AO 120 (Rev. 2/99)

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

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 California on the following X Patents or ☐ Trademarks:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
CV 14-01727 MEJ	4/15/2014	450 Golden Gate Avenue, San Francisco, CA 94102
PLAINTIFF NETAPP, INC.		DEFENDANT CROSSROADS SYSTEMS, INC

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,051,147		
2 7,987,311		
3		Please See Attached.
4		
5		

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ 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 Richard W. Wieking	(BY) DEPUTY CLERK Hilary Jackson	DATE April 17, 2014

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

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Attorneys for Plaintiff
NETAPP, INC.

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

NETAPP, INC., Plaintiff, v. CROSSROADS SYSTEMS, INC. Defendant	Case No. **COMPLAINT FOR DECLARATORY JUDGMENT** **DEMAND FOR JURY TRIAL**

Plaintiff NetApp, Inc. ("NetApp" or "Plaintiff"), by its attorneys, alleges as follows:

NATURE OF THE ACTION

This is an action by Plaintiff for Declaratory Judgment against Defendant Crossroads Systems, Inc. ("Crossroads" or "Defendant"). NetApp seeks declaratory relief pursuant to 28 U.S.C. §§ 2201 and 2202, declaring United States Patent Nos. 7,051,147 ("the '147 Patent") and 7,987,311 ("the '311 Patent") (collectively the "patents-in-suit") to be not infringed.

THE PARTIES

1. Plaintiff NetApp, Inc. is a Delaware corporation with its principal place of business at 495 East Java Drive, Sunnyvale, California 94089.

2. Defendant Crossroads is a corporation incorporated under the laws of the State of Delaware and has its principal place of business at 11000 North MoPac Expressway, Austin, Texas, 78759.

BACKGROUND STATEMENT

3. NetApp brings this declaratory judgment action in response to accusations of infringement involving the '147 and '311 Patents levied against NetApp by Crossroads for products referenced in its "Concise Statement of Infringement" filed on April 9, 2014 in Civil Action No. 1:14-cv-149-SS currently pending in the Western District of Texas and attached hereto as Exhibit A. Neither the '147 nor the '311 Patents were asserted in Crossroads' Original Complaint, nor has Crossroads sought to amend its Original Complaint to include these patents.

4. Accordingly, NetApp brings this Declaratory Judgment action because an actual allegation of infringement has been made by Crossroads related to the patents-in-suit.

JURISDICTION AND VENUE

5. This Court has subject matter jurisdiction over NetApp's request for a declaratory judgment under 28 U.S.C. §§ 2201 and 2202. This action arises under the patent laws of the United States, 35 U.S.C. §§ 100 et seq., which are within the subject matter jurisdiction of this Court under 28 U.S.C. §§ 1331 and 1338(a).

6. Crossroads' allegations threaten actual and imminent injury to NetApp that can be redressed by judicial relief and that injury is of sufficient immediacy and reality to warrant the

issuance of a declaratory judgment. Absent a declaration of non-infringement, Crossroads' continued wrongful assertions of infringement related to NetApp's products will cause NetApp harm.

7. This Court has general and specific personal jurisdiction over Crossroads because of its purposeful, systematic, and continuous contacts with California. Crossroads sells products and services in California, including its StrongBox® product line and actively solicits customers in California by presenting at conferences such as Createasphere's Digital Asset Management Conference in Beverly Hills, California and the Hollywood Post Alliance Tech Retreat in Indian Wells, California. Moreover, Crossroads maintains sales personnel in California and conducts business in this district. This Court has personal jurisdiction over Crossroads for another reason: Crossroads has purposefully directed into California its enforcement activities regarding the patents-in-suit. On information and belief, Crossroads's licensing and enforcement efforts in California have generated substantial revenues.

8. Venue is proper in this district pursuant to 28 U.S.C. § 1391(b) because, inter alia, a substantial part of the events and omissions giving rise to the claims occurred here and because Crossroads is subject to personal jurisdiction in this district.

INTRADISTRICT ASSIGNMENT

9. Division assignment to the San Jose Division of the United States District Court for the Northern District of California is proper pursuant to Civil Local Rule 3-2(e) because this is both an Intellectual Property Action that arose in, among other places, Santa Clara County, and because a substantial part of the events giving rise to the claims occurred in Santa Clara County.

FACTUAL ALLEGATIONS

10. Crossroads purports to be the owner of the '147 Patent. The '147 Patent is entitled "Storage router and method for providing virtual local storage" and issued on May 23, 2006. A copy of the '147 Patent is attached hereto as Exhibit B.

11. Crossroads purports to be the owner of the '311 Patent. The '311 Patent is also entitled "Storage router and method for providing virtual local storage" and issued on July 26, 2011. A copy of the '311 Patent is attached hereto as Exhibit C.

FIRST CLAIM FOR RELIEF

(Declaratory Judgment of Non-Infringement of the '147 Patent)

12. NetApp incorporates by reference each of the allegations in the preceding paragraphs of this Complaint as if fully set forth herein.

13. No claim of the '147 Patent has been or is infringed, either directly or indirectly, by NetApp or the purchasers of NetApp's products.

14. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality between Crossroads and NetApp to warrant the issuance of a declaratory judgment that NetApp has not infringed, and does not infringe, directly or indirectly, any claim of the '147 Patent.

SECOND CLAIM FOR RELIEF

(Declaratory Judgment of Non-Infringement of the '311 Patent)

15. NetApp incorporates by reference each of the allegations in the preceding paragraphs of this Complaint as if fully set forth herein.

16. No claim of the '311 Patent has been or is infringed, either directly or indirectly, by NetApp or the purchasers of NetApp's products.

17. As a result of the acts described in the foregoing paragraphs, there exists a substantial controversy of sufficient immediacy and reality between Crossroads and NetApp to warrant the issuance of a declaratory judgment that NetApp has not infringed, and does not infringe, directly or indirectly, any claim of the '311 Patent.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff prays for judgment as follows:

1. For entry of a declaration that NetApp products have not infringed and are not infringing, either directly or indirectly, any claim of the '147 or '311 Patents;

2. An order that Crossroads and each of its officers, employees, agents, attorneys, and any and all persons acting in concert or participation with them are restrained and enjoined from further prosecuting or instituting any action against NetApp claiming that the '147, and '311 Patents are infringed or from representing that NetApp's products or their use by the purchasers of those

products infringe the '147, and '311 Patents;

3. A declaration that this is an exceptional case under 35 U.S.C. § 285;

4. An award to NetApp of its costs and attorneys' fees incurred herein; and

5. For such other relief as the Court deems just and proper.

JURY DEMAND

NetApp demands a trial by jury on all issues so triable.

DUANE MORRIS LLP

Dated: April 15, 2014

By: */s/ Karineh Khachatourian*
Karineh Khachatourian
Patrick S. Salceda
David T. Xue

Attorneys for Plaintiff
NETAPP, INC.

AO 120 (Rev. 08/10)

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

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 Western District of Texas, Austin Division on the following

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

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:13-cv-1025-SS	11/26/2013	Western District of Texas, Austin Division

PLAINTIFF	DEFENDANT
Crossroads Systems, Inc.	Huawei Technologies Co. Ltd., Huawei Enterprise USA Inc. and Huawei Technologies USA Inc.

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 see attached		
2 6,425,035		
3 7,934,041		
4 7,051,147		
5		

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ 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
William G. Putnicki	Olga Schwedy	11/27/2013

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**

H. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '041 Patent;

I. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendants' willful infringement of the '041 Patent;

J. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '041 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

K. That Defendants have infringed the '147 Patent;

L. That such infringement of the '147 Patent by Defendants has been willful;

M. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '147 Patent;

N. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendants' willful infringement of the '147 Patent;

O. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '147 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

P. That Defendants pay Crossroads all of Crossroads' reasonable attorneys' fees and expenses;

Q. That costs be awarded to Crossroads;

R. That Defendants, Defendants' agents, employees, representatives, successors and assigns, and those acting in privity or in concert with Defendants, be preliminary and permanently enjoined from further infringement of the '035 Patent;

S. That Defendant, Defendants' agents, employees, representatives, successors and assigns, and those acting in privity or in concert with Defendants, be preliminary and permanently enjoined from further infringement of the '041 Patent;

T. That Defendants, Defendants' agents, employees, representatives, successors and assigns, and those acting in privity or in concert with Defendants, be preliminary and permanently enjoined from further infringement of the '147 Patent;

U. That this is an exceptional case under 35 U.S.C. § 285; and

V. That Crossroads be granted such other and further relief as the Court may deem just and proper under the circumstances.

DEMAND FOR JURY TRIAL

Crossroads hereby demands a trial by jury on all issues.

Dated: November 26, 2013

Respectfully submitted,

By: */s/ Steven Sprinkle*

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ATTORNEYS FOR PLAINTIFF CROSSROADS SYSTEMS, INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CROSSROADS SYSTEMS, INC.,	§	
	§	
Plaintiff,	§	
	§	CIVIL ACTION NO. 1:13-CV-1025
v.	§	
	§	JURY DEMANDED
HUAWEI TECHNOLOGIES CO. LTD.,	§	
HUAWEI ENTERPRISE USA INC.	§	
HUAWEI TECHNOLOGIES USA INC.	§	
	§	
Defendants.	§	

PLAINTIFF CROSSROADS SYSTEMS, INC.'S
COMPLAINT FOR PATENT INFRINGEMENT

THE PARTIES

1. Plaintiff Crossroads Systems, Inc. ("Crossroads") is a corporation incorporated under the laws of the State of Delaware and has its principal place of business at 11000 North MoPac Expressway, Austin, Texas 78759.

2. Upon information and belief, Defendant Huawei Technologies Co. Ltd. ("Huawei China") is a corporation organized and existing under the laws of the People's Republic of China with its principal place of business in Huawei Industrial Base, Bantian, Longgang, Shenzshen, Guangdong, P.R. China, 518129.

3. Upon information and belief, Defendant Huawei Enterprise USA Inc. ("Huawei Enterprise") is a California Corporation with its principal office at 3965 Freedom Circle, 11th Floor, Santa Clara, CA 95054.

4. Upon information and belief, Defendant Huawei Technologies USA Inc. is a Texas corporation with its principal office at 5700 Tennyson Parkway, Suite 500, Plano, TX 75024.

JURISDICTION AND VENUE

5. This action arises under the laws of the United States, more specifically under 35 U.S.C. § 100, *et seq*. Subject matter jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 and 1338.

6. Personal jurisdiction and venue are proper in this district under 28 U.S.C. §§ 1391 and 1400(b). Upon information and belief, Defendants Huawei China, Huawei Enterprise and Huawei Technologies USA Inc. established minimum contacts with this forum such that the exercise of jurisdiction over Defendants would not offend traditional notions of fair play and substantial justice. Upon information and belief, Defendants regularly conduct business in the State of Texas and in this judicial district and are subject to the jurisdiction of this Court. Upon information and belief, Defendants have been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, including, but not limited to, products that practice the subject matter claimed in the Patents-In-Suit, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 6,425,035

7. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

8. On July 23, 2002, United States Patent No. 6,425,035 (the "'035 Patent") was duly and legally issued. A true and correct copy of the '035 Patent is attached hereto as Exhibit A. Crossroads is the assignee and the owner of all right, title, and interest in and to the '035 Patent. The '035 Patent is entitled to a presumption of validity.

9. On information and belief, Defendants have directly infringed the '035 Patent. On information and belief, Defendant continues to directly infringe the '035 Patent.

10. Specifically, on information and belief, Defendants have directly infringed the '035 Patent by making, using, offering for sale, selling and/or importing into the United States certain of products including at least the following: OceanStor S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T), OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems.

11. Further, on information and belief, Defendants have been and now are indirectly infringing by way of inducing infringement of the '035 Patent with knowledge of the '035 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain products, including the OceanStor S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T), OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems, and Defendants knew that these actions were inducing end users to infringe the '035 Patent.

12. Further, on information and belief, Defendants have been and now are indirectly infringing by way of contributing to the infringement by end users of the '035 Patent by selling, offering to sell and/or importing into the United States components, including the OceanStor

S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T) OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems, knowing the components to be especially made or especially adapted for use in the infringement of the '035 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

13. Defendants have been on constructive and/or actual notice of the '035 Patent since at least as early as February 2012, and Defendants have not ceased their infringing activities. The infringement of the '035 Patent by Defendants has been and continues to be willful and deliberate.

14. Crossroads has been irreparably harmed by Defendants' acts of infringement of the '035 Patent, and will continue to be harmed unless and until Defendants' acts of infringement are enjoined and restrained by order of this Court.

15. As a result of the acts of infringement of the '035 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 7,934,041

16. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

17. On April 26, 2011, United States Patent No. 7,934,041 (the "'041 Patent") was duly and legally issued. A true and correct copy of the '041 Patent is attached hereto as Exhibit B. Crossroads is the assignee and the owner of all right, title, and interest in and to the '041 Patent. The '041 Patent is entitled to a presumption of validity.

18. On information and belief, Defendants have directly infringed the '041 Patent. On information and belief, Defendants continue to directly infringe the '041 Patent.

19. Specifically, on information and belief, Defendants have directly infringed the '041 Patent by making, using, offering for sale, selling and/or importing into the United States certain products including at least the following: OceanStor S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T) OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems.

20. Further, upon information and belief, Defendants have been and now are indirectly infringing by way of inducing infringement of the '041 Patent with knowledge of the '041 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain products, including the OceanStor S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T), OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems, and Defendant knew that these actions were inducing end users to infringe the '041 Patent.

21. Further, upon information and belief, Defendants have been and now are indirectly infringing by way of contributing to the infringement by end users of the '041 Patent by selling, offering to sell and/or importing into the United States components, OceanStor S2200T Storage System, OceanStor S6800T Storage System, OceanStor T Series Unified

Storage Systems (including the OceanStor S2600T, OceanStor S5500T, OceanStor S5600T, OceanStor S5800T), OceanStor HVS85T Storage Systems, OceanStor HVS88T Storage Systems, OceanStor VIS6600T Storage Systems, OceanStor Dorado 2100 G2 Storage Systems, and OceanStor Dorado 5100 Storage Systems, knowing the components to be especially made or especially adapted for use in the infringement of the '041 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

22. Defendants have been on constructive and/or actual notice of the '041 Patent since at least as early as early as February 2012, and Defendants have not ceased the infringing activities. The infringement of the '041 Patent by Defendants has been and continues to be willful and deliberate.

23. Crossroads has been irreparably harmed by Defendants' acts of infringement of the '041 Patent, and will continue to be harmed unless and until Defendants' acts of infringement are enjoined and restrained by order of this Court.

24. As a result of the acts of infringement of the '041 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 7,051,147

25. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

26. On May 23, 2006, United States Patent No. 7,051,147 (the "'147 Patent") was duly and legally issued. A true and correct copy of the '147 Patent is attached hereto as Exhibit C. Crossroads is the assignee and the owner of all right, title, and interest in and to the '147 Patent. The '147 Patent is entitled to a presumption of validity.

27. On information and belief, Defendants have directly infringed the '147 Patent. On information and belief, Defendants continue to directly infringe the '147 Patent.

28. Specifically, on information and belief, Defendants have directly infringed the '147 Patent by making, using, offering for sale, selling and/or importing into the United States certain products including at least the following: OceanStor S5600T Storage Systems, OceanStor S5800T Storage Systems, OceanStor S6800T Storage Systems, OceanStor VIS6600T Storage Systems.

29. Further, on information and belief, Defendants have been and now are indirectly infringing by way of inducing infringement of the '147 Patent with knowledge of the '147 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain products, including the OceanStor S5600T Storage Systems, OceanStor S5800T Storage Systems, OceanStor S6800T Storage Systems, OceanStor VIS6600T Storage Systems, and Defendants knew that these actions were inducing end users to infringe the '147 Patent.

30. Further, on information and belief, Defendants have been and now are indirectly infringing by way of contributing to the infringement by end users of the '147 Patent by selling, offering to sell and/or importing into the United States components, including OceanStor S5600T Storage Systems, OceanStor S5800T Storage Systems, OceanStor S6800T Storage Systems, OceanStor VIS6600T Storage Systems, knowing the components to be especially made or especially adapted for use in the infringement of the '147 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

31. Defendants have been on constructive and/or actual notice of the '147 Patent since at least as early as February 2012, and Defendants have not ceased the infringing activities.

The infringement of the '147 Patent by Defendants has been and continues to be willful and deliberate.

32. Crossroads has been irreparably harmed by Defendants' acts of infringement of the '147 Patent, and will continue to be harmed unless and until Defendants' acts of infringement are enjoined and restrained by order of this Court.

33. As a result of the acts of infringement of the '147 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

PRAYER FOR RELIEF

WHEREFORE, Crossroads requests this Court enter judgment as follows:

A. That Defendants have infringed the '035 Patent;

B. That such infringement of the '035 Patent by Defendants has been willful;

C. That Defendants account for and pays to Crossroads all damages caused by the infringement of the '035 Patent;

D. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendants' willful infringement of the '035 Patent;

E. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '035 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

F. That Defendants have infringed the '041 Patent;

G. That such infringement of the '041 Patent by Defendants has been willful;

AO 120 (Rev. 08/10)

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

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 Western District of Texas, Austin Division on the following

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

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:13-cv-895-SS	10/7/2013	Western District of Texas, Austin Division

PLAINTIFF	DEFENDANT
Crossroads Systems, Inc.	Oracle Corporation

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 see attached		
2 6,425,035		
3 7,934,041		
4 7,051,147		
5		

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
William G. Putnicki	Olga Schroeder	10/7/2013

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**

F. That Defendant has infringed the '041 Patent;

G. That such infringement of the '041 Patent by Defendant has been willful;

H. That Defendant accounts for and pays to Crossroads all damages caused by the infringement of the '041 Patent;

I. That Crossroads receive enhanced damages from Defendant in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendant's willful infringement of the '041 Patent;

J. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendant's infringement of the '041 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

K. That Defendant has infringed the '147 Patent;

L. That such infringement of the '147 Patent by Defendant has been willful;

M. That Defendant accounts for and pays to Crossroads all damages caused by the infringement of the '147 Patent;

N. That Crossroads receive enhanced damages from Defendant in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendant's willful infringement of the '147 Patent;

O. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendant's infringement of the '147 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

P. That Defendant pay Crossroads all of Crossroads' reasonable attorneys' fees and expenses;

Q. That costs be awarded to Crossroads;

R. That Defendant, its agents, employees, representatives, successors and assigns, and those acting in privity or in concert with it, be preliminary and permanently enjoined from further infringement of the '035 Patent;

S. That Defendant, its agents, employees, representatives, successors and assigns, and those acting in privity or in concert with it, be preliminary and permanently enjoined from further infringement of the '041 Patent;

T. That Defendant, its agents, employees, representatives, successors and assigns, and those acting in privity or in concert with it, be preliminary and permanently enjoined from further infringement of the '147 Patent;

U. That this is an exceptional case under 35 U.S.C. § 285; and

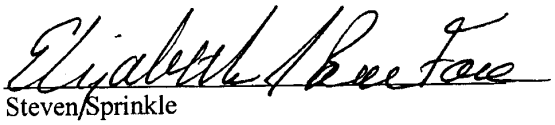
V. That Crossroads be granted such other and further relief as the Court may deem just and proper under the circumstances.

DEMAND FOR JURY TRIAL

Crossroads hereby demands a trial by jury on all issues.

Dated: October 7, 2013

Respectfully submitted,

By: 

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ATTORNEYS FOR PLAINTIFF CROSSROADS SYSTEMS, INC.

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CROSSROADS SYSTEMS, INC.,

Plaintiff,

v.

ORACLE CORPORATION,

Defendant.

CIVIL ACTION NO. _____

JURY DEMANDED

A13CV0895 SS

PLAINTIFF CROSSROADS SYSTEMS, INC.'S COMPLAINT FOR PATENT INFRINGEMENT

THE PARTIES

1. Plaintiff Crossroads Systems, Inc. ("Crossroads") is a corporation incorporated under the laws of the State of Delaware and has its principal place of business at 11000 North MoPac Expressway, Austin, Texas 78759.

2. Upon information and belief, Defendant Oracle Corporation ("Defendant") is a Delaware corporation with a principal place of business of 500 Oracle Parkway, Redwood City, CA 94065.

JURISDICTION AND VENUE

3. This action arises under the laws of the United States, more specifically under 35 U.S.C. § 100, *et seq*. Subject matter jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 and 1338.

4. Personal jurisdiction and venue are proper in this district under 28 U.S.C. §§ 1391 and 1400(b). Upon information and belief, Defendant Oracle has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice.

5. This Court has personal jurisdiction over Oracle. Upon information and belief, Oracle regularly conducts business in the State of Texas and in this judicial district and is subject to the jurisdiction of this Court. Upon information and belief, Oracle has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, including, but not limited to, products that practice the subject matter claimed in the Patents-In-Suit, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 6,425,035

6. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

7. On July 23, 2002, United States Patent No. 6,425,035 (the "'035 Patent") was duly and legally issued. A true and correct copy of the '035 Patent is attached hereto as Exhibit A. Crossroads is the assignee and the owner of all right, title, and interest in and to the '035 Patent. The '035 Patent is entitled to a presumption of validity.

8. On information and belief, Defendant has directly infringed the '035 Patent. On information and belief, Defendant continues to directly infringe the '035 Patent.

9. Specifically, on information and belief, Defendant has directly infringed the '035 Patent by making, using, offering for sale, selling and/or importing into the United States certain of its products including at least the following: Sun ZFS Storage 7120 Appliance, Sun ZFS Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI

SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage 2540-M2 Array.

10. Further, on information and belief, Defendant has been and now is indirectly infringing by way of inducing infringement of the '035 Patent with knowledge of the '035 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain of its products, including the Sun ZFS Storage 7120 Appliance, Sun ZFS Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Oracle Solaris with SCSI Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage 2540-M2 Array, and Defendant knew that its actions were inducing end users to infringe the '035 Patent.

11. Further, on information and belief, Defendant has been and now is indirectly infringing by way of contributing to the infringement by end users of the '035 Patent by selling, offering to sell and/or importing into the United States components, including the Sun ZFS Storage 7120 Appliance, Sun ZFS Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Oracle Solaris with SCSI Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage

2540-M2 Array, knowing the components to be especially made or especially adapted for use in the infringement of the '035 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

12. Defendant has been on constructive and/or actual notice of the '035 Patent since at least as early as November 2009, and Defendant has not ceased its infringing activities. The infringement of the '035 Patent by Defendant has been and continues to be willful and deliberate.

13. Crossroads has been irreparably harmed by Defendant's acts of infringement of the '035 Patent, and will continue to be harmed unless and until Defendant's acts of infringement are enjoined and restrained by order of this Court.

14. As a result of the acts of infringement of the '035 Patent by Defendant, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 7,934,041

15. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

16. On April 26, 2011, United States Patent No. 7,934,041 (the "'041 Patent") was duly and legally issued. A true and correct copy of the '041 Patent is attached hereto as Exhibit B. Crossroads is the assignee and the owner of all right, title, and interest in and to the '041 Patent. The '041 Patent is entitled to a presumption of validity.

17. On information and belief, Defendant has directly infringed the '041 Patent. On information and belief, Defendant continues to directly infringe the '041 Patent.

18. Specifically, on information and belief, Defendant has directly infringed the '041 Patent by making, using, offering for sale, selling and/or importing into the United States certain of its products including at least the following: Sun ZFS Storage 7120 Appliance, Sun ZFS

Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage 2540-M2 Array.

19. Further, upon information and belief, Defendant has been and now is indirectly infringing by way of inducing infringement of the '041 Patent with knowledge of the '041 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain of its products, including the Sun ZFS Storage 7120 Appliance, Sun ZFS Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Oracle Solaris with SCSI Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage 2540-M2 Array, and Defendant knew that its actions were inducing end users to infringe the '041 Patent.

20. Further, upon information and belief, Defendant has been and now is indirectly infringing by way of contributing to the infringement by end users of the '041 Patent by selling, offering to sell and/or importing into the United States components, including the Sun ZFS Storage 7120 Appliance, Sun ZFS Storage 7320 Appliance, Sun ZFS Storage 7420 Appliance, Oracle Servers with Solaris with SCSI Target Mode Framework, Oracle Solaris with SCSI

Target Mode Framework, Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with iSCSI SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, Pillar Axiom 600 with iSCSI SAN Slammer, Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Oracle Sun Storage 2540-M2 Array, knowing the components to be especially made or especially adapted for use in the infringement of the '041 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

21. Defendant has been on constructive and/or actual notice of the '041 Patent since at least as early as May 2011, and Defendant has not ceased its infringing activities. The infringement of the '041 Patent by Defendant has been and continues to be willful and deliberate.

22. Crossroads has been irreparably harmed by Defendant's acts of infringement of the '041 Patent, and will continue to be harmed unless and until Defendant's acts of infringement are enjoined and restrained by order of this Court.

23. As a result of the acts of infringement of the '041 Patent by Defendant, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 7,051,147

24. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

25. On May 23, 2006, United States Patent No. 7,051,147 (the "'147 Patent") was duly and legally issued. A true and correct copy of the '147 Patent is attached hereto as Exhibit C. Crossroads is the assignee and the owner of all right, title, and interest in and to the '147 Patent. The '147 Patent is entitled to a presumption of validity.

26. On information and belief, Defendant has directly infringed the '147 Patent. On information and belief, Defendant continues to directly infringe the '147 Patent.

27. Specifically, on information and belief, Defendant has directly infringed the '147 Patent by making, using, offering for sale, selling and/or importing into the United States certain of its products including at least the following: Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, and the Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer.

28. Further, on information and belief, Defendant has been and now is indirectly infringing by way of inducing infringement of the '147 Patent with knowledge of the '147 Patent by making, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction and/or advertising certain of its products, including the Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, and the Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, and Defendant knew that its actions were inducing end users to infringe the '147 Patent.

29. Further, on information and belief, Defendant has been and now is indirectly infringing by way of contributing to the infringement by end users of the '147 Patent by selling, offering to sell and/or importing into the United States components, including the Pillar Axiom 300 with Fibre Channel SAN Slammer, Pillar Axiom 300 with Combination FC/iSCSI SAN Slammer, Pillar Axiom 600 with Fibre Channel SAN Slammer, and the Pillar Axiom 600 with Combination FC/iSCSI SAN Slammer, knowing the components to be especially made or

especially adapted for use in the infringement of the '147 Patent. Such components are not a staple article or commodity of commerce suitable for substantial non-infringing uses.

30. Defendant has been on constructive and/or actual notice of the '147 Patent since at least as early as November 2009, and Defendant has not ceased its infringing activities. The infringement of the '147 Patent by Defendant has been and continues to be willful and deliberate.

31. Crossroads has been irreparably harmed by Defendant's acts of infringement of the '147 Patent, and will continue to be harmed unless and until Defendant's acts of infringement are enjoined and restrained by order of this Court.

32. As a result of the acts of infringement of the '147 Patent by Defendant, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

PRAYER FOR RELIEF

WHEREFORE, Crossroads requests this Court enter judgment as follows:

A. That Defendant has infringed the '035 Patent;

B. That such infringement of the '035 Patent by Defendant has been willful;

C. That Defendant accounts for and pays to Crossroads all damages caused by the infringement of the '035 Patent;

D. That Crossroads receive enhanced damages from Defendant in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendant's willful infringement of the '035 Patent;

E. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendant's infringement of the '035 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

AO 120 (Rev. 08/10)

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

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 Western District of Texas, Austin Division on the following

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

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:12-CV-104 SS	2/1/2012	Western District of Texas, Austin Division

PLAINTIFF	DEFENDANT
Crossroads Systems, Inc.	Infortrend Corporation; Aberdeen LLC; Boost Systems, Inc.; iXsystems, Inc.; and Storageflex, Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	see attached		
2	6,425,035		
3	7,051,147		
4	7,934,041		
5	7,934,040		

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1 7,987,311		
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
William G. Putnicki	Olga Schroed	2/2/2012

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**

infringement, by way of actively inducing infringement and/or contributing to the infringement of the '147 Patent by users of Defendant Boost products, such as EonStor Fibre-to-Fibre RAID Systems by, among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of its products, including the EonStor Fibre-to-Fibre RAID Systems.

32. Further, Defendant Storageflex has been and now is indirectly infringing the '147 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '147 Patent by users of Defendant Storageflex's products, such as the FF1124 by, among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of its products and/or certain components for use with Storageflex's products, including the FF1124 and/or components for use with same.

33. Defendants Infortrend, Boost and Storageflex have been on notice of the '147 Patent since before this lawsuit through notification by letter (Boost, Storageflex), prior involvement in litigation involving the '147 Patent (Infortrend), and/or purchase of a marked product (Storageflex), and have not ceased their infringing activities. The infringement of the '147 Patent by Defendants Infortrend, Boost and Storageflex has been and continues to be willful and deliberate.

34. Crossroads has been irreparably harmed by each of Defendant Infortrend's, Boost's and Storageflex's acts of infringement of the '147 Patent and will continue to be harmed unless and until each of Defendant Infortrend's, Boost's and Storageflex's acts of infringement are enjoined and restrained by order of this Court.

35. As a result of the acts of infringement of the '147 Patent by Defendants Infortrend, Boost and Storageflex, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 3: INFRINGEMENT OF U.S. PATENT NO. 7,934,041

36. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

37. On April 26, 2011, United States Patent No. 7,934,041 (the "'041 Patent") was duly and legally issued. A true and correct copy of the '041 Patent is attached hereto as Exhibit C. Crossroads is the assignee and the owner of all right, title, and interest in and to the '041 Patent. The '041 Patent is entitled to a presumption of validity.

38. Defendants Infortrend, Aberdeen, Boost, iXsystems and Storageflex have directly infringed the '041 Patent. On information and belief, the Defendants continue to directly infringe the '041 Patent.

39. Specifically, each of the Defendants has directly infringed the '041 Patent by making, using, offering for sale, selling and/or importing into the United States certain of their products including at least the following: EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Infortrend); XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface (Aberdeen); EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Boost); Titan 316F, Titan 424F, ESVA iSCSI Host Series and

ESVA Fibre Host Series (iXsystems); and FF1124 and HA3969 with FC or iSCSI Host Interfaces (Storageflex).

40. Further, Defendant Aberdeen has been and now is indirectly infringing the '041 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '041 Patent by users of Defendant Aberdeen's products, such as XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Aberdeen's products, including XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface.

41. Further, Defendant Boost has been and now is indirectly infringing the '041 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '041 Patent by users of Defendant Boost's products, such as EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Boost's products, including the EonStor RAID Systems with Fibre Host Interface and/or iSCSI

Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series.

42. Further, Defendant iXsystems has been and now is indirectly infringing the '041 Patent, with knowledge of the patent, by way of contributing to the infringement of the '041 Patent by users of Defendant iXsystems' products, such as Titan 316F, Titan 424F, ESVA iSCSI Host Series, and ESVA Fibre Host Series by among other things, offering for sale, selling, and/or importing into the United States certain of Defendant iXsystems' products, including Titan 316F, Titan 424F, ESVA iSCSI Host Series, and/or ESVA Fibre Host Series.

43. Further, Defendant Storageflex has been and now is indirectly infringing the '041 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '041 Patent by users of Defendant Storageflex's products, such as the FF1124 and HA3969 with FC or iSCSI Host Interfaces by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of Defendant Storageflex's products and/or components for use with same, including, without limitation, the FF1124 and HA3969 with FC or iSCSI Host Interfaces and/or components for use with same.

44. Defendants Aberdeen, Boost, iXsystems and Storageflex have been on notice of the '041 Patent since before this lawsuit through notification by letter that their products, including, but not limited to, the infringing products listed herein, have infringed and continue to infringe the '041 Patent, and have not ceased their infringing activities. The infringement of the '041 Patent by Defendants Aberdeen, Boost, iXsystems and Storageflex has been and continues to be willful and deliberate.

45. Crossroads has been irreparably harmed by each of Defendant Infortrend's, Boost's, Aberdeen's, iXsystems' and Storageflex's acts of infringement of the '041 Patent, and will continue to be harmed unless and until of Defendant Infortrend's, Boost's, Aberdeen's, iXsystems' and Storageflex's acts of infringement are enjoined and restrained by order of this Court.

46. As a result of the acts of infringement of the '041 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 4: INFRINGEMENT OF U.S. PATENT NO. 7,934,040

47. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

48. On April 26, 2011, United States Patent No. 7,934,040 (the "'040 Patent") was duly and legally issued. A true and correct copy of the '040 Patent is attached hereto as Exhibit D. Crossroads is the assignee and the owner of all right, title, and interest in and to the '040 Patent. The '040 Patent is entitled to a presumption of validity.

49. Defendants Infortrend, Aberdeen, Boost, iXsystems and Storageflex have each directly infringed the '040 Patent. On information and belief, each Defendant continues to directly infringe the '040 Patent.

50. Specifically, each of the Defendants has directly infringed the '040 Patent by making, using, offering for sale, selling and/or importing into the United States certain of their products including at least the following: EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Infortrend); XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS

F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface (Aberdeen); EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Boost); Titan 316F, Titan 424F, ESVA iSCSI Host Series and ESVA Fibre Host Series (iXsystems); and FF1124 and HA3969 FC or iSCSI Host Interfaces (Storageflex).

51. Further, Defendant Aberdeen has been and now is indirectly infringing the '040 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '040 Patent by users of Defendant Aberdeen's products, such as XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Aberdeen's products, including XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface.

52. Further, Defendant Boost has been and now is indirectly infringing the '040 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '040 Patent by users of Defendant Boost's products, such as EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series by

among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Boost's products, including the EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series.

53. Further, Defendant iXsystems has been and now is indirectly infringing the '040 Patent, with knowledge of the patent, by way of contributing to the infringement of the '040 Patent by users of Defendant iXsystems' products, such as the Titan 316F, Titan 424F, ESVA iSCSI Host Series and ESVA Fibre Host Series by among other things, offering for sale, selling, and/or importing into the United States certain of Defendant iXsystems' products, including the Titan 316F, Titan 424F, ESVA iSCSI Host Series and ESVA Fibre Host Series.

54. Further, Defendant Storageflex has been and now is indirectly infringing the '040 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '040 Patent by users of Defendant Storageflex's products, such as the FF1124 and HA3969 with FC or iSCSI Host Interfaces by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of Defendant Storageflex's products and/or components for use with same, including, without limitation, the FF1124 and HA3969 with FC or iSCSI Host Interfaces and/or components for use with same.

55. Defendants Aberdeen, Boost, iXsystems and Storageflex have been on notice of the '040 Patent since before this lawsuit through notification by letter that their products, including, but not limited to, the infringing products listed herein, have infringed and continued

to infringe, and have not ceased their infringing activities. The infringement of the '040 Patent by Defendants Aberdeen, Boost, iXsystems and Storageflex has been and continues to be willful and deliberate.

56. Crossroads has been irreparably harmed by each of Defendant Storageflex's, Aberdeen's, iXsystems', Boost's and Infortrend's acts of infringement of the '040 Patent, and will continue to be harmed unless and until each of Defendant Storageflex's, Aberdeen's, iXsystems', Boost's and Infortrend's acts of infringement are enjoined and restrained by order of this Court.

57. As a result of the acts of infringement of the '040 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 5: INFRINGEMENT OF U.S. PATENT NO. 7,987,311

58. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

59. On July 26, 2011, United States Patent No. 7,987,311 (the "'311 Patent") was duly and legally issued. A true and correct copy of the '311 Patent is attached hereto as Exhibit E. Crossroads is the assignee and the owner of all right, title, and interest in and to the '311 Patent. The '311 Patent is entitled to a presumption of validity.

60. Defendants Infortrend, Aberdeen, Boost, iXsystems and Storageflex have each directly infringed the '311 Patent. On information and belief, each Defendant continues to directly infringe the '311 Patent.

61. Specifically, each of the Defendants has directly infringed the '311 Patent by making, using, offering for sale, selling and/or importing into the United States certain of their products including at least the following: EonStor RAID Systems with Fibre Host Interface

and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Infortrend); XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface (Aberdeen); EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Boost); Titan 316F, Titan 424F, ESVA iSCSI Host Series and ESVA Fibre Host Series (iXsystems); and FF1124 and HA3969 FC or iSCSI Host Interfaces (Storageflex).

62. Further, Defendant Boost has been and now is indirectly infringing the '311 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '311 Patent by users of Defendant Boost's products, such as EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Boost's products, including the EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series.

63. Further, Defendant Storageflex has been and now is indirectly infringing the '311 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement

of the '311 Patent by users of Defendant Storageflex's products, such as the FF1124 and HA3969 with FC or iSCSI Host Interfaces by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of Defendant Storageflex's products and/or components for use with same, including, without limitation, the FF1124 and HA3969 with FC or iSCSI Host Interfaces and/or components for use with same.

64. Defendants Boost and Storageflex have been on notice of the '311 Patent since before this lawsuit through notification by letter that their products, including, but not limited to, the infringing products listed herein, have infringed and continued to infringe, and have not ceased their infringing activities. The infringement of the '311 Patent by Defendants Boost and Storageflex has been and continues to be willful and deliberate.

65. Crossroads has been irreparably harmed by each of Defendant Storageflex's, Aberdeen's, iXsystems', Boost's and Infortrend's acts of infringement of the '311 Patent, and will continue to be harmed unless and until each of Defendant Storageflex's, Aberdeen's, iXsystems', Boost's and Infortrend's acts of infringement are enjoined and restrained by order of this Court.

66. As a result of the acts of infringement of the '311 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

PRAYER FOR RELIEF

WHEREFORE, Crossroads requests this Court enter judgment as follows:

A. That each of the Defendants has infringed the '035 Patent;

B. That such infringement of the '035 Patent by Defendants has been willful;

IN THE UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CROSSROADS SYSTEMS, INC.,	§	
	§	
Plaintiff,	§	
	§	CIVIL ACTION NO. 1:12-CV-104
v.	§	
	§	JURY DEMANDED
(1) INFORTREND CORPORATION,	§	
(2) ABERDEEN LLC,	§	
(3) BOOST SYSTEMS, INC.,	§	
(4) IXSYSTEMS, INC., and	§	
(5) STORAGEFLEX, INC.,	§	
	§	
Defendants.	§	

PLAINTIFF CROSSROADS SYSTEMS, INC.'S COMPLAINT FOR PATENT INFRINGEMENT

THE PARTIES

1. Plaintiff Crossroads Systems, Inc. ("Crossroads") is a corporation incorporated under the laws of the State of Delaware and has its principal place of business at 11000 North MoPac Expressway, Austin, Texas 78759.

2. Upon information and belief, Defendant Infortrend Corporation ("Infortrend") is a California corporation with a principal place of business of 2200 Zanker Road, Suite 130, San Jose, CA 95131.

3. Upon information and belief, Defendant Aberdeen LLC ("Aberdeen") is a California company with a principal place of business of 10420 Pioneer Boulevard, Santa Fe Springs, CA 90670.

4. Upon information and belief, Defendant Boost Systems, Inc. ("Boost") is a California corporation with a principal place of business of 11391 Sunrise Gold Circle, Suite 300, Rancho Cordova, CA 95742.

C. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '035 Patent;

D. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendants' willful infringement of the '035 Patent;

E. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '035 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

F. That Defendants Infortrend, Boost and Storageflex have infringed the '147 Patent;

G. That such infringement of the '147 Patent by Defendants Infortrend, Boost and Storageflex has been willful;

H. That Defendants Infortrend, Boost and Storageflex account for and pay to Crossroads all damages caused by the infringement of the '147 Patent;

I. That Crossroads receive enhanced damages from Defendants Infortrend, Boost and Storageflex in the form of treble damages, pursuant to 35 U.S.C. § 284 based on Defendants Infortrend, Boost and Storageflex's willful infringement of the '147 Patent;

J. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants Infortrend, Boost and Storageflex's infringement of the '147 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

K. That each of the Defendants has infringed the '041 Patent;

L. That such infringement of the '041 Patent by Defendants Aberdeen, Boost, iXsystems and Storageflex has been willful;

M. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '041 Patent;

N. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on each of Defendants Aberdeen's, Boost's, iXsystems' and Storageflex's willful infringement of the '041 Patent;

O. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '041 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

P. That each of the Defendants has infringed the '040 Patent;

Q. That such infringement of the '040 Patent by Defendants Aberdeen, Boost, iXsystems and Storageflex has been willful;

R. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '040 Patent;

S. That Crossroads receive enhanced damages from Defendants in the form of treble damages, pursuant to 35 U.S.C. § 284 based on each of Defendants Aberdeen's, Boost's, iXsystems' and Storageflex's willful infringement of the '040 Patent;

T. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '040 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

U. That each of the Defendants has infringed the '311 Patent;

V. That such infringement of the '311 Patent by Defendants Boost and Storageflex has been willful;

W. That Defendants account for and pay to Crossroads all damages caused by the infringement of the '311 Patent;

X. That Crossroads receive enhanced damages from Defendants Boost and Storageflex in the form of treble damages, pursuant to 35 U.S.C. § 284 based on each of Defendants Boost's and Storageflex's willful infringement of the '311 Patent;

Y. That Crossroads be granted pre-judgment and post-judgment interest on the damages caused to it by reason of Defendants' infringement of the '311 Patent, including pre-judgment and post-judgment interest on any enhanced damages or attorneys' fees award;

Z. That Defendants pay Crossroads all of Crossroads' reasonable attorneys' fees and expenses;

AA. That costs be awarded to Crossroads;

BB. That Defendants, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be preliminary and permanently enjoined from further infringement of the '035 Patent;

CC. That Defendants Infortrend, Boost and Storageflex, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be preliminary and permanently enjoined from further infringement of the '147 Patent;

DD. That Defendants, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be preliminary and permanently enjoined from further infringement of the '041 Patent;

EE. That Defendants, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be preliminary and permanently enjoined from further infringement of the '040 Patent;

FF. That Defendants, their agents, employees, representatives, successors and assigns, and those acting in privity or in concert with them, be preliminary and permanently enjoined from further infringement of the '311 Patent;

GG. That this is an exceptional case under 35 U.S.C. § 285; and

HH. That Crossroads be granted such other and further relief as the Court may deem just and proper under the circumstances.

DEMAND FOR JURY TRIAL

Crossroads hereby demands a trial by jury on all issues.

Dated: February 1, 2012

Respectfully submitted,

By: */s/ Elizabeth J. Brown Fore*

Steven Sprinkle
State Bar No. 00794962
Elizabeth J. Brown Fore
State Bar No. 24001795
Sprinkle IP Law Group, PC

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Austin, Texas 78705
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ebrownfore@sprinklelaw.com

5. Upon information and belief, Defendant iXsystems, Inc. ("iXsystems") is a Delaware corporation with a principal place of business of 2490 Kruse Drive, San Jose, CA 95131.

6. Upon information and belief, Defendant Storageflex, Inc. ("Storageflex") is an Ontario corporation with a principal place of business of 3601 Highway 7, Suite 400, Markham, Ontario L3R 0M3 Canada.

JURISDICTION AND VENUE

7. This action arises under the laws of the United States, more specifically under 35 U.S.C. § 100, *et seq.* Subject matter jurisdiction is proper in this Court pursuant to 28 U.S.C. §§ 1331 and 1338.

8. Personal jurisdiction and venue are proper in this district under 28 U.S.C. §§ 1391(c) and 1400. Upon information and belief, each Defendant has established minimum contacts with this forum such that the exercise of jurisdiction over each defendant would not offend traditional notions of fair play and substantial justice.

9. This Court has personal jurisdiction over Infortrend. Upon information and belief, Infortrend regularly conducts business in the State of Texas and in this judicial district and is subject to the jurisdiction of this Court. Upon information and belief, Infortrend has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, including, but not limited to, products that practice the subject matter claimed in the Patents-In-Suit, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

10. This Court has personal jurisdiction over Aberdeen. Upon information and belief, Aberdeen regularly conducts business in the State of Texas and in this judicial district and is

subject to the jurisdiction of this Court. Upon information and belief, Aberdeen has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

11. This Court has personal jurisdiction over Boost. Upon information and belief, Boost regularly conducts business in the State of Texas and in this judicial district and is subject to the jurisdiction of this Court. Upon information and belief, Boost has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

12. This Court has personal jurisdiction over iXsystems. Upon information and belief, iXsystems regularly conducts business in the State of Texas and in this judicial district and is subject to the jurisdiction of this Court. Upon information and belief, iXsystems has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district.

13. This Court has personal jurisdiction over Storageflex. Upon information and belief, Storageflex regularly conducts business in the State of Texas and in this judicial district and is subject to the jurisdiction of this Court. Upon information and belief, Storageflex has been doing business in Texas and this judicial district by distributing, marketing, selling and/or offering for sale its products, and/or regularly doing or soliciting business and/or engaging in other persistent courses of conduct in and/or directed to Texas and this judicial district. Further, Storageflex has engaged in activities in this judicial district relating to one or more products that

practice the subject matter claimed by at least one of the Patents-In-Suit by purchasing one or more products from this judicial district that were marked with at least one of the patents-in-suit.

COUNT 1: INFRINGEMENT OF U.S. PATENT NO. 6,425,035

14. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

15. On July 23, 2002, United States Patent No. 6,425,035 (the "'035 Patent") was duly and legally issued. A true and correct copy of the '035 Patent is attached hereto as Exhibit A. Crossroads is the assignee and the owner of all right, title, and interest in and to the '035 Patent. The '035 Patent is entitled to a presumption of validity.

16. Defendants Infortrend, Aberdeen, Boost, iXsystems and Storageflex have each directly infringed the '035 Patent. On information and belief, each Defendant continues to directly infringe the '035 Patent.

17. Specifically, each of the Defendants has directly infringed the '035 Patent by making, using, offering for sale, selling and/or importing into the United States certain of their products including at least the following: EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Infortrend); XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface (Aberdeen); EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series (Boost); Titan 316F, Titan 424F, ESVA iSCSI Host Series, and

ESVA Fibre Host Series (iXsystems); and FF1124 and HA3969 with FC or iSCSI Host Interfaces (Storageflex).

18. Further, Defendant Infortrend has been and now is indirectly infringing the '035 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '035 Patent by users of Defendant Infortrend's products, such as EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series, by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of Defendant Infortrend's products and/or Defendant Infortrend's components for use with same, including EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series and ESVA Fibre Host Series and/or components for use with same.

19. Further, Defendant Aberdeen has been and now is indirectly infringing the '035 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '035 Patent by users of Defendant Aberdeen's products, such as XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Aberdeen's products, including XDAS D-Series RAID Systems with FC and/or iSCSI Host, XDAS iSCSI Series

RAID Systems, XDAS F8 Series RAID Systems and Aberdeen P8 XDAS with Fibre Host Interface.

20. Further, Defendant Boost has been and now is indirectly infringing the '035 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '035 Patent by users of Defendant Boost's products, such as EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, providing product instruction, and/or advertising certain of Defendant Boost's products, including the EonStor RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, EonStor DS RAID Systems with Fibre Host Interface and/or iSCSI Host Interface, ESVA iSCSI Host Series, and ESVA Fibre Host Series.

21. Further, Defendant iXsystems has been and now is indirectly infringing the '035 Patent, with knowledge of the patent, by way of contributing to the infringement of the '035 Patent by users of Defendant iXsystems' products, such as the Titan 316F, Titan 424F, ESVA iSCSI Host Series and ESVA Fibre Host Series, by among other things, offering for sale, selling, and/or importing into the United States certain of Defendant iXsystems' products, including Titan 316F, Titan 424F, ESVA iSCSI Host Series, and/or ESVA Fibre Host Series.

22. Further, Defendant Storageflex has been and now is indirectly infringing the '035 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '035 Patent by users of Defendant Storageflex's products, such as the FF1124 and

HA3969 with FC or iSCSI Host Interfaces, by among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of Defendant Storageflex's products and/or components for use with same, including the FF1124 and HA3969 with FC or iSCSI Host Interfaces and/or components for use with same.

23. Each Defendant has been on notice of the '035 Patent since before this lawsuit through prior involvement in litigation involving the '035 Patent (Infortrend), the purchase of a marked product (Storageflex) and/or through notification by letter that its products, including but not limited to the infringing products listed herein, have infringed and continue to infringe (Storageflex, Aberdeen, iXsystems, Boost), and no Defendant has ceased its infringing activities. The infringement of the '035 Patent by each Defendant has been and continues to be willful and deliberate.

24. Crossroads has been irreparably harmed by each of Defendant Infortrend's, Storageflex's, Aberdeen's, Boost's and iXsystems' acts of infringement of the '035 Patent, and will continue to be harmed unless and until each of Defendant Infortrend's, Storageflex's, Aberdeen's, Boost's and iXsystems' acts of infringement are enjoined and restrained by order of this Court.

25. As a result of the acts of infringement of the '035 Patent by Defendants, Crossroads has suffered and will continue to suffer damages in an amount to be proven at trial.

COUNT 2: INFRINGEMENT OF U.S. PATENT NO. 7,051,147

26. Crossroads incorporates by reference the allegations set forth in the preceding paragraphs.

27. On May 23, 2006, United States Patent No. 7,051,147 (the "'147 Patent") was duly and legally issued. A true and correct copy of the '147 Patent is attached hereto as Exhibit B. Crossroads is the assignee and the owner of all right, title, and interest in and to the '147 Patent. The '147 Patent is entitled to a presumption of validity.

28. Defendants Infortrend, Boost and Storageflex have directly infringed the '147 Patent and, on information and belief, Defendants Infortrend, Boost and Storageflex continue to directly infringe the '147 Patent.

29. Specifically, Defendants Infortrend, Boost and Storageflex have directly infringed the '147 Patent by making, using, offering for sale, selling and/or importing into the United States certain of their products including at least the following: EonStor Fibre-to-Fibre RAID Systems and EonStor DS Fibre-to-Fibre RAID Systems (Infortrend); EonStor Fibre-to-Fibre RAID Systems (Boost); and FF1124 (Storageflex).

30. Further, Defendant Infortrend has been and now is indirectly infringing the '147 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent infringement, by way of actively inducing infringement and/or contributing to the infringement of the '147 Patent by users of Defendant Infortrend's products, such as EonStor Fibre-to-Fibre RAID Systems and EonStor DS Fibre-to-Fibre RAID Systems by, among other things, making, using, offering for sale, selling, importing into the United States, marketing, supporting, promoting, providing product instruction, and/or advertising certain of its products and/or Defendant Infortrend's components for use with same, including EonStor Fibre-to-Fibre RAID Systems, EonStor DS Fibre-to-Fibre RAID Systems and/or components for use with same.

31. Further, Defendant Boost has been and now is indirectly infringing the '147 Patent, with knowledge of the patent and knowledge that its induced acts constitute patent

AO 120 (Rev. 3/04)

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

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 WD/TX, Austin Division on the following X Patents or ☐ Trademarks:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:09-cv-879-SS	December 7, 2009	Western District of Texas, Austin Division
PLAINTIFF Crossroads Systems, Inc.		DEFENDANT (1) Postvision, Inc., (2) Celeros Corporation (3) Digilink Technologies (4) Ciphermax, Inc. (5) Intransa, Inc. (6) Rasilient Systems, Inc. (7) Qlogic Corporation (8) Overland Storage, Inc.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	6,425,035		
2	7,051,147		
3			
4			
5			

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
See attached Final Judgment

CLERK	(BY) DEPUTY CLERK	DATE
William G. Putnicki		12/23/2010

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 DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

FILED
DEC 23 2010
CLERK, U.S. DISTRICT COURT
WESTERN DISTRICT OF TEXAS
BY _____ /DEPUTY CLERK

CROSSROADS SYSTEMS, INC.,
Plaintiff,

-vs-

Case No. A-09-CA-879-SS

POSTVISION, INC. d/b/a Archion; CELEROS CORPORATION; DIGILINK TECHNOLOGY, INC.; CIPHERMAX, INC.; INTRANSA, INC.; RASILIENT SYSTEMS, INC.; QLOGIC CORPORATION; and OVERLAND STORAGE, INC.,
Defendants.

FINAL JUDGMENT

BE IT REMEMBERED on this day the Court entered its order granting a default judgment on behalf of the plaintiff against CipherMax, Inc. The Court now enters the following final judgment accounting for all eight defendants in the case:

IT IS ORDERED, ADJUDGED, and DECREED that all claims against Postvision, Inc. d/b/a Archion, Celeros Corporation, Digilink Technology, Inc., Intransa, Inc., Rasilient Systems, Inc., and Overland Storage, Inc. and all claims/counterclaims by the same are DISMISSED WITHOUT PREJUDICE.

IT IS FURTHER ORDERED, ADJUDGED, and DECREED that all claims against Qlogic Corporation and all claims/counterclaims by the same are DISMISSED WITH PREJUDICE.

IT IS FURTHER ORDERED, ADJUDGED, and DECREED that

1. CipherMax, Inc. has infringed United States Patent No. 6,425,035 (the "'035 Patent") and United States Patent No. 7,051,147 (the "'147 Patent");

2. CipherMax's infringement of the '035 Patent and the '147 Patent was willful;

3. CipherMax shall pay Crossroads' attorneys' fees in the amount of THIRTEEN THOUSAND, EIGHT HUNDRED, AND SIXTY FIVE DOLLARS ($13,865.00)

4. CipherMax, its agents, employees, representatives, successors and assigns, and those acting in privity or in consort with CipherMax are permanently enjoined from further infringement of the '035 Patent and the '147 Patent by making, using, offering to sell or selling in the United States, or importing into the United States, any unlicensed products, including, without limitation, the CM Family storage systems, (including the CM1800, CM200T, CM200D, CM250, and CM 500 products) either alone or in combination with any other product;

5. CipherMax is required to provide notice of the injunction herein to its officers, directors, agents, servants, representatives, attorneys, employees, subsidiaries and affiliates, and those persons in active consort or participation with them;

6. CipherMax is required to employ whatever means are necessary or appropriate to ensure compliance with this final judgment; and

7. This permanent injunction shall be in effect until the expiration of the '035 Patent and the '147 Patent.

IT IS FINALLY ORDERED, ADJUDGED, and DECREED that all costs of suit are taxed against each party incurring the same.

SIGNED this the 22nd day of December 2010.

SAM SPARKS
UNITED STATES DISTRICT JUDGE

AO 120 (Rev. 3/04)

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

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 _____ on the following ☐ Patents or ☐ Trademarks:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
1:08-cv-861-SS	November 24, 2008	US District Court, Western District of Texas, Austin Division

PLAINTIFF	DEFENDANT
Crossroads Systems, Inc.	DataDirect Networks, Inc., et al

PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1		
2		
3 6,425,035		
4 7,051,147		
5		

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

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT
Please see attached Final Judgment.

CLERK	(BY) DEPUTY CLERK	DATE
William G. Putnicki	Mary Cameron	MAR 17 2010

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**

AO 120 (Rev. 2/99)

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

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 X Patents or ☐ Trademarks:

DOCKET NO.	DATE FILED	U.S. DISTRICT COURT
CV 08-05687 HRL	12/19/2008	280 North First St, Rm 2112, San Jose, CA 95121

PLAINTIFF	DEFENDANT
SYMANTEC CORPORATION	CROSSROADS SYSTEMS INC.

	PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
1	7 Pats pg. 2		SEE ATTACHED COMPLAINT
2			
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In the above—entitled case, the following patent(s) have been included:

DATE INCLUDED	INCLUDED BY ☐ Amendment ☐ Answer ☐ Cross Bill ☐ Other Pleading	
PATENT OR TRADEMARK NO.	DATE OF PATENT OR TRADEMARK	HOLDER OF PATENT OR TRADEMARK
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In the above—entitled case, the following decision has been rendered or judgement issued:

DECISION/JUDGEMENT

CLERK	(BY) DEPUTY CLERK	DATE
Richard W. Wieking	Betty Walton	December 19, 2008

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

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LATHAM & WATKINS LLP
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Attorneys for Plaintiff
Symantec Corporation

UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

SAN JOSE DIVISION

SYMANTEC CORPORATION, a Delaware Corporation, Plaintiff, v. CROSSROADS SYSTEMS, INC. a Texas Corporation Defendant.	Case No. C08 05687 HRL COMPLAINT FOR DECLARATORY JUDGMENT DEMAND FOR JURY TRIAL

COMPLAINT

Plaintiff Symantec Corporation ("Symantec") hereby pleads the following claims for Declaratory Judgment against Defendant Crossroads Systems, Inc. ("Crossroads"), and alleges as follows:

PARTIES

1. Plaintiff Symantec is a Delaware Corporation with its principal place of business at 20330 Stevens Creek Boulevard, Cupertino, California 95014-2132.

2. On information and belief, Defendant Crossroads is a Texas Corporation with its principal place of business at 11000 MoPac Expressway, Austin, Texas, 78759.

JURISDICTION AND VENUE

3. The Court has subject matter jurisdiction over this action and the matter pleaded herein under 28 U.S.C. §§ 1331 and 1338(a) because the action arises under the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 *et seq.*, and the Patent Act of the United States, 35 U.S.C. § 1, *et seq.*

4. Venue is proper in the United States District Court for the Northern District of California pursuant to 28 U.S.C. § 1391(b)(2) in that a substantial part of the acts giving rise to the claim occurred in this District, and Crossroads is subject to personal jurisdiction in this District.

INTRADISTRICT ASSIGNMENT

5. This action for a declaratory judgment of non-infringement and invalidity of patents is assigned on a district-wide basis under Civil L.R. 3-2(c).

GENERAL ALLEGATIONS

6. This action involves U.S. Patent No. 5,941,972 ("the '972 patent") attached hereto as Exhibit A, U.S. Patent No. 6,425,035 ("the '035 patent"), attached hereto as Exhibit B, U.S. Patent No. 6,421,753 ("the '753 patent"), attached hereto as Exhibit C, U.S. Patent No. 6,763,419 ("the '419 patent"), attached hereto as Exhibit D, U.S. Patent No. 6,738,854 ("the '854 patent"), attached hereto as Exhibit E, U.S. Patent No. 6,789,152 ("the '152 patent"), attached hereto as Exhibit F, and U.S. Patent No. 7,051,147 ("the '147 patent"), attached hereto as Exhibit G (collectively "the patents-in-suit"). The '035, '753, '419, '854, '152 and '147 patents all claim priority to the '972 patent.

7. On August 26, 2004, Crossroads sent a letter to Veritas Software Corporation ("Veritas") offering Veritas a license to the '972 and '035 patents in exchange, in part, for "a

royalty rate as a percentage of the net sales of [Veritas] products covered by the '972 or '035 Patents."

8. Veritas requested Crossroads to provide Veritas with the basis for Crossroads' assertions that any of the products or offerings of Veritas were covered by any claims of the '972 and/or '035 patents. Crossroads indicated that it could not provide such information to Veritas without a non-disclosure agreement in place. The parties discussed the non-disclosure agreement for a short period, but did not ultimately reach such an agreement. Veritas again requested Crossroads' basis for its claims. But the basis was never provided and the parties had no further communication after the first quarter of 2005 until Crossroads suddenly reappeared in December of 2008. In 2005, Symantec acquired Veritas.

9. On December 12, 2008, Crossroads sent a letter to Symantec offering a license to the patents-in-suit for "any/all products, potentially including the various storage foundation products acquired from Veritas" in exchange, in part, for "a running royalty on the net sales of products using the patented access controls feature."

10. Upon information and belief, Crossroads contends that one or more of Symantec's products infringe one or more claims of the patents-in-suit and that those claims are valid, although it still has provided Symantec with no basis for such contentions.

11. Symantec denies that any of its products infringe any claim of the patents-in-suit, and also denies that the patents-in-suit are valid.

FIRST CLAIM FOR RELIEF

Declaratory Relief Regarding Non-Infringement

12. Symantec incorporates herein the allegations of paragraphs 1-11.

13. An actual and justiciable controversy exists between Plaintiff Symantec and Defendant Crossroads as to the non-infringement of the patents-in-suit, which is evidenced by Crossroads' allegations that Veritas' products, later acquired by Symantec, as well as other Symantec products infringe valid claims of the patents-in-suit, and Symantec's allegations herein.

14. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 *et seq.*, Symantec requests the declaration of the Court that Symantec does not infringe and has not infringed any claim of the patents-in-suit.

SECOND CLAIM FOR RELIEF

Declaratory Relief Regarding Invalidity

15. Symantec incorporates herein the allegations of paragraphs 1-11.

16. An actual and justiciable controversy exists between Plaintiff Symantec and Defendant Crossroads as to the invalidity of the patents-in-suit, which is evidenced by Crossroads' allegations that Veritas' products, later acquired by Symantec, as well as other Symantec products infringe valid claims of the patents-in-suit, and Symantec's allegations herein.

17. Pursuant to the Federal Declaratory Judgment Act, 28 U.S.C. § 2201 *et seq.*, Symantec requests the declaration of the Court that the patents-in-suit are invalid under the Patent Act, 35 U.S.C. §§ 41 *et seq.*, including but not limited to sections 102, 103, and 112.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Symantec respectfully requests that the Court enter declaratory judgment as follows:

1. That Symantec does not infringe and has not infringed, directly or indirectly, any of the patents-in-suit;

2. That the patents-in-suit are invalid;

3. That Crossroads, and all persons acting on its behalf or in concert with it, be permanently enjoined and restrained from charging, orally or in writing, that any of the patents-in-suit is infringed by Symantec, directly or indirectly;

4. That Symantec be awarded its costs, expenses and reasonable attorney fees in this action; and

5. That Symantec be awarded such other and further relief as the Court may deem appropriate.

DEMAND FOR JURY TRIAL

Plaintiff Symantec respectfully demands a jury trial in this action.

Dated: December 19, 2008

LATHAM & WATKINS LLP

By _____
Mark A. Flagel
Attorneys for Plaintiff
SYMANTEC CORPORATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
NOTIFICATION OF LARGE ENTITY STATUS	Atty. Docket No. **CROSS1120-13**

Applicant: **Geoffrey B. Hoese, et al.**	
Application No. **10/658,163**	Filing Date: **09/09/2003**
Patent No. **7,051,147**	Issue Date **05/23/2006**
For: **Storage Router and Method for Providing Virtual Local Storage**	
Group Art: **2182**	Confirmation No. **5675**

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

Certificate of Transmission Under 37 C.F.R. § 1.8

I hereby certify that this correspondence is being deposited electronically with the U.S. Patent and Trademark Office using the United States Patent and Trademark Office's EFS-Web system on June 9, 2008.

Janice Pampell

Janice Pampell

Dear Sir:

On review of the file for this matter, it appears that all the proper fees have been paid. While this notification may be redundant, we hereby submit this notification that the assignee of the above-referenced patent is a large entity.

While Applicant does not believe any further fees are due and owing, the Commissioner is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

Respectfully submitted,

Sprinkle IP Law Group

John L. Adair
Reg. No. 48,828

Dated: June 6, 2008

1301 W. 25th Street
Suite 408
Austin, TX 78705
Tel. 512-637-9220
Fax. 512-371-9088

Electronic Acknowledgement Receipt

EFS ID:	3421245
Application Number:	10658163
International Application Number:	
Confirmation Number:	5675
Title of Invention:	STORAGE ROUTER AND METHOD FOR PROVIDING VIRTUAL LOCAL STORAGE
First Named Inventor/Applicant Name:	Geoffrey B. Hoese
Customer Number:	44654
Filer:	John L. Adair/Janice Pampell
Filer Authorized By:	John L. Adair
Attorney Docket Number:	CROSS1120-13
Receipt Date:	09-JUN-2008
Filing Date:	09-SEP-2003
Time Stamp:	09:58:02
Application Type:	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	Miscellaneous Incoming Letter	CROWSS1120-13_Notification_of_Large_Entity_Status.pdf	26724 019e69ee3825db37438f835876a6f39f03a3ce97	no	1
Warnings:					
Information:					

Total Files Size (in bytes):	26724

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.

03-15-06

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 (571) 273-2885

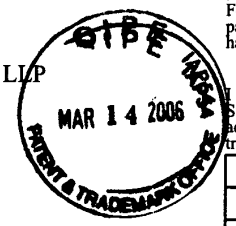
INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence 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)

25094 7590 01/20/2006

DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

44654
Sprinkle IP Law Group
1301 W. 25th Street, Suite 408
Austin, Texas 78705



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~~ Express class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Stacy Sutton Kerby	(Depositor's name)
Stacy Sutton Kerby	(Signature)
March 14, 2006	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13	5675

TITLE OF INVENTION: STORAGE ROUTER AND METHOD FOR PROVIDING VIRTUAL LOCAL STORAGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$300	$1000	04/20/2006

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHIN, CHRISTOPHER B	2182	710-001000

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 Sprinkle IP Law Group
2
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

Crossroads Systems, Inc.

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

Austin, TX

03/16/2006 BABRAHA2 00000046 10658163
01 FC:1501 1400.00 OP
02 FC:1504 300.00 OP
03 FC:8001 3.00 OP

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 1

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 50-3183 (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 _____ Date 3/14/06

Typed or printed name John ADAIR Registration No. 48,828

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.

TRANSMITTAL OF PAYMENT OF ISSUE FEE (LARGE Entity) 37 C.F.R. 1.311)				Docket No. CROSS1120-13
Applicant(s)				
Application No. 10/658,163	Filing Date 09/09/2003	Examiner Shin, Christopher B.	Group Art Unit 2182	Confirmation No. 5675
Title:				

Mail Stop: Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Transmitted herewith are the following items in reference to the above-identified application:

- ☒ Issue Fee Transmittal Form PTOL-85
- ☒ Issue Fee: $1,400.00
- ☒ Publication Fee $300.00
- ☒ Advanced Order - No. of Copies 1/ Fee $3.00
- ☐ Letter to Official Draftsperson and Formal Drawings
- ☒ Postcard

- ☒ A check in the amount of **$1703.00** is attached
- ☐ The Director is hereby authorized to charge Deposit Account No. 50-3183 of Sprinkle IP Law Group the above-noted fee
- ☒ The Director is hereby authorized to charge any deficiencies or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

John L. Adair
Reg. No. 48,828

Customer No. 44654
Sprinkle IP Law Group
1301 W. 25th Street, Suite 408
Austin, Texas 78705
Tel. (512) 637-9223
Fax. (512) 371-9088

Certificate of Mailing Under 37 C.F.R. 1.10

I hereby certify that this document and fee is being deposited with the U.S. Postal Service as Express Mail No. **EV828700999US** in an envelope addressed to Mail Stop: Issue Fee, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on March 14 **2006**.

Stacy Sutton Kerby

UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13

CONFIRMATION NO. 5675

OC000000018039068

OC000000018039068

44654
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

Date Mailed: 02/10/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/26/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

ALBERTHA L JACKSON
2100 (571) 272-3594

ATTORNEY/APPLICANT COPY

Issue Classification	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/658,163	HOESE ET AL.	
	Examiner	Art Unit	
	Christopher B. Shin	2182	

ISSUE CLASSIFICATION

ORIGINAL CLASS	ORIGINAL SUBCLASS	CROSS REFERENCE(S) CLASS	CROSS REFERENCE(S) SUBCLASS (ONE SUBCLASS PER BLOCK)
710	305	710	11
INTERNATIONAL CLASSIFICATION		709	258
G 0 6 F	13/00		
	/		
	/		
	/		
	/		

(Assistant Examiner) (Date)

(Legal Instruments Examiner) 1-10-06 (Date)

CHRISTOPHER SHIN
PRIMARY EXAMINER
OF 2182

(Primary Examiner) 1-4-06 (Date)

Total Claims Allowed: ~~21~~ 39

O.G. Print Claim(s)	O.G. Print Fig.
1	3

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181
	2		32		62		92		122		152		182
	3		33		63		93		123		153		183
	4		34		64		94		124		154		184
	5		35		65		95		125		155		185
	6		36		66		96		126		156		186
	7		37		67		97		127		157		187
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	9		39		69		99		129		159		189
	10		40		70		100		130		160		190
	11		41		71		101		131		161		191
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	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

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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 NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13

CONFIRMATION NO. 5675

OC000000018039068
OC000000018039068

44654
SPRINKLE IP LAW GROUP
1301 W. 25TH STREET
SUITE 408
AUSTIN, TX 78705

Date Mailed: 02/10/2006

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/26/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

ALBERTHA L JACKSON
2100 (571) 272-3594

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13

CONFIRMATION NO. 5675

25094
DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

OC000000018039055
OC000000018039055

Date Mailed: 02/10/2006

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/26/2005.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

ALBERTHA L JACKSON
2100 (571) 272-3594

OFFICE 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

NOTICE OF ALLOWANCE AND FEE(S) DUE

25094 7590 01/20/2006

DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

EXAMINER	
SHIN, CHRISTOPHER B	
ART UNIT	**PAPER NUMBER**
2182	

DATE MAILED: 01/20/2006

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13	5675

TITLE OF INVENTION: STORAGE ROUTER AND METHOD FOR PROVIDING VIRTUAL LOCAL STORAGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$300	$1000	04/20/2006

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.

PTOL-85 (Rev. 07/05) Approved for use through 04/30/2007.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: Mail **Mail Stop ISSUE FEE**
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25094 7590 01/20/2006

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13	5675

TITLE OF INVENTION: STORAGE ROUTER AND METHOD FOR PROVIDING VIRTUAL LOCAL STORAGE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE	PUBLICATION FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	$700	$300	$1000	04/20/2006

EXAMINER	ART UNIT	CLASS-SUBCLASS
SHIN, CHRISTOPHER B	2182	710-001000

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 _____
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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

4a. The following fee(s) are enclosed:
- ☐ Issue Fee
- ☐ Publication Fee (No small entity discount permitted)
- ☐ Advance Order - # of Copies _____

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 _____ (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.
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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.

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13	5675

25094 7590 01/20/2006

DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

EXAMINER	
SHIN, CHRISTOPHER B	

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 01/20/2006

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 0 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 0 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.

PTOL-85 (Rev. 07/05) Approved for use through 04/30/2007.

Notice of Allowability	Application No. 10/658,163	Applicant(s) HOESE ET AL.	
	Examiner Christopher B. Shin	Art Unit 2182	

-- 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 *the AF received December 20, 2005*.

2. ☒ The allowed claim(s) is/are *15-53*.

3. ☐ 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.

4. ☐ 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.

5. ☐ 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).

6. ☐ 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 Draftperson'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 _____.

CHRISTOPHER B. SHIN
PRIMARY EXAMINER
GROUP 2182

AF

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
REPLY TO OFFICE ACTION DATED 11/01/2005	Atty. Docket No. **CROSS1120-13**

Applicant **Geoffrey B. Hoese**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

Commissioner for Patents
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Alexandria, VA 22313-1450

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Julie H. Blackard
Signature

Julie H. Blackard
Printed Name

In response to the Official Action mailed November 1, 2005, Applicant respectfully requests the Examiner reconsider the rejections of the Claims in view of this reply.

O/C

XO

1-4-06

Issue Classification	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/658,163	HOESE ET AL.	
	Examiner	Art Unit	
	Christopher B. Shin	2182	

ISSUE CLASSIFICATION

ORIGINAL		CROSS REFERENCE(S)							
CLASS	SUBCLASS	CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)						
710	305	710	11						
INTERNATIONAL CLASSIFICATION		709	258						
G 0 6 F	13/00								
	/								
	/								
	/								
	/								

(Assistant Examiner) (Date)

(Legal Instruments Examiner) 1-10-06 (Date)

CHRISTOPHER SHIN
PRIMARY EXAMINER
OF 2182

(Primary Examiner) 1-4-06 (Date)

Total Claims Allowed: 21

O.G. Print Claim(s)	O.G. Print Fig.
1	3

☒ Claims renumbered in the same order as presented by applicant ☐ CPA ☐ T.D. ☐ R.1.47

Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
	1		31		61		91		121		151		181
	2		32		62		92		122		152		182
	3		33		63		93		123		153		183
	4		34		64		94		124		154		184
	5		35		65		95		125		155		185
	6		36		66		96		126		156		186
	7		37		67		97		127		157		187
	8		38		68		98		128		158		188
	9		39		69		99		129		159		189
	10		40		70		100		130		160		190
	11		41		71		101		131		161		191
	12		42		72		102		132		162		192
	13		43		73		103		133		163		193
	14		44		74		104		134		164		194
	15		45		75		105		135		165		195
	16		46		76		106		136		166		196
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	23		53		83		113		143		173		203
	24		54		84		114		144		174		204
	25		55		85		115		145		175		205
	26		56		86		116		146		176		206
	27		57		87		117		147		177		207
	28		58		88		118		148		178		208
	29		59		89		119		149		179		209
	30		60		90		120		150		180		210

Search Notes	Application/Control No.	Applicant(s)/Patent under Reexamination
	10/658,163	HOESE ET AL.
	Examiner	Art Unit
	Christopher B. Shin	2182

SEARCHED			
Class	Subclass	Date	Examiner
710	1-5	10/24/2005	CBS
710	8-13	10/24/2005	CBS
710	22-28	10/24/2005	CBS
710	305-306	10/24/2005	CBS
710	250	10/24/2005	CBS
709	258	10/24/2005	CBS
714	42	10/24/2005	CBS
711	112,113	10/24/2005	CBS
711	110	10/24/2005	CBS
710	126-131	10/24/2005	CBS
710	36-38	10/24/2005	CBS

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner
710	**305, 11**	1/3/2006	**CBS**
709	258	1/3/2006	CBS

SEARCH NOTES (INCLUDING SEARCH STRATEGY)		
	DATE	EXMR
PLUS	1/12/2005	CBS
PALM - for double patenting	1/13/2005	CBS
EAST (USPAT, EPO, JPO, DERWENT, IBMTDB)	1/15/2005	CBS
PALM - for double patenting	10/24/2005	CBS
PARENT & RELATED CASES WERE REVIEWED FOR THE ALLOWANCE	10/24/2005	CBS
CHECKED WITH EXR CHAN ALLEN FOR ALL OF THE RELATED RE-EXAM CASES FOR THE ALLOWANCE	10/24/2005	CBS

AFS

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
REPLY TO OFFICE ACTION DATED 11/01/2005	Atty. Docket No. **CROSS1120-13**

Applicant **Geoffrey B. Hoese**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

Commissioner for Patents
P.O. Box 1450
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Julie H. Blackard
Signature

JULIE H. BLACKARD
Printed Name

In response to the Official Action mailed November 1, 2005, Applicant respectfully requests the Examiner reconsider the rejections of the Claims in view of this reply.

IN THE CLAIMS:

Please amend the claims as follows. The claims are in the format as required by 35 C.F.R. § 1.121.

1-14 Cancelled

15. (Previously Presented) A storage router for providing virtual local storage on remote storage devices to a device, comprising:

a buffer providing memory work space for the storage router;

a first Fibre Channel controller operable to connect to and interface with a first Fibre Channel transport medium;

a second Fibre Channel controller operable to connect to and interface with a second Fibre Channel transport medium; and

a supervisor unit coupled to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable:

to maintain a configuration for remote storage devices connected to the second Fibre Channel transport medium that maps between the device and the remote storage devices and that implements access controls for storage space on the remote storage devices; and

to process data in the buffer to interface between the first Fibre Channel controller and the second Fibre Channel controller to allow access from Fibre Channel initiator devices to the remote storage devices using native low level, block protocol in accordance with the configuration.

16. (Previously Presented) The storage router of claim 15, wherein the configuration maintained by the supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.

17. (Previously Presented) The storage router of claim 16, wherein the Fibre Channel devices comprise workstations.

18. (Previously Presented) The storage router of claim 16, wherein the remote storage devices comprise hard disk drives.

19. (Previously Presented) The storage router of claim 15, wherein each of the first Fibre Channel controller comprises:

a Fibre Channel (FC) protocol unit operable to connect to the Fibre Channel transport medium;

a first-in-first-out queue coupled to the Fibre Channel protocol unit; and

a direct memory access (DMA) interface coupled to the first-in-first-out queue and to the buffer.

20. (Previously Presented) A storage network, comprising:

a first Fibre Channel transport medium;

a second Fibre Channel transport medium;

a plurality of workstations connected to the first Fibre Channel transport medium;

a plurality of storage devices connected to the second Fibre Channel transport medium; and

a storage router interfacing between the first Fibre Channel transport medium and the second Fibre Channel transport medium, the storage router providing virtual local storage on the storage devices to the workstations and operable:

to map between the workstations and the storage devices;

to implement access controls for storage space on the storage devices; and

to allow access from the workstations to the storage devices using native low level, block protocol in accordance with the mapping and access controls.

21. (Previously Presented) The storage network of claim 20, wherein the access controls include an allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation.

22. (Previously Presented) The storage network of claim 20, wherein the storage devices comprise hard disk drives.

23. (Previously Presented) The storage network of claim 20, wherein the storage router comprises:

a buffer providing memory work space for the storage router;

a first Fibre Channel controller operable to connect to and interface with the first Fibre Channel transport medium, the first Fibre Channel controller further operable to pull outgoing

data from the buffer and to place incoming data into the buffer;

a second Fibre Channel controller operable to connect to and interface with the second Fibre Channel transport medium, the second Fibre Channel controller further operable to pull outgoing data from the buffer and to place incoming data into the buffer; and

a supervisor unit coupled to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable:

to maintain a configuration for the storage devices that maps between workstations and storage devices and that implements the access controls for storage space on the storage devices; and

to process data in the buffer to interface between the first Fibre Channel controller and the second Fibre Channel controller to allow access from workstations to storage devices in accordance with the configuration.

24. (Previously Presented) A method for providing virtual local storage on remote storage devices to Fibre Channel devices, comprising:

interfacing with a first Fibre Channel transport medium;

interfacing with a second Fibre Channel transport medium;

maintaining a configuration for remote storage devices connected to the second Fibre Channel transport medium that maps between Fibre Channel devices and the remote storage devices and that implements access controls for storage space on the remote storage devices; and

allowing access from Fibre Channel initiator devices to the remote storage devices using native low level, block protocol in accordance with the configuration.

25. (Previously Presented) The method of claim 24, wherein maintaining the configuration includes allocating subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.

26. (Previously Presented) The method of claim 25, wherein the Fibre Channel devices comprise workstations.

27. (Previously Presented) The method of claim 25, wherein the remote storage devices comprise hard disk drives.

28. (Previously Presented) An apparatus for providing virtual local storage on a remote storage device to a device operating according to a Fibre Channel protocol, comprising:

a first controller operable to connect to and interface with a first transport medium, wherein the first transport medium is operable according to the Fibre Channel protocol;

a second controller operable to connect to and interface with a second transport medium, wherein the second transport medium is operable according to the Fibre Channel protocol; and

a supervisor unit coupled to the first controller and the second controller, the supervisor unit operable to control access from the device connected to the first transport medium to the remote storage device connected to the second transport medium using native low level, block protocols according to a map between the device and the remote storage device.

29. (Previously Presented) The apparatus of Claim 28, wherein the supervisor unit is further operable to maintain a configuration wherein the configuration includes the map between the device and the remote storage device, and further wherein the map includes virtual LUNs that provide a representation of the storage device.

30. (Previously Presented) The apparatus of Claim 29, wherein the map only exposes the device to LUNs that the device may access.

31. (Previously Presented) The apparatus of Claim 28, wherein the supervisor unit is further operable to maintain a configuration including the map, wherein the map provides a mapping from a host device ID to a virtual LUN representation of the remote storage device to a physical LUN of the remote storage device.

32. (Previously Presented) The apparatus of Claim 28, wherein the remote storage device further comprises storage space partitioned into virtual local storage for the device connected to the first transport medium.

33. (Previously Presented) The apparatus of Claim 32, wherein the supervisor unit is further operable to prevent the device from accessing any storage on the remote storage device that is not part of a virtual local storage partition assigned to the device

34. (Previously Presented) The apparatus of Claim 28, wherein the first controller and the second controller further comprise a single controller.

35. (Previously Presented) A system for providing virtual local storage on remote storage devices, comprising:

a first controller operable to connect to and interface with a first transport medium operable according to a Fibre Channel protocol;

a second controller operable to connect to and interface with a second transport medium operable according to the Fibre Channel protocol;

at least one device connected to the first transport medium;

at least one storage device connected to the second transport medium; and

an access control device coupled to the first controller and the second controller, the access control device operable to:

map between the at least one device and a storage space on the at least one storage device; and

control access from the at least one device to the at least one storage device using native low level, block protocol in accordance with the map.

36. (Previously Presented) The system of Claim 35, wherein the access control device is further operable to maintain a configuration wherein the configuration includes the map between the at least one device and the at least one storage device, and further wherein the map includes virtual LUNs that provide a representation of the at least one storage device.

37. (Previously Presented) The system of Claim 36, wherein the map only exposes the at least one device to LUNs that the at least one device may access.

38. (Previously Presented) The system of Claim 35, wherein the access control device is further operable to maintain a configuration including the map, wherein the map provides a mapping from a host device ID to a virtual LUN representation of the at least one storage device to a physical LUN of the at least one storage device.

39. (Previously Presented) The system of Claim 35, wherein the at least one storage device further comprises storage space partitioned into virtual local storage for the at least one device.

40. (Previously Presented) The system of Claim 39, wherein the access control unit is further operable to prevent at least one device from accessing any storage on the at least one storage device that is not part of a virtual local storage partition assigned to the at least one device.

41. (Previously Presented) The system of Claim 35, wherein the first controller and the second controller further comprise a single controller.

42. (Previously Presented) A method for providing virtual local storage on remote storage devices, comprising:

mapping between a device connected to a first transport medium and a storage device connected to a second transport medium, wherein the first transport medium and the second transport medium operate according to a Fibre Channel protocol;

implementing access controls for storage space on the storage device; and

allowing access from the device connected to the first transport medium to the storage device using native low level, block protocols.

43. (Previously Presented) The method of Claim 42, further comprising maintaining a configuration wherein the configuration includes a map between the device and the one storage device, and further wherein the map includes virtual LUNs that provide a representation of the storage device.

44. (Previously Presented) The method of Claim 43, wherein the map only exposes the device to LUNs that the device may access.

45. (Previously Presented) The method of Claim 42, further comprising maintaining a configuration including a map from a host device ID to a virtual LUN representation of the storage device to a physical LUN of the storage device.

46. (Previously Presented) The method of Claim 42, further comprising partitioning storage space on the storage device into virtual local storage for the device.

47. (Previously Presented) The method of Claim 46, further comprising preventing the device from accessing any storage on the storage device that is not part of a virtual local storage partition assigned to the device.

48. (Previously Presented) A system for providing virtual local storage, comprising:

a host device;

a storage device remote from the host device, wherein the storage device has a storage space;

a first controller;

a second controller

a first transport medium operable according to a Fibre Channel protocol, wherein the first transport medium connects the host device to the first controller;

a second transport medium operable according to the Fibre Channel protocol, wherein the second transport medium connects the second controller to the storage device;

a supervisor unit coupled to the first controller and the second controller, the supervisor unit operable to:

maintain a configuration that maps between the host device and at least a portion of the storage space on the storage device; and

implement access controls according to the configuration for the storage space on the storage device using native low level, block protocol.

49. (Previously Presented) The system of Claim 48, wherein the supervisor unit is further operable to:

maintain a configuration that maps from the host device to a virtual representation of at least a portion of the storage space on the storage device to the storage device; and

allow the host device to access only that portion of the storage space that is contained in the map.

50. (Previously Presented) The system of Claim 49, wherein the configuration comprises a map from a host device ID to a virtual LUN representation of the storage device to a physical LUN of the storage device.

51. (Previously Presented) The system of Claim 48, wherein the storage device further comprises storage space partitioned into virtual local storage for the host device.

52. (Previously Presented) The system of Claim 51, wherein the supervisor unit is further operable to prevent the host device from accessing any storage on the storage device that is not part of a virtual local storage partition assigned to the host device.

53. (Previously Presented) The apparatus of Claim 48, wherein the first controller and the second controller further comprise a single controller.

REMARKS

Applicant appreciates the time taken by the Examiner to review Applicant's present application. This application has been carefully reviewed in light of the Official Action mailed November 1, 2005. Applicant respectfully requests reconsideration and favorable action in this case.

Double Patenting Rejection

Applicant respectfully wishes to clarify that Applicant agreed that some aspects of the present invention are consistent with items addressed in issued applications and copending applications and reexaminations. Additionally Applicant agreed to submit a terminal disclaimer to obviate the Examiner's double patenting rejection. The submission of the terminal disclaimer is not an admission as to the propriety of the double patenting rejection. *See*, MPEP 804.02.

In the double patenting rejection, the Examiner listed the following related cases. To aid the Examiner, Applicant provides the following listing and status of each of the cases

09/001,799 issued as 5,941,972, under reexamination as 90/007,123 and 90/007,317
09/354,682 issued as 6,421,753, under reexamination as 90/007,124
09/081,110 issued as 6,789,152
10/081,114 now abandoned
10/023,786 now abandoned
09/965,335 issued as 6,425,035, under reexamination as 90/007,125
10/174,720 issued as 6,738,854, under reexamination as 90/007,127
09/965,339 issued as 6,425,036, under reexamination as 90/007,126
10/081,082 now abandoned
10/361,283 issued as 6,763,419
10/638,955 now abandoned
10/640,468 now abandoned
11/191,254 pending

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

Respectfully submitted,

Sprinkle IP Law Group
Attorneys for Applicant

John L. Adair
Reg. No. 48,828

Date: 12/14/05

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT	Atty. Docket No. **CROSS1120-13**
Applicant **Geoffrey B. Hoese, et al.**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

Certificate of Mailing Under 37 C.F.R. §1.8

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 on **December 15, 2005.**

Julie H. Blackard

Name

JULIE H. BLACKARD

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

Dear Sir:

Crossroads Systems, Inc., the owner of one hundred percent (100%) interest in the instant application, as evidenced by the Assignment Recorded on December 31, 1997 on Reel/Frame: 8929/0290 hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. § 154 to 156 and 173 of U.S. Patent Nos. 5,941,972, 6,421,753, 6,425,036, 6,425,035, 6,789,152, 6,738,854, and 6,763,419 or shortened by any terminal disclaimer filed prior to the grant of any patent granted on co-pending Application Nos. 90/007,123, 90/007,124, 90/007,125, 90/007,126, 90/007,127, 11/191,254, and 90/007,317. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and any patent granted on the co-pending applications are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

12/21/2005 DEMMANU1 00000034 503183 10658163
01 FC:2814 65.00 DA

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. § 154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check box 1, 2, 3, or 4 as appropriate.

1. ☐ For submission on behalf of an organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

* Statement under 37 C.R.F. 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

2. ☒ The undersigned is an attorney or agent of record.

3. ☐ Terminal disclaimer fee under 37 C.F.R. 1.20(d) included.

4. ☒ The Commissioner is hereby authorized to deduct the required fee, and/or any deficiencies or credit any overpayments regarding this application from deposit account 50-3183 of Sprinkle IP Law Group.

John L. Adair — Dated 12/15/05

10/658163

Application or Docket Number

PATENT APPLICATION FEE DETERMINATION RECORD
Effective January 1, 2003

CLAIMS AS FILED - PART I

	(Column 1)		(Column 2)
TOTAL CLAIMS	53		
FOR	NUMBER FILED		NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	39 minus 20=	*	19
INDEPENDENT CLAIMS	7 minus 3 =	*	4
MULTIPLE DEPENDENT CLAIM PRESENT			☐

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

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=	171	OR	X$18=	
X42=	798	OR	X84=	
+140=		OR	+280=	
TOTAL	1173	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 34	Minus	** 39	=
Independent	* 7	Minus	*** 7	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 34	Minus	** 39	=
Independent	* 7	Minus	*** 7	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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

* 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 th "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 th appropriat box in column 1.

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/658,163	HOESE ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 122005	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
James R. Matthews

U.S. Patent and Trademark Office

UNITED STATES PATENT AND TRADEMARK OFFICE

A

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

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13	5675

25094 7590 11/01/2005

DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

EXAMINER	
SHIN, CHRISTOPHER B	

ART UNIT	PAPER NUMBER
2182	

DATE MAILED: 11/01/2005

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

PTO-90C (Rev. 10/03)

Office Action Summary	Application No.	Applicant(s)	
	10/658,163	HOESE ET AL.	
	Examiner	Art Unit	
	Christopher B Shin	2182	

-- 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 *27 July 2005*.

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) *15-53* 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) *15-53* 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 *09 September 2003* 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 *07252005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The amendment received July 27, 2005 has been entered and carefully considered. Claims 15-53 and the applicant's responses were carefully considered.

Interview/Double Patenting Rejection

2. On October 25, 2005, a telephonic interview was conducted and the applicant agreed to file additional Terminal Disclaimer against all of the remaining related pending applications and allowed applications. During the interview, the examiner also kindly asks the applicant to make sure that the present and pending applications to be consistent with the related reexamination applications.

3. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970);and, *In re Thorington*,418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

a. Since the applicant agreed with the examiner regarding the Double Patenting rejection, the details of the rejection would be omitted.

b. The examiner kindly asks the applicant for help on identifying all of the related applications, if the examiner inadvertently makes a mistake. Claim15-53 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims of the related Patent/Applications as follows. Although the conflicting claims are not identical, they are not patentably distinct from each other because the related applications claim subject matter that are substantially identical to the present claimed invention. The following are the list of the related cases:

09/001,799; 09/354,682; 10/081,110; 10/081,114; 10/023,786; 10/081,110; 09/965,335; 10/174,720; 09/965,339; 10/081,082; 10/361,283; 10/638,955; 10/640,468; 10/658,163; 11/191,254; 90/007,123; 90/007,124; 90/007,125; 90/007,126; 90/007,127;& 90/007,327.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher B. Shin whose telephone number is 571-272-4159. The examiner can normally be reached on 6:30-5:00 M,Tu,Th,F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kim Huynh can be reached on 571-272-4147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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).

CHRISTOPHER SHIN
PRIMARY EXAMINER
OF 2182

October 26, 2005
cbs

PTO/SB/08A (04-03)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	10/658,163
Filing Date	09/09/2003
First Named Inventor	Hoese, Geoffrey
Group Art Unit	2182
Examiner Name	Shin, Christopher B.
Attorney Docket Number	CROSS1120-13

Sheet 1 OF 4

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number Number	Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	A1	4,415,970		11/15/1983	Swenson, et al.	
	A2	4,455,605		6/19/1984	Cormier, et al.	
	A3	4,504,927		3/12/1985	Callan	
	A4	4,533,996		8/6/1985	Gartung, et al.	
	A5	4,573,152		2/25/1986	Greene, et al.	
	A6	4,603,380		7/29/1986	Easton, et al.	
	A7	4,620,295		10/28/1986	Aiden, Jr.	
	A8	4,644,462		2/17/1987	Matsubara, et al.	
	A9	4,697,232		9/29/1987	Brunelle, et al.	
	A10	4,787,028		11/22/1988	Finforck, et al.	
	A11	4,807,180		2/21/1989	Takeuchi, et al.	
	A12	4,811,278		3/7/1989	Bean, et al.	
	A13	4,821,179		4/11/1989	Jensen, et al.	
	A14	4,825,406		4/25/1989	Bean, et al.	
	A15	4,827,411		5/2/1989	Arrowood, et al.	
	A16	4,835,674		5/30/1989	Collins, et al.	
	A17	4,864,532		9/5/1989	Reeve, et al.	
	A18	4,897,874		1/30/1990	Lidensky, et al.	
	A19	4,961,224		10/2/1990	Yung	
	A20	5,072,378		12/10/1991	Manka	
	A21	5,077,732		12/31/1991	Fischer, et al.	
	A22	5,077,736		12/31/1991	Dunphy, Jr., et al.	
	A23	5,124,987		6/23/1992	Milligan, et al.	
	A24	5,155,845		10/13/1992	Beal, et al.	
	A25	5,185,876		2/9/1993	Nguyen, et al.	
	A26	5,193,168		3/9/1993	Corrigan, et al.	
	A27	5,193,184		3/9/1993	Belsan, et al.	
	A28	5,202,856		4/13/1993	Glider, et al.	

	A29	5,210,866		5/11/1993	Milligan, et al.	
	A30	5,212,785		5/18/1993	Powers, et al.	
	A31	5,214,778		5/25/1993	Glider, et al.	
	A32	5,226,143		7/6/1993	Baird, et al.	
	A33	6,239,632		08/24/93	Larner	
	A34	5,239,654		8/24/1993	Ing-Simmons	
	A35	5,247,638		9/21/1993	O'Brien, et al.	
	A36	5,247,692		9/21/1993	Fujimura	
	A37	5,297,262		3/22/1994	Cox, et al.	
	A38	5,301,290		4/5/1994	Tetzlaff, et al.	
	A39	5,315,657		5/24/2994	Abadi, et al.	
	A40	5,317,693		7/19/1994	Elko, et al.	
	A41	5,331,673		7/19/1994	Elko, et al.	
	A42	5,361,347		11/1/1994	Glider, et al.	
	A43	5,367,646		11/22/1994	Pardillos, et al.	
	A44	5,379,385		1/3/1995	Shomler	
	A45	5,379,398		1/3/1995	Cohn, et al.	
	A46	5,388,243		2/7/1995	Gilder, et al.	
	A47	5,388,246		2/7/1995	Kasi	
	A48	5,394,526		2/28/1995	Crouse et al.	
	A49	5,396,596		3/7/1995	Hashemi, et al.	
	A50	5,403,639		4/4/1995	Belsan, et al.	
	A51	5,410,667		4/25/1995	Belsan, et al.	
	A52	5,410,697		4/25/1995	Baird, et al.	
	A53	5,416,915		5/16/1995	Mattson, et al.	
	A54	5,418,909		5/23/1995	Jachowski, et al.	
	A55	5,420,988		5/30/1995	Elliott	
	A56	5,423,026		6/6/1995	Cook, et al.	
	A57	5,426,637		6/20/1995	Derby, et al	
	A58	5,430,855		7/4/1995	Wash, et al.	
	A59	5,450,570		9/12/1995	Richek, et al.	
	A60	5,452,421		9/19/1995	Beardsley, et al.	
	A61	5,459,857		10/17/1995	Ludlam, et al.	
	A62	5,463,754		10/31/1995	Beausoleil, et al.	
	A63	5,469,576		11/21/1995	Dauerer, et al.	
	A64	5,471,609		11/28/1995	Yudenfriend	
	A65	5,487,077		1/23/1996	Hassner, et al.	
	A66	5,495,474		2/27/1996	Olnowich, et al.	
	A67	5,496,576		3/5/1996	Jeong	

	A68	5,504,857		4/2/1996	Baird, et al.	
	A69	5,507,032		4/9/1996	Kimura	
	A70	5,511,169		4/23/1996	Suda	
	A71	5,519,695		5/21/1996	Purohit, et al.	
	A72	5,530,845		6/25/1996	Hiatt, et al.	
	A73	5,535,352		7/9/1996	Bridges, et al.	
	A74	5,537,585		7/16/1996	Blickerstaff, et al.	
	A75	5,544,313		8/6/1996	Shachnai, et al.	
	A76	5,548,791		8/20/1996	Casper, et al.	
	A77	5,564,019		10/8/1996	Beausoleil, et al	
	A78	5,568,648		10/22/1996	Coscarella, et al.	
	A79	5,581,709		12/3/1996	Ito, et al.	
	A80	5,581,724		12/3/1996	Belsan et al.	
	A81	5,613,082		3/18/1997	Brewer, et al.	
	A82	5,621,902		4/15/1997	Cases, et al.	
	A83	5,632,012		5/20/1997	Belsan, et al.	
	A84	5,634,111		5/27/1997	Oeda, et al.	
	A85	5,638,518		6/10/1997	Malladi	
	A86	5,642,515		6/24/1997	Jones, et al.	
	A87	5,659,756		8/19/1997	hefferon, et al.	
	A88	5,664,107		9/2/1997	Chatwanni, et al.	
	A89	5,727,218		3/10/1998	Hotchkin	
	A90	5,743,847		4/28/1998	Nakamura, et al.	
	A91	5,781,715		7/14/1998	Sheu	
	A92	5,802,278		9/1/1998	Isfeld, et al.	
	A93	5,805,816		9/8/1998	Picazo, Jr., et al.	
	A94	5,860,137		1/12/1999	Raz, et al.	
	A95	5,867,648		2/2/1999	Foth, et al.	
	A96	5,889,952		3/30/1999	Hunnicutt, et al.	
	A97	5,913,045		6/15/1999	Gillespie, et al.	
	A98	5,923,557		7/13/1999	Eidson	
	A99	5,933,824		8/3/1999	DeKoning, et al.	
	A100	5,935,260		8/10/1999	Ofer	
	A101	5,949,994		9/28/1999	Boggs, et al.	
	A102	5,953,511		9/14/1999	Sescilia, et al.	
	A103	5,959,994		9/28/1999	Boggs, et al.	
	A104	5,974,530		10/26/1999	Young	
	A105	6,021,451		2/1/2000	Bell, et al.	
	A106	6,055,603		4/25/2000	Ofer, et al.	

	A107	6,065,087		5/16/2000	Keaveny, et al.	
	A108	6,073,218		6/6/2000	DeKoning, et al.	
	A109	6,075,863		6/13/2000	Krishnan, et al.	
	A110	6,081,849		6/27/2000	Born, et al.	
	A111	6,098,149		8/1/2000	Ofer, et al.	
	A112	6,108,684		8/22/2000	DeKoning, et al	
	A113	6,118,766		9/12/2000	Akers	
	A114	6,148,004		11/14/2000	Nelson, et al.	
	A115	6,209,023		3/27/2001	Dimitroff, et al.	
	A116	6,230,218		5/8/2001	Casper, et al.	
	A117	6,341,315		1/22/2002	Arroyo, et al.	
	A118	6,343,324		1/29/2002	Hubis, et al.	
	A119	6,425,036		7/23/2002	Hoese, et al.	
	A120	6,484,245		11/19/2002	Sanada, et al.	

Examiner Initials		FOREIGN PATENT DOCUMENTS			Publication Date MM-DD-YYYY (Number 43)	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		Country Code	Number	Kind Code (If known)			
	B1	GB	2341715				
	B2	JP	6301607				
	B3	WO	98/36357		1998		
Examiner Signature					Date Considered	10-25-05	

PTO/SB/08B (08-00)

FORM PTO 1449 US Department of Commerce Patent and Trademark Office		
	Application Number	10/658,163
	Filing Date	09/09/2003
	First Named Inventor	Geoffrey B. Hoese
	Group Art Unit	2182
	Examiner Name	Shin, Christopher B.
Sheet 1 of 7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	Date
	C1	Decision Returning Petition mailed February 28, 2005	
	C2	Block-Based Distributed File Systems, Anthony J. McGregor, July 1997	
	C3	Compaq StorageWorks HSG80 Array Controller ACS Version 8.3 (Maintenance and Service Guide) 11/98	
	C4	Compaq StorageWorks HSG80 Array Controller ACS Version 8.3 (Configuration and CLI Reference Guide) 11/98	
	C5	CRD-5500 SCSI RAID Controller User's Manual CMD Technology, Inc. pp. 1-1 to 6-25, revised November 21, 1996.	11/21/1996
	C6	DIGITAL Storage Works, HSZ70 Array Controller, HSOF Version 7.0 EK-HSZ70-CG. A01, Digital Equipment Corporation, Maynard, Massachusetts	
	C7	DIGITAL StorageWorks HSZ70 Array Controller HSOF Version 7.0 EK-HSZ270-RM. A01 CLI Reference Manual	
	C8	DIGITAL StorageWorks HSZ70 Array Controller HSOF Version 7.0 EK-HSZ70-SV. A01	1997-
	C9	DIGITAL StorageWorks HSG80 Array Controller ACS Version 8.0 (User's Guide 1/98)	
	C10	DP5380 Asynchronous SCSI Interface, National Semiconductor Corporation, Arlington, TX, May 1989, pp. 1-32	
	C11	Emerson, "Ancor Communications: Performance evaluation of switched fibre channel I/O system using--FCP for SCSI" February 1995, IEEE, pp. 479-484	2/1/1995
	C12	Fibre Channel and ATM: The Physical Layers, Jerry Quam WESCON/94, published 27-29 September 1994. Pages 648-652.	
	C13	Fiber Channel storage interface for video-on-demand servers by Anazaloni, et al.	6/15/1905
	C14	Gen5 S-Series XL System Guide Revision 1.01 by Chen	6/18/1905
	C15	Graphical User Interface for MAXSTRAT Gen5/Gen-S Servers User's guide 1.1	6/11/1996
	C16	High Performance Data transfers Using Network-Attached Peripherals at the national Storage Laboratory by Hyer	2/26/1993
	C17	IFT-3000 SCSI to SCSI Disk array Controller Instruction Manual Revision 2.0 by Infotrend Technologies, Inc.	1995-
	C18	Implementing a Fibre Channel SCSI transport by Snively	1994-
	C19	"InfoServer 150--Installation and Owner's Guide", EK-INFSV-OM-001, Digital Equipment Corporation, Maynard, Massachusetts 1991, Chapters 1 and 2	
	C20	InfoServer 150VXT Photograph	
	C21	Infoserver 100 System Operations Guide, First Edition Digital Equipment Corporation, 1990	
	C22	Johnson, D.B., et al., "The Peregrine High Performance RPC System", Software-Practice and Experience, 23(2):201-221, Feb. 1993	
	C23	Local-Area networks for the IBM PC by Haugdahl	
	C24	Misc. Reference Manual Pages, SunOS 5.09	

FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
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				Examiner Name	Shin, Christopher B.
Sheet	2	of	7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS	Date
	C25	New serial I/Os speed storage subsystems by Bursky	2/6/1995
	C26	Petal: Distributed Virtual Disks, Edward K. Lee and Chandramohan A. Thekkath, ACM SIGPLAN Notices, Volume 31, Issue 9, September 1996, pages 84-92.	
	C27	Pictures of internal components of the InfoServer 150, taken from http://bindarydinosaurs.couk/Museum/Digital/infoserver/infoserver.php in Nov. 2004.	
	C28	Raidtec FibreArray and Raidtec FlexArray UltraRAID Systems", Windows IT PRO Article, October 1997	
	C29	S.P. Joshi, "Ethernet controller chip interfaces with variety of 16-bit processors," electronic Design, Hayden Publishing Co., Inc., Rochelle Part, NJ, October 14, 1982. pp 193-200	
	C30	Simplest Migration to Fibre Channel Technology" Article, Digital Equipment Corporation, November 10, 1997, published on PR Newswire	11/10/1997
	C31	Systems Architectures Using Fibre Channel, Roger Cummings, Twelfth IEEE Symposium on Mass Storage Systems, Copyright 1993 IEEE. Pages 251-256	
	C32	Dot Hill's Request to Exceed Page Limit in Motion for Summary Judgment filed June 29, 2005. Case No. A-03-CV-754 (SS)	
	C33	Request for Ex Parte Reexamination for 6,425,035. Third Party Requester: William A. Blake	
	C34	Request for Ex Parte Reexamination for 6,425,035. Third Party Requester: Natu J. Patel	
	C35	Office Action dated 01/21/03 for 10/174,720 (CROSS1120-8)	1/21/2003
	C36	Office Action dated 02/27/01 for 09/354,682 (CROSS1120-1)	2/27/2001
	C37	Office Action dated 08/11/00 for 09/354,682 (CROSS1120-1)	8/11/2000
	C38	Office Action dated 12/16/99 for 09/354,682 (CROSS1120-1)	12/16/1999
	C39	Office Action dated 11/06/02 for 10/023,786 (CROSS1120-4)	11/6/2002
	C40	Office Action dated 01/21/03 for 10/081,110 (CROSS1120-5)	1/21/2003
	C41	Office Action in Ex Parte Reexamination 90/007,127, mailed 02/07/05.	2/7/2005
	C42	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,127 filed on 04/06/05.	
	C43	Office Action in Ex Parte Reexamination 90/007,125, mailed 02/07/05.	2/7/2005
	C44	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,125 and 90/007,317 filed on 04/06/05.	
	C45	Office Action in Ex Parte Reexamination 90/007,126, mailed 02/07/05.	2/7/2005
	C46	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,126 filed on 04/06/05.	
	C47	Office Action in Ex Parte Reexamination 90/007,124, mailed 02/07/05.	2/7/2005
	C48	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,124 filed on 04/06/05.	
	C49	Office Action in Ex Parte Reexamination 90/007,123, mailed 02/07/05.	2/7/2005

FORM PTO 1449 US Department of Commerce Patent and Trademark Office			Application Number	10/658,163
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			Examiner Name	Shin, Christopher B.
Sheet 3	of 7		Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	Date
	C50	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,123 filed on 04/05/05.	
	C51	European Office Action issued April 1, 2004 in Application No. 98966104.6-2413	4/1/2004
	C52	Fiber Channel (FCS)/ATM Interworking: A Design Solution by Anzaloni, et al.	
		Copies of the following are on the attached CD-Rom	
	C53	Defendant's First Supplemental Trial Exhibit List, Crossroads Systems, Inc., v. Chaparral Network Storage, Inc., C.A. No. A-00CA-217-SS (W.D. Tex. 2001). **(CD-Rom)**.	
	C54	Defendant's Third Supplemental Trial Exhibit List, Crossroads Systems, Inc. v. Pathlight Technology, Inc., C.A. No. A-00CA-248-SS (W.D. Tex. 2001) **(CD-Rom)**.	
	C55	Defendant Chaparral Network Storage, Inc.'s First Supplemental Trial Exhibit List (D1 through D271) (**CD-ROM** Chaparral Exhibits ExList_Def).	9/2/2001
	C56	Plaintiff's Fourth Amended Trail Exhibit List, Crossroads Systems, Inc. v. Chaparral Network Storage, Inc, C.A. No. A-00CA-217-SS (W.D. Tex. 2001) **(CD-Rom)**.	9/11/2001
	C57	Plaintiff's Revised Trial Exhibit List, Crossroads Systems, Inc. v. Pathlight Technology, Inc., C.A. No. A-00CA-248-SS (W.D. Tex. 2001). **(CD-Rom)**.	
	C58	Trail Transcripts, Crossroads Systems, Inc. v. Chaparral Network Storage, Inc., C.A. No. A-00CA-217-SS (W.D. Tex. 2001) **(CD-Rom)**.	
	C59	Trail Transcripts, Crossroads Systems, Inc. v. Pathlight Technology, Inc., C.A. No. A-00CA-248-SS (W.D. Tex. 2001). **(CD-Rom)**.	

FORM PTO 1449 US Department of Commerce Patent and Trademark Office			Application Number	10/658,163
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			Examiner Name	Shin, Christopher B.
Sheet 4	of 7		Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	Date
	C60	Datasheet for CrossPoint 4100 Fibre Channel to SCSI Router (Dedek Ex 41 (ANCT 117-120)) (**CD-ROM** Chaparral Exhibits D012).	
	C61	Symbios Logic- Software Interface Specification Series 3 SCSI RAID Controller Software Release 02.xx (Engelbrecht Ex 2 (LSI 1421-1658)) (**CD-ROM** Chaparral Exhibits D013).	12/3/1997
	C62	Press Release- Symbios Logic to Demonstrate Strong Support for Fibre Channel at Fall Comdex (Engelbrecht 12 (LSI 2785-86)) (**CD-ROM** Chaparral Exhibits D016).	11/13/1996
	C63	OEM Datasheet on the 3701 Controller (Engelbrecht 13 (LSI 01837-38)) (**CD-ROM** Chaparral Exhibits D017).	6/17/1905
	C64	Nondisclosure Agreement Between Adaptec and Crossroads Dated 10/17/96 (Quisenberry Ex 25 (CRDS 8196)) (**CD-ROM** Chaparral Exhibits D020).	10/17/1996
	C65	Organizational Presentation on the External Storage Group (Lavan Ex 1 (CNS 182242-255)) (**CD-ROM** Chaparral Exhibits D021).	4/11/1996
	C66	Bridge. C, Bridge Between SCSI-2 and SCSI-3 FCP (Fibre Channel Protocol) (**CD-ROM** Chaparral Exhibits P214).	
	C67	Bridge Phase II Architecture Presentation (Lavan Ex 2 (CNS 182287-295)) (**CD-ROM** Chaparral Exhibits D022).	4/12/1996
	C68	Attendees/Action Items from 4/12/96 Meeting at BTC (Lavan Ex 3 (CNS 182241)) (**CD-ROM** Chaparral Exhibits D023).	4/12/1996
	C69	Brooklyn Hardware Engineering Requirements Documents, Revision 1.4 (Lavan Ex 4 (CNS 178188-211)) (**CD-ROM** Chaparral Exhibits D024) by Pecone.	5/26/1996
	C70	Brooklyn Single-Ended SCSI RAID Bridge Controller Hardware OEM Manual, Revision 2.1 (Lavan EX 5 (CNS 177169-191)) (**CD-ROM** Chaparral Exhibits D025).	3/21/1996
	C71	Coronado Hardware Engineering Requirements Document, Revision 0.0 (Lavan Ex 7 (CNS 176917-932)) (**CD-ROM** Chaparral Exhibits D027) by O'Dell.	9/30/1996
	C72	ESS/FPG Organization (Lavan Ex 8 (CNS 178639-652)) (**CD-ROM** Chaparral Exhibits D028).	12/6/1996
	C73	Adaptec MCS ESS Presents: Intelligent External I/O Raid Controllers "Bridge" Strategy (Lavan Ex 9 (CNS 178606-638)). (**CD-ROM** Chaparral Exhibits D029).	2/6/1996
	C74	AEC-7313 Fibre Channel Daughter Board (for Brooklyn) Engineering Specification, Revision 1.0 (Lavan Ex 10 (CNS 176830-850)) (**CD-ROM** Chaparral Exhibits D030).	2/27/1997
	C75	Bill of Material (Lavan Ex 14 (CNS 177211-214)) (**CD-ROM** Chaparral Exhibits D034).	7/24/1997
	C76	AEC-. 4412B, AEC-7412/B2 External RAID Controller Hardware 0EM Manual, Revision 2.0 (Lavan Ex 15 (CNS 177082-123)) (**CD-ROM** Chaparral Exhibits D035).	6/27/1997

FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
				Filing Date	09/09/2003
				First Named Inventor	Geoffrey B. Hoese
				Group Art Unit	2182
				Examiner Name	Shin, Christopher B.
Sheet	5	of	7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS	Date
CS	C77	Coronado II, AEC-7312A Fibre Channel Daughter (for Brooklyn) Hardware Specification, Revision 1.2 (Lavan Ex 16 (CNS 177192-210)) (CD-ROM Chaparral Exhibits D036) by Tom Yang.	7/18/1997
	C78	AEC-4412B, AEC7412/3B External RAID Controller Hardware OEM Manual, Revision 3.0. (Lavan Ex 17 (CNS 177124-165)) (CD-ROM Chaparral Exhibits D037).	8/25/1997
	C79	Memo Dated 8/15/97 to AEC-7312A Evaluation Unit Customers re: B001 Release Notes (Lavan Ex 18 (CNS 182878-879)) (CD-ROM Chaparral Exhibits D038),	8/15/1997
	C80	Brooklyn Main Board (AES-0302) MES Schedule (Lavan Ex I9 (CNS 177759-763)) (CD-ROM Chaparral Exhibits D039).	2/11/1997
	C81	News Release-Adaptec Adds Fibre Channel Option to its External RAID Controller Family (Lavan Ex 20 (CNS 182932-934)) (CD-ROM Chaparral Exhibits D040).	5/6/1997
	C82	AEC-4412B/7412B User's Guide, Rev. A (Lavan Ex 21) (CD-ROM Chaparral Exhibits D041).	6/19/1905
	C83	Data Book- AIC-7895 PCI Bus Master Single Chip SCSI Host Adapter (Davies Ex 1 (CNS 182944-64)) (CD-ROM Chaparral Exhibits D046).	5/21/1996
	C84	Data Book- AIC-1160 Fibre Channel Host Adapter ASIC (Davies Ex 2 (CNS 181800-825)) (CD-ROM Chaparral Exhibits D047).	6/18/1905
	C85	Viking RAID Software (Davies Ex 3 (CNS 180969-181026)) (CD-ROM Chaparral Exhibits D048).	6/18/1905
	C86	Header File with Structure Definitions (Davies Ex 4 (CNS 180009-018)) (CD-ROM Chaparral Exhibits D049).	8/8/1996
	C87	C++ SourceCode for the SCSI Command Handler (Davies Ex 5 (CNS 179136-168)) (CD-ROM Chaparral Exhibits D050).	8/8/1996
	C88	Header File Data Structure (Davies Ex 6 (CNS 179997-180008)) (CD-ROM Chaparral Exhibits D051).	1/2/1997
	C89	SCSI Command Handler (Davies Ex 7 (CNS 179676-719)) (CD-ROM Chaparral Exhibits D052).	1/2/1997
	C90	Coronado: Fibre Channel to SCSI Intelligent RAID Controller Product Brief (Kalwitz Ex I (CNS 182804-805)) (CD-ROM Chaparral Exhibits D053).	
	C91	Bill of Material (Kalwitz Ex 2 (CNS 181632-633)) (CD-ROM Chaparral Exhibits D054).	3/17/1997
	C92	Emails Dated 1/13-3/31/97 from P. Collins to Mo re: Status Reports (Kalwitz Ex 3 (CNS 182501-511)) (CD-ROM Chaparral Exhibits D055).	
	C93	Hardware Schematics for the Fibre Channel Daughtercard Coronado (Kalwitz Ex 4 (CNS 181639-648)) (CD-ROM Chaparral Exhibits D056).	
	C94	Adaptec Schematics re AAC-340 (Kalwitz Ex 14 CNS 177215-251)) (CD-ROM Chaparral Exhibits D057).	
	C95	Bridge Product Line Review (Manzanares Ex 3 (CNS 177307-336)) (CD-ROM Chaparral Exhibits D058).	
	C96	AEC Bridge Series Products-Adaptec External Controller RAID Products Pre-Release Draft, v.6 (Manzanares Ex 4 (CNS 174632-653)). (CD-ROM Chaparral Exhibits D059).	10/28/1997

FORM PTO 1449 US Department of Commerce Patent and Trademark Office			Application Number	10/658,163
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			Group Art Unit	2182
			Examiner Name	Shin, Christopher B.
Sheet 6	of 7		Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART – NON PATENT LITERATURE DOCUMENTS	Date
	C97	Hewlett-Packard Roseville Site Property Pass for Brian Smith (Dunning Ex 14 (HP 489) (CD-ROM Chaparral Exhibits D078).	11/7/1996
	C98	Distribution Agreement Between Hewlett-Packard and Crossroads (Dunning Ex 15 (HP 326-33) (CD-ROM Chaparral Exhibits D079).	
	C99	HPFC-5000 Tachyon User's Manuel, First Edition (PTI 172419-839) (CD-ROM Chaparral Exhibits D084).	5/1/1996
	C100	X3T10 994D - (Draft) Information Technology: SCSI-3 Architecture Model, Rev. 1.8 (PTI 165977) (CD-ROM Chaparral Exhibits D087).	
	C101	X3T10 Project 1047D: Information Technology- SCSI-3 Controller Commands (SCC), Rev, 6c (PTI 166400-546) (CD-ROM Chaparral Exhibits D088).	9/3/1996
	C102	X3T10 995D- (Draft) SCSI-3 Primary Commands, Rev. 11 (Wanamaker Ex 5 (PTI 166050-229)) (CD-ROM Chaparral Exhibits D089).	11/13/1996
	C103	VBAR Volume Backup and Restore (CRDS 12200-202) (CD-ROM Chaparral Exhibits D099).	
	C104	Preliminary Product Literature for Infinity Commstor's Fibre Channel to SCSI Protocol Bridge (Smith Ex 11; Quisenberry Ex 31 (SPLO 428-30) (CD-ROM Chaparral Exhibits D143).	8/19/1996
	C105	Letter dated 7/12/96 from J. Boykin to B. Smith re: Purchase Order for Evaluation Units from Crossroads (Smith Ex 24) CRDS 8556-57) (CD-ROM Chaparral Exhibits D144).	7/12/1996
	C106	CrossPoint 4100 Fibre Channel to SCSI Router Preliminary Datasheet (Hulsey Ex 9 (CRDS 16129-130)) (CD-ROM Chaparral Exhibits D145).	11/1/1996
	C107	CrossPoint 4400 Fibre Channel to SCSI Router Preliminary Datasheet (Bardach Ex. 9, Quisenberry Ex 33 (CRDS 25606-607)) (CD-ROM Chaparral Exhibits D153).	11/1/1996
	C108	Fax Dated 07/22/96 from L. Petti to B. Smith re: Purchase Order from Data General for FC2S Fibre to Channel SCSI Protocol Bridge Model 11 (Smith Ex 25; Quisenberry Ex 23; Bardach Ex 11 (CRDS 8552-55; 8558) (CD-ROM Chaparral Exhibits D155).	
	C109	Email Dated 12/20/96 from J. Boykin to B. Smith re: Purchase Order for Betas in February and March (Hoese Ex 16, Quisenberry Ex 25; Bardach Ex 12 (CRDS 13644-650) (CD-ROM Chaparral Exhibits D156).	
	C110	Infinity Commstor Fibre Channel Demo for Fall Comdex, 1996 (Hoese Ex 15, Bardach Ex 13 (CRDS 27415) (CD-ROM Chaparral Exhibits D157).	
	C111	Fax Dated 12/19/96 from B. Bardach to T. Rarich re: Purchase Order Information (Bardach Ex. 14; Smith Ex 16 (CRDS 4460)) (CD-ROM Chaparral Exhibits D158).	
	C112	Miscellaneous Documents Regarding Comdex (Quisenberry Ex 2 (CRDS 27415-465)) (CD-ROM Chaparral Exhibits D165).	
	C113	CrossPoint 4100 Fibre Channel to SCSI Router Preliminary Datasheet (Quisenberry) Ex 3 (CRDS 4933-34) (CD-ROM Chaparral Exhibits D166) (CD-ROM Chaparral Exhibits D166).	

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				Examiner Name	Shin, Christopher B.
Sheet	7	of	7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS	Date
CS	C114	CrossPoint 4400 Fibre to Channel to SCSI Router Preliminary Datasheet; Crossroads Company and Product Overview (Quisenberry Ex 4 (CRDS 25606; 16136)) (**CD-ROM** Chaparral Exhibits D167).	
	C115	Crossroads Purchase Order Log (Quisenberry Ex 9 (CRDS 14061-062)) (**CD-ROM** Chaparral Exhibits D172).	
	C116	RAID Manager 5 with RDAC 5 for UNIX V.4 User's Guide (LSI-01854) (**CD-ROM** Chaparral Exhibits P062).	9/1/1996
	C117	Letter dated May 12, 1997 from Alan G. Leal to Barbara Bardach enclosing the original OEM License and Purchase Agreement between Hewlett-Package Company and Crossroads Systems, Inc. (CRDS 02057) (**CD-ROM** Chaparral Exhibits P130).	
	C118	CR4x00 Product Specification (CRDS 43929) (**CD-ROM** Chaparral Exhibits P267).	6/1/1998
	C119	Symbios Logic – Hardware Functional Specification for the Symbios Logic Series 3 Fibre Channel Disk Array Controller Model 3701 (Engelbrecht Ex 3 (LSI-1659-1733) (**CD-ROM** Pathlight Exhibits D074).	
	C120	Report of the Working Group on Storage I/O for Large Scale Computing; Department of Computer Science Duke University: CS-1996-21 (PTI 173330-347). (**CD-ROM** Pathlight Exhibits D098).	
	C121	Brian Allison's 1999 Third Quarter Sales Plan (PDX 38) CNS 022120-132)) (**CD-ROM** Pathlight Exhibits D201).	6/5/2001
✓	C122	Brooklyn SCSI-SCSI Intelligent External RAID Bridge Definition Phase External Documentation (**CD-ROM** Pathlight Exhibits D129).	
Examiner Signature			Date Considered 10-25-05

DFW

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT	Atty. Docket No. **CROSS1120-13**
Applicant **Geoffrey B. Hoese, et al.**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

Certificate of Mailing Under 37 C.F.R. §1.8

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 on **October 28, 2005.**

Janice Pampell

Janice Pampell

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

Dear Sir:

Crossroads Systems, Inc., the owner of one hundred percent (100%) interest in the instant application, as evidenced by the Assignment Recorded on December 31, 1997 on Reel/Frame: 8929/0290 hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. § 154 to 156 and 173 of U.S. Patent Nos. 5,941,972, 6,421,753, 6,425,036, 6,425,035, 6,789,152, 6,738,854, and 6,763,419. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. § 154 to 156 and 173 of the prior patent, as presently shortened by any terminal disclaimer, in the event that it later: expires for failure to pay a

maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check box 1, 2, 3, or 4 as appropriate.

1. ☐ For submission on behalf of an organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

* Statement under 37 C.R.F. 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

2. ☒ The undersigned is an attorney or agent of record.

3. ☐ Terminal disclaimer fee under 37 C.F.R. 1.20(d) included.

4. ☒ The Commissioner is hereby authorized to deduct any deficiencies or credit any overpayments regarding this application from deposit account 50-3183 of Sprinkle IP Law Group.

Steven Sprinkle

10/28/05
Dated

Please forward to Group Art Unit 2182

Amended Compact Discs

EXAMINER NOTE: THIS PAPER IS AN INTERNAL WORKSHEET ONLY. DO NOT ENCLOSE WITH ANY COMMUNICATION TO THE APPLICANT. ITS PURPOSE IS ONLY THAT OF AN AID IN HIGHLIGHTING A PARTICULAR PROBLEM IN A COMPACT DISC.

THE ATTACHED CD (COPY 1) HAS BEEN REVIEWED BY OIPE FOR COMPLIANCE WITH 37 CFR 1.52(E). ***Please match this CD with the application listed below.***

Date: 8/16/2005
Serial No./Control No. 10/658,163
Reviewed By: K. SMITH Phone: 308 9210 ext. 118

☐ The compact discs are readable and acceptable.

☐ Copy 1 and Copy 2 of the compact discs are not the same.

☐ The compact discs are unreadable.

☐ The files on the compact discs are not in ASCII.

☐ The compact discs contain at least one virus.

☑ Other NOT PROPER SUBJECT MATTER FOR CD.

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APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/658,163	09/09/2003	Geoffrey B. Hoese	CROSS1120-13

CONFIRMATION NO. 5675

25094
DLA PIPER RUDNICK GRAY CARY US, LLP
2000 University Avenue
E. Palo Alto, CA 94303-2248

OC000000016767235

Date Mailed: 08/12/2005

NOTICE REGARDING POWER OF ATTORNEY

This is in response to the Power of Attorney filed 07/26/2005 . The Power of Attorney in this application is not accepted for the reason(s) listed below:

- The Power of Attorney is from an assignee and the Certificate required by 37 CFR 3.73(b) has not been received.

BERHANU GIRUM
PTOSS (703) 305-0677

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10/658163

PATENT APPLICATION FEE DETERMINATION RECORD
Effective January 1, 2003

Application or Docket Number

CLAIMS AS FILED - PART I

	(Column 1)	(Column 2)
TOTAL CLAIMS	51	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	39 minus 20=	* 19
INDEPENDENT CLAIMS	7 minus 3 =	* 4
MULTIPLE DEPENDENT CLAIM PRESENT		☐

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

SMALL ENTITY TYPE ☐		OR	OTHER THAN SMALL ENTITY	
RATE	FEE		RATE	FEE
BASIC FEE	375.00	OR	BASIC FEE	750.00
X$ 9=	171	OR	X$18=	
X42=	168	OR	X84=	
+140=		OR	+280=	
TOTAL	714	OR	TOTAL	

CLAIMS AS AMENDED - PART II

AMENDMENT A

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	* 34	Minus	** 39	=
Independent	* 7	Minus	*** 7	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

SMALL ENTITY		OR	OTHER THAN SMALL ENTITY	
RATE	ADDITIONAL FEE		RATE	ADDITIONAL FEE
X$ 9=		OR	X$18=	
X42=		OR	X84=	
+140=		OR	+280=	
TOTAL ADDIT. FEE		OR	TOTAL ADDIT. FEE	

AMENDMENT B

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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

AMENDMENT C

	(Column 1) CLAIMS REMAINING AFTER AMENDMENT		(Column 2) HIGHEST NUMBER PREVIOUSLY PAID FOR	(Column 3) PRESENT EXTRA
Total	*	Minus	**	=
Independent	*	Minus	***	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM				☐

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

* 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 th "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 th appropriat box in column 1.

FORM PTO-875 (Rev. 12/02) *U.S. Government Printing Office: 2003—499-464/78011 Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
REPLY TO OFFICE ACTION DATED 01/27/2005	Atty. Docket No. **CROSS1120-13**

Applicant **Geoffrey B. Hoese**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

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

Dear Sir:

Certificate of Mailing Under 37 C.F.R. §1.10

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail to Addressee (Label No. EV704312847US) addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22312-1450 on 7-27-05.

Julie H. Blackard
Signature

Julie H. Blackard
Printed Name

In response to the Official Action mailed January 27, 2005, Applicant respectfully requests the Examiner reconsider the rejections of the Claims in view of the this reply.

IN THE ABSTRACT:

Please amend the abstract as follows:

A storage router ~~(56)~~ and storage network ~~(50)~~ provide virtual local storage on remote ~~SCSI~~ storage devices ~~(60, 62, 64)~~ to Fiber Channel devices. A plurality of Fiber Channel devices, such as workstations ~~(58)~~, are connected to a Fiber Channel transport medium ~~(52)~~, and a plurality of ~~SCSI~~ storage devices ~~(60, 62, 64)~~ are connected to a ~~SCSI bus~~ second Fibre Channel transport medium ~~(54)~~. The storage router ~~(56)~~ interfaces between the Fiber Channel transport media ~~medium (52) and the SCSI bus transport medium (54)~~. The storage router ~~(56)~~ maps between the workstations ~~(58)~~ and the ~~SCSI~~ storage devices ~~(60, 62, 64)~~ and implements access controls for storage space on the ~~SCSI~~ storage devices ~~(60, 62, 64).~~ The storage router ~~(56)~~ then allows access from the workstations ~~(58)~~ to the ~~SCSI~~ storage devices ~~(60, 62, 64)~~ using native low level, block protocol in accordance with the mapping and the access controls.

IN THE CLAIMS:

Please amend the claims as follows. The claims are in the format as required by 35 C.F.R. § 1.121.

1-14 Cancelled

15. (Previously Presented) A storage router for providing virtual local storage on remote storage devices to a device, comprising:

a buffer providing memory work space for the storage router;

a first Fibre Channel controller operable to connect to and interface with a first Fibre Channel transport medium;

a second Fibre Channel controller operable to connect to and interface with a second Fibre Channel transport medium; and

a supervisor unit coupled to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable:

to maintain a configuration for remote storage devices connected to the second Fibre Channel transport medium that maps between the device and the remote storage devices and that implements access controls for storage space on the remote storage devices; and

to process data in the buffer to interface between the first Fibre Channel controller and the second Fibre Channel controller to allow access from Fibre Channel initiator devices to the remote storage devices using native low level, block protocol in accordance with the configuration.

16. (Previously Presented) The storage router of claim 15, wherein the configuration maintained by the supervisor unit includes an allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.

17. (Previously Presented) The storage router of claim 16, wherein the Fibre Channel devices comprise workstations.

18. (Previously Presented) The storage router of claim 16, wherein the remote storage devices comprise hard disk drives.

19. (Previously Presented) The storage router of claim 15, wherein each of the first Fibre Channel controller comprises:

a Fibre Channel (FC) protocol unit operable to connect to the Fibre Channel transport medium;

a first-in-first-out queue coupled to the Fibre Channel protocol unit; and

a direct memory access (DMA) interface coupled to the first-in-first-out queue and to the buffer.

20. (Previously Presented) A storage network, comprising:

a first Fibre Channel transport medium;

a second Fibre Channel transport medium;

a plurality of workstations connected to the first Fibre Channel transport medium;

a plurality of storage devices connected to the second Fibre Channel transport medium; and

a storage router interfacing between the first Fibre Channel transport medium and the second Fibre Channel transport medium, the storage router providing virtual local storage on the storage devices to the workstations and operable:

to map between the workstations and the storage devices;

to implement access controls for storage space on the storage devices; and

to allow access from the workstations to the storage devices using native low level, block protocol in accordance with the mapping and access controls.

21. (Previously Presented) The storage network of claim 20, wherein the access controls include an allocation of subsets of storage space to associated workstations, wherein each subset is only accessible by the associated workstation.

22. (Previously Presented) The storage network of claim 20, wherein the storage devices comprise hard disk drives.

23. (Previously Presented) The storage network of claim 20, wherein the storage router comprises:

a buffer providing memory work space for the storage router;

a first Fibre Channel controller operable to connect to and interface with the first Fibre Channel transport medium, the first Fibre Channel controller further operable to pull outgoing data from the buffer and to place incoming data into the buffer;

a second Fibre Channel controller operable to connect to and interface with the second Fibre Channel transport medium, the second Fibre Channel controller further operable to pull outgoing data from the buffer and to place incoming data into the buffer; and

a supervisor unit coupled to the first and second Fibre Channel controllers and the buffer, the supervisor unit operable:

to maintain a configuration for the storage devices that maps between workstations and storage devices and that implements the access controls for storage space on the storage devices; and

to process data in the buffer to interface between the first Fibre Channel controller and the second Fibre Channel controller to allow access from workstations to storage devices in accordance with the configuration.

24. (Previously Presented) A method for providing virtual local storage on remote storage devices to Fibre Channel devices, comprising:

interfacing with a first Fibre Channel transport medium;

interfacing with a second Fibre Channel transport medium;

maintaining a configuration for remote storage devices connected to the second Fibre Channel transport medium that maps between Fibre Channel devices and the remote storage devices and that implements access controls for storage space on the remote storage devices; and

allowing access from Fibre Channel initiator devices to the remote storage devices using native low level, block protocol in accordance with the configuration.

25. (Previously Presented) The method of claim 24, wherein maintaining the configuration includes allocating subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Channel device.

26. (Previously Presented) The method of claim 25, wherein the Fibre Channel devices comprise workstations.

27. (Previously Presented) The method of claim 25, wherein the remote storage devices comprise hard disk drives.

28. (Previously Presented) An apparatus for providing virtual local storage on a remote storage device to a device operating according to a Fibre Channel protocol, comprising:

a first controller operable to connect to and interface with a first transport medium, wherein the first transport medium is operable according to the Fibre Channel protocol;

a second controller operable to connect to and interface with a second transport medium, wherein the second transport medium is operable according to the Fibre Channel protocol; and

a supervisor unit coupled to the first controller and the second controller, the supervisor unit operable to control access from the device connected to the first transport medium to the remote storage device connected to the second transport medium using native low level, block protocols according to a map between the device and the remote storage device.

29. (Previously Presented) The apparatus of Claim 28, wherein the supervisor unit is further operable to maintain a configuration wherein the configuration includes the map between the device and the remote storage device, and further wherein the map includes virtual LUNs that provide a representation of the storage device.

30. (Previously Presented) The apparatus of Claim 29, wherein the map only exposes the device to LUNs that the device may access.

31. (Previously Presented) The apparatus of Claim 28, wherein the supervisor unit is further operable to maintain a configuration including the map, wherein the map provides a mapping from a host device ID to a virtual LUN representation of the remote storage device to a physical LUN of the remote storage device.

32. (Previously Presented) The apparatus of Claim 28, wherein the remote storage device further comprises storage space partitioned into virtual local storage for the device connected to the first transport medium.

33. (Previously Presented) The apparatus of Claim 32, wherein the supervisor unit is further operable to prevent the device from accessing any storage on the remote storage device that is not part of a virtual local storage partition assigned to the device

34. (Previously Presented) The apparatus of Claim 28, wherein the first controller and the second controller further comprise a single controller.

35. (Previously Presented) A system for providing virtual local storage on remote storage devices, comprising:

a first controller operable to connect to and interface with a first transport medium operable according to a Fibre Channel protocol;

a second controller operable to connect to and interface with a second transport medium operable according to the Fibre Channel protocol;

at least one device connected to the first transport medium;

at least one storage device connected to the second transport medium; and

an access control device coupled to the first controller and the second controller, the access control device operable to:

map between the at least one device and a storage space on the at least one storage device; and

control access from the at least one device to the at least one storage device using native low level, block protocol in accordance with the map.

36. (Previously Presented) The system of Claim 35, wherein the access control device is further operable to maintain a configuration wherein the configuration includes the map between the at least one device and the at least one storage device, and further wherein the map includes virtual LUNs that provide a representation of the at least one storage device.

37. (Previously Presented) The system of Claim 36, wherein the map only exposes the at least one device to LUNs that the at least one device may access.

38. (Previously Presented) The system of Claim 35, wherein the access control device is further operable to maintain a configuration including the map, wherein the map provides a mapping from a host device ID to a virtual LUN representation of the at least one storage device to a physical LUN of the at least one storage device.

39. (Previously Presented) The system of Claim 35, wherein the at least one storage device further comprises storage space partitioned into virtual local storage for the at least one device.

40. (Previously Presented) The system of Claim 39, wherein the access control unit is further operable to prevent at least one device from accessing any storage on the at least one storage device that is not part of a virtual local storage partition assigned to the at least one device.

41. (Previously Presented) The system of Claim 35, wherein the first controller and the second controller further comprise a single controller.

42. (Previously Presented) A method for providing virtual local storage on remote storage devices, comprising:

mapping between a device connected to a first transport medium and a storage device connected to a second transport medium, wherein the first transport medium and the second transport medium operate according to a Fibre Channel protocol;

implementing access controls for storage space on the storage device; and

allowing access from the device connected to the first transport medium to the storage device using native low level, block protocols.

43. (Previously Presented) The method of Claim 42, further comprising maintaining a configuration wherein the configuration includes a map between the device and the one storage

device, and further wherein the map includes virtual LUNs that provide a representation of the storage device.

44. (Previously Presented) The method of Claim 43, wherein the map only exposes the device to LUNs that the device may access.

45. (Previously Presented) The method of Claim 42, further comprising maintaining a configuration including a map from a host device ID to a virtual LUN representation of the storage device to a physical LUN of the storage device.

46. (Previously Presented) The method of Claim 42, further comprising partitioning storage space on the storage device into virtual local storage for the device.

47. (Previously Presented) The method of Claim 46, further comprising preventing the device from accessing any storage on the storage device that is not part of a virtual local storage partition assigned to the device.

48. (Previously Presented) A system for providing virtual local storage, comprising:

a host device;

a storage device remote from the host device, wherein the storage device has a storage space;

a first controller;

a second controller

a first transport medium operable according to a Fibre Channel protocol, wherein the first transport medium connects the host device to the first controller;

a second transport medium operable according to the Fibre Channel protocol, wherein the second transport medium connects the second controller to the storage device;

a supervisor unit coupled to the first controller and the second controller, the supervisor unit operable to:

maintain a configuration that maps between the host device and at least a portion of the storage space on the storage device; and

implement access controls according to the configuration for the storage space on the storage device using native low level, block protocol.

49. (Previously Presented) The system of Claim 48, wherein the supervisor unit is further operable to:

maintain a configuration that maps from the host device to a virtual representation of at least a portion of the storage space on the storage device to the storage device; and

allow the host device to access only that portion of the storage space that is contained in the map.

50. (Previously Presented) The system of Claim 49, wherein the configuration comprises a map from a host device ID to a virtual LUN representation of the storage device to a physical LUN of the storage device.

51. (Previously Presented) The system of Claim 48, wherein the storage device further comprises storage space partitioned into virtual local storage for the host device.

52. (Previously Presented) The system of Claim 51, wherein the supervisor unit is further operable to prevent the host device from accessing any storage on the storage device that is not part of a virtual local storage partition assigned to the host device.

53. (Previously Presented) The apparatus of Claim 48, wherein the first controller and the second controller further comprise a single controller.

REMARKS

The Examiner requested that the Applicants clarify several terms in the claims and point out support for a system with two Fibre Channel transport media. Applicants appreciate the Examiner's efforts to expedite prosecution and address the Examiner's request for particular definitions and showings of support in the remarks provided below.

I. Objections to Drawings

The drawings stand objected to as failing to comply with 37 C.F.R. § 1.83(a) as not showing every feature of the invention specified in the claims because they do not show the claimed limitation regarding the first and second media being a Fibre Channel protocol type. Applicants note, however, that such a drawing is only required "where necessary for the understanding of the subject matter sought to be patented." As discussed in more detail below, the Specification discloses an implementation in which the initiator is a Fibre Channel initiator, the target is a Fibre Channel target. See Specification at page 15, lines 12-17. Specifically, the Specification states that the "storage router has various modes of operation that are possible between FC and SCSI target and initiator combinations. These modes are: FC Initiator to SCSI Target; SCSI Initiator to FC Target; SCSI Initiator to SCSI Target; ***and FC Initiator to FC Target.***" *Id.* (emphasis added). The figures provided in the invention, along with the Specification, provide additional information relating to the invention in detail necessary to support this FC initiator to FC target embodiment. One of skill in the art would not require an additional drawing to understand that a workstation (or other initiator) can be connected to the storage router via Fibre Channel and a storage device (or other target) can be connected to the storage router via Fibre Channel. Therefore, Applicants submit that such an drawing showing a storage router connected to two Fibre Channel transport mediums is not necessary for an understanding of the invention and not required under 37 C.F.R. § 1.83(a). Accordingly, withdrawal of this rejection is respectfully requested.

II. Objection to Specification

The Examiner also objected to the Abstract and the Specification. Applicants have amended the Abstract to describe that the two transport media are Fibre Channel.

Furthermore, the Specification specifically discloses a Fibre Channel Initiator-to-Fibre Channel target mode at page 15, lines 12-17:

> The storage router has various modes of operation that are possible between FC and SCSI target and initiator combinations. These modes are: FC Initiator to SCSI Target; SCSI Initiator to FC Target; SCSI Initiator to SCSI Target; ***and FC Initiator to FC Target.*** (Emphasis Added).

Thus, the Specification specifically recites that one embodiment of the invention is a FC initiator device and a FC target storage device. This FC initiator to FC storage device embodiment is entirely consistent with the recitations in claims 15-53.

In fact, the Specification goes further and discloses two additional particular embodiment of the Fibre Channel Initiator-to-Fibre Channel target mode at page 15, lines 17-25:

> The first two modes can be supported concurrently in a single storage router device are discussed briefly below. The third mode can involve two storage router devices back to back and can serve primarily as a device to extend the physical distance beyond that possible via a direct SCSI connection. ***The last [FC Initiator to FC Target] mode can be used to carry FC protocols encapsulated on other transmission technologies (e.g. ATM, SONET), or to act as a bridge between two FC loops (e.g. as a two port fabric).*** (Emphasis Added).

This description clearly shows that the last mode (the FC initiator to FC target mode where both the transport medium to which a host is connected and the transport medium to which the storage device is connected is a Fibre Channel transport medium) can done in a variety of ways, including the examples recited where (1) the FC protocols are carried on other transmission technologies and (2) the storage router acts as a bridge between two FC loops. The Specification therefore discloses an invention that includes a FC initiator to FC target embodiment, along with two distinct examples of that embodiment. Therefore, Applicants respectfully request withdrawal of this objection.

III. Claim Term Definitions

The Examiner also requested the Applicant provide definitions for several claim terms. As the Examiner is aware, the claims in US Patent No. 5, 941, 972 have been interpreted by

the U.S. Federal District Court in the case *Crossroads v. Chaparral Network Storage, Inc.*, Western District of Texas, Civil Action No. A-00-CA-217-SS and *Crossroads Systems (Texas), Inc., v. Pathlight Technology, Inc.*, Western District of Texas, Civil Action No. A-00CA-248-JN (collectively, the "Chaparral Litigation"). In that case, the Federal District Court issued a Joint Markman Order (the "Markman Order") interpreting the terms "native, low level block protocol" and "map". Applicant will rely on both the Specification and this Markman Order in response to the Examiner's request to define these terms.

A. Native Low Level Block Protocol ("NLLBP")

The term "native low level block protocol" (or "NLLBP") is a protocol that enables computers to exchange information that does not involve the overhead of high level protocols and file systems typically required by network servers. This definition is supported in the Specification and prior litigation interpreting this claim term.

According to the invention, the host computers connected to the first transport medium are allowed to access the remote storage devices using a NLLBP. In systems prior to the present invention, when making a request to storage through a network server to allow access between workstations and remote storage devices, a workstation typically had to translate the requests from its file system protocols to higher level network protocols in order to communicate with the network server, and the network server would then translate them into low level requests to the storage device(s). In contrast, as described in the Specification, allowing a host to access storage devices using a NLLBP provides a mechanism by which communication between the host and the storage devices can be accomplished faster because there is no need to translate from a network protocol to a NLLBP. *See* Specification, page 2, line 17-page 3, line 13; page 7, line 17-26 (distinguishing an NLLBP from higher-level protocols by contrasting the present invention (allowing access using NLLBP) to prior art solutions (which allowed access using network protocols requiring translation to NLLBP)). Thus, the Specification points out that a native low level block protocol is one that does not involve the overhead of high level protocols used by network servers.

Furthermore, in the Chaparral Litigation the Federal District Court issued its Markman Order defining the term "NLLBP" as follows: "a set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers." A copy of the Markman Order is attached

hereto as Exhibit A. This construction and the validity of the '972 Patent was upheld by the Federal Circuit. A copy of the Federal Circuit decision affirming the decision of the lower court is attached hereto as Exhibit B. Thus, based on both the Specification and the Markman Order, an NLLBP is a protocol that enables computers to exchange of information without the overhead of high-level protocols and file systems typically required by network servers.

B. Mapping

The term "mapping" means to create a path from a host device on one side of the storage router to a device on the other side of the router where a map contains a representation of the devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate to a device on the other side of the storage router, the storage router can connect the devices. This definition is supported by the Specification and prior litigation interpreting this claim term.

Mapping between devices connected to the first transport medium and storage devices in the present application refers to a mapping between the workstations/host computers and storage devices such that a particular workstation/host computer on the first transport medium is associated with a storage device, storage devices or portion thereof on the second transport medium. As discussed in the Specification, the mapping provides a correlation between devices on the first data transport medium and the storage devices through one or more steps, and can, for example, be implementing through the use of mapping tables. *See*, Specification, page 4, lines 15-21; page 4, line 28-page 5, line 6; page 9, lines 7-8, page 10, lines 4-7 and page 22, lines 8-11. Thus, the Specification points out that mapping provides a correlation between a host device and a storage device so as to create a path the storage router can use to connect the host device to the storage device.

Additionally, the Federal District Court in the Chaparral Litigation defined the term "map" in its Markman Order as follows: "to create a path from a device on one side of the storage router to a device on the other side of the router, i.e., from a Fibre Channel device to a SCSI device (or vice-versa). A map contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate to a device on the other side of the storage router, the storage router can connect the devices." *See,* Markman Order, Exhibit A, page 12. Thus, the mapping of the present invention associates a representation of the host device(s) on the first transport medium with a

representation of the storage devices on the second transport medium to create a path between the hosts and the remote storage devices (or portion(s) thereof).

C. Support for Fibre Channel-to-Fibre Channel Implementation

As discussed above, the Specification discloses a Fibre Channel Initiator-to-Fibre Channel target mode. *See*, Specification, page 15, lines 12-25.

> The storage router has various modes of operation that are possible between FC and SCSI target and initiator combinations. These modes are: FC Initiator to SCSI Target; SCSI Initiator to FC Target; SCSI Initiator to SCSI Target; ***and FC Initiator to FC Target.*** (Emphasis Added). The first two modes can be supported concurrently in a single storage router device are discussed briefly below. The third mode can involve two storage router devices back to back and can serve primarily as a device to extend the physical distance beyond that possible via a direct SCSI connection. ***The last [FC Initiator to FC Target] mode can be used to carry FC protocols encapsulated on other transmission technologies (e.g. ATM, SONET), or to act as a bridge between two FC loops (e.g. as a two port fabric).*** (Emphasis Added).

Thus, the Specification specifically recites that one embodiment of the invention is a FC initiator device and a FC target storage device. This FC initiator to FC storage device embodiment is entirely consistent with the recitations in claims 15-53.

IV. Rejections Under 35 U.S.C. §112

The Examiner rejected Claim 15-53 under 35 U.S.C. §112, first paragraph, because the Examiner asserts that i) the best mode contemplated by the inventor has not been disclosed and ii) the disclosure does not meet the enablement requirement. The basis for these rejections asserted by the Examiner is that the "disclosure does not clearly disclose any details of the present claims regarding the first and second media being both Fibre Channel transport as a whole."

As previously discussed, Applicants respectfully submit that an implementation having both a first Fibre Channel transport and a second Fibre Channel transport is disclosed at page 15, lines 12-25, as discussed above. This FC initiator to FC target mode represents one embodiment of the invention generally described in the remainder of the Specification and the Drawings. In addition, the Applicants went further and discussed two additional example implementations of this FC initiator to FC target mode embodiment: in one example

implementation, the Fibre Channel protocols can be encapsulated on other transmission technologies (e.g., ATM, SONET); in the other example implementation, the storage router acts as a bridge between two Fibre Channel loops (i.e., a first fibre channel transport medium and a second fibre channel transport medium). Contrary to the Examiner's assertion, Applicants respectfully submit that there is no evidence that the inventors concealed the best mode of connecting fibre channel transport media.

The Specification further provides support for implementing the configuration, mapping and access controls for Fibre Channel devices so as to enable one of ordinary skill in the art to practice the FC initiator to FC storage device embodiment of the invention. As one example, the Specification discusses the particulars of Fibre Channel devices, specifically stating:

> Fibre Channel devices within a fabric are addressed by a unique port identifier. This identifier is assigned to a port during certain well-defined states of the FC protocol. Individual ports are allowed to arbitrate for a known, user defined address. If such an address is not provided, or if arbitration for a particular user address fails, the port is assigned a unique address by the FC protocol. This address is generally not guaranteed to be unique between instances. Various scenarios exist where the AL-PA of a device will change, either after power cycle or loop reconfiguration.
>
> The FC protocol also provides a logical unit address field within command structures to provide addressing to devices internal to a port. The FCP CMD payload specifies an eight byte LUN field. Subsequent identification of the exchange between devices is provided by the FQXID (Fully Qualified Exchange ID). *See*, Specification, page 19, lines 9-25.

Thus, the Applicants described these addressing conventions in a manner that would enable one of ordinary skill in the art to implement them for Fibre Channel devices.

As another example relating to mapping, the Specification states that "mapping can be implemented through the use of mapping table or other mapping techniques." *See,* Specification, page 9, lines 7-8; page 10, lines 4-7. Based on the disclosed Fibre Channel addressing techniques, one of ordinary skill in the art would understand how to implement a table that maps Fibre Channel initiators to Fibre Channel storage devices or portions thereof. In yet another example, the Specification provides that access controls limit a computers access to specified storage devices or portions thereof. *See,* Specification, page 10, lines 20-24. The storage router can use tables to map, for each initiator, what storage access is

available and what partition is being addressed by a particular request. *See*, Specification page 22, lines 8-11. Based on the Fibre Channel addressing scheme, those in the art would understand how to use tables to map Fibre Channel initiators to Fibre Channel targets to control access by the Fibre Channel targets to assigned storage devices or portions thereof. Thus, in the Fibre Channel Initiator-to-Fibre Channel target embodiment, one of ordinary skill in the art would understand how to provide tables that map a representation of a Fibre Channel initiator device to a representation of a Fibre Channel target device and that cause requests from particular Fibre Channel Initiators to be directed (or not allowed to be directed) to particular storage.

The present application thus discloses i) a Fibre Channel initiator-to-Fibre Channel target mode of operation, ii) mapping achieved through, for example, tables and iii) access controls are implemented through mapping in an enabling manner. There is simply no evidence that the inventors concealed some better way of practicing the present invention. Based on the Specification, one of ordinary skill in the art would understand how to provide tables that map Fibre Channel initiator devices to a Fibre Channel target devices and that cause certain requests from a Fibre Channel Initiator to be directed to permitted storage, thus allowing the use of NLLBP from the Fibre Channel Initiator to the storage router and from the storage router to the Fibre Channel target. Applicants therefore respectively request withdrawal of the Claim rejections.

V. Double Patenting Rejections

Claims 15-53 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 5,941,972. Applicants are including with this reply a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c). U.S. Patent No. 5,941,972 and the current Application are commonly owned. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 15-53 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-14 of U.S. Patent No. 6,425,035. Applicants are including with this reply a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c). U.S. Patent No. 6,425,035 and the current Application are commonly owned. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 15-53 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-23 of U.S. Patent No. 6,738,854. Applicants are including with this reply a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c). U.S. Patent No. 6,738,854 and the current Application are commonly owned. Accordingly, withdrawal of this rejection is respectfully requested.

Claims 15-53 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-10 of U.S. Patent No. 6,763,419. Applicants are including with this reply a timely filed terminal disclaimer in compliance with 37 C.F.R. § 1.321(c). U.S. Patent No. 6,425,035 and the current Application are commonly owned. Accordingly, withdrawal of this rejection is respectfully requested.

VI. Conclusion

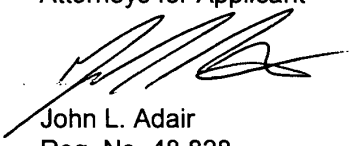
Applicants have now made an earnest attempt to place this case in condition for allowance. Other than as explicitly set forth above, this reply does not include acquiescence to statements, assertions, assumptions, conclusions, or any combination thereof in the Office Action. For the foregoing reasons and for other reasons clearly apparent, Applicant respectfully requests full allowance of the pending claims. The Examiner is invited to telephone the undersigned at the number listed below for prompt action in the event any issues remain.

An extension of three (3) months is requested and a Notification of Extension of Time Under 37 C.F.R. § 1.136 with the appropriate fee is enclosed herewith.

The Director of the U.S. Patent and Trademark Office is hereby authorized to charge any fees or credit any overpayments to Deposit Account No. 50-3183 of Sprinkle IP Law Group.

Respectfully submitted,

Sprinkle IP Law Group
Attorneys for Applicant



John L. Adair
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Exhibit A

UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF TEXAS
AUSTIN DIVISION

CROSSROADS SYSTEMS, (TEXAS), INC.	§	
	§	
vs.	§	NO. A 00 CA 217 SS
	§	
CHAPARRAL NETWORK STORAGE, INC.	§	

CROSSROADS SYSTEMS, (TEXAS), INC.	§	
	§	
vs.	§	NO. A 00 CA 248 SS
	§	
PATHLIGHT TECHNOLOGY, INC.	§	

ORDER

BE IT REMEMBERED that on the 25th day of July 2000 the Court, in accordance with *Markman v. Westview Instruments, Inc.*, 52 F.3d 967 (Fed. Cir. 1995), *aff'd*, 116 S. Ct. 1384 (1996), held a hearing at which the parties appeared by representation of counsel and made oral arguments on their proposed claims construction. At the hearing, the parties presented a Joint Stipulation of Claim Construction, indicating that the parties have agreed upon the definitions for seventeen terms and/or phrases in U.S. Patent No. 5,941,972 ("the '972 patent"), and that only ten terms and/or phrases in the '972 patent remain in dispute. After considering the briefs, the case file as a whole, and the applicable law, the Court enters the following opinion and order.

I. Standard for Claims Construction

The construction of claims, or the definition of the terms used in the claims, is a matter of law for the Court. When adopting a claim construction, the Court should first consider the intrinsic evidence, which includes the claims, the specification, and the prosecution history. *See Vitronics*

Corp. v. Conceptronic, Inc., 90 F.3d 1576, 1582 (Fed. Cir. 1996) (explaining that intrinsic evidence is "the most significant source of the legally operative meaning of disputed claim language"). Not surprisingly, the starting point is always "the words of the claims themselves." *Id.; see also Comark Communications, Inc. v. Harris Corp.*, 156 F.3d 1182, 1186 (Fed. Cir. 1998). The words of the claims are generally given their ordinary and customary meaning, unless the patentee intended to use a "special definition of the term clearly stated in the patent specification or file history." *Vitronics*, 90 F.3d at 1582. Thus, the Court must review the specification and file history to determine whether the patentee intended to use any such "special" definitions. *See id.* The specification and file history may also be consulted as general guides for claim interpretation. *See Comark*, 156 F.3d at 1186.

The specification and file history, however, are not substitutes for the plain language of the claims. The specification is not meant to describe the full scope of the patent – it includes only a written description of the invention, sufficient to enable a person skilled in the art to make and use it, as well as the invention's "best mode." *See* 35 U.S.C. § 112. Thus, the claims may be broader than the specification, and generally should not be confined to the examples of the invention set forth in the specification. *See Comark*, 156 F.3d at 1187 ("Although the specification may aid the court in interpreting the meaning of disputed claim language, particular embodiments and examples appearing in the specification will not generally be read into the claims."). Indeed, the Federal Circuit has repeatedly emphasized that "limitations from the specification are not to be read into the claims." *Id.* at 1186.

In addition to examining the intrinsic evidence the Court may, in its discretion, receive extrinsic evidence regarding the proper construction of the patent's terms. *See Key Pharmaceuticals*

v. Hercon Labs. Corp., 161 F.3d 709, 716 (Fed. Cir. 1998) ("[T]rial courts generally can hear expert testimony for background and education on the technology implicated by the presented claim construction issues, and trial courts have broad discretion in this regard."). The plaintiff has provided an expert affidavit and the defendant has provided excerpts from several dictionaries as extrinsic evidence concerning the construction of the terms of the '972 patent.

II. "implements access controls for storage space on the SCSI storage devices"

This phrase is used in claims 1, 10 and 11 of the '972 patent. The parties dispute whether the phrase refers to "access controls" only for certain subsections of a divided SCSI storage device, or whether it also includes limiting access to entire undivided SCSI storage devices. The plaintiff argues the phrase includes both kinds of access controls; the defendants say the phrase refers only to access controls for various subsections within a single divided SCSI storage device. The defendants also argue the plaintiff's construction is improper because, if adopted, it will result in the '972 patent being invalidated by prior art.

The plaintiff proposes the following definition: "provides controls which limit a computer's access to a specific subset of storage devices or sections of a single storage device." *See* Plaintiff's Brief, at 20. The defendants propose the phrase should be defined as "partitions the storage space on each one of the SCSI storage devices and defines the accessibility of each resulting partition." *See* Defendants' Brief, Ex. 2. The Court agrees with the plaintiff.

The intrinsic evidence of the '972 patent shows the plaintiff's invention is intended to restrict access both to subsections of a SCSI storage device, as well as to entire, undivided SCSI devices. First, the plain language of this phrase refers only to "storage space" and does not limit the space

only to subsections of a divided SCSI storage device. Second, Figure 3 of the '972 patent supports a broad reading of this phrase. Figure 3 shows three SCSI storage devices, two of which are undivided (60 and 64). The third device (62) is divided into four subsections of storage space. From the simple labeling on Figure 3, it is clear that the entire, undivided storage device (64) is meant to be accessed only by a single workstation (computer E). Thus, Figure 3 expressly shows that the plaintiff's invention contemplates using "access controls" for an entire, undivided storage device as well as for the divided subsections within a single storage device.[1] Third, the language of the specification expressly describes limiting access to an entire, undivided SCSI storage device. Specifically, in referring to Figure 3, the specification states "storage device 64 can be allocated as storage for the remaining workstation 58 (workstation E)." *See* '972 Patent, at 4:20 - 4:21. At the hearing, the defendants' counsel argued that, simply because Figure 3 describes this feature does not mean the feature was intended to be part of the claimed invention. The Court soundly rejects this argument. Figure 3 is meant to be an example of how the plaintiff's claimed invention can be implemented, and the specification clearly describes this figure as illustrating one implementation of the claimed invention. Adopting the defendants' argument would ignore a fundamental principle of claims construction, oft repeated in the defendants' brief and oral arguments, that the specification is "the single best guide to the meaning of a disputed term." *See Vitronics*, 90 F.3d at 1582. Finally, the defendants correctly point out that the specification also refers to the single, undivided storage device (64) as a "partition (i.e., logical storage definition)." *See* '972 Patent, at 4:44 - 4:47. Rather than compel the defendants' proposed construction, however, this language supports the plaintiff's

[1] Figure 3 also discloses – and the defendants do not dispute – that the plaintiff's invention contemplates limiting access to various subsections of the divided SCSI storage device (62).

argument at the hearing that a discrete unit of storage – whether an entire SCSI storage device or a subsection within that device – can be referred to as a "partition."[2]

The defendants also argue that, even if the intrinsic evidence supports the plaintiff's proposed definition, this definition is nonetheless improper because it would cause the '972 patent to read directly upon prior art (and therefore be invalid). It is true that "claims should be read in a way that avoids ensnaring prior art if it is possible to do so." *Harris Corp. v. IXYS Corp.*, 114 F.3d 1149, 1153 (Fed. Cir. 1997). However, the defendants have not shown that the prior art at issue – the Lui patent – would be "ensnared" by adopting the plaintiff's definition. Importantly, the Lui patent was part of the prior art expressly considered by the patent examiner before granting the '972 patent. The patent examiner apparently did not use the Lui patent to reject a single claim in the '972 patent. The patent examiner also did not issue an Office Action requiring the plaintiff to distinguish its invention from the Lui patent on access control (or any other) grounds. Although the Patent Office is not the model of efficiency or thoroughness, its failure to cite the Lui patent as potentially invalidating prior art creates a strong presumption that the Lui patent does not read upon the plaintiff's claimed invention. In addition, it does not appear to the Court that the Lui patent reads upon the '972 claimed invention. While the Lui patent does disclose a system of Fibre Channel computers and SCSI storage devices, *see* Defendants' Brief, Ex. 6, at 2:53 - 2:65, the similarities end there. The Lui patent concerns an invention of "bypass circuits" used to "prevent the failure of any device" in the system. *See id.*, at Abstract. The invention of the Lui patent is not concerned with the swift transfer of information across a router, and thus does not disclose techniques for mapping,

[2] The Court expressly notes, however, that it is not defining the term "partition" in this order, as that term is not used in the '972 claim language.

implementing access controls, or a memory buffer.[3] At the hearing, the defendants' counsel suggested that Figure 2 of the Lui patent discloses the claimed invention of the '972 patent. However, Figure 2 of the Lui patent is not a part of the Lui invention; rather it is an illustration of a "conventional" network system that the Lui invention allegedly improves upon. *See id.* at 3:66. The Court rejects the defendants' argument that "conventional" network systems also read directly upon the '972 claimed invention. The patent examiner may have let one piece of prior art slip by; he or she would not have missed a "conventional" network system directly applicable to the plaintiff's claimed invention.

In sum, the Court will adopt the plaintiff's proposed definition and construe the phrase "implements access controls" in the claims of the '972 patent to mean "provides controls which limit a computer's access to a specific subset of storage devices or sections of a single storage device."

III. "allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Chanel device"

The dispute here is essentially the same as in the preceding section. This phrase is used in claims 2, 8 and 12 of the '972 patent. As it did with the "implements access controls . . ." phrase, the plaintiff argues the "allocation . . ." phrase means that specific Fibre Channel devices can be allocated storage space on subsections of a single SCSI storage device and on entire, undivided SCSI storage devices. The defendants stick to their general argument on this issue, and contend the phrase

[3] The defendants argue these features are "implicitly" found in the Lui specification and in any event were disclosed in other prior art. *See* Defendants' Brief, at 12 and n.1. The Court is not persuaded that these features are "implicitly" disclosed by the Lui patent, and the other prior art briefly referenced by the defendants makes no mention of combining that prior art with the invention of the Lui patent, or vice-versa.

means storage space can only be allocated on subsections of a single divided SCSI storage device. Both parties agree this storage space, however it is defined, can only be accessed by the specified Fibre Channel device(s).

The plaintiff's proposed definition is "subsets of storage space are allocated to specific Fibre Channel devices." *See* Plaintiff's Brief, at 26. The defendants say the phrase should be defined to mean "one or more partitions that are only accessible by a single Fibre Channel device." *See* Defendants' Brief, Ex. 2. For the reasons discussed in the preceding section, the Court adopts the plaintiff's proposed construction.

IV. "supervisor unit"

This term is used in claims 1, 2 and 10 of the '972 patent. The plaintiff contends this term should be defined as "a microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls." *See* Plaintiff's Brief, at 25. The defendants argue the term should be defined as "an Intel 80960RP processor" with several specific features. *See* Defendants' Brief, Ex. 2.

The defendants argue their construction is mandated by the means-plus-function analysis of § 112(6) of the Patent Act, because the claims of the '972 patent do not adequately describe the "supervisor unit" to be used. *See* Defendants' Brief, at 15-17. The plaintiff argues that § 112(6) does not apply because the term "means" is not used with the term "supervisor unit" and because the term "supervisor unit" is adequately described by other claim language in the '972 patent. *See* Plaintiff's *Markman* Exhibits, at 35-39.

Section 112(6) of the Patent Act provides that when a claim refers to the "means for" a

specific act, but fails to adequately describe these means, the means then must be defined by reference to the specification. *See* 35 U.S.C. § 112(6).[4] If the claim language at issue does not include the term "means," there is a presumption that the § 112(6) means-plus-function analysis does not apply. *See Al-Site Corp. v. VSI Int'l, Inc.*, 174 F.3d 1308, 1318 (Fed. Cir. 1999) ("[W]hen an element of a claim does not use the term 'means,' treatment as a means-plus-function claim element is generally not appropriate."). To overcome this presumption, the party seeking to apply § 112(6) must show the claim language at issue is purely functional and that other claim language does not adequately describe the disputed term. *See id.* ("[W]hen it is apparent that the element invokes purely functional terms, without the additional recital of specific structure or material for performing that function, the claim element may be a means-plus-function element despite the lack of express means-plus- function language."). From a review of the claim language as a whole, the Court agrees with the plaintiff that the term "supervisor unit" is not purely functional, but refers instead to a device that can perform the tasks specifically listed in the claim language of the '972 patent. Specifically, claims 1, 2 and 10 of the '972 patent describe a "supervisor unit" that can: (1) maintain and map the configuration of networked Fibre Channel and SCSI storage devices; (2) include in this configuration an allocation of specific storage space to specific Fibre Channel devices; (3) implement access controls for the SCSI storage devices; and (4) process data in the storage router's buffer to allow an exchange between the Fibre Channel and SCSI storage devices. *See* '972 Patent,

[4] Section 112(6) reads as follows: "An element in a claim for a combination may be expressed as a means or step for performing a specified function without the recital of structure, material, or acts in support thereof, and such claim shall be construed to cover the corresponding structure, material, or acts described in the specification and equivalents thereof." 35 U.S.C. § 112(6).

at Claims 1, 2 and 10. These are the same tasks described in the plaintiff's proppsed definition. In addition, the specification expressly defines the "supervisor unit" as "a microprocessor" (a computer chip) and specifically as "a microprocessor for controlling operation of storage router 56 and to handle mapping and security access for requests between Fibre Channel 52 and SCSI bus 54." *See id.* at 5:7 - 5:10. However, neither the specification (nor the claim language) limits the '972 patent to the specific Intel computer chip referenced by the defendants. Although the defendants correctly point out that the Intel 80960 chip is the only computer chip expressly named in the '972 patent and the specification describes many features this chip, the defendants fail to note that the Intel 80960 chip is listed as only "one implementation" of the claimed invention's microprocessor. *See* '972 Patent, at 5:63. The defendants are attempting exactly what the Federal Circuit prohibits – to limit the claims to the preferred embodiment and examples of the specification. "This court has cautioned against limiting the claimed invention to preferred embodiments or specific examples in the specification." *Comark*, 156 F.3d at 1186 (quoting *Texas Instruments, Inc. v. United States Int'l Trade Comm'n*, 805 F.2d 1558, 1563 (Fed. Cir. 1988)). The Court will not use an example of "one implementation" in the specification to limit the plain language of the claims. Accordingly, the Court adopts the plaintiff's definition of "supervisor unit" and will construe that term as used in the claims of the '972 patent to mean "a microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls."

V. "SCSI storage devices"

This term is used in claims 1, 4, 7, 9-11 and 14 of the '972 patent. The plaintiff argues that this term essentially needs no further definition because the term SCSI is so well-known in the industry, but proposes that the term can be further defined as "any storage device including, for

example, a tape drive, CD-ROM drive, or a hard disk drive that understands the SCSI protocol and can communicate using the SCSI protocol." *See* Plaintiff's Brief, at 18. The defendants argue the term should be defined as "any storage device that uses a SCSI standard and has a unique BUS:TARGET:LUN address." *See* Defendants' Brief, Ex. 2.

The Court agrees with the plaintiff. Essentially, the defendants contend their narrow definition should be used because it "comports with '972 specification" and its discussion of SCSI storage devices. *See* Defendant's Brief, at 14. However, the specification language referred to by the defendants is only one example of how the SCSI storage device addressing scheme "can" be represented. *See* '972 Patent, at 7:39. Again, the defendants are impermissibly trying to limit the claim language to an example given in the specification. *See Comark*, 156 F.3d at 1186-87. For the sake of extra clarity, the Court will adopt the plaintiff's proposed definition for this term.

VI. "process data in the buffer"

This phrase is used in claims 1 and 10 of the '972 patent. The plaintiff argues the phrase is adequately defined on its own and by the surrounding claim language. The defendants contend the phrase should be defined as "to manipulate data in the buffer in a manner to (a) achieve mapping between Fibre Channel and SCSI devices, and (b) apply access controls and routing functions." *See* Defendants' Brief, Ex. 2.

The plain language of claims 1 and 10 disclose that the supervisor unit (the microprocessor) processes data in the buffer "to interface between the Fibre Channel controller and the SCSI controller to allow access from Fibre Channel initiator devices to SCSI storage devices using the native low level, block protocol in accordance with the configuration." *See* '972 Patent, at Claims 1 and 10. This language adequately describes what it means to "process data in the buffer" for these

claims. Simply because the specification may use slightly different language to describe this "processing," *see id.* at 5:18 - 5:20, does not entitle the defendants to adopt the specification language over the plain language of the claims. The Court will not further define this phrase.

VII. "storage router"

This term is used in claims 1-7 and 10 of the '972 patent. The plaintiff argues the term needs no further definition for claims 1-6, and for claim 7 it should be defined as "a device which provides virtual local storage, maps, implements access controls, and allows access using native low level block protocols." *See* Plaintiff's Brief, at 27. The defendants contend the term should mean "a bridge device that connects a Fibre Channel link directly to a SCSI bus and enables the exchange of SCSI command set information between application clients on SCSI bus devices and the Fibre Channel links." *See* Defendants' Brief, Ex. 2.

The defendants do not make any argument for their proposed definition in their brief, and did not discuss the term at the July 25 hearing. In their notebook of exhibits presented at the hearing, the defendants include one page which supports their definition with a quote from the specification. *See* Defendants' *Markman* Exhibits, "Markman Presentation" Tab, at 22. This argument is disingenuous. The specification language quoted by the defendants is immediately followed by several sentences further defining "storage router." Indeed, the next sentence begins "Further, the storage router applies access controls . . . ." *See* '972 Patent, at 5:30. The defendants' attempt to limit the term "storage router" to one of several descriptive sentences in the specification is not well-taken. In addition, the Court finds the term "storage router," as used in all claims of the '972 patent, is adequately described by the additional language of the claims, which discloses in detail the various functions and/or qualities of the storage router. The Court will not further define this term.

VIII. "map"

This term is used in claims 1, 7, 10 and 11 of the '972 patent. The plaintiff contends the term means "to create a path from a device on one side of the storage router to a device on the other side of the router, *i.e.* from a Fibre Channel device to a SCSI device (or vice-versa). A 'map' contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate to a device on the other side of the storage router, the storage router can connect the devices." *See* Plaintiff's Brief, at 22. The defendants argue the term means "to translate addresses." *See* Defendants' Brief, Ex. 2.

In support of their definition, the defendants point only to a dictionary definition of "map." *See* Defendants' Brief, at 13 and Ex. 4. The plaintiff, on the other hand, cites to specific portions of the specification that support its definitions of map (both as a verb and a noun) as used in the claims of the '972 patent. *See* Plaintiff's Brief, at 22 (citing '972 Patent, at 1:66 - 2:5 and 6:65 - 7:6). Because intrinsic evidence is far more salient than a dictionary definition, and because the Court agrees that the specification language cited by the plaintiff supports its construction of the term "map," the Court will adopt the plaintiff's proposed definition of this term.

IX. "Fibre Channel protocol unit" and "SCSI protocol unit"

These terms are used in claims 5 and 6 of the '972 patent. The plaintiff contends these phrases should be defined as "a portion of the Fibre Channel controller which connects to the Fibre Channel transport medium" and "a portion of the SCSI controller which interfaces to the SCSI bus." *See* Plaintiff's Brief, at 27. The defendants say the terms mean "block and equivalents thereof that connects to the Fibre Channel transport medium" and "block and equivalents thereof that connects to the SCSI bus transport medium." *See* Defendants' Brief, Ex. 2.

The defendants argue the means-plus-function analysis of § 112(6) should apply here because the terms are well-known and are not defined in two dictionaries cited by the defendants. *See* Defendants' Brief, at 7-8, 14-15, Ex. 4 and Ex. 5. However, the defendants do not indicate how the term should be defined in reference to the specification, and in fact contend "the '972 specification fails to reveal any structure corresponding to the claimed function." *See id.* at 8 and 15. The defendants then propose the word "block" should be used to describe these terms because the "protocol units" are "simply depicted as a block within the diagram of Figure 5" of the '972 patent. *See id.* This reasoning is wholly unpersuasive. Simply because a figure in the patent physically depicts the protocol units in a block-like shape, it does not follow that the units should be defined as "blocks or equivalents thereof." Under that reasoning, the SCSI storage devices, which are physically depicted as cylinders in the '972 patent, could be defined simply as "cylinders, oil drums or monkey barrels, or equivalents thereof." As the plaintiff correctly points out, the language of claims 5 and 6 plainly states that the "protocol units" for both devices are part of the "controllers" for the devices, and are intended to "connect" the devices to various "transport media" (*i.e.*, to various cables). *See* '972 Patent, at Claims 5 and 6. Accordingly, the Court adopts the plaintiff's definitions for these terms, and will construe the terms to mean "a portion of the Fibre Channel controller which connects to the Fibre Channel transport medium" and "a portion of the SCSI controller which interfaces to the SCSI bus."

X. **"interface"**

In their Joint Stipulation of Claim Construction, the parties claim the meaning of the term "interface" is in dispute. However, this phrase is not discussed in any of the parties' briefs, and neither side presented an argument at the July 25 hearing as to why the term is disputed. This term

has a standard and ordinary meaning—even to a federal judge—and the Court will not further define it.

XI. Undisputed Terms

Finally, in their Joint Stipulation of Claim Construction, the parties have stipulated to the construction of 17 other terms in the '972 patent. The Court will therefore adopt these stipulated constructions, solely for the purpose of this lawsuit.

Accordingly, the Court enters the following order:

IT IS ORDERED that the attached construction of the patent claims will be incorporated into any jury instructions given in this cause and will be applied by the Court in ruling on the issues raised in summary judgment.

SIGNED on this 26th day of July 2000.

UNITED STATES DISTRICT JUDGE

CONSTRUCTION OF CLAIMS
U.S. PATENT NO. 5,941,972

Disputed Terms

The phrase "implements access controls for storage space on the SCSI storage devices" means provides controls which limit a computer's access to a specific subset of storage devices or sections of a single storage device.

The phrase "allocation of subsets of storage space to associated Fibre Channel devices, wherein each subset is only accessible by the associated Fibre Chanel device" means subsets of storage space are allocated to specific Fibre Channel devices.

A "supervisor unit" is a microprocessor programmed to process data in a buffer in order to map between Fibre Channel devices and SCSI devices and which implements access controls.

A "SCSI storage device" is any storage device including, for example, a tape drive, CD-ROM drive, or a hard disk drive that understands the SCSI protocol and can communicate using the SCSI protocol.

The term "map" means to create a path from a device on one side of the storage router to a device on the other side of the router, *i.e.* from a Fibre Channel device to a SCSI device (or vice-versa). A "map" contains a representation of devices on each side of the storage router, so that when a device on one side of the storage router wants to communicate with a device on the other side of the storage router, the storage router can connect the devices.

A "Fibre Channel protocol unit" is a portion of the Fibre Channel controller which connects to the Fibre Channel transport medium.

A "SCSI protocol unit" is a portion of the SCSI controller which interfaces to the SCSI bus.

Stipulated / Undisputed Terms

A "buffer" is a memory device that is utilized to temporarily hold data.

A "direct memory access (DMA) interface" is a device that acts under little or no microprocessor control to access memory for data transfer.

A "Fibre Channel" is a known high-speed serial interconnect, the structure and operation of which is described, for example, in Fibre Channel Physical and Signaling Interface (FC-PH), ANSI X3.230 Fibre Channel Arbitrated Loop (FC-AL), and ANSI X3.272 Fibre Channel Private Loop Direct Attach (FC-PLDA).

A "Fibre Channel controller" is a device that interfaces with a Fibre Channel transport medium.

A "Fibre Channel device" is any device, such as a computer, that understands Fibre Channel protocol and can communicate using Fibre Channel protocol.

"Fibre Channel protocol" is a set of rules that apply to Fibre Channel.

A "Fibre Channel transport medium" is a serial optical or electrical communications link that connects devices using Fibre Channel protocol.

A "first-in-first-out queue" is a multi-element data structure from which elements can be removed only in the same order in which they were inserted; that is, it follows a first in, first out (FIFO) constraint.

A "hard disk drive" is a well known magnetic storage media, and includes a SCSI hard disk drive.

An "initiator device" is a device that issues requests for data or storage.

"Maintain(ing) a configuration" means keep(ing) a modifiable setting of information.

A "native low level, block protocol" is a set of rules or standards that enable computers to exchange information and do not involve the overhead of high level protocols and file systems typically required by network servers.

A "SCSI" (Small Computer System Interface) is a high speed parallel interface that may be used to connect components of a computer system.

A "SCSI bus transport medium" is a cable consisting of a group of parallel wires (normally 68) that forms a communications path between a SCSI storage device and another device, such as a computer.

A "SCSI controller" is a device that interfaces with the SCSI bus transport medium.

"Virtual local storage" is a specific subset of overall data stored in storage devices that has the appearance and characteristics of local storage.

A "workstation" is a remote computing device that connects to the Fibre Channel, and may consist of a personal computer.

Exhibit B

NOTE: Pursuant to Fed. Cir. R. 47.6, this disposition is not citable as precedent. It is a public record. This disposition will appear in tables published periodically.

United States Court of Appeals for the Federal Circuit

02-1158

CROSSROADS SYSTEMS, (TEXAS), INC.,

Plaintiff-Appellee,

v.

CHAPARRAL NETWORK STORAGE, INC.,

Defendant-Appellant.

JUDGMENT

ON APPEAL from the United States District Court for the Western District of Texas

In CASE NO(S). 00-CV-217 and 00-CV-621

This CAUSE having been heard and considered, it is

ORDERED and ADJUDGED: AFFIRMED. See Fed. Cir. R. 36

Per Curiam (NEWMAN, SCHALL, and DYK, Circuit Judges).

ENTERED BY ORDER OF THE COURT

DATED: FEB 12 2003

Jan Horbaly, Clerk

ISSUED AS A MANDATE: MARCH 5, 2003

Costs Against Appellant:
Total $97.35

186

07-28-05

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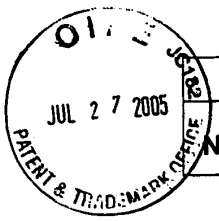

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
NOTIFICATION OF EXTENSION OF TIME UNDER 37 C.F.R § 1.136	Atty. Docket No. **CROSS1120-13**

Applicant **Geoffrey B. Hoese**	
Application Number **10/658,163**	Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation No. **5675**	

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

Certification Under 37 C.F.R. §1.10

I hereby certify that this document is being deposited with the United States Postal Service as Express Mail to Addressee (Label No. EV704312847US) in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22312-1450 on **July 27, 2005**.

Julie H. Blackard

Dear Sir:

Applicant hereby takes an Extension of Time for responding to the Office Action date mailed January 27, 2005 for a period of three (3) month(s).

		Small Entity	***Large Entity***
	First Month	$ 60.00	$ 120.00
	Second Month	$ 225.00	$ 450.00
X	Third Month	$ 510.00	**$ 1,020.00**
	Fourth Month	$ 795.00	$ 1,590.00
	Fifth Month	$ 1,080.00	$ 2,160.00
	TOTAL	**$**	**$1,020.00**

Enclosed is a check in the amount of **$1,020.00** made payable to the Director of the U.S. Patent Office. If any fees are inadvertently omitted, additional fees are required, or if any amounts have been overpaid, please appropriately charge or credit those fees to Deposit Account No. 50-3183 of SPRINKLE IP LAW GROUP.

07/29/2005 CNGUYEN2 00000037 10658163
01 FC:1253 1020.00 OP

Respectfully submitted,

SPRINKLE IP LAW GROUP

John L. Adair
Reg. No. 48,828

Date: July 27, 2005
1301 W. 25th Street, Suite 408
Austin, Texas 78705
(512) 637.9223 – Telephone
(512) 371.9088 - Facsimile

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

TERMINAL DISCLAIMER TO OBVIATE A DOUBLE PATENTING REJECTION OVER A PRIOR PATENT	Atty. Docket No. CROSS1120-13
Applicant: **Geoffrey B. Hoese**	
Application Number: **10/658,163**	Date Filed: **09/09/2003**
Title: **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit: **2182**	Examiner: **Shin, Christopher B.**
Confirmation Number: **5675**	

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

Dear Sir:

Certificate of Mailing Under 37 C.F.R. §1.10

I hereby certify that this correspondence is being deposited with the United States Postal Service as Express Mail to Addressee in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22312-1450 on 7-27-05

Julie H. Blackard
Signature

JULIE H. BLACKARD
Printed Name

07/29/2005 CNGUYEN2 00000037 10658163
02 FC:1814 130.00 OP

Crossroads Systems, Inc., owner of one hundred percent (100%) interest in the instant application, as evidenced by the assignment recorded on 12/21/1997 on Reel/Frame: 8929/0290, hereby disclaims, except as provided below, the terminal part of the statutory term of any patent granted on the instant application, which would extend beyond the expiration date of the full statutory term defined in 35 U.S.C. § 154 to 156 and 173 of U.S. Patent No. 5,941,972, U.S. Patent No. 6,425,036, U.S. Patent No. 6,738,854 and/or U.S. Patent No. 6,763,419. The owner hereby agrees that any patent so granted on the instant application shall be enforceable only for and during such period that it and the prior patent are commonly owned. This agreement runs with any patent granted on the instant application and is binding upon the grantee, its successors or assigns.

In making the above disclaimer, the owner does not disclaim the terminal part of any patent granted on the instant application that would extend to the expiration date of the full statutory term as defined in 35 U.S.C. § 154 to 156 and 173 of the prior patents, as presently

Attorney Docket:
CROSS1120-13

Customer ID: 44654
Application No. 10/658,183

shortened by any terminal disclaimer, in the event that it later: expires for failure to pay a maintenance fee, is held unenforceable, is found invalid by a court of competent jurisdiction, is statutorily disclaimed in whole or terminally disclaimed under 37 C.F.R. 1.321, has all claims canceled by a reexamination certificate, is reissued, or is in any manner terminated prior to the expiration of its full statutory term as presently shortened by any terminal disclaimer.

Check box 1, 2, 3, or 4 as appropriate.

1. ☒ For submission on behalf of an organization (e.g., corporation, partnership, university, government agency, etc.), the undersigned is empowered to act on behalf of the organization.

I hereby declare that all statements made herein of my own knowledge are true and that all statements made 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 Section 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issued thereon.

* Statement under 37 C.R.F. 3.73(b) is required if terminal disclaimer is signed by the assignee (owner). Form PTO/SB/96 may be used for making this certification. See MPEP § 324.

2. ☐ The undersigned is an attorney or agent of record.

3. ☒ Terminal disclaimer fee under 37 C.F.R. 1.20(d) included.

4. ☐ Terminal disclaimer fee under 37 C.F.R. 1.20(d). The Commissioner is hereby authorized to deduct $130.00 representing the above-noted filing fee from Deposit Account. No. 50-3183 of Sprinkle IP Law Group. The Commissioner is hereby further authorized to deduct any deficiencies or credit any overpayments regarding this application from the same account.

Robert Sims
Title: President/CEO

7/20/05
Dated

Application Number	Application/Control No.	Applicant(s)/Patent under Reexamination	
	10/658,163	HOESE ET AL.	

Document Code - DISQ	Internal Document – DO NOT MAIL

TERMINAL DISCLAIMER	☒ APPROVED	☐ DISAPPROVED
Date Filed : 072705	This patent is subject to a Terminal Disclaimer	

Approved/Disapproved by:
James R. Matthews

U.S. Patent and Trademark Office

sprinkle IP LAW GROUP

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[o] 512.637.9220
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FAX COVER SHEET

TO:	U.S. Patent Office	**Fax#:**	571/273-8300
FROM:	Julie H. Blackard Legal Secretary	**Client Matter #:**	CROSS1120-13
DATE:	07/26/05	**# of Pages:**	2
RE:	**Revocation and Power of Attorney**		

Please contact 512.637.9227 if there is a problem with this transmission.

SECOND REQUEST

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
REVOCATION AND POWER OF ATTORNEY AND CHANGE OF MAILING ADDRESS	Atty. Docket No. (Opt.) **CROSS1120-13**

Applicants **Geoffrey B Hoese, et. al.**	**RECEIVED CENTRAL FAX CENTER**
Application Number **10/658,163**	Filed **9/9/2003** JUL 26 2005
For **STORAGE ROUTER AND METHOD FOR PROVIDING VIRTUAL LOCAL STORAGE**	
Group Art Unit **2186**	Examiner **Unknown**
Confirmation No. **5675**	

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

Dear Sir:

Certification Under 37 C.F.R. §1.8

I hereby certify that this document is being transmitted to COMMISSIONER FOR PATENTS via facsimile on 8-17, 2004.

Reynetta DeVeau
Signed Name

Reynetta DeVeau
Printed Name

Crossroads Systems, Inc., 100% owner of the above-identified patent application, as evidenced by the Assignment recorded on December 31, 1997 on Reel/Frame: 8929/0290, hereby revokes all previous Powers of Attorney and appoints the following attorneys under Customer No. 44654, all of the firm of SPRINKLE IP LAW GROUP, to prosecute the above-identified Patent and to transact all business in the Patent and Trademark Office connected therewith.

STEVEN R. SPRINKLE	Registration No. 40,825
JOHN ADAIR	Registration No. 48,828
ARI AKMAL	Registration No. 51,388

Direct all telephone calls and correspondence to:

Customer No. 44654
SPRINKLE IP LAW GROUP
1301 W. 25th Street, Suite 408,
Austin, Texas 78705
Attn: Steven Sprinkle
Tel. 512.637.9220 / Fax 512.371.9088

I hereby state I am authorized to act on behalf of **CROSSROADS SYSTEMS, INC.**

Respectfully submitted,

Crossroads Systems, Inc.

Dated: 8/11, 2004

By: _____
Robert Sims, President & CEO

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE	
INFORMATION DISCLOSURE STATEMENT BY APPLICANTS	Atty. Docket No. (Opt.) **CROSS1120-13**

Applicant **Geoffrey B. Hoese, et al.**	
Application Number **10/658,163**	Date Filed **09/09/2003**
Title **Storage Router and Method for Providing Virtual Local Storage**	
Group Art Unit **2182**	Examiner **Shin, Christopher B.**
Confirmation Number: **5675**	

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

Certification Under 37 C.F.R. §1.8

I hereby certify that this document is being deposited with the United States Postal Service as First Class Mail in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313 on **July 13, 2005.**

Janice Pampell
Janice Pampell

Applicants respectfully request, pursuant to 37 C.F.R. §§ 1.555, 1.56, 1.97 and 1.98, that the art listed on the attached SBO8-A and SBO8-B forms be considered and cited in the examination of the above-identified application. Since the present Application was filed after June 30, 2003, a copy of any U.S. Patent and any U.S. Patent Application Publications cited on the attached SBO8-A form is not being submitted with this Information Disclosure Statement pursuant to the waiver of 37 C.F.R. § 1.98(a)(2)(i) by the U.S. Patent and Trademark Office. Several documents are included on the enclosed CD-Rom, as well as hard copies for the convenience of the Examiner.

Furthermore, pursuant to 37 C.F.R. §§ 1.97(g) and (h), no representation is made that a search has been made or that this art is material to patentability of the present application. Applicants respectfully submit that the claims of Applicants' above-referenced patent is patentably distinguishable from these references. Applicants respectfully request consideration of these references. The Commissioner is hereby authorized to charge any fees due, or refund any credit, to Deposit Account No. 50-3183 of Sprinkle IP Law Group for any fee under 37 C.F.R. §1.17.

07/26/2005 CNGUYEN2 00000075 10658163
01 FC:1806 180.00 OP

Respectfully submitted,
Sprinkle IP Law Group
Attorneys for Applicants

John L. Adair
Reg. No. 48,828

Dated: July 13, 2005
1301 W. 25th Street, Suite 408
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T. 512-637-9220 / F. 512-371-9088

PTO/SB/08A (04-03)

INFORMATION DISCLOSURE STATEMENT BY APPLICANT

Application Number	10/658,163
Filing Date	09/09/2003
First Named Inventor	Hoese, Geoffrey
Group Art Unit	2182
Examiner Name	Shin, Christopher B.
Attorney Docket Number	CROSS1120-13

Sheet 1 OF 4

U.S. PATENT DOCUMENTS

Examiner Initials	Cite No.	Document Number Number	Kind Code (if known)	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
	A1	4,415,970		11/15/1983	Swenson, et al.	
	A2	4,455,605		6/19/1984	Cormier, et al.	
	A3	4,504,927		3/12/1985	Callan	
	A4	4,533,996		8/6/1985	Gartung, et al.	
	A5	4,573,152		2/25/1986	Greene, et al.	
	A6	4,603,380		7/29/1986	Easton, et al.	
	A7	4,620,295		10/28/1986	Aiden, Jr.	
	A8	4,644,462		2/17/1987	Matsubara, et al.	
	A9	4,697,232		9/29/1987	Brunelle, et al.	
	A10	4,787,028		11/22/1988	Finforck, et al.	
	A11	4,807,180		2/21/1989	Takeuchi, et al.	
	A12	4,811,278		3/7/1989	Bean, et al.	
	A13	4,821,179		4/11/1989	Jensen, et al.	
	A14	4,825,406		4/25/1989	Bean, et al.	
	A15	4,827,411		5/2/1989	Arrowood, et al.	
	A16	4,835,674		5/30/1989	Collins, et al.	
	A17	4,864,532		9/5/1989	Reeve, et al.	
	A18	4,897,874		1/30/1990	Lidensky, et al.	
	A19	4,961,224		10/2/1990	Yung	
	A20	5,072,378		12/10/1991	Manka	
	A21	5,077,732		12/31/1991	Fischer, et al.	
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	A23	5,124,987		6/23/1992	Milligan, et al.	
	A24	5,155,845		10/13/1992	Beal, et al.	
	A25	5,185,876		2/9/1993	Nguyen, et al.	
	A26	5,193,168		3/9/1993	Corrigan, et al.	
	A27	5,193,184		3/9/1993	Belsan, et al.	
	A28	5,202,856		4/13/1993	Glider, et al.	

	A29	5,210,866		5/11/1993	Milligan, et al.	
	A30	5,212,785		5/18/1993	Powers, et al.	
	A31	5,214,778		5/25/1993	Glider, et al.	
	A32	5,226,143		7/6/1993	Baird, et al.	
	A33	6,239,632		08/24/93	Larner	
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	A35	5,247,638		9/21/1993	O'Brien, et al.	
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	A37	5,297,262		3/22/1994	Cox, et al.	
	A38	5,301,290		4/5/1994	Tetzlaff, et al.	
	A39	5,315,657		5/24/2994	Abadi, et al.	
	A40	5,317,693		7/19/1994	Elko, et al.	
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	A50	5,403,639		4/4/1995	Belsan, et al.	
	A51	5,410,667		4/25/1995	Belsan, et al.	
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	A53	5,416,915		5/16/1995	Mattson, et al.	
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	A55	5,420,988		5/30/1995	Elliott	
	A56	5,423,026		6/6/1995	Cook, et al.	
	A57	5,426,637		6/20/1995	Derby, et al	
	A58	5,430,855		7/4/1995	Wash, et al.	
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	A62	5,463,754		10/31/1995	Beausoleil, et al.	
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	A65	5,487,077		1/23/1996	Hassner, et al.	
	A66	5,495,474		2/27/1996	Olnowich, et al.	
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	A68	5,504,857		4/2/1996	Baird, et al.	
	A69	5,507,032		4/9/1996	Kimura	
	A70	5,511,169		4/23/1996	Suda	
	A71	5,519,695		5/21/1996	Purohit, et al.	
	A72	5,530,845		6/25/1996	Hiatt, et al.	
	A73	5,535,352		7/9/1996	Bridges, et al.	
	A74	5,537,585		7/16/1996	Blickerstaff, et al.	
	A75	5,544,313		8/6/1996	Shachnai, et al.	
	A76	5,548,791		8/20/1996	Casper, et al.	
	A77	5,564,019		10/8/1996	Beausoleil, et al	
	A78	5,568,648		10/22/1996	Coscarella, et al.	
	A79	5,581,709		12/3/1996	Ito, et al.	
	A80	5,581,724		12/3/1996	Belsan et al.	
	A81	5,613,082		3/18/1997	Brewer, et al.	
	A82	5,621,902		4/15/1997	Cases, et al.	
	A83	5,632,012		5/20/1997	Belsan, et al.	
	A84	5,634,111		5/27/1997	Oeda, et al.	
	A85	5,638,518		6/10/1997	Malladi	
	A86	5,642,515		6/24/1997	Jones, et al.	
	A87	5,659,756		8/19/1997	hefferon, et al.	
	A88	5,664,107		9/2/1997	Chatwanni, et al.	
	A89	5,727,218		3/10/1998	Hotchkin	
	A90	5,743,847		4/28/1998	Nakamura, et al.	
	A91	5,781,715		7/14/1998	Sheu	
	A92	5,802,278		9/1/1998	Isfeld, et al.	
	A93	5,805,816		9/8/1998	Picazo, Jr., et al.	
	A94	5,860,137		1/12/1999	Raz, et al.	
	A95	5,867,648		2/2/1999	Foth, et al.	
	A96	5,889,952		3/30/1999	Hunnicutt, et al.	
	A97	5,913,045		6/15/1999	Gillespie, et al.	
	A98	5,923,557		7/13/1999	Eidson	
	A99	5,933,824		8/3/1999	DeKoning, et al.	
	A100	5,935,260		8/10/1999	Ofer	
	A101	5,949,994		9/28/1999	Boggs, et al.	
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	A105	6,021,451		2/1/2000	Bell, et al.	
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	A108	6,073,218		6/6/2000	DeKoning, et al.	
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	A110	6,081,849		6/27/2000	Born, et al.	
	A111	6,098,149		8/1/2000	Ofer, et al.	
	A112	6,108,684		8/22/2000	DeKoning, et al	
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	A114	6,148,004		11/14/2000	Nelson, et al.	
	A115	6,209,023		3/27/2001	Dimitroff, et al.	
	A116	6,230,218		5/8/2001	Casper, et al.	
	A117	6,341,315		1/22/2002	Arroyo, et al.	
	A118	6,343,324		1/29/2002	Hubis, et al.	
	A119	6,425,036		7/23/2002	Hoese, et al.	
	A120	6,484,245		11/19/2002	Sanada, et al.	

Examiner Initials		FOREIGN PATENT DOCUMENTS			Publication Date MM-DD-YYYY (Number 43)	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines Where Relevant Passages or Figures Appear
		Country Code	Number	Kind Code *(if known)*			
	B1	GB 2341715					
	B2	JP 6301607					
	B3	WO 98/36357			1998		
Examiner Signature					Date Considered		

PTO/SB/08B (08-00)

FORM PTO 1449 US Department of Commerce Patent and Trademark Office		
	Application Number	10/658,163
	Filing Date	09/09/2003
	First Named Inventor	Geoffrey B. Hoese
	Group Art Unit	2182
	Examiner Name	Shin, Christopher B.
Sheet 1 of 7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS	Date
	C1	Decision Returning Petition mailed February 28, 2005	
	C2	Block-Based Distributed File Systems, Anthony J. McGregor, July 1997	
	C3	Compaq StorageWorks HSG80 Array Controller ACS Version 8.3 (Maintenance and Service Guide) 11/98	
	C4	Compaq StorageWorks HSG80 Array Controller ACS Version 8.3 (Configuration and CLI Reference Guide) 11/98	
	C5	CRD-5500 SCSI RAID Controller User's Manual CMD Technology, Inc. pp. 1-1 to 6-25, revised November 21, 1996.	11/21/1996
	C6	DIGITAL Storage Works, HSZ70 Array Controller, HSOF Version 7.0 EK-HSZ70-CG. A01, Digital Equipment Corporation, Maynard, Massachusetts	
	C7	DIGITAL StorageWorks HSZ70 Array Controller HSOF Version 7.0 EK-HSZ270-RM. A01 CLI Reference Manual	
	C8	DIGITAL StorageWorks HSZ70 Array Controller HSOF Version 7.0 EK-HSZ70-SV. A01	1997-
	C9	DIGITAL StorageWorks HSG80 Array Controller ACS Version 8.0 (User's Guide 1/98)	
	C10	DP5380 Asynchronous SCSI Interface, National Semiconductor Corporation, Arlington, TX, May 1989, pp. 1-32	
	C11	Emerson, "Ancor Communications: Performance evaluation of switched fibre channel I/O system using--FCP for SCSI" February 1995, IEEE, pp. 479-484	2/1/1995
	C12	Fibre Channel and ATM: The Physical Layers, Jerry Quam WESCON/94, published 27-29 September 1994. Pages 648-652.	
	C13	Fiber Channel storage interface for video-on-demand servers by Anazaloni, et al.	6/15/1905
	C14	Gen5 S-Series XL System Guide Revision 1.01 by Chen	6/18/1905
	C15	Graphical User Interface for MAXSTRAT Gen5/Gen-S Servers User's guide 1.1	6/11/1996
	C16	High Performance Data transfers Using Network-Attached Peripherals at the national Storage Laboratory by Hyer	2/26/1993
	C17	IFT-3000 SCSI to SCSI Disk array Controller Instruction Manual Revision 2.0 by Infotrend Technologies, Inc.	1995-
	C18	Implementing a Fibre Channel SCSI transport by Snively	1994-
	C19	"InfoServer 150--Installation and Owner's Guide", EK-INFSV-OM-001, Digital Equipment Corporation, Maynard, Massachusetts 1991, Chapters 1 and 2	
	C20	InfoServer 150VXT Photograph	
	C21	Infoserver 100 System Operations Guide, First Edition Digital Equipment Corporation, 1990	
	C22	Johnson, D.B., et al., "The Peregrine High Performance RPC System", Software-Practice and Experience, 23(2):201-221, Feb. 1993	
	C23	Local-Area networks for the IBM PC by Haugdahl	
	C24	Misc. Reference Manual Pages, SunOS 5.09	

FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
				Filing Date	09/09/2003
				First Named Inventor	Geoffrey B. Hoese
				Group Art Unit	2182
				Examiner Name	Shin, Christopher B.
Sheet	2	of	7	Atty Docket Number	CROSS1120-13

Examiner Initials	Cite No.	OTHER PRIOR ART -- NON PATENT LITERATURE DOCUMENTS	Date
	C25	New serial I/Os speed storage subsystems by Bursky	2/6/1995
	C26	Petal: Distributed Virtual Disks, Edward K. Lee and Chandramohan A. Thekkath, ACM SIGPLAN Notices, Volume 31, Issue 9, September 1996, pages 84-92.	
	C27	Pictures of internal components of the InfoServer 150, taken from http://bindarydinosaurs.couk/Museum/Digital/infoserver/infoserver.php in Nov. 2004.	
	C28	Raidtec FibreArray and Raidtec FlexArray UltraRAID Systems", Windows IT PRO Article, October 1997	
	C29	S.P. Joshi, "Ethernet controller chip interfaces with variety of 16-bit processors," electronic Design, Hayden Publishing Co., Inc., Rochelle Part, NJ, October 14, 1982. pp 193-200	
	C30	Simplest Migration to Fibre Channel Technology" Article, Digital Equipment Corporation, November 10, 1997, published on PR Newswire	11/10/1997
	C31	Systems Architectures Using Fibre Channel, Roger Cummings, Twelfth IEEE Symposium on Mass Storage Systems, Copyright 1993 IEEE. Pages 251-256	
	C32	Dot Hill's Request to Exceed Page Limit in Motion for Summary Judgment filed June 29, 2005. Case No. A-03-CV-754 (SS)	
	C33	Request for Ex Parte Reexamination for 6,425,035. Third Party Requester: William A. Blake	
	C34	Request for Ex Parte Reexamination for 6,425,035. Third Party Requester: Natu J. Patel	
	C35	Office Action dated 01/21/03 for 10/174,720 (CROSS1120-8)	1/21/2003
	C36	Office Action dated 02/27/01 for 09/354,682 (CROSS1120-1)	2/27/2001
	C37	Office Action dated 08/11/00 for 09/354,682 (CROSS1120-1)	8/11/2000
	C38	Office Action dated 12/16/99 for 09/354,682 (CROSS1120-1)	12/16/1999
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	C48	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,124 filed on 04/06/05.	
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FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
				Filing Date	09/09/2003
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				Group Art Unit	2182
				Examiner Name	Shin, Christopher B.
Sheet	3	of	7	Atty Docket Number	CROSS1120-13

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	C50	Reply to Office Action Under Ex Parte Reexamination Dated 02/02/07 for 90/007,123 filed on 04/05/05.	
	C51	European Office Action issued April 1, 2004 in Application No. 98966104.6-2413	4/1/2004
	C52	Fiber Channel (FCS)/ATM Interworking: A Design Solution by Anzaloni, et al.	
		Copies of the following are on the attached CD-Rom	
	C53	Defendant's First Supplemental Trial Exhibit List, Crossroads Systems, Inc., v. Chaparral Network Storage, Inc., C.A. No. A-00CA-217-SS (W.D. Tex. 2001). **(CD-Rom)**.	
	C54	Defendant's Third Supplemental Trial Exhibit List, Crossroads Systems, Inc. v. Pathlight Technology, Inc., C.A. No. A-00CA-248-SS (W.D. Tex. 2001) **(CD-Rom)**.	
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	C58	Trail Transcripts, Crossroads Systems, Inc. v. Chaparral Network Storage, Inc., C.A. No. A-00CA-217-SS (W.D. Tex. 2001) **(CD-Rom)**.	
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FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
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Sheet	4	of	7	Atty Docket Number	CROSS1120-13

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	C62	Press Release- Symbios Logic to Demonstrate Strong Support for Fibre Channel at Fall Comdex (Engelbrecht 12 (LSI 2785-86)) (**CD-ROM** Chaparral Exhibits D016).	11/13/1996
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	C67	Bridge Phase II Architecture Presentation (Lavan Ex 2 (CNS 182287-295)) (**CD-ROM** Chaparral Exhibits D022).	4/12/1996
	C68	Attendees/Action Items from 4/12/96 Meeting at BTC (Lavan Ex 3 (CNS 182241)) (**CD-ROM** Chaparral Exhibits D023).	4/12/1996
	C69	Brooklyn Hardware Engineering Requirements Documents, Revision 1.4 (Lavan Ex 4 (CNS 178188-211)) (**CD-ROM** Chaparral Exhibits D024) by Pecone.	5/26/1996
	C70	Brooklyn Single-Ended SCSI RAID Bridge Controller Hardware OEM Manual, Revision 2.1 (Lavan EX 5 (CNS 177169-191)) (**CD-ROM** Chaparral Exhibits D025).	3/21/1996
	C71	Coronado Hardware Engineering Requirements Document, Revision 0.0 (Lavan Ex 7 (CNS 176917-932)) (**CD-ROM** Chaparral Exhibits D027) by O'Dell.	9/30/1996
	C72	ESS/FPG Organization (Lavan Ex 8 (CNS 178639-652)) (**CD-ROM** Chaparral Exhibits D028).	12/6/1996
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	C74	AEC-7313 Fibre Channel Daughter Board (for Brooklyn) Engineering Specification, Revision 1.0 (Lavan Ex 10 (CNS 176830-850)) (**CD-ROM** Chaparral Exhibits D030).	2/27/1997
	C75	Bill of Material (Lavan Ex 14 (CNS 177211-214)) (**CD-ROM** Chaparral Exhibits D034).	7/24/1997
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FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
				Filing Date	09/09/2003
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				Group Art Unit	2182
				Examiner Name	Shin, Christopher B.
Sheet	5	of	7	Atty Docket Number	CROSS1120-13

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	C77	Coronado II, AEC-7312A Fibre Channel Daughter (for Brooklyn) Hardware Specification, Revision 1.2 (Lavan Ex 16 (CNS 177192-210)) (CD-ROM Chaparral Exhibits D036) by Tom Yang.	7/18/1997
	C78	AEC-4412B, AEC7412/3B External RAID Controller Hardware OEM Manual, Revision 3.0. (Lavan Ex 17 (CNS 177124-165)) (CD-ROM Chaparral Exhibits D037).	8/25/1997
	C79	Memo Dated 8/15/97 to AEC-7312A Evaluation Unit Customers re: B001 Release Notes (Lavan Ex 18 (CNS 182878-879)) (CD-ROM Chaparral Exhibits D038),	8/15/1997
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	C83	Data Book- AIC-7895 PCI Bus Master Single Chip SCSI Host Adapter (Davies Ex 1 (CNS 182944-64)) (CD-ROM Chaparral Exhibits D046).	5/21/1996
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	C85	Viking RAID Software (Davies Ex 3 (CNS 180969-181026)) (CD-ROM Chaparral Exhibits D048).	6/18/1905
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	C88	Header File Data Structure (Davies Ex 6 (CNS 179997-180008)) (CD-ROM Chaparral Exhibits D051).	1/2/1997
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	C94	Adaptec Schematics re AAC-340 (Kalwitz Ex 14 CNS 177215-251)) (CD-ROM Chaparral Exhibits D057).	
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FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
				Filing Date	09/09/2003
				First Named Inventor	Geoffrey B. Hoese
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Sheet	6	of	7	Atty Docket Number	CROSS1120-13

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	C97	Hewlett-Packard Roseville Site Property Pass for Brian Smith (Dunning Ex 14 (HP 489) (CD-ROM Chaparral Exhibits D078).	11/7/1996
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	C105	Letter dated 7/12/96 from J. Boykin to B. Smith re: Purchase Order for Evaluation Units from Crossroads (Smith Ex 24) CRDS 8556-57) (CD-ROM Chaparral Exhibits D144).	7/12/1996
	C106	CrossPoint 4100 Fibre Channel to SCSI Router Preliminary Datasheet (Hulsey Ex 9 (CRDS 16129-130)) (CD-ROM Chaparral Exhibits D145).	11/1/1996
	C107	CrossPoint 4400 Fibre Channel to SCSI Router Preliminary Datasheet (Bardach Ex. 9, Quisenberry Ex 33 (CRDS 25606-607)) (CD-ROM Chaparral Exhibits D153).	11/1/1996
	C108	Fax Dated 07/22/96 from L. Petti to B. Smith re: Purchase Order from Data General for FC2S Fibre to Channel SCSI Protocol Bridge Model 11 (Smith Ex 25; Quisenberry Ex 23; Bardach Ex 11 (CRDS 8552-55; 8558) (CD-ROM Chaparral Exhibits D155).	
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FORM PTO 1449 US Department of Commerce Patent and Trademark Office				Application Number	10/658,163
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Sheet	7	of	7	Atty Docket Number	CROSS1120-13

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	C114	CrossPoint 4400 Fibre to Channel to SCSI Router Preliminary Datasheet; Crossroads Company and Product Overview (Quisenberry Ex 4 (CRDS 25606; 16136)) (**CD-ROM** Chaparral Exhibits D167).	
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	C116	RAID Manager 5 with RDAC 5 for UNIX V.4 User's Guide (LSI-01854) (**CD-ROM** Chaparral Exhibits P062).	9/1/1996
	C117	Letter dated May 12, 1997 from Alan G. Leal to Barbara Bardach enclosing the original OEM License and Purchase Agreement between Hewlett-Package Company and Crossroads Systems, Inc. (CRDS 02057) (**CD-ROM** Chaparral Exhibits P130).	
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G5R RB33 RGB

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(54) Abstract Title
Magnetic disk redundant array

(57) A plurality of magnetic disk drives (301, 302, 303) are configured to store machine readable data in a protected way such that data is recoverable in the event of a single disk failure. The array of disks is housed for application directly into an existing disk bay of a computer (101). The array is connectable to the computer as if it were a single conventional computer disk and the drives are controlled by an operating system on the computer as if they were a single storage volume.

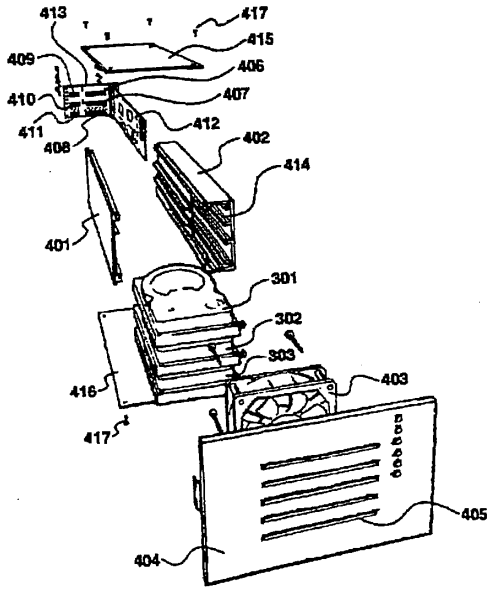

Figure 4

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1995

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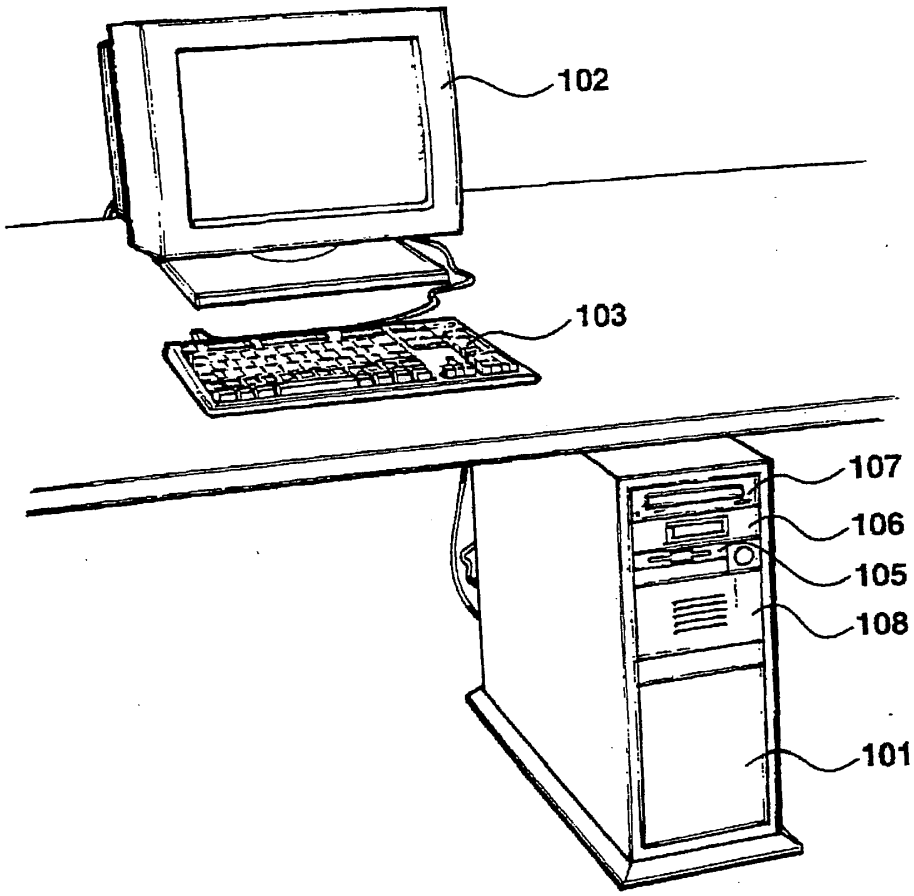

Figure 1

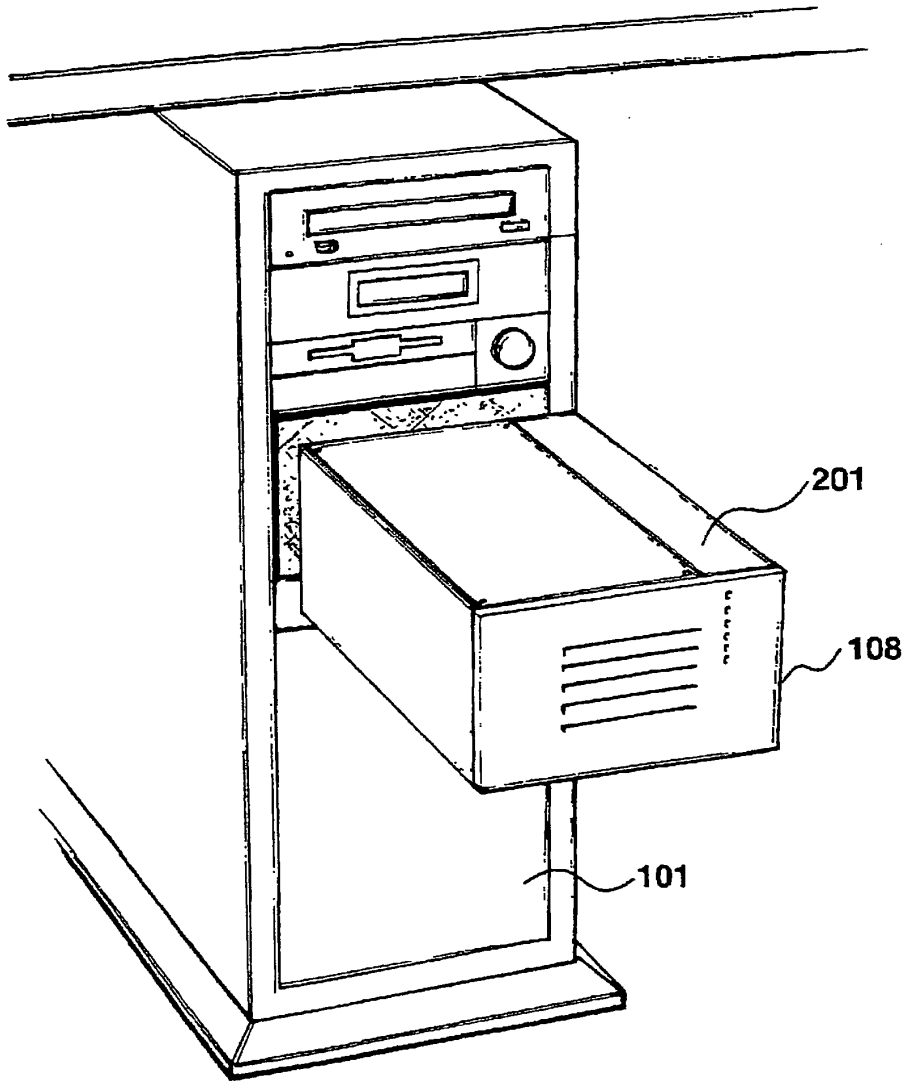

Figure 2

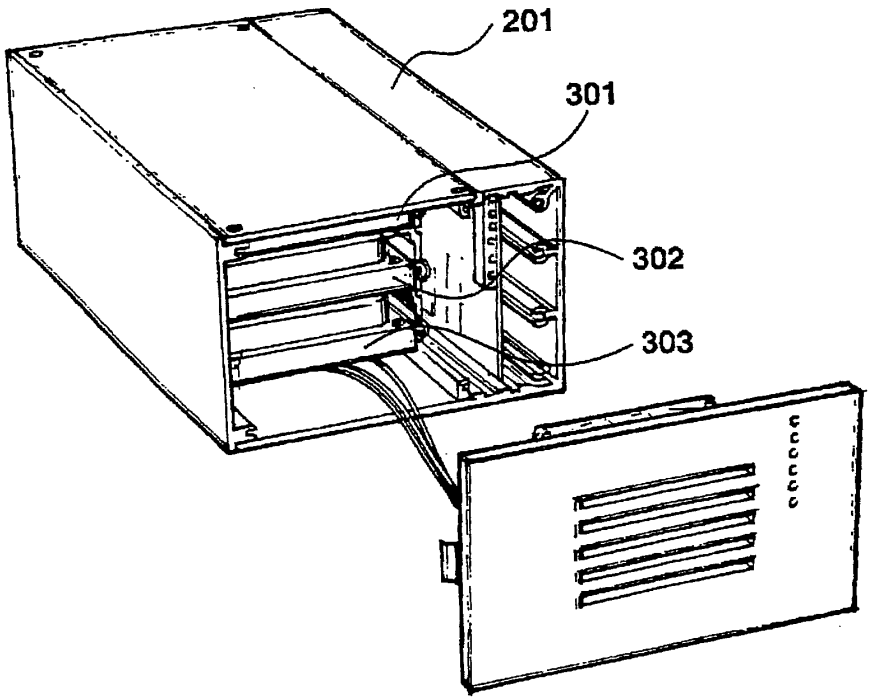

Figure 3

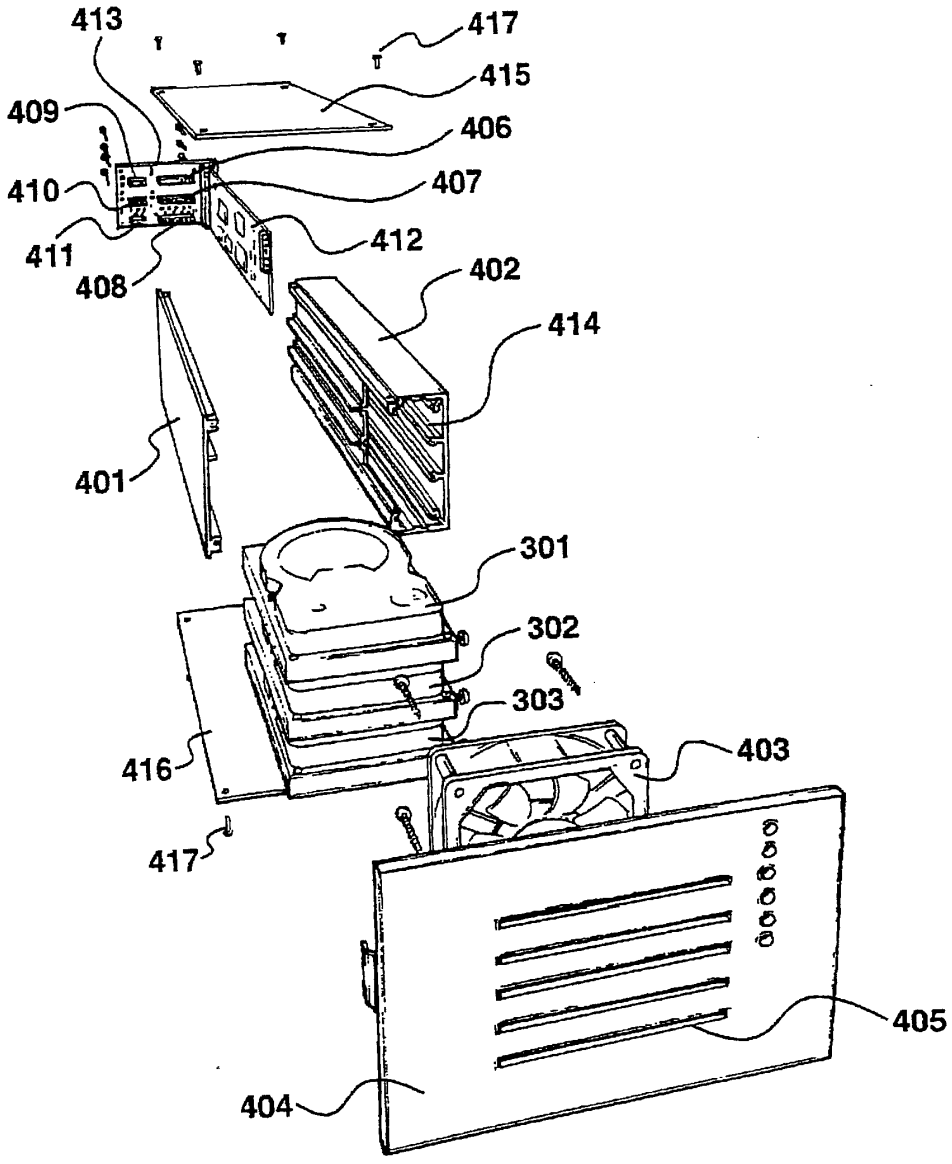
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Figure 4

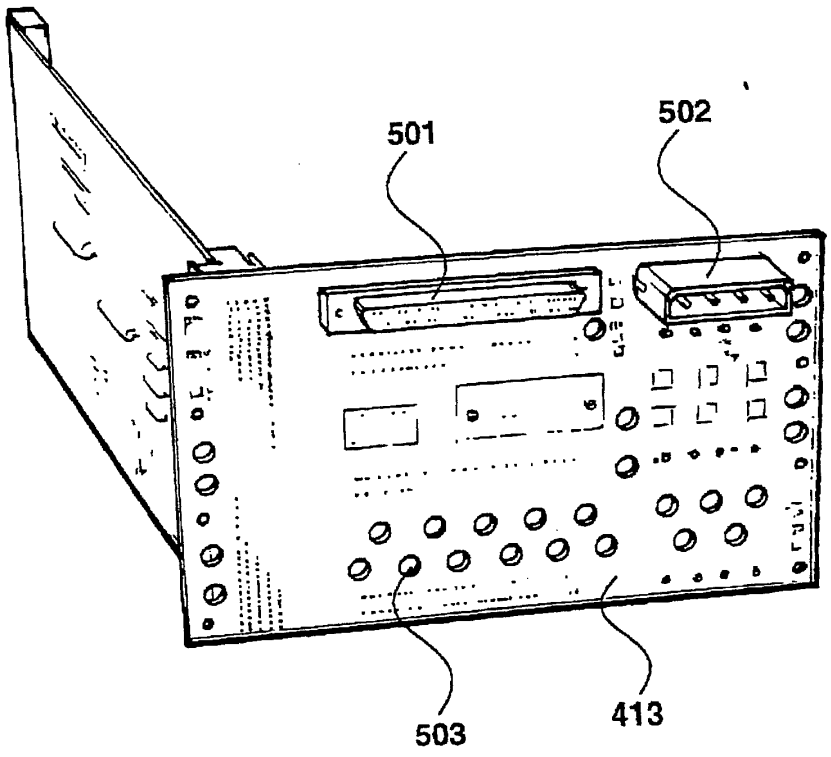

Figure 5

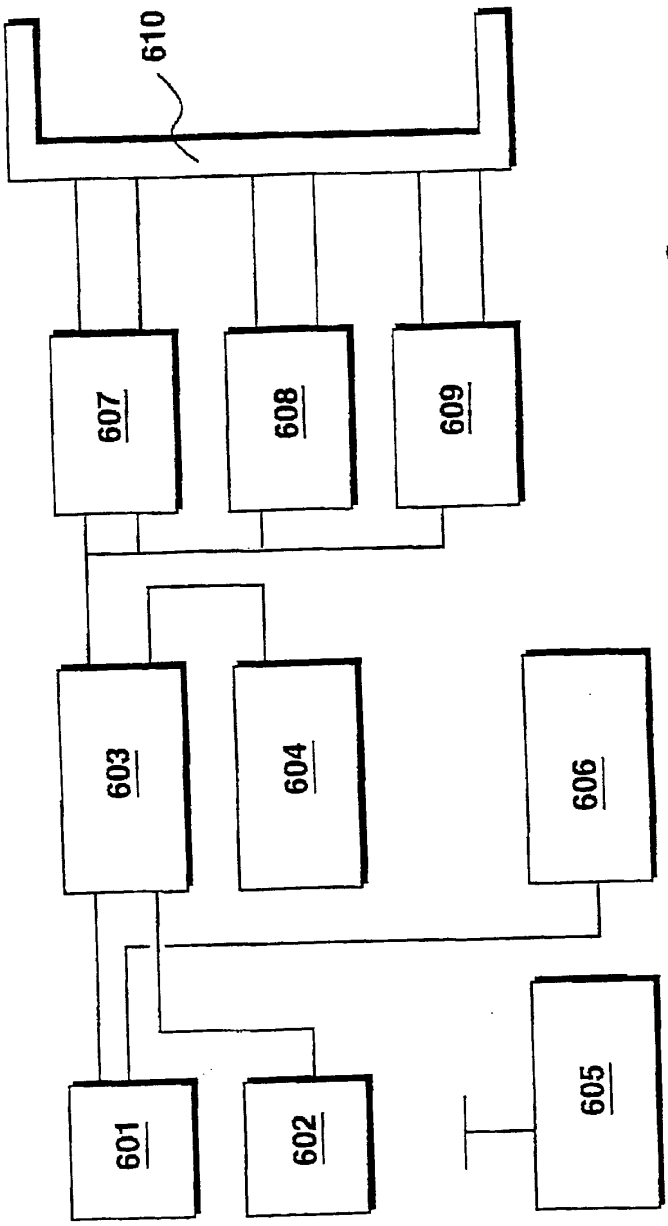

Figure 6

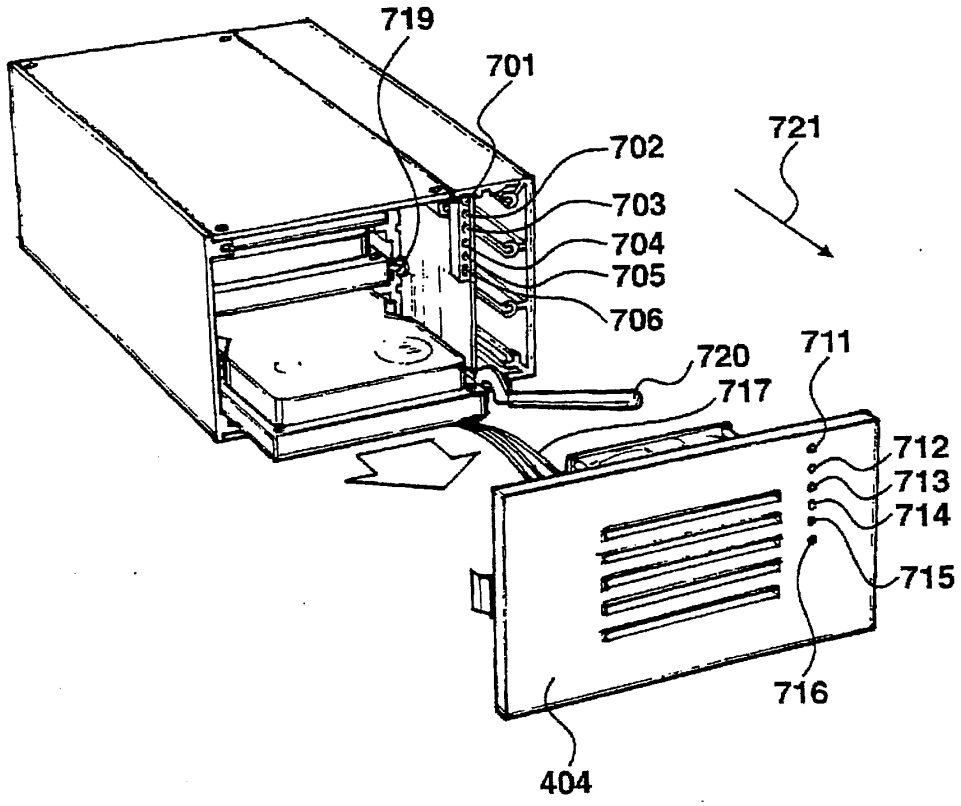
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Figure 7

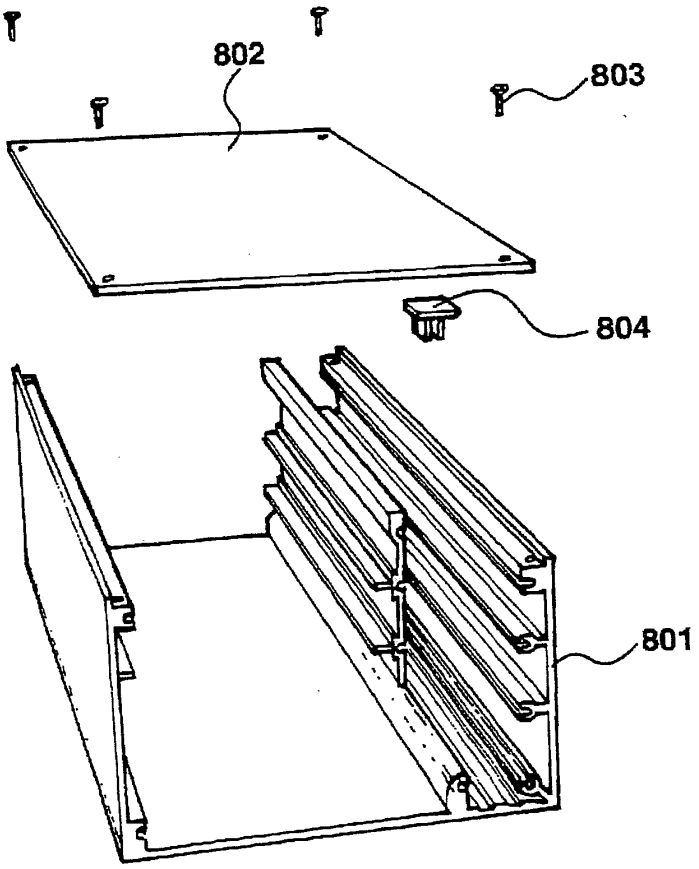

Figure 8

Data Storage

The present invention relates to an array of magnetic disks configured to store machine readable data in a protected way, such that data is recoverable in the event of disk failure.

Arrays configured to store machine readable data in a protected way are known and are often referred to as a redundant array of inexpensive disks, usually abbreviated to the acronym "RAID". Several RAID procedures are known and most of these share the approach of generating redundant data by an exclusive ORing process from which, in the event of any of the disks failing, all of the data can be reconstituted from the remaining operational disks.

When all of the disks are operational, the array is said to be working in its protected mode. In the event of one disk failure, the system may still remain operational, in that data may be read from the disks, but the data ceases to be protected and a further disk failure would result in data loss. With a single disk failure the system is said to be working in an unprotected mode at which point an operator would be advised that disk replacement is required and that the lost data needs to be reconstituted. Thus, a disk would be physically removed, replaced and then the lost data would be reconstituted on to the new disk.

As personal computer systems and workstations become more powerful, allowing more sophisticated software applications to be executed and the degree of data storage available in such systems increases, with disks containing several gigabytes of data now becoming widely used, a greater demand has been created for the installation of protected systems using disk redundancy. Complete RAID subsystems may be purchased for external connection but a problem with such known systems is that the cost can be very prohibitive. In many situations, the cost of such a RAID system

tends to be higher than the cost of a personal computer system. Thus, there is a requirement for providing RAID protection at reduced cost.

Personal computer systems are usually housed in desktop units or tower units having spare bays allowing additional disks to be received. Thus, it is possible for many hard disk drives to be included within a tower housing and additional interface cards may be provided if required. Thereafter, it is possible for the RAID calculations to be effected by the resident host CPU, such that the additional extra cost is quite modest. However, a major problem with such a configuration is that a significant processor overhead is required in order to perform the RAID calculations, resulting in a severe degradation in overall system performance.

According to a first aspect of the present invention, there is provided a plurality of data storage devices configured to store machine readable data in a protected way such that data is recoverable in the event of a single device failure, wherein the devices are housed for application directly into an existing disk bay for a computer; the devices are connectable to a disk interface as if they were a single conventional storage volume; and said devices are controlled by an operating system installed on a computer as if they were a single storage volume.

In a preferred embodiment, the disks are interfaced to an IDE connection and three disks may be received in respective IDE connections.

Preferably, the array presents a SCSI interface to a host computer and the array may be configured to be housed in two or more five and one quarter inch drive bays.

According to a second aspect of the present invention, there is provided a method of equipping a personal computer with a plurality of data storage devices configured as a redundant array by interfacing said devices to conventional five and one quarter inch drive bays, such that protected machine readable data is recoverable in the event of a single disk failure, comprising the steps of supporting the array within an existing disk bay for a

computer; connecting the array to the computer as if it were a single conventional computer disk; and controlling said drives by an operating system installed on a computer as if it were a single storage volume.

The invention will now be described by way of example only, with reference to the accompanying drawings, in which:

Figure 1 shows a personal computer system;

Figure 2 shows an array of disks being inserted into a computer system;

Figure 3 details the array shown in *Figure 2*;

Figure 4 shows an exploded view of the array identified in *Figure 3*;

Figure 5 shows a rear face view of the array back plane;

Figure 6 shows a circuit for implementing RAID calculations; and

Figure 7 illustrates the removal of a damaged disk from the array; and

Figure 8 shows an alternative embodiment for the extrusion identified in *Figure 4*.

A personal computer system is shown in *Figure 1* in which a main system tower **101** supplies visual information to a visual display unit **102** and receives manual commands via a keyboard **103**. The main system tower houses a central processing unit, memory circuits and other standard associated electronics as is well known in the art. The personal computer system may be an IBM PC type system, a Mackintosh system or any other computer type equipment used for individual use, possibly in a networked configuration. Alternatively, the main system tower **101** may constitute a network server, possibly running an appropriate server operating system, such as Windows NT server.

Tower **101** includes conventional five and one quarter inch disk bays. Within these disk bays a plurality of devices have been mounted, including a three and a half inch floppy disk drive **105**, a tape streamer **106**, a CD ROM drive **107** and an array of magnetic disks **108**, embodying the present invention.

Array **108** is detailed in *Figure 2* and is shown being installed into the main system tower **101**. The array **108** of magnetic disks is configured to store machine readable data in a protected way such that data is recoverable in the event of a single disk failure. The array of disks is housed for application directly into an existing disk bay of a computer, such as the main system tower **101**. The array is connectable to the computer as if it were a single conventional computer disk and the array is operated by an operating system installed on the computer as if it were a single disk.

Each empty drive bay is protected by a removable plastic cover and unit **107** locates within an aperture equivalent to the width of two bays, requiring the removal of two such covers. The array includes a housing **201**, locatable within the two bay aperture and towards its rear includes conventional power and data connectors; such that the housing as a whole is connected to the main system tower using a conventional SCSI connection. Thus, the main system perceives the disk array as if it were a single disk and the operating system, executed by the main system, controls the operation of the array using equivalent commands to those required for the operation of a single storage volume.

The array **107** is detailed in *Figure 3* and contains a total of three IDE drives **301**, **302** and **303**. An exploded view of the array is illustrated in *Figure 4*, which shows each of the individual IDE drives **301**, **302** and **303** being supported by aluminium extrusions, in the form of a left extrusion **401** and a right extrusion **402**. These extrusions hold the disk drives **301**, **302** and **303** firmly in place and facilitate the removal and replacement of individual disk drives when disk failure occurs.

Disk drives **301**, **302** and **303** are located in relatively close proximity and in order to maintain preferred operational temperatures, an electric fan **403** is positioned between the front of the disk drives and a front housing **404**. In this respect, the main front housing includes ventilation grilles **405**.

Each IDE drive **301**, **302** and **303** locates within a conventional IDE socket **406**, **407**, **408**, in addition to respective power supply sockets **409**, **410**, **411**. Thus, from the perspective of each IDE drive, the physical drives are located into sockets substantially similar to those found on an IDE bus of a standard computer system.

RAID calculations are performed within the device itself, using conventional hardware RAID circuitry mounted on circuit board **412**, having electrical connections to the back plane circuit board **413**. Right extrusion **402** defines a cavity **414**, configured to receive circuit board **412**. The extrusions **401** and **402** are held in position by an upper plate **415** and a lower plate **416**, secured by appropriate bolts **417**.

The rear face of back plane **413** is illustrated in *Figure 5*. The back plane includes a conventional SCSI socket **501** and a power supply socket **502**. The array therefore presents itself to the main system as a single disk drive, requiring a single disk drive connection via SCSI interface **501**.

Back plane **413** also includes rows of holes **503** to facilitate ventilation of the disks. Thus, cooling air is brought in through ventilation holes **405**, blown between the disks **301**, **302** and **303** and then exits through holes **503**.

The circuit implemented on board **412** is illustrated diagramatically in *Figure 6*. The circuit includes a central processing unit **601** which communicates with an input/output circuit **602** via a CPU bridge **603**. In addition, operation of CPU **601** is controlled by a CPU mode select circuit **604**. Power from the housing is directed to a three volt supply regulating circuit **605**, arranged to supply power to operational circuits via supply rails.

The CPU **601** receives data relating to the operational environment from an environmental detecting circuit **606**. This information may be received directly, as shown in *Figure 6*, or it may be directed via other control circuitry to allow combined environmental information to be returned to the CPU **601**.

Further output circuitry includes IDE controllers **607** and **608** and a SCSI controller **609**. These circuits communicate with the back plane sockets via a one hundred and eighty way connector **610**.

Input/output circuit **602** supplies driving current to six LED's **701**, **702**, **703**, **704**, **705** and **706** shown in *Figure* 7. Each of these LED's is visible by means of respective holes **711**, **712**, **713**, **714**, **715** and **716** in the front panel **404**. Each LED is a Hewlett Packard HSMF-C655 and actually includes a green LED and a red LED which may be operated independently.

LED **701** indicates the overall operational integrity of the system and primarily confirms that CPU **601** is operating correctly. Thus, when the system is fully operational, LED **701** is illuminated green. Alternatively, if faults have been detected within the controller, LED **701** is illuminated red.

LED **702** represents the environmental monitoring status and is primarily concerned with operational temperature. Environmental circuit **606** includes a temperature sensor and a fault condition is generated if this sensor detects that operational temperatures have become excessive. In addition, a tachometer is associated with fan **403** and a fault condition is generated if this detects that rotation of the fan has ceased. Malfunction of fan **403** represents a serious problem in that this could result in all three drives being permanently damaged such that no protection is offered by the RAID configuration. The system also detects the presence of appropriate voltages on voltage supply rails, as supplied by power supply unit **605** in addition to detecting appropriate terminator power on the SCSI bus.

When the supply rail voltages are correct, SCSI terminator power is correct, the fan is operational and the system is working at its optimal operational temperature, LED **702** is illuminated green. If the system encounters problems and diverges from its preferred operational characteristics, such a condition is detected and LED **702** is illuminated orange. Under these conditions, further operation of the system is permitted but warnings may be generated to the effect that a job should be closed

down and that the device should be investigated. If problems continue and the situation worsens, particularly if the operational temperature becomes very high, LED **702** is illuminated red. Under these conditions, power to the drives is removed and an error condition is generated such that further access to the drives is not permitted.

LED **703** indicates that the SCSI connection is fully operational by being illuminated green. Furthermore, when the SCSI bus is actually in use, LED **703** is illuminated orange.

LED's **704**, **705** and **706** represents operational characteristics of the individual drives **301**, **302** and **303** respectively. When the drives are operational, the LED's are illuminated green and then illuminated orange when the actual data transfer takes place. Furthermore, if a disk error is detected, to the effect that an individual disk has failed, its respective LED is illuminated red.

In response to a single disk failure, it is preferable for the system to be placed off-line and for the damaged disk to be replaced immediately so that the lost data may be reconstituted and the system returned to protected mode operation. In order to replace a disk, the front panel is removed, an operation facilitated by the front panel **404** being retained simply to the main housing by means of an interference connection. Having removed the front panel **404** it is restrained by wires **717** required for supplying electrical power to fan **403**.

The disk drives include tapped holes towards their front-right corner and each of said tapped holes receives a threaded stud **719**. Stud **719** allows its respective disk **301** to **303** to be removed by the application of a stud hook **720**. Force is applied in the direction of arrow **721**, thereby forcing the respective disk drive away from its IDE and data sockets, such as sockets **406** and **409** etc.

An alternative embodiment is illustrated in *Figure 8*. In this embodiment, side panels and a base panel are fabricated as a single

extrusion **801**. The housing is then completed by the application of a top panel **802**. The top panel **802** is secured to the lower extrusion **801** by means of bolts **803** and circuitry held within the extrusion is further secured by an adhesive clip **804**.

Claims

1. A plurality of data storage devices configured to store machine readable data in a protected way such that data is recoverable in the event of a single device failure, wherein

the devices are housed for application directly into an existing disk bay for a computer;

the devices are connectable to a disk interface as if they were a single conventional storage volume; and

said devices are controlled by an operating system installed on a computer as if they were a single storage volume.

2. Data storage devices according to claim 1, wherein said storage devices are magnetic disk drives.

3. Data storage devices according to claim 2, wherein the magnetic disks are interfaced to an IDE connection.

4. Data storage devices according to claim 3, wherein three disks are received in respective IDE connections.

5. Data storage devices according to any of claims 1 to 3, wherein said devices present a SCSI interface to a host computer.

6. Data storage device according to any of claims 1 to 5, configured to be housed in two or more five and one quarter inch drive bays.

7. Data storage devices according to any of claims 1 to 6, including means for detecting when said devices are operating in non-ideal conditions.

8. Data storage devices according to claim 7, including means for detecting when said devices are operating at excessive temperatures.

9. Data storage devices according to claim 7 or claim 8, including means for detecting non-operation of a cooling fan.

10. Data storage devices according to claim 7 or claim 8, including means for directly detecting an excessive operational temperature.

11. Data storage devices according to any of claims 7 to 10, including means for removing drive power to said devices upon detecting a non-ideal operating condition.

12. Data storage devices according to any of claims 1 to 11, including a detachable front panel and a cooling fan secured to said front panel, including ventilation openings arranged to direct a cooling air-stream between the individual devices.

13. A plurality of data storage devices according to any of claims 1 to 12, wherein said devices are connectable in a computer housing and the devices are controlled by the operating system of said computer.

14. A method of equipping a personal computer with a plurality of data storage devices configured as a redundant array by interfacing said devices to conventional five and one quarter inch drive bays, such that protected machine readable data is recoverable in the event of a single disk failure, comprising the steps of

supporting the array within an existing disk bay for a computer;

connecting the array to the computer as if it were a single conventional computer disk; and

controlling said drives by an operating system installed on a computer as if it were a single storage volume.

15. A method according to claim **14**, wherein said data storage devices are magnetic disk drives.

16. A method according to claim **15**, wherein said magnetic disk drives are interfaced to an IDE connection.

17. A method according to claim **16**, wherein three disks are received in respective IDE connections.

18. A method according to any of claims **14** to **17**, wherein said devices present a SCSI interface to a host computer.

19. A method according to any of claims **14** to **18**, wherein said devices are housed in two or more five and one quarter inch drive bays.

20. A method according to any of claims **14** to **19**, wherein non-ideal operating conditions for said devices are detected.

21. A plurality of data storage devices substantially as herein described with reference to the accompanying Figures.

22. A method of equipping a personal computer substantially as herein described with reference to the accompanying Figures.

The Patent Office

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Application No: GB 9820213.8 **Examiner:** Julyan Elbro
Claims searched: 1 to 22 **Date of search:** 4 January 1999

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Databases searched:

UK Patent Office collections, including GB, EP, WO & US patent specifications, in:

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Documents considered to be relevant:

Category	Identity of document and relevant passage		Relevant to claims
X	EP 0795812 A1	HITACHI see figure 1 and pages 2-3.	1-20
X	EP 0717357 A2	SYMBIOSIS LOGIC see abstract and figure 2.	1-20
X	EP 0569313 A2	INTERNATIONAL BUSINESS MACHINES see abstract and figures 1 and 3.	1-20
X	EP 0569236 A2	COMPAQ see figure 2 and pages 2-4.	1-20
X	EP 0485110 A2	ARRAY TECHNOLOGY see abstract.	1-20
X	EP 0450801 A2	INTERNATIONAL BUSINESS MACHINES see abstract, column 22 line 34 to column 23 line 11, and column 27 lines 15-25.	1-20
X	WO 93/18455 A1	ARRAY TECHNOLOGY see abstract, figure 1, and page 10 lines 2-26.	1-20
X	WO 91/20076 A1	STORAGE TECHNOLOGY see abstract and figure 1.	1-20
X	WO 91/14982 A1	SF2 CORPORATION see abstract and figures 1 and 2.	1-20

X Document indicating lack of novelty or inventive step
Y Document indicating lack of inventive step if combined with one or more other documents of same category.
& Member of the same patent family
A Document indicating technological background and/or state of the art.
P Document published on or after the declared priority date but before the filing date of this invention.
E Patent document published on or after, but with priority date earlier than, the filing date of this application.

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Application No: GB 9820213.8 **Examiner:** Julyan Elbro
Claims searched: 1 to 22 **Date of search:** 4 January 1999

Category	Identity of document and relevant passage	Relevant to claims
X	US 5651132 A HITACHI see abstract and figure 1.	1-20

X	Document indicating lack of novelty or inventive step	A	Document indicating technological background and/or state of the art.
Y	Document indicating lack of inventive step if combined with one or more other documents of same category.	P	Document published on or after the declared priority date but before the filing date of this invention.
&	Member of the same patent family	E	Patent document published on or after, but with priority date earlier than, the filing date of this application.

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Abstract

(57)【要約】
【目的】
複数の情報処理装置から複数の I/O デバイスへのアクセスを可能とする。
【構成】
複数の情報処理装置 20,30,40 とマルチアクセス制御装置 50 を FDDI10 に接続し、マルチアクセス制御装置 50 は、I/O デバイス 70,80,90 に SCSI 接続されている。
情報処理装置は、マルチアクセス制御装置へ FDDI フレームでアクセスする。
ネットワーク制御部 500 は、情報処理装置からのデ-タを FDDI インタフェ-スで送受信した後、プロトコル変換部 520 では、SCSI プロトコルに変換し、I/O デバイス制御部 510 を介して I/O デバイスをアクセスする。

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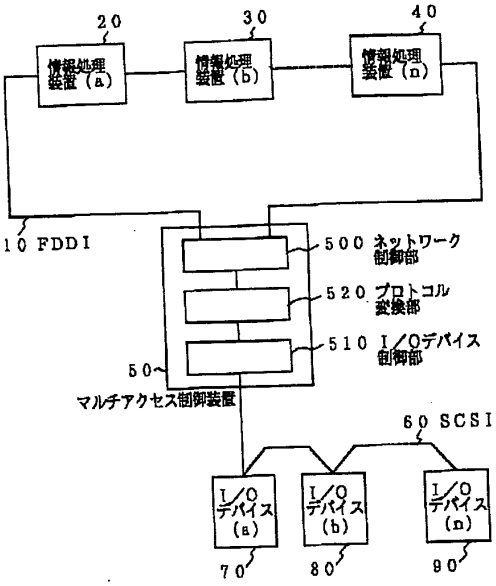
Abstract

(57) [Abstract]
[Objective]
access to I/O device of plural is made possible from information processing apparatus of plural .
[Constitution]
information processing apparatus 20, 30, 40 and multi access control device 50 of plural are connected to FDDI10, the multi access control device 50 SCSI is connected to I/O device 70, 80, 90.
To multi access control device access it does information processing apparatus , with FDDIframe .
data from information processing apparatus transmission and reception after doing, in protocol conversion section 520,it converts network control unit 500, to SCSI protocol with FDDIinterface , through I/O device control unit 510,access it does I/O device .



Claims

【特許請求の範囲】

【請求項 1】

ネットワークを介して複数の情報処理装置を接続したシステムにおいて、該ネットワークのインタフェース制御を行うネットワーク制御手段と、I/O インタフェースを介して複数の I/O デバイスを制御する I/O デバイス制御手段と、該ネットワーク制御手段と I/O デバイス制御手段のインタフェース変換を行うプロトコル変換手段からなるマルチアクセス制御手段を設け、前記複数の情報処理装置は該マルチアクセス制御手段を介して前記複数の I/O デバイスにアクセスすることを特徴とするマルチアクセス I/O 制御方式。

【請求項 2】

前記 I/O デバイス制御手段を前記 I/O デバイス内の制御部に内蔵することを特徴とする請求項 1 記載のマルチアクセス I/O 制御方式。

【請求項 3】

前記複数の情報処理装置が実行した処理データを、前記マルチアクセス制御手段を介して前記所定の I/O デバイスに格納し、該情報処理装置の障害発生時に予備の情報処理装置に切り

[Claim(s)]

[Claim 1]

Through network , through network control means and I/O interface which do interface control of said network in system which connects information processing apparatus of plural , the multi access control means which consists of protocol conversion means which converts I/O device control means and the said network control means and I/O device control means which control I/O device of plural interface providing, As for information processing apparatus of aforementioned plural through said multi access control means , in the I/O device of aforementioned plural access multi access I/O control system . which designatesthat it does as feature

[Claim 2]

multi access I/O control system . which is stated in Claim 1 which designates that theaforementioned I/O device control means is built in to control unit inside theaforementioned I/O device as feature

[Claim 3]

Treatment data which information processing apparatus of aforementioned plural executed, through aforementioned multi access control means , it houses in theaforementioned predetermined I/O device , changes to information processing