

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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RED HAT, INC., DELL INC., DELL TECHNOLOGIES INC.,  
EMC CORPORATION, HEWLETT PACKARD ENTERPRISES CO.,  
HITACHI VANTARA CORPORATION,  
and SUPER MICRO COMPUTER, INC.,  
Petitioner,

v.

ELECTRONICS & TELECOMMUNICATIONS RESEARCH  
INSTITUTE,  
Patent Owner.

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Case IPR2019-00465  
Patent 6,718,436 B2

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Before JAMESON LEE, KIMBERLY McGRAW,  
and NATHAN A, ENGELS, *Administrative Patent Judges*.

LEE, *Administrative Patent Judge*.

DECISION  
Denying Instituting of *Inter Partes* Review  
35 U.S.C. § 314

## I. INTRODUCTION

### A. Background

On December 19, 2018, Petitioner filed a Petition to institute *inter partes* review of claims 1–14 of U.S. Patent No. 6,718,436 B2 (Ex. 1001, “the ’436 patent”). Paper 6 (“Pet.”). Patent Owner filed a Preliminary Response. Paper 11 (“Prelim. Resp.”).

To institute an *inter partes* review, we must determine that the information presented in the Petition shows “that there is a reasonable likelihood that the petitioner would prevail with respect to at least 1 of the claims challenged in the petition.” 35 U.S.C. § 314(a). Having considered all submissions of both parties, we determine that Petitioner has not demonstrated a reasonable likelihood that it would prevail in establishing the unpatentability of any of claims 1–14.

Accordingly, the Petition is *denied*, and no *inter partes* review is instituted.

### B. Related Matters

The parties identify several civil actions involving alleged infringement of the ’436 patent: *Sequoia Tech., LLC v. Dell, Inc.*, No. 1-18-cv-01127-LPS-CJB (D. Del.); *Sequoia Tech., LLC v. Hitachi, Ltd.*, No. 1-18-cv-01129-LPS-CJB (D. Del.); *Sequoia Tech., LLC v. Sun Micro Computer, Inc.*, No. 1-18-cv-01307-LPS-CJB (D. Del.); *Sequoia Tech., LLC v. Hewlett Packard Enter. Co.*, No. 1-18-cv-01128-LPS-CJB (D. Del.). Pet. 3, Paper 7, 2. Patent Owner further identifies an action seeking declarative judgment of non-infringement against the ’436 patent: *Red Hat, Inc. v. Sequoia Tech., LLC*, No. 1-18-cv-02027-MN (D. Del.). Paper 7, 2.

Petitioner also has filed another petition for *inter partes* review of claims 1–14 of the '436 patent, IPR2019-00467. Paper 7, 2.

C. The '436 Patent

The '436 patent is directed to the managing of a logical volume. Ex. 1001, 3:66–4:40. A logical volume is a virtual disk drive that includes multiple physical disk drives. *Id.* at 1:24–26. The '436 patent explains that logical volume managers implementing software RAID (Redundant Array of Independent Disks) were known. *Id.* at 1:26–27, 3:20–22. Such a logical volume manager is an intermediate level block device driver implementing various RAID techniques in software based on the calculating ability of a computer, and treats several physically separated independent disk drives as one disk drive. *Id.* at 3:22–27. According to the '486 patent, conventional logical volume managers have problems in that the metadata is too large to manage in huge storage structures and the processing speed is too slow when modifying the metadata. *Id.* at 3:41–44. Also, according to the '486 patent, the huge size of the metadata in prior art logical volume managers delays system booting time and uses too much memory. *Id.* at 3:44–46.

The '436 patent describes a method for managing a logical volume, said to be “in order to support dynamic online resizing and minimizing a size of metadata,” including the steps of: a) creating the logical volume by gathering disk partitions in response to a request for creating the logical volume in a physical storage space; b) generating the metadata including information of the logical volume and the disk partitions forming the logical volume and storing the metadata to the disk partitions forming the logical volume; c) dynamically resizing the logical volume in response to request for resizing, and modifying the metadata on the disk partitions forming the

logical volume; and d) calculating and returning a physical address corresponding to a logical address of the logical volume by using mapping information of the metadata containing information of the physical address corresponding to the logical address. *Id.* at 4:7–22.

Figure 1 of the '436 patent is reproduced below:

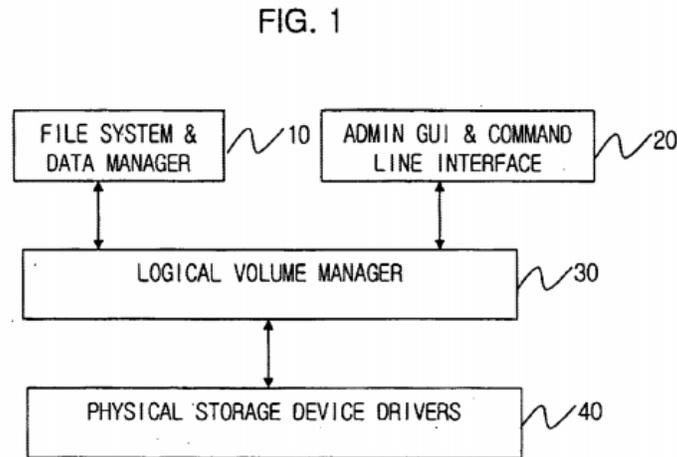


Figure 1 is a diagram of a computer system according to the '436 patent. Ex. 1001, 5:23–24. The computer system includes physical storage device drivers 40 for operating disk drive devices in an operating system. *Id.* at 6:20–22. Logical volume manager 30 is a virtual intermediate level device driver located above a variety of physical device drivers 40, uses services of physical device drivers, and is included in the operating system of the computer. *Id.* at 6:23–26. A file system and data manager 10 performs operations on a logical volume serviced by logical volume manager 30. *Id.* at 6:27–29. An administration graphical user interface (admin GUI) and command line interface 20 are tools to perform managing operations on the logical volume by using functions provided by the logical volume manager. *Id.* at 6:29–33.

Figure 2 of the '436 patent is reproduced below:

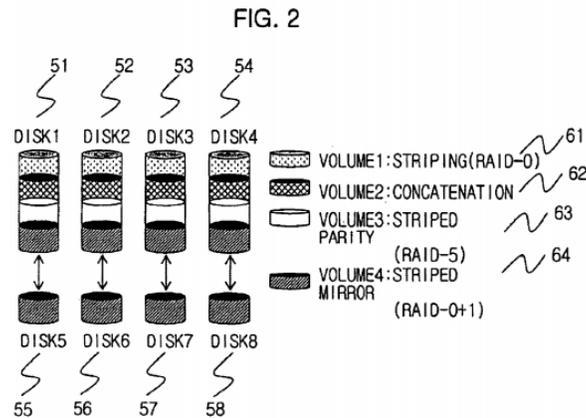


Figure 2 is a view of a logical volume in accordance with a preferred embodiment of the '436 patent. *Id.* at 5:25–26. It shows possible logical volumes generated by the logical volume manager in an embodiment of eight disk drives. *Id.* at 6:37–39.

Disks 1, 2, 3, 4 are divided into four partitions and disks 5, 6, 7, 8 each constitute a single partitions. *Id.* at 6:39–41. Disks can be divided into partitions using a tool or utility applied by an operating system. *Id.* at 6:41–42. Volume 1 (61) includes the first partition of disks 1, 2, 3, and 4; Volume 2 (62) includes the second partition of disks 1, 2, 3, and 4; Volume 3 (63) includes the third partition of disks 1, 2, 3, and 4; and Volume 4 (64) includes the fourth partition of disks 1, 2, 3, and 4, as well as the whole partitions of disks 5, 6, 7, and 8. *Id.* at 6:44–51.

There can be three virtualizations of storage space in accordance with a preferred embodiment of the '436 patent. *Id.* at 6:54–56. The first virtualization is a disk partition or physical partition, and it is generated by an operating system's tool or utility. *Id.* at 6:57–59. The disk partition is a minimum unit of the logical volume; a logical volume includes more than one disk partition; and a logical volume is resized in disk partition units. *Id.*

at 6:59–62. The second virtualization is the logical volume, which is a union of disk partitions and is extensible. *Id.* at 6:64–65. A logical volume is named and provides continuous address space, and it can be resized while the system is operating. *Id.* at 6:66–67. The third virtualization is an extent. *Id.* at 7:1. It is continuous space having the same size and also a minimum unit of space allocation to store information. *Id.* at 7:1–3. The size of an extent is fixed with each logical volume and it is decided at the time of creation of the logical volume. *Id.* at 7:3–5.

The '456 patent describes storing the metadata in a table structure within the physical disk partitions forming a logical volume. *Id.* at 7:13–20. Figure 3 is reproduced below:

FIG. 3

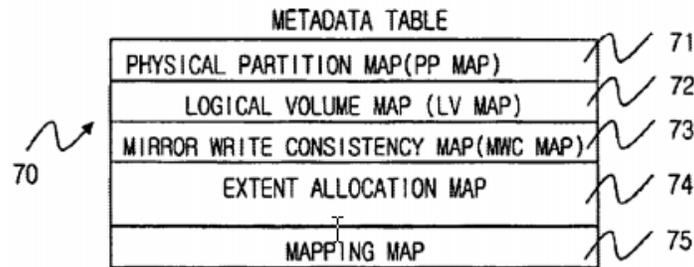


Figure 3 shows metadata table 70 stored in each disk partition constructing one logical volume. *Id.* at 7:18–20. As shown in Figure 3, metadata table 70 stored in the disk partitions includes numerous maps, i.e., a physical partition map, a logical volume map, a mirror write consistency map, an extent allocation map, and a mapping map. *Id.* Figures 4, 5, and 6 are structural diagrams illustrating the physical partition map, logical volume map, and mapping map, and are reproduced below:

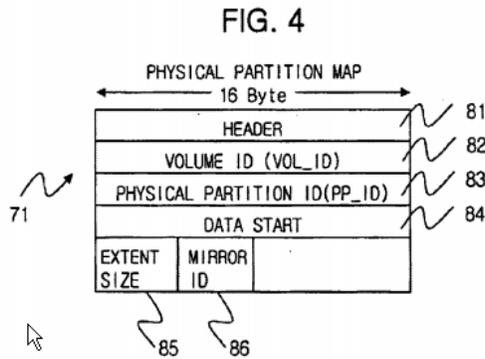


Figure 4 is a structural diagram of a physical partition map in the metadata table within the disk partitions. *Id.* at 5:32–34.

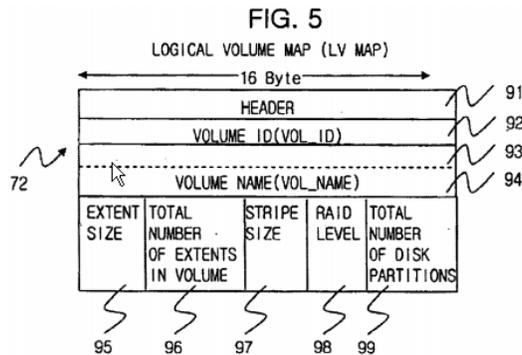


Figure 5 is a structural diagram of a logical volume map in the metadata table within the disk partitions. *Id.* at 5:35–37.

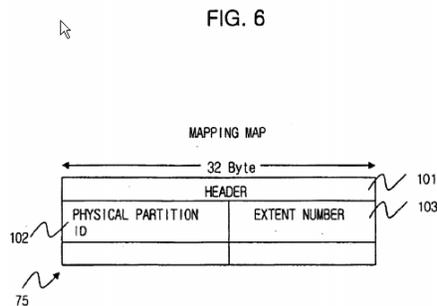


Figure 6 is a structural diagram of a mapping map in the metadata table within the disk partitions. *Id.* at 5:38–40.

Claims 1, 8, and 11 are independent. Claims 1 and 11 are each directed to “A method for managing a logical volume in order to support

dynamic online resizing and minimizing a size of metadata.” Ex. 1001, 12:16–18, 14:26–28. Claim 8 is directed to “A computer-readable recording medium storing instructions for executing a method for managing a logical volume in order to support dynamic online resizing and minimizing a size of metadata.” *Id.* at 13:29–30. Claim 1 is representative and reproduced below:

1. A method for managing a logical volume in order to support dynamic online resizing and minimizing a size of metadata, said method comprising steps of:
  - a) creating the logical volume by gathering disk partitions in response to a request for creating the logical volume in a physical storage space;
  - b) generating the metadata including information of the logical volume and the disk partitions forming the logical volume and storing the metadata to the disk partitions forming the logical volume;
  - c) dynamically resizing the logical volume in response to a request for resizing, and modifying the metadata on the disk partitions forming the logical volume; and
  - d) calculating and returning a physical address corresponding to a logical address of the logical volume by using mapping information of the metadata containing information of the physical address corresponding to the logical address;

wherein the metadata includes,

a disk partition table containing information of a disk partition into which the metadata is stored;

a logical volume table for maintaining the information of the logical volume by storing duplicated information of the logical volume onto all disk partitions of the logical volume;

an extent allocation table for indicating whether each extent in the disk partition is used or not used; and

a mapping table for maintaining mapping information for a physical address space corresponding to a logical address space which is a continuous address space equal in size of storage space to an entirety of said logical volume.

*Id.* at 12:16–48. Claim 8 recites a computer-readable recording medium storing instructions for executing a method, and the method is literally the same as that recited in claim 1. *Id.* at 13:29–61. Claim 11 is the same as claim 1, except that the four tables within the metadata are more restrictively recited as:

a disk partition table including the logical volume information to which the disk partition containing the metadata belongs, information for identifying the disk partition, real data start information, an extent size information of the disk partition defined in the logical volume, and mirror checking information;

a logical volume table duplicated and stored in all disk partitions constructing corresponding logical volume including logical volume identifying information corresponding to the logical volume, logical volume name information, extent size information of the logical volume, RAID level information of construction type of the logical volume, and total number of disk partitions constructing the logical volume;

an extent allocation table for representing usage of the extent by using one bit per each extent in the disk partition; and

a mapping table being constructed with a pair of the disk partition identifying information and an extent number corresponding to each extent for mapping a logical address to a physical address, for continuous logical address space of a logical volume.

*Id.* at 14:45–67.

D. Evidence Relied Upon

Petitioner relies on the following references:<sup>1</sup>

| References        |                                                                                                                               | Date                                 | Exhibit  |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|----------|
| Kodama            | U.S. Patent No. 6,542,962 B2                                                                                                  | Apr. 1, 2003, filed<br>Mar. 21, 2001 | Ex. 1007 |
| HP-UX<br>Handbook | Poniatowski, Marty, HP-UX<br>SYSTEM ADMINISTRATION<br>HANDBOOK & TOOLKIT,<br>Prentice Hall, Inc. 1998                         | 1998                                 | Ex. 1008 |
| Peloquin          | U.S. Patent No. 6,574,705 B1                                                                                                  | June 3, 2003, filed<br>Nov. 16, 2000 | Ex. 1009 |
| Murray            | U.S. Patent No. 6,185,666 B1                                                                                                  | Feb. 6, 2001                         | Ex. 1010 |
| HP-UX<br>Manual   | <i>How HP-UX Works: Concepts<br/>for the System Administrator,<br/>HP9000 Computers</i> , 3rd Ed.,<br>Hewlett Packard Company | 1992                                 | Ex. 1019 |

Petitioner also relies on the Declarations of Brian A. Berg. (Ex. 1003), Marty Poniatowski (Ex. 1011), and Paul Vallis (Ex. 1021), as well as an Affidavit of Mr. Christopher Butler (Ex. 1022).

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<sup>1</sup> The '436 patent issued from Application 10/005,604, filed December 7, 2001. Ex. 1001, (21), (22). The '436 patent lists Korean Application 2001-45621 as a foreign priority application, filed July 27, 2001. *Id.* at (30). But Patent Owner has not, in the Preliminary Response, attempted to show the '436 patent is entitled to the July 27, 2001 priority date. For purposes of this decision, December 7, 2001 is the effective filing date of the '436 patent.

E. The Asserted Ground of Unpatentability

| Claims Challenged       | Basis    | References                                   |
|-------------------------|----------|----------------------------------------------|
| 1, 2, and 8             | § 103(a) | HP-UX Handbook and Peloquin                  |
| 4–6, and 9–13           | § 103(a) | HP-UX Handbook, Peloquin, and Murray         |
| 3, 7, and 14            | § 103(a) | HP-UX Handbook, Peloquin, Murray, and Kodama |
| 1, 2, 4, 5, 6, and 8–13 | § 103(a) | HP-UX Handbook and HP-UX Manual              |
| 3, 7, and 14            | § 103(a) | HP-UX Handbook, HP-UX Manual, and Kodama     |

II. ANALYSIS

A. The Law on Obviousness

The question of obviousness is resolved on the basis of underlying factual determinations including: (1) the scope and content of the prior art; (2) any differences between the claimed subject matter and the prior art; (3) the level of ordinary skill in the art; and (4) when in evidence, objective indicia of nonobviousness. *Graham v. John Deere Co.*, 383 U.S. 1, 17–18 (1966). One seeking to establish obviousness based on more than one reference also must articulate sufficient reasoning with rational underpinnings to combine teachings. *See KSR Int’l Co. v. Teleflex, Inc.*, 550 U.S. 398, 418 (2007).

B. The Level of Ordinary Skill in the Art

Petitioner asserts that the level of ordinary skill in the art corresponds to “at least an undergraduate degree or equivalent academic or professional training in computer science or computer engineering, or a related field, and

two years of industry experience in the field of data storage systems.” Pet. 7–8 (citing Ex. 1003 ¶ 11). Patent Owner has not offered an articulation of the level of ordinary skill in the art. We adopt the level of ordinary skill as articulated by Petitioner, except that we delete the qualifier “at least” to eliminate vagueness as to the appropriate level of education. The qualifier expands the range without an upper bound, i.e., encompassing a Ph.D. Degree and beyond, and thus does not meaningfully indicate the level of ordinary skill in the art.

### C. Claim Construction

For petitions filed on or after November 13, 2018, a claim shall be construed using the same claim construction standard that would be used to construe the claim in a civil action under 35 U.S.C. § 282(b), including construing the claim in accordance with the ordinary and customary meaning of such claim as understood by one of ordinary skill in the art and the prosecution history pertaining to the patent. 37 C.F.R. § 42.100(b) (2018). Petitioner filed its Petition on December 19, 2018. Paper 6. Thus, we apply the claim construction standard as set forth in *Phillips v. AWH Corp.*, 415 F.3d 1303 (Fed. Cir. 2005) (en banc).

Claim terms are generally given their ordinary and customary meaning as would be understood by one with ordinary skill in the art in the context of the specification, the prosecution history, other claims, and even extrinsic evidence including expert and inventor testimony, dictionaries, and learned treatises, although extrinsic evidence is less significant than the intrinsic record. *Phillips*, 415 F.3d at 1312–1317. Usually, the specification is dispositive, and it is the single best guide to the meaning of a disputed term. *Id.* at 1315.

The specification may reveal a special definition given to a claim term by the patentee, or the specification may reveal an intentional disclaimer or disavowal of claim scope by the inventor. *Id.* at 1316. If an inventor acts as his or her own lexicographer, the definition must be set forth in the specification with reasonable clarity, deliberateness, and precision.

*Renishaw PLC v. Marposs Societa' per Azioni*, 158 F.3d 1243, 1249 (Fed. Cir. 1998). The disavowal, if any, can be effectuated by language in the specification or the prosecution history. *Poly-America, L.P. v. API Indus., Inc.*, 839 F.3d 1131, 1136 (Fed. Cir. 2016). “In either case, the standard for disavowal is exacting, requiring clear and unequivocal evidence that the claimed invention includes or does not include a particular feature.” *Id.*

Only those claim terms that are in controversy need to be construed, and only to the extent necessary to resolve the controversy. *Nidec Motor Corp. v. Zhongshan Broad Ocean Motor Co. Ltd.*, 868 F.3d 1013, 1017 (Fed. Cir. 2017); *Wellman, Inc. v. Eastman Chem. Co.*, 642 F.3d 1355, 1361 (Fed. Cir. 2011); *Vivid Techs., Inc. v. Am. Sci. & Eng'g, Inc.*, 200 F.3d 795, 803 (Fed. Cir. 1999).

Petitioner proposes a construction for the claims terms “disk partition” and “extent.” Pet. 9–11. Patent Owner proposes a construction for the term “mapping table.” Prelim. Resp. 15–17. For purposes of this Decision, however, we need not expressly construe any one of those terms, because the proposed constructions would not make any difference in the outcome.

#### Metadata Including Tables

Based on how Petitioner has applied the prior art, however, it is necessary to resolve whether the various tables recited in claims 1, 8, and 11,

that are within the metadata and stored within the disk partitions forming the logical volume, must have a tabular format or structure in the disk partitions, or need only be presented on a display as tables for viewing.

Step “b)” of claims 1 and 11 reads: “b) generating the metadata including information of the logical volume and the disk partitions forming the logical volume and *storing the metadata to the disk partitions forming the logical volume.*” Ex. 1001, 12:22–25, 14:32–35 (emphasis added). Claim 8 essentially recites the same.<sup>2</sup> *Id.* at 13:36–39. Each of claims 1, 8, and 11 further recites: “wherein the metadata further includes a disk partition table . . . ; a logical volume table . . . ; an extent allocation table . . . ; and a mapping table . . . .” *Id.* at 12:35–47, 13:49–61, 14:46–67. The antecedent basis for “the metadata” is that metadata which has been generated *and* stored in the disk partitions forming the logical volume.

The specification of the ’436 patent does not contain any description that is directed to how metadata should or would be presented to a user on a display. The ’436 patent is not about how metadata is displayed to a user. Rather, the ’436 patent is about organizing metadata within storage. In discussing problems with preexisting systems, the specification states:

[C]onventional logical volume managers have problems in that *metadata* is too large to manage *in huge storage structures* and processing speed is too slow when modifying metadata. Also, for managing a logical volume, the *huge size of metadata* delays system booting time and *uses too much memory.*

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<sup>2</sup> Claim 8 includes an extraneous “it” just prior to “the metadata.” Ex. 1001, 13:38. The “it” refers to “the metadata” but is followed immediately by “the metadata.” The parties have not attributed any significance to the word “it” which appears to be superfluous. Neither do we.

*Id.* at 3:41–46 (emphasis added). The specification further identifies an object of the invention as “to provide a logical volume manager for managing a logical volume *using a mapping table storing a relation between a physical address and a logical address, using a minimum space for metadata* and supporting online dynamic resizing.” *Id.* at 3:66 to 4:3 (emphasis added). Another stated object is “to provide a computer-readable *recording medium storing a program or data structure for embodying the method.*” *Id.* at 4:4–6 (emphasis added). In the Summary of the Invention section, the specification further states:

Also, operations for metadata modification can be performed effectively by minimizing necessary metadata for managing a logical volume, and *memory can have more space for other operations* based on minimized metadata.

The present invention manages a local volume by *using minimum space for system metadata* and modifies metadata by using minimum processing overhead. The present invention can also modify metadata with simple operation, *manage huge storage*, and provide various functions including on-line resizing, in response to a user’s request, during system operation. *Id.* at 4:51–61 (emphasis added). We find that presenting metadata in table form on a display to users has little significance, if any, with respect to the storage-based benefits and objectives described in the specification.

Figure 3 of the ’436 patent is reproduced below:

FIG. 3

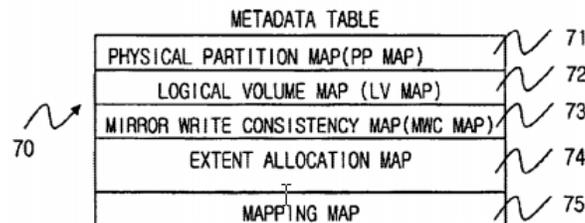


Figure 3 “is a structural chart of a metadata table used in a method for managing the logical volume,” “is a view illustrating the metadata table stored in each disk partition constructing one logical volume,” and “shows the metadata table **70** maintained and stored in each disk partition constructing one logical volume.” *Id.* at 7:13–20. Figures 4–6, already reproduced above, further illustrate details about the physical partition map, logical volume map, and the mapping map in memory, with each of the physical partition map and the logical volume map having a tabular data structure that is 16 bytes wide and the mapping table having a tabular data structure that is 32 bytes wide. *Id.* at Fig. 4–6.

In light of the above-noted disclosures of the ’436 patent, directed to the benefits and significance of storage space and storage structures for metadata, the claim language reciting “storing the metadata to the disk partitions forming the logical volume” and “wherein the metadata further includes a disk partition table . . . ; a logical volume table . . . ; an extent allocation table . . . ; and a mapping table . . . .” means the tables of claims 1, 8, and 11 must have or embody a tabular data structure within the disk partitions. The requirement would not be met by presenting metadata on a display in table form.

D. Alleged Unpatentability of Claims 1, 2, and 8  
as Obvious over HP-UX Handbook and Peloquin

1. The HP-UX Handbook (Ex. 1008)<sup>3</sup>

The HP-UX Handbook bears the following indicia of publication:

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<sup>3</sup> In citing to this exhibit, we use the page numbers at the top rather than the bottom of the exhibit because that is how Petitioner has cited to this exhibit.

**Library of Congress Cataloging-in-Publication Data**

Poniatowski, Marty.  
The HP-UX system administration handbook and toolkit / Marty  
Poniatowski.  
p. cm.  
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ISBN 0-13-905571-1 (pbk. : alk. paper)  
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Ex. 1008, vi. Its author, Mr. Marty Poniatowski, testifies that the book was published by Prentice Hall PTR prior to 1998 and that he received a copy of the book from Prentice Hall PTR in 1997. Ex. 1011 ¶¶ 6–7. He also testifies that Prentice Hall PTR offered the book for sale and sold copies of the book, that copies of the book were sold at least by December 1997, and that he received royalties from sales of his books including the HP-UX Handbook during the royalty period ending December 1997. *Id.* ¶¶ 8–10.

Patent Owner disputes that Petitioner has sufficiently shown the HP-UX Handbook qualifies as a printed publication prior to May 7, 2001, because of lack of demonstration of public accessibility. Prelim. Resp. 8–10. However, we need not reach the issue of whether Petitioner has sufficiently shown the HP-UX Handbook constitutes a printed publication by 1998, or prior to May 7, 2001, for reasons discussed below pertaining to the alleged teachings of the HP-UX Handbook.

The HP-UX Handbook, in its Preface section, states: “This book starts out with the basics and then proceeds to cover the details of HP-UX system administration.” Ex. 1008, xix. Within Chapter 2 of the HP-UX

Handbook, there is a section titled “Logical Volume Manager Background.” *Id.* at 149–163. It describes Logical Volume Manager as “a disk management subsystem that allows you to manage physical disks as logical volumes.” *Id.* at 149. “Not only can you specify the size of a logical volume, but you can also change its size if the need arises.” *Id.* Figure 2–3 of the HP-UX Handbook is reproduced below:

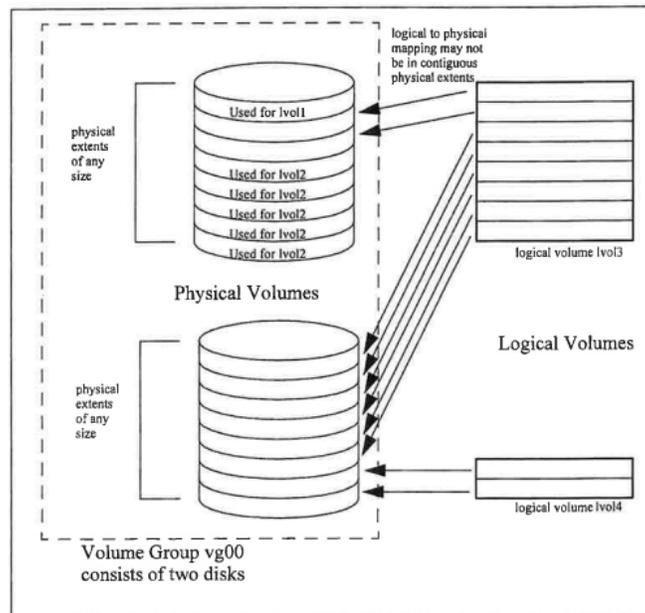


Figure 2-3 Logical Volume Manager Partial Logical to Physical Mapping

The figure depicts a partial mapping of logical volumes to physical disks. *Id.* at 151–152. As depicted in the figure, physical volumes comprised of physical extents are used by or mapped to four logical volumes lvol1, lvol2, lvol3, and lvol4.

The HP-UX Handbook defines “physical volume” as a “disk that has been initialized for use by Logical Volume Manager. An entire disk must be initialized if it is to be used by the Volume Manager; that is, you can’t initialize only part of a disk for Logical Manager use and the rest for fixed partitioning.” *Id.* at 150. The HP-UX Handbook defines “physical extent”

as follows: “A set of contiguous disk blocks on a physical volume. If you define a disk to be a physical volume then the contiguous blocks within that disk form a physical extent. Logical Volume Manager uses the physical extent as the unit for allocating disk space to logical volumes.” *Id.* at 151.

As shown in Figure 2–3 above, Logical Volume 1 maps to at least one physical extent on the top disk; Logical Volume 2 maps at least to multiple physical extents in the top disk; Logical Volume 3 maps to multiple physical extents within each of the two disks; and logical volume 4 maps to multiple physical extents within the bottom disk.

2. Peloquin (Ex. 1009)

Peloquin discloses a data processing system and method for storing logical volume information used by a logical volume manager to create and manage a logical volume. Ex. 1009, 1:62–64. The data processing system includes a plurality of storage devices and a plurality of physical partitions within the plurality of storage devices are specified. *Id.* at 1:65–67. Each of the physical partitions includes a plurality of sectors, and the specified physical partitions are logically combined to create the logical volume. *Id.* at 1:67–2:2. A first plurality of the sectors are reserved in each of the physical partitions for the logical volume information. *Id.* at 2:2–4. The first plurality of sectors are located at the top of each of the physical partitions. *Id.* at 2:4–6. The logical volume information is stored in the first plurality of sectors in each of the physical partitions. *Id.* at 4:6–8. Peloquin describes nothing about the data structures, if any, used to store the logical volume information at the top of each of the physical partitions.

3. Claim 1

Claim 1 recites, in pertinent part “storing the metadata to the disk partitions forming the logical volume,” and:

wherein the metadata further includes,

a disk partition table containing information of a disk partition into which the metadata is stored;

a logical volume table for maintaining the information of the logical volume by storing duplicated information of the logical volume onto all disk partitions of the logical volume;

an extent allocation table for indicating whether each extent in the disk partition is used or not used; and

a mapping table for maintaining mapping information for a physical address space corresponding to a logical address space which is a continuous address space equal in size of storage space to an entirety of said logical volume.

Ex. 1001, 12:35–48. As we analyzed above, such claim language requires each of the disk partition table, logical volume table, extent allocation table, and mapping table to be stored as tables, i.e., in tabular format or structure, within all disk partitions of the logical volume, and the requirement would not be satisfied by showing that metadata is viewable on a computer display in table form.

To satisfy the claim requirement that the metadata includes a disk partition table and an extent allocation table, Petitioner relies on the disclosure in the HP-UX Handbook of the display command “pvdisplay.” Pet. 29–32, 33–34. To satisfy the claim requirement of the metadata includes a logical volume table and a mapping table, Petitioner relies on the disclosure in the HP-UX Handbook of the display command “lvdisplay.” *Id.* at 32–33, 35–36.

With regard to the disk partition table, Petitioner presents the following figure on page 31 of the Petition:

RH-1008, 159-60 (shown in part, annotated)

```
$ pvdisplay -v /dev/dsk/c0t6d0
--- Physical volumes ---
FV Name      /dev/dsk/c0t1d0
VG Name      /dev/vg00
PV Status    available
Allocatable  yes
VGDA         2
Cur LV      7
PE Size (Mbytes) 4
Total PE    157
Free PE     8
Allocated PE 149
Stale PE    0

--- Distribution of physical volume ---
LV Name      LE of LV  PE for LV
/dev/vg00/lvol1  12      12
/dev/vg00/lvol2  17      17
/dev/vg00/lvol6  75      75
/dev/vg00/lvol7   9       9
/dev/vg00/lvol4  25      25
/dev/vg00/lvol5   6       6
/dev/vg00/lvol3   5       5

--- Physical extents ---
PE  Status  LV          LE
0000 current /dev/vg00/lvol1 0000
0001 current /dev/vg00/lvol1 0001
0002 current /dev/vg00/lvol1 0002
0003 current /dev/vg00/lvol1 0003
```

Address of disk partition

Disk partition table

The figure is an annotated (red highlight, captions, and tabular border added by Petitioner) version of what the HP-UX Handbook illustrates as a partial example of the resulting display after a user runs the command “pvdisplay.” *Id.* at 29–31; Ex. 1008, 159–160. The Petitioner explains: “The ‘pvdisplay’ command instructs the system to display system metadata about a physical volume (a disk partition), including . . . .” *Id.* at 29–30. The Petitioner asserts: “This information constitutes a ‘disk partition table’ at least because it is a table that includes information of a disk partition, as listed above.” *Id.* at 30.

We are not sufficiently persuaded by Petitioner that the HP-UX Handbook describes storing disk partition information in tabular format or structure within the disk partitions. What is shown in the above-reproduced figure is only the results of a display command “pvdisplay” provided to

present information to the user on a display. Ex. 1008, 159. Neither the figure nor other evidence cited by Petitioner shows anything about how the information actually is stored in the disk partitions, e.g., whether the information is stored in tabular format or structure. It is possible that the command “pvdisplay” takes information that is not stored in tabular form and then puts it in tabular form for display to the user. The Petitioner has not described the “pvdisplay” command implementation in sufficient detail. Petitioner also has not asserted, much less explained why, the displayed information necessarily has to be stored in tabular format or structure based on a theory of inherency.

Petitioner’s technical witness, Mr. Brian A. Berg, testifies: “A POSITA would understand that by requiring an address of the disk partition, the ‘pvdisplay’ command displays *the disk partition table stored at the specified address.*” Ex. 1003 ¶ 192 (emphasis added). The testimony is unpersuasive, because it assumes that there is a structured table at the specified address. No explanation is provided by Mr. Berg as to why the information would be stored in tabular format or structure in the disk partition. The testimony at most supports only that the information is stored within the disk partition, but not that the information is stored in tabular format or structure.

Mr. Berg further testifies: “Also, it was known in the art that the metadata displayed by the HP-UX commands, including system metadata displayed by the ‘pvdisplay’ command, were stored in what is called the ‘Volume Group Descriptor Area’ (or ‘VGDA’) on each disk partition of a logical volume.” *Id.* ¶ 192. That testimony does not pertain to whether the identified information is stored in the disk partition in tabular format or

structure. Furthermore, Petitioner cannot combine the teachings of a printed publication with the operations of an actual system that was on sale or in public use, because in an *inter partes* review Petitioner can raise a ground of unpatentability only on the basis of prior art consisting of patents and printed publications. *See* 35 U.S.C. § 311(b).

We agree with Patent Owner that “even if the output generated by those commands [‘pvd`display`’ and ‘lvd`display`’] is displayed in a table-like format, the output format does not mean that the displayed information is stored by HP-UX in a table or multiple tables.” Prelim. Resp. 28. We also agree with Patent Owner that the displayed information could be stored in any format and then displayed to the user in table form by operation of the display command “pvd`display`.” *Id.* at 29. We find this analogy fitting the circumstance: Presenting rolls of coins of different denominations to a bank for deposit does not mean the cookie jar used to hold the coins stored the coins in rolls—rather, the presentation of coins in rolls at the bank merely evidences that the coins were packaged in rolls at some time prior to their presentation at the bank, with no indication of how the coins were stored in the cookie jar.

Petitioner asserts: “Thus, the HP-UX Handbook teaches a disk partition table that includes information of a disk partition in which the metadata is stored.” Pet. 30. But the table as shown is on the computer display. Petitioner has not sufficiently shown that such a disk partition table exists in a disk partition, where the information at issue is stored in tabular format or structure.

Petitioner further asserts that any contention by Patent Owner that the “pvd`display`” command does not satisfy the claimed table “would run

contrary” to infringement positions taken by the ’436 patent’s licensee in district-court infringement action, “which specifically identified ‘information describing the physical volume, such as its unique identifier, physical extent information, and pointers to other LVM structures on the disk.’” *Id.* at 31–32 (citing Ex. 1020, 9). The argument is unpersuasive, for two reasons. First, the cited portion of the complaint does not rely on the HP-UX Handbook. Second, a complaint in a civil action for patent infringement need not refer to all of the evidence that will be produced at trial. *See Intelligent Bio-Systems, Inc. v. Illumina Cambridge Ltd.*, 821 F.3d 1359, 1369 (Fed. Cir. 2016). “Unlike district court litigation—where parties have greater freedom to revise and develop their arguments over time and in response to newly discovered material—the expedited nature of IPRs bring with it an obligation for petitioners to make their case in their petition to institute.” *Id.*

With regard to the extent allocation table, Petitioner presents the following figure on page 34 of the Petition:

| RH-1008, 160-61 (shown in part, annotated) |         |                 |      |
|--------------------------------------------|---------|-----------------|------|
| --- Physical extents ---                   |         |                 |      |
| PE                                         | Status  | LV              | LE   |
| 0000                                       | current | /dev/vg00/lvol1 | 0000 |
| 0001                                       | current | /dev/vg00/lvol1 | 0001 |
| 0002                                       | current | /dev/vg00/lvol1 | 0002 |
| 0003                                       | current | /dev/vg00/lvol1 | 0003 |
|                                            | .       |                 |      |
|                                            | .       |                 |      |
|                                            | .       |                 |      |
| 0156                                       | free    |                 | 0000 |

The figure is an annotated (yellow highlight, caption, and tabular border added by Petitioner) version of what the HP-UX Handbook illustrates as another partial example of the resulting display after a user runs the display

command “pvdisplay.” *Id.* at 34; Ex. 1008, 160–161. Petitioner asserts: “Because this table indicates whether each extent in a disk partition is used or not used, it is an “extent allocation table.” Pet. 34 (citing Ex. 1003 ¶¶ 198–99).

For substantially the same reasons discussed above on why Petitioner has not made a sufficient showing with regard to the disk partition table, Petitioner has not made a sufficient showing with regard to the extent allocation table. The figure illustrates only what is displayed to a user after processing by the display command “pvdisplay”; the figure does not establish the format or structure of the data as stored within a disk partition. Likewise, the cited testimony of Mr. Berg supports only that a table is displayed and not that the data is stored in tabular format or structure within a disk partition. Ex. 1003 ¶¶ 198–99.

Petitioner also asserts that any contrary argument by Patent Owner “would run contrary to its licensee’s complaint.” Pet. 34 (citing Ex. 1020, 10–11). The argument is unpersuasive, because: (1) the cited portion of the complaint does not rely on the HP-UX Handbook, and (2) a complaint in a civil action for patent infringement need not refer to all of the evidence that will be produced at trial. *See Intelligent Bio-Systems*, 821 F.3d at 1369.

Accordingly, we determine that Petitioner has not sufficiently shown the existence of an extent allocation table in a disk partition, where the information at issue is stored in tabular format or structure.

With regard to the logical volume table, Petitioner presents the following figure on page 32 of the Petition:

| RH-1008, 156 (annotated, shown in part) |                                                                                   |
|-----------------------------------------|-----------------------------------------------------------------------------------|
|                                         | <pre>\$ lvsdisplay -v /dev/vg00/lvol1</pre>                                       |
|                                         | <pre>--- Logical volumes ---</pre>                                                |
|                                         | <pre>LV Name          /dev/vg00/lvol1</pre>                                       |
|                                         | <pre>VG Name          /dev/vg00</pre>                                             |
|                                         | <pre>LV Permission    read/write</pre>                                            |
|                                         | <pre>LV Status        available/syncd</pre>                                       |
|                                         | <pre>Mirror copies    0</pre>                                                     |
|                                         | <pre>Consistency Recovery MWC</pre>                                               |
|                                         | <pre>Schedule         parallel</pre>                                              |
|                                         | <pre>LV Size (Mbytes) 48</pre>                                                    |
|                                         | <pre>Current LE       12</pre>                                                    |
|                                         | <pre>Allocated PE     12</pre>                                                    |
|                                         | <pre>Stripes          0</pre>                                                     |
|                                         | <pre>Stripe Size (Kbytes) 0</pre>                                                 |
|                                         | <pre>Bad block        off</pre>                                                   |
|                                         | <pre>Allocation       strict/contiguous</pre>                                     |
| Logical<br>volume<br>table              |  |

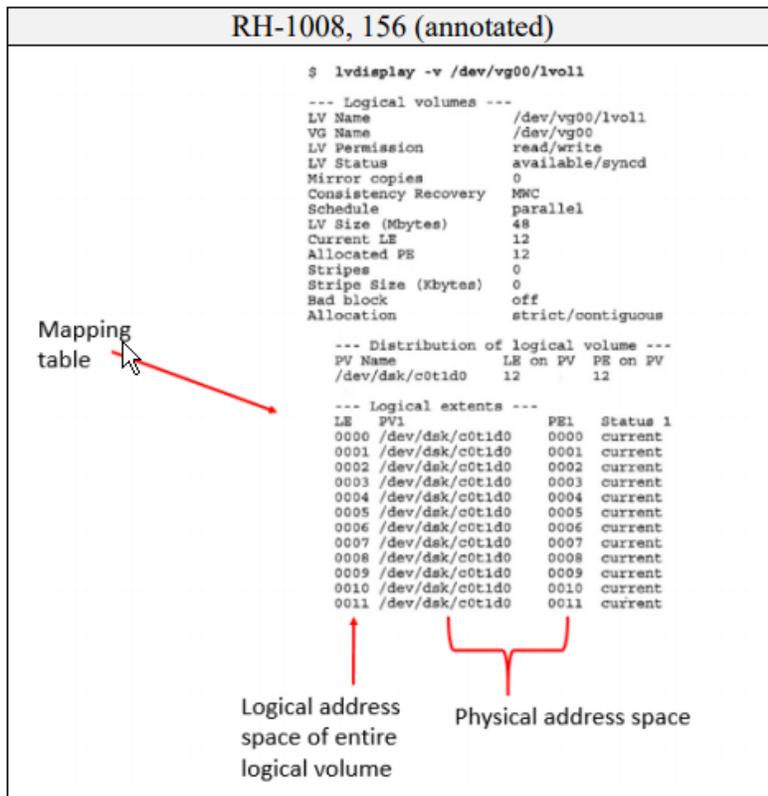
The figure is an annotated (red arrow, captions, and tabular border) version of what the HP-UX Handbook illustrates as a partial example of the resulting display after a user runs the display command “lvsdisplay” for logical volume 1, “lvol1.” Pet. 32, Ex. 1008, 155–156.

For substantially the same reasons discussed above on why Petitioner has not made a sufficient showing with regard to the disk partition table and the extent allocation table, Petitioner has not made a sufficient showing with regard to the logical volume table. The figure illustrates only what is displayed to a user after processing by the display command “lvsdisplay,” and not the format or structure of the data as stored within a disk partition. Likewise, the testimony of Mr. Berg supports only that a table is displayed and not that the data is stored in tabular format or structure within a disk partition. Ex. 1003 ¶ 196. Although in connection with the logical volume table the Petition refers to Pelouquin (Pet. 33), it is to support the requirement that information of the logical volume is “duplicated” in all disk partitions, and not about storing information in tabular format or structure within the disk partitions.

Petitioner also asserts that to the extent Patent Owner asserts that the `lvdisplay` command in HP-UX does not satisfy the limitation of a logical volume table, that “would run contrary to its licensee’s complaint.” Pet. 33 (citing Ex. 1020, 8). The argument is unpersuasive, because (1) the cited portion of the complaint does not rely on the HP-UX Handbook, and (2) a complaint in a civil action for patent infringement need not refer to all of the evidence that will be produced at trial. *See Intelligent Bio-Systems*, 821 F.3d at 1369.

Accordingly, Petitioner has not sufficiently shown the existence of a logical volume table in a disk partition, where the information at issue is stored in tabular format or structure.

With regard to the mapping table, Petitioner presents the following figure on page 35 of the Petition:



The figure is an annotated (red arrows and marking, captions, and tabular border added by Petitioner) version of what the HP-UX Handbook illustrates as an example of the resulting display after a user runs the display command “`lvdisplay`” for logical volume 1, “`lv01.`” Pet. 35, Ex. 1008, 156. Petitioner asserts: “Because this information is mapping information for a physical address space corresponding to a logical address space which is a continuous address space equal in size of storage space to an entirety of said logical volume, it is a mapping table (as claimed). Pet. 36 (citing Ex. 1003 ¶¶ 200–01).

For substantially the same reasons discussed above on why Petitioner has not made a sufficient showing with regard to the disk partition table, the extent allocation table, and the logical volume table, Petitioner has not made a sufficient showing with regard to the mapping table. The figure illustrates only what is displayed to a user after processing by the display command “`lvdisplay,`” and not the format or structure of the data as stored within a disk partition. Likewise, the testimony of Mr. Berg supports only that a table is displayed and not that the data is stored in tabular format or structure within a disk partition. Ex. 1003 ¶ 200 (“The ‘`lvdisplay`’ command displays a mapping table . . .”).

Petitioner also asserts that to the extent Patent Owner asserts that the HP-UX Handbook does not satisfy the limitation of the recited mapping table, that “would run contrary to its licensee’s complaint. Pet. 36 (citing Ex. 1020, 11). The argument is unpersuasive, because (1) the cited portion of the complaint does not rely on the HP-UX Handbook, and (2) a complaint in a civil action for patent infringement need not refer to all of the evidence that will be produced at trial. *See Intelligent Bio-Systems*, 821 F.3d at 1369.

Accordingly, Petitioner has not sufficiently shown the existence of a logical mapping table in a disk partition, where the information at issue is stored in tabular format or structure.

For the foregoing reasons, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of claim 1 as obvious over the HP-UX Handbook and Peloquin.

4. Claim 2

Claim 2 depends from claim 1. The deficiency of Petitioner's analysis for claim 1, discussed above, applies also to claim 2. Petitioner's discussion of claim 2 does not cure that deficiency. Thus, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of claim 2 as obvious over the HP-UX Handbook and Peloquin.

5. Claim 8

Claim 8 recites a computer-readable recording medium storing instructions for executing a method, and the method is the same as that recited in claim 1. Ex. 1001, 13:29–61. Petitioner's analysis of claim 8 adds nothing to cure the deficiency discussed above for claim 1. Pet. 39–40. Thus, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of claim 8 as obvious over HP-UX Handbook and Peloquin.

E. Alleged Unpatentability of Claims 4–6 and 9–13 as Obvious over HP-UX Handbook, Peloquin, and Murray

Claim 4 depends from claim 1. Claims 5 and 6 each depend from claim 4. Claim 9 depends from claim 8, and claim 10 depends from claim 9. Thus, the deficiency of Petitioner's showings based on the HP-UX handbook and Peloquin for claim 1 applies also to claims 4–6, and the deficiency of

Petitioner's showings for claim 8 based on the HP-UX Handbook and Peloquin applies also to claims 9 and 10. As applied by Petitioner, Murray does not relate to or cure the deficiency of Petitioner's analysis with respect to claims 1 and 8 based on the HP-UX Handbook and Peloquin. Pet. 43–54. For instance, Murray is relied on by Petitioner to account for the specific “real data start” information required by claims 4 and 9. Pet. 42, 44, 52.

Claim 11 is independent. As noted above, claim 11 is the same as claim 1, except that the four tables within the metadata are more restrictively recited as:

- a disk partition table including the logical volume information to which the disk partition containing the metadata belongs, information for identifying the disk partition, real data start information, an extent size information of the disk partition defined in the logical volume, and mirror checking information;
- a logical volume table duplicated and stored in all disk partitions constructing corresponding logical volume including logical volume identifying information corresponding to the logical volume, logical volume name information, extent size information of the logical volume, RAID level information of construction type of the logical volume, and total number of disk partitions constructing the logical volume;
- an extent allocation table for representing usage of the extent by using one bit per each extent in the disk partition; and
- a mapping table being constructed with a pair of the disk partition identifying information and an extent number corresponding to each extent for mapping a logical address to a physical address, for continuous logical address space of a logical volume.

*Id.* at 14:45–67.

To meet the requirements of the above-noted tables, Petitioner, as in the case for claim 1, relies on the output of the “pvdisplay” and “lvdisplay” commands shown in the HP-UX Handbook. Pet. 43–51, 53–54. Thus, the same deficiencies of the Petition discussed above in connection with claim 1’s disk partition table, logical volume table, extent allocation table, and mapping table also apply to Petitioner’s accounting for claim 11’s disk partition table, logical volume table, extent allocation table, and mapping table. As applied by Petitioner, Murray does not relate to or cure the deficiency of Petitioner’s analysis with respect to claim 11 based on the HP-UX Handbook and Peloquin. Pet. 43–54. For instance, Murray is relied on by Petitioner to account for the specific “real data start” information required by claim 11. Pet. 42, 44, 53.

Claims 12 and 13 each depend from claim 11. The deficiency of Petitioner’s showings for claim 11 based on the HP-UX Handbook, Peloquin, and Murray applies also to claims 12 and 13.

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any of claims 4–6 and 9–13 as obvious over HP-UX Handbook, Peloquin, and Murray.

F. Alleged Unpatentability of Claims 3, 7, and 14 as Obvious HP-UX Handbook, Peloquin, Murray, and Kodama

Claim 3 depends from claim 1. Claim 7 depends from claim 4. Claim 14 depends from claim 11. Thus, the deficiency of Petitioner’s showings based on the HP-UX handbook and Peloquin for claim 1 applies also to claim 3. The deficiency of Petitioner’s showings for claim 4 based on the HP-UX Handbook, Peloquin, and Murray applies also to claim 7. The deficiency of Petitioner’s showings for claim 11 based on the HP-UX

Handbook, Peloquin, and Murray applies also to claim 14. As applied by Petitioner, Murray and Kodama do not relate to or cure the deficiency of Petitioner's analysis with respect to claim 1 based on the HP-UX Handbook and Peloquin. Pet. 57–59. As applied by Petitioner, Kodama does not relate to or cure the deficiency of Petitioner's analysis with respect to claims 4 and 11 based on HP-UX Handbook, Peloquin, and Murray. *Id.* at 56–62. Kodama is relied on by Petitioner to meet the additional limitations recited in claims 3, 7, and 14. *Id.*

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any of claims 3, 7, and 14 as obvious over the HP-UX Handbook, Peloquin, Murray, and Kodama.

G. Alleged Unpatentability of Claims 1, 2, 4–6, and 8–13  
as Obvious over the HP-UX Handbook and the HP-UX Manual

1. The HP-UX Manual (Ex. 1019)

According to Petitioner, the HP-UX Manual is a document that describes the HP-UX Operating System version 9.0. Pet. 64. The HP-UX Manual states: “This Edition documents the 9.0 release of HP-UX, and is intended as a companion manual to the *System Administration Tasks* manual.” Ex. 1019, 5. Mr. Paul Vallis,<sup>4</sup> testifies that he wrote the HP-UX Manual and that the HP-UX Manual “was one of several books that HP published and included with new shipments of the HP9000 Series 300, 400,

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<sup>4</sup> Mr. Vallis testifies: “I have been employed at Hewlett Packard or a now Hewlett Packard Enterprise (“HPE”) since 1985. I worked as a call center agent until September of 1988 when I joined the technical writing organization that I have been associated with until present.” Ex. 1021 ¶ 2. One of the products Mr. Vallis worked on in the late 1980's and early 1990's was the HP9000 computer. *Id.* ¶ 3.

700, and 800 systems starting in August of 1992.” Ex. 1021 ¶ 5 (cited at Pet. 64). Mr. Vallis also testifies that “[a]nyone that purchased an HP9000 Series 300, 400, 700, and 800 system starting in August of 1992 would have received [the HP-UX Manual] with their order.” *Id.* According to Mr. Vallis, in the early 1990’s HP was selling the HP 9000 Series 300, 400, 700, and 800 system, and when sold, each of these models of the HP9000 system “ran HP-UX 9.0 as its operating system.” *Id.* ¶ 3. Mr. Vallis testifies that HP had a standard practice of providing manuals with its computers. *Id.* ¶ 6.

Patent Owner asserts that Petitioner has not sufficiently shown that the HP-UX Manual qualifies as a printed publication. Prelim. Resp. 48–49. For reasons discussed below, we need not reach the issue.

2. Independent Claims 1, 8, and 11

In this alleged ground of unpatentability, Petitioner relies on the HP-UX Handbook and the HP-UX Manual, instead of the HP-UX Handbook and Peloquin which we already discussed above for claims 1, 8, and 11. Pet. 62–79. As applied by Petitioner, however, the HP-UX Manual does not relate to the deficiencies discussed above with respect to the disclosure of the HP-UX Handbook relied on by Petitioner to satisfy each of the tables recited in claims 1, 8, and 11, i.e., the disk partition table, the logical volume table, the extent allocation table, and the mapping table.

Specifically, Petitioner relies on the HP-UX Manual with regard to the claim limitations of storing metadata on the disk partition to which the metadata relates (Pet. 70, 77, 78–79), storing duplicate metadata in all disk partitions forming a logical volume (Pet. 71, 74, 77, 78–79), storing metadata in a particular VGRA location of each disk partition (Pet. 72, 77, 78–79), and having certain type of information, i.e., “real data start

information,” included in the alleged disk partition table of the HP-UX Handbook (Pet. 73–74, 79). Thus, as applied by Petitioner, the HP-UX Manual does not cure the deficiencies discussed above with respect to Petitioner’s application of the HP-UX Handbook to claims 1, 8, and 11.

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any of claims 1, 8, and 11 as obvious over the HP-UX Handbook and the HP-UX Manual.

3. Dependent Claims 2, 4–6, 9, 10, 12, and 13

Claims 2 and 4–6 each depend directly or indirectly from claim 1. Claims 9 and 10 each depend either directly or indirectly from claim 8. Claims 12 and 13 each depend directly from claim 11. Thus, the deficiency of Petitioner’s analysis with respect to claim 1, discussed above, applies also to claims 2 and 4–6. The deficiency of Petitioner’s analysis with respect to claim 8, discussed above, applies also to claims 9 and 10. The deficiency of Petitioner’s analysis with respect to claim 11, discussed above, applies also to claims 12 and 13. Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any of claims 2, 4–6, 9, 10, 12, and 13 as obvious over the HP-UX Handbook and the HP-UX Manual.

H. Alleged Unpatentability of Claims 3, 7, and 14 as Obvious over the HP-UX Handbook, HP-UX Manual, and Kodama

Because claim 3 depends from claim 1, the deficiency of Petitioner’s showings for claim 1 based on the HP-UX Handbook and the HP-UX Manual applies also to claim 3. Because claim 7 depends from claim 4, the deficiency of Petitioner’s showings for claim 4 based on the HP-UX Handbook and the HP-UX Manual applies also to claim 7. Because claim

14 depends from claim 11, the deficiency of Petitioner's showings for claim 11 based on the HP-UX Handbook and the HP-UX Manual applies also to claim 14. As applied by Petitioner, Kodama does not relate to or cure the noted deficiencies in the Petitioner's analysis of independent claims 1, 4, and 11. Pet. 79–82. Kodama is relied on by Petitioner to meet the additional limitations recited in claims 3, 7, and 14. *Id.*

Accordingly, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any of claims 3, 7, and 14 as obvious over HP-UX Handbook, HP-UX Manual, and Kodama.

I. Discretionary Denial of Petition under 35 U.S.C. § 314(a)

Patent Owner asserts that we should exercise discretion under 35 U.S.C. § 314(a) not to institute review in this case, because the Petition basis its challenges on the HP-UX Handbook and the HP-UX Manual which “merely describe the operation of HP-UX.” Prelim. Resp. 49–50. Patent Owner asserts that the HP-UX Handbook and the HP-UX Manual “are nothing more than second-hand descriptions of what the HP-UX system allegedly does,” and “present issues of whether those documents are printed publications and whether those documents are enabling.” *Id.* at 50.

According to Patent Owner, issues relating to what the HP-UX system actually does are “better litigated in court.” *Id.* Patent Owner further contends that Petitioner may attempt “to get two bites at the apple,” based on the same HP-UX system, once here and once in the related civil action. *Id.*

Patent Owner further asserts that Petitioner has filed, simultaneously, two petitions for *inter partes* review of the same claims of the '436 patent. *Id.* According to Patent Owner, “[m]ultiple simultaneous petitions can pose more harassment risks than ones spread out over time as they multiply the

patent owner's work and expense in the compressed time frames of IUPR proceedings." *Id.* Patent Owner argues that multiple simultaneously filings amount to paying more to argue more, which is contrary to "the integrity of the patent system, the efficient administration of the Office, and the ability of the Office to timely complete [review] proceedings." *Id.* (citing 35 U.S.C. § 316(b)).

We do not reach the issue of discretionary denial of the Petition, because, as discussed above, Petitioner has not shown a reasonable likelihood that it would prevail in establishing unpatentability of any challenged claim.

### III. CONCLUSION

Petitioner has not shown a reasonable likelihood that it would prevail in establishing that at least 1 of the challenged claims 1–14 is unpatentable.

### IV. ORDER

It is

ORDERED that the Petition is *denied* and that no *inter partes* review is instituted for any challenged claim on any ground of unpatentability.

IPR2019-00465  
Patent 6,718,436 B2

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