

Aviel Rubin, Ph.D.
November 14, 2016

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

PALO ALTO NETWORKS, INC.

Petitioner

CASE NO.

vs.

IPR2015-01979

FINJAN, INC.

Patent Owner

DEPOSITION OF AVIEL RUBIN, PH.D.

MONDAY, NOVEMBER 14, 2016

12:49 P.M.

102 W. PENNSYLVANIA AVENUE,

THE ROYSTON BUILDING, SUITE 350

TOWSON, MARYLAND 21204

REPORTED BY: Ronda J. Thomas, RPR, CRR

Aviel Rubin, Ph.D.
November 14, 2016

1 APPEARANCES:	Page 2	1 INDEX TO EXHIBITS	Page 4
2		2 AVIEL RUBIN, Ph.D.	
3 ON BEHALF OF THE PATENT OWNER:		3 Palo Alto Networks, Inc. vs. Finjan, Inc.	
4 MICHAEL LEE, ESQUIRE		4 Monday November 14, 2016	
5 Kramer, Levin, Naftalis and Frankel, LLP		5	
6 990 Marsh Road		6 Exhibit No.	Marked
7 Menlo Park, California 94025		7 Exhibit 1 Supplemental Declaration of Aviel	6
8 Telephone: 650-752-1416		8 Rubin In Support Of Petitioner's	
9 Email: Mhlee@kramerlevin.com		9 Reply	
10		10 Exhibit 2 Article, "Install-Time Vaccination	11
11 ON BEHALF OF THE PETITIONER:		11 of Windows Executables to Defend	
12 BRIAN EUTERMOSER, ESQUIRE		12 Against Stack Smashing Attacks."	
13 Cooley, LLP		13 Exhibit 3 U.S. Patent No. 8,141,154	30
14 380 Interlocken Crescent, Suite 900		14 Exhibit 4 U.S. Patent Application No.	30
15 Broomfield, Colorado 80021		15 2005-0108562 to Khazan	
16 Telephone: 720-566-4203		16	
17 Email: Beutermoser@cooley.com		17	
18		18	
19		19	
20		20	
21		21	
22		22	
23		23	
24		24	
25 ALSO PRESENT: ADAM NUDELMAN, VIDEOGRAPHER		25	
1 INDEX TO EXAMINATION	Page 3	1 MONDAY, NOVEMBER 14, 2016, TOWSON, MARYLAND	Page 5
2		2 12:49 P.M.	
3 WITNESS:		3 * * *	
4 Examination By:	Page	4 PROCEEDINGS	
5 Mr. Lee	6	5 THE VIDEOGRAPHER: Here begins tape number	
6		6 one in the videotaped deposition of Dr. Aviel Rubin in	
7		7 the matter of Palo Alto Networks, Inc. versus Finjan,	
8		8 Inc., in the U.S. District Court for the Northern	
9		9 District of California. San Jose Division. Case No.	
10		10 IPR2015-01974.	
11		11 Today's date is 11/14/16. Time on the	
12		12 video monitor is 12:49 p.m. Videographer today is Adam	
13		13 Nudelman representing Gore Brothers. Video deposition	
14		14 is taken place at Gore Brother, 102 West Pennsylvania	
15		15 Avenue, Towson, Maryland.	
16		16 Would counsel please voice identify	
17		17 themselves and state whom they represent.	
18		18 MR. LEE: Michael Lee representing Patent	
19		19 Owner Finjan, Kramer Levin.	
20		20 MR. EUTERMOSER: Brian Eutermoser with	
21		21 Cooley on behalf of Petitioner Palo Alto Networks.	
22		22 THE VIDEOGRAPHER: Court reporter today is	
23		23 Ronda Thomas representing Gore Brothers. Will the	
24		24 reporter please swear in the witness.	
25		25 Whereupon,	

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<p style="text-align: right;">Page 6</p> <p>1 AVIEL RUBIN, PH.D.,</p> <p>2 called as a witness, having been first duly sworn to</p> <p>3 tell the truth, the whole truth, and nothing but the</p> <p>4 truth, was examined and testified as follows:</p> <p>5 EXAMINATION BY MR. LEE:</p> <p>6 Q Please state your full name and address for</p> <p>7 the record.</p> <p>8 A Aviel David Rubin, at 3 Thornhaugh,</p> <p>9 T-H-O-R-N-H-A-U-G-H, Court in Pikesville, Maryland</p> <p>10 21208.</p> <p>11 Q Do you understand why you're here today?</p> <p>12 A Yes.</p> <p>13 Q Why are you here today?</p> <p>14 A You are taking my deposition.</p> <p>15 Q What do you understand this deposition to</p> <p>16 be about?</p> <p>17 A My supplemental declaration in the '154</p> <p>18 patent IPR case.</p> <p>19 (Deposition Exhibit 1 was marked for</p> <p>20 purposes of identification.)</p> <p>21 Q You've been handed an exhibit marked as</p> <p>22 Exhibit Number 1. Exhibit Number 1 is entitled,</p> <p>23 "Supplemental Declaration Of Aviel Rubin In Support Of</p> <p>24 Petitioner's Reply," marked as Palo Alto Networks</p> <p>25 Exhibit 1045.</p>	<p style="text-align: right;">Page 8</p> <p>1 Q Which opinions are you referring to?</p> <p>2 A The opinions in this document.</p> <p>3 Q Can you summarize the opinions in this</p> <p>4 document that you're referring to?</p> <p>5 MR. EUTERMOSER: Object to the form.</p> <p>6 Document speaks for itself.</p> <p>7 A It's a very short document so I don't think</p> <p>8 that I need to summarize it. It's what it says here.</p> <p>9 Q Can you summarize it, though?</p> <p>10 MR. EUTERMOSER: Same objection.</p> <p>11 A I'm worried that if I summarize it I would</p> <p>12 leave something out so I could read it to you if you</p> <p>13 would like.</p> <p>14 Q So sitting here today, you cannot give me</p> <p>15 any kind of summary of your declaration, correct?</p> <p>16 MR. EUTERMOSER: Same objection. Also</p> <p>17 mischaracterizes his testimony.</p> <p>18 A I could but I would worry that if I</p> <p>19 summarized I might leave something out and so, you</p> <p>20 know, it's a very short document and I think it speaks</p> <p>21 for itself.</p> <p>22 Q Please provide your summary?</p> <p>23 MR. EUTERMOSER: Same objections.</p> <p>24 A So I stated that I have personal knowledge</p> <p>25 of the facts in this declaration. I list my rate. And</p>
<p style="text-align: right;">Page 7</p> <p>1 Is Exhibit Number 1 the supplemental</p> <p>2 declaration you're referring to?</p> <p>3 A Yes.</p> <p>4 Q Can you refer to page 7 of Exhibit Number</p> <p>5 1. Let me know when you're there.</p> <p>6 A I'm there.</p> <p>7 Q Is that your signature at the bottom of</p> <p>8 page 7?</p> <p>9 A Yes.</p> <p>10 Q Did you sign this document on October 28th,</p> <p>11 2016?</p> <p>12 A Yes.</p> <p>13 Q Why were you asked to put in a supplemental</p> <p>14 declaration on October 28th, 2016?</p> <p>15 MR. EUTERMOSER: Object to the form.</p> <p>16 Caution the witness not to reveal communications with</p> <p>17 counsel.</p> <p>18 A Yeah, I can't discuss the communications I</p> <p>19 had with the lawyers.</p> <p>20 Q You cannot say any reason why, correct,</p> <p>21 sitting here today on November 14th, 2016?</p> <p>22 A It's part of the process. They -- the two</p> <p>23 parties responded to each other and the attorneys in</p> <p>24 their response I suppose wanted to cite to their expert</p> <p>25 and so I provided these opinions.</p>	<p style="text-align: right;">Page 9</p> <p>1 I talk about the items that I was reviewing and my own</p> <p>2 expertise.</p> <p>3 Then I describe the document, Medvidovic</p> <p>4 deposition transcript, and a document by Nebenzahl and</p> <p>5 Wool -- it's a typo by the way. It should be "Wool"</p> <p>6 and it says "Wood."</p> <p>7 Then after that I talk about that one of</p> <p>8 ordinary skill would have known how to instrument</p> <p>9 applications. And I give some quotes from Khazan that</p> <p>10 support, support that.</p> <p>11 And then I talk about things that Khazan</p> <p>12 discloses, discuss Detours, and how Khazan describes</p> <p>13 what Detours does. And why Khazan describes that Win</p> <p>14 132 API functions are instrumentive. And some more</p> <p>15 things that Khazan describes.</p> <p>16 And then I talk about how one of ordinary</p> <p>17 skill in the art would have known how to apply the</p> <p>18 teachings of Khazan to instrument an executable</p> <p>19 application.</p> <p>20 I talk about the Medvidovic's testimony and</p> <p>21 why I disagree with his testimony.</p> <p>22 And I then talk about the Nebenzahl and</p> <p>23 Wool article and I explain why that article bolsters my</p> <p>24 position that IDA Pro was in common use before the '154</p> <p>25 patent and then I talk about, you know, that one of</p>

<p style="text-align: right;">Page 10</p> <p>1 ordinary skill in the art would know how to instrument 2 an application using IDA Pro as identified in Khazan. 3 I talk about my disagreement with 4 Medvidovic's and what would have been obvious to one of 5 ordinary skill in the art. How to instrument 6 applications with Khazan. 7 Then I reserved my right to offer more 8 opinions. That's, there may be more things in here but 9 that's, I guess the summary of it. 10 Q You mentioned that you cited Exhibit Number 11 1044 Nebenzahl and Wool, correct? 12 A Yes. 13 Q When were you first aware of this document? 14 A Probably in late 2003, 2004. 15 Q How did you become aware of the Nebenzahl 16 document? 17 A So I worked actively as a researcher in 18 this field and actually Avishai Wool, the second 19 officer is someone I know very well. He was at the 20 labs when I was at AT&T labs. He was at Bell Labs. 21 And in fact he was my host for my last sabbatical at 22 Tel Aviv University. So his research is research that 23 I followed closely. And when he wrote this paper I'm 24 sure that I was aware of it, along with a lot of other 25 papers in the field at the time.</p>	<p style="text-align: right;">Page 12</p> <p>1 Q What's an application? 2 MR. EUTERMOSER: Object to the form. 3 A In what context? 4 Q In the context of what you said, 5 instrumenting applications? 6 MR. EUTERMOSER: Object to the form. 7 A So you're talking about the context of 8 the '154 patent or just in general outside of this 9 case. 10 Q In the context of your declaration? 11 MR. EUTERMOSER: Object to the form. 12 A Can you show me which occurrence you're 13 referring to in my declaration. 14 Q I'm talking about your summary. You said, 15 you're talking about instrumenting applications, 16 correct? 17 A Yes. 18 Q So my question is, what is an application? 19 MR. EUTERMOSER: Object to the form. 20 A So are you referring to paragraph 14 for 21 example where I say that I disagree with 22 Dr. Medvidovic's testimony that Khazan does not teach 23 instrumenting applications? Is that the applications 24 that you're talking about. 25 Q Again, you gave a summary. Do you recall</p>
<p style="text-align: right;">Page 11</p> <p>1 Q The Nebenzahl document, it's not cited in 2 your previous declaration, correct? 3 A That's right. 4 Q You could have cited the Nebenzahl document 5 in your previous declaration, correct? 6 MR. EUTERMOSER: Object to form. 7 A I suppose I could cite any document that I 8 want. 9 (Deposition Exhibit 2 was marked for 10 purposes of identification.) 11 Q You've been handed an exhibit marked as 12 Exhibit Number 2. Exhibit Number 2 is entitled, 13 "Install-Time Vaccination of Windows Executables to 14 Defend Against Stack Smashing Attacks." By Nebenzahl 15 and Wool. 16 And at the bottom it's marked as 17 Exhibit 1044. 18 Is this the Nebenzahl document we have been 19 referring to? 20 A Yes. 21 Q Previously you mentioned that instrumenting 22 applications. Do you recall that? 23 A When I was summarizing the report? 24 Q Correct. 25 A Yes.</p>	<p style="text-align: right;">Page 13</p> <p>1 that? 2 A Right. 3 Q Where you talked about instrumenting 4 applications. You understand what an application is, 5 correct? 6 MR. EUTERMOSER: Object to the form. 7 Argumentative. 8 A Yes. 9 Q What is an application? 10 MR. EUTERMOSER: Same objection. 11 A I'm just -- 12 MR. EUTERMOSER: Also vague and ambiguous. 13 A I'm trying to understand if you're 14 referring to applications in paragraph 14 when you ask 15 me what's an application or is it something broader? 16 Q It's within the context of your 17 declaration? 18 MR. EUTERMOSER: Object to the form. 19 A I mentioned application in multiple places 20 so I want to look and review because you are looking 21 for a catchall now that will cover all of them, right? 22 Q I'm just talking about your summary that 23 you said of your declaration. You mentioned 24 instrumenting applications, correct? 25 A Right. One of the reasons that I didn't</p>

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1 want to give a summary is that I didn't want to, you
2 know, I didn't prepare a summary of this. I just
3 prepared this document. And I didn't want to be held
4 to that summary because it was kind of on-the-fly.
5 So I'd rather look at a specific part of my
6 declaration and answer questions about that than an
7 on-the-fly summary that I provided.
8 Q So sitting here today, you can't tell me
9 what an application is, correct?
10 MR. EUTERMOSER: Objection.
11 Mischaracterizes his testimony. It's also vague and
12 ambiguous.
13 A That's not correct. I just have multiple
14 locations that I discuss an application in here and I'm
15 asking which one you want me to, to describe or define
16 for you? Or if you're asking for a catchall that will
17 cover all of them.
18 Q In your summary you talked about
19 instrumenting applications, I just want to know what
20 you mean by applications?
21 MR. EUTERMOSER: Objection. Vague and
22 ambiguous. Mischaracterizes his testimony.
23 A So my summary was not precise the way the
24 document is. I put a lot of thought into it and
25 reviewed every word. And the summary was an on-the-fly

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1 description, I didn't come here today to answer
2 questions about my summary. I want to answer questions
3 about the documents.
4 I'm trying to understand if you want a
5 specific instance that you want to point to of
6 application or if you're asking me to define it in a
7 way that covers all the instances of the word
8 application in the actual declaration, not on-the-fly
9 summary.
10 Q What different types of applications do you
11 discuss in your declaration?
12 MR. EUTERMOSER: Object to the form.
13 (Witness reading.)
14 A So there's some described on page 2 in
15 paragraph 2 where I quote Khazan talking about binary
16 machine executable programs, script programs and
17 command programs which I understand to mean shell
18 scripts. Those are different types applications.
19 Q So just to be clear, where do you use the
20 term applications and provide two different meanings
21 for them?
22 A I never said I did.
23 Q So when you use the word "application,"
24 there's only one meaning, correct?
25 MR. EUTERMOSER: Object to the form.

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1 A I don't have multiple meanings for the word
2 "application."
3 Q Can you tell me what the meaning of
4 application is that you applied in your declaration?
5 MR. EUTERMOSER: Objection. Vague and
6 ambiguous. Foundation.
7 A So I would say when I'm talking about
8 applications in this declaration, I'm talking about
9 instrumenting applications, which is talking about code
10 that's running or executables.
11 Q So an application is code that's running;
12 is that correct?
13 MR. EUTERMOSER: Object to the form.
14 A Well, you could have an application that
15 isn't running but it's code that can run or that's
16 running.
17 Q So is it fair to say that an application in
18 your opinion is code that can be run?
19 MR. EUTERMOSER: Object to the form.
20 A I would say that code that can be run can
21 be part of an application.
22 Q So it's not fair to say that any code that
23 can be run is an application?
24 MR. EUTERMOSER: Object to the form.
25 A Well, I think in general that might be the

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1 case, but in this particular declaration I'm talking
2 about instrumenting code, instrumenting applications
3 and how you could prevent malicious code from running
4 inside of other codes so I don't think it's limited
5 here to self-contained applications like if you would
6 purchase. Like, if you went in and purchased Microsoft
7 Word, yeah, that's an application. But in the context
8 here we're talking about code that can be instrumented
9 to prevent malware from running.
10 Q So in the context of your declaration is it
11 fair to say that an application is any code that can be
12 run?
13 MR. EUTERMOSER: Object to the form.
14 A Let me say that what I do think is fair to
15 say is that when I talk about the instrumentation of
16 applications I'm talking about the instrumentation of
17 code that can run.
18 Q So can you answer the question that I asked
19 is whether an application is any code that can be run?
20 MR. EUTERMOSER: Objection. Asked and
21 answered.
22 A So I don't look at it from that point of
23 view. I look at it from the point of view that if
24 you're talking about technologies for instrumenting
25 applications, you're talking about instrumenting code.

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