

Transcript of the Testimony of:

MICHAEL FRANZ

NETSKOPE, INC.

VS.

FORTINET, INC.

May 10, 2024

Volume II



I M A G I N E
R E P O R T I N G

UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE PATENT TRIAL AND APPEAL BOARD

NETSKOPE, INC.,	)	
	)	
Petitioner,	)	PTAB Case No. IPR2023-00459
	)	
vs.	)	Patent No. 10,084,825
	)	
FORTINET, INC.,	)	
	)	
Patent Owner.	)	
_____	)	

DEPOSITION OF MICHAEL FRANZ

VOLUME II

Sacramento, California

Friday, May 10, 2024

REPORTED BY: Matthew Sculatti
CSR No. 13558

1 UNITED STATES PATENT AND TRADEMARK OFFICE
2 BEFORE THE PATENT TRIAL AND APPEAL BOARD
3
4

5 NETSKOPE, INC.,)
6 Petitioner,) PTAB Case No. IPR2023-00459
7 vs.) Patent No. 10,084,825
8 FORTINET, INC.,)
9 Patent Owner.)
10 _____)
11

12 Deposition of MICHAEL FRANZ, VOLUME II, taken before
13 Matthew Sculatti, a Certified Shorthand Reporter for the
14 State of California, commencing at 1:26 P.M.,
15 Friday, May 10, 2024. This deposition was reported
16 remotely.
17
18
19
20
21
22
23
24
25

1 APPEARANCES:

2

3

4 FOR THE PETITIONER:

5 PERKINS COIE LLP

6 BY: THOMAS MILLIKAN, ATTORNEY AT LAW

7 BY: KAY LI, ATTORNEY AT LAW

8 11452 El Camino Real

9 Suite 300

10 San Diego, California 92130-2080

11 TEL: (858) 720-5700

12 FAX: (858) 720-5799

13 tmillikan@perkinscoie.com

14 bli@perkinscoie.com

15

16 FOR THE PATENT OWNER:

17 QUINN EMANUEL URQUHART & SULLIVAN, LLP

18 BY: QUINCY LU, ATTORNEY AT LAW

19 865 South Figueroa Street

20 10th Floor

21 Los Angeles, California 90017

22 TEL: (213) 443-3717

23 FAX: (213) 443-3100

24 quincylu@quinnemanuel.com

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I N D E X

WITNESS	EXAMINATION	PAGE
MICHAEL FRANZ	By Mr. Lu	85

E X H I B I T S

EXHIBIT	DESCRIPTION	PAGE
Exhibit 1019	Rebuttal Declaration of Michael Franz in Support of Petitioner's Reply to Patent Owner's Response	114

1 Sacramento, California; Friday, May 10, 2024;

2 1:26 P.M.

3

4 MICHAEL FRANZ,

5 having been administered an oath, was examined and

6 testified as follows:

7

8 EXAMINATION

9 BY MR. LU:

10 Q Good afternoon, Dr. Franz.

11 A Good afternoon.

12 Q You have been previously deposed in this case;
13 correct?

14 A Yes, that's true.

15 Q And since then, you submitted a supplemental
16 declaration --

17 A Yes.

18 Q -- in this case?

19 A Yes.

20 Q And so you understand you're here today to
21 testify about that supplemental declaration?

22 A Yes.

23 Q Okay. In terms of this deposition today, did you
24 do anything to prepare for it?

25 A I -- I reread some of the documents, most

1 importantly my -- you know, obviously, the supplemental
2 declaration and some of the other -- other documents. So
3 the paralegal at Perkins Coie sent me a full folder of the
4 pleadings and exhibits that I actually have in front of me
5 right now on my computer.

6 Q Okay. So you have hard copies of --

7 A Not hard copies. I have -- I have soft copies.
8 I -- I didn't print them out.

9 Q I see. Okay. So you have -- on your computer,
10 you have copies of all of the exhibits, including your
11 declarations in this case?

12 A Yes. So I don't know if it's all the exhibits,
13 but it's -- I believe it's the full set, yes. And -- and
14 they came -- they came directly from the law firm. I
15 haven't actually looked at every single one of them.

16 Q Okay. I -- I assume you have the relevant --
17 the -- the important ones. And if you don't, we -- I can
18 upload the exhibit.

19 Did you meet with anybody to prepare for today's
20 deposition?

21 A I met with the two attorneys that you see present
22 right now from Perkins Coie yesterday.

23 Q And so that would be Ms. Li and Mr. Millikan?

24 A Correct.

25 Q And how long did you meet with them yesterday?

1 A Oh, perhaps an hour and 15 minutes.

2 Q And did you meet with anybody before yesterday to
3 prepare for this deposition?

4 A For this deposition, no.

5 Q Okay. And do you have any notes in front of you,
6 whether physical or, you know, on your computer?

7 A No.

8 Q And you don't have any other applications open
9 besides Zoom and whatever PDF viewer you're using?

10 A Correct. I think I may have -- on -- on another
11 screen, I have my e-mail open. I closed that right now
12 because I needed the link in order to join you. Okay.
13 It's closed now.

14 Q Okay. That's fine.

15 Now, Dr. Franz, you are here as an expert in the
16 field of computer networking; correct?

17 A I'm here as an -- as an -- as an expert on the
18 field of computer security networking and other fields
19 that's relevant to this -- to this proceeding, yes.

20 Q And -- and computer networking is one of the
21 fields that's relevant to this proceeding; correct?

22 A Well, computer network security is. We have --
23 we have this discussion previously, whether distributed
24 computing was -- was -- was relevant. So my expertise is
25 in network security and related systems software.

1 Q Okay. And -- and how long have you been an
2 expert in network security?

3 A So I mean, for many years I published in the --
4 the main conference on -- on Network and Distributed
5 Systems Symposium maybe for ten years. I -- I would have
6 to look at my -- my -- my resume. But much of my research
7 has been informed in the space of either, you know,
8 distributing computations between client server systems;
9 you know, having mobile devices in networks where some of
10 the work was offloaded to servers; and then the whole
11 problem of keeping these devices secured in the possible
12 presence of malware moving via the network; and some other
13 things. So if you look at that, it's probably 20 years
14 that I've been working in this -- in this space.

15 Q And -- and when did you graduate college or
16 university?

17 A So I am actually year '94. And my master's
18 degree in '89.

19 Q And what were -- what subjects were your PhD
20 or -- and your master's?

21 A So my -- I actually built one of the very first
22 mobile code systems, where you had programs that you
23 compiled to a -- you know, a machine-independent
24 representation that moved across the network and at the
25 other -- you know, at the other side, was dynamically

1 recreated. So I built one of the very first portable code
2 systems about two years before Java was introduced.

3 Q I see. So you -- you've been -- so you just
4 testified that this project you worked on involved
5 computer networks; correct?

6 A So which project? Excuse me, again.

7 Q This, what you called, the very first mobile code
8 system. You mentioned it involved a machine-independent
9 representation --

10 A So --

11 Q -- that moved across the network?

12 A So --

13 Q Does this project involve computer networking?

14 A My PhD project?

15 Q Yes?

16 A My PhD project was -- was based on the -- on
17 the -- on the machine-independent representation. The
18 idea there was -- was -- was that you could get
19 portability for free. At the time, you know, the -- the
20 system that I built initially was just the -- the fact
21 that you could take a -- a portable format and generate it
22 for a specific computer. I actually demonstrated this by
23 doing it from a -- from a disc, reading it from a disc and
24 doing it. But very soon afterwards, like two years later,
25 Java came. And then this whole -- so that would have been

1 in 1996.

2 And from then onwards, obviously, the whole game
3 became mobile code that moves across computer networks.
4 So if you look at my publication history, there's going to
5 be some work about how do you make sure that a program
6 that moves across a mobile network doesn't cause harm to
7 the target computer; all right? That's still a problem
8 today.

9 Q Okay. And so for your PhD project, did it
10 involve building a computer network?

11 A My PhD program did not involve building a
12 computer network, no.

13 Q Did it involve using a computer network?

14 A The actual PhD project did not.

15 Q Okay. Let me ask it this way: How long have you
16 been familiar with computer networks?

17 A A long time.

18 Q Over --

19 A Yes.

20 Q Over 30 years?

21 A I was certainly using computer networks when I
22 was still a graduate student. And -- and after that, yes.

23 Q And what years were you a graduate student?

24 A I was a graduate student between '89 and '94.

25 Q And while you were a graduate student or, you

1 know, earlier or even a little bit later, did you build
2 any computer networks?

3 A I did not build a computer network, no. What do
4 you even mean by building a computer network? Do you mean
5 putting the cables together? Do you mean installing the
6 software? Do you mean -- what exactly are you -- are you
7 referring to about that?

8 Q Well, I mean, I was pretty young in the 1990s; so
9 I'm not too familiar with how networks worked at that
10 time, but whatever definition. So -- so we can go with
11 the first one, putting the cables together.

12 Is that something that you did in the 1990s or
13 even in the early 2000s?

14 A I would probably have plugged computers into --
15 into -- into switches and cabled my -- my computer to
16 something, yes. But I wouldn't call that building a
17 network necessarily, yes.

18 Q I see. What -- what would you call that then?

19 A Connecting to a network. I mean, obviously,
20 you're talking about my graduate-student days. I mean,
21 definitely in the years later, you know, I have been
22 working on projects that were deeply involved in trying to
23 make networks of computers work better together.

24 Q All right. So in these networks that you at
25 least were familiar with in the '90s or early 2000s, what

1 were some of the components that would have been involved
2 or would have been part of that network?

3 A So the interesting thing is actually that, since
4 you talked about my graduate-student days, in my
5 graduate-student days, we actually -- I was a student at
6 ETH Zurich. And my advisor was a very famous man who just
7 passed away last year. And we actually had a total
8 computer infrastructure that was built in-house. So we
9 did actually not use a standard network.

10 We actually used computers that were called Ceres
11 that were built by some other grad students. And we ran
12 our own operating system, and we ran our own physical
13 hardware to do the networking. And we programmed our own
14 networking stack. It's just that I wasn't the person
15 doing that, but other grad students were. It was a -- not
16 a standard off-the-shelf computing environment, but it was
17 actually an entirely in-house built environment from the
18 hardware all the way up to the programming language and
19 the operating system, including the networking stack.

20 Q Okay. Would you agree that in the 1990s, one of
21 the standard ways -- or one of the standard types of
22 networks was an Ethernet network?

23 A I -- I agree that one of the standards was an
24 Ethernet network. We were not using Ethernet at the time.

25 Q Are you familiar with Ethernet networks?

1 A I'm familiar with Ethernet networks, yes.

2 Q Were you familiar with Ethernet networks in the
3 '90s or early 2000s?

4 A Yes.

5 Q So in an Ethernet network, what would be some of
6 the components that made up that network?

7 A What do you mean by "components"? What --

8 Q Well, physical hardware. What would be some of
9 the physical hardware that made up an Ethernet network in
10 the 1990s or early 2000s?

11 A As far as the -- the -- you know, the -- the
12 consumer, you had -- you had an Ethernet card somewhere in
13 your -- in your computer that at that time was -- might
14 have been a -- a discrete piece of hardware that you
15 plugged into a board somewhere. And then you attach an
16 Ethernet cable, and you might have had a switch or
17 something that you plugged the other end of the cable
18 into.

19 Q Okay. What is a switch?

20 A A switch is a -- a box that -- that switches
21 connection -- you know, that has multiple devices it plugs
22 into. And it routes traffic from one end to another -- to
23 another end.

24 Q Okay. I'm not sure if it actually does any
25 routing. But putting that aside, did routers exist in the

1 1990s and early 2000s for Ethernet networks?

2 A Yeah. I think we were using routers and switches
3 pretty -- sometimes interchangeably; so -- so both of
4 these existed, yes.

5 Q And what about hubs? Have you ever heard that?
6 An Ethernet hub?

7 A I've -- I've heard that term, yes.

8 Q So besides hubs, switches, or routers, or the
9 Ethernet cards in a client device, were there any other
10 sort of physical components that were commonly used in an
11 Ethernet network?

12 A Specifically on an Ethernet network?

13 Q Yeah?

14 A I mean, I don't know what -- what exactly you're
15 getting at.

16 Q Which -- which part of my question did you not
17 understand?

18 A What other kind of device are you -- are you --
19 are you -- are you looking for?

20 Q I'm not -- I'm -- I'm asking you if there were
21 any other sort of devices. If you can't think of any,
22 then you can say that.

23 A Okay. I -- if you're -- you're asking about
24 Ethernet in the 1990s, so that's a -- a long time ago.
25 Yes.

1 Q Okay. So let me -- let me just clarify. So
2 you've identified switches, routers, Ethernet cards, and a
3 client device. I mentioned hubs. And I'm just trying to
4 figure out if there's anything else -- any other sort of
5 physical component that was commonly used in an Ethernet
6 network in the '90s or early 2000s. Do you know if there
7 was?

8 A I -- I would have to look into that. It was a
9 long time ago. I'm not quite sure how that relates to --
10 to this case, but -- but, you know, that was a time when
11 there was still lots of different networking technologies
12 that -- that coexisted. So...

13 Q Okay. So you said --

14 A I --

15 Q Oh, go ahead.

16 A Yeah. I mean --

17 Q Sorry.

18 A So at that time, you know, I had an office. And
19 I -- I had a computer that -- that I connected to -- to --
20 to an Ethernet. And -- and some of the other
21 infrastructure was managed by other people.

22 Q So just talking about Ethernet networks, if you
23 wanted to network more -- like, three or more client
24 devices together, could you do that without a switch or a
25 router or a similar piece of hardware?

1 A So -- say that again. Ask the question again,
2 please.

3 Q Let me -- let me clarify. So just talking about
4 Ethernet networks in the '90s or early 2000s. If you
5 wanted to have three client devices on the same network
6 and each one only has a single Ethernet card, would you be
7 able to put them on the same network without using a
8 switch or a router or a hub or a similar piece of
9 hardware?

10 A Yeah. I believe the -- the early Ethernets,
11 right -- they were -- they actually used a common -- a
12 common box. But, you know, I think by the time that
13 you're talking, most of the Internet was already switched
14 to Ethernet.

15 Q Okay. So -- sorry. Was that a yes or a no?

16 A There were specific networks where it was an --
17 an open bus, and -- yes. And so people -- people
18 talked -- that was the whole point of the original
19 Ethernet, that you would actually listen to see if there
20 was any traffic. And you would -- you would talk on the
21 network. And only -- and only one person could talk at
22 the same time. And if there was a collision, then there
23 was a backup scheme where -- where people -- where the --
24 the computers would -- would randomly wait to -- so
25 hopefully, someone would -- would then start talking

1 and -- and have the -- have the bus to themselves, the
2 bandwidth. But -- but, obviously, the -- the shared
3 resources limited the throughput so people moved away from
4 that quite early. Now you're talking about a quite
5 specific technology that hasn't been used in a long time.

6 Q Would you agree that networks today are more
7 complicated than the networks that we were discussing from
8 the 1990s or early 2000s?

9 MS. LI: Objection. Form.

10 THE WITNESS: Yeah. What -- can you define what
11 "complicated" is?

12 BY MR. LU:

13 Q Do you have an understanding of network
14 complexity?

15 A There's -- there's many different dimensions of
16 network complexity. I mean, certainly, we have more
17 devices today.

18 Q Okay. Besides more devices, are there any other
19 dimensions of network complexity?

20 A I mean, we have -- we have more diversity on the
21 networks. We have more devices. We have different
22 networking technologies that coexist. We have devices
23 that move. You know, they are -- they are on the network
24 somewhere. And then they disappear, and they appear
25 somewhere totally different because someone has unplugged

1 a laptop and plugged it in somewhere else. There are --
2 there are lots of things that, you know, the scale --
3 everything -- so many more devices on networks. So yes,
4 there's more stuff going on.

5 Q So you said -- I believe you said we have more
6 diversity on the networks. What did you mean by that?

7 A So we have people -- we have devices that connect
8 Wi-Fi. We have devices that connect via cellular
9 networks. We have mobile phones. We have tablets. We
10 have mainframes. We have -- you know, there's -- there
11 are more different devices that are networked than there
12 were.

13 Q I see.

14 And you also said we have more devices. Now, I
15 assume you're talking about we have numerically more
16 devices supported in networks; is that correct?

17 A For the total number of network devices is
18 probably larger than the number of people on this planet
19 by several factors. Several factors, yes.

20 Q And -- and so just to clarify, in networks today,
21 they tend to be larger, have more devices than networks
22 from the 1990s to early 2000s; is that what you're saying?

23 MS. LI: Objection. Form.

24 THE WITNESS: So I was talking about the total
25 devices in the world that are networked; all right? So

1 these are -- these are on -- on different networks. And
2 those networks themselves are then interconnected.

3 BY MR. LU:

4 Q Okay. And so you also said we have, you know, a
5 diversity of devices including like Wi-Fi and mobile
6 phones and tablets and mainframes.

7 Are there physical components that have to -- or
8 that are -- not have to -- let me withdraw.

9 So you said there was a diversity of devices,
10 including Wi-Fi and mobile phones and tablets and
11 mainframes. Do networks today use physical components to
12 handle that diversity of devices?

13 A Okay. So first of all, Wi-Fi is not a -- is not
14 a -- not a kind of device. So -- so there's a diversity
15 of connection techniques, which include, you know, mobile
16 networks and Wi-Fi. There's a diversity of devices, which
17 includes mobile phones, tablets, and these devices.
18 And -- what is the second part of your question?

19 Q The second part is do networks today use physical
20 components to handle this diversity of devices or
21 connection types?

22 A That's a very vague question. So -- so, you
23 know -- so networks have been -- have been, obviously,
24 trying to -- to keep up with the number of devices, yes.

25 Q I mean, earlier we were talking about hubs and

1 switches and routers. Are there other types of physical
2 components used in today's networks to handle the
3 diversity of devices and networking protocols?

4 A Well, for example, if you have a wireless device
5 and you need a base station to connect that wireless
6 device somehow; right? So there's -- there's
7 corresponding infrastructure for the different networking
8 technologies.

9 Q And if you wanted to give a label to the physical
10 components of the infrastructure, what label would you
11 give it?

12 A I'm not sure I understand your question. What do
13 you mean by "label"?

14 Q Well, so there's hardware and the infrastructure.
15 And then there's client devices that connect to the
16 infrastructure.

17 Is there like a term that we can use to call that
18 hardware and infrastructure?

19 A I -- I just called it infrastructure; right? So
20 for each different kind of technology, you would have a
21 different kind of infrastructure. So for example, for
22 a -- for my Wi-Fi network, I call it a base station.

23 Q Does it make sense to call them network
24 appliances?

25 A I would -- I do not believe that, you know, a

1 mobile phone provider would call their cell tower a -- a
2 network appliance.

3 Q Okay. But would --

4 A I would -- I would be surprised if they did.

5 Q Okay. But what about like a Wi-Fi router? Would
6 that be a network appliance?

7 A Okay. I mean, I'm sure that there may be people
8 who would call a wireless bay station a -- an appliance.
9 That might be a -- a term that -- that someone might use
10 in a -- in a marketing kind of environment. But...

11 Q But you wouldn't use it that way? Is that what
12 you're saying?

13 A Well, I'm -- when I'm talking about a wireless
14 base station, I'm being very specific. And I -- I call it
15 a wireless base station.

16 Q Okay. Would you call a firewall a network
17 appliance?

18 A When I'm talking about a firewall specifically, I
19 call it a firewall. But --

20 Q Okay. But you wouldn't -- I'm sorry. You
21 wouldn't call it a network appliance? Is that what you're
22 saying?

23 MS. LI: Objection. Form.

24 THE WITNESS: So, you know, if we are -- if we
25 are talking about a group of devices, then -- then -- then

1 yes. The -- the term "appliance" might be appropriate if
2 they -- they share the -- the property that they are, you
3 know, devices with a small operating system that, you
4 know, running -- you know, that are -- that are managed
5 and that -- you know, the word "appliance" comes from
6 something like a kitchen appliance; right? So that is
7 a -- a device that -- that requires very little
8 interaction and that does a specific -- small set of
9 specific tasks, mostly without requiring interaction.

10 BY MR. LU:

11 Q Okay. Do you know who Dr. Wenke Lee is?

12 A Yes.

13 Q Okay. And you understand he is an expert hired
14 by your client, Netskope, in other IPR proceedings against
15 Fortinet; correct?

16 A I understood that, yes.

17 Q Have you ever met Dr. Lee?

18 A Yes.

19 Q Have you ever spoken with him?

20 A Yes.

21 Q Have you spoken to him about these cases?

22 A No.

23 Q When was the last time that you spoke with
24 Dr. Lee?

25 A I believe it's been after the pandemic. So -- so

1 we attend some of the same computer security conferences,
2 and so, you know, if we sat next to each other during some
3 dinners, but we usually talk about scientific topics.

4 Q I see. Do you agree that Dr. Lee meets your
5 definition of a person of an ordinary skill in the art?

6 A Certainly.

7 Q Okay. So do you have a copy of the -- of
8 Exhibit 1001 in front of you, or do you have access to a
9 copy of Exhibit 1001?

10 A That is the patent itself; right?

11 Q Yes.

12 A Okay. Yes.

13 Q Okay. Let me open it up, as well.

14 MS. LI: Counsel, do you mind just dropping it
15 into the chat anyway just to --

16 MR. LU: Okay. Sure. Yeah. Hold on. Give me a
17 second then.

18 All right. It's uploading. Do you see it?

19 THE WITNESS: Yes.

20 MS. LI: Yes.

21 MR. LU: Okay. Great.

22 BY MR. LU:

23 Q Okay. So, Dr. Franz, do you have it open?
24 Exhibit --

25 A Yes.

1 Q Okay. Great.

2 Could you turn to page 12, which is listing the
3 claims?

4 A Okay.

5 Q Now, I wanted to ask you about -- well, I wanted
6 to ask you about claim 1, which starts on page 11.

7 A Okay.

8 Q But the limitations I wanted to look at are on
9 the next page, page 12. So if you see on page 12, column
10 11, line 4, there is a determining step.

11 Do you see that?

12 A Yes.

13 Q "Determining by the first network security
14 appliance, one or more network security operations that
15 are executed by the second network security appliance."

16 A I see that.

17 Q Okay. And then the next step is also a
18 determining step; correct?

19 A Correct.

20 Q And so I'll just read it into the record. This
21 limitation says, "Determining by the first network
22 security appliance, one or more local network security
23 operations that are to be executed by the first network
24 security appliance based on the one or more network
25 security operations that are executed by the second

1 network security appliance, including skipping, by the
2 first network security appliance, the one or more network
3 security operations that are executed by the second
4 network security appliance."

5 Do you see that?

6 A I see that.

7 Q Can you tell me in your own words how you
8 interpret these two limitations?

9 A So -- so this patent is talking very specifically
10 about a set of cooperate -- you know, of -- of -- of
11 network devices that are cooperating with each other for
12 the purpose of security; all right? So that's some --
13 somewhat different from you asking me what was going on at
14 the end of the 1990s in the specific context of Ethernet.
15 So -- and, you know, we actually have a -- you know, a
16 very specific context given in the specification that
17 talks about, you know, a first network security appliance
18 that receives incoming traffic.

19 And then, you know, it actually gives, you
20 know -- it presents an embodiment as an example, where you
21 can see that, you know, there's traffic that is -- that is
22 routed. You know, there's -- there's -- there's a VPN
23 and -- and so on. So what -- what this -- what this claim
24 says is that you have a first network security appliance
25 that is able to determine whether traffic that is -- that

1 comes into it came from a -- a second network security
2 appliance that is participating in this -- in this
3 collaboration. And -- and after it determined that --
4 that it did come from -- from that other second -- other
5 security appliance, then it -- it determines what
6 operations that second appliance may have already -- the
7 security -- network security operations that other
8 appliance has already performed.

9 And then after that, it determines, you know,
10 which -- which operations itself needs to be executed
11 based on its knowledge of what security operations have
12 already been performed by the previous -- by the -- by the
13 second appliance that -- that previously processed this
14 traffic.

15 Q All right. So that was a pretty long answer.
16 Maybe I can try to summarize it a bit.

17 A (Unintelligible response).

18 Q That's okay. That's okay.

19 So with respect to these two determining steps in
20 column 11, what's going on is that you have two network
21 security appliances. The first one determines whether the
22 second one has already performed a network security
23 operation on the traffic. And if it has, then one of the
24 things it can do is skip that particular operation that
25 was already executed; correct?

1 MS. LI: Objection. Form.

2 THE WITNESS: That's what it says there. It
3 says, you know, determine and including skipping by the
4 first network security appliance to one or more network
5 security operations that are executed by the second
6 network security appliance.

7 BY MR. LU:

8 Q Okay. And you -- you would agree that the first
9 network security appliance is cooperating with the second
10 network security appliance in these limitations; correct?

11 MS. LI: Objection. Form.

12 THE WITNESS: Well, the -- the goal of this whole
13 thing is -- is to avoid duplicate work through
14 cooperation.

15 BY MR. LU:

16 Q Okay. And specifically these two determining
17 steps, they accomplish the goal of avoiding duplicate work
18 through cooperation; correct?

19 A Well, it's not just these -- it's not just the
20 two steps. It's the -- the whole setup; right? You need
21 to also first set things up so that -- that, you know, you
22 actually know what -- what -- what that means; right? So
23 you need -- you need to be able to identify that; right?
24 It starts on the previous page.

25 Q Right. No. I understand that, but I'm just

1 trying to figure out where is the cooperation going on.
2 And my question is would you agree that these two
3 determining steps, that is where the first and second
4 network security appliances are cooperating?

5 A The whole thing is -- the whole protocol is -- is
6 the cooperation.

7 Q Okay. But in column 11, these two determining
8 steps, there is cooperation going on; correct?

9 MS. LI: Objection. Form.

10 THE WITNESS: The -- the steps are -- these two
11 steps are -- are -- are carried out by the first network
12 security appliance; right? So it's --

13 BY MR. LU:

14 Q Uh-huh.

15 A -- it's the avoiding of the duplicate work
16 that's -- that's happening in those steps.

17 Q Okay. And would you agree that in those steps
18 the first network security appliance is cooperating with
19 the second network security appliance?

20 A At that point, the second one is no longer
21 involved.

22 Q So is it your testimony that they're not
23 cooperating in these steps?

24 A As I said, the whole thing is the cooperation.
25 The -- the -- the -- the cooperation is the -- is the --

1 the whole protocol that enables the second -- sorry. It
2 enables the first network security appliance to decide to
3 not repeat network security operations that it has
4 determined have already been -- been performed by the
5 second one.

6 Q Okay. And so which limitation would you say is
7 where the first network security appliance, quote,
8 "decides to not repeat network security operation that it
9 has determined have already been performed by the second
10 one," end quote?

11 A Well, that's the limitation that says determining
12 by the first network security appliance one or more local
13 network security operations that are to be executed by the
14 first network security appliance based on the one or more
15 network security operations that are executed by the
16 second network security appliance, including skipping, by
17 the first network security appliance, the one or more
18 network security operations that are executed by the
19 second network security appliance.

20 Q Okay. So that's the limitation at column 11
21 starting at line 7 -- correct? -- that you just read?

22 A That is the -- the step where the first network
23 security appliance determines what operations it still
24 needs to execute based on its knowledge about what the
25 second network appliance did.

1 Q Okay. And you would agree if that step wasn't in
2 this claim, then there would be no cooperation; correct?

3 MS. LI: Objection. Form.

4 THE WITNESS: There's still the determining by
5 the first network security appliance where the network
6 traffic has been transmitted from the second; right?
7 There's -- there's -- there's still more steps to this
8 protocol that would still be happening.

9 BY MR. LU:

10 Q Okay. I'm just trying to understand what you
11 believe is the cooperation; okay?

12 So if I get rid of this limitation starting at
13 column 11, line 7 through line 15, is it your opinion that
14 this claim still involves cooperation between the first
15 and second network security appliances?

16 A Sir, you -- you have it a little backwards;
17 right? So we're talking about a -- a patent that is
18 trying to avoid duplicate work. So the claim that you're
19 reciting back at me is a claim that makes it possible to
20 avoid duplicate work. And the patent itself calls this a
21 cooperative security fabric. And a person of ordinary
22 skill in the art would lean back and say, "Yes." So this
23 whole protocol that goes on that enables you to avoid
24 duplicate work, that is cooperation; right?

25 And so cooperation is -- is what is -- what is

1 stated a priority of audio in this (unintelligible).
2 And -- and when I read the claim, I -- I agree that, yes,
3 that is cooperation, but it -- it's kind of slightly
4 strange to ask me to narrow it down to where does the
5 cooperation happen. We are told in advance that this is
6 cooperation. And we are -- we are specifically looking at
7 a method that -- that eliminates duplicate work through
8 cooperation.

9 Q Okay. No, I understand.

10 Sorry. Sorry. Are you finished?

11 A Yes.

12 Q Okay. So maybe there was a bit of a
13 miscommunication on my part. I'm not trying to narrow
14 where the cooperation is happening. I'm just trying to
15 understand if you agree that this determining step
16 involves cooperation between the appliances?

17 A And I --

18 Q Do you agree, or do you disagree?

19 A I already told you that we're told in advance
20 that this is -- this is a -- a cooperative security
21 fabric. And -- and there's a number of steps -- and
22 there's a number of steps -- steps that enables the first
23 network security appliance to avoid duplicate work.

24 Q Okay. And so you would agree that avoiding the
25 duplicate work is what -- is -- is how -- is one way --

1 let me withdraw that.

2 So you would agree that avoiding duplicate work
3 is one way the first and second network security
4 appliances cooperate with each other?

5 A So --

6 MS. LI: Objection to form.

7 THE WITNESS: Yeah. So this patent is explaining
8 a method that -- how you avoid duplicate work. And the
9 first network security appliance cannot do that on its
10 own. So the -- the -- the first network security
11 appliance is able to avoid this -- this duplicate work
12 because it is given information by the second network
13 security appliance about what the second network security
14 appliance, if -- if at all, has already done, you know,
15 what operations it has already executed.

16 BY MR. LU:

17 Q Okay. And my question was --

18 A And that overall thing, I believe, someone
19 would -- you know, someone of ordinary skill, quite
20 possibly even -- even most people, would understand is
21 cooperation; right?

22 Q So that overall thing you're referring to, if a
23 network security appliance is able to avoid this duplicate
24 work because it is given information by the second network
25 security appliance about what the second network security

1 appliance, if at all, has already done? Is that what you
2 mean by, quote --

3 A Well --

4 (Court reporter clarification.)

5 MR. LU: Okay. So my -- my apologies. Let me --
6 let me withdraw the question.

7 BY MR. LU:

8 Q And, Dr. Franz, I'll try to not talk over you if
9 you also try not to talk over me; right? So let me -- let
10 me ask my question.

11 So you said that overall thing most people would
12 understand is called cooperation; right?

13 MS. LI: Objection. Form.

14 THE WITNESS: (Unintelligible response.)

15 BY MR. LU:

16 Q I'm sorry. What -- did you answer that question?
17 I must have missed it.

18 A Well, you just repeated what I said. I -- I said
19 the overall thing most people would understand is
20 cooperation. So the cooperation consists of the second
21 network appliance communicating the operations it has
22 already executed, and the first security appliance then
23 having the wherewithal to -- to base its decisions on what
24 network security operations to perform based on the
25 knowledge that it gained by the communication from the

1 second security appliance.

2 Q Okay. I see. I -- I think we -- we understand.

3 Okay. So you say -- you said you have your
4 supplemental declaration or a copy of that on your
5 computer?

6 A I do.

7 Q Okay. Could you turn to that? And I'll upload
8 it to the chat, as well.

9 MR. LU: So this is Exhibit 1019 in this
10 proceeding.

11 (Exhibit 1019 was marked for
12 identification.)

13 BY MR. LU:

14 Q Is that correct? Dr. Franz?

15 A Yes. Sorry. I've got it now. Okay. Yes.

16 MR. LU: Okay. Counsel, do you see that exhibit
17 that I uploaded?

18 MS. LI: I do.

19 MR. LU: Okay. Great.

20 Sorry. Give me one second.

21 BY MR. LU:

22 Q All right. Can you turn to paragraph 39, which
23 starts on page 17?

24 And let me know when you're there, Dr. Franz.

25 A I'm there.

1 Q Okay. So you testify in this paragraph that "For
2 example, searching for 'cooperative security' in Google
3 Patents returns over 100 hits"; did I read that right?

4 A Yes.

5 Q And so I'm just wondering if you did any other
6 searches. Like, did you search for the term "cooperative
7 security fabric" in Google patents?

8 A No.

9 This -- the point was that, independently, these
10 three terms have, you know, a well -- an easily understood
11 meaning, and that, you know, we've -- we've had a long
12 discussion about fabric; right? And it -- "cooperative"
13 means working together to -- to -- towards a common goal.
14 And "security" has a -- a -- a well-understood meaning.
15 And even the combination "cooperative security," you know.

16 Each of these words taken together, they also
17 have the expected meaning. And so that is what we -- what
18 we see here. We see, you know, cooperative security means
19 cooperative behavior to -- for the -- for the goal of
20 security. And these are two examples.

21 Q Okay. Did you search for the term "cooperative
22 security fabric" in any academic papers?

23 A I do not think so.

24 Q Did you search for the term "cooperative security
25 fabric" in any search engine?

1 A I may have done that very early on, but certainly
2 not while writing this -- this rebuttal report.

3 Q Okay. If -- you say you may have done that. If
4 you can recall, do you recall what results you got when
5 you searched for the term "cooperative security fabric" in
6 a search engine?

7 A Not really.

8 Q Okay. Did you search for the term "cooperative
9 security fabric" in a library catalog?

10 A No.

11 Q Did you search for the term "cooperative security
12 fabric" in Google Books?

13 A I did not believe it was necessary to do that.

14 Q Okay. So that's a no; right?

15 A Correct.

16 Q So in preparing this supplemental declaration,
17 you did not search for the term "cooperative security
18 fabric" anywhere; correct?

19 A For the -- for the preparation of this rebuttal
20 report, I do not believe so.

21 Q All right. Okay. Can you turn to paragraph 12,
22 which is on page 5 of your supplemental declaration?

23 Let me know when you're there.

24 A I'm there.

25 Q Okay. So you say here, "With the plain meaning

1 of 'fabric' in mind, by extension, a 'cooperative security
2 fabric' simply requires devices that form a network
3 topology and work together to coordinate security
4 operations among them."

5 Do you see that?

6 A Yes.

7 Q Under your definition of "cooperative security
8 fabric," you would need to have at least two devices;
9 correct?

10 A For a -- for a cooperative security fabric -- so
11 a cooperation requires more than one (unintelligible).

12 Q Right. It requires at least two to cooperate;
13 correct?

14 A Yes.

15 Q So I may have missed it, but you said cooperation
16 requires more than one -- something. It's not in the --
17 the transcript. I guess, let me just ask it again so we
18 have a -- a clear transcript.

19 Under your definition of cooperative security
20 fabric, you would need to have at least two devices
21 coordinating security operations; correct?

22 MS. LI: Objection. Form.

23 THE WITNESS: Well, for the -- for the function
24 of -- of coordination security, you need two -- you need
25 two parties; correct.

1 BY MR. LU:

2 Q I'm not sure what you mean by "parties." Is
3 it -- is that -- would it be correct to say for the
4 function of coordination security you need at least two
5 devices?

6 MS. LI: Objection. Form.

7 THE WITNESS: Yes.

8 BY MR. LU:

9 Q You would agree that it would not be possible for
10 a single -- well, let me withdraw that.

11 All right. I actually may be pretty close to
12 wrapping up; so why don't we take a quick break, and I'll
13 double-check my notes to see if I need to ask anything
14 else.

15 Why don't we come back at 2:30? Does that work?

16 A Okay.

17 Q All right.

18 (A brief recess was taken.)

19 MR. LU: All right. I pass the witness.

20 MS. LI: I also do not have further questions.

21 THE REPORTER: May we go off the record?

22 MR. LU: Yep.

23 THE REPORTER: All right. Ms. Li, would you like
24 to order a certified transcript?

25 MS. LI: Yes, please.

1 (Whereupon, the deposition concluded at 2:29 P.M.)

2

3 (DECLARATION UNDER PENALTY OF PERJURY ON THE FOLLOWING

4 PAGE HEREOF.)

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

I, MICHAEL FRANZ, do solemnly declare under penalty of perjury that the foregoing is my deposition under oath; that these are the questions asked of me and my answers thereto; that I have read same and have made the necessary corrections, additions, or changes to my answers that I deem necessary.

In witness thereof, I hereby subscribe my name this day of _____, 2024.

WITNESS SIGNATURE

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25

CERTIFICATION
OF
CERTIFIED SHORTHAND REPORTER

I, the undersigned, a Certified Shorthand
Reporter of the State of California do hereby certify:

That the foregoing proceedings were taken before
me at the time and place herein set forth; that any
witnesses in the foregoing proceedings, prior to
testifying, were placed under oath; that a verbatim record
of the proceedings was made by me using machine shorthand
which was thereafter transcribed under my direction;
further, that the foregoing is an accurate transcription
thereof.

I further certify that I am neither financially
interested in the action nor a relative or employee of any
attorney of any of the parties.

IN WITNESS WHEREOF, I have this date

subscribed my name



Matthew Sculatti, CSR No. 13558

Dated: May 10, 2024

Exhibits	4	6,8,17,21 102:1,5, 6 104:14,15,22,24 105:1,2,4,17,24 106:2,5,6,8,13 107:4,6,9,10 108:12,18,19 109:2,7,12,14,16, 17,19,23,25 110:5 111:23 112:9,11, 13,14,23,25 113:1,21,22 114:1	behavior	115:19	105:23 110:2,14, 18,19 111:2
Ex 1019 Michael Franz 051024 84:8 114:9,11	4 104:10		bit	91:1 106:16 111:12	claims 104:3
1	5		board	93:15	clarification 113:4
1 104:6	5 116:22		Books	116:12	clarify 95:1 96:3 98:20
10 85:1	7		box	93:20 96:12	clear 117:18
100 115:3	7 109:21 110:13		break	118:12	client 88:8 94:9 95:3,23 96:5 100:15 102:14
1001 103:8,9	8		build	91:1,3	close 118:11
1019 114:9,11	89 88:18 90:24	appliances 100:24 106:21 108:4 110:15 111:16 112:4	building	90:10, 11 91:4,16	closed 87:11,13
11 104:6,10 106:20 108:7 109:20 110:13	9	applications 87:8	built	88:21 89:1, 20 92:8,11,17	code 88:22 89:1,7 90:3
12 104:2,9 116:21	90s 91:25 93:3 95:6 96:4	art 103:5 110:22	bus	96:17 97:1	coexist 97:22
15 87:1 110:13	94 88:17 90:24	assume 86:16 98:15	C		coexisted 95:12
17 114:23	A	attach 93:15	cable	93:16,17	Coie 86:3,22
1990s 91:8,12 92:20 93:10 94:1, 24 97:8 98:22 105:14	academic 115:22	attend 103:1	cabled	91:15	collaboration 106:3
1996 90:1	access 103:8	attorneys 86:21	cables	91:5,11	college 88:15
1:26 85:2	accomplish 107:17	audio 111:1	California	85:1	collision 96:22
2	actual 90:14	avoid 107:13 110:18,20,23 111:23 112:8,11, 23	call	91:16,18 100:17,22,23 101:1,8,14,16,19, 21	column 104:9 106:20 108:7 109:20 110:13
20 88:13	administered 85:5	avoiding 107:17 108:15 111:24 112:2	called	89:7 92:10 100:19 113:12	combination 115:15
2000s 91:13,25 93:3,10 94:1 95:6 96:4 97:8 98:22	advance 111:5, 19	B	calls	110:20	common 96:11, 12 115:13
2024 85:1	advisor 92:6	back 110:19,22 118:15	card	93:12 96:6	commonly 94:10 95:5
2:29 119:1	afternoon 85:10, 11	backup 96:23	cards	94:9 95:2	communicating 113:21
2:30 118:15	agree 92:20,23 97:6 103:4 107:8 108:2,17 110:1 111:2,15,18,24 112:2 118:9	backwards 110:16	carried	108:11	communication 113:25
3	ahead 95:15	bandwidth 97:2	case	85:12,18 86:11 95:10	compiled 88:23
30 90:20	apologies 113:5	base 100:5,22 101:14,15 113:23	cases	102:21	complexity 97:14,16,19
39 114:22	appliance 101:2,	based 89:16 104:24 106:11 109:14,24 113:24	catalog	116:9	complicated 97:7,11
		bay 101:8	cell	101:1	component 95:5
			cellular	98:8	components
			Ceres	92:10	
			certified	118:24	
			chat	103:15 114:8	
			claim	104:6	

92:1 93:6,7 94:10 99:7,11,20 100:2, 10	cooperative 110:21 111:20 115:2,6,12,15,18, 19,21,24 116:5,8, 11,17 117:1,7,10, 19	89:22	documents 85:25 86:2	examples 115:20
computations 88:8	coordinate 117:3	deposed 85:12	double-check 118:13	Excuse 89:6
computer 86:5,9 87:6,16,18,20,22 89:5,13,22 90:3,7, 10,12,13,16,21 91:2,3,4,15 92:8 93:13 95:19 103:1 114:5	coordinating 117:21	deposition 85:23 86:20 87:3,4 119:1	dropping 103:14	execute 109:24
computers 91:14,23 92:10 96:24	coordination 117:24 118:4	determine 105:25 107:3	duplicate 107:13,17 108:15 110:18,20,24 111:7,23,25 112:2,8,11,23	executed 104:15, 23,25 105:3 106:10,25 107:5 109:13,15,18 112:15 113:22
computing 87:24 92:16	copies 86:6,7,10	determined 106:3 109:4,9	dynamically 88:25	exhibit 86:18 103:8,9,24 114:9, 11,16
concluded 119:1	copy 103:7,9 114:4	determines 106:5,9,21 109:23	E	exhibits 86:4,10, 12
conference 88:4	correct 85:13 86:24 87:10,16,21 89:5 98:16 102:15 104:18,19 106:25 107:10,18 108:8 109:21 110:2 114:14 116:15,18 117:9,13,21,25 118:3	determining 104:10,13,18,21 106:19 107:16 108:3,7 109:11 110:4 111:15	e-mail 87:11	exist 93:25
conferences 103:1	Counsel 103:14 114:16	device 94:9,18 95:3 99:14 100:4, 6 102:7	earlier 91:1 99:25	existed 94:4
connect 98:7,8 100:5,15	court 113:4	devices 88:9,11 93:21 94:21 95:24 96:5 97:17,18,21, 22 98:3,7,8,11,14, 16,17,21,25 99:5, 9,12,16,17,20,24 100:3,15 101:25 102:3 105:11 117:2,8,20 118:5	early 91:13,25 93:3,10 94:1 95:6 96:4,10 97:4,8 98:22 116:1	expected 115:17
connected 95:19	D	dimensions 97:15,19	easily 115:10	expert 87:15,17 88:2 102:13
Connecting 91:19	days 91:20 92:4,5	dinners 103:3	eliminates 111:7	expertise 87:24
connection 93:21 99:15,21	decide 109:2	directly 86:14	embodiment 105:20	explaining 112:7
consists 113:20	decides 109:8	disagree 111:18	enables 109:1,2 110:23 111:22	extension 117:1
consumer 93:12	decisions 113:23	disappear 97:24	end 93:17,22,23 105:14 109:10	F
context 105:14, 16	declaration 85:16,21 86:2 114:4 116:16,22 119:3	disc 89:23	engine 115:25 116:6	fabric 110:21 111:21 115:7,12, 22,25 116:5,9,12, 18 117:1,8,10,20
cooperate 105:10 112:4 117:12	declarations 86:11	discrete 93:14	environment 92:16,17 101:10	fabric' 117:2
cooperating 105:11 107:9 108:4,18,23	deeply 91:22	discussing 97:7 87:23 115:12	ETH 92:6	fact 89:20
cooperation 107:14,18 108:1, 6,8,24,25 110:2, 11,14,24,25 111:3,5,6,8,14,16 112:21 113:12,20 117:11,15	define 97:10	discussion 87:23 115:12	Ethernet 92:22, 24,25 93:1,2,5,9, 12,16 94:1,6,9,11, 12,24 95:2,5,20, 22 96:4,6,14,19 105:14	factors 98:19
	definition 91:10 103:5 117:7,19	distributed 87:23 88:4	Ethernets 96:10	familiar 90:16 91:9,25 92:25 93:1,2
	degree 88:18	distributing 88:8	EXAMINATION 85:8	famous 92:6
	demonstrated	diversity 97:20 98:6 99:5,9,12,14, 16,20 100:3	examined 85:5	field 87:16,18
				fields 87:18,21
				figure 95:4 108:1
				fine 87:14
				finished 111:10
				firewall 101:16, 18,19

firm 86:14		incoming 105:18	113:25	13,16,19,21 118:1,8,19,22
folder 86:3	H	independently 115:9	L	M
form 97:9 98:23 101:23 107:1,11 108:9 110:3 112:6 113:13 117:2,22 118:6	handle 99:12,20 100:2	information 112:12,24	label 100:9,10,13	machine-independent 88:23 89:8,17
format 89:21	happen 111:5	informed 88:7	language 92:18	made 93:6,9
Fortinet 102:15	happening 108:16 110:8 111:14	infrastructure 92:8 95:21 100:7, 10,14,16,18,19,21	laptop 98:1	main 88:4
Franz 85:4,10 87:15 103:23 113:8 114:14,24	hard 86:6,7	initially 89:20	law 86:14	mainframes 98:10 99:6,11
free 89:19	hardware 92:13, 18 93:8,9,14 95:25 96:9 100:14,18	installing 91:5	lean 110:22	make 90:5 91:23 100:23
Friday 85:1	harm 90:6	interaction 102:8,9	Lee 102:11,17,24 103:4	makes 110:19
front 86:4 87:5 103:8	heard 94:5,7	interchangeably 94:3	Li 86:23 97:9 98:23 101:23 103:14,20 107:1, 11 108:9 110:3 112:6 113:13 114:18 117:22 118:6,20,23,25	malware 88:12
full 86:3,13	HEREOF 119:4	interconnected 99:2	library 116:9	man 92:6
function 117:23 118:4	hired 102:13	interesting 92:3	limitation 104:21 109:6,11,20 110:12	managed 95:21 102:4
G	history 90:4	Internet 96:13	limitations 104:8 105:8 107:10	marked 114:11
gained 113:25	hits 115:3	interpret 105:8	limited 97:3	marketing 101:10
game 90:2	Hold 103:16	introduced 89:2	link 87:12	master's 88:17, 20
generate 89:21	hour 87:1	involve 89:13 90:10,11,13	listen 96:19	meaning 115:11, 14,17 116:25
give 100:9,11 103:16 114:20	hub 94:6 96:8	involved 89:4,8 91:22 92:1 108:21	listing 104:2	means 107:22 115:13,18
goal 107:12,17 115:13,19	hubs 94:5,8 95:3 99:25	involves 110:14 111:16	local 104:22 109:12	meet 86:19,25 87:2
Good 85:10,11	I	IPR 102:14	long 86:25 88:1 90:15,17 94:24 95:9 97:5 106:15 115:11	meets 103:4
Google 115:2,7 116:12	idea 89:18	Java 89:2,25	longer 108:20	mentioned 89:8 95:3
grad 92:11,15	identification 114:12	join 87:12	looked 86:15	met 86:21 102:17
graduate 88:15 90:22,23,24,25	identified 95:2	K	lots 95:11 98:2	method 111:7 112:8
graduate-student 91:20 92:4,5	identify 107:23	keeping 88:11	LU 85:9 97:12 99:3 102:10 103:16,21,22 107:7,15 108:13 110:9 112:16 113:5,7,15 114:9,	MICHAEL 85:4
Great 103:21 104:1 114:19	important 86:17	kind 94:18 99:14 100:20,21 101:10 111:3		Millikan 86:23
group 101:25	importantly 86:1	kitchen 102:6		mind 103:14 117:1
guess 117:17	in-house 92:8,17	knowledge 106:11 109:24		minutes 87:1
	include 99:15			
	includes 99:17			
	including 86:10 92:19 99:5,10 105:1 107:3 109:16			

miscommunicati on 111:13	97:22 100:3,7	ordinary 103:5 110:21 112:19	phone 101:1	processed 106:13
missed 113:17 117:15	networks 88:9 89:5 90:3,16,21 91:2,9,23,24 92:22,25 93:1,2 94:1 95:22 96:4, 16 97:6,7,21 98:3, 6,9,16,20,21 99:1, 2,11,16,19,23 100:2	original 96:18	phones 98:9 99:6,10,17	program 90:5,11
mobile 88:9,22 89:7 90:3,6 98:9 99:5,10,15,17 101:1		P	physical 87:6 92:12 93:8,9 94:10 95:5 99:7, 11,19 100:1,9	programmed 92:13
move 97:23	notes 87:5 118:13	P.M. 85:2 119:1	piece 93:14 95:25 96:8	programming 92:18
moved 88:24 89:11 97:3	number 98:17,18 99:24 111:21,22	pandemic 102:25	plain 116:25	programs 88:22
moves 90:3,6	numerically 98:15	papers 115:22	planet 98:18	project 89:4,6,13, 14,16 90:9,14
moving 88:12		paragraph 114:22 115:1 116:21	pleadings 86:4	projects 91:22
multiple 93:21		paralegal 86:3	plugged 91:14 93:15,17 98:1	property 102:2
N	O	part 92:2 94:16 99:18,19 111:13	plugs 93:21	protocol 108:5 109:1 110:8,23
narrow 111:4,13	oath 85:5	participating 106:2	point 96:18 108:20 115:9	protocols 100:3
necessarily 91:17	Objection 97:9 98:23 101:23 107:1,11 108:9 110:3 112:6 113:13 117:22 118:6	parties 117:25 118:2	portability 89:19	provider 101:1
needed 87:12	off-the-shelf 92:16	pass 118:19	portable 89:1,21	publication 90:4
Netskope 102:14	office 95:18	passed 92:7	possibly 112:20	published 88:3
network 87:22,25 88:2,4,12,24 89:11 90:6,10,12, 13 91:3,4,17,19 92:2,9,22,24 93:5, 6,9 94:11,12 95:6, 23 96:5,7,21 97:13,16,19,23 98:17 100:22,23 101:2,6,16,21 104:13,14,15,21, 22,23,24 105:1,2, 4,11,17,24 106:1, 7,20,22 107:4,6,9, 10 108:4,11,18,19 109:2,3,7,8,12,13, 14,15,16,17,18, 19,22,25 110:5,15 111:23 112:3,9, 10,12,13,23,24,25 113:21,24 117:2	offloaded 88:10	patent 103:10 105:9 110:17,20 112:7	preparation 116:19	purpose 105:12
	onwards 90:2	patents 115:3,7	prepare 85:24 86:19 87:3	put 96:7
	open 87:8,11 96:17 103:13,23	PDF 87:9	preparing 116:16	putting 91:5,11 93:25
	operating 92:12, 19 102:3	PENALTY 119:3	presence 88:12	Q
	operation 106:23,24 109:8	people 95:21 96:17,23 97:3 98:7,18 101:7 112:20 113:11,19	present 86:21	question 94:16 96:1 99:18,22 100:12 108:2 112:17 113:6,10, 16
	operations 104:14,23,25 105:3 106:6,7,10, 11 107:5 109:3, 13,15,18,23 112:15 113:21,24 117:4,21	perform 113:24	presents 105:20	questions 118:20
networked 98:11,25	opinion 110:13	performed 106:8,12,22 109:4,9	pretty 91:8 94:3 106:15 118:11	quick 118:12
networking 87:16,18,20 89:13 92:13,14,19 95:11	order 87:12 118:24	PERJURY 119:3	previous 106:12 107:24	quote 109:7,10 113:2
		Perkins 86:3,22	previously 85:12 87:23 106:13	R
		person 92:14 96:21 103:5 110:21	print 86:8	ran 92:11,12
		Phd 88:19 89:14, 16 90:9,11,14	priority 111:1	randomly 96:24
			problem 88:11 90:7	read 104:20 109:21 111:2 115:3
			proceeding 87:19,21 114:10	
			proceedings 102:14	

reading 89:23	routes 93:22	share 102:2	starts 104:6 107:24 114:23	talk 96:20,21 103:3 113:8,9
rebuttal 116:2,19	routing 93:25	shared 97:2	stated 111:1	talked 92:4 96:18
recall 116:4	running 102:4	side 88:25	station 100:5,22 101:8,14,15	talking 91:20 95:22 96:3,13,25 97:4 98:15,24 99:25 101:13,18, 25 105:9 110:17
receives 105:18	S	similar 95:25 96:8	step 104:10,17,18 109:22 110:1 111:15	talks 105:17
recess 118:18	Sacramento 85:1	simply 117:2	steps 106:19 107:17,20 108:3, 8,10,11,16,17,23 110:7 111:21,22	target 90:7
reciting 110:19	sat 103:2	single 86:15 96:6 118:10	strange 111:4	tasks 102:9
record 104:20 118:21	scale 98:2	Sir 110:16	student 90:22,23, 24,25 92:5	techniques 99:15
recreated 89:1	scheme 96:23	skill 103:5 110:22 112:19	students 92:11, 15	technologies 95:11 97:22 100:8
referring 91:7 112:22	scientific 103:3	skip 106:24	stuff 98:4	technology 97:5 100:20
related 87:25	screen 87:11	skipping 105:1 107:3 109:16	subjects 88:19	ten 88:5
relates 95:9	search 115:6,21, 24,25 116:6,8,11, 17	slightly 111:3	submitted 85:15	tend 98:21
relevant 86:16 87:19,21,24	searched 116:5	small 102:3,8	summarize 106:16	term 94:7 100:17 101:9 102:1 115:6,21,24 116:5,8,11,17
repeat 109:3,8	searches 115:6	soft 86:7	supplemental 85:15,21 86:1 114:4 116:16,22	terms 85:23 115:10
repeated 113:18	searching 115:2	software 87:25 91:6	supported 98:16	testified 85:6 89:4
report 116:2,20	secured 88:11	sort 94:10,21 95:4	surprised 101:4	testify 85:21 115:1
reporter 113:4 118:21,23	security 87:18, 22,25 88:2 103:1 104:13,14,15,22, 24,25 105:1,2,3,4, 12,17,24 106:1,5, 7,11,21,22 107:4, 5,6,9,10 108:4,12, 18,19 109:2,3,7,8, 12,13,14,15,16, 17,18,19,23 110:5,15,21 111:20,23 112:3, 9,10,13,23,25 113:22,24 114:1 115:2,7,14,15,18, 20,22,24 116:5,9, 11,17 117:1,3,7, 10,19,21,24 118:4	space 88:7,14	switch 93:16,19, 20 95:24 96:8	testimony 108:22
representation 88:24 89:9,17		specific 89:22 96:16 97:5 101:14 102:8,9 105:14,16	switches 91:15 93:20 94:2,8 95:2 100:1	thing 92:3 107:13 108:5,24 112:18, 22 113:11,19
requires 102:7 117:2,11,12,16		specifically 94:12 101:18 105:9 107:16 111:6	Symposium 88:5	things 88:13 98:2 106:24 107:21
requiring 102:9		specification 105:16	system 89:8,20 92:12,19 102:3	throughput 97:3
reread 85:25	sense 100:23	spoke 102:23	systems 87:25 88:5,8,22 89:2	time 89:19 90:17 91:10 92:24 93:13 94:24 95:9,10,18 96:12,22 97:5 102:23
research 88:6	server 88:8	spoken 102:19, 21	T	today 85:20,23 90:8 97:6,17 98:20 99:11,19
resources 97:3	servers 88:10	stack 92:14,19	tablets 98:9 99:6, 10,17	
respect 106:19	set 86:13 102:8 105:10 107:21	standard 92:9, 16,21		
response 106:17 113:14	setup 107:20	standards 92:23		
results 116:4		start 96:25		
resume 88:6		starting 109:21 110:12		
returns 115:3				
rid 110:12				
routed 105:22				
router 95:25 96:8 101:5				
routers 93:25 94:2,8 95:2 100:1				

today's 86:19 100:2	uploading 103:18	writing 116:2	
told 111:5,19		Y	
topics 103:3	V		
topology 117:3	vague 99:22	year 88:17 92:7	
total 92:7 98:17, 24	viewer 87:9	years 88:3,5,13 89:2,24 90:20,23 91:21	
totally 97:25	VPN 105:22	yesterday 86:22, 25 87:2	
tower 101:1	W	young 91:8	
traffic 93:22 96:20 105:18,21, 25 106:14,23 110:6	wait 96:24	Z	
transcript 117:17,18 118:24	wanted 95:23 96:5 100:9 104:5, 8	Zoom 87:9	
transmitted 110:6	ways 92:21	Zurich 92:6	
true 85:14	well-understood 115:14		
turn 104:2 114:7, 22 116:21	Wenke 102:11		
types 92:21 99:21 100:1	wherewithal 113:23		
U	Wi-fi 98:8 99:5, 10,13,16 100:22 101:5		
Uh-huh 108:14	wireless 100:4,5 101:8,13,15		
understand 85:20 94:17 100:12 102:13 107:25 110:10 111:9,15 112:20 113:12,19 114:2	withdraw 99:8 112:1 113:6 118:10		
understanding 97:13	wondering 115:5		
understood 102:16 115:10	word 102:5		
unintelligible 106:17 111:1 113:14 117:11	words 105:7 115:16		
university 88:16	work 88:10 90:5 91:23 107:13,17 108:15 110:18,20, 24 111:7,23,25 112:2,8,11,24 117:3 118:15		
unplugged 97:25	worked 89:4 91:9		
upload 86:18 114:7	working 88:14 91:22 115:13		
uploaded 114:17	world 98:25		
	wrapping 118:12		