

EXHIBIT 4

Volume 4

Pages 615 - 831

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

BEFORE THE HONORABLE WILLIAM H. ALSUP, JUDGE

FINJAN, INC.,)	
Plaintiff,)	
VS.)	No. C 17-5659 WHA
JUNIPER NETWORKS, INC.,)	
Defendant.)	

San Francisco, California
Thursday, December 13, 2018

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I N D E X

Thursday, December 13, 2018 - Volume 4

	PAGE	VOL.
Plaintiff Rests	643	4
<u>PLAINTIFF'S WITNESSES</u>	<u>PAGE</u>	<u>VOL.</u>
<u>ICASIANO, ALEX</u>		
By Videotaped Deposition	642	4
<u>GUPTA, SHELLY</u>		
By Videotaped Deposition	643	4
<u>DEFENDANT'S WITNESSES</u>	<u>PAGE</u>	<u>VOL.</u>
<u>BUSHONG, MICHAEL</u>		
(SWORN)	644	4
Direct Examination by Ms. Carson	645	4
Cross-Examination by Mr. Hannah	698	4
Redirect Examination by Ms. Carson	709	4
<u>RUBIN, AVIEL</u>		
(SWORN)	710	4
Direct Examination by Mr. Heinrich	711	4
Cross-Examination by Mr. Andre	771	4
Redirect Examination by Mr. Heinrich	796	4
<u>UGONE, KEITH RAYMOND</u>		
(SWORN)	797	4
Direct Examination by Ms. Curran	798	4
Cross-Examination by Ms. Kobialka	820	4

I N D E XE X H I B I T S

	IDEN	EVID	VOL.
<u>TRIAL EXHIBITS</u>			
58		685	4
182		686	4
1059		727	4
1070		720	4
1170		690	4
1241, Title Page & Table of Contents		730	4
1241, Page 39		763	4
1248		760	4
1264		751	4
1347		682	4
1552		726	4
2197		724	4

1 **THE COURT:** Okay. Next question.
 2 **BY MR. HEINRICH:**
 3 **Q.** Now, is it true that Juniper only uses Amazon's physical
 4 servers and not Amazon software?
 5 **A.** No. A lot of the running of the system is based on a lot
 6 of Amazon code that is providing the interface to DynamoDB and
 7 S3. They provide a lot of tools and functionality to people
 8 who want to build applications that use those systems. I
 9 believe I have some source code to go to for that.
 10 **Q.** For time reasons, why don't we skip that.
 11 **A.** Okay.
 12 **Q.** So does Sky ATP have a database under the definition that
 13 applies here that stores a security profile including a list of
 14 suspicious computer operations?
 15 **A.** So in my answer I'm going to apply the definition of a
 16 database that's for the claim, which is that it has to have a
 17 schema. And so my answer is, no, there is no database that has
 18 a schema and stores a list of suspicious computer operations in
 19 Sky ATP.
 20 **Q.** Is there a technological reason why Juniper doesn't use a
 21 database with a schema to store that security profile with the
 22 list?
 23 **A.** Yes. There's a very good one.
 24 So the list of suspicious operations, which is the results
 25 of running all of the analysis engines, is very, very large and

1 each run can produce data that's very, very different; and so
 2 it's much better suited to a schema-less database than to a
 3 database that has a schema.
 4 So the engineers made the decision saying "This isn't the
 5 type of data that I would put into a database with a schema,"
 6 and so they chose DynamoDB and S3.
 7 **Q.** So I want to read to you some of Dr. Cole's testimony
 8 yesterday on page --
 9 **THE COURT:** Read it exactly now. Don't summarize.
 10 **BY MR. HEINRICH:**
 11 **Q.** On page 432 of yesterday's transcript, Dr. Cole testified,
 12 quote, (reading):
 13 "So both the static analysis and the dynamic analysis
 14 perform that security profile, and then to make it easy to
 15 look up, if somebody else uses that same downloadable,
 16 Juniper puts it in a structured database with a schema so
 17 they can quickly look up the information to make it go
 18 quicker in the future."
 19 Do you agree with that?
 20 **A.** I disagree with several things in that.
 21 **Q.** And what do you disagree with?
 22 **A.** I disagree that it's put into a database with a schema
 23 because it's put into DynamoDB, which does not have a schema.
 24 I disagree that it's being done to make anything faster in
 25 any way. That is actually not a requirement, and this is what

RUBIN - DIRECT / HEINRICH

757

1 I was talking about earlier, which is that the list of
 2 suspicious operations does not ever need to be consulted again
 3 when the product is running. And so there's not going to be
 4 retrieval of it and it makes a lot more sense to put it in a
 5 database without a schema than to put it into a database that
 6 has a schema, which is exactly what they do.
 7 **Q.** Is Dr. Cole correct that when a downloadable comes in
 8 that's been seen before, Sky ATP looks up the security profile?
 9 **A.** No. Sky ATP just looks up the verdict.
 10 **THE COURT:** Of these three -- well, while we've got it
 11 on the screen. Which one of those three storage places is the
 12 verdict stored?
 13 **THE WITNESS:** It's the one on the left. The one
 14 that's called Amazon DynamoDB.
 15 **THE COURT:** And which is the one where the list of
 16 suspicious operations is stored?
 17 **THE WITNESS:** The list of suspicious operations is
 18 stored in a different table within the same database, you know,
 19 within Amazon DynamoDB.
 20 **THE COURT:** They're both in DynamoDB but you're saying
 21 it's in a different table?
 22 **THE WITNESS:** Right. So this is a schema-less
 23 database and even though it's a schema-less database, it has
 24 tables. Tables are a construct in databases that allow you to
 25 store multiple different types of things in different tables.

RUBIN - DIRECT / HEINRICH

758

1 And so the table -- one of the tables after the analysis engine
 2 runs, those results that are produced are put into that table.
 3 When a verdict is calculated, that verdict goes into a
 4 different table. Neither one of those tables has a schema.
 5 **THE COURT:** Okay. Thank you.
 6 **BY MR. HEINRICH:**
 7 **Q.** Now, does Dr. Cole say that any one of these individual
 8 storage components is the claimed database for purposes of
 9 Claim 10?
 10 **A.** I -- in court he didn't seem to remember if DynamoDB was,
 11 but I reviewed his expert report very carefully and he did not
 12 accuse any one of these as being the claimed database.
 13 **Q.** And what's his theory?
 14 **A.** He draws a box around all three of them and he says,
 15 "Well, this is the database and it has a schema."
 16 **Q.** And this is from Exhibit 1179, which is in evidence.
 17 Whose annotations were these on this exhibit?
 18 **A.** So this is what you've seen before. Dr. Cole in his
 19 deposition was asked which is the database from Claim 10 in the
 20 accused product, and so he couldn't point to DynamoDB or S3 or
 21 MySQL so he just drew a box around the entire thing and said,
 22 "Well, this is the database."
 23 **Q.** Does Dr. Cole refer to this as a single unified database?
 24 **A.** He does.
 25 **Q.** Do you agree with that?

1 A. I don't agree with that.
 2 Q. And why is that?
 3 A. Because these are three different separate storage
 4 solutions. They have different purposes. They are
 5 communicated with in different programming languages, and so
 6 you can't just draw a box and say, "This is a database."
 7 Q. So we saw that the definition of "database" that applies
 8 here requires a database organized according to a schema.
 9 A. Right.
 10 Q. Is this, what Dr. Cole is calling ResultsDB database,
 11 organized according to a database schema as required?
 12 A. No. I mean, that notion is actually kind of ridiculous
 13 because you've got these different storage solutions, two of
 14 which are schema-less and one of which doesn't have any list of
 15 security operations. And so they use different languages so
 16 you couldn't possibly have a schema for three things that are
 17 so different.
 18 Q. So what does Dr. Cole point to as the schema for what he
 19 calls the ResultsDB database?
 20 A. So he points to something called the JSON schema, which is
 21 JSON is a text format that's used to format information in a
 22 computer system.
 23 Q. Is there a standard that governs JSON format?
 24 A. Yes.
 25 Q. And what is that standard?

PROCEEDINGS

1 (Proceedings were heard out of the presence of the jury:) 761
 2 THE COURT: All right. You may step down and have
 3 your break too.
 4 Any -- oh, I forgot to ask the jury something. I'm going
 5 to have Tracy go into the jury room and tell them that I meant
 6 to tell them that even though we're trying to close out the
 7 case on Friday maybe, maybe not, they should definitely keep
 8 Monday, Tuesday, and Wednesday ready to come back here.
 9 Can you make sure? I don't want them making plans to go
 10 out of town or something. Okay?
 11 Is that all right, Counsel?
 12 MR. ANDRE: That's fine, Your Honor.
 13 MR. KAGAN: Yes.
 14 THE COURT: All right. Good. Please do that.
 15 All right. Well, you-all have almost used exactly the
 16 same amount of time. Defendants have used 335 of your 390 and
 17 the other side has used 338. This takes into account -- please
 18 be seated -- takes into account the mistake I made so that --
 19 so you both are down to roughly an hour of time left. That
 20 means that by going into tomorrow, we won't have more than an
 21 hour, an hour and ten minutes worth of testimony, and then
 22 we'll be ready to take -- so just be aware of that. Okay?
 23 All right. Anything more?
 24 MR. ANDRE: I'm sorry.
 25 MR. HANNAH: No. We thought you were leaving.

1 A. So JSON is a standard produced by the IETF. It's the
 2 Internet Engineering Task Force, which is the organization that
 3 put out standards like TCP, IP, all of the Internet protocols
 4 that define how we communicate.
 5 Q. So if you look in your notebook at Exhibit 1248.
 6 A. (Witness examines document.) Oh, I'm sorry. Which
 7 exhibit?
 8 Q. 1248.
 9 A. (Witness examines document.) Oh. It's the first one.
 10 Q. And what is this?
 11 A. So this is the standards document from the IETF defining
 12 JSON.
 13 MR. HEINRICH: We move 1248 in evidence.
 14 MR. ANDRE: No objection.
 15 THE COURT: Thank you. Received.
 16 (Trial Exhibit 1248 received in evidence)
 17 BY MR. HEINRICH:
 18 Q. And if we can turn to --
 19 THE COURT: How much longer do you have on direct?
 20 MR. HEINRICH: I think about ten minutes.
 21 THE COURT: All right. We're going to break and let
 22 our jury have a break here.
 23 Remember the admonition. We'll see you back here in 15
 24 minutes.
 25 THE COURT: All right.

PROCEEDINGS

1 THE COURT: Okay. Thank you for being so kind. 762
 2 Okay. I'm going to take my break. See you in a minute.
 3 (Recess taken at 11:20 a.m.)
 4 (Proceedings resumed at 11:32 a.m.)
 5 (Proceedings were heard in the presence of the jury:)
 6 THE COURT: Are we ready to go?
 7 MR. HEINRICH: Yes, Your Honor.
 8 THE COURT: Tracy, let's bring in our jury, please.
 9 (Proceedings were heard in the presence of the jury:)
 10 THE COURT: Welcome back and please be seated.
 11 I just want to -- before we get started, I asked Tracy to
 12 say this to you and I'll say it myself. We're going to make
 13 efforts to get the case to you tomorrow. You may or may not
 14 have enough time to decide it tomorrow. That will be up to
 15 you.
 16 But I cannot -- I don't want you making plans for Monday,
 17 Tuesday, or Wednesday because we may need you here. I can't be
 18 positive that the case will go to you for decision tomorrow.
 19 It may have to be Monday. And even if it does go tomorrow, it
 20 may be that you can't reach a verdict until Monday, Tuesday, or
 21 Wednesday because of the deliberations that you need to do.
 22 So please keep those days open -- Monday, Tuesday, and
 23 Wednesday -- but also keep Friday available so that you'll have
 24 that opportunity and we'll see.
 25 All right. Back to work. You may continue with your