer system while the computer system is operating, comprising:

a bus connector, for receiving the bus card;



**IN THE CLAIMS:**

Please amend the claims as shown below.

1. (Currently amended) A device restoration system, for restoring a client device to a state prior to a major failure, comprising:

a server device;

a network communicatively interconnecting the client device and the server device;

a storage manager accessible to the server device for saving the state, wherein the state includes a machine configuration state; and

a network boot in which the server device causes the client device to boot.

2. (Original) A method of restoring a client device of a network on failure of the client device, wherein the network includes a server computer, comprising the steps of:

booting the client device via a network boot;

creating a boot program for operation on the client device;

configuring the client device according to the boot program and a saved configuration state;

copying a file to the client device in accordance with a configuration from the step of configuring.

3. (Original) The method of claim 2, wherein the steps of booting, creating, configuring, and copying are performed through communications over the network between the client device and the server computer.

4. (Original) The method of claim 2, wherein the step of booting is performed by a boot server of the network.

5. (Original) The method of claim 2, wherein the step of creating is performed by the server computer and the boot program is communicated to the client device

6. (Original) The method of claim 2, wherein the step of configuring the client device is performed by a file server of the network and a storage manager.
7. (Original) The method of claim 2, wherein the step of copying is performed by a storage manager server of the network.
8. (Original) The method of claim 2, further comprising the step of:  
storing an image of the client device via a storage manager application of a server device of the network.
9. (Original) The method of claim 8, wherein the step of storing is performed by a standard storage manager application and includes backup of the configuration state of the client computer.
10. (Original) The method of claim 9, wherein the step of booting is performed by a boot server of the network; the step of creating is performed by a restore server of the network; the step of configuring is performed by a file server of the network and a storage manager server of the network; and the step of copying is performed by the file server and the storage manager.
11. (Original) A method of restoring a client device of a network, the network including a server device having a storage manager application, comprising the steps of:  
backing up configuration data, as well as application and data files, by the storage manager application; and  
restoring the backed up configuration data, as well as application and data files, from the step of backing up, to the client device over the network.
12. (Original) The method of claim 11, further comprising the step of: booting the client device via a standard network boot.
13. (Original) The method of claim 12, further comprising the step of:

supplying to the client device a boot program; and  
using the boot program at the client device to perform the step of restoring.

14. (Original) The method of claim 11, wherein the client device is remote from the storage manager application.

15. (Original) The method of claim 12, wherein the step of booting is initiated remote from the client device.

16. (Currently amended) A device restoration system, for restoring a client device to a state prior to a major failure, comprising:

a controlling device connected to the client device, for resetting the client device;  
a storage manager communicatively connected to the client device, for saving the state, wherein the state includes a machine configuration state; and  
a boot program for operating the client device, communicatively connected to the storage manager, and causing the client device to boot with the state.

17. (Original) A method of restoring a client device on failure of the client device, comprising the steps of:

saving a state of the client device prior to the failure;  
resetting the client device;  
booting the client device; and  
configuring the client device according to the state from the step of saving.

## REMARKS

Claims 1 – 17 were pending in the present application. Claims 1 and 16 have been amended. Claims 1 – 17 remain pending in the present application.

Claims 1 – 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoggarth et al. (U.S. Patent Number 6,535,976, hereinafter ‘Hoggarth’) in view of Chou et al (U.S. Patent Number 6,065,123, hereinafter ‘Chou’). Applicant respectfully traverses this rejection.

Hoggarth discloses a method of booting a client data processing system attached to a control data processing system, wherein the client system issues an initial program load request onto a network, and wherein in response to the initial program load request, bootstrap code is transferred to the client from the control system to cause the client to boot (Abstract). Specifically, Hoggarth discloses a ‘hybrid’ initial program load mechanism which combines the advantages of both conventional RPL (remote program load) and local program load techniques (Column 4, lines 53 – 58). A Normal and a Special mode of operation for the hybrid RPL technique are disclosed. In Normal mode, the control server sends the client a bootstrap program which initiates a local program load which causes the client to operate, in effect, like a normal (i.e., non-RPL) client system (Column 4, line 58 – Column 5, line 3). In Special Mode, the administrator changes the setup of the server system to specify a different RPL bootstrap program for the client, e.g., a minimal operating system. At the next power-on or reboot, the client issues a request for RPL as usual, and is provided the special bootstrap program by the server, which is then installed on the client hard file. The administrator then changes the setup of the server to specify a local program load for the client. At the next power-on or reboot, the client reverts to the normal operation and carries out a local program load from the ‘amended’ software (Column 5, lines 4-21). Hoggarth further teaches that “each client is ‘forced’ to issue a boot request from the server at each power-on or reboot” (Column 5, lines 27-28), and that “by means of the present invention, the client is



prevented from taking control and carrying out an unsupervised local boot” (Column 5, lines 37-39).

The Examiner has cited Column 6, lines 7-40 of Hoggarth as teaching “a storage manager accessible to the server device”. Column 6, lines 7-40 of Hoggarth describe steps involved in a normal case hybrid RPL operation. In contrast, a “storage manager” is disclosed on page 11, line 21, through page 12, line 3 of the present application as an application or server that backs up all of the client computer files, including the client machine configuration settings, as well as application and data files. Applicant can find no teaching or suggestion of a storage manager in Column 6, lines 7-40 of Hoggarth.

Further, the Examiner has cited Column 2, lines 56-61 of Hoggarth as teaching “a controlling device connected to the client device for resetting the client device”. Column 2, lines 56-61 of Hoggarth disclose that in a preferred method, the software specified by the control system is an upgrade to the BIOS code, and the method includes storing the upgraded BIOS in non-volatile storage. The BIOS “specifies the location from where the client boots at power-on or reboot” (Hoggarth, Column 5, lines 40-42). In contrast, in the description starting on page 10, line 17 of the present application, a controlling device is described as operable to “electrically (and if necessary, mechanically) initiate a reset as if the reset button on the client computer is triggered” as part of a “restore operation”. Applicant can find no teaching or suggestion of a controlling device capable of initiating a reset as part of a restore operation in the cited lines from Hoggarth.

In addition, the Examiner cites Chou (Column 23 line 52 – Col. 24, line 18) as teaching “a storage manager saving a state prior to a major failure”. Chou discloses a computer system with unattended on-demand availability including power saving features (Abstract). Applications periodically save their operational states to guard against power failures and crashes in the computer system disclosed by Chou. If a power failure or crash occurs, the system consults restart policies and, if appropriate, automatically re-starts applications to their most recently saved operational states once power is re-stored (Abstract). The lines cited by Examiner describe checkpoint services

available to applications, allowing the InstantON servicing agent to restart selected applications that had earlier registered with the InstantON servicing agent. Necessary state information for the application is periodically saved in checkpoint records. InstantON servicing agent begins running once the operating system is running (Column 10, lines 4-5). That is, InstantON requires the operating system to be functioning.

Applicant can find no teaching or suggestion in Chou of saving “machine configuration state,” as recited in Applicant’s amended claims 1 and 16. As described starting on page 8, line 18 of the present application, “all files of the client computer, including machine configuration states, as well as the usual application files and data of the client computer”, are backed up to the storage manager. The present application expressly distinguishes the saving of machine configuration states (page 8, lines 13-18, page 11, lines 18-21) from the operations of storage managers that only save application state as disclosed by Chou. The saved machine configuration state may be used to restore the client system, as well as applications, after a failure (page 9, lines 1-6, page 11, lines 7-10).

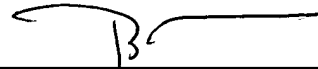
Accordingly, amended Claims 1 and 16 are believed to patentably distinguish over Hoggarth and Chou. Claims 2 – 15 and 17 are directed to the method of system Claims 1 and 16, and are thus believed to patentably distinguish over Hoggarth and Chous for at least the above reasons.

**CONCLUSION**

Applicant submits the application is in condition for allowance, and an early notice to that effect is requested.

If any fees are due, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C. Deposit Account No. 501505/5760-00801/BNK.

Respectfully submitted,



---

B. Noël Kivlin  
Reg. No. 33,929  
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.  
P.O. Box 398  
Austin, TX 78767-0398  
Phone: (512) 853-8800

Date: 10-20-04



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

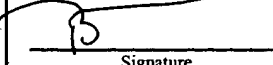
Application No.: 09/998,246  
Filed: November 30, 2001  
Inventor(s):  
Jeffe, et al.

§ Examiner: Perveen, Rehana  
§ Group/Art Unit: 2116  
§ Atty. Dkt. No: 5760-00801  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

Title: COMPUTER  
RESTORATION  
SYSTEMS AND METHOD

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

B. Noël Kivlin  
Printed Name

 10-20-01  
Signature Date

FEE AUTHORIZATION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

The Commissioner is hereby authorized to charge the following fee to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account Number 50-1505/5760-00801:

Fee: Information Disclosure Statement  
Amount: \$180.00  
Attorney Docket No.: 5760-00801

The Commissioner is also authorized to charge any extension fee or other fees which may be necessary to the same account number.

Respectfully submitted,

B. Noël Kivlin  
Reg. No. 33,929  
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.  
P.O. Box 398  
Austin, TX 78767-0398  
Phone: (512) 853-8800  
Date: 10-20-01



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 09/998,246
Filed: November 30, 2001
Inventor(s):
Jeffe, et al.

Examiner: Perveen, Rehana
Group/Art Unit: 2116
Atty. Dkt. No: 5760-00801

Title: COMPUTER
RESTORATION
SYSTEMS AND METHOD

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date indicated below.

B. Noel Kivlin
Printed Name

Signature

Date

INFORMATION DISCLOSURE STATEMENT

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

Applicant requests consideration of [X] the references listed on the attached Form PTO-1449 and/or [ ] the additional information identified below in paragraph 3.

- [X] A copy of each reference listed on the Form PTO-1449 is enclosed.
[ ] The references listed on the Form PTO-1449 were previously cited in application serial no. \_\_\_\_\_ to which the captioned application is seeking priority under 35 U.S.C. §120; therefore, a copy of each reference is not enclosed.
[ ] The captioned application was filed after June 30, 2003; therefore, a copy of each reference is not enclosed.

1. This Information Disclosure Statement is submitted:

- a. [ ] within 3 months of the filing date of a national application other than a continued prosecution application under § 1.53(d);
[ ] within 3 months of the date of entry of the national stage as set forth in § 1.491 in an International application;
[ ] before the mailing date of a first Office Action on the merits; or

- before the mailing of a first Office Action after the filing of a request for continued examination under § 1.114.
- b.  after the events of above paragraph 1a and prior to the mailing date of a final Office Action or Notice of Allowance, and thus:  the certification of paragraph 2 below is provided, or  a fee of \$180.00 is enclosed.
- c.  after the mailing date of a final Office Action or a Notice of Allowance and prior to payment of the issue fee, and thus: the certification of paragraph 2 below is provided and a fee of \$180.00 is enclosed.

2. It is hereby certified:

- that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or
- that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in § 1.56 (c) more than three months prior to the filing of the Statement.

3.  Consideration of the following additional information (including any co-pending or abandoned U.S. applications, prior uses and/or sales, etc.) is requested:

4. For each non-English language reference listed on the attached Form PTO-1449:

- reference is made to an English language translation submitted herewith, and/or
- reference is made to a foreign patent office search report (in the English language) submitted herewith, and/or
- reference is made to an English language translation of a foreign patent office search report submitted herewith, and/or
- reference is made to the concise explanation contained in the specification of the present application at page(s) \_\_\_\_\_, and/or
- reference is made to the concise explanation set forth below:

5.  Applicant also offers the following comments for the Examiner's consideration:
6.  Also enclosed is a copy of a foreign search report citing these references.
7.  The listed documents were brought to the attention of the Applicant(s) after payment of the issue fee in the captioned case. The documents were cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. Applicant(s) request this Information Disclosure Statement and attached Form PTO-1449 be placed in the file of the captioned application.
8.  Applicant(s) requests that the Information Disclosure Statement and attached Form PTO-1449 and references, which are being filed before the grant of the patent and pursuant to 37 C.F.R. § 1.97(i), be placed in the file of the captioned application.

If any required fees are missing, the Commissioner is authorized to charge said fees to Meyertons, Hood, Kivlin, Kowert & Goetzel, P.C. Deposit Account No. 50-1505/5760-00801.

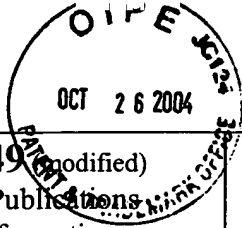
Respectfully submitted,



---

B. Noël Kivlin  
Reg. No. 33,929  
ATTORNEY FOR APPLICANT(S)

Meyertons, Hood, Kivlin, Kowert, & Goetzel, P.C.  
P.O. Box 398  
Austin, TX 78767-0398  
Phone: (512) 853-8800  
Date: 10-20-09



<b>Form PTO-1449 (modified)</b> List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)	ATTY. DKT. NO. 5760-00801  APPLICANT: Jeffe, et al.  FILING DATE: 11/30/01	SERIAL NO. 09/998,246  GROUP: 2116
---	--	--

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE APPROPRIAT
	B1	6,802,025	10/5/04	Thomas, et al			
	B2	6,785,695	8/31/04	Hamilton, II et al			

**FOREIGN PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATIO YES/NO

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**


EXAMINER: \_\_\_\_\_ DATE CONSIDERED: \_\_\_\_\_

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent own



**PATENT APPLICATION FEE DETERMINATION RECORD**  
Effective October 1, 2001

Application or Docket Number

09993246

**CLAIMS AS FILED - PART I**

	(Column 1)	(Column 2)
TOTAL CLAIMS	17	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	17 minus 20 =	* 0
INDEPENDENT CLAIMS	5 minus 3 =	* 2
MULTIPLE DEPENDENT CLAIM PRESENT	<input type="checkbox"/>	

\* If the difference in column 1 is less than zero, enter "0" in column 2

**CLAIMS AS AMENDED - PART II**

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* 17 Minus ** 17	= 0
	Independent	* 5 Minus *** 3	= 2
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus **	=
	Independent	* Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

	(Column 1)	(Column 2)	(Column 3)
AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	* Minus **	=
	Independent	* Minus ***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

\* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.  
 \*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."  
 \*\*\* If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."  
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

**SMALL ENTITY TYPE**  OR

**OTHER THAN SMALL ENTITY**

RATE	FEE	OR	RATE	FEE
BASIC FEE	370.00		BASIC FEE	740.00
X\$ 9=			X\$18=	
X42=			X84=	
+140=			+280=	
TOTAL			TOTAL	

**SMALL ENTITY** OR

**OTHER THAN SMALL ENTITY**

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=			X\$18=	
X42=	X		X84=	✓
+140=			+280=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=			X\$18=	
X42=			X84=	
+140=			+280=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

RATE	ADDITIONAL FEE	OR	RATE	ADDITIONAL FEE
X\$ 9=			X\$18=	
X42=			X84=	
+140=			+280=	
TOTAL ADDIT. FEE			TOTAL ADDIT. FEE	

BEST AVAILABLE COPY



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/998,246	11/30/2001	Peter Jeffe	KRNL:001	4233

7590 07/23/2004  
B. NOEL KIVLIN  
CONLEY, ROSE & TAYON, P.C.  
P.O. BOX 398  
AUSTIN, TX 78767-0398

EXAMINER

PERVEEN, REHANA

ART UNIT PAPER NUMBER

2116

DATE MAILED: 07/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

BEST AVAILABLE COPY

**Office Action Summary**

Application No. 09/998,246	Applicant(s) JEFFE ET AL.
Examiner Rehana Perveen	Art Unit 2116

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1)  Responsive to communication(s) filed on 08 April 2002.
- 2a)  This action is **FINAL**.
- 2b)  This action is non-final.
- 3)  Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4)  Claim(s) 1-17 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5)  Claim(s) \_\_\_\_\_ is/are allowed.
- 6)  Claim(s) 1-17 is/are rejected.
- 7)  Claim(s) \_\_\_\_\_ is/are objected to.
- 8)  Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9)  The specification is objected to by the Examiner.
- 10)  The drawing(s) filed on 30 November 2001 is/are: a)  accepted or b)  objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11)  The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12)  Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a)  All   b)  Some \*   c)  None of:  
1.  Certified copies of the priority documents have been received.  
2.  Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3.  Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**BEST AVAILABLE COPY**

**Attachment(s)**

- 1)  Notice of References Cited (PTO-892)
- 2)  Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3)  Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 10/7/02
- 4)  Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5)  Notice of Informal Patent Application (PTO-152)
- 6)  Other: \_\_\_\_\_

**DETAILED ACTION**

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoggarth et al, Patent No. 6,535,976, in view of Chou et al, Patent No. 6,065,123.

As to claims 1 and 16, Hoggarth et al teach a server device, a network communicatively interconnecting a client device and the server device, a storage manager accessible to the server device (col. 6 lines 7-40), a controlling device connected to the client device for resetting the client device (col. 2 lines 56-61), and a network boot in which the server device causes the client device to boot (col. 6 lines 7-40).

However, Hoggarth et al do not expressly teach the storage manager saving a state prior to a major failure.

Chou et al teach a storage manager saving a state prior to a major failure (col. 23 line 52 – col. 24 line 18).

**BEST AVAILABLE COPY**

Art Unit: 2116

It would have been obvious for one of ordinary skill in the art at the time of the invention to combine the teachings of Hoggarth et al and Chou et al because Chou et al's state saving feature prior to a major failure, when incorporated into Hoggarth et al's network communication system of clients and server, would have enabled improved integrity of the overall system and improved throughput by quickly allowing to return to operational state preceding a major failure.

Claims 2-15 and 17 are directed to the method of system claims 1 and 16. Hoggarth et al and Chou et al, in combination, teach the system as set forth in claims 1 and 16. Therefore, Hoggarth et al and Chou et al, also in combination, teach the method as set forth in claims 2-15 and 17.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rehana Perveen whose telephone number is 703-305-8476. The examiner can normally be reached on 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lynne H Browne can be reached on 703-308-1159. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

**BEST AVAILABLE COPY**

Art Unit: 2116

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Rehana Perveen  
Primary Patent Examiner  
Technology Center 2100

BEST AVAILABLE COPY

<b>Form PTO-1449</b> (modified) List of Patents and Publications of Applicant's Information Disclosure Statement (Use several sheets if necessary)	ATTY. DKT. NO. 5760-00801  APPLICANT: Jeffe, et al.  FILING DATE: 11/30/01	SERIAL NO. 09/998,246  GROUP: 2182
--	--	--

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE APPROPRIAT
<i>CP</i>	A1	6,317,826	11/13/01	McCall, et al	—	—	
<i>CP</i>	A2	5,930,824	07/27/99	Anglin, et al	—	—	
<i>CP</i>	A3	5,828,887	10/27/98	Yeager, et al	—	—	
<i>CP</i>	A4	5,452,454	09/19/95	Basu	—	—	

**FOREIGN PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATIO YES/NO

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

<i>CP</i>	A5	International Search Report application no. PCT/US01/44941					

EXAMINER:  DATE CONSIDERED: 6/29/04

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent own

**BEST AVAILABLE COPY**

<b>Notice of References Cited</b>	Application/Control No. 09/998,246	Applicant(s)/Patent Under Reexamination JEFFE ET AL.	
	Examiner Rehana Perveen	Art Unit 2116	Page 1 of 1

**U.S. PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
A	US-6,708,283 B1	03-2004	Nelvin et al.	714/5
B	US-6,535,976 B1	03-2003	Hoggarth et al.	713/2
C	US-6,065,123 A	05-2000	Chou et al.	713/322
D	US-			
E	US-			
F	US-			
G	US-			
H	US-			
I	US-			
J	US-			
K	US-			
L	US-			
M	US-			

**FOREIGN PATENT DOCUMENTS**

*	Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
N					
O					
P					
Q					
R					
S					
T					

**NON-PATENT DOCUMENTS**

*	Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
U	
V	
W	
X	

\*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)  
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.



**Index of Claims**



Application No.

09/998,246

Examiner

Rehana Perveen

Applicant(s)

JEFFE ET AL.

Art Unit

2116

✓	Rejected
=	Allowed

-	(Through numeral) Cancelled
+	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date			
Final	Original				
	1				
	2				
	3				
	4				
	5				
	6				
	7				
	8				
	9				
	10				
	11				
	12				
	13				
	14				
	15				
	16				
	17				
	18				
	19				
	20				
	21				
	22				
	23				
	24				
	25				
	26				
	27				
	28				
	29				
	30				
	31				
	32				
	33				
	34				
	35				
	36				
	37				
	38				
	39				
	40				
	41				
	42				
	43				
	44				
	45				
	46				
	47				
	48				
	49				
	50				

Claim		Date			
Final	Original				
	51				
	52				
	53				
	54				
	55				
	56				
	57				
	58				
	59				
	60				
	61				
	62				
	63				
	64				
	65				
	66				
	67				
	68				
	69				
	70				
	71				
	72				
	73				
	74				
	75				
	76				
	77				
	78				
	79				
	80				
	81				
	82				
	83				
	84				
	85				
	86				
	87				
	88				
	89				
	90				
	91				
	92				
	93				
	94				
	95				
	96				
	97				
	98				
	99				
	100				

Claim		Date			
Final	Original				
	101				
	102				
	103				
	104				
	105				
	106				
	107				
	108				
	109				
	110				
	111				
	112				
	113				
	114				
	115				
	116				
	117				
	118				
	119				
	120				
	121				
	122				
	123				
	124				
	125				
	126				
	127				
	128				
	129				
	130				
	131				
	132				
	133				
	134				
	135				
	136				
	137				
	138				
	139				
	140				
	141				
	142				
	143				
	144				
	145				
	146				
	147				
	148				
	149				
	150				



This Page Is Inserted by IFW Operations  
and is not a part of the Official Record

## **BEST AVAILABLE IMAGES**

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

**IMAGES ARE BEST AVAILABLE COPY.**

As rescanning documents *will not* correct images,  
please do not report the images to the  
Image Problem Mailbox.

## WEST Search History





DATE: Thursday, July 15, 2004

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
	<i>DB=USPT,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR</i>		
<input type="checkbox"/>	L28	(server near5 (trigger\$4 or caus\$4) near5 client near5 boot\$4)	3
<input type="checkbox"/>	L27	(server near3 caus\$4 near3 client near3 boot\$4)	0
<input type="checkbox"/>	L26	l20 and L25	0
<input type="checkbox"/>	L25	L24 same (sav\$4 near2 state)	15
<input type="checkbox"/>	L24	(client same server same network\$4)	26929
<input type="checkbox"/>	L23	l10 and L20	9
<input type="checkbox"/>	L22	l6 and L20	5
<input type="checkbox"/>	L21	l1 and L20	16
<input type="checkbox"/>	L20	l13 or l14 or l15 or l16 or l17 or l18 or L19	3296
<input type="checkbox"/>	L19	713/340.ccls.	443
<input type="checkbox"/>	L18	713/300.ccls.	856
<input type="checkbox"/>	L17	714/15.ccls.	722
<input type="checkbox"/>	L16	714/13.ccls.	263
<input type="checkbox"/>	L15	714/7.ccls.	401
<input type="checkbox"/>	L14	714/2.ccls.	667
<input type="checkbox"/>	L13	714/1.ccls.	260
<input type="checkbox"/>	L12	L6 and (sav\$4 near3 state)	5
<input type="checkbox"/>	L11	L5 and (sav\$4 near3 state)	80
<input type="checkbox"/>	L10	L4 same (sav\$4 near3 state)	31
<input type="checkbox"/>	L9	L5 same (sav\$4 near3 state)	0
<input type="checkbox"/>	L8	L6 same (sav\$4 near3 state)	0
<input type="checkbox"/>	L7	L6 same state	12
<input type="checkbox"/>	L6	L5 same restor\$8	28
<input type="checkbox"/>	L5	L4 same configur\$9	689
<input type="checkbox"/>	L4	(reset\$4 same boot\$4)	2849
<input type="checkbox"/>	L3	l1 same reset\$4 same boot\$4	0
<input type="checkbox"/>	L2	(sav\$4 near3 state) with ((prior or before) near3 fail\$4)	12
<input type="checkbox"/>	L1	(sav\$4 near3 state) same ((prior or before) near3 fail\$4)	48

END OF SEARCH HISTORY

[First Hit](#) [Fwd Refs](#) [Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[Generate Collection](#) [Print](#)

L12: Entry 1 of 5

File: USPT

Oct 2, 2001

DOCUMENT-IDENTIFIER: US 6298443 B1

TITLE: Method and system for supplying a custom software image to a computer system

Detailed Description Text (25):

The hard drive restoration process completes by clearing the information 226 on the hard drive 112 and downloading 228 the software image 102 from the custom-programmed CD ROM 106 to the hard disk drive 112. The restoration program clears the hard disk drive 112 by formatting the hard drive 112 to erase possibly corrupted data, insure proper operation of the drive, and eliminate any viruses that may have infected the drive 112. The restoration program downloads the software image 102 by copying all software originally ordered and configured from the custom-programmed CD ROM 106 onto the hard disk drive 112 in a correct order. As the files are copied to the hard disk drive 112, file attributes are correctly assigned or reset for operation of the software image 102. The copy process is moderately time consuming, typically enduring for 10 to 25 minutes. Following copying of the files, a check software transport operation 230 execute; a routine that verifies that the software-hardware keying and software download were performed and executed correctly. The restoration program terminates 232 by displaying a message on the computer display requesting that the user remove the CD ROM from the reader, removing the bootable flexible diskette 108 from the drive, and rebooting the computer 104. Following the second reboot operation, the computer 104 is in the identical condition of the computer at the original delivery with the possible exception of differences resulting from any modifications made to the original software order by agreement between the user or customer and a factory representative.

Detailed Description Text (37):

In one mode of operation, the program code in the XBIOS 520 operates by transferring operation identifiers and parameters to the CMOS memory 460 and performing an input/output instruction that evokes a SMI# signal. The SMI# signal is a signal for activating a system management mode (SMM) of operating. When a processor 410 recognizes a SMI# signal on an instruction boundary, the processor 410 waits for all store operations to complete. The processor 410 then saves the processor register state to a region in memory called a system management RAM (SMRAM) space and begins to execute a SMM handler routine. The SMI# interrupt has a greater priority than debug exceptions and external interrupts so that SMM processing preempts debug and external interrupt conditions. Subsequent SMI# and nonmaskable interrupt (NM) requests are not acknowledged while the processor is operating in system management mode.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#) [Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[Generate Collection](#) [Print](#)

L12: Entry 2 of 5

File: USPT

May 16, 2000

DOCUMENT-IDENTIFIER: US 6065123 A

TITLE: Computer system with unattended on-demand availability

Abstract Text (1):

A computer system with unattended on-demand availability includes power-saving features which place the system into a Standby mode whenever the system is idle or is not being used. Prior to entering Standby mode, the system sets a hardware timer which indicates when the next scheduled event in the system should be performed. When either the timer expires or another event occurs which requires system operation, the system resumes to the On power state without user intervention. In one embodiment, the system of the present invention allows applications to periodically save their operational states. By saving their operational states, applications are able to guard against power failures and crashes. If a power failure or crash occurs, the system consults restart policies and, if appropriate, automatically re-starts applications to their most recently saved operational states once power is re-stored.

Brief Summary Text (16):

In one embodiment, the system of the present invention allows applications to periodically save their operational states. By saving their operational states, applications are able to guard against power failures and crashes. If a power failure or crash occurs, the system consults restart policies and, if appropriate, automatically re-starts applications to their most recently saved operational states once power is re-stored.

Detailed Description Text (8):

In one embodiment, application processes are monitored by a server process that maintains information needed to restart them and restore their internal state, should it become necessary. By calling functions provided by the server process, applications can indicate the conditions under which they should be restarted, can save operational state information to be used upon restart, can schedule future execution of themselves or other applications, and can schedule messages to be delivered to themselves or other applications. By saving their operational states, applications are able to guard against power failures and software crashes. Furthermore, once the state information is saved, an application can schedule its future execution and then deliberately exit. When the scheduled time or other triggering event occurs, the application will be restarted and can recover its previous operational state and continue execution.

Detailed Description Text (45):

InstantON servicing agent 140 also checks whether an application or the system user has requested to enter Standby mode, step 325. This request may be direct from a system user or may be a procedure call issued from an application running on the system. In one embodiment of the present invention, the system user can request to enter Standby mode by switching the power system to the "off" position. In this embodiment, the traditional off/on power switch of a computer system is re-configured to cause the system to enter Standby mode rather than the Off power mode when the switch is placed in-the "off" position. Thus, in this embodiment the system does not turn "off"; therefore, if a power failure occurs, the system boots up as soon as power is restored. In one implementation, an additional power switch

is also included in the computer system which, when actuated, causes the system to enter the Off power mode. In an alternate embodiment, the system user can cause the system to enter the Standby power level by selecting a menu button provided by operating system 120 or InstantON manager 180, or by activating a predetermined key sequence, analogous to the ctrl-alt-del sequence used to reset some personal computers. The actuation of the predetermined key sequence by the system user is received by the operating system, which issues a signal to InstantON servicing agent 140, via VPOWERD 135, indicating the system is about to enter Standby mode.

Detailed Description Text (132):

In order to return an application to its operational state at the time of the system crash or power failure, a record is used to determine what that operational state is. In one embodiment of the present invention, this record is generated by the checkpoint services of the present invention. Applications which are connected to InstantON servicing agent 140 periodically make procedure calls to InstantON servicing agent 140 which save the necessary state information for the application in checkpoint records. Then, upon restart, InstantON servicing agent 140 provides restarted applications with the stored checkpoint information when the applications request it, thereby allowing them to return to their operational state preceding the system crash. In one implementation, this operational state is the state at the last time the checkpoint services were called prior to the system crashing.

Detailed Description Text (139):

The IonAddChkRecord procedure call allows the calling application process to generate a new checkpoint record. The calling process includes, as parameters, a pointer to a buffer and the size of that buffer. Prior to making the procedure call, the process generates the operational state information necessary for it to return to its current state. If this is the first time the process has called the checkpoint services, then all operational state information is saved. However, if this is a second or later call, then only incremental changes need to be included. The amount and nature of this checkpoint information being saved is dependent on the application process. Thus, the checkpoint records for each application process can be different. Upon receiving the IonAddChkRecord call, InstantON servicing agent 140 generates a checkpoint record for the process, storing the time the procedure was called, the size of the buffer and the data in the buffer. InstantON servicing agent 140 keeps track of all of the checkpoint identifiers associated with each application process based on the registration identifier for the process. Thus, multiple checkpoint records can be associated with the process regardless of whether the process was terminated and re-executed between the saving of the checkpoint records. In one implementation, InstantON servicing agent 140 returns a message indicating that the call was successful, that the calling process is not connected to InstantON servicing agent 140, that InstantON servicing agent 140 is unavailable, or that an invalid parameter was passed to InstantON servicing agent 140.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L28: Entry 2 of 3

File: USPT

Mar 18, 2003

DOCUMENT-IDENTIFIER: US 6535976 B1

TITLE: Initial program load in data processing network

Detailed Description Text (29):

At step 500, the network administrator changes the setup of the server to specify a new hybrid RPL profile for a client. In other words, the `normal` mode of operation is disabled. At step 510, when the client system is next powered-on or rebooted (either using a remote control utility specified by the administrator or alternatively by the client user), the client issues one ore more NOS RPL requests via the network adapter. At step 520, the server recognizes the client unique network address in the request. However, in this mode, the server does not issue the hybrid bootstrap code to cause the client to execute a local boot. Instead, the server downloads selected software according to a software profile defined according to the required maintenance function. In the following description, this downloaded software is termed maintenance software though as will be described below it may in fact be software for upgrading the local operating system, software for upgrading system BIOS or other software. At step 530 therefore, the maintenance software is downloaded to the client system where it is executed and/or stored onto the local hardfile. At step 540, the client indicates to the server that the operation on the client is complete. In response, the server process changes the setup for the client back to hybrid RPL bootstrap at s step 550. At next reboot, indicated at step 560, which may be initiated either by the remote control utility or by the client user, the client issues the normal RPL request via the client network adapter card and local boot takes place as per normal hybrid RPL--step 570.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)



[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L2: Entry 1 of 12

File: USPT

Mar 16, 2004

DOCUMENT-IDENTIFIER: US 6708283 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: System and method for operating a system with redundant peripheral bus controllers

Detailed Description Text (21):

As discussed above, the I/O system manager 31 may periodically save the internal states of the selected peripheral bus controller 30 and the video controller 32. The system may also track the time between failures of the various controllers, or other statistics that allow the system essentially to predict controller failure. The system can then save the controller states, and change its selection of controllers at an appropriate time before a failure occurs.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L2: Entry 3 of 12

File: USPT

May 31, 1994

DOCUMENT-IDENTIFIER: US 5317752 A

TITLE: Fault-tolerant computer system with auto-restart after power-fall

## CLAIMS:

15. A method of operating a computer system having a central processing unit (CPU), memory including volatile memory and non-volatile memory, a main power supply, and a backup power supply, said method comprising the steps of:

(a) executing code by the CPU from the memory in normal operation while power for said computer system is supplied by the main power supply, said execution including controlling processes;

(b) detecting the occurrence of failure of said main power supply, and continuing execution of code by said CPU using the backup power supply;

(c) after detecting said failure, initiating execution of a shutdown procedure by said CPU, including issuing a sequence of signals from said CPU to said processes controlled by said CPU during normal operation immediately prior to said power failure, while continuing execution of said shutdown procedure by the CPU to save state of said processes being executed, the signals to said processes including:

(i) "signal power failure" (SIGPWR) with code "power failure quiesce" (PFQUIESCE) during shutdown followed by "signal power failure" (SIGPWR) with code "power failure restart" (PFRESTART), or

(ii) "signal terminated" (SIGTERM) with code "power failure quiesce" (PFQUIESCE) followed by "signal kill" (SIGKILL);

(d) storing on said non-volatile memory said state; and

(e) shutting down said backup power supply and ceasing execution of code by said CPU.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L7: Entry 1 of 12

File: USPT

Jun 8, 2004

DOCUMENT-IDENTIFIER: US 6748548 B2

TITLE: Computer peripheral device that remains operable when central processor operations are suspended

Brief Summary Paragraph Table (1):

Sleeping States Description S0 Normal operation, active state (no sleeping state). S1 The S1 sleeping state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system context. S2 The S2 sleeping state is a low wake-up latency sleeping state. This state is similar to the S1 sleeping state except the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake-up event. S3 The S3 sleeping state is a low wake-up latency sleeping state where all system context is lost except system memory. CPU, cache, and chip set context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context. Control starts from the processor's reset vector after the wake-up event. S4 The S4 sleeping state is the lowest power, longest wake-up latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. A copy of the platform context is written to the hard disk. S5 The S5 state is similar to the S4 state except the OS does not save any context nor enable any devices to wake the system. The system is in the "soft" off state and requires a complete boot when awakened.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L7: Entry 2 of 12

File: USPT

Apr 13, 2004

DOCUMENT-IDENTIFIER: US 6721881 B1

TITLE: System and method for determining if a display device configuration has changed by comparing a current indicator with a previously saved indicator

Detailed Description Text (25):

FIG. 3 is a flow chart illustrating at least one embodiment of a method for detecting display configuration during an SBF fast boot. FIGS. 1 and 3 illustrate that, in operation 310, a system start is initiated when an initiating event is detected. An initiating event is any event that cycles the computer system 100 into a powered-on state. The reset event may be an initial supply of power to a computer system 100 that has been previously in a powered-off state, may be a user-initiated activation of a reset switch, may be a power cycle where power is removed and then restored to a computer system by a user or through an interruption of the power source, may be a software-initiated reset by the operating system, or any other event that causes, or emulates, the computer system's power transitioning from an "off" to "on" state. During the system start operation 310, the initiating event is detected, and execution of the system BIOS code 196 is begun, including execution of POST.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L7: Entry 3 of 12

File: USPT

Feb 10, 2004

DOCUMENT-IDENTIFIER: US 6691234 B1

**\*\* See image for Certificate of Correction \*\***

TITLE: Method and apparatus for executing instructions loaded into a reserved portion of system memory for transitioning a computer system from a first power state to a second power state

Detailed Description Text (6):

FIG. 3 shows a state diagram illustrating the transitions of a computer system between various power states in accordance with ACPI specification. As mentioned above, the ACPI specification defines a number of global system states (Gx states) that apply to the entire system and are visible to the user. These various global system states include: (1) G0 global working state; (2) G1 global sleeping state; (2) G2 soft off state; and G3 mechanical off state. G0 working state is a computer state where the system dispatches user mode (application) threads and they execute. In this state, devices (peripherals) are dynamically having their power state changed. G1 sleeping state is a computer state where the computer consumes a small amount of power, user mode threads are not being executed, and the system "appears" to be off (from an end user's perspective, the display is off, etc.). Latency for returning to the working state varies upon the wakeup environment selected prior to entry of this state. Work can be resumed without rebooting the OS because large elements of system context are saved by the hardware and the rest by the system software. G2 soft off state is a computer state where the computer consumes a minimal amount of power. No user mode or system mode code is run. This state requires a large latency in order to return to the working state. The system's context will not be preserved by the hardware. The system needs to be restarted to return to the working state. G3 is a computer state that is entered and left by a mechanical means (e.g., turning off the system's power through the movement of a large switch, etc.) It is implied by the entry of this off state through a mechanical means that no electrical current is running through the circuitry. The OS must be restarted to return to the working state. There are various types of sleeping states within the global sleeping state. These various sleeping states include: (1) S1 sleeping state; (2) S2 sleeping state; (3) S3 sleeping state; and (4) S4 sleeping state. The S1 sleeping state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context. The S2 sleeping state is a low wake-up latency sleeping state except the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake-up event. The S3 sleeping state is a low wake-up latency sleeping state where all system context is lost except system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context. Control starts from the processor's reset vector after the wake-up event. The S4 sleeping state is the lowest power, longest wake-up latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. Platform context is maintained. From a user-visible level, the system can be thought of as being in one of the states shown in FIG. 3. In general use, the system alternates between the working states and the sleeping states. In the working state, the computer performs some work. User-mode application threads are dispatched and running. Individual devices can be in low-power states and the processor(s) can be in low power states if they are not being

used. Any device that is turned off by the system because it is not actively in use can be turned on with short latency. In one embodiment, when the computer system is idle or the user has pressed the power button, the OS will put the system into one of the various sleeping states shown in FIG. 3. No user-visible computation occurs in a sleeping state. The various sleeping states shown in FIG. 3 differ in what events can arouse the system to a working state and how long this takes. Computers that support legacy BIOS power management boot in the legacy state and transition to the working state when an ACPI OS loads. A system without legacy support transitions directly from the mechanical off state to the working state.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L7: Entry 5 of 12

File: USPT

Sep 24, 2002

DOCUMENT-IDENTIFIER: US 6457137 B1

TITLE: Method for configuring clock ratios in a microprocessor

Detailed Description Text (15):

The term boot, as is well known in the art, refers to a process in a device designed to bring itself into a state where it can operate on its own. For example, a typical boot routine can consist of a small set of instructions that operate to start a computer by bringing the rest of a much larger process from a peripheral device into the memory for a processor from which the processor continues to execute. The small set of instructions typically resides in a read only memory (ROM) and the processor is configured to execute these instructions in response to a reset event. A reset event restores a computer or device to a known state. Typically, most devices will perform a power-on reset when power is introduced to the machine in order to initialize operation of the computer to a known state.

[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#) [Generate Collection](#) [Print](#)

L7: Entry 6 of 12

File: USPT

Aug 6, 2002

DOCUMENT-IDENTIFIER: US 6430687 B1

TITLE: Boot sequence for a network computer including prioritized scheduling of boot code retrieval

Detailed Description Text (4):

In the preferred embodiment of computer network 100, it is typically unnecessary to fully power down network clients 104 during normal system operation.\* During prolonged periods of inactivity, the preferred embodiments of network client 104 are configured to assume a low power mode to reduce the overall power consumed by computer system 100. In the preferred embodiment, network client can assume one of at least four power mode states. In an ON mode, network client 104 is fully functional and consumes the maximum power. If a client that is in ON mode remains idle (i.e., receives no input via a keyboard, mouse or other input device) from a user of network client 104 or from network server 102 via network 105 for specified duration, network client 104 assumes a SUSPEND state. In the SUSPEND state, various peripheral circuits and I/O facilities of network computer 104 such as the computer's video monitor are powered down until network client 104 detects user input or input from network server 102. For purposes of this disclosure, a defining characteristic of the SUSPEND state is the ability to "wake" network computer 104 from the SUSPEND state without executing a hardware or software boot. In other words, power is maintained to critical facilities of network client 104 to enable operation, in response to an input event such as a keyboard or mouse entry, after waking the I/O and peripheral circuits that were powered down. In the preferred embodiment, network computer 104 is capable of entering a SOFT OFF mode in which power is maintained to only those facilities of network computer 104 necessary to enable client 104 to detect a boot event and to initiate execution of a boot sequence. Whereas power and refresh activity is maintained to the network computer's system memory in SUSPEND state, power to system memory is disabled in the SOFT OFF state. In embodiments of network client 104 lacking in a hard disk or other suitable permanent read/write storage facility, disabling power to the computer's system memory typically eliminates the network computer's operating system software from the system. Under these circumstances, execution of a boot code sequence is required after a subsequent boot event to restore network computer 104 to full functionality. In the SOFT OFF mode, a boot event that might suitably initiate the boot code sequence includes a LAN wake-up event in which the initiation of the boot code sequence and a user initiated boot event such as depressing a reset button on the chassis of network computer 104. In a FULL OFF mode, all power to network computer 104 is disabled and the computer is incapable of detecting any boot event other than the activation of a power switch located on network computer 104.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)



[First Hit](#) [Fwd Refs](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L7: Entry 7 of 12

File: USPT

Jun 11, 2002

DOCUMENT-IDENTIFIER: US 6404741 B1

TITLE: Monitoring of a packet telephony device via a control device

Detailed Description Text (19):

One potential problem may arise if a full reset, or re-boot, of the packet telephony device is initiated. It is possible that the re-boot may retrigger the condition that had rendered the packet telephony device fully or partially inoperable. For example, the packet telephony device may be a PC-based packet phone which is also programmed to run other non telephony-related software, which software is the cause of the PC entering the hung state; re-booting the PC may cause the offending software to be executed again and re-create the hung scenario. As an alternative to attempting a full re-boot of the packet telephony device, a special command or series of commands can be issued, through device interface unit 240 or through power control handler 260, to initiate a limited restoration of operation of the packet telephony device so that the device manages only a limited set of functions. To continue with the packet telephone example above, device interface unit 240 or power control handler 260 can issue a special command (or set of commands) which would initiate a limited re-boot of the PC, such that only telephony-related functions of the PC would be enabled. Alternatively, the packet telephony device could be configured such that any attempt to reset or re-boot that comes directly from power control handler 260 would result in the limited function reset described above.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

First Hit   Fwd Refs                      Previous Doc    Next Doc        Go to Doc#

**Generate Collection**    **Print**

L7: Entry 8 of 12

File: USPT

Jun 4, 2002

DOCUMENT-IDENTIFIER: US 6401198 B1

TITLE: STORING SYSTEM-LEVEL MASS STORAGE CONFIGURATION DATA IN NON-VOLATILE MEMORY ON EACH MASS STORAGE DEVICE TO ALLOW FOR REBOOT/POWER-ON RECONFIGURATION OF ALL INSTALLED MASS STORAGE DEVICES TO THE SAME CONFIGURATION AS LAST USE

Detailed Description Text (20):

Typically, if ECP mode is selected, usually then the ECP channel would be selected, also enable and disable passwords such as the user password and the superior password, also set what the password should be, also determining if a password is required on boot, enable or disable the password on resume, store password protection for diskette of a floppy drive, fixed disk boot protection can be set to normal or write protected, enable the integrated hard drive interfaces, select primary integrated adapter, secondary integrated adaptor, both or disable, enable or disable the floppy disk controller, configure the serial port, disable, enable or auto, select disable, enable and auto for serial port configuration, select disable, enable and auto for infrared port configuration, select mode for infrared port or wireless port, IRDA or FIR, select the base I/O address for the infrared port, select the configuration of the parallel port to enable, disable or automatically configure the path by either the system BIOS or the operating system, select the mode of parallel port where the modes include normal, bidirectional ECP or EPP mode, select the configuration of the modem port to enable, disable or automatically configure the port by either the system BIOS or operating system, configure power management, configure the power management mode, always (power management for AC and battery power), battery only, disable (no power management), maximum performance to allow power conservation with optimal system performance, maximum power saving to allow most power saving at expense of system performance, custom, to allow custom setting for different power management features including smart CPU mode with off and on options, standby time out with disable and a predetermined period of time, suspend time out with disable and predetermined period of time, suspend with save to disk or suspend with save to RAM, resume; resume on modem, ring with enable or disable ring, resume on time of day, setting the time to set the resume time, battery low suspend with an enable or disable feature, inactivating timer, enable, disable, resume on alarm with enable or disable by setting the alarm time and alarm date, configure time-out function with disable with a fixed amount of time, stand-by time out, 5-Volt suspend time out, .0.-Volt suspend time out, hard disk time out, video time out, language, select primary IDE master, primary IDE slave, secondary IDE master, secondary IDE slave, all that is stored is what is found, select plug-in plug operating system including yes and no, reset configuration data including yes and no options, select system speed fast and compatible to set the speed of the memory cache, select error correction control (ECC) configuration, sets the memory ECC state including ECC or non-ECC, select resource configuration memory reservation to reserve specific memory blocks, IOQ to reserve specific IOQs, select keyboard configuration including NUM lock to set the power on state so that NUM lock is active or nonactive, select keyboard rate to select the keyboard repeat rate (in per sec), keyboard delay select delay before repeat of the keys, select video configuration palette snooping to enable or disable, DMI event logging including event log capacity, event log visibility, DMI event log data, clear the DMI event log, event logging disable or enable, mark the DMI events as read, select the setup password, restore on power loss to restore the last state before power loss occurred, stay

off to keep power off until power button is pressed, power on which restores power to the system, quick boot mode enable or disable to skip certain tests while booting.

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)

[First Hit](#)[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

Generate Collection

Print

L7: Entry 11 of 12

File: TDBD

Sep 1, 1993

DOCUMENT-IDENTIFIER: NB930925

TITLE: Method for Regeneration of Corrupted or Lost Binary Files Required for Booting

Disclosure Text (1):

Disclosed is a proposed method of recovering lost binary files that normally reside on the system disk by generating them from the system's boot image. Using a software tool, the boot image will be unpacked to extract copies of the binary files which originally created the boot image. These copies are then put back onto the system disk to replace lost or corrupted files. - The boot image is a conglomeration of several binary, executable files including the configuration files and the UNIX kernel. Essentially, the boot image is a micro-operating system containing enough information to get a system booted from the reset state. During boot up time, the resident Read Only Memory (ROM) will start reading a portion of the boot image into system memory. When enough of the binary has been read in, the boot image takes over and completes the system configuration and initialization. - A problem exists when an important file, such as the /UNIX\* kernel file, gets corrupted or accidentally erased. The system can still boot up without the /UNIX file because a copy of that file has been copied into the boot image. Obviously, the user wants a copy of the /UNIX to reside on the system disks in case it is needed for construction of another, newer boot image. However, the recovery of that file is time consuming and troublesome with the current procedures. Currently, the user must go to either a backup medium or the original install media of the operating system. The user must use the media, most often tape, and scan the tape looking for the /UNIX file. Then, users must copy that file to the disk filesystem to recover the important file. A problem with this procedure, besides the time costs, is that there exists possibilities that the file recovered from the backup storage may not be the latest image that the system should be running. For example, if a new /UNIX were placed on a system and then the /UNIX file were accidentally erased, then restoring the /UNIX from the backup or install media would lead the user to restoring an obsolete version of the /UNIX binary. - This proposal calls for a software program that takes the boot image and unpacks the image, allowing the user to choose which binary files should be recovered. Since any update added to the system, that is essential to the booting of a machine, causes the boot image to be rebuilt, the boot image will have the latest binary copy of the essential files of an operating system. - The method of recovering critical binary files from the boot image improves many qualities of a system. First, the user has an easy way to recover lost or corrupted files. Second, the files that are recovered will be guaranteed to be the latest version of the file. Third, the regeneration recovery procedure will be less time consuming than the search and replace method. Finally, this feature reduces the dependency of having backup media present and available for recovery. \* Trademark of UNIX System Laboratories, Inc.

[Previous Doc](#)[Next Doc](#)[Go to Doc#](#)

[First Hit](#)      [Previous Doc](#)      [Next Doc](#)      [Go to Doc#](#)

**End of Result Set**

[Generate Collection](#) | [Print](#)

L7: Entry 12 of 12

File: DWPI

Sep 25, 1993

DERWENT-ACC-NO: 1993-344325  
DERWENT-WEEK: 199343  
COPYRIGHT 2004 DERWENT INFORMATION LTD

TITLE: Isolation barrier separating section contg. system configuration, power management and soft reset areas - is activated when VDD power supply level becomes invalid or drops below voltage level of back-up battery.

Basic Abstract Text (1):

The isolation barrier is incorporated in a CMOS integrated circuit chip to isolate a section, which is responsible for the system configuration, power management, soft reset and scheduling, from the rest of the chip. The isolation barrier is active when the VDD power supply becomes invalid (or when the VDD level drops below the voltage level of a back-up battery). The isolation barrier is powered by VDD and the isolated section is powered by either VDD or the back-up lithium battery VBAT, depending on the voltage level of VDD. When VDD is greater than VBAT, a signal called ISO ENA, which is an output of a VDD loss sensing circuit, is set to (logical) zero and the barrier is inactive, i.e. it lowers the barrier to establish a normal communication between the isolated section and the rest of the chip. When the voltage level of VDD drops below that of VBAT, the value ISOENA is set to (logical) one to enable the barrier. While the barrier is enabled, the system clock is shut down and the system management section is in idle mode but does not lose its contents. As ISOENA goes low and the barrier becomes disabled, the system clock restarts and the isolated section re-establishes communication with the rest of the chip. While the barrier is disabled, the memory and registers within the isolated section can be updated and read by the system. However when the barrier is enabled, the isolated section can only be accessed through a boot pin. Barrier enable mode: ISO ENA. The barrier control signal generated by a VDD loss sensing circuit, becomes active as VDD loss is detected. Active ISOENA signal stops the system clock as a pre-assigned phase and holds its outputs to the isolated section at an inactive (a logical zero) state, so that there will be no write/read access to the mere and registers in the section. As a result, the system information is maintained until the system is rebooted and power is restored again. Logically, the outputs from the barrier to the isolated section are generated from the inverse of the corresp. inputs, which are then NORed with the ISOENA signal. Thus, these output signals will be held at the logical zero state due to the active state of the ISOENA signal, whether the VDD power supply is present or not. If the VDD power supply is neither good or present the output signals from the barrier to the rest of the chip are useless and may be unknown. Barrier disable mode: ISOENA becomes inactive to lower the barrier to re-establish the normal communication between the isolated section with the rest of the chip.

[Previous Doc](#)      [Next Doc](#)      [Go to Doc#](#)

[First Hit](#) [Fwd Refs](#)[Previous Doc](#) [Next Doc](#) [Go to Doc#](#) [Generate Collection](#) [Print](#)

L22: Entry 1 of 5

File: USPT

Jun 8, 2004

DOCUMENT-IDENTIFIER: US 6748548 B2

TITLE: Computer peripheral device that remains operable when central processor operations are suspended

Brief Summary Paragraph Table (1):

Sleeping States Description S0 Normal operation, active state (no sleeping state). S1 The S1 sleeping state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chip set) and hardware maintains all system context. S2 The S2 sleeping state is a low wake-up latency sleeping state. This state is similar to the S1 sleeping state except the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake-up event. S3 The S3 sleeping state is a low wake-up latency sleeping state where all system context is lost except system memory. CPU, cache, and chip set context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context. Control starts from the processor's reset vector after the wake-up event. S4 The S4 sleeping state is the lowest power, longest wake-up latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. A copy of the platform context is written to the hard disk. S5 The S5 state is similar to the S4 state except the OS does not save any context nor enable any devices to wake the system. The system is in the "soft" off state and requires a complete boot when awakened.

Current US Cross Reference Classification (1):713/300[Previous Doc](#) [Next Doc](#) [Go to Doc#](#)

[First Hit](#)   [Fwd Refs](#)   [Previous Doc](#)   [Next Doc](#)   [Go to Doc#](#)

[Generate Collection](#)   [Print](#)

L22: Entry 2 of 5

File: USPT

Feb 10, 2004

DOCUMENT-IDENTIFIER: US 6691234 B1

**\*\* See image for [Certificate of Correction](#) \*\***

TITLE: Method and apparatus for executing instructions loaded into a reserved portion of system memory for transitioning a computer system from a first power state to a second power state

Detailed Description Text (6):

FIG. 3 shows a state diagram illustrating the transitions of a computer system between various power states in accordance with ACPI specification. As mentioned above, the ACPI specification defines a number of global system states (Gx states) that apply to the entire system and are visible to the user. These various global system states include: (1) G0 global working state; (2) G1 global sleeping state; (2) G2 soft off state; and G3 mechanical off state. G0 working state is a computer state where the system dispatches user mode (application) threads and they execute. In this state, devices (peripherals) are dynamically having their power state changed. G1 sleeping state is a computer state where the computer consumes a small amount of power, user mode threads are not being executed, and the system "appears" to be off (from an end user's perspective, the display is off, etc.). Latency for returning to the working state varies upon the wakeup environment selected prior to entry of this state. Work can be resumed without rebooting the OS because large elements of system context are saved by the hardware and the rest by the system software. G2 soft off state is a computer state where the computer consumes a minimal amount of power. No user mode or system mode code is run. This state requires a large latency in order to return to the working state. The system's context will not be preserved by the hardware. The system needs to be restarted to return to the working state. G3 is a computer state that is entered and left by a mechanical means (e.g., turning off the system's power through the movement of a large switch, etc.) It is implied by the entry of this off state through a mechanical means that no electrical current is running through the circuitry. The OS must be restarted to return to the working state. There are various types of sleeping states within the global sleeping state. These various sleeping states include: (1) S1 sleeping state; (2) S2 sleeping state; (3) S3 sleeping state; and (4) S4 sleeping state. The S1 sleeping state is a low wake-up latency sleeping state. In this state, no system context is lost (CPU or chipset) and hardware maintains all system context. The S2 sleeping state is a low wake-up latency sleeping state except the CPU and system cache context is lost (the OS is responsible for maintaining the caches and CPU context). Control starts from the processor's reset vector after the wake-up event. The S3 sleeping state is a low wake-up latency sleeping state where all system context is lost except system memory. CPU, cache, and chipset context are lost in this state. Hardware maintains memory context and restores some CPU and L2 configuration context. Control starts from the processor's reset vector after the wake-up event. The S4 sleeping state is the lowest power, longest wake-up latency sleeping state supported by ACPI. In order to reduce power to a minimum, it is assumed that the hardware platform has powered off all devices. Platform context is maintained. From a user-visible level, the system can be thought of as being in one of the states shown in FIG. 3. In general use, the system alternates between the working states and the sleeping states. In the working state, the computer performs some work. User-mode application threads are dispatched and running. Individual devices can be in low-power states and the processor(s) can be in low power states if they are not being

used. Any device that is turned off by the system because it is not actively in use can be turned on with short latency. In one embodiment, when the computer system is idle or the user has pressed the power button, the OS will put the system into one of the various sleeping states shown in FIG. 3. No user-visible computation occurs in a sleeping state. The various sleeping states shown in FIG. 3 differ in what events can arouse the system to a working state and how long this takes. Computers that support legacy BIOS power management boot in the legacy state and transition to the working state when an ACPI OS loads. A system without legacy support transitions directly from the mechanical off state to the working state.

Current US Original Classification (1):  
713/300

[Previous Doc](#)

[Next Doc](#)

[Go to Doc#](#)





2100/14/02  
2185/02

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Inventor: Peter Jeffe and Bruce Bramhall §  
Patent No.: §  
Issued: §  
Serial No.: 09/998,246 ✓ §  
Filing Date: 11/29/01 §  
For: Computer Restoration §  
Systems and Methods §

Atty. Dkt. No.: 5760-00801

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date indicated below:

B. Noel Kivlin  
Name of Registered Representative

10/3/02      B.  
Date                      Signature

**RECEIVED**

OCT 09 2002  
Technology Center 2100

NOTICE OF CHANGE OF ADDRESS

Commissioner for Patents  
Washington, D.C. 20231

Sir:

Applicant respectfully requests the Commissioner to change the correspondence address for the above identified patent application. The old correspondence address was:

Carr & Ferrell LLP  
2225 E. Bayshore Rd, Suite 200  
Palo Alto, CA 94303

The new correspondence address is:

B. Noël Kivlin  
Conley, Rose & Tayon, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
(512) 703-1247

If there are any questions regarding this matter, please contact me at the telephone number provided below.

Respectfully submitted,

B. Noël Kivlin  
Reg. No. 33,929

CONLEY, ROSE & TAYON  
P.O. Box 398  
Austin, Texas 78767-0398  
(512) 476-1400  
Date: 10/3/02



- c.  after the mailing date of a final Office Action or a Notice of Allowance and prior to payment of the issue fee, and thus: the certification of paragraph 2 below is provided and a fee of \$180.00 is enclosed.

2. It is hereby certified:

- that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the Statement, or
- that no item of information contained in the Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the knowledge of the person signing the certification after making reasonable inquiry, was known to any individual designated in § 1.56 (c) more than three months prior to the filing of the Statement.

3.  Consideration of the following additional information (including any co-pending or abandoned U.S. applications, prior uses and/or sales, etc.) is requested:

4. For each non-English language reference listed on the attached Form PTO-1449:

- reference is made to an English language translation submitted herewith, and/or
- reference is made to a foreign patent office search report (in the English language) submitted herewith, and/or
- reference is made to an English language translation of a foreign patent office search report submitted herewith, and/or
- reference is made to the concise explanation contained in the specification of the present application at page(s) \_\_\_\_\_, and/or
- reference is made to the concise explanation set forth below:

5.  Applicant also offers the following comments for the Examiner's consideration:

6.  Also enclosed is a copy of a foreign search report citing these references.

7.  The listed documents were brought to the attention of the Applicant(s) after payment of the issue fee in the captioned case. The documents were cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. Applicant(s) request this Information Disclosure Statement and attached Form PTO-1449 be placed in the file of the captioned application.

8.  Applicant(s) requests that the Information Disclosure Statement and attached Form PTO-1449 and references, which are being filed before the grant of the patent and pursuant to 37 C.F.R. § 1.97(i), be placed in the file of the captioned application.

If any required fees are missing, the Commissioner is authorized to charge said fees to Conley, Rose & Tayon, P.C. Deposit Account No. 50-1505/5760-00801.

Respectfully submitted,



B. Noël Kivlin  
Reg. No. 33,929  
Attorney for Applicant(s)

CONLEY, ROSE & TAYON, P.C.  
P. O. Box 398  
Austin, Texas 78767  
(512) 476-1400

Date: 10/3/02

<b>Form PTO-1449</b> (modified) List of Patents and Publications For Applicant's Information Disclosure Statement (Use several sheets if necessary)	ATTY. DKT. NO. 5760-00801  APPLICANT: Jaffe, et al.  FILING DATE: 11/30/01	SERIAL NO. 09/998,246  GROUP: 2182
---	--	--

**U.S. PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE APPROPRIAT
	A1	6,317,826	11/13/01	McCall, et al			
	A2	5,930,824	07/27/99	Anglin, et al			
	A3	5,828,887	10/27/98	Yeager, et al			
	A4	5,452,454	09/19/95	Basu			

**FOREIGN PATENT DOCUMENTS**

EXAM. INITIALS	REF. DES.	DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATIO YES/NO

**OTHER ART (Including Author, Title, Date, Pertinent Pages, Etc.)**

	A5	International Search Report application no. PCT/US01/44941

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if citation considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to the patent own



Paper No. 4

H. Dale Langley, Jr.  
The Law Firm of H. Dale Langley, Jr., P.C.  
610 West Lynn  
Austin, TX 78703

**COPY MAILED**

**MAY 28 2002**

In re Application of  
Jeffe, et al.  
Application No. 09/998,246  
Filed: November 30, 2001

**OFFICE OF PETITIONS**  
ON PETITION

This is in response to the paper styled "REQUEST FOR FILE DATE," filed December 27, 2001. This paper is being treated under 37 CFR 1.10(d), as a petition to accord the above-identified application a filing date of November 29, 2001 instead of the presently accorded filing date of November 30, 2001.

Petitioner requests an earlier filing date on the basis that the application was purportedly deposited in Express Mail service on November 29, 2001, pursuant to the requirements of 37 CFR 1.10, but that the USPS entered an incorrect "date-in" on petitioner's "Express Mail" mailing label.

Paragraph (a) of 37 CFR 1.10 states that:

Any correspondence received by the Patent and Trademark Office (Office) that was delivered by the "Express Mail Post Office to Addressee" service of the United States Postal Service (USPS) will be considered filed in the Office on the date of deposit with the USPS. The date of deposit with the USPS is shown by the "date-in" on the "Express Mail" mailing label or other official USPS notation. If the USPS deposit date cannot be determined, the correspondence will be accorded the Office receipt date as the filing date. See §1.6(a).

(Emphasis supplied). Paragraph (d) of 37 CFR 1.10 states that:

Any person filing correspondence under this section that was received by the Office and delivered by the "Express Mail Post Office to Addressee" service of the USPS, who can show that the "date-in" on the "Express Mail" mailing label or other official notation entered by the USPS was incorrectly entered or omitted by the USPS, may petition the Commissioner to accord the correspondence a filing date as of the date the correspondence is shown to have been deposited with the USPS, provided that:

(1) The petition is filed promptly after the person becomes aware that the Office has accorded, or will accord, a filing date based upon an incorrect entry by the USPS;

(2) The number of the "Express Mail" mailing label was placed on the paper(s) or fee(s) that constitute the correspondence prior to the original mailing by "Express Mail"; and

(3) The petition includes a showing which establishes, to the satisfaction of the Commissioner, that the requested filing date was the date the correspondence was deposited in "Express Mail Post Office to Addressee" service prior to the last scheduled pickup for that day. Any showing pursuant to this paragraph must be corroborated by evidence from the USPS

or that came into being after deposit and within one business day of the deposit of the correspondence in the "Express Mail Post Office to Addressee" service of the USPS.

A grantable petition under 37 CFR 1.10(d) must include "a showing which establishes, to the satisfaction of the Commissioner, that the requested filing date was the date the correspondence was deposited in 'Express Mail Post Office to Addressee' service prior to the last scheduled pickup for that day." In addition, the showing "must be corroborated by evidence from the USPS or that came into being after deposit and within one business day of the deposit of the correspondence in the 'Express Mail Post Office to Addressee' service of the USPS." Evidence from the USPS may be an Express Mail Corporate Account Mailing Statement or a copy of the USPS Track/Confirm system information. Evidence that came into being within one day after the deposit of the correspondence as Express Mail may be in the form of a log book which contains information such as the Express Mail number; the application number, attorney docket number or other such file identification number; the place, date and time of deposit; the time of the last scheduled pick-up for that date and place of deposit; the depositor's initials or signature; and the date and time of entry in the log.

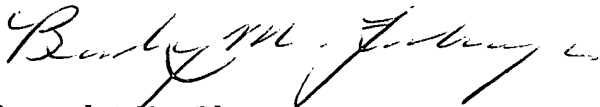
The instant petition lacks sufficient evidence to establish that on the requested filing date, the application was deposited in Express Mail service prior to the last scheduled pickup for that day. Petitioner has provided no corroborative evidence of the deposit. Accordingly, the instant petition is hereby **DISMISSED**.

Any request for reconsideration of this decision should be filed within **TWO MONTHS** of the mailing date of the decision to be considered timely. See, 37 CFR 1.181(f). This time period may **not** be extended under 37 CFR 1.136(a). Further correspondence with respect to this matter should be addressed as follows:

- By mail:           Commissioner for Patents  
                    Box DAC  
                    Washington, D.C. 20231
- By FAX:           (703) 308-6916  
                    Attn: Office of Petitions
- By hand:          Crystal Plaza Four, Suite 3C23  
                    2201 S. Clark Place  
                    Arlington, VA

The application is being returned to Technology Center 2100 for examination in due course.

Telephone inquiries related to this decision may be directed to Petitions Attorney Alesia M. Brown at (703) 305-0310.

  
Beverly M. Flanagan  
Supervisory Petitions Examiner  
Office of Petitions  
Office of the Deputy Commissioner  
for Patent Examination Policy







COPY OF PAPERS  
ORIGINALLY FILED

PATENT  
5760-00801

DECLARATION AND POWER OF ATTORNEY

As a below named inventor, I hereby declare that:

My residence, post office address, and citizenship are as stated below next to my name.

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled "COMPUTER RESTORATION SYSTEMS AND METHODS," the specification of which:

- is attached hereto.
- was filed on November 29, 2001 as Application Serial No. 09/998,246 and was amended on \_\_\_\_\_ (if applicable).

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose to the Patent and Trademark Office all information known to me to be material to patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56.

I hereby claim foreign priority benefits under 35 U.S.C. § 119(a)-(d) or § 365(b) of any foreign application(s) for patent or inventor's certificate listed below, or under § 365(a) of any PCT international application listed below designating least one country other than the United States of America, and have identified below any foreign application for patent or inventor's certificate, or of any PCT international application, having a filing date before that of the application on which priority is claimed.

<u>Prior Foreign Application No.</u>	<u>Country</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>	<u>Priority</u> <u>Claimed</u>	<u>Cert. copy</u> <u>Attached</u>
N/A				

I hereby claim the benefit under 35 U.S.C. § 119(e) of any United States provisional application(s) listed below.

<u>Provisional Application No.</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>
60/250,200	11/29/00

I hereby claim the benefit under 35 U.S.C. § 120 of any United States application(s) listed below, or under § 365(c) of any PCT international application listed below designating the United States of America, and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States or PCT international application in the manner provided by the first paragraph of 35 U.S.C. § 112, I acknowledge the duty to disclose all information known to me to be material to the patentability of the subject matter claimed in this application, as "materiality" is defined in 37 C.F.R. § 1.56, which became available between the filing date of the prior application and the national or PCT international filing date of this application.

<u>Parent Application No.</u>	<u>Filing Date</u> <u>(mm/dd/yy)</u>	<u>Parent Patent No. (if applicable) or Status</u>
N/A		

I hereby revoke any previous Powers of Attorney and appoint

Joseph T. FitzGerald	Reg. No. 33,881
John Brigden	Reg. No. 40,530

*each of said attorneys being employed by Veritas Software Corporation; and*

Mark K. Brightwell	Reg. No. 47,446
Brenna A. Brock	Reg. No. 48,509
Kevin L. Daffer	Reg. No. 34,146
Mark R. DeLuca	Reg. No. 44,649
Mollie E. Hamel	Reg. No. 48,405
Jeffrey C. Hood	Reg. No. 35,198
Robert C. Jahnke	Reg. No. 44,800
B. Noël Kivlin	Reg. No. 33,929
Robert C. Kowert	Reg. No. 39,255
Mark Lupkowski	Reg. No. 49,010
Lawrence J. Merkel	Reg. No. 41,191
Eric B. Meyertons	Reg. No. 34,876
Louise K. Miller	Reg. No. 36,609
Theresa A. Moorman	Reg. No. 46,941
David W. Quimby	Reg. No. 39,338
Rory D. Rankin	Reg. No. 47,884
David A. Rose	Reg. No. 26,223
Doug Shamah	Reg. No. 45,093


*each of said attorneys or agents being a member or an associate of the firm of Conley, Rose & Tayon, P.C., as attorney or agent for so long as they remain with such company or firm, with full power of substitution and revocation, to prosecute the application, to make alterations and amendments therein, to transact all business in the Patent and Trademark Office in connection therewith, and to receive the Letters Patent.*


Please direct all communications to:

B. Noël Kivlin  
Conley, Rose & Tayon, P.C.  
P.O. Box 398  
Austin, Texas 78767-0398  
Phone: (512) 476-1400

PATENT  
5760-00801

I hereby declare that all statements made herein of my own knowledge are true and that all statements made herein on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under 18 U.S.C. § 1001 and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

Inventor's Full Name: Peter Jeffe  
Inventor's Signature:  Date: 4-12-02  
City and State (or Foreign Country) of Residence: Austin, TX Citizenship: US  
Post Office and Residence Address: 1613 Patterson Rd., Austin, TX 78746  
(Include number, street name, city, state and zip code)

Inventor's Full Name: Bruce Bramhall  
Inventor's Signature:  Date: 4-12-2002  
City and State (or Foreign Country) of Residence: Pflugerville, TX Citizenship: US  
Post Office and Residence Address: 202 Applewood Dr., Pflugerville, TX 78660  
(Include number, street name, city, state and zip code)

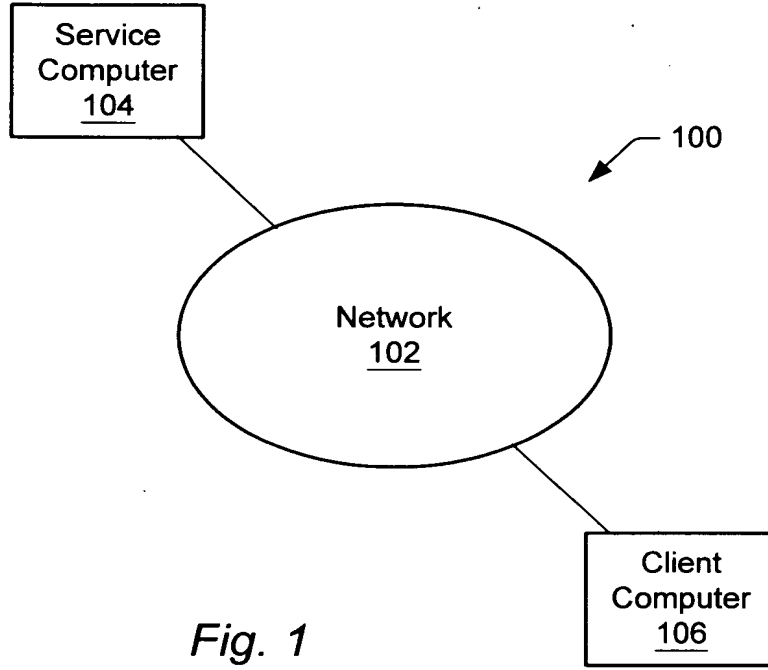


Fig. 1

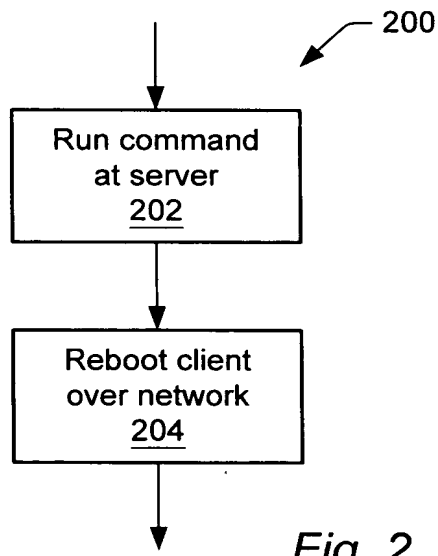


Fig. 2

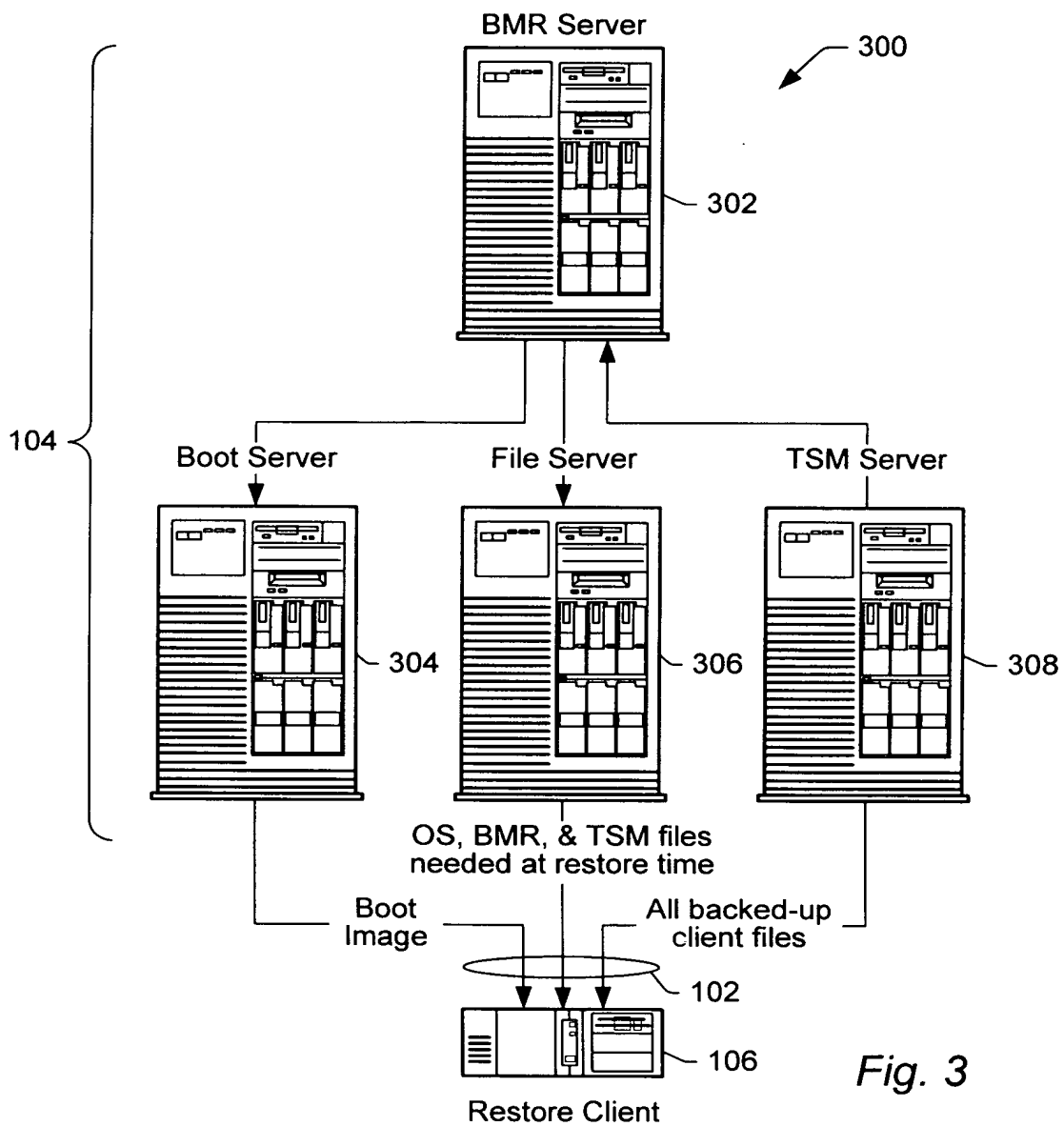


Fig. 3

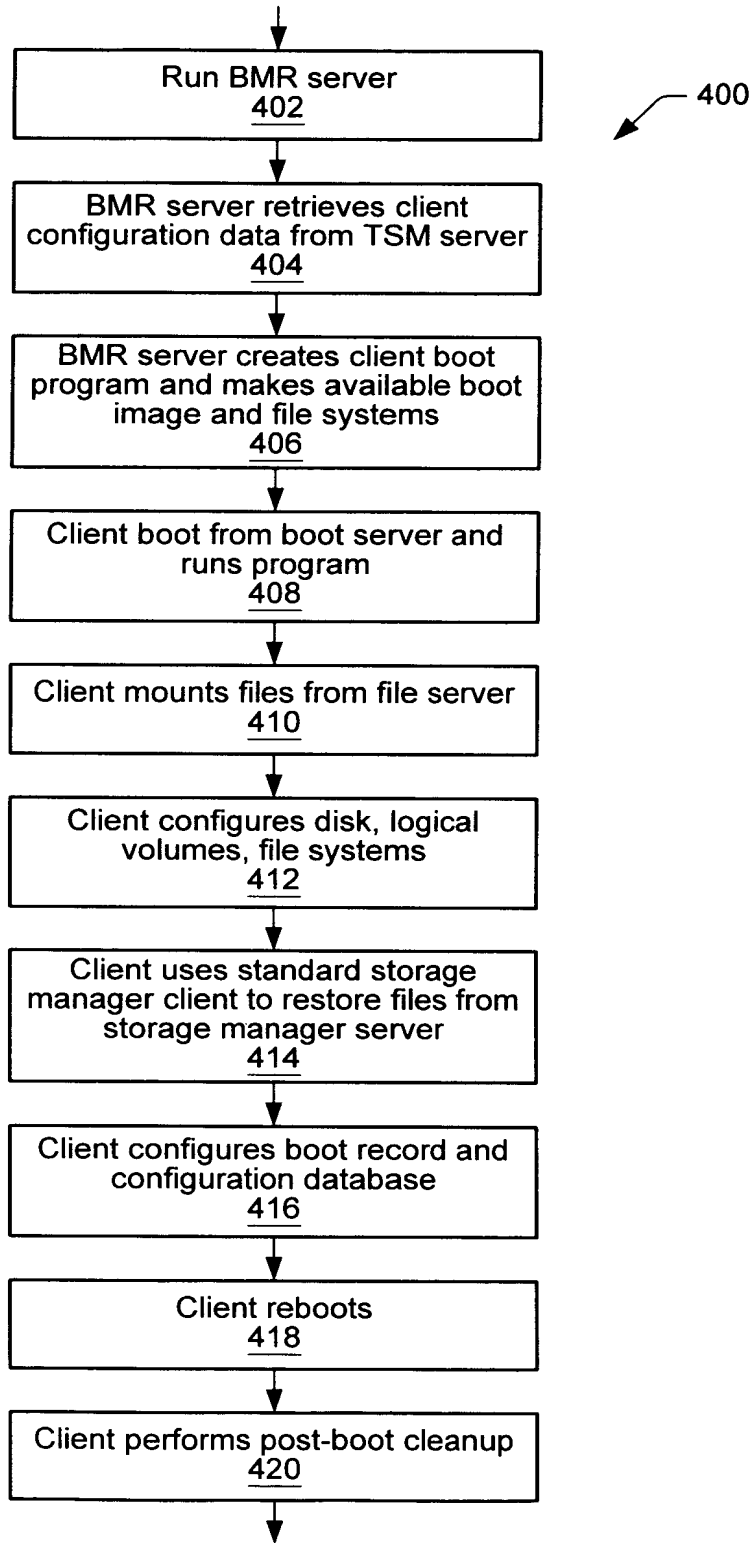


Fig. 4

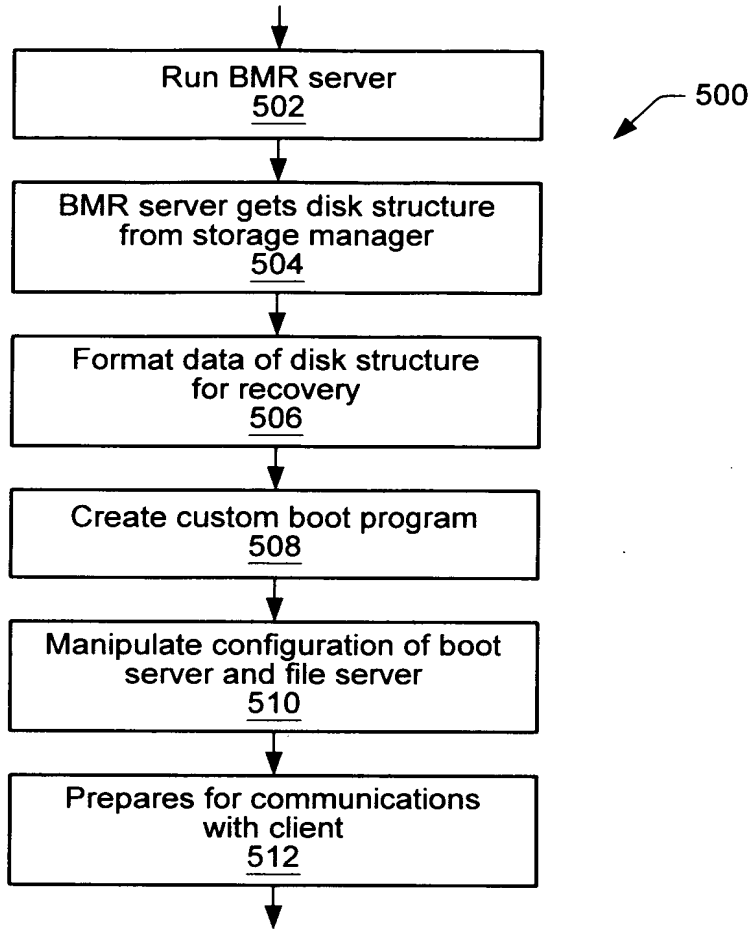


Fig. 5

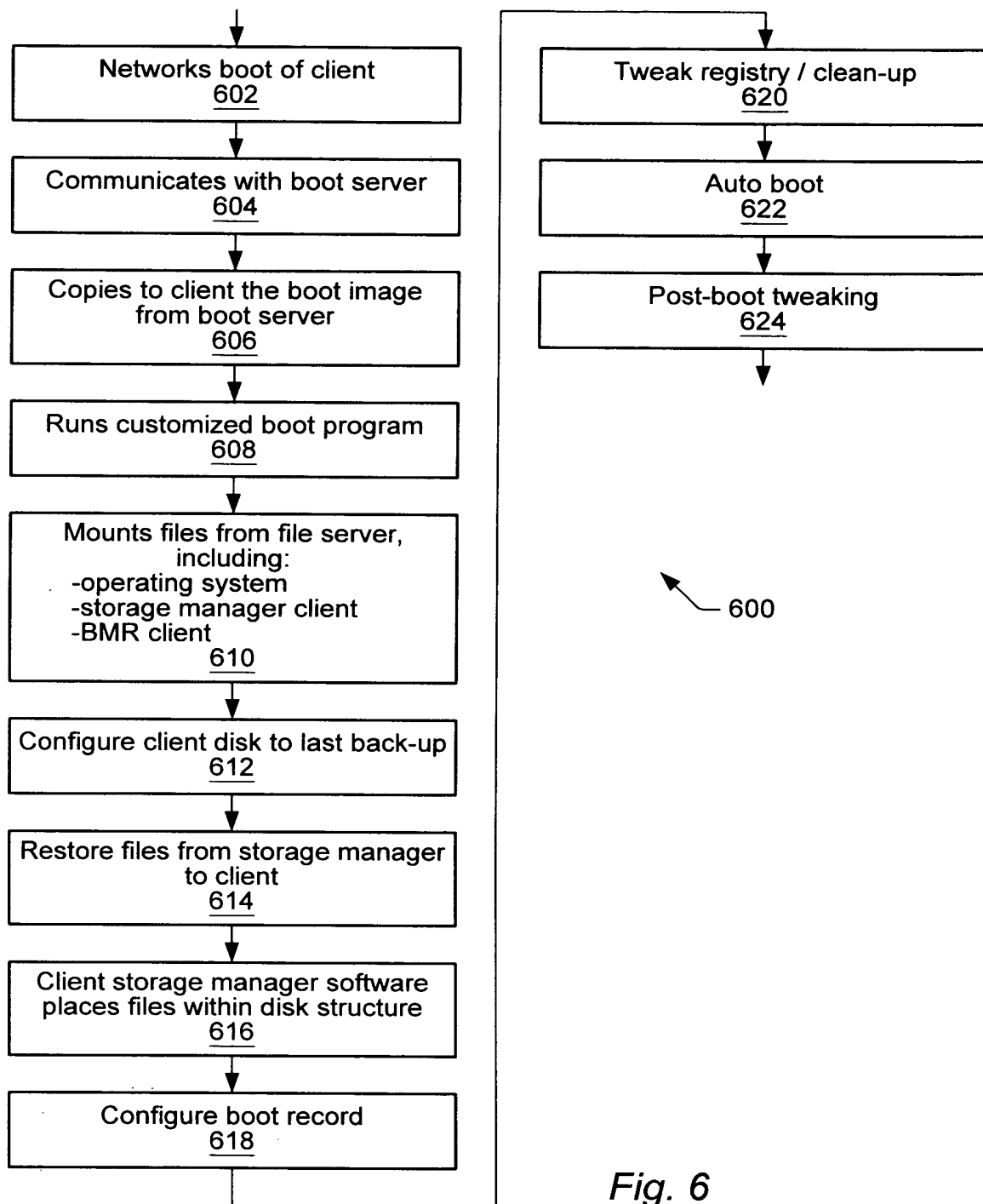
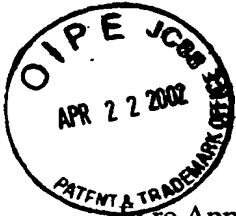


Fig. 6





COPY OF PAPERS  
ORIGINALLY FILED

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of:  
Peter Jeffe and Bruce Bramhall

Serial No. 09/998,246

Filed: November 29, 2001

For: Computer Restoration  
Systems and Methods

§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§  
§

Group Art Unit: 2182

Examiner: Unknown

Atty. Dkt. No.: 5760-00801

I hereby certify that this correspondence is being deposited with the U.S. Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, Washington, D.C. 20231, on the date indicated below:

B. Noël Kivlin  
Registered Representative

April 12, 2002  
Date

Signature

STATEMENT REGARDING CHANGE FROM SMALL ENTITY STATUS

Commissioner for Patents  
Washington, D.C. 20231

Dear Sir:

Patentee is no longer entitled to small entity status in the above-referenced patent application.

No fees are believed necessary; however if any fees are required, the Commissioner is hereby authorized to immediately charge the fees or credit any overpayment to Conley, Rose & Tayon, P.C. Deposit Account No. 501505/5760-00801/BNK.

Respectfully submitted,

B. Noël Kivlin  
Attorney for Applicant  
Reg. No. 33,929

Conley, Rose & Tayon  
P.O. Box 398  
Austin, Texas 78767-0398  
Ph: (512) 476-1400  
Date: April 12, 2002



## UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
 UNITED STATES PATENT AND TRADEMARK OFFICE  
 WASHINGTON, D.C. 20231  
 www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/998,246	11/30/2001	Peter Jeffe	KRNL:001

H. Dale Langley, Jr.  
 The Law Firm of H. Dale Langley, Jr., P.C.  
 610 West Lynn  
 Austin, TX 78703

**COPY OF PAPERS  
 ORIGINALLY FILED**



**CONFIRMATION NO. 4233  
 FORMALITIES LETTER**



\*OC00000007186459\*

Date Mailed: 12/12/2001

## NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION

FILED UNDER 37 CFR 1.53(b)

*Filing Date Granted*

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.  
*A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

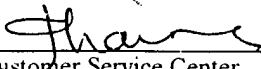
The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawings have a line quality that is too light to be reproduced (weight of all lines and letters must be heavy enough to permit adequate reproduction) or text that is illegible (reference characters, sheet numbers, and view numbers must be plain and legible) see 37 CFR 1.84(l) and (p)(1));

04/24/2002 ROSMAN1 00000023 501505 09998246

01 FC:105 130.00 CH

*A copy of this notice **MUST** be returned with the reply.*

  
\_\_\_\_\_

Customer Service Center

Initial Patent Examination Division (703) 308-1202

PART 1 - ATTORNEY/APPLICANT COPY



- (f) A copy of Notice to File Missing Parts of Application Filing Date Granted.
- (g) A return postcard to acknowledge receipt of these materials. Please stamp and return this postcard to the undersigned.

If any fees are inadvertently omitted or if any additional fees are required or have been overpaid, please appropriately charge or credit those fees to Conley, Rose & Tayon, P.C. Deposit Account Number 501505/5760-00801/BNK.

Respectfully submitted,



B. Noël Kivlin  
Attorney for Applicant  
Reg. No. 33,929

Conley, Rose & Tayon  
P.O. Box 398  
Austin, Texas 78767-0398  
Ph: (512) 476-1400  
Date: April 12, 2002





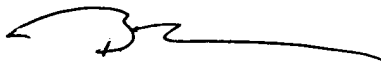




**REMARKS**

No fees are believed necessary; however, the Commissioner is hereby authorized to charge any fees which may be required to Deposit Account No. 501505/5760-00801/BNK.

Respectfully submitted,

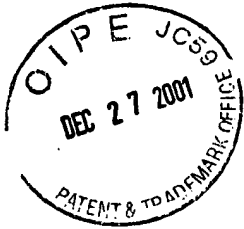


B. Noël Kivlin  
Attorney for Applicant  
Reg. No. 33,929

Conley, Rose & Tayon  
P.O. Box 398  
Austin, Texas 78767-0398  
Ph: (512) 476-1400  
Date: 3-27-02

01-03-01

GP/2182



The Law Firm of  
**H. Dale Langley, Jr.**

A Professional Corporation

610 West Lynn  
Austin, Texas 78703  
Email: dlangley@iptechlaw.com

Telephone: (512) 477-3830  
Fax: (512) 477-4080  
eFax: (253) 540-2683

December 27, 2001

**RECEIVED**

JAN 07 2002

**Technology Center 2100**

Assistant Commissioner for Patents  
Box – FILING DATE  
Washington, D.C. 20231

<p align="center"><b>CERTIFICATE OF MAILING BY EXPRESS MAIL Receipt No. EL646840484US</b></p> <p>I certify that this Request and any attachments is being deposited on <u>27 DECEMBER 2001</u>, with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 and is addressed to the Assistant Commission for Patents, Box FILING DATE, Washington, D.C. 20231.</p> <p align="right"><i>Carolyn Firestone</i> Carolyn Firestone</p>
---

Re: United States Patent Application  
Entitled: *COMPUTER RESTORATION SYSTEMS AND METHODS*  
Inventors: Peter Jeffe and Bruce Bramhall  
Serial No.: 09/998246  
Filing Date: November 29, 2001  
Our Ref.: KRNL:001

Sir:

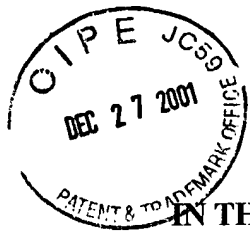
Transmitted herewith is: (1) Request for File Date; (2) Copy of Application as filed on November 29, 2001; (3) Copy of Express Mail Receipt; (4) Copy of return postcard; and (5) Return postcard with postage. Applicant believes that no fees are due with this Request, however, if any fees are due the Assistant Commissioner for Patents is authorized to charge such fees to Deposit Account No. 50-1350.

Respectfully submitted,

*H. Dale Langley Jr.*

H. Dale Langley, Jr.  
Reg. No. 35,927

HDL:crf  
Enclosures



PATENT  
Docket No. KRNL:001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

RECEIVED  
MAY 20 2002  
OFFICE OF PETITIONS

In Re Application of: §  
Peter Jeffe, et al. §  
Serial No: 09/998246 §  
Filed: November 29, 2001 §  
Title: COMPUTER RESTORATION §  
SYSTEMS AND METHODS §

Group Art Unit: 2182  
Examiner: Not Yet Assigned

RECEIVED  
JAN 07 2002  
Technology Center 2100

TO: Assistant Commissioner for Patents  
Box – FILING DATE  
Washington, D.C. 20231

<b>CERTIFICATE OF MAILING</b> <b>BY EXPRESS MAIL</b> <u>Receipt No. EL646840484US</u>
<small>I certify that this Request and any attachments is being deposited on <u>27 DECEMBER 2001</u>, with the U.S. Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 and is addressed to the Assistant Commission for Patents, Box FILING DATE, Washington, D.C. 20231.</small>
 Carolyn Firestone

**REQUEST FOR FILE DATE**

Sir:

Applicant filed the above-referenced US Patent Application via "Express Mail Post Office to Addressee", by depositing said application in an express mail envelope with postage prepaid in the Express Mail Drop Box on November 29, 2001, before the deadline. The date of deposit and the express mail number was properly reflected on the papers which were enclosed in the express mail envelope and signed by the depositor. Additionally, the return postcard was identified by the date of deposit along with the express mail number. Due to circumstances unknown to Applicant, the express mail mailing receipt was incorrectly entered as the next business day. This resulted in the inaccurate "date-in" on Applicant's filing receipt and return postcard.

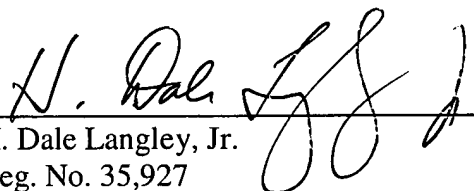
It is respectfully requested that the US Patent Office take into consideration the on-going difficulties experienced with the US Postal Service since the September 11<sup>th</sup> events and grant Applicant's US Patent Application filing date as November 29, 2001. A copy of the originally filed papers and a copy of the express mail mailing receipt and the return postcard are enclosed.

All statements made of the party's own knowledge are true, all statements made on information and belief are believed to be true, and all statements are made with the knowledge that whoever, in any matter within the jurisdiction of the Patent and Trademark Office, knowingly and willfully falsifies, conceals, or covers up by any trick, scheme, or device a material fact, or makes any false, fictitious or fraudulent statements or representations, or makes or uses any false writing or document knowing the same to contain any false, fictitious or fraudulent statement or entry, shall be subject to the penalties set forth under 18 U.S.C. 1001, and that violations of this paragraph may jeopardize the validity of the application or document, or the validity or enforceability of any patent, trademark registration, or certificate resulting therefrom.

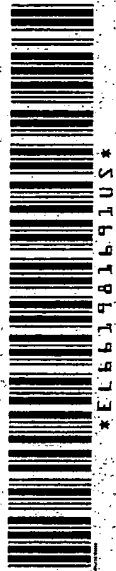
The Commissioner is hereby authorized to charge payment of any fees associated with this Request to Deposit Account No. 50-1350.

Respectfully submitted,

Dated: 12-26-01

  
\_\_\_\_\_  
H. Dale Langley, Jr.  
Reg. No. 35,927

The Law Firm of H. Dale Langley, Jr., P.C.  
610 West Lynn  
Austin, Texas 78703  
Telephone: (512) 477-3830  
Facsimile: (512) 477-4080  
Email: [dlangley@iptechlaw.com](mailto:dlangley@iptechlaw.com)



EL661981691US

SEE REVERSE SIDE FOR  
SERVICE GUARANTEE AND LIMITS  
ON INSURANCE COVERAGE



POST OFFICE  
TO ADDRESSEE

UNITED STATES POSTAL SERVICE™

ORIGIN (POSTAL USE ONLY)		Flat Rate Envelope	Postage	Return Receipt Fee	COD Fee	Insurance Fee
PO ZIP Code:	78799	<input type="checkbox"/>	\$			
Date In:	11/30/01	Day of Delivery: <input checked="" type="checkbox"/> Next <input type="checkbox"/> Second	Time In: 12:00 PM	Time In: 3 PM	Time In: 2nd Day	Time In: 3rd Day
Weight:	7 ozs.	<input checked="" type="checkbox"/> AM <input type="checkbox"/> PM	Int'l Alpha Country Code:	Acceptance Clerk Initials: <i>GW</i>	Total Postage & Fees: \$ 12.45	
No Delivery <input type="checkbox"/>	Weekend <input type="checkbox"/>	Holiday <input type="checkbox"/>				

**CUSTOMER USE ONLY**

METHOD OF PAYMENT: XXXXXXXXXX  
 Express Mail Corporate Acct. No. XXXXXXXXXX  
 Postal Service Acct. No. XXXXXXXXXX

FROM: (PLEASE PRINT) H. DALE LANGLEY PC  
 610 W. LYNN ST  
 AUSTIN TX 78703-4742

TO: (PLEASE PRINT) Assistant Commissioner for Patents  
 U.S. Patent and Trademark Office  
 Box NEW APPLICATION  
 P.O. Box 2327  
 Arlington, VA 22202

FOR PICKUP OR TRACKING CALL 1-800-222-1811 WWW.USPS.GOV

RECEIVED  
JAN 07 2002  
Technology Center 2100

RECEIVED  
MAY 20 2002  
OFFICE OF PETITIONS

Customer Copy July 1997

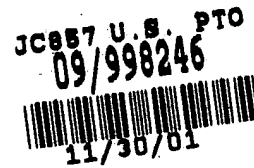
RECEIVED  
MAY 20 2002  
OFFICE OF PETITIONS



Attorney Docket No.: KRNL:001

Assistant Commissioner for Patents  
U.S. Patent and Trademark Office  
Box - NEW APPLICATION  
P.O. Box 2327  
Arlington, VA 22202

**Inventors:** P. Jeffe and B. Bramhall  
**Serial No.:** Not Yet Assigned  
**Entitled:** Computer Restoration Systems and Methods  
**Filing Date:** October 16, 2001



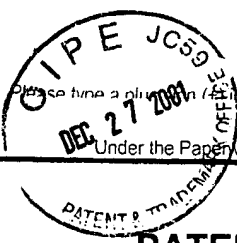
Enclosed are the following items: (1) Utility Patent Application Transmittal (1 page); (2) Fee Transmittal (1 page); (3) Utility Patent Application (24 pages - w/cover sheet); (4) Drawings (5 sheets); and (5) Return Postcard with postage.

Receipt and file stamp hereby acknowledges that the Patent Office has received the above-listed items in connection with the above-referenced patent application.

Date of Deposit: November 29, 2001

Sent via Express Mail No. EL66198169US

HDL/CRF - 11/29/01



Please time a plus sign (+) inside this box →   
Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office: U.S. DEPARTMENT OF COMMERCE

PTO/SB/05 (03-01)

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	KRNL:001
First Inventor	Jeffe, et al.
Title	Computer Restoration Systems and Methods
Express Mail Label No.	EL661981691US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

- Fee Transmittal Form (e.g., PTO/SB/17)  
*(Submit an original and a duplicate for fee processing)*
- Applicant claims small entity status.  
See 37 CFR 1.27.
- Specification [Total Pages  ]  
*(preferred arrangement set forth below)*
  - Cover Sheet with Certificate of Service
  - Descriptive title of the invention
  - Cross Reference to Related Applications
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings
  - Detailed Description
  - Claims - (12 claims total)
    - 3 Independent
    - 9 Dependent
  - Abstract of the Disclosure
- Drawing(s) (35 U.S.C. 113) [Total Sheets  ]
- Oath or Declaration [Total Sheets  ]
  - Newly executed (original or copy)
  - Copy from a prior application (37 CFR 1.63 (d))  
*(for continuation/divisional with Box 18 completed)*
    - DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s) named in the prior application, see 37 CFR 1.63(d)(2) and 1.33(b).
- Application Data Sheet. See 37 CFR 1.76

- CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
- Nucleotide and/or Amino Acid Sequence Submission  
*(if applicable, all necessary)*
  - Computer Readable Form (CRF)
  - Specification Sequence Listing on:
    - CD-ROM or CD-R (2 copies); or
    - paper
  - Statements verifying identity of above copies

## ACCOMPANYING APPLICATION PARTS

- Assignment Papers (cover sheet & document(s))
- 37 CFR 3.73(b) Statement  Power of Attorney  
*(when there is an assignee)*
- English Translation Document *(if applicable)*
- Information Disclosure Statement (IDS)/PTO-1449  Copies of IDS Citations
- Preliminary Amendment (13 pages)
- Return Receipt Postcard (MPEP 503)  
*(Should be specifically itemized)*
- Certified Copy of Priority Document(s)  
*(if foreign priority is claimed)*
- Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
- Other:

**RECEIVED**  
JAN 07 2002  
Technology Center 2100

18 If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

Continuation     Divisional     Continuation-in-part (CIP)    of prior application No.: \_\_\_\_\_  
Prior application information:    Examiner: \_\_\_\_\_    Group Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

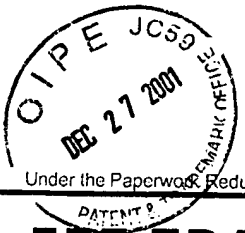
## 19. CORRESPONDENCE ADDRESS

Customer Number or Bar Code Label    (Insert Customer No. or Attach bar code label here)    or     Correspondence address below

Name	H. Dale Langley, Jr.				
Address	The Law Firm of H. Dale Langley, Jr., P.C.				
	610 West Lynn				
City	Austin	State	Texas	Zip Code	78703
Country	United States	Telephone	512-477-3830	Fax	512-477-4080

Name (Print/type)	H. Dale Langley, Jr.	Registration No. (Attorney/Agent)	35927
Signature		Date	Nov. 29, 2001

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

<h1 style="margin: 0;">FEE TRANSMITTAL</h1> <h2 style="margin: 0;">for FY 2001</h2> <p style="margin: 5px 0 0 20px;">Patent fees are subject to annual revision.</p>		<b>Complete if Known</b>	
		Application Number	Not yet assigned
		Filing Date	November 29, 2001
		First Named Inventor	Jeffe, et al.
		Examiner Name	Unknown
		Group Art Unit	Unknown
TOTAL AMOUNT OF PAYMENT		Attorney Docket No.	KRNL:001

**METHOD OF PAYMENT**

1.  The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 50-1350  
 Deposit Account Name: H. Dale Langley, Jr.

Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17  
 Applicant claims small entity status. See 37 CFR 1.27

2. Payment Enclosed:  
 Check  Credit Card  Money Order  Other

**FEE CALCULATION (continued)**

RECEIVED

JAN 07 2002

Technology Center 2100

3. ADDITIONAL FEES

Fee Code	Large Entity Fee (\$)	Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or cover sheet	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for <i>ex parte</i> reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(a)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3) (\$ 0)**

**FEE CALCULATION**

1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	370.00
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

**SUBTOTAL (1) (\$ 370.00)**

2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
20	-20** = 17	9.00	0
5	-3** = 2	42.00	84.00
Multiple Dependent			0

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
103	18	203	9	Claims in excess of 20	
102	84	202	42	Independent claims in excess of 3	
104	280	204	140	Multiple dependent claim, if not paid	
109	84	209	42	**Reissue independent claims over original patent	
110	18	210	9	**Reissue claims in excess of 20 and over original patent	

**SUBTOTAL (2) (\$ 84.00)**

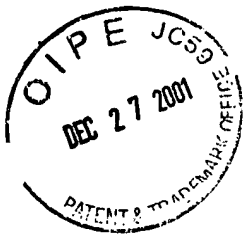
\*\* or number previously paid, if greater; For Reissues, see above

<b>SUBMITTED BY</b>		<i>Complete (if applicable)</i>	
Name (Print/Type)	H. Dale Langley, Jr.	Registration No. (Attorney/Agent)	35927
Telephone	512-477-3830	Date	October 16, 2001
Signature	<i>H. Dale Langley, Jr.</i>		

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant commissioner for Patents, Washington, DC 20231.





**CERTIFICATE OF MAILING BY "EXPRESS MAIL"**  
Express Mail® Mailing Label Number EL661981691US  
Date of Deposit November 29, 2001  
I hereby certify that this paper or fec is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202

*H. Dale Langley, Jr.*  
\_\_\_\_\_  
H. Dale Langley, Jr.

## COMPUTER RESTORATION SYSTEMS AND METHODS

**Inventors: Peter Jeffe and Bruce Bramhall**  
1250 South Capital of Texas Hwy.  
Building III, Suite 601  
Austin, Texas 78746

**RECEIVED**  
JAN 07 2002  
Technology Center 2100

**H. Dale Langley**  
Reg. No. 35,927  
The Law Firm of H. Dale Langley, Jr., P.C.  
610 West Lynn  
Austin, Texas 78703  
Telephone: (512) 477-3830  
Telecopier: (512) 477-4080



RECEIVED  
JAN 07 2002  
Technology Center 2100

## COMPUTER RESTORATION SYSTEMS AND METHODS

### Background of the Invention

The present invention generally relates to computers and local and wide area interconnected computers and data communications networks and, more particularly, relates to restoration of computer systems backed up on storage managers, such as in a network, upon a crash or other similar event which prohibits normal boot up operations.

Computer boot disk crashes and similar major machine failure events, in which normal boot up operations are thereafter not possible or are otherwise hindered, are problematic in several respects to system administrators. Conventionally, such events have required system administrators to completely reconfigure the crashed computer, including, without limitation, by reconfiguring machine non-volatile random access memory (NVRAM) settings, loading the computer operating system, replacing applications and files, retrieving backed up data, and thoroughly re-configuring the operating system, application programs, drivers, and other operational settings.

Even in instances in which a crash or similar systems failure event does not require complete restoration of the computer system by the system administrator, a boot disk, as well as other configurational set ups, are typically required. Boot disks and other

set up tools are often not readily available in the location of each computer of a network or other wide area system. Moreover, to restore computer systems of such an arrangement requires significant time and effort, including to format disk drives, replace or fix operating systems and errors, reload applications, retrieve backed up data, and  
5 routinely save, as well as additionally reinstitute, operating, network, and application settings to those at the point of the crash.

Typically, networks and system components of the networks, particularly distributed and interconnected computers of the networks, are backed-up in normal system maintenance and administration operations. The backups can include backup of  
10 the system itself, as well as backup of data and applications. Particularly in enterprise computing systems, each computer of the enterprise network can be backed up regularly (or as otherwise scheduled or desired) as to data and applications by use of a storage manager software application. Present storage manager applications provide file and data-oriented backups of each computer. A number of different software storage manager  
15 applications are available for the enterprise computing environment, for example, the TSM software of Tivoli Systems (an IBM Corporation subsidiary), Veritas, Legato, and others.

Although these presently available storage manager back-up resources are available in the several enterprise computing software packages, the packages have not  
20 made it possible to automatically or readily restore any or each particular computer or other element of the computing enterprise. The back-up data has merely been available to assist the system administrator to re-copy and otherwise re-set each computer to the data

and application status then maintained in back-up. The back-ups from these packages are merely file and data backups, and can not provide complete restoration of the system.

In order to provide complete system backups, including, for example, operating system, drivers, and other machine configuration backup, additional backup resources are  
5 required, such as “mksysb” images and “savevg” commands on AIX, a product like Disk Image on Windows, or otherwise. Such system backups, as compared to file and data backups of storage manager applications, are not available in many operating systems. Even when such system backup is maintained and available, machine restoration in the event of major failure has typically been achieved by system administrators only by  
10 separately employing such system backup to restore the basic operating system and machine configuration, and then a separate file and data backup of a storage manager application has been employed to restore the rest of the machine’s data and applications.

The conventional backup and restoration of computers of the enterprise network has been problematic. For example, the system and file/data backups which must be  
15 maintained in order to perform the restoration are redundant and waste valuable storage space, network bandwidth, and effort. File and data backups, for instance, are often saved on individual machines of the network by the backup function of the respective operating system of each machine. System backup information is similarly saved or has even been maintained in hard copy or other manual operation. Any backups of the system and  
20 file/data that are saved on the network are, therefore, redundant. Moreover, the conventional system backups, for example Ignite on HP-UX, NIM on AIX or others, are often out of date because such backups are not usually performed as frequently as backups of applications and data performed by the storage manager application. The

duplicate backup procedures required for system configuration data, on the one hand, and application files and data, on the other hand, together with various individual machine and network backup operations, increase the potential for human error when restoring from the backups. System administrators must juggle tapes and resolve tape access  
5 conflicts between the various backups, including the separate storage manager backup and the system backup. Also, the machine restoration process typically requires separate steps of re-installation of the device operating systems, followed by restoration from backup of application and data files. These separate re-installation of system configurations, on the one hand, and restoration of application and data file backups, on  
10 the other hand, are largely manual operations which are time consuming and themselves error-prone.

It would be a significant improvement in the art and technology to provide computer machine restoration systems and methods that alleviate many of the problems of the conventional backups and restoration processes, and that provide advantages of  
15 time savings, limited manual involvement, and ready and automatic availability of resources for performing the restoration.

### **Summary of the Invention**

An embodiment of the invention is a device restoration system. The device  
20 restoration system restores a client device to a state prior to a major failure. The system includes a server device, a network communicatively interconnecting the client device and the server device, a storage manager accessible to the server device for saving the state, and a boot process in which the client device boots either from a server device over a network, or from locally attached media, for example tape, CD-ROM, or floppy disk.

Another embodiment of the invention is a method of restoring a client device of a network on failure of the client device. The network includes a server computer. The method includes booting the client device via a network or local media boot, creating a boot program for operation on the client device, configuring the client device according to the boot program and a saved configuration state, and copying files to the client device in accordance with a configuration from the step of configuring.

Yet another embodiment of the invention is a method of restoring a client device of a network. The network includes a server device. The server device has a storage manager application. The method includes backing up configuration data, as well as application and data files, by the storage manager application, and restoring the backed up configuration data, as well as application and data files, from the step of backing up, to the client device over the network.

### **Brief Description of the Drawings**

The present invention is illustrated by way of example and not limitation in the accompanying figures, in which like references indicate similar elements, and in which:

FIG. 1 illustrates a network, including a client computer and a server computer connected over the network, for performing a restoration operation of embodiments of the present invention on failure of the client computer;

FIG. 2 illustrates a method of the restoration operation performed on the network, including the client computer and the server computer, of FIG. 1, according to embodiments of the present invention;

FIG. 3 illustrates the server computer, including components of a restore server, a boot server, a file server and a storage management server, and the client computer, each of FIG.1, according to embodiments of the present invention;

FIG. 4 illustrates a method of restoration of a computer upon operational failure,  
5 according to embodiments of the present invention;

FIG. 5 illustrates a method of operation of the server computer of FIGs. 1 and 3, according to embodiments of the present invention; and

FIG. 6 illustrates a method of operation of the client computer of FIGs. 1 and 3, according to embodiments of the present invention.

10

### **Detailed Description of Preferred Embodiments**

Referring to Fig. 1, a network 100 includes network elements 102 communicatively interconnecting a server computer 104 and a client computer 106. The network elements 102 include any of a wide variety of conventional networking components and connectors, such as additional server computers, client computers, and  
15 connection cables or channels, wired, wireless or otherwise. The server computer 104 is any processing device that is communicatively connected by the network elements 102 to the client computer 106. The server computer 104 is, for example, a computer device equipped with software to act as a server of information requested by one or more client devices over the network 100 and is, typically, a conventional server computer of an  
20 enterprise network of communications and computing elements. The server computer 104 serves to receive requests over the network 100, for example, requests from the client computer, 106, and in response to those requests the server computer 104 returns a response over the network 100. The server computer 104 is particularly capable of acting

as a storage manager for interconnected elements and devices of the network or of communicating with a separate computer (not shown in FIG. 1) that performs storage management functions.

The client computer 106 of the network 100 is, likewise, any processing or  
5 communications device that is capable of communicating with the server computer 104 over the network 100, by making requests or otherwise. The client computer 106 is, for example, a desktop or workstation computer. The network 100 is any of a variety of networking and communications interconnections, such as an intranet, the Internet, a dedicated network, or other communications network. The network 100 is operable  
10 according to a particular packetized data protocol, such as transport control protocol/Internet protocol (TCP/IP) or some other network protocol. The server computer 104 and the client computer 106 communicate over the network 100 via the particular protocols of the network, such as, for example, according to the standard Internet network protocol TCP/IP. In normal operations, the client computer 106 makes  
15 requests over the network 100 according to the particular protocols of the network 100, and the server computer 104 responds over the network 100 in answer to the requests. If there occurs any major failure of the client computer 106, the client computer 106 can not boot and can not communicate with the server computer 104 in such manner or otherwise properly operate.

20 In the network 100, the server computer 104, in conjunction with the client computer 106, can perform an automatic restoration operation to the client computer 106, which enables complete boot-up, reconfiguration, and restoration of systems, files, and data to the client computer 106. This automatic restoration operation is performed



without a boot disk at the client computer 106 and includes both system restoration and file and data restoration. In effect, the restoration operation performed by the network 100, via the server computer 104 and the client computer 106, completely restores the client computer 106 to the state at the time of the failure.

5 Referring to Fig. 2, a method 200 is performed by the server computer 104 and the client computer 106 of the network 100 of Fig. 1, in order to restore the client computer 106 on major failure that prohibits normal boot of the client computer 106. In the method 200, a command is run in a step 202 at the server computer 106 by the system administrator or other user of the server computer 106. The step 202 initiates a network  
10 reboot of the client computer 106 in a step 204. The network reboot of the step 202 restores the client computer 106 in all respects, including the systems and application and data files of the client computer 106 at the time of the failure of the client computer 106.

In the method 200, the server computer 104 maintains, or otherwise has access to, a storage manager device or software application. Such storage managers are  
15 conventional and typically serve to back up to server devices, such as the server computer 104, and restore data of client devices, such as the client computer 106. These storage managers generally do not back up all files, but only back up application files and data. Machine configuration states are not typically backed up. In the present embodiments, the entirety of the client computer 106 is backed up by the storage manager, that is, all  
20 files of the client computer 106, including machine configuration states, as well as the usual application files and data of the client computer 106, are backed up to the storage manager. Backups of the client computer 106 which follow an initial full backup of all configuration and file and data files of the client computer 106 can be incremental

backups of only changed information since an immediately prior backup. By backing up machine configurations of the client computer 106, at the regular and periodic backup times for backup operations of the storage manager in backing up application and data files of the client computer 106, the system configurations, as well as all applications and data, are backed up by the storage manager. These full backups by the storage manager are employed to restore the client computer 106 on failure, as further described here.

Referring to Fig. 3, the server computer 104 of Fig. 1 includes four separate, distinct server components 300, identified in Fig. 3 as a bare metal restore (BMR) server 302, a boot server 304, a file server 306, and a storage manager (SM) server 308. Each of the boot server 304, the file server 306 and the SM server 308 is communicatively connected to the BMR server 302. The server components 300 are also communicatively connected to the client computer 106 over the network elements 102. Although the respective server components 300 are illustrated in Fig. 3 as distinct and separate server computers, the server components 300 are merely functions that can be performed and available on any number and arrangement of computing devices with server functionality. The server components 300 can be each located on and performed by separate server devices, or can be grouped onto a single server device or combinations, banks, or other arrangements of server devices. The server devices functioning as the server components 300 can be centrally located or disparately located devices, all in communication over the network 100 according to appropriate protocols and features.

Referring to Fig. 4, a method 400 restores the system and application and data files to the client computer 106 of Figs. 1 and 3, upon a major failure of the client computer 106. The method 400 is performed between the server components 300 and the

client computer 106 over the network 100 and, thus, the restoration method 400 can be initiated, performed and completed from a location remote from the location of the client computer 106. No boot disk or boot efforts are required directly at the location of the client computer 106. Rather, an external source or media attached to the client computer  
5 106, such as, for example, the server components 300 in communication with the client computer 106 over the network 100, or alternatively an attached media and media read device, such as tape, CD-Rom, or floppy disk, serves to allow the client device 106 to boot from the server components 300 or media device, as applicable. In such event, the server components 300 or media device, as applies, permits the client computer 106 to  
10 perform the boot process. The hard drive and other memory of the client computer 106 is not required in order for the client computer 106 to so boot.

Remote re-boot and restoration of the client computer 106 according to the method 400, such as via communications of the client computer 106 with networked elements like the server components 300, are possible if the client computer 106, upon  
15 failure, retains sufficient unaffected resources to communicate over the network 100 with the server components 300 to reboot via communicated commands with the server components 300. Remote re-boot and restoration can also occur according to the method 400, for example, in the case of a system like an AIX SP node, where the physical “front panel” (i.e., on, off, reset and similar control circuitry and equipment) of the client  
20 computer 106 can be manipulated through software from another device, so that the controlling device can electrically (and, if necessary, mechanically) initiate a reset as if the reset button on the client computer 106 is triggered. In either event, communications with devices external to the client computer 106, either over the network 100 by the

server components 300 or with a connected controlling device, enable the complete restore operation.

The method 400 is commenced in a step 402 at the BMR server 302 by a user, for example, a system administrator of the network 100, by a run command input to the BMR server 302. This run command of the step 402 causes the BMR server 302 to configure the boot server 304 and the file server 306 to initiate restoration and indicates that the particular client computer 106 is to be configured and restored. In a step 404, the BMR server 302 then retrieves configuration data regarding the client computer 106 from the SM server 308. The configuration data so retrieved is the most recently backed up machine configuration states, as saved by the storage manager.

The SM server 308 is a conventional storage manager application that serves to periodically backup and save application and file information present on the client computer 106, as well as on all other client devices of the network enterprise. An example of the storage manager application of the SM server 308 is the TSM<sup>TM</sup> software of Tivoli Systems (an IBM Corporation subsidiary). Other examples include the storage manager products of Veritas, Legato, Computer Associates, and others. All such storage manager applications include features enabling backups of client devices, such as application programs, data files, and user-settings. These storage manager applications typically provide backup of application files, data and only certain user-settings, primarily related to the application files, and do not usually provide storage for operating systems, log files, and other device-specific system configurations and information. With the present embodiments, however, the storage manager backs up all of the client computer 106 files, including the client machine configuration settings, as well as the application

and data files. As previously mentioned, this backup can be incremental with each regularly scheduled backup operation performed by the storage manager, such that only changes since an immediately prior backup are backed up with the backup operation.

In a step 406, the BMR server 302 creates a client boot program and makes  
5 available over the network a boot image and file systems for the client computer 106 being restored. The client boot program is delivered over the network 100 to the client computer 106 once the client computer 106 initializes over the network in a network boot operation. The boot image and file systems are saved at the boot server 304 and the file server 306, respectively, and via the network boot process and client boot program are  
10 accessible to the client computer 106 over the network 100 for initiation of restoration operations. In the following, a network boot process (e.g., with the network 100 and server components 300) is primarily described, however, it is to be understood that the substantially similar boot process is achieved with such controlling device that is connected locally or otherwise to the client computer 106 to effect resetting.

15 The client computer 106 next is booted from the boot server 304 and runs the client boot program to retrieve boot information from the boot server 304 and file systems from the file server 306 over the network 100. The network boot performed by the client computer 106 in such manner uses the standard "bootp" and/or "bootparams" protocols to network boot the client computer 106 from the boot server 304. The client boot program  
20 continues to operate at the client computer 106 to perform the boot over the network 100 and to enable client computer 106 access to system configuration files from the file server 306 and application and data files from the SM server 308.

In a step 410, the client computer 106, via network 100 communications between the client computer 106 and the file server 306, mounts configuration files from the file server 306. Based on the files so mounted from the file server 306, the hard disk of the client computer 106 is configured in a step 412, and appropriate disk configurations such as partitions, volume groups, logical volumes and files systems are set up. Once so  
5 configured, the client computer 106 uses the standard storage manager client application in a step 414 to restore files from the SM server 308 to the client computer 106. The standard storage manager client application is the client software or other application which is required by the particular storage manager application for the client device, such  
10 as the client computer 106, to communicate with the storage manager for backup and restore operations. Once the client computer 106 has been reconfigured from the network boot by the boot server 304, the client boot program, and configuration files of the file server 306 in the steps 408, 410, 412, the standard storage manager client application operates to restore the application and data files in typical manner.

15 In a step 416, the client computer 106 configures a boot record and configuration database for the client computer 106, in order that the client computer 106 will have them available for next client boot operations. The client computer 106 thereafter reboots, in typical manner, in a step 418. An added step 420 of post-boot clean-up can be required. In the step 420, any client computer 106 settings and data that are not fully restored from  
20 the rest of the method 400 are adjusted manually or by maintenance programs or routines available at the client or over the network 100, as the case may be.

Referring to Fig. 5, details are illustrated of a method 500 of operation of the BMR server 302, and other server components 300, in restoration of the client computer

106 according to the methods 200, 400 of Figs. 2 and 4, respectively. A step 502 is initiated by a user (e.g., system administrator) directing the BMR server 302 to commence a restore operation of the particular client computer 106. The step 502 includes, for example, input by the user to the BMR server 302 of a run command for the  
5 restore method 500.

In a step 504, the BMR server 302 retrieves or otherwise attains the appropriate disk structure for the particular client computer 106, for example, by retrieving such structure information from the storage manager application or other storage or application, through communications over the network 100 or otherwise as applicable. A  
10 step 506 follows, in which the format data is retrieved or otherwise attained of the disk structure for the particular client computer 106 to be recovered. The format data is available through communications over the network 100 or otherwise as applicable.

Thereafter, in a step 508, the BMR server 302 creates a custom boot program for the particular client computer 106. The custom boot program includes information  
15 necessary to the client computer 106 to initiate a succeeding network boot and to locate and access machine configuration data and application and data files on the network 100, such as from the file server 306 and the SM server 308. The access to data and files triggered by the boot program is made through communications over the network 100 or otherwise.

20 In a step 510, the BMR server 302 manipulates configuration of the boot server 304 and the file server 306 to enable those servers 304, 306 to be available to the particular client computer 106 over the network 100 for the network boot and restore operations. Next, in a step 512, the BMR server 302 prepares the respective server

components 302, 304, 306, 308 and the client computer 106 for communications therebetween over the network 100.

Referring to Fig. 6, a method 600 is performed by the client computer 106 to restore the client computer 106 on major failure. A network boot of the client computer 106 is performed in a step 602. As previously mentioned, the network boot is a standard network boot operation, initiated by the client computer 106 via the boot server 304 in communication over the network 100 with the client computer 106. The client computer 106 communicates with the boot server 304 in a step 604, in performing the network boot operation. The client computer 106 next receives over the network 100 in a step 606 the boot image for the client computer 106 from the boot server 304, and the boot image is copied to the client computer 106, for example, to random access memory (RAM).

In a step 608, the client computer 106 runs the customized boot program for the particular client computer 106, as obtained by the client computer 106 via communications over the network 100 from the BMR server 302. The client computer 106 next, in a step 610, mounts the system configuration files for the client computer 106, as accessed via communications over the network 100 with the file server 306. The files mounted to the client computer 106 from the file server 306 in the step 610 include the operating system for the client computer 106, the storage manager client software application which is the standard client application for the particular storage manager, and a BMR client software application that enables the client computer 106 to interact with the BMR server 302 over the network 100 to perform the restoration.

In a step 612, the hard disk of the client computer 106 is configured to match the most recent back-up saved by the storage manager. In the step 612, the client computer



106 communicates over the network 100 with the SM server 308 to recover from the storage manager the appropriate configuration information. Next, in a step 614, the application and data files of the client computer 106 are restored from the storage manager, through communications by the client computer 106 with the SM server 308.

5 The client storage manager software, that is, the typical client software that operates with the particular storage manager application to restore data from the storage manager, places the backed-up files from the storage manager within the disk structure of the client computer 106. The step 612 could alternately involve communications with or by other or additional elements, rather than or in combination with the SM server 308; for  
10 example, the client device 106 can in a Unix implementation instead communicate with and recover configuration information from the file server or other equipment or location.

In a step 618, the client computer 106 configures its boot record from the configuration data obtained from the file server 306 and the SM server 308 in the network boot via the boot server 304 and the BMR server 302. Various registry and clean-up  
15 operations at the client computer 106, depending on the circumstances and particular states of the client computer 106, are then performed in a step 620. The step 620 can be automated at the client computer 106, automated over the network 100, manual by a user, or combinations thereof. An auto boot of the client computer 106 then follows in a step 622. After the auto boot of the step 622, additional post-boot adjustments and set-up is  
20 performed to cause the client computer 106 to conform in all respects to the status and files at the time of the most recent backup by the storage manager application and at the time the failure occurred. The step 622 is performed automatically by the client computer 106 or over the network 100 by communications with another network device, by manual

steps of the user of the client device 106 or over the network 100 by the system administrator, or otherwise or through combinations of the foregoing, all with the result that the client computer 106 is fully restored to the state prior to the failure.

In operation of the systems 100, 300, and the methods 200, 400, 500, and 600, numerous alternative business and technical arrangements are possible. Although only particular devices of a communications network and its nodes are herein described and discussed, particularly, the server computer 104 and the client computer 106, it is to be expressly understood that such network will typically include numerous client devices served by the server computer 104 and the storage manager application. In fact, combinations of client devices, such as the client computer 106 and others, as well as server devices, such as the server computer 104, its various server components 300, and others, including, for example, those elements, pluralities of any, certain ones, all of those elements, and even additional or alternative elements, and other combinations, are all possible in keeping with the scope of the embodiments herein. The network, itself, can, for example, be an intranet, even an intranet combination or intranet-extranet combination, a wide or local area network, a global network, such as the Internet, or otherwise. Numerous banks of server devices and elements, and pluralities of client devices or elements, can be possible for restoration according to the embodiments. Moreover, the various devices can be disparately located and distributed, and can be centrally located or distributed through a wide geographic area in various combinations and arrangements. In the case of a global network such as the Internet, the network is capable of communicating by its protocols, which may include standard or specialized protocols and operations for specific situations.

In the foregoing specification, the invention has been described with reference to specific embodiments. However, one of ordinary skill in the art appreciates that various modifications and changes can be made without departing from the scope of the present invention as set forth in the claims below. Accordingly, the specification and figures are  
5 to be regarded in an illustrative rather than a restrictive sense, and all such modifications are intended to be included within the scope of the present invention.

Benefits, other advantages, and solutions to problems have been described above with regard to specific embodiments. However, the benefits, advantages, solutions to problems and any element(s) that may cause any benefit, advantage, or solution to occur  
10 or become more pronounced are not to be construed as a critical, required, or essential feature or element of any or all the claims. As used herein, the terms "comprises", "comprising", or any other variation thereof, are intended to cover a non-exclusive inclusion, such that a process, method, article, or apparatus that comprises a list of elements does not include only those elements but may include other elements not  
15 expressly listed or inherent to such process, method, article, or apparatus.

Claims

What is Claimed is:

1. A device restoration system, for restoring a client device to a state prior to  
5 a major failure, comprising:  
a server device;  
a network communicatively interconnecting the client device and the  
server device;  
a storage manager accessible to the server device for saving the state; and  
10 a network boot in which the server device causes the client device to boot.
2. A method of restoring a client device of a network on failure of the client  
device, wherein the network includes a server computer, comprising the steps of:  
booting the client device via a network boot;  
15 creating a boot program for operation on the client device;  
configuring the client device according to the boot program and a saved  
configuration state;  
copying a file to the client device in accordance with a configuration from  
the step of configuring.
- 20 3. The method of claim 2, wherein the steps of booting, creating, configuring,  
and copying are performed through communications over the network between the client  
device and the server computer.

4. The method of claim 2, wherein the step of booting is performed by a boot server of the network.

5 5. The method of claim 2, wherein the step of creating is performed by the server computer and the boot program is communicated to the client device.

6. The method of claim 2, wherein the step of configuring the client device is performed by a file server of the network and a storage manager.

10

7. The method of claim 2, wherein the step of copying is performed by a storage manager server of the network.

8. The method of claim 2, further comprising the step of:  
15 storing an image of the client device via a storage manager application of a server device of the network.

9. The method of claim 8, wherein the step of storing is performed by a standard storage manager application and includes backup of the configuration state of  
20 the client computer.

10. The method of claim 9, wherein the step of booting is performed by a boot server of the network; the step of creating is performed by a restore server of the network;

the step of configuring is performed by a file server of the network and a storage manager server of the network; and the step of copying is performed by the file server and the storage manager.

5           11.    A method of restoring a client device of a network, the network including a server device having a storage manager application, comprising the steps of:

                backing up configuration data, as well as application and data files, by the storage manager application; and

                restoring the backed up configuration data, as well as application and data  
10       files, from the step of backing up, to the client device over the network.

12.    The method of claim 11, further comprising the step of:  
                booting the client device via a standard network boot.

15       13.    The method of claim 12, further comprising the step of:  
                supplying to the client device a boot program; and  
                using the boot program at the client device to perform the step of restoring.

14.    The method of claim 11, wherein the client device is remote from the  
20   storage manager application.

15.    The method of claim 12, wherein the step of booting is initiated remote  
from the client device.

16. A device restoration system, for restoring a client device to a state prior to a major failure, comprising:

5 a controlling device connected to the client device, for resetting the client device;

a storage manager communicatively connected to the client device, for saving the state; and

a boot program for operating the client device, communicatively connected to the storage manager, and causing the client device to boot with the state.

10

17. A method of restoring a client device on failure of the client device, comprising the steps of:

saving a state of the client device prior to the failure

resetting the client device;

15 booting the client device; and

configuring the client device according to the state from the step of saving.

**Abstract**

A method restores a client device of a network on major failure of the client device. The client device is incapable of automatically booting on its own. The network includes a server computer. The method includes booting the client device over the network in the restoration operation, configuring the client device according to the boot program and saved configuration states for the client device, and copying files to the client device in accordance with the configuration. The client computer has access to a storage manager application, such as a server computer of the network operating a storage management software program. All client files, including configuration files, as well as application and data files, of the client device are saved on the network by the storage manager application. The client device is booted over the network, rather than locally to the client device by boot disk or otherwise. The boot program is loaded to the client device, and the client device retrieves configuration and file information over the network from the storage manager application. The client device configures its disk according to the configuration information, and then all other files and data of the client device at the time of failure of the client device are saved on the disk substantially in the condition and state just prior to the failure and as most recently backed up to the storage manager application. Alternatively, the client device is reset and booted via a control device either locally or otherwise connected to the client device, and substantially according to the method of the network boot.



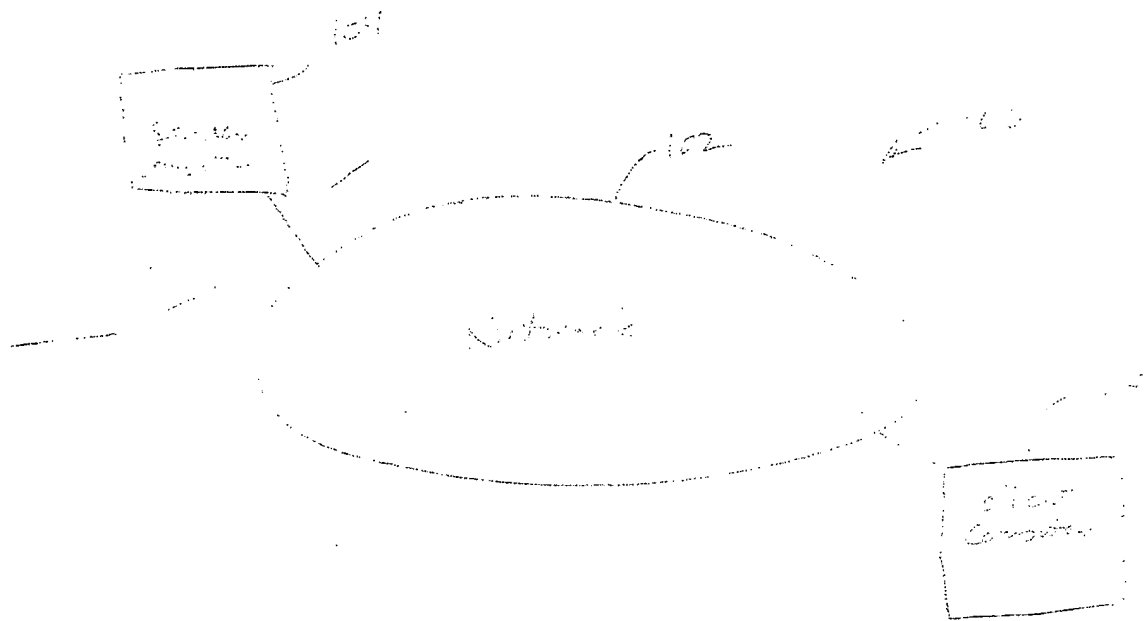


Fig. 1

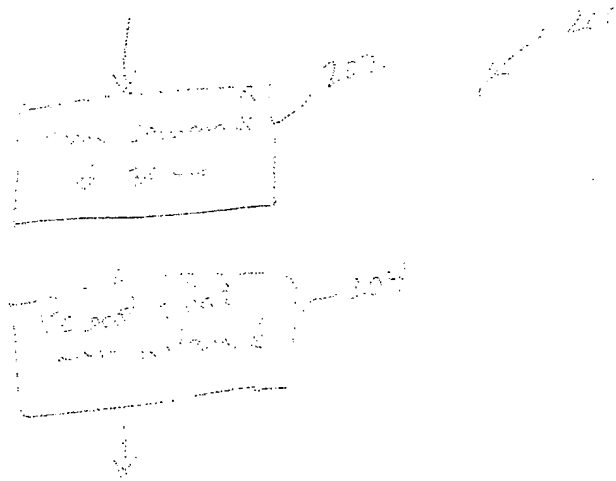


Fig. 2

BEST AVAILABLE COPY  
 BEST AVAILABLE COPY

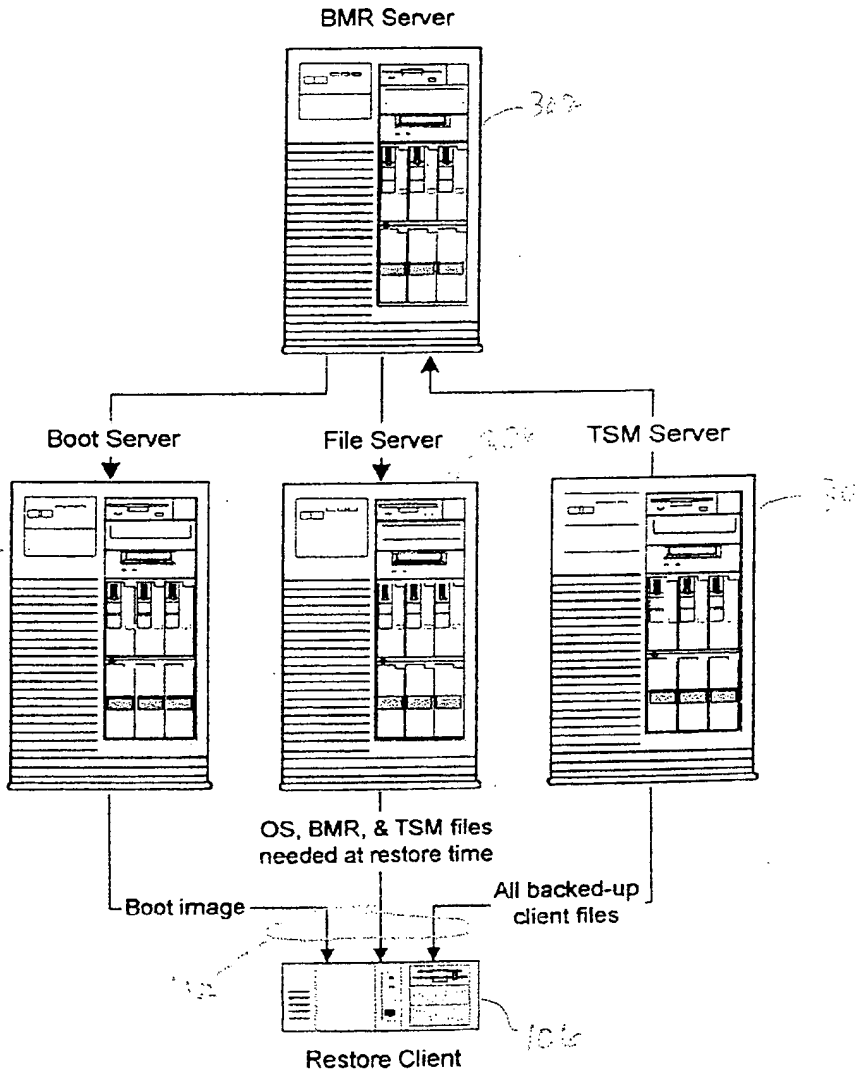


Fig. 3

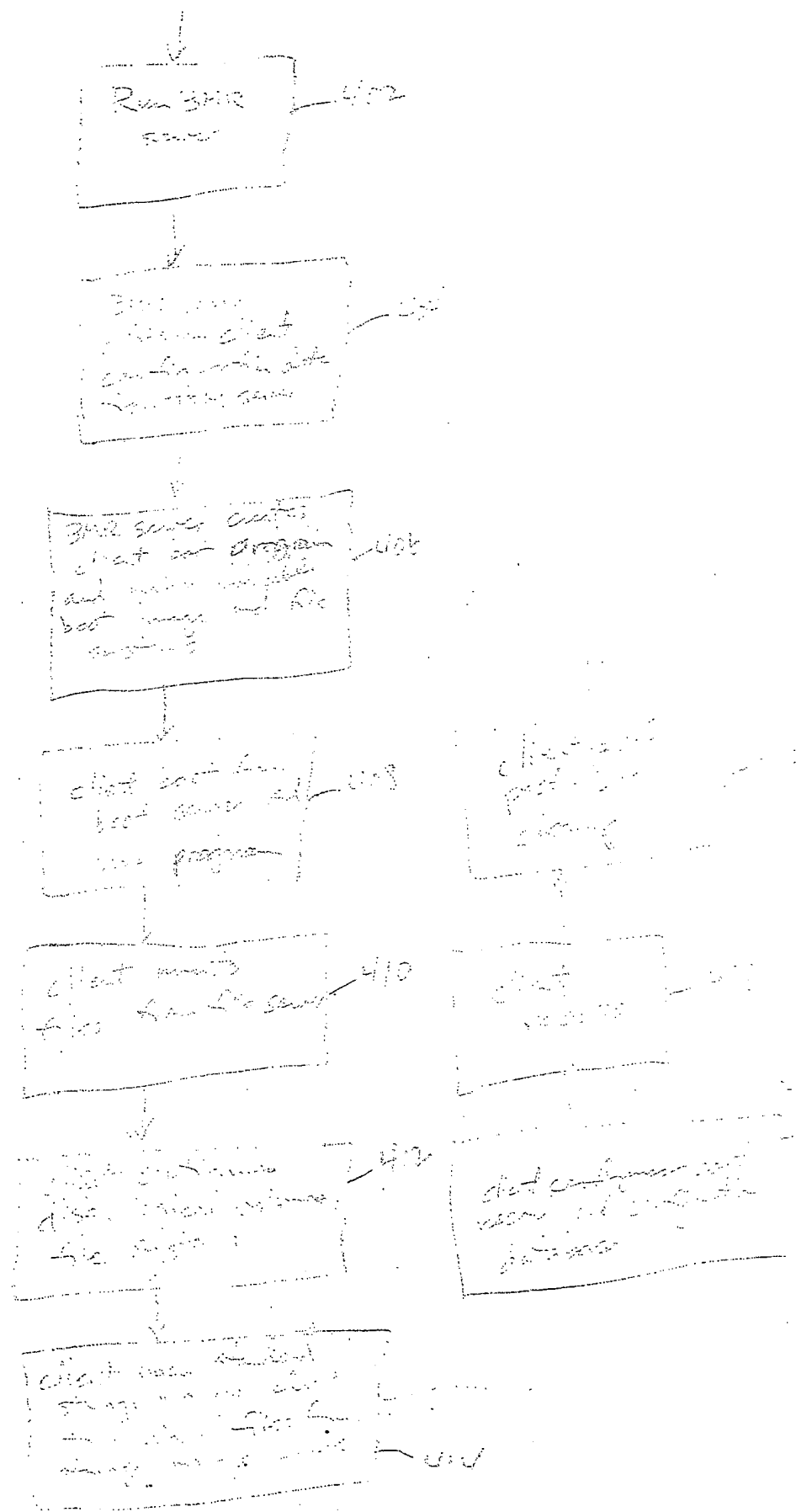
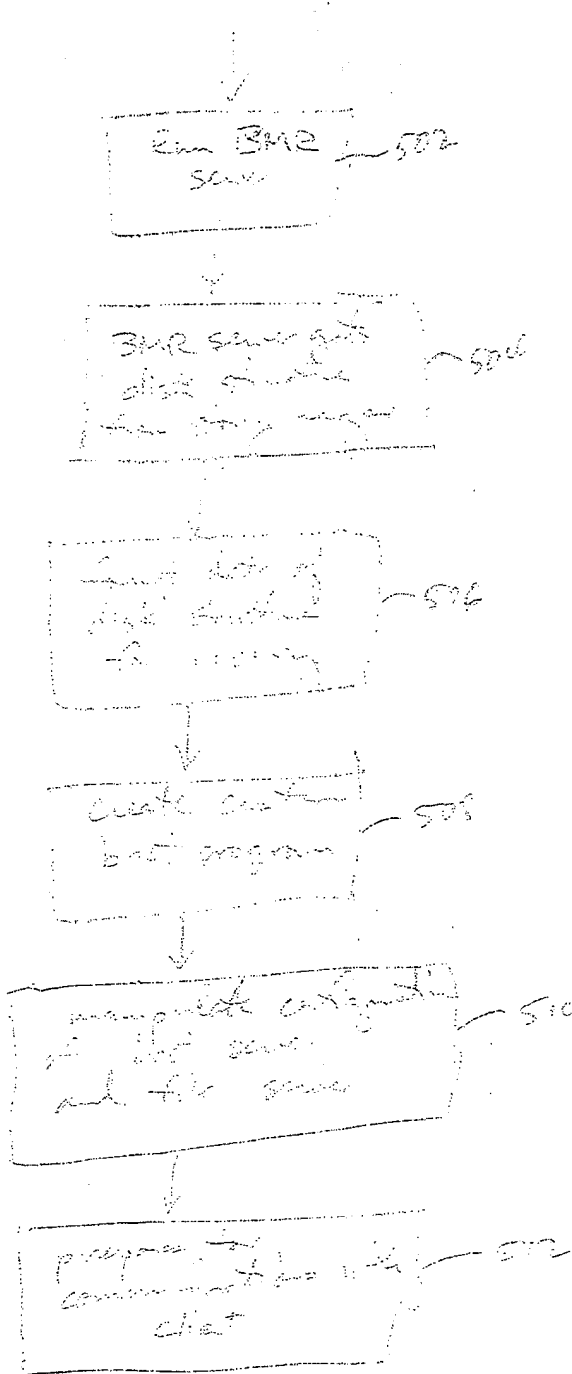


Fig. 4

BEST AVAILABLE COPY



500

Fig. 5

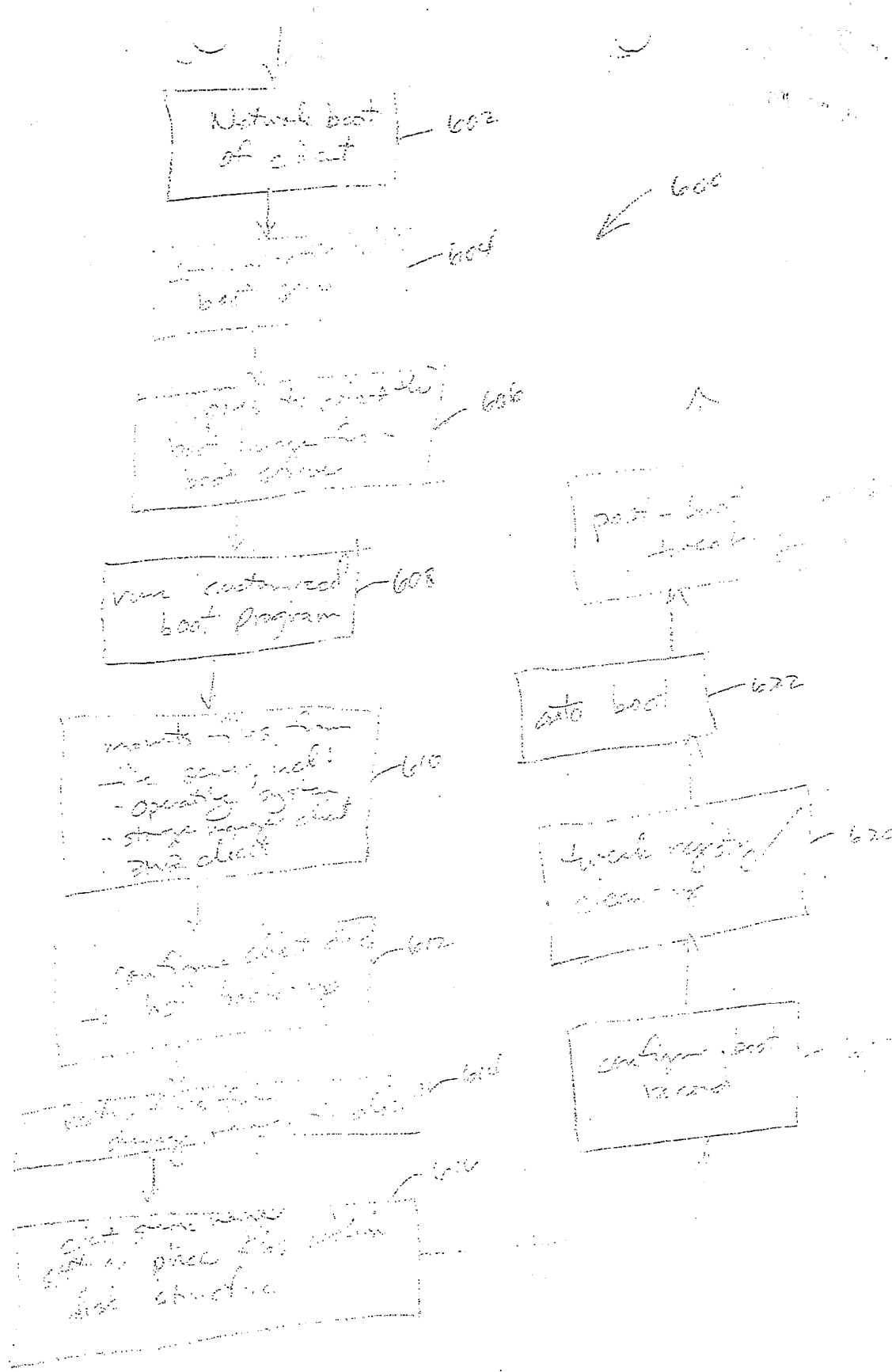


FIG. 6



UNITED STATES PATENT AND TRADEMARK OFFICE

COMMISSIONER FOR PATENTS  
 UNITED STATES PATENT AND TRADEMARK OFFICE  
 WASHINGTON, D.C. 20231  
 www.uspto.gov

APPLICATION NUMBER	FILING/RECEIPT DATE	FIRST NAMED APPLICANT	ATTORNEY DOCKET NUMBER
09/998,246	11/30/2001	Peter Jeffe	KRNL:001

CONFIRMATION NO. 4233

FORMALITIES LETTER



\*OC00000007186459\*

H. Dale Langley, Jr.  
 The Law Firm of H. Dale Langley, Jr., P.C.  
 610 West Lynn  
 Austin, TX 78703

Date Mailed: 12/12/2001

**NOTICE TO FILE MISSING PARTS OF NONPROVISIONAL APPLICATION**

**FILED UNDER 37 CFR 1.53(b)**

***Filing Date Granted***

An application number and filing date have been accorded to this application. The item(s) indicated below, however, are missing. Applicant is given **TWO MONTHS** from the date of this Notice within which to file all required items and pay any fees required below to avoid abandonment. Extensions of time may be obtained by filing a petition accompanied by the extension fee under the provisions of 37 CFR 1.136(a).

- The oath or declaration is missing.  
*A properly signed oath or declaration in compliance with 37 CFR 1.63, identifying the application by the above Application Number and Filing Date, is required.*
- To avoid abandonment, a late filing fee or oath or declaration surcharge as set forth in 37 CFR 1.16(l) of \$65 for a small entity in compliance with 37 CFR 1.27, must be submitted with the missing items identified in this letter.
- **The balance due by applicant is \$ 65.**

The application is informal since it does not comply with the regulations for the reason(s) indicated below.

The required item(s) identified below must be timely submitted to avoid abandonment:

- Substitute drawings in compliance with 37 CFR 1.84 because:
  - drawings have a line quality that is too light to be reproduced (weight of all lines and letters must be heavy enough to permit adequate reproduction) or text that is illegible (reference characters, sheet numbers, and view numbers must be plain and legible) see 37 CFR 1.84(l) and (p)(1));

---

*A copy of this notice **MUST** be returned with the reply.*

*Thaine*

~~Customer Service Center~~

Initial Patent Examination Division (703) 308-1202

PART 3 - OFFICE COPY

12-03-01

A

PTO/SB/05 (03-01)

Approved for use through 10/31/2002. OMB 0651-0032  
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

11/30/01

0998 U.S. PTO

# UTILITY PATENT APPLICATION TRANSMITTAL

(Only for new nonprovisional applications under 37 CFR 1.53(b))

Attorney Docket No.	KRNL:001
First Inventor	Jeffe, et al.
Title	Computer Restoration Systems and Methods
Express Mail Label No.	EL661981691US

## APPLICATION ELEMENTS

See MPEP chapter 600 concerning utility patent application contents.

ADDRESS TO: Assistant Commissioner for Patents  
Box Patent Application  
Washington, DC 20231

- Fee Transmittal Form (e.g., PTO/SB/17)  
*(Submit an original and a duplicate for fee processing)*
- Applicant claims small entity status.  
See 37 CFR 1.27.
- Specification [Total Pages  ]  
*(referenced arrangement set forth below)*
  - Cover Sheet with Certificate of Service
  - Descriptive title of the invention
  - Cross Reference to Related Applications
  - Background of the Invention
  - Brief Summary of the Invention
  - Brief Description of the Drawings
  - Detailed Description
  - Claims - (12 claims total)
    - 3 Independent
    - 9 Dependent
  - Abstract of the Disclosure
- Drawing(s) (35 U.S.C. 113) [Total Sheets  ]
- Oath or Declaration [Total Sheets  ]
  - Newly executed (original or copy)
  - Copy from a prior application (37 CFR 1.63 (d))  
*(for continuation/divisional with Box 18 completed)*
    - DELETION OF INVENTOR(S)**  
Signed statement attached deleting inventor(s)  
named in the prior application, see 37 CFR  
1.63(d)(2) and 1 33(b)
- Application Data Sheet. See 37 CFR 1.76

- CD-ROM or CD-R in duplicate, large table or Computer Program (Appendix)
- Nucleotide and/or Amino Acid Sequence Submission  
*(if applicable, all necessary)*
  - Computer Readable Form (CRF)
  - Specification Sequence Listing on:
    - CD-ROM or CD-R (2 copies); or
    - paper
  - Statements verifying identity of above copies

0998 U.S. PTO  
09/998246  
11/30/01

## ACCOMPANYING APPLICATION PARTS

- Assignment Papers (cover sheet & document(s))
- 37 CFR 3.73(b) Statement  Power of Attorney  
*(when there is an assignee)*
- English Translation Document *(if applicable)*
- Information Disclosure Statement (IDS)/PTO-1449  Copies of IDS Citations
- Preliminary Amendment (13 pages)
- Return Receipt Postcard (MPEP 503)  
*(Should be specifically itemized)*
- Certified Copy of Priority Document(s)  
*(if foreign priority is claimed)*
- Nonpublication Request under 35 U.S.C. 122 (b)(2)(B)(i). Applicant must attach form PTO/SB/35 or its equivalent.
- Other:

18 If a CONTINUING APPLICATION, check appropriate box, and supply the requisite information below and in a preliminary amendment, or in an Application Data Sheet under 37 CFR 1.76:

Continuation     Divisional     Continuation-in-part (CIP)    of prior application No: \_\_\_\_\_  
 Prior application information:    Examiner: \_\_\_\_\_    Group Art Unit: \_\_\_\_\_

For CONTINUATION or DIVISIONAL APPS only: The entire disclosure of the prior application, from which an oath or declaration is supplied under Box 5b, is considered a part of the disclosure of the accompanying continuation or divisional application and is hereby incorporated by reference. The incorporation can only be relied upon when a portion has been inadvertently omitted from the submitted application parts.

## 19. CORRESPONDENCE ADDRESS

Customer Number or Bar Code Label \_\_\_\_\_ or  Correspondence address below  
 (Insert Customer No. or Attach bar code label here)

Name	H. Dale Langley, Jr.					
Address	The Law Firm of H. Dale Langley, Jr., P.C.					
	610 West Lynn					
City	Austin	State	Texas	Zip Code	78703	
Country	United States	Telephone	512-477-3830	Fax	512-477-4080	

Name (Print/type)	H. Dale Langley, Jr.	Registration No. (Attorney/Agent)	35927
Signature	<i>H. Dale Langley, Jr.</i>	Date	Nov. 29, 2001

Burden Hour Statement. This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant Commissioner for Patents, Box Patent Application, Washington, DC 20231.



Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

# FEE TRANSMITTAL for FY 2001

Patent fees are subject to annual revision.

## Complete if Known

Application Number	Not yet assigned
Filing Date	November 29, 2001
First Named Inventor	Jeffe, et al.
Examiner Name	Unknown
Group Art Unit	Unknown
Attorney Docket No.	KRNL:001

TOTAL AMOUNT OF PAYMENT (\$)**454.00**

### METHOD OF PAYMENT

1.  The Commissioner is hereby authorized to charge indicated fees and credit any overpayments to:

Deposit Account Number: 50-1350  
Deposit Account Name: H. Dale Langley, Jr.

Charge Any Additional Fee Required Under 37 CFR 1.16 and 1.17  
 Applicant claims small entity status. See 37 CFR 1.27

2.  Payment Enclosed:

Check  Credit Card  Money Order  Other

### FEE CALCULATION

#### 1. BASIC FILING FEE

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
101	740	201	370	Utility filing fee	370.00
106	330	206	165	Design filing fee	
107	510	207	255	Plant filing fee	
108	740	208	370	Reissue filing fee	
114	160	214	80	Provisional filing fee	

SUBTOTAL (1) (\$)**370.00**

#### 2. EXTRA CLAIM FEES

Total Claims	Extra Claims	Fee from below	Fee Paid
20	17	9.00	0
5	2	42.00	84.00
Multiple Dependent			0

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description
103	18	203	9	Claims in excess of 20
102	84	202	42	Independent claims in excess of 3
104	280	204	140	Multiple dependent claim, if not paid
109	84	209	42	**Reissue independent claims over original patent
110	18	210	9	**Reissue claims in excess of 20 and over original patent

SUBTOTAL (2) (\$)**84.00**

\*\* or number previously paid, if greater, For Reissues, see above

### FEE CALCULATION (continued)

#### 3. ADDITIONAL FEES

Large Entity Fee Code	Large Entity Fee (\$)	Small Entity Fee Code	Small Entity Fee (\$)	Fee Description	Fee Paid
105	130	205	65	Surcharge - late filing fee or oath	
127	50	227	25	Surcharge - late provisional filing fee or cover sheet	
139	130	139	130	Non-English specification	
147	2,520	147	2,520	For filing a request for <i>ex parte</i> reexamination	
112	920*	112	920*	Requesting publication of SIR prior to Examiner action	
113	1,840*	113	1,840*	Requesting publication of SIR after Examiner action	
115	110	215	55	Extension for reply within first month	
116	400	216	200	Extension for reply within second month	
117	920	217	460	Extension for reply within third month	
118	1,440	218	720	Extension for reply within fourth month	
128	1,960	228	980	Extension for reply within fifth month	
119	320	219	160	Notice of Appeal	
120	320	220	160	Filing a brief in support of an appeal	
121	280	221	140	Request for oral hearing	
138	1,510	138	1,510	Petition to institute a public use proceeding	
140	110	240	55	Petition to revive - unavoidable	
141	1,280	241	640	Petition to revive - unintentional	
142	1,280	242	640	Utility issue fee (or reissue)	
143	460	243	230	Design issue fee	
144	620	244	310	Plant issue fee	
122	130	122	130	Petitions to the Commissioner	
123	50	123	50	Processing fee under 37 CFR 1.17(q)	
126	180	126	180	Submission of Information Disclosure Stmt	
581	40	581	40	Recording each patent assignment per property (times number of properties)	
146	740	246	370	Filing a submission after final rejection (37 CFR § 1.129(a))	
149	740	249	370	For each additional invention to be examined (37 CFR § 1.129(b))	
179	740	279	370	Request for Continued Examination (RCE)	
169	900	169	900	Request for expedited examination of a design application	

Other fee (specify) \_\_\_\_\_

\*Reduced by Basic Filing Fee Paid

SUBTOTAL (3) (\$)**0**

### SUBMITTED BY

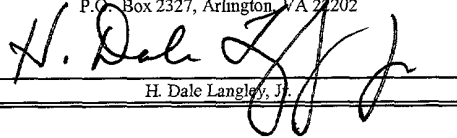
Complete (if applicable)

Name (Print/Type)	H. Dale Langley, Jr.	Registration No. (Attorney/Agent)	35927	Telephone	512-477-3830
Signature		Date	October 16, 2001		

**WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.**

Burden Hour Statement: This form is estimated to take 0.2 hours to complete. Time will vary depending upon the needs of the individual case. Any comments on the amount of time you are required to complete this form should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, Washington, DC 20231. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Assistant commissioner for Patents, Washington, DC 20231.

**CERTIFICATE OF MAILING BY "EXPRESS MAIL"**  
Express Mail® Mailing Label Number EL661981691US  
Date of Deposit November 29, 2001  
I hereby certify that this paper or fee is being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR 1.10 on the date indicated above and is addressed to the Assistant Commissioner for Patents, U.S. Patent and Trademark Office, P.O. Box 2327, Arlington, VA 22202

  
\_\_\_\_\_  
H. Dale Langley, Jr.

## COMPUTER RESTORATION SYSTEMS AND METHODS

**Inventors: Peter Jeffe and Bruce Bramhall**  
**1250 South Capital of Texas Hwy.**  
**Building III, Suite 601**  
**Austin, Texas 78746**

**H. Dale Langley**  
**Reg. No. 35,927**  
**The Law Firm of H. Dale Langley, Jr., P.C.**  
**610 West Lynn**  
**Austin, Texas 78703**  
**Telephone: (512) 477-3830**  
**Telecopier: (512) 477-4080**

FOOTER: 94286660

## COMPUTER RESTORATION SYSTEMS AND METHODS

### Background of the Invention

The present invention generally relates to computers and local and wide area interconnected computers and data communications networks and, more particularly, relates to restoration of computer systems backed up on storage managers, such as in a network, upon a crash or other similar event which prohibits normal boot up operations.

Computer boot disk crashes and similar major machine failure events, in which normal boot up operations are thereafter not possible or are otherwise hindered, are problematic in several respects to system administrators. Conventionally, such events have required system administrators to completely reconfigure the crashed computer, including, without limitation, by reconfiguring machine non-volatile random access memory (NVRAM) settings, loading the computer operating system, replacing applications and files, retrieving backed up data, and thoroughly re-configuring the operating system, application programs, drivers, and other operational settings.

Even in instances in which a crash or similar systems failure event does not require complete restoration of the computer system by the system administrator, a boot disk, as well as other configurational set ups, are typically required. Boot disks and other

PATENT SHEET

set up tools are often not readily available in the location of each computer of a network or other wide area system. Moreover, to restore computer systems of such an arrangement requires significant time and effort, including to format disk drives, replace or fix operating systems and errors, reload applications, retrieve backed up data, and  
5 routinely save, as well as additionally reinstitute, operating, network, and application settings to those at the point of the crash.

Typically, networks and system components of the networks, particularly distributed and interconnected computers of the networks, are backed-up in normal system maintenance and administration operations. The backups can include backup of  
10 the system itself, as well as backup of data and applications. Particularly in enterprise computing systems, each computer of the enterprise network can be backed up regularly (or as otherwise scheduled or desired) as to data and applications by use of a storage manager software application. Present storage manager applications provide file and data-oriented backups of each computer. A number of different software storage manager  
15 applications are available for the enterprise computing environment, for example, the TSM software of Tivoli Systems (an IBM Corporation subsidiary), Veritas, Legato, and others.

Although these presently available storage manager back-up resources are available in the several enterprise computing software packages, the packages have not  
20 made it possible to automatically or readily restore any or each particular computer or other element of the computing enterprise. The back-up data has merely been available to assist the system administrator to re-copy and otherwise re-set each computer to the data

PATENT SHEET

and application status then maintained in back-up. The back-ups from these packages are merely file and data backups, and can not provide complete restoration of the system.

In order to provide complete system backups, including, for example, operating system, drivers, and other machine configuration backup, additional backup resources are required, such as “mksysb” images and “savevg” commands on AIX, a product like Disk Image on Windows, or otherwise. Such system backups, as compared to file and data backups of storage manager applications, are not available in many operating systems. Even when such system backup is maintained and available, machine restoration in the event of major failure has typically been achieved by system administrators only by separately employing such system backup to restore the basic operating system and machine configuration, and then a separate file and data backup of a storage manager application has been employed to restore the rest of the machine’s data and applications.

The conventional backup and restoration of computers of the enterprise network has been problematic. For example, the system and file/data backups which must be maintained in order to perform the restoration are redundant and waste valuable storage space, network bandwidth, and effort. File and data backups, for instance, are often saved on individual machines of the network by the backup function of the respective operating system of each machine. System backup information is similarly saved or has even been maintained in hard copy or other manual operation. Any backups of the system and file/data that are saved on the network are, therefore, redundant. Moreover, the conventional system backups, for example Ignite on HP-UX, NIM on AIX or others, are often out of date because such backups are not usually performed as frequently as backups of applications and data performed by the storage manager application. The

duplicate backup procedures required for system configuration data, on the one hand, and application files and data, on the other hand, together with various individual machine and network backup operations, increase the potential for human error when restoring from the backups. System administrators must juggle tapes and resolve tape access  
5 conflicts between the various backups, including the separate storage manager backup and the system backup. Also, the machine restoration process typically requires separate steps of re-installation of the device operating systems, followed by restoration from backup of application and data files. These separate re-installation of system configurations, on the one hand, and restoration of application and data file backups, on  
10 the other hand, are largely manual operations which are time consuming and themselves error-prone.

It would be a significant improvement in the art and technology to provide computer machine restoration systems and methods that alleviate many of the problems of the conventional backups and restoration processes, and that provide advantages of  
15 time savings, limited manual involvement, and ready and automatic availability of resources for performing the restoration.

### **Summary of the Invention**

An embodiment of the invention is a device restoration system. The device  
20 restoration system restores a client device to a state prior to a major failure. The system includes a server device, a network communicatively interconnecting the client device and the server device, a storage manager accessible to the server device for saving the state, and a boot process in which the client device boots either from a server device over a network, or from locally attached media, for example tape, CD-ROM, or floppy disk.

Another embodiment of the invention is a method of restoring a client device of a network on failure of the client device. The network includes a server computer. The method includes booting the client device via a network or local media boot, creating a boot program for operation on the client device, configuring the client device according to the boot program and a saved configuration state, and copying files to the client device in accordance with a configuration from the step of configuring.

Yet another embodiment of the invention is a method of restoring a client device of a network. The network includes a server device. The server device has a storage manager application. The method includes backing up configuration data, as well as application and data files, by the storage manager application, and restoring the backed up configuration data, as well as application and data files, from the step of backing up, to the client device over the network.

#### **Brief Description of the Drawings**

The present invention is illustrated by way of example and not limitation in the accompanying figures, in which like references indicate similar elements, and in which:

FIG. 1 illustrates a network, including a client computer and a server computer connected over the network, for performing a restoration operation of embodiments of the present invention on failure of the client computer;

FIG. 2 illustrates a method of the restoration operation performed on the network, including the client computer and the server computer, of FIG. 1, according to embodiments of the present invention;

FIG. 3 illustrates the server computer, including components of a restore server, a boot server, a file server and a storage management server, and the client computer, each of FIG.1, according to embodiments of the present invention;

FIG. 4 illustrates a method of restoration of a computer upon operational failure, according to embodiments of the present invention;

FIG. 5 illustrates a method of operation of the server computer of FIGs. 1 and 3, according to embodiments of the present invention; and

FIG. 6 illustrates a method of operation of the client computer of FIGs. 1 and 3, according to embodiments of the present invention.

### Detailed Description of Preferred Embodiments

Referring to Fig. 1, a network 100 includes network elements 102 communicatively interconnecting a server computer 104 and a client computer 106. The network elements 102 include any of a wide variety of conventional networking components and connectors, such as additional server computers, client computers, and connection cables or channels, wired, wireless or otherwise. The server computer 104 is any processing device that is communicatively connected by the network elements 102 to the client computer 106. The server computer 104 is, for example, a computer device equipped with software to act as a server of information requested by one or more client devices over the network 100 and is, typically, a conventional server computer of an enterprise network of communications and computing elements. The server computer 104 serves to receive requests over the network 100, for example, requests from the client computer 106, and in response to those requests the server computer 104 returns a response over the network 100. The server computer 104 is particularly capable of acting



as a storage manager for interconnected elements and devices of the network or of communicating with a separate computer (not shown in FIG. 1) that performs storage management functions.

The client computer 106 of the network 100 is, likewise, any processing or communications device that is capable of communicating with the server computer 104 over the network 100, by making requests or otherwise. The client computer 106 is, for example, a desktop or workstation computer. The network 100 is any of a variety of networking and communications interconnections, such as an intranet, the Internet, a dedicated network, or other communications network. The network 100 is operable according to a particular packetized data protocol, such as transport control protocol/Internet protocol (TCP/IP) or some other network protocol. The server computer 104 and the client computer 106 communicate over the network 100 via the particular protocols of the network, such as, for example, according to the standard Internet network protocol TCP/IP. In normal operations, the client computer 106 makes requests over the network 100 according to the particular protocols of the network 100, and the server computer 104 responds over the network 100 in answer to the requests. If there occurs any major failure of the client computer 106, the client computer 106 can not boot and can not communicate with the server computer 104 in such manner or otherwise properly operate.

In the network 100, the server computer 104, in conjunction with the client computer 106, can perform an automatic restoration operation to the client computer 106, which enables complete boot-up, reconfiguration, and restoration of systems, files, and data to the client computer 106. This automatic restoration operation is performed

without a boot disk at the client computer 106 and includes both system restoration and file and data restoration. In effect, the restoration operation performed by the network 100, via the server computer 104 and the client computer 106, completely restores the client computer 106 to the state at the time of the failure.

5 Referring to Fig. 2, a method 200 is performed by the server computer 104 and the client computer 106 of the network 100 of Fig. 1, in order to restore the client computer 106 on major failure that prohibits normal boot of the client computer 106. In the method 200, a command is run in a step 202 at the server computer 106 by the system administrator or other user of the server computer 106. The step 202 initiates a network  
10 reboot of the client computer 106 in a step 204. The network reboot of the step 202 restores the client computer 106 in all respects, including the systems and application and data files of the client computer 106 at the time of the failure of the client computer 106.

In the method 200, the server computer 104 maintains, or otherwise has access to, a storage manager device or software application. Such storage managers are  
15 conventional and typically serve to back up to server devices, such as the server computer 104, and restore data of client devices, such as the client computer 106. These storage managers generally do not back up all files, but only back up application files and data. Machine configuration states are not typically backed up. In the present embodiments, the entirety of the client computer 106 is backed up by the storage manager, that is, all  
20 files of the client computer 106, including machine configuration states, as well as the usual application files and data of the client computer 106, are backed up to the storage manager. Backups of the client computer 106 which follow an initial full backup of all configuration and file and data files of the client computer 106 can be incremental

backups of only changed information since an immediately prior backup. By backing up machine configurations of the client computer 106, at the regular and periodic backup times for backup operations of the storage manager in backing up application and data files of the client computer 106, the system configurations, as well as all applications and data, are backed up by the storage manager. These full backups by the storage manager are employed to restore the client computer 106 on failure, as further described here.

Referring to Fig. 3, the server computer 104 of Fig. 1 includes four separate, distinct server components 300, identified in Fig. 3 as a bare metal restore (BMR) server 302, a boot server 304, a file server 306, and a storage manager (SM) server 308. Each of the boot server 304, the file server 306 and the SM server 308 is communicatively connected to the BMR server 302. The server components 300 are also communicatively connected to the client computer 106 over the network elements 102. Although the respective server components 300 are illustrated in Fig. 3 as distinct and separate server computers, the server components 300 are merely functions that can be performed and available on any number and arrangement of computing devices with server functionality. The server components 300 can be each located on and performed by separate server devices, or can be grouped onto a single server device or combinations, banks, or other arrangements of server devices. The server devices functioning as the server components 300 can be centrally located or disparately located devices, all in communication over the network 100 according to appropriate protocols and features.

Referring to Fig. 4, a method 400 restores the system and application and data files to the client computer 106 of Figs. 1 and 3, upon a major failure of the client computer 106. The method 400 is performed between the server components 300 and the

TOGETHER

client computer 106 over the network 100 and, thus, the restoration method 400 can be initiated, performed and completed from a location remote from the location of the client computer 106. No boot disk or boot efforts are required directly at the location of the client computer 106. Rather, an external source or media attached to the client computer 5 106, such as, for example, the server components 300 in communication with the client computer 106 over the network 100, or alternatively an attached media and media read device, such as tape, CD-Rom, or floppy disk, serves to allow the client device 106 to boot from the server components 300 or media device, as applicable. In such event, the server components 300 or media device, as applies, permits the client computer 106 to 10 perform the boot process. The hard drive and other memory of the client computer 106 is not required in order for the client computer 106 to so boot.

Remote re-boot and restoration of the client computer 106 according to the method 400, such as via communications of the client computer 106 with networked elements like the server components 300, are possible if the client computer 106, upon 15 failure, retains sufficient unaffected resources to communicate over the network 100 with the server components 300 to reboot via communicated commands with the server components 300. Remote re-boot and restoration can also occur according to the method 400, for example, in the case of a system like an AIX SP node, where the physical “front panel” (i.e., on, off, reset and similar control circuitry and equipment) of the client 20 computer 106 can be manipulated through software from another device, so that the controlling device can electrically (and, if necessary, mechanically) initiate a reset as if the reset button on the client computer 106 is triggered. In either event, communications with devices external to the client computer 106, either over the network 100 by the

server components 300 or with a connected controlling device, enable the complete restore operation.

The method 400 is commenced in a step 402 at the BMR server 302 by a user, for example, a system administrator of the network 100, by a run command input to the BMR server 302. This run command of the step 402 causes the BMR server 302 to configure the boot server 304 and the file server 306 to initiate restoration and indicates that the particular client computer 106 is to be configured and restored. In a step 404, the BMR server 302 then retrieves configuration data regarding the client computer 106 from the SM server 308. The configuration data so retrieved is the most recently backed up machine configuration states, as saved by the storage manager.

The SM server 308 is a conventional storage manager application that serves to periodically backup and save application and file information present on the client computer 106, as well as on all other client devices of the network enterprise. An example of the storage manager application of the SM server 308 is the TSM<sup>TM</sup> software of Tivoli Systems (an IBM Corporation subsidiary). Other examples include the storage manager products of Veritas, Legato, Computer Associates, and others. All such storage manager applications include features enabling backups of client devices, such as application programs, data files, and user-settings. These storage manager applications typically provide backup of application files, data and only certain user-settings, primarily related to the application files, and do not usually provide storage for operating systems, log files, and other device-specific system configurations and information. With the present embodiments, however, the storage manager backs up all of the client computer 106 files, including the client machine configuration settings, as well as the application

and data files. As previously mentioned, this backup can be incremental with each regularly scheduled backup operation performed by the storage manager, such that only changes since an immediately prior backup are backed up with the backup operation.

In a step 406, the BMR server 302 creates a client boot program and makes  
5 available over the network a boot image and file systems for the client computer 106 being restored. The client boot program is delivered over the network 100 to the client computer 106 once the client computer 106 initializes over the network in a network boot operation. The boot image and file systems are saved at the boot server 304 and the file server 306, respectively, and via the network boot process and client boot program are  
10 accessible to the client computer 106 over the network 100 for initiation of restoration operations. In the following, a network boot process (e.g., with the network 100 and server components 300) is primarily described, however, it is to be understood that the substantially similar boot process is achieved with such controlling device that is connected locally or otherwise to the client computer 106 to effect resetting.

15 The client computer 106 next is booted from the boot server 304 and runs the client boot program to retrieve boot information from the boot server 304 and file systems from the file server 306 over the network 100. The network boot performed by the client computer 106 in such manner uses the standard “bootp” and/or “bootparams” protocols to network boot the client computer 106 from the boot server 304. The client boot program  
20 continues to operate at the client computer 106 to perform the boot over the network 100 and to enable client computer 106 access to system configuration files from the file server 306 and application and data files from the SM server 308.

In a step 410, the client computer 106, via network 100 communications between the client computer 106 and the file server 306, mounts configuration files from the file server 306. Based on the files so mounted from the file server 306, the hard disk of the client computer 106 is configured in a step 412, and appropriate disk configurations such as partitions, volume groups, logical volumes and files systems are set up. Once so  
5 configured, the client computer 106 uses the standard storage manager client application in a step 414 to restore files from the SM server 308 to the client computer 106. The standard storage manager client application is the client software or other application which is required by the particular storage manager application for the client device, such as the client computer 106, to communicate with the storage manager for backup and  
10 restore operations. Once the client computer 106 has been reconfigured from the network boot by the boot server 304, the client boot program, and configuration files of the file server 306 in the steps 408, 410, 412, the standard storage manager client application operates to restore the application and data files in typical manner.

15 In a step 416, the client computer 106 configures a boot record and configuration database for the client computer 106, in order that the client computer 106 will have them available for next client boot operations. The client computer 106 thereafter reboots, in typical manner, in a step 418. An added step 420 of post-boot clean-up can be required. In the step 420, any client computer 106 settings and data that are not fully restored from  
20 the rest of the method 400 are adjusted manually or by maintenance programs or routines available at the client or over the network 100, as the case may be.

Referring to Fig. 5, details are illustrated of a method 500 of operation of the BMR server 302, and other server components 300, in restoration of the client computer

106 according to the methods 200, 400 of Figs. 2 and 4, respectively. A step 502 is initiated by a user (e.g., system administrator) directing the BMR server 302 to commence a restore operation of the particular client computer 106. The step 502 includes, for example, input by the user to the BMR server 302 of a run command for the  
5 restore method 500.

In a step 504, the BMR server 302 retrieves or otherwise attains the appropriate disk structure for the particular client computer 106, for example, by retrieving such structure information from the storage manager application or other storage or application, through communications over the network 100 or otherwise as applicable. A  
10 step 506 follows, in which the format data is retrieved or otherwise attained of the disk structure for the particular client computer 106 to be recovered. The format data is available through communications over the network 100 or otherwise as applicable.

Thereafter, in a step 508, the BMR server 302 creates a custom boot program for the particular client computer 106. The custom boot program includes information  
15 necessary to the client computer 106 to initiate a succeeding network boot and to locate and access machine configuration data and application and data files on the network 100, such as from the file server 306 and the SM server 308. The access to data and files triggered by the boot program is made through communications over the network 100 or otherwise.

20 In a step 510, the BMR server 302 manipulates configuration of the boot server 304 and the file server 306 to enable those servers 304, 306 to be available to the particular client computer 106 over the network 100 for the network boot and restore operations. Next, in a step 512, the BMR server 302 prepares the respective server