

The opinion in support of the decision being entered today was not written for publication and is not binding precedent of the Board.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAVID L. MAISON, JEFFREY NASET, CHARLES R. PLAINE,
CHRIS KIICK and MARK HATTARKI

Appeal No. 2006-2373
Application No. 10/113,083

ON BRIEF

Before THOMAS, HAIRSTON, and MACDONALD, Administrative Patent Judges.

THOMAS , Administrative Patent Judge.

DECISION

Appellants have appealed to the Board from the examiner's final rejection of claims 1 through 3 and 7 through 14. The examiner has indicated the allowability of claims 19 through 26 and has objected to claims 4 through 6 and 15 through 18.

Representative independent claim 1 is reproduced below:

1. A method of verifying a memory image written from system memory to a dump disk when a computer system experiences a fatal error causing a system crash, said method comprising:

locking at least one portion of the system memory to prevent the locked portion from being swapped out to a swap partition prior to the system crash;

seeding the locked portion of the memory with a signature;

upon detecting the system crash, dumping the seeded portion of the memory to the dump disk, said dumped portion including an image of the seeded signature; and

verifying the memory image by comparing the dumped signature image with the signature that was seeded in the locked portion of the memory prior to the system crash.

The following references are relied on by the examiner:

Wilson	2002/0166053	Nov. 7, 2002 (Filed date May 2, 2001)
Price	6,738,932	May 18, 2004 (Filed date Dec. 22, 2000)

Claims 1 through 3 and 7 through 14 stand rejected under 35 U.S.C. § 103.

As evidence of obviousness, the examiner relies upon Price in view of Wilson.

Rather than repeat the positions of the appellants and the examiner, reference is made to the brief and reply brief for appellants' positions, and to the answer for the examiner's positions.

OPINION

For the reasons set forth by the examiner in the answer, as expanded upon here, we sustain the rejection of all claims on appeal under 35 U.S.C. § 103.

Appellants have not argued the particulars of any independent claim 1, 10 and 11 on appeal and have not argued the particulars of any respective dependent claims. We therefore take independent claim 1 as representative for our consideration.

At the outset, we note that from our consideration of appellants' recognition of the prior art beginning at specification page 1, paragraph [0003] through specification page 3 paragraph [0005], dumping the contents of Random Access Memory was known in the art as well as the need to compare data in a physical memory with data that was dumped to disk, that is, to have an image of the data in the RAM before the data is dumped as well as the image data that is actually

dumped. The initial lines of paragraph [0005] state “[d]evelopers have attempted to establish a ‘before’ image by seeding the RAM with a pattern of data (i.e., signature) that can be extracted from the dumped data for comparison and verification.” Thus, it was known in the art to seed a portion of memory with a signature that may later be abstracted from data that is dumped and therefore used for comparison and verification purposes. Certain disadvantages are further noted because of the swapping out of data during a crash of a system. In paragraph [0006] appellants’ contribution to the art is said to be the ability to lock a corresponding portion of memory from the swapping operation. As otherwise disclosed, appellants’ locking is merely allocating a memory portion.

With this background in mind, we turn to appellants’ arguments beginning at page 9 of the principal brief on appeal. At page 10 of this brief, appellants assert that the comparison file 180 in figure 1 of Price contains signature information that is not dumped as part of the crash memory images 190 also in this figure.

Appellants go on to emphasize that no dumped file created in the Price reference includes a memory portion that is seeded with a signature pattern. Appellants continue by arguing that the calculated and stored signature information of Price

does not “remotely suggest a signature pattern that is seeded in a locked portion of the system memory that is dumped, including the signature, upon experiencing a system crash as claimed by Appellant” as set forth in the sentence bridging pages 10 and 11 of the principal brief on appeal.

We do not agree with this assessment of Price from two major perspectives. Initially, the feature actually recited in independent claim 1 on appeal is “seeding the locked portion of the memory with a signature.” Thus, appellants’ actual argument that the signature pattern that is seeded in a locked memory portion of the memory that is dumped is not taught or suggested is misplaced since this feature is not claimed in the same terms. In other words, the actual seeding of the locked portion of the memory with a signature is not stated to occur “in” the locked memory portion.

Our second major consideration also involves two parts. The initial part has already been set forth in our assessment of appellants’ own recognition of the prior art that it was known in the art to establish an image of memory by seeding the data in a portion of the memory with a pattern or signature of data that may be abstracted from dumped data for comparison and verification. Furthermore, it

appears to us that the lengthy discussion in Price beginning at the bottom of column 3 through the bottom of column 8 essentially teaches this as one optional feature. The paragraph beginning at column 4, line 34 of Price indicates that the entire dump analysis system 150 in figure 1 may be a separate computer system or one like computer system 110 in this figure. Moreover, it also indicates at the end of that paragraph at lines 54 through 56 that “[i]n a further embodiment, the dump analysis system 150 [including elements 160, 170, 180 and 190] is included as an element of the computer system 110.” Thus, it appears to us that the artisan would well appreciate that the executable file indexing mechanism 160 and the correlated system comparison files 180 (the operation of which is generally set forth in figure 3 in flow chart form) may be inclusive or a part of the broadly defined “at least one portion of the system memory.” Appellants’ own specification emphasizes that it is the locking capability that is their contribution in the art rather than the ability to seed a signature in a locked memory portion.

Appellants’ arguments with respect to Wilson at pages 11 and 12 of the principal brief on appeal are noted. Initially, we do not understand the examiner’s position in the answer as relying upon the encryption and decryption capabilities of

Wilson to the extent set forth at page 12 of this brief. Pages 6 through 9 of the answer (the examiner's responsive arguments portion) emphasize that it is Wilson who teaches that it was known in the art to lock at least the kernel portion of a memory. This appears to be admitted by appellants' in the arguments presented at pages 11 and 12 of the principal brief. Indeed, the kernel portion 20 is generally stated to be non-swappable as set forth in paragraphs [0047], [0049] and [0058]. Note the corresponding showings in figures 1 and 5 of Wilson.

The examiner's reasoning at this portion of the answer also emphasizes the teaching in the paragraph of Price at column 1, beginning at line 15. We note corresponding teachings in the paragraph at column 4 describing figure 1 beginning at line 10. It appears to us that the artisan would well appreciate from the state of the art with respect to prior art operating systems, some of which include so-called kernels, that they were regarded as unswappable. The prior art operating systems discussed at these portions of Price correspond to the operating systems in Wilson (to include virtual memory systems) discussed at paragraphs [0004], [0021-22] and [0060]. It is these portions of system memory that are not swapped in and out of system memory during normal operations but which remain fixed during normal operations and of which are subject to be able to be dumped

upon a system failure/crash. We therefore do not agree with appellants' urgings at page 12 of the principal brief on appeal that there are no motivations to combine the respective teachings of Price and Wilson, and that there is therefore no reasonable expectation of success of this combinability. Wilson merely exemplifies in the manner utilized by the examiner the state of the art anyway.

When appellants' arguments and reply brief are considered, we are not persuaded of the patentability of the subject matter of the present claims on appeal in light of the combined teachings of Price and Wilson. According to the above analysis, it was not only known in the appellants' admitted prior art that signature information could be dumped as a part of the prior art crash memory image, the comparison file 180 in figure 1 of Price under certain alternative embodiments may be considered as a part of the broadly defined "a portion of system memory" that is dumped. As such, we do not agree with appellants' view that it would be a mischaracterization to equate the comparison files 180 in Price with the claimed portion of the memory that is seeded with the signature and subsequently dumped upon detecting a system crash. The reader should bear in mind as well that

representative independent claim 1 does not require that the seeding with a signature actually occur “in” the locked portion of the memory as argued in the principal brief.

Based upon these considerations again, the urging that Price actually teaches away from the claimed invention is misplaced (reply brief pages 4 and 5). We also do not agree with appellants’ concluding remarks that if a dumped memory image did include executable signatures, there would be no need to create and maintain a signature separately in a comparison file that is precluded from being dumped upon a system crash. As noted earlier, this view does not consider the whole teaching value to the artisan in Price. This also appears to be one characterization of what appellants’ invention actually does in the seeding with a signature capability as disclosed. Again, it is further noted that it is known in the art that “separate” signatures are maintained in appellants’ own invention in accordance with their own admitted prior art.

In view of the foregoing, the decision of the examiner rejecting various claims on appeal under 35 U.S.C. §103 is affirmed.

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