

1 UNITED STATES PATENT AND TRADEMARK OFFICE

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3 BEFORE THE PATENT TRIAL AND APPEAL BOARD

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5 NETSKOPE, INC.,
6 Petitioner,

7 v.

8 FORTINET, INC.,
Patent Owner.

9 * * *

10 PTAB Case No. IPR2023-00456
11 Patent 11,036,856

12 VIDEOCONFERENCED (ZOOM) DEPOSITION OF

13 JOHN R. BLACK, JR., Ph.D.

14 LOUISVILLE, COLORADO

15 Thursday, 29th of February, 2024

16 8:35 a.m. Pacific

17 Pursuant to notice and pursuant to the

18 Code of Federal Regulations and

19 Federal Rules of Civil Procedure,

20 before April L. Crites, RMR, CRR, CSR, CCR,

21 and Notary Public in and for the State of Ohio.

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I N D E X

EXAMINATIONS CONDUCTED

PAGE

JOHN R. BLACK, JR., Ph.D.

Cross-Examination by Mr. Klein..... 4

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PATENT OWNER'S EXHIBITS

MARKED

DESCRIPTION

PAGE

Exhibit 2004	Supplemental Declaration of Dr. John Black, Jr., in Support of Patent Owner's Response	4
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* * *

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19 * * *

1 JOHN R. BLACK, JR., Ph.D.
2 of lawful age, Witness herein, having been first
3 duly cautioned and sworn, as hereinafter certified,
4 was examined and said as follows:

5 CROSS-EXAMINATION

6 BY MR. KLEIN:

7 Q. Good morning, Dr. Black.

8 A. Good morning, Mr. Klein.

9 Q. You've been deposed before?

10 A. Yes. I think by you, in fact.

11 Q. Okay. So you're familiar with the ground
12 rules?

13 A. I believe I am, yes.

14 Q. So I want to dive a little bit into the
15 things you read when you were putting together your
16 supplemental declaration, which is Exhibit 2004.

17 (Petitioner Exhibit 2004, Supplemental
18 Declaration of Dr. John Black, Jr., in
19 Support of Patent Owner's Response,
20 having been previously marked, was
21 presented for purposes of
22 identification.)

1 THE WITNESS: Okay.

2 BY MR. KLEIN:

3 Q. And you can bring that up if you want to,
4 but I don't think you need it.

5 A. Okay.

6 Q. Did you read the institution decision
7 when you were preparing your supplemental
8 declaration?

9 A. I did.

10 Q. And what did you think of the institution
11 decision?

12 MR. ZIVOJNOVIC: Objection. Vague.

13 THE WITNESS: I was somewhat
14 disappointed, maybe, in myself, to some extent,
15 because I think that the Board had the impression
16 that I was saying something that I didn't intend to
17 say in my initial declaration. We can dive into
18 what I'm talking about maybe later. But I felt
19 maybe I fell short of what I was trying to explain
20 in my opening declaration, and that's why I've
21 elaborated now in the supplemental.

22 BY MR. KLEIN:

1 Q. Did you agree with any part of the
2 institution decision?

3 MR. ZIVOJNOVIC: Objection. Scope.

4 THE WITNESS: I mean, it's 30 or 40
5 pages. I certainly agree that it's about this
6 patent, and, you know, the basic rules.

7 I don't remember sentence-by-sentence
8 which ones I might have agreed and disagreed with.

9 BY MR. KLEIN:

10 Q. Do you remember agreeing with any of the
11 Board's analysis?

12 MR. ZIVOJNOVIC: Objection. This has
13 nothing to do with his direct testimony.

14 THE WITNESS: I mean, the analysis is
15 broadly set forth as, you know, Here's what the
16 patent owner said, this is what Dr. Black said,
17 this is a passage from the patent itself. And, you
18 know -- so those things, of course, they're just
19 citing and setting up the reasoning.

20 I just think that the conclusions, in
21 certain cases -- once again, I think I missed the
22 mark, respectfully, and I take most of the blame

1 for that.

2 BY MR. KLEIN:

3 Q. And were there any conclusions with which
4 you agree?

5 MR. ZIVOJNOVIC: Objection. Scope.

6 THE WITNESS: I would really have to
7 re-review the institution decision and look at each
8 one and consider your question.

9 BY MR. KLEIN:

10 Q. Can you think of any off the top of your
11 head right now?

12 MR. ZIVOJNOVIC: Again, objection. This
13 has nothing to do with his direct testimony.

14 THE WITNESS: I would have to review the
15 ID.

16 BY MR. KLEIN:

17 Q. So the answer is, no, you can't think of
18 an example off the top of your head?

19 MR. ZIVOJNOVIC: Objection. This is
20 starting to become a waste of time. Scope.

21 THE WITNESS: Not off the top of my head.
22 Not without reviewing it, no.

1 BY MR. KLEIN:

2 Q. Did you read Dr. Franz's depo transcript?

3 A. Yes, I did.

4 Q. Did you read all of it?

5 A. Yeah. It's fairly short.

6 Q. Were there any parts of Dr. Franz's depo
7 transcript where you agreed with his testimony?

8 A. Certainly. Quite a bit of it.

9 Q. Okay. Can you -- were there parts of his
10 testimony that you disagree with?

11 A. Yes, there were.

12 Q. And what were some of the examples of
13 Dr. Franz's testimony that you agreed with?

14 A. He talked about some basic concepts in
15 computer science. For example, we agree that in
16 some instances that moving a file can be a very
17 quick and efficient undertaking. You just change
18 the metadata. And in other cases, moving could be
19 much more significant undertaking where you have to
20 actually move the file contents elsewhere. He
21 talked a little bit about things that were perhaps
22 a digression or side comments that are completely

1 accurate, so I agree with those, as well. There
2 are probably plenty of examples of just basic
3 computer science explanations that I think are
4 accurate.

5 Q. And when you said moving could be much
6 more significant undertaking, you're thinking about
7 copying?

8 A. Right. So there's sort of two species of
9 moving a file, right? And one is that it moves
10 within the same file system. And in that case, the
11 file contents are untouched, but the metadata that
12 describes where the file lives, you might change
13 its name or change its location within the file
14 system. And this is an almost instantaneous step.
15 You just go to this -- in Linux, it's called an
16 inode. You go to this inode, and you say cross out
17 the old location, put it in the new location. It's
18 moved in a sense, but the contents of the file on
19 the disk hasn't been touched. It remains in its
20 place.

21 But there's the second species of move,
22 which is a much more significant step, which you

1 can think of it as a copy and an erasure of the
2 original. And you wouldn't want to do that unless
3 you had to, because it's going to take a lot of
4 time and consume a lot of resources and perhaps
5 expose you to some security risks. So in that
6 case, you only do it when it's not possible to
7 simply update the metadata. You don't have any
8 other choice, because you're moving it to a
9 different file system, perhaps even across the
10 network or something. Your only choice really,
11 then, is to do a copy, and then erase the original.

12 Q. Is there an example of a copy operation
13 where you're not creating a second copy of the
14 file?

15 A. Maybe in obscure cases. Overwhelmingly,
16 you always create a second copy. Dr. Franz pointed
17 out this copy-on-write example. This is normally a
18 concept from memory copies, not from disk copies.
19 But there are, I think, a couple systems where they
20 actually use this trick on the disk. But this is a
21 pretty obscure corner case, and I don't think any
22 of the references here are talking about doing

1 that.

2 Q. Is it -- so you mentioned copy-on-write.
3 Is that a concept that's deployed -- rather, I
4 guess is that a concept that was known before 2018?

5 MR. ZIVOJNOVIC: Objection. Vague.
6 Scope. This is not in his declarations.

7 THE WITNESS: First of all, copy-on-write
8 overwhelmingly means memory-based. That's the way
9 I teach it. It's almost always we -- what we mean
10 when we talk about it. I don't think normally the
11 term's even used for disk-based systems, but I have
12 seen, in a couple of obscure cases, this trick
13 being used on the disk. I don't know if -- I think
14 it was used on the disk in those corner cases prior
15 to 2018, perhaps, but I'd have to check.
16 Certainly, the memory-based version is decades old.

17 MR. KLEIN: And I want to talk a little
18 bit about some of the -- your definitions that you
19 provide in your declaration. And so, if you want,
20 you can look at paragraph 48 of your declaration.
21 This is Exhibit 2004.

22 THE WITNESS: I'm there.

1 BY MR. KLEIN:

2 Q. And so you can look at paragraph 48 if
3 you want, or you can just tell me what's your
4 definition of "move" or "moving"?

5 A. And I'm going to take it that you mean
6 moving a file, since that's sort of the setting.

7 Q. Right.

8 A. Once again, to me, moving a file can mean
9 two different things. From the user perspective,
10 perhaps, there is no noticeable difference other
11 than perhaps delay. But there's the first type of
12 move, which is simply updating the metadata, and
13 then there's this more elaborate, significant
14 undertaking where you copy and erase.

15 Now, from a user's standpoint, perhaps
16 she doesn't even see any distinction, because the
17 net effect is the same. The file is in this new
18 location and ceases to exist in its original
19 location, and that, to me, is moving. And how it's
20 implemented under the sheets, like I said, can
21 vary, but that's the net effect.

22 Q. Is that definition of move found anywhere

1 in the '856 patent?

2 A. I mean, I'd have to check. I don't
3 recall there being such a fundamental concept. I
4 don't recall there being an explanation of the word
5 "copy" or "move" or any kind of basic computer
6 science concepts like that.

7 Q. Did you read the prosecution history?

8 A. I believe so. It would have been quite a
9 long time ago. I didn't review it before today.

10 Q. Do you recall if the prosecution history
11 gave any definitions to "move" or "copy"?

12 A. I would -- I would have to check. It's
13 been too long.

14 Q. Okay. Did you cite any dictionaries in
15 your declaration to support your definitions of
16 move or copy?

17 A. I believe I cited the POSIX standard, but
18 I don't -- it may appear in the dictionary. I
19 didn't cite to any dictionary to respond to your
20 question, your direct question.

21 Q. And in your paragraphs 48 and 49, where
22 you expound on your definitions of move and copy,

1 do you cite any portions of the spec to support
2 your testimony?

3 A. I don't see citations to the '856 spec in
4 paragraphs 48 or 49.

5 Q. So we've talked about the definition of
6 "move." I think we covered this already a little
7 bit, but just so we can have a clear excerpt on
8 this, what's your definition of "copy" or "copying"
9 a file?

10 A. Copying a file, its most basic form in
11 computer science means you produce a duplicate. So
12 now you have two copies of the same thing. It
13 could be in the same place, it could be in
14 different places, but there exists two of them.

15 Q. And you said the -- you are aware of at
16 least a couple of counterexamples where copying
17 doesn't necessarily include copying the file --

18 MR. ZIVOJNOVIC: Objection. Misstates
19 testimony.

20 THE COURT REPORTER: I missed the end of
21 your question.

22 MR. KLEIN: I can repeat it.

1 BY MR. KLEIN:

2 Q. So I believe you said that you're aware
3 of at least a couple of counterexamples where
4 copying doesn't necessarily include making a second
5 copy of the file; is that right?

6 MR. ZIVOJNOVIC: Objection. Misstates
7 prior testimony. Vague.

8 THE WITNESS: I'm aware of this other
9 term. It's not called copying. It's called
10 copy-on-write. Which could suggest, perhaps, to
11 someone who's not familiar with the term, that it's
12 making a separate copy. But instead, it's using a
13 trick with links, and it's just making a link to
14 the same copy. And if you read the documentation
15 on copy-on-write, it will describe what it's
16 actually doing, and say it's not doing a copy.
17 It's actually just making a link to the same copy.

18 BY MR. KLEIN:

19 Q. So if I'm moving -- and I'm not trying to
20 use moving in a loaded sense. If I'm just moving a
21 file from one directory to another directory within
22 the same storage medium, is that a moving or a

1 copying operation?

2 MR. ZIVOJNOVIC: Objection. Vague.

3 THE WITNESS: That's the moving of type 1
4 that I discussed before where you just update the
5 metadata. This is the kind of moving that's in the
6 prior art that we're talking about today.

7 BY MR. KLEIN:

8 Q. And then if I move -- again, I'm not
9 using it in a loaded sense -- a file from one
10 physical medium to a second physical medium, is
11 that a move or a copy operation?

12 A. That is, again, a move. But it's of
13 type 2, which requires -- I mean, you could do a
14 very contrived way to avoid this. But the way it's
15 done in computer science is that type of move is
16 done via a copy, and then erasure of the original.
17 And we call them both moves, but under the sheets,
18 like I said, there's two different things going on.

19 Q. So is all copying moving?

20 MR. ZIVOJNOVIC: Objection. Vague.

21 THE WITNESS: Normally, we -- in computer
22 science, we talk about copying only in the sense

1 that there are two living copies at the end of the
2 process, and moving implies that the original is
3 somehow destroyed or removed.

4 BY MR. KLEIN:

5 Q. I didn't follow that.

6 So if I'm moving a file -- strike that.

7 If I copy a file, am I necessarily moving
8 it?

9 A. The way that we think about it in
10 computer science is if you copy, the original lives
11 on. If you move, the original is gone. That's the
12 distinction.

13 Q. So then what's the relationship between
14 move and copy? Are they the same, different?

15 A. I'm sorry, it --

16 MR. ZIVOJNOVIC: Objection. Vague.

17 THE WITNESS: It is a little complicated.

18 So there's -- I said, once again, there
19 are two types of moving. The first type, you just
20 update the metadata, you're done.

21 The second type is much more closely
22 related to copying, because it involves a copy

1 first, but then there's this extra step where you
2 remove the original. In copying, you don't
3 remove -- you do the copy, and you don't remove the
4 original. So there's a relationship, a similarity
5 between the type 2 move, which is copy and erase,
6 and a plain old copy, which is pretty close,
7 because you're not removing the original in that --
8 in the copy.

9 Now, when we talk about the first type of
10 move, where all you're doing is updating metadata
11 and you're done in an instant, that's much more
12 unlike copying now.

13 BY MR. KLEIN:

14 Q. All right. So then I want to move on to
15 a third operation. What's a transfer?

16 A. A transfer suggests that a file is being
17 transported now. Often, that means across a
18 network. Maybe you could find examples where it's
19 not actually moving across a network, but that's
20 the concept that usually is conjured in your mind
21 when you think of a file transfer.

22 Q. Is it distinct from moving -- I'm sorry,

1 I didn't know if you were done.

2 A. Yeah. So in my -- my take on transfer is
3 that the -- that the salient operation is the
4 transport of a file, and it is agnostic to whether
5 the original remains intact or not. Whereas I said
6 in the -- in the move and the copy case, the
7 original -- what happens to the original is part of
8 the story.

9 Q. So a move -- a transfer can be a move or
10 a copy?

11 A. I would just say a transfer involves
12 transporting the file and not -- it doesn't include
13 what happens to the original. So if you do a copy
14 across the Internet, FTP, you're doing a file
15 transfer. In fact, FTP stands for file transfer
16 protocol. Whatever happens to the original is not
17 your concern. You did the transfer. If the owner
18 deletes that after the transfer, that's up to her.
19 If she leaves it around, that's up to her. It's
20 still a transfer in either case.

21 Q. So if the original is deleted, is that
22 then a move operation?

1 A. I mean, you might step back and think,
2 Well, let's see. We did the transfer. The file's
3 over here now, and then someone took it upon
4 themselves to remove the original. So I guess, big
5 picture, a move has occurred. I haven't really
6 thought deeply about this. Certainly, the prior
7 art that talks about moving isn't at all disclosing
8 anything like what we're talking about now, but I
9 suppose you can think of it that way.

10 Q. And then what's a share or sharing
11 operation when you're moving a file?

12 A. So sharing is a much broader concept. To
13 me, to share a file just means to make it
14 available. So, for example, if you and I are using
15 the same laptop and I just give you permission to
16 look at my files by changing the permissions on the
17 file, I shared it with you. Now, all I've done is
18 changed the metadata. I've said, you know,
19 Mr. Klein is now authorized or enabled, but I
20 haven't moved the file, and I haven't copied the
21 file. I've just opened the access up to you.
22 That's sharing.

1 Q. So sharing is just a permissions-type
2 operation?

3 A. I think permissions is one way. I think
4 sending e-mail -- e-mailing you with an attachment
5 is sharing a file, as well, because now I've given
6 you a copy of it, right? So now I shared it.

7 Sharing is just making something
8 available to you, and there are a whole host of
9 ways I can do this. So it's a very broad concept
10 that would include certain kinds of copying and
11 moving, as well, because if I move it to you or
12 copy it to you, by e-mailing, let's say, I've
13 shared it. So sharing is quite broad, and there
14 all kinds of different ways to do sharing.

15 Q. Is sharing defined in the '856 spec
16 anywhere?

17 MR. ZIVOJNOVIC: Objection. Vague.

18 THE WITNESS: I don't think there's an
19 explicit definition, Here's what sharing means. I
20 think they just use the term.

21 BY MR. KLEIN:

22 Q. And I think you give your concept of

1 sharing in paragraph 51 of your report, right?

2 A. Yeah. I say sharing a file means making
3 the file accessible to others. So I guess that's
4 more or less a definition.

5 Q. And do you cite any part of the '856 spec
6 to support your definition of sharing?

7 A. There is a citation to the spec, but I
8 don't think it's to a definition given in the
9 specification. I think I'm citing to where the
10 term's used.

11 Q. Right. You're citing the Board's
12 discussion in the institution decision, right?

13 A. Exactly.

14 Q. All right. So in paragraph 52 of your
15 report, you say that there are differences between
16 copying and moving and other operations, right?

17 A. I mean, I say they are different terms.
18 I don't know that I elaborate on how they're
19 different in that paragraph, but we just talked
20 about my view of why they're all different.

21 Q. Right. And you say that those terms,
22 being copying and meaning -- copying and sharing

1 and moving and transferring don't have the same
2 meaning, right?

3 A. Right. And I think the Board took my
4 statements to mean that one cannot include the
5 other, and I don't mean to say that. As we've
6 discussed, you know, like, a move could include a
7 copy as part of its operation, one of the steps.
8 So by saying they're distinct, I don't mean that
9 one can't be included in the other in certain
10 cases. I just mean that they're not synonymous.
11 They're not exactly the same thing.

12 Q. I see.

13 So I just want to clarify. The first
14 thing you said is about the Board taking your
15 statements to mean that one cannot include the
16 other. Are you saying that the Board understood
17 your testimony to mean that moving and copying are
18 completely dissimilar terms?

19 MR. ZIVOJNOVIC: Objection. Vague.
20 Misstates prior testimony.

21 THE WITNESS: Right. To be clear, the
22 Board says patent owner, so I guess that's not me.

1 But they also cite my testimony in parts, too. And
2 they say the argument is unavailing, because the
3 patent owner's argument that copying -- or that
4 moving cannot include copying is wrong.

5 And I would just say, well, that, I think
6 is where I fell short. I wanted to make clear that
7 moving can include copying as a step for certain
8 types of movement, certain type of file moves. And
9 to the extent that the Board thought that I was
10 saying something different, that's on me. It is
11 absolutely the case that certain kinds of moves can
12 include a copy step. Certain kind of copies can
13 include a move step. It just depends on how things
14 are implemented, but they're not the same thing.
15 That's the bottom line.

16 BY MR. KLEIN:

17 Q. Can you point me to a disclosure in the
18 spec that shows moving and copying have different
19 meanings?

20 MR. ZIVOJNOVIC: Objection. Vague.

21 THE WITNESS: The only thing I can recall
22 off the top of my head of how I would understand

1 that the patent viewed the terms differently is
2 that they use them differently. I don't recall any
3 explicit statement saying, Here's what move means,
4 here's what copy means, here are the differences,
5 you know, explaining in all the detail that I've
6 gone through today how they're different.

7 BY MR. KLEIN:

8 Q. So what would -- or strike that.

9 Do you -- are you familiar with the term
10 "drag and drop"?

11 A. Sure.

12 Q. If I'm on my Windows PC, and I have my
13 downloads folder and my documents folder, and I
14 drag and drop a document from downloads to my
15 documents, is that a copy or a move operation?

16 A. So I don't --

17 MR. ZIVOJNOVIC: Objection. Vague.

18 THE WITNESS: I don't use Windows too
19 much. But I think in that case, it removes the
20 original, or the original doesn't live on. And you
21 can correct me if I'm wrong about Windows. But my
22 understanding is -- my memory is you drag file A

1 from the first location to the second location
2 within the same file system now, it disappears from
3 the original, and now appears in the destination.
4 So I would say that's a move of the first type,
5 where there's a very quick update of the metadata,
6 and there's no actual movement of the contents.

7 BY MR. KLEIN:

8 Q. And what about if I move file A from my
9 PC to a USB drive that I plugged into my PC. Is
10 that a move or a copy operation?

11 MR. ZIVOJNOVIC: Objection. Vague.

12 THE WITNESS: So once again, assuming
13 that the original disappears -- and that's an
14 assumption I'm making -- now you're moving to a
15 different file system, so you have to do a copy and
16 an erase of the original. That's the second type
17 of move we've been talking about.

18 BY MR. KLEIN:

19 Q. What if the original doesn't disappear?
20 What would your opinion be?

21 MR. ZIVOJNOVIC: Objection. Vague.

22 Under what scenario?

1 THE WITNESS: Then in that case, you've
2 made a copy by dragging and dropping, and the
3 original has persisted.

4 BY MR. KLEIN:

5 Q. So I just want to clarify. So that would
6 be a copy operation?

7 MR. ZIVOJNOVIC: Objection. Vague.

8 THE WITNESS: If both the original and
9 now the new file both live on, that's a copy.

10 BY MR. KLEIN:

11 Q. Is there a difference between moving by
12 copying and just copying?

13 A. Yes. I would say moving by copying
14 implies that you're doing a copy and then an
15 erasure of the original. Otherwise, you wouldn't
16 call it a move. That's a move of the second type
17 that we've been talking about. Copying implies
18 that you make a copy and you don't remove the
19 original.

20 Q. So the difference between moving by
21 copying and copying turns on whether the original
22 file stays in place; is that right?

1 A. Correct.

2 MR. ZIVOJNOVIC: Objection. Vague.

3 THE WITNESS: We're talking about the
4 second type of move, which I've said, earlier, is
5 very similar to a copy versus that first type of
6 move, which is very distinct from a copy.

7 BY MR. KLEIN:

8 Q. So if you can turn to paragraph 55 in
9 your declaration, please.

10 MR. ZIVOJNOVIC: We've been going for
11 about an hour. Should we take a break soon? Oh,
12 sorry. My apologies. I messed up our start time.
13 I'm used to starting at the top of the hour. So
14 please go on.

15 MR. KLEIN: That's all right.

16 BY MR. KLEIN:

17 Q. So, Dr. Black, can you turn to
18 paragraph 55 in your declaration, please?

19 A. I'm there.

20 Q. And the last statement says, In other
21 words, moving data is very fast. Copying data,
22 especially large files, can be very slow.

1 Do you see that?

2 A. I do.

3 Q. How much faster is moving versus copying?

4 A. Well, here, I'm talking about that first
5 type of move, where all you do is update the
6 metadata and you're done. And I'm distinguishing
7 it from the second type of move, which requires a
8 copy. And I'm calling that copying data in the
9 second part of the sentence.

10 So in the case where you actually have
11 to -- to take the file contents and reproduce them,
12 either you're doing a move type 2 or you're doing a
13 copy, that is going to be slowed, especially
14 depending on very large files. So if you're moving
15 or copying a terabyte of data, that's going to
16 take, you know, 20 minutes, an hour. I mean, it
17 could be very long.

18 If you're simply moving that terabyte
19 within the file system it already resides in, it's
20 going to be instantaneous, virtually. It'll take a
21 few milliseconds.

22 Q. Do you know what the average file size is

1 for a document?

2 A. So sometimes we would call, like, videos
3 documents, as well, right? You may mean -- I don't
4 know. You may have a concept in your mind of legal
5 documents being the most common type of document.
6 That's not the case in my world. Then you might
7 have a PDF that might be a few hundred kilobytes to
8 a megabytes. If you deal with video documents,
9 then you might be into the gigabytes. If you deal
10 with BLOBs and database technology, you might be
11 into the tens or hundreds of gigabytes. So it
12 really depends on what a document is in your world.

13 Q. Let's talk about just your standard
14 enterprise network.

15 You have designed systems for enterprise
16 networks before, yes?

17 MR. ZIVOJNOVIC: Objection. Vague.
18 Incomplete hypothetical.

19 THE WITNESS: I have. In fact, I worked
20 with a video delivery company enterprise where the
21 most of what they deal with are large videos. I've
22 also dealt with small- to medium-sized businesses

1 where they deal more with Word documents. It
2 really depends on the enterprise we're talking
3 about.

4 BY MR. KLEIN:

5 Q. And in the enterprise -- let's talk about
6 the one that had the large videos. Did they have
7 to perform any security or cryptographic operations
8 on the large videos?

9 A. My engagement had nothing to do with
10 that. So if they did, I wouldn't have been privy.
11 This was all within their network, and I don't
12 think they were encrypting things within their
13 network. They may have encrypted it for delivery
14 elsewhere, but I wasn't involved in that part of
15 the business.

16 Q. And you're talking about copying data
17 being very slow. Can't you just offset any
18 slowdown in processing with more processing power?

19 A. You know, processing power is not really
20 the bottleneck for a copy operation. Let's take a
21 simple example, copying over the Internet. Your
22 Internet speed is going to be the bottleneck. Your

1 processor is much faster. Copying, let's say, on a
2 specific computer from one -- let's say, like your
3 example, one disk drive to a USB. Now we're not
4 going over the Internet, but now the bottleneck is
5 going to be your USB speed, USB 2 or USB 3, is
6 faster, but it's still going to be a slowdown. The
7 processor, or the brain of the computer, is going
8 to tell the memory system, Go do this and send me
9 an interrupt when you're done, at least done with
10 some portion of it. And the CPU is going to go off
11 and do some other stuff and not care about that
12 copy until it's time to pay attention to it again.
13 So the CPU isn't burdened.

14 But the I/O system, you know, the
15 communication pathway to your USB port, that's
16 going to be saturated because you're doing all this
17 transmission of data out to this USB stick. So
18 that -- that'll take a while. That's the reason it
19 takes a while, and that part of your computer is
20 going to be heavily burdened until you're done.

21 Q. But couldn't you just increase the
22 processing power of the I/O system?

1 A. I mean, you could, right? You have USB
2 2. You can go get USB 3 and it'll be faster. But
3 it's still going to be very finite and very
4 noticeable compared to the speed with which you
5 wish the copy will take place.

6 I mean, I, myself, sometimes have to copy
7 substantial amounts to a USB stick, and I'm
8 standing in a law office or in a colleague's office
9 at the university, and it's awkward if it takes
10 several minutes sometimes. But you -- you can't go
11 to USB 17. It doesn't exist. So you have to just
12 use the best technology available.

13 Q. So the copying operation is more
14 inefficient than other operations?

15 A. Certainly, if you had the option to just
16 move the file locally with this type 1 movement
17 that I described where you just update the
18 metadata, you would always opt for that versus
19 doing an unnecessary copy-and-erase type 2 move.

20 Q. So you're familiar with the FortiSandbox
21 system, right?

22 A. To some level, yes.

1 Q. And the FortiSandbox system, you can
2 mount a cloud storage to a network security device,
3 right?

4 MR. ZIVOJNOVIC: Objection. Vague.

5 THE WITNESS: Are we -- are we talking
6 about a certain time frame? I'm not sure when that
7 capability became available, if it was available
8 years ago. And I searched for -- through the
9 administration guide that's in evidence and looked
10 for native mounting. I couldn't find it described
11 anywhere in that document, so I'm not sure if, in
12 the relevant reference, it was available.

13 BY MR. KLEIN:

14 Q. But you've read Dr. Franz's declaration,
15 right?

16 A. I read it sometime ago, yes.

17 Q. And do you recall excerpts in which he
18 talks about the portions of the FortiSandbox guide
19 that support natively mounting a cloud storage
20 device?

21 MR. ZIVOJNOVIC: Objection. Vague.
22 Assumes facts not in evidence.

1 THE WITNESS: I -- just sitting here, I
2 don't recall. I do recall the petition talking
3 about it, and I read that last night and tried to
4 find -- but there was no pointer from the petition
5 to that reference, the FortiSandbox reference, so I
6 wasn't sure where that notion was coming from.

7 BY MR. KLEIN:

8 Q. So if copying is the more inefficient
9 operation, why does the '856 use it?

10 MR. ZIVOJNOVIC: Objection. Vague.

11 THE WITNESS: There could be an advantage
12 even though, like we've described, it's more
13 burdensome. For example, for a security reason,
14 perhaps, you might want to take the files and
15 physically isolate them from the suspect or
16 potentially dirty files by moving them to a
17 completely separate location so that there's no
18 accidental potential intermixing.

19 This concept isn't described anywhere in
20 the prior art, of course. This is something I'm
21 reading from the '856.

22 BY MR. KLEIN:

1 Q. Right. And you're saying that copying
2 operations have drawbacks. They can be
3 inefficient. They can cause bottlenecks, right?

4 A. Yes. I mean, it's much slower than a
5 type 1 move, for example, as we've been discussing.

6 Q. So why would the '856 patent limit it --
7 why would the '856 patent use the copying operation
8 when it seems inferior to the type 1 move
9 operation?

10 MR. ZIVOJNOVIC: Objection. Asked and
11 answered.

12 THE WITNESS: Because if a goal of the
13 '856 is to provide additional security by saying, I
14 want to store the known clean files far away and
15 separately and nowhere near the suspect dirty
16 files, then I'm willing to take on the cost of a
17 copy to realize that advantage.

18 BY MR. KLEIN:

19 Q. When you say "far away," what do you
20 mean, "far away"? Well, strike that.

21 You said far away in a separate location.
22 What do you mean by that? You mean a separate

1 physical media?

2 A. Perhaps. Perhaps in the separate S3
3 bucket, in a separate geographical location somehow
4 isolated from where the dirty files or the
5 potentially dangerous files live.

6 If you were to just update the metadata
7 and just simply move from one location to another
8 within the disk, you're not gaining that
9 separation.

10 And, Mr. Klein, if it's okay. I know
11 it's only been 45 minutes, but I could use a
12 restroom break real quick.

13 MR. KLEIN: No problem. Let's take
14 10 minutes.

15 (A brief recess was taken.)

16 BY MR. KLEIN:

17 Q. Dr. Black, have you ever used
18 "transferring a file" and "copying a file"
19 interchangeably?

20 MR. ZIVOJNOVIC: Objection. Vague.

21 THE WITNESS: I probably use those words
22 thousands of times. I don't think of them as

1 interchangeably. You -- you -- you gave me an
2 example a little while ago dragging and dropping
3 within a computer. I wouldn't consider that a file
4 transfer. I just wouldn't use that word in that
5 instance. I would think of that as a move or a
6 copy, depending on what happened.

7 A transfer, I think of transporting the
8 file somewhere, physically moving it away. Now,
9 I'm not sure that's the strict definition, but
10 that's just the way I hear the word when you use
11 it.

12 BY MR. KLEIN:

13 Q. So you've never used "transfer" and
14 "copy" interchangeably?

15 MR. ZIVOJNOVIC: Objection. Vague and
16 asked and answered.

17 THE WITNESS: Once again, I -- I have
18 used those words thousands of times for 50 years,
19 and I just don't -- you know, I wouldn't want to
20 say definitively never in those 50 years did I once
21 use them interchangeably, but I can't think of an
22 instance.

1 BY MR. KLEIN:

2 Q. Why wouldn't you want to say definitively
3 if they're such distinct concepts?

4 A. Because I -- I speak a lot informally.
5 I'm not under oath all the time, and I'm sometimes
6 informal with my words and sometimes I get confused
7 and use one word when I mean another. I just
8 wouldn't want to say I have a full record of all my
9 thinking and utterances for 50 years. You know,
10 that's just more than I can attest to.

11 Q. Have you ever heard somebody else use
12 "transfer" and "copy" interchangeably?

13 MR. ZIVOJNOVIC: Objection. Vague. Also
14 outside the scope.

15 THE WITNESS: Maybe a layperson might
16 have at one point. I don't think a person of
17 ordinary skill or extraordinary skill in computer
18 science using them interchangeably, because we all
19 kind of understand the distinction there.

20 BY MR. KLEIN:

21 Q. So you've never heard of a person of
22 ordinary skill in the art interchangeably use

1 "transfer" and "copy"?

2 MR. ZIVOJNOVIC: Objection. We're
3 outside the scope of his declaration. Also vague.
4 Asked and answered.

5 THE WITNESS: Not that I can recall.

6 BY MR. KLEIN:

7 Q. Have you ever used "move" and "copy"
8 interchangeably?

9 A. If you mean a type 2 move, which I said
10 are very similar and are different from what's in
11 the prior art, that second type of move, I might
12 have used those two interchangeably in some
13 instances. Probably not, because I still think of
14 them as different, but they are so similar that
15 perhaps, in that instance.

16 I would never think of the type 1 move,
17 where you just change the metadata, as anything
18 like copying, and I would never use those
19 interchangeably.

20 Q. So you've never used the "type 1 move,"
21 as you've called it, and "copy" interchangeably?

22 A. No way. Those are too distant.

1 Q. Have you ever used "transfer" and "move"
2 interchangeably?

3 MR. ZIVOJNOVIC: Objection. Vague.
4 Scope.

5 THE WITNESS: If we mean the type 2 move,
6 then, once again, they're similar. Like -- just
7 like the discussion we had about "copy" versus
8 "transfer," I would have to say I can't recall an
9 instance, but there's some similarity there. Like
10 I said, transfer I think of as copying to somewhere
11 distinct and different. Far away, potentially.

12 I wouldn't call -- I wouldn't call
13 copying from my disk to a USB stick as a transfer.
14 I would think of that as just copying. But if I
15 did it over the Internet, then maybe I would say
16 that's a transfer and maybe I might call it copying
17 or a type 2 move.

18 BY MR. KLEIN:

19 Q. So when you are talking to your
20 colleagues, do you tell them that you want to do a
21 type 2 move or a type 1? Do you use that
22 nomenclature in your everyday parlance?

1 A. No. My colleagues understand when the
2 type 1 technology is used versus the type 2,
3 without my having to distinguish between them. So
4 I would just say move, and they would know if the
5 movement's between different file systems if it's
6 type 2. And if not, the computer is certainly
7 going to do a type 1, and I wouldn't have to
8 explain that to them.

9 Q. So claim 1 -- let's take that one, for
10 example -- uses the term "copying," right?

11 A. It does, yes.

12 Q. Now, is it your opinion that that use of
13 copying is type 2 copying or copying-copying?

14 MR. ZIVOJNOVIC: Objection. Vague.

15 THE WITNESS: To be clear, I haven't
16 distinguished type 1 and type 2 copying. Only type
17 1 and type 2 move. So copying, I haven't said that
18 there's a distinction -- copying.

19 BY MR. KLEIN:

20 Q. You broke up a little bit. Can you
21 repeat that?

22 A. Sure. So you asked me about type 2

1 copying. I don't think I said that. I've only
2 said type 1 and type 2 move, that there are two
3 different species of move. But copying, I think we
4 haven't tried to break that down at all.

5 Q. That was my bad, the question. I didn't
6 mean to say "type 2 copying," so let me rephrase
7 that.

8 Claim 1 uses the term copying, right?

9 A. It does.

10 Q. Now, is that a type 2 moving, or is that
11 a copying?

12 MR. ZIVOJNOVIC: Objection. Vague.

13 THE WITNESS: I mean, it says copying.
14 As I've said before, the type 2 move is very
15 similar to copying. It's just copy and then erase
16 the original. I think the patent uses the term
17 move elsewhere, particularly, like, in some of the
18 figures. And what I read that to mean is copy and
19 erase, just implement the move type 2 with a copy.

20 But you're right, in claim 1 it says
21 copying, and that's copying. It's making a
22 duplicate.

1 BY MR. KLEIN:

2 Q. So it's not the type 2 move; it's just
3 copying, in the claims?

4 MR. ZIVOJNOVIC: Objection. Vague.
5 Misstates prior testimony.

6 THE WITNESS: I think it -- it includes
7 the type 2 move, as well, because embodiments use
8 that term and show that happening and, like I said,
9 a type 2 move is a copy. It's just a copy with one
10 extra step, but it includes copying. Type 1 does
11 not.

12 BY MR. KLEIN:

13 Q. So copying can include the strict
14 definition of copying and type 2 moving?

15 A. Yes. Because type 2 moving includes the
16 copying step. So you are -- you can't get around
17 copying if you do a type 2 move.

18 MR. KLEIN: All right. I'm done.

19 Pass the witness.

20 MR. ZIVOJNOVIC: No further questions.

21 MR. KLEIN: All right. Thank you,
22 Dr. Black. Short and sweet.

1 THE WITNESS: Sure. Good to see you
2 again.

3 MR. KLEIN: All right. Take care.

4 (The deposition was concluded at
5 9:35 a.m.)

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1 I, JOHN R. BLACK, JR., Ph.D., do hereby
2 certify that the foregoing is a true and accurate
3 transcription of my testimony.

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Dated

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1 STATE OF OHIO)
2 COUNTY OF CLERMONT) §§: CERTIFICATE

3

4 I, April L. Crites, RPR, RMR, CRR, a
5 Notary Public within and for the State of Ohio,
6 duly commissioned and qualified,

7 DO HEREBY CERTIFY that the above-named
8 JOHN R. BLACK, JR., Ph.D., was by me first duly
9 sworn to testify the truth, the whole truth, and
10 nothing but the truth.

11 Said testimony was reduced to writing by
12 me stenographically in the presence of the witness
13 and thereafter reduced to typewriting.

14 I FURTHER CERTIFY that I am not a
15 relative or attorney of either party, in any manner
16 interested in the event of this action, nor am I,
17 or the court reporting firm with which I am
18 affiliated, under a contract as defined in Civil
19 Rule 28(D).

20

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22

1 IN WITNESS WHEREOF, I have hereunto set
2 my hand and seal of office at Amelia, Ohio, on this
3 29th day of February, 2024.

4

5

April L. Crites  APRIL L. CRITES
Notary Public
State of Ohio
My Comm. Expires
October 3, 2027

6

7

APRIL L. CRITES, RPR, RMR, CRR
NOTARY PUBLIC, STATE OF OHIO
My commission expires 10/3/2027

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