

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

Cloudera, Inc.,
Petitioner,

v.

R2 Solutions LLC,
Patent Owner.

Case No. IPR2024-00303

U.S. Patent No. 8,190,610

**PETITIONER’S REPLY TO PATENT OWNER’S
PRELIMINARY RESPONSE¹**

¹ The Board authorized this three-page Reply to address Petitioner’s arguments under 35 U.S.C. § 325(d) in an email dated April 10, 2024. *See* EX-1027.

The Board should decline to exercise its discretion to deny institution under 35 U.S.C. § 325(d) because none of the asserted art was before the Examiner and each reference provides disclosure that Petitioner relies on that was not previously considered. The Examiner also erred regarding the art presented during prosecution.

I. Pike, Chowdhuri, and MacLeod Are Not the Same or Substantially the Same as Art Previously Presented, Nor Are Petitioner's Arguments

The Petition's references (Pike, Chowdhuri, and MacLeod) undisputedly were not cited or relied on during examination. They are also substantially different than the art before the Office, including Dean/Ghemawat (EX-1009, EX-1011), Cruanes (EX-2008), and Burroughs (EX-2007). For starters, Patent Owner makes no arguments with respect to MacLeod. That is because MacLeod bears no resemblance to the art previously considered. Pike is also distinct because it discloses MapReduce features that were *not* disclosed by Dean/Ghemawat. This includes Pike's "Process and Task Status Tracking" of Figures 6 and 7A. Petitioner relies on these disclosures, including Pike's tracking of input files through its map and reduce tasks, to support Petitioner's argument that Pike teaches and renders obvious "form[ing] corresponding intermediate data for [a] data group and identifiable to that data group" and reducing "in a manner that is defined to correspond to that data group." Pet. 30-33 (asserting that in Pike's status tables "[i]n Figure 7A, map and reduce tasks are tracked according to 'Input Files' (i.e., Pike's 'data groups')"), 48-49. Pike also discloses that the map

and reduce operators are “application-specific,” which Petitioner argues renders obvious partitioning and mapping input files (i.e., “data groups”) having “different schema,” *id.*, 36-38, and “processing . . . each data group in a manner that is defined to correspond to that data group,” *id.*, 48-49. These disclosures are not in Dean/Ghemawat. *See* EX-1009. They also strike at the heart of Patent Owner’s (incorrect) arguments that using “data groups” in MapReduce is patentable.

Chowdhuri is also unlike Burroughs and Cruanes. That Burroughs refers to “schema” and the Examiner relied on it does not establish similarity. *See* POPR at 31. Instead, the applicant during prosecution argued the opposite: “Burroughs only teaches processing of data that has the same schema,” unlike Chowdhuri which discloses data having different schema. *Compare* EX-1004, 145, *with* Pet. 38-42. Burroughs also fails to disclose Chowdhuri’s scan and join iterators (which Petitioner contends correspond to MapReduce’s map and reduce tasks), or scanning and joining “order” and “customer” tables “to get the orders that belong to a particular customer.” EX-1003 ¶¶126-27, 131, 135, Figs. 3A, 3B; Pet. 19-20, 49. Chowdhuri is similarly unlike Cruanes. During prosecution, the applicant argued Cruanes does not disclose providing partitioned data from different data groups to different mapping tasks. EX-1004, 16-17. Chowdhuri discloses this by its parallel execution of scanning iterators. Pet. 22-24 (citing Chowdhuri ¶¶126-28, 131-35, Fig. 3B); *see also* Chowdhuri ¶128 (“[I]f the customer table is partitioned..., the database can initiate multiple scans...”).

Patent Owner is also wrong that Chowdhuri is like Cruanes because Chowdhuri does not teach map functions—Chowdhuri’s scan iterators are map functions. Pet. 19-20.

Petitioner’s arguments are also not substantially the same as those presented the Examiner. Petitioner asserts *different art* and relies on *a combination* of art not previously considered. By contrast, the Examiner used Cruanes for anticipation only, EX-1004, 76-86, 109-122, and used Burroughs in combination with another reference (Datar) that Patent Owner does not discuss, *id.*, 154-62.

II. The Examiner Erred in Analyzing the Art

The Examiner initially asserted that Cruanes anticipated the claims and then allowed the claims (without reasons) after the applicant added “partitioning” the data groups and providing each to a “selected one of a plurality of mapping functions.” EX-1004, 54-70, 33. Cruanes discloses this by disclosing that “[t]he build phase producer slaves would scan respective portions of the dept table, and distribute each dept table row to the build phase consumer slave that is associated with the range into which the dept-id value of the row falls.” EX-2008 ¶12. Cruanes also partitions tables, where “each partition may be assigned to a particular node that will be involved in the parallel join operation.” *Id.* ¶¶53-58. At minimum, the Examiner should have cited this or proposed obviousness based on Cruanes (alone or with other art, such as Dean/Ghemawat). The Board should institute review because the Petition presents different art and arguments and the Examiner erred in allowing the claims.

Dated: April 17, 2024

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that a copy of the foregoing
PETITIONER'S REPLY TO PATENT OWNER'S PRELIMINARY RESPONSE
was served on April 17, 2024, via email directed to counsel of record for the Patent
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