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Paper 39
Entered: February 27, 2015

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

DELL INC., HEWLETT-PACKARD COMPANY,
and NETAPP, INC.,
Petitioners,

v.

ELECTRONICS AND TELECOMMUNICATIONS
RESEARCH INSTITUTE,
Patent Owner.

Case IPR2013-00635
Patent 6,978,346 B2

Before BRIAN J. McNAMARA, MIRIAM L. QUINN, and
GREGG I. ANDERSON, *Administrative Patent Judges.*

ANDERSON, *Administrative Patent Judge.*

FINAL WRITTEN DECISION
35 U.S.C. § 318(a) and 37 C.F.R. § 42.73

I. INTRODUCTION

On September 27, 2013, Dell, Inc., Hewlett-Packard Company, and NETAPP, Inc. (collectively, "Petitioner") filed a Petition requesting an *inter partes* review of claims 1 through 9 of U.S. Patent No. 6,978,346 B2 (Ex. 1001, "the '346 patent"). Paper 1 ("Pet."). On March 20, 2014, we instituted trial for claims 1–3 and 5–8 of the '346 patent on certain of the grounds of unpatentability alleged in the Petition. Paper 19 ("Decision on Institution" or "Dec. Inst.").

After institution of trial, Electronics and Telecommunications Research Institute ("Patent Owner") filed a Patent Owner Response. Paper 28 ("PO Resp."). Petitioner filed a Reply. Paper 33 ("Pet. Reply").

An oral hearing was held on December 18, 2014. The transcript of the consolidated hearing has been entered into the record. Paper 38 ("Tr.").

We have jurisdiction under 35 U.S.C. § 6(c). This final written decision is issued pursuant to 35 U.S.C. § 318(a).

A. Related Proceedings

The '346 patent has been asserted against Petitioner in the following actions: *Safe Storage LLC v. Dell Inc.*, 1-12-cv-01624 and *Safe Storage LLC v. NetApp Inc.*, 1-12-cv-01628. Pet 1–2. Petitioner advises us of an additional seventeen actions involving the '346 patent against third parties, all pending in the United States District Court for the District of Delaware. *Id.*

B. The '346 Patent

The '346 patent describes an apparatus with "redundant interconnection between multiple hosts and a redundant array of inexpensive disks (hereinafter referred to as 'RAID')." Ex. 1001, Abstract. As a result

of the redundant interconnection, the apparatus allows increased bandwidth in the event one of the two RAID controllers 460 and 461 has a failure. *Id.* at 3:1–9.

Figure 4 of the '346 patent is reproduced below:

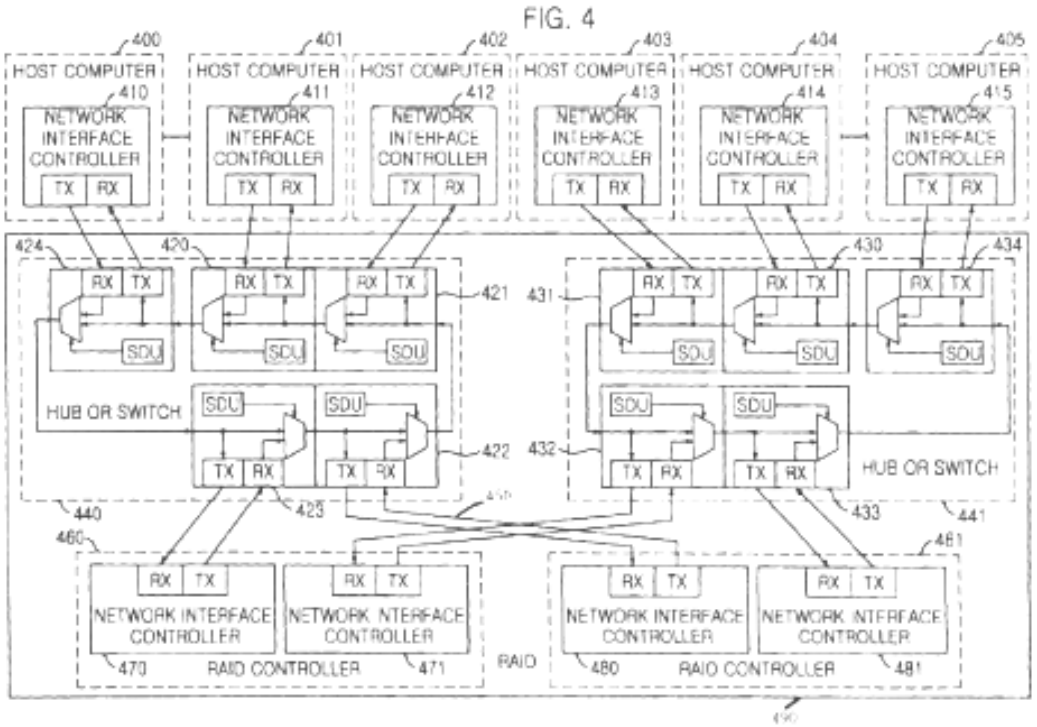

Figure 4 is a block diagram of a host matching system including RAID 490 and its interconnection to host computers 400–405. Ex. 1001, 2:64–3:6. RAID 490 includes two RAID controllers 460, 461 and hubs 440, 441. *Id.* at 3:10–18. Each RAID controller includes a pair of network interface controllers. For example, RAID controller 460 includes network interface controllers 470, 471, and RAID controller 461 includes network interface controllers 480, 481. *Id.* at 3:11–13. Each host computer has its own network interface controller (410–415), which connects the host computer through the hubs and to the network interface controllers (470, 471, 480, 481) of RAID controllers 460, 461. *Id.* at 3:31–35.

The ’346 patent describes that the result is two independent networks with twice the bandwidth of a single network and a “communication passage” between the two RAID controllers. *Id.* at 3:62–64. The communication passage creates a “fault tolerant function” should one of the RAID controllers 460 or 461 fail. *Id.* at 3:64–66. According to Figure 4, communications line 450 interconnects network interface controller 480 of RAID controller 461 and network interface controller 470 of RAID controller 460. *Id.* at 4:2–6; Fig. 4. Then, RAID controller 461 may send information to RAID controller 460. *Id.* In like manner, network interface controller 471 of RAID controller 460 may be connected over communications lines to network interface controller 481 of RAID controller 461, allowing RAID controller 460 to send information to RAID controller 461. *Id.* at 3:66–4:2.

In summary, and as shown in Figure 4, a communication circuit is provided for an error recovery, while maintaining bandwidth communication between two RAID controllers 460, 461. Ex. 1001, 3:1–5. Even though one RAID controller 460 or 461 has an occurrence of a trouble, the bandwidth becomes twice the single connection bandwidth. *Id.* at 3: 6–9.

C. Illustrative Claim

Independent claim 1 is reproduced below:

> 1. An apparatus for a redundant interconnection between multiple hosts and a RAID, comprising:
>
> a first RAID controlling units and a second RAID controlling unit for processing a requirement of numerous host computers, the first RAID controlling unit including a first network controlling unit and a second network controlling unit, and the second RAID controlling unit including a third network controlling unit and a fourth network controlling unit; and

> a plurality of connection units for connecting the first RAID controlling units and the second RAID controlling unit to the numerous host computers, wherein the first RAID controlling unit and the second RAID controlling unit directly exchange information with the numerous host computers through the plurality of connecting units, and the first network controlling unit exchanges information with the fourth network controlling unit, and the second network controlling unit exchanges information with the third network controlling unit.

D. Ground Upon Which Trial Was Instituted

Trial was instituted on the ground alleging that claims 1–3 and 5–8 of the '346 patent are anticipated under 35 U.S.C. § 102(b) by Hathorn, U.S. Patent No. 5,574,950, issued November 12, 1996.

II. ANALYSIS

A. Claim Construction

1. Principles of Law

In an *inter partes* review, claim terms in an unexpired patent are interpreted according to their broadest reasonable construction in light of the specification of the patent in which they appear. 37 C.F.R. § 42.100(b).

2. "RAID" (Claim 1)

In the Decision on Institution we found that "RAID" is well understood by a person of ordinary skill in the art as an acronym for "redundant array of inexpensive disks." Dec. Inst. 8 (citing Ex. 1001, Abstract). Patent Owner does not dispute the interpretation, but points out that each word of the construction conveys additional significance. PO Resp. 10.

With regard to the word "disks," Patent Owner argues that "disks" means "disk drives," and that a RAID is an "array of multiple disk drives configured for redundancy." *Id.* (citing Declaration of Dr. Thomas M.

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