

UNITED STATES PATENT AND TRADEMARK OFFICE

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BEFORE THE PATENT TRIAL AND APPEAL BOARD

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ACTIFIO, INC.,  
Petitioner,

v.

DELPHIX CORP.,  
Patent Owner.

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Case IPR2015-00128<sup>1</sup>  
Patent 8,468,174 B1

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Before JENNIFER S. BISK, PATRICK R. SCANLON, and  
MINN CHUNG, *Administrative Patent Judges*.

BISK, *Administrative Patent Judge*.

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

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<sup>1</sup> Case IPR2015-00136 has been consolidated with this proceeding.

## INTRODUCTION

### *A. Background*

Petitioner, Actifio, Inc., filed two Petitions requesting *inter partes* review of claims 1, 4, 5, 27–29, and 34 (the “challenged claims”) of U.S. Patent No. 8,468,174 B1 (Ex. 1001, “the ’174 patent”). IPR2015-00128, Paper 1 (“Pet.”); IPR2015-00136, Paper 1 (“’136 Pet.”).<sup>2</sup> On April 29, 2015, we consolidated the two proceedings and instituted an *inter partes* review based on the following grounds of unpatentability (Paper 7, “Inst. Dec.”):

| References   | Challenged Claims |
|--|-------------------|
| Edwards, <sup>3</sup> Edwards II, <sup>4</sup> Neto, <sup>5</sup> and Klivansky <sup>6</sup> | 1, 27, and 28     |
| Edwards, Edwards II, Neto, Klivansky, and Hart <sup>7</sup>                                  | 4, 5, 29, and 34  |

This is a Final Written Decision under 35 U.S.C. § 318(a) and 37 C.F.R. § 42.73. For the reasons set forth below, Petitioner has shown by a

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<sup>2</sup> Because of the substantial overlap in the two Petitions, we will cite only to the Petition of IPR2015-00128 unless otherwise noted.

<sup>3</sup> John K. Edwards et al., *FlexVol: Flexible, Efficient File Volume Virtualization in WAFL*, 2008 PROC. OF THE 2008 USENIX ANNUAL TECHNICAL CONF. 129. Ex. 1003 (“Edwards”).

<sup>4</sup> U.S. Patent No. 7,409,511 B2 issued Aug. 5, 2008. Ex. 1005 (“Edwards II”).

<sup>5</sup> ANAND RANGANTHAN & ANTONIO JOSE RODRIGUES NETO, TECHNICAL REPORT, SNAPMANAGER 3.0 FOR ORACLE BEST PRACTICES, TR-3761 (2009). Ex. 1004 (“Neto”).

<sup>6</sup> MIROSLAV KLIVANSKY, TECHNICAL WHITE PAPER, A THOROUGH INTRODUCTION TO FLEXCLONE™ VOLUMES, TR3347 (2004). Ex. 1006 (“Klivansky”).

<sup>7</sup> U.S. Patent Application Pub. No. 2008/0307345 A1 published Dec. 11, 2008. Ex. 1007 (“Hart”).

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preponderance of the evidence that claims 1, 4, 5, 27–29, and 34 are unpatentable.

*B. Related Matters*

The parties indicate that the '174 patent is involved in the lawsuit *Delphix Corp. v. Actifio, Inc.*, Case No. 5:13-cv-04613-BLF (N.D. Cal.). Pet. 2; Paper 5<sup>8</sup>, 1.

*C. The '174 Patent*

The '174 patent describes computer systems and methods for efficiently managing multiple copies of databases. Ex. 1001, 1:14–16. Specifically, the '174 patent recognizes the growing importance of databases to an organization's information technology infrastructure and the increasing amount of resources required to manage these databases. *Id.* at 1:16–31. A typical information technology infrastructure includes production database servers that run applications managing the daily transactions of the organization. *Id.* at 1:32–34. Routine changes and upgrades to a production database or the applications that work with that database typically require the use of copies of the production databases in order to protect the production environment. *Id.* at 1:34–37. Depending on the process used for making the change or upgrade at issue, this may involve several copies of the production database—one for each stage of development such as testing, certification, and training. *Id.* at 1:37–44. Because production databases are typically large and complex, the practice of making multiple full copies of these databases is expensive and inefficient. *Id.* at 1:44–52.

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<sup>8</sup> Because of the substantial overlap in the two proceedings, unless otherwise noted, all citations of Papers and Exhibits are from IPR2015-00128.

The '174 patent recognizes these problems and proposes creating “virtual databases” that share information so that multiple copies of database information are made only if necessary. *Id.* at 2:67–3:32. “Systems and methods for creating and using virtual databases are disclosed in [U.S. Patent No. 8,150,808 (“the '808 patent”)], which is incorporated by reference in its entirety.” *Id.* at 4:6–9.

The '808 patent describes one virtual database embodiment represented by Figure 2a, “production database system 110 . . . is the source of the database being virtualized” to create virtual database 220 using virtual database files stored in database storage system 100. *Ex.* 2002, 6:59–65. Figure 2a of the '808 patent is reproduced below.

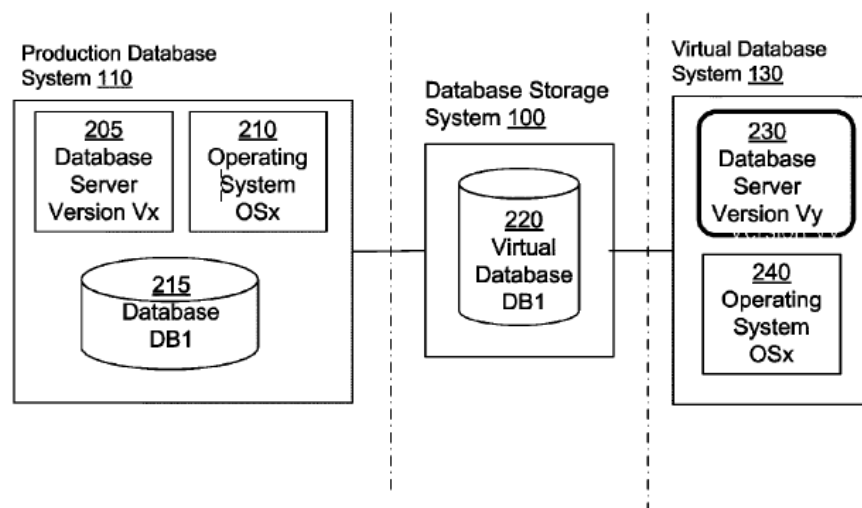


FIG. 2(a)

Figure 2a depicts production database system 110, virtual database DB1 220 stored in database storage system 100, and virtual database system 130, which accesses virtual database 220. *Id.* at 6:59–7:20.

To virtualize a production database, the system of the '808 patent makes a first “point-in-time” (“PIT”) copy of the production database and stores an entire set of database blocks representing the production database

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at that time in database storage system 100. *See id.* at 18:27–36, Fig. 10. Subsequent PIT copies involve incremental changes and copy “only the blocks that changed since the last PIT copy and may copy much less data compared to the first PIT copy.” *Id.* at 18:38–41. A virtual database (VDB) is created by creating virtual database (VDB) file structures comprising VDB blocks that point to different PIT database blocks. *See id.* at 18:27–55. Each time an updated PIT copy is received at database storage system 100 reflecting changes in the production database, the system updates the appropriate VDB blocks in a VDB file which are “implemented as pointers to the actual database block that stores the [updated] data.” *See id.* at 18:44–55.

The '808 patent discloses several embodiments for making PIT copies of the production database including, by streaming data to the database storage system and, alternatively, using file sharing. In “the streaming embodiment,” which is depicted in Figures 4 and 5 and described in column 12, line 14 to column 14, line 67 of the '808 patent (*see id.* at 3:29–37 (describing Figures 4 and 5 as “an embodiment of the invention”)), the production database system, upon receiving a request for data from the point-in-time copy manager of the database storage system (*id.* at 12:19–23), packages the production database data “into a format that can be processed by the point-in-time copy manager” (*id.* at 12:58–62) and builds the appropriately formatted data into a data stream that is sent to the point-in-time copy manager. *Id.* at 12:62–13:3. In some embodiments, “the production system library 385 includes code” in this stream for analyzing the structures of the files of the database or process metadata “associated with database blocks.” *Id.* at 13:11–16.

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