

EXHIBIT 9

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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1 direct examination.

2 **MR. HEINRICH:** Thank you, Your Honor.

3 Just one additional housekeeping matter. The

4 Exhibit 1241, *SQL for Dummies*, we'd move into evidence one

5 additional page at 1241-39.

6 **THE COURT:** Any problem with that?

7 **MR. ANDRE:** No, Your Honor. No objection.

8 **THE COURT:** All right. That's in, 1231 [sic].

9 **MR. HEINRICH:** So that's 1241 at page 39 of the

10 exhibit.

11 **THE COURT:** Oh, 39. Okay.

12 (Trial Exhibit 1241, Page 39 received in evidence)

13 **MR. HEINRICH:** All right. So we were about to pull up

14 Exhibit 1248, so let's just bring that up on the screen. And

15 if we can pull up on page 3 of 1248.

16 **Q.** What does -- the Internet Engineering Task Force, how do

17 they describe the JSON format?

18 **A.** So the IETF defines JSON, and in this first sentence in

19 the introduction it says that (reading):

20 "JSON is a text format for the serialization of

21 structured data."

22 So that basically says that it's a way to take data and

23 keep it in an organized way on the computer.

24 **Q.** Now, can a JSON conform to a schema?

25 **A.** Yes. You can have a JSON schema. The word "schema" just

1 analysis, are stored in DynamoDB or S3, which are schema-less.

2 And so that's very different from the way Dr. Cole described

3 it.

4 **Q.** The MySQL database used in Sky ATP, does that use the JSON

5 format?

6 **A.** It does not. Nothing that's stored in the MySQL database

7 is of a JSON format.

8 **Q.** And if you can please pull up Exhibit 99. This is already

9 in evidence. This is the source code.

10 And let's take a look at page 207. You can just take a

11 look at it on the screen.

12 **A.** Okay.

13 **Q.** Can you explain what this code is telling us here?

14 **A.** Okay. So what we're looking at here is the code for a

15 table of objects and different -- different keys, like the

16 primary key, unique key, indexed. So this is the SQL

17 information in the MySQL database.

18 **Q.** And does this use the JSON format?

19 **A.** It does not.

20 **Q.** All right. Dr. Cole also referred to what's called main

21 schema. What does that relate to?

22 **A.** Okay. So the main schema is also a JSON schema and it

23 defines how certain data is stored in a JSON.

24 **Q.** So let's drill down a little bit deeper and let's talk in

25 more detail about how information is stored in DynamoDB

1 has to do with having rules for how you put things together.

2 This is different from a database schema, which defines how you

3 put data into a database. A JSON schema defines how you put

4 text into a JSON object.

5 **Q.** So it gets a little confusing. Does use of the word

6 "schema" mean a database schema?

7 **A.** It does not. And this is actually where I want to get

8 back to my original theme of labels.

9 I felt that Dr. Cole was using the label "schema"

10 incorrectly; and just because something is in a JSON schema,

11 doesn't mean that if you put that object into a database, it

12 would be a database schema. If you put that object into a

13 schema-less database, you can have a JSON in a schema-less

14 database, but I don't think it's appropriate to try to confuse

15 that the JSON schema somehow makes that a database schema.

16 **Q.** Now, does the JSON format used in Sky ATP organize

17 everything in what Dr. Cole refers to as the ResultsDB

18 database?

19 **A.** No.

20 **Q.** Can you explain?

21 **A.** So, first of all, there is no such thing as a ResultsDB

22 database. He's drawing a box around three different storage

23 solutions and calling that the ResultsDB database. That's the

24 first part of my answer.

25 Secondly, the JSONs, which are the results of the

1 **A.** Okay.

2 **Q.** Can you kind of walk us through?

3 **A.** Sure. So what happens is there are two types of

4 information stored in two different tables in DynamoDB. So

5 when the analysis engines run, they produce results and those

6 results can contain a lot of information. If the total results

7 that get put into a JSON does not exceed 400 kilobytes, then

8 that gets put in a JSON into DynamoDB.

9 If it's bigger than 400 kilobytes, then those results,

10 which could be, you know, 3 megabytes, 4 megabytes, much bigger

11 than 400 kilobytes, it gets put into S3, which is just an

12 object store, and then a link to that data in S3 is put into

13 DynamoDB.

14 **Q.** Now, we saw some testimony from Dr. Cole that, well, there

15 must be a database with a schema because once stored, the

16 security profiles with the list of suspicious operations have

17 to be quickly accessed. Is that right?

18 **A.** That's not right.

19 **Q.** And why not?

20 **A.** The reason is that when those results of the analysis are

21 stored, all those detail results, they're not used again by the

22 system. What the system uses is the verdict. The verdict is

23 very small and easy to look up.

24 **Q.** Now, when Sky ATP accesses a stored verdict, is it also

25 accessing that security profile?