

In the Matter Of:

OXYLABS LT v

BRIGHT DATA LTD.

TIM WILLIAMS, PH.D.

December 19, 2024



UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

OXYLABS LT, UAB,

Petitioner,

v.

BRIGHT DATA LTD.,

Patent Owner

Case IPR2024-00126

Patent No. 11,616,826

REMOTE ORAL DEPOSITION OF

TIM A. WILLIAMS PhD

Thursday, December 19, 2024

REPORTED BY:

MICHAEL E. MILLER, FAPR, RDR, CRR

California CSR #13649

JOB NO. 2024-967965

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1 REMOTE ORAL DEPOSITION OF TIM A. WILLIAMS PhD, 2 produced as a witness at the instance of the Patent 3 Owner and duly sworn, was taken in the above-styled 4 and numbered cause on the above-referenced date from 5 9:03 a.m. to 11:29 a.m. PST before Michael E. 6 Miller, FAPR, RDR, CRR, California CSR #13649, 7 reported by real-time stenographic means at the 8 location of the witness, Danville, California. 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 INDEX 2 TIM A. WILLIAMS PhD 3 December 19, 2024 4 5 APPEARANCES 3 6 PROCEEDINGS 5 7 8 EXAMINATION OF TIM A. WILLIAMS PhD: 9 BY MR. ROBINSON 5 10 11 CERTIFICATE 83 12 13 14 NO EXHIBITS MARKED/REFERENCED 15 16 17 18 19 20 21 22
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1 REMOTE APPEARANCES: 2 NORTON ROSE FULBRIGHT US LLP 3 BY: EAGLE ROBINSON, ESQUIRE 4 eagle.robinson@nortonrosefulbright.com 5 CHAD WALLIS, ESQUIRE 6 chad.wallis@nortonrosefulbright.com 7 98 San Jacinto Boulevard 8 Suite 1100 9 Austin, Texas 78701 10 (512)474-5201 11 Counsel for Petitioner 12 13 14 15 16 17 18 19 20 21 22 1 CHERIAN LLP 2 BY: ELIZABETH O'BRIEN, ESQUIRE 3 elizabetho@cherianllp.com 4 THOMAS DUNHAM, ESQUIRE 5 tom.d@cherianllp.com 6 1901 L Street NW 7 Suite 700 8 Washington, DC 20036 9 (202)838-1560 10 Counsel for Patent Owner 11 12 13 14 15 16 17 18 19 20 21 22 1 TECHNICIAN: 2 SHREVE VANZANTEN 3 Lexitas 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	1 ----- 2 P R O C E E D I N G S 3 December 19, 2024, 9:03 a.m. PST 4 ----- 5 TIM A. WILLIAMS PhD, 6 having been duly sworn, 7 testified as follows: 8 ----- 9 EXAMINATION 10 ----- 11 BY MR. ROBINSON: 12 Q. Good morning, Dr. Williams. Thank you 13 for joining us today. 14 A. Good morning. 15 Q. You recall being deposed in connection 16 with patents owned by Bright Data in the past? 17 A. Yes. 18 Q. So I won't spend a lot of time on sort of 19 basics. The only thing I'll ask you to recall is 20 that let's try not to speak over each other, and if 21 I ask a question that you don't understand, please 22 feel free to ask me to repeat it or rephrase it. Is

Page 6 1 that fair? 2 A. Yes. 3 Q. Okay. Thank you, sir. 4 We're here today to ask you questions 5 related to your declaration in IPR20 -- well, let me 6 double-check that I get this number right -- 7 IPR2024-00126, involving US Patent No. 11,616,826; 8 is that correct? 9 A. I believe so. 10 Q. So if I refer to the '826 patent, will 11 you understand that's the patent that I'm referring 12 to? 13 A. Yes. 14 Q. Do you recall previously offering 15 testimony in connection with US Patent 16 No. 11,190,622? 17 A. No. 18 Q. Okay. I'm going to try to put in the 19 chat your prior declaration for the '622 patent. If 20 you would please let me know when you can access 21 that. 22 A. I have it.	Page 8 1 would, please let me know when you're able to access 2 that document. 3 A. I have it. 4 Q. On the first page of that document, just 5 to make sure we're on the same one, does it say 6 Declaration of Dr. Tim A. Williams, and reference 7 Case IPR2024-00126? 8 A. It does. 9 Q. All right. Thank you. 10 And that document is your declaration for 11 the '826 patent, correct? 12 A. It is. 13 Q. All right. I'm going to ask you to refer 14 to paragraph 75 on numbered page 47. 15 A. All right. 16 Q. Do you agree, sir, that Linux is a server 17 operating system? 18 A. A server operating system needs to be 19 used on a type of hardware in order to be a server, 20 and it needs to provide certain functionality. 21 Q. So let's skip ahead a couple of pages to 22 paragraph 80, then.
Page 7 1 Q. Do you recognize that document, sir? 2 A. It's my signature at the back. 3 Q. And just so it's clear for the record, 4 that document bears the title on the first page 5 Declaration of Dr. Tim A. Williams, and it 6 references Case IPR2022-00687; is that correct, sir? 7 A. It does. 8 Q. Okay. Do you understand that the Patent 9 Trial and Appeal Board found in favor of MetaCluster 10 as the petitioner in that proceeding and invalidated 11 the challenged claims of the '622 patent? 12 A. No. 13 Q. Do you recall any of your opinions that 14 you offered in this document, Dr. Williams? 15 A. Vaguely. This document is almost a year 16 old. 17 Q. Are there any opinions in that document 18 that you would, as we sit here today, care to 19 change? 20 A. I can't testify as to that. 21 Q. Okay. Next I'm going to drop into the 22 chat your declaration from this proceeding. If you	Page 9 1 A. Okay. I'm there. 2 Q. When you say a certain type of hardware, 3 what do you mean? 4 A. Not consumer hardware. 5 Q. How do you know what's consumer hardware 6 and what's not consumer hardware? 7 A. I've explained what the characteristics 8 of a server hardware are, and I've also explained 9 what the characteristics of a consumer hardware are. 10 Q. Where? 11 A. Paragraph 73: In my opinion, a POSA 12 would understand that a server operating system is 13 different from a client operating system, at least 14 because a server operating system (a) is optimized 15 for concurrent network connections, as opposed to a 16 client operating system that prioritizes 17 interactions with the user; (b) typically has more 18 robust administration tools; (c) typically uses a 19 command line interface as opposed to a graphical 20 user interface; and (d) provides more fine-grained 21 permissions or advanced security settings for 22 multiple users/inputs; and (e), manages redundant

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1 hard drives or multiple processors. 2 So the hardware that supports those 3 operations is a server hardware. 4 Q. Those all seem like software-level 5 functionalities. Where does that address hardware? 6 A. You're mischaracterizing what I'm saying. 7 Q. How so? 8 A. Point (a) is optimized for concurrent 9 network connections; therefore, the hardware must 10 have concurrent network connections. 11 (c), typically uses a command line 12 interface as opposed to a graphical user interface; 13 therefore, a server need not have a graphical user 14 interface. 15 Q. Is that a hardware component? 16 A. Yes, it is. 17 (d), fine-grained permissions or advanced 18 security settings, that can involve hardware as 19 well, and (e), manages redundant hard drives, which 20 are hardware, or multiple processors, which are 21 hardware. 22 Q. Let's start with (a).	1 Q. What does it mean to be optimized for 2 concurrent network connections as opposed to simply 3 having concurrent network connections? 4 A. In other words, the flow of information 5 into and out of the server is critical to the 6 server's operation, and the hardware that controls 7 those ports and that flow of information is 8 optimized for speed or latency. 9 Q. Is a blade server a server hardware? 10 A. Yes. 11 Q. Can a blade server be coupled to a 12 graphical user interface? 13 A. Typically not. 14 Q. But it can be, can't it? 15 A. I can't think of an example. 16 Q. So you can't say that it's impossible? 17 A. Few things in this world are impossible. 18 Q. So it is, in fact, possible for a 19 consumer to use a blade server as a personal 20 computer, isn't it? 21 A. I've never seen that occur. 22 Q. But it's possible, isn't it?
Page 11	Page 13
1 What is the hardware component that 2 permits concurrent network connections? 3 A. Multiple ports and hardware to handle 4 those ports for input and output. 5 Q. Do client computers ever have multiple 6 ports? 7 A. Client computers? Consumer computers? 8 Q. Consumer computers. 9 A. Consumer hardware may have -- typically 10 doesn't have concurrent network connections, but 11 may. 12 Q. Switches and routers have concurrent 13 network connections, don't they? 14 A. Yes, but they aren't servers, and they 15 aren't consumer hardware. 16 Q. But consumer hardware can have concurrent 17 network connections, though? 18 A. I can't think of an example. 19 Q. That doesn't quite answer the question. 20 Consumer hardware can have concurrent 21 network connections, can't it? 22 A. I can't think of an example.	1 A. I've never seen it occur. 2 Q. That doesn't answer the question. 3 It can be done given the capabilities of 4 the hardware, can't it? 5 MS. O'BRIEN: Objection, form. 6 A. I've never seen it occur. 7 BY MR. ROBINSON: 8 Q. Is it your testimony that it is 9 impossible to configure a blade server as a personal 10 computer? 11 A. I never use the word "impossible." 12 Q. So you concede that it is possible to 13 connect a graphical user interface and typical 14 keyboard and mouse and to use a blade server 15 hardware for a personal computer? 16 A. That's not my testimony. 17 Q. Is it your testimony that that's never 18 been done? 19 A. I've never seen that occur. 20 Q. Are you familiar with blade servers, 21 Dr. Williams? 22 A. I am.

Page 14 1 Q. Do they include connections to which a 2 graphical user interface can be connected? 3 A. What do you mean by connections? 4 Q. HDMI, VGA. 5 A. They can. 6 Q. Do they include connections to which a 7 keyboard can be connected? 8 A. Sometimes. 9 Q. Do they include connections to which a 10 mouse can be connected? 11 A. Sometimes. 12 Q. Do they include sufficient memory and 13 processing capabilities to run Windows or some other 14 type of operating system that's typically used on 15 personal computers? 16 A. Depends on the server. Depends on the 17 hardware. 18 Q. Some blade servers undoubtedly include 19 sufficient hardware capability to run a personal 20 computer operating system, do they not? 21 A. Can I have the question again, please. 22 Q. Some blade servers include sufficient	Page 16 1 could function as a consumer device? 2 A. As I just testified, a POSA would not 3 consider a server, a blade server, hardware to be a 4 piece of consumer equipment. 5 Q. Regardless of how it's used or 6 implemented? 7 MS. O'BRIEN: Objection, form. 8 A. Can I have the question again, please? 9 BY MR. ROBINSON: 10 Q. You testified that a POSA would not 11 consider a server, a blade server hardware to be a 12 piece of consumer equipment, and I said: Is that 13 true regardless of how it's used or implemented? 14 MS. O'BRIEN: Same objection. 15 A. I don't understand your question. 16 BY MR. ROBINSON: 17 Q. Is it your testimony that under no 18 circumstances a blade server would ever be 19 considered to be a piece of consumer equipment? 20 MS. O'BRIEN: Objection, form. 21 A. Not by a POSA, in my opinion. 22 ///
Page 15 1 hardware capability to run a personal computer 2 operating system, correct? 3 A. I've never seen that occur. 4 Q. Do you know whether blade servers include 5 sufficient hardware capability to run a personal 6 computer operating system? 7 A. Yes. 8 Q. Do they or do they not? 9 A. They have the raw capability to run a 10 personal operating system, but I've never seen that 11 occur, and a POSA would not consider a blade server 12 as a piece of consumer equipment. 13 Q. If a consumer buys a blade server and 14 uses it to run a personal computer, is it a consumer 15 computer? 16 A. I've not expressed that opinion. 17 Q. I'm asking you to. 18 A. I haven't considered that option. 19 Q. Dr. Williams, your declaration includes 20 pages upon pages of opinions about the lines between 21 servers and client devices and consumer computers, 22 and you haven't considered whether server hardware	Page 17 1 BY MR. ROBINSON: 2 Q. What about a personal computer used as a 3 server? Would that ever be considered a piece of 4 server hardware? 5 A. If it's running a server operating system 6 and it has the characteristics that I outline in 7 paragraph 73, it possibly could be. 8 Q. But if that same computer is running a 9 personal computer operating system and is used by a 10 consumer, then it would be a piece of consumer 11 hardware? 12 A. Yes. 13 Q. So consumer hardware can become server 14 hardware depending on how it's configured and used, 15 correct? 16 MS. O'BRIEN: Objection, form. 17 A. Can I have that question again, please? 18 BY MR. ROBINSON: 19 Q. Consumer hardware can become server 20 hardware depending on how it's configured and used, 21 correct? 22 MS. O'BRIEN: Same objection.

Page 18 1 A. A piece of consumer equipment can be 2 configured to be a server if it has the correct 3 operating system and functionality as I outlined in 4 paragraph 73. 5 BY MR. ROBINSON: 6 Q. Can a piece of server equipment be 7 configured to be consumer equipment? 8 A. Not in my experience. 9 Q. Not possible? 10 MS. O'BRIEN: Objection, form. 11 A. I never say something is impossible. 12 BY MR. ROBINSON: 13 Q. Well, let's start there. 14 Is it possible to configure a piece of 15 server equipment as a piece of consumer equipment? 16 A. A POSA would not consider that to be 17 true. 18 Q. A POSA would consider that to be 19 impossible; is that what you're saying? 20 A. I never use the word "impossible." 21 Q. Well, I'm asking you what a POSA would 22 think.	Page 20 1 piece of consumer equipment while you were using it 2 as a personal computer? 3 MS. O'BRIEN: Objection, form. 4 A. No, because the role of the computer is 5 to be a server, and it's -- it is a piece of server 6 equipment. 7 BY MR. ROBINSON: 8 Q. What if you had a personal computer that 9 you sometimes used as a server? 10 MS. O'BRIEN: Objection -- 11 BY MR. ROBINSON: 12 Q. Would that be a consumer equipment or a 13 server equipment? 14 A. May I have the question again? 15 Q. If you had a personal computer that you 16 sometimes used as a server, would it be a consumer 17 device or server hardware? 18 MS. O'BRIEN: Objection, form. 19 A. It would be a consumer device. 20 BY MR. ROBINSON: 21 Q. And it could never be a piece of server 22 hardware as long as it were sometimes used as a
Page 19 1 Would a POSA think it would be impossible 2 to configure a piece of server equipment as a piece 3 of consumer equipment as you have interpreted those 4 terms in your declaration? 5 A. I never use the word "impossible." 6 Q. So it's possible? 7 MS. O'BRIEN: Objection, form. 8 A. Many things can occur. 9 BY MR. ROBINSON: 10 Q. So it is possible that a POSA would 11 understand that a piece of server equipment could be 12 configured and used as a piece of consumer 13 equipment? 14 A. A POSA would never think to do that, 15 would never consider a piece of server hardware to 16 be used as consumer equipment. 17 Q. Dr. Williams, you're a POSA. You've 18 qualified as at least a POSA, right? 19 A. Yes. 20 Q. If you were to have a blade server that 21 you used as a server but that you also had a 22 personal computer operating system on, would it be a	Page 21 1 consumer device? 2 MS. O'BRIEN: Objection, form. 3 A. Based on -- based on a hardware 4 definition, yes, it's just a piece of consumer 5 equipment. 6 BY MR. ROBINSON: 7 Q. But if you stopped entirely -- stopped 8 using it entirely for a personal computer, then it 9 could transition to being a piece of hardware -- 10 server hardware? 11 A. No, it's still a piece of consumer 12 equipment. It's just being used as a server. 13 Q. So is it your testimony, then, that a 14 personal computer configured as a server could never 15 be the first server recited in the claims of 16 the '826 patent? 17 MS. O'BRIEN: Objection, form. 18 A. Again, I never say never. 19 BY MR. ROBINSON: 20 Q. So a personal computer configured as a 21 server could be the first server recited in the 22 claims of the '826 patent?

Page 22 1 A. I've not expressed that opinion. 2 Q. You've expressed a lot of opinions about 3 what is and isn't a server and a lot of opinions 4 about what those claims cover, and, in fact, your 5 testimony in this case has everything to do with 6 what does or doesn't meet those claim terms. 7 So I'm asking you, Dr. Williams, to 8 express the opinion of whether or not a personal 9 computer configured as a server could ever satisfy 10 the first server in the claims of the '826 patent. 11 A. The answer is no. 12 Q. Could a blade server configured as a 13 personal computer ever satisfy the client device of 14 the claims of the '826 patent? 15 A. I've never seen that occur. 16 Q. That wasn't the question. I'll ask it 17 again. 18 Could a blade server configured and used 19 as a personal computer ever be the client device in 20 the claims of the '826 patent? 21 MS. O'BRIEN: Objection, form. 22 A. Your hypothetical doesn't make sense	Page 24 1 BY MR. ROBINSON: 2 Q. Okay. Circling back to paragraph 80 of 3 your declaration on the '826 patent, Linux offers a 4 server operating system, correct? 5 A. "Linux" is a general term for multiple 6 software capabilities, one of which is a server 7 operating system. 8 Q. Okay. And so the capabilities depend on 9 the functionality, meaning Linux operating as a 10 server -- or as a server operating system implements 11 server functionality, correct? 12 A. On server hardware. 13 Q. Okay. So Linux acting as a server on a 14 personal computer device would somehow not be a 15 server operating system? 16 MS. O'BRIEN: Objection, form. 17 A. It's not a server per the understanding 18 of a POSA in this particular case because the 19 hardware is not a server piece of hardware. 20 BY MR. ROBINSON: 21 Q. So more generally, outside the -- sorry, 22 I didn't mean to interrupt.
Page 23 1 because I've never seen that occur. 2 BY MR. ROBINSON: 3 Q. But you've conceded that it's possible to 4 do so. 5 A. Many things are possible. 6 Q. So the hypothetical makes sense. You've 7 conceded that it's possible. 8 If you configure a blade server as a 9 personal computer, could it be a client device 10 within the term of the '826 patent claims that 11 you've opined on? 12 MS. O'BRIEN: Objection, form. 13 A. I've not expressed that opinion. 14 BY MR. ROBINSON: 15 Q. But that's squarely within the realm of 16 the opinions that you have expressed, Dr. Williams, 17 so I think it's a fair question. 18 Can a blade server configured as a 19 personal computer ever be the client device of 20 claim 1 of the '826 patent? 21 MS. O'BRIEN: Objection, form. 22 A. No.	Page 25 1 A. It is a consumer equipment, not a server 2 equipment. 3 Q. So more generally, outside the confines 4 of the '826 patent, just generally in the field, 5 Linux can be implemented as a server operating 6 system on a personal computer that's configured to 7 act as a server, right? 8 A. Yes. 9 Q. Okay. What's a consumer? 10 A. A consumer is someone who is a person who 11 purchases the equipment for personal use. 12 Q. Does personal mean nonbusiness use? 13 A. Can be business use. 14 Q. Okay. When does a business use become 15 nonpersonal? 16 A. Business use of what? 17 Q. Of computing equipment. 18 MS. O'BRIEN: Objection, form. 19 A. Sorry, can I have the question again, 20 please? 21 BY MR. ROBINSON: 22 Q. When does a business use become

Page 26 1 nonpersonal? 2 MS. O'BRIEN: Objection, form. 3 A. A business use of a piece of equipment? 4 BY MR. ROBINSON: 5 Q. So any business use of a piece of 6 equipment -- 7 A. No, I'm asking a question. 8 Q. Yes. 9 A. Please clarify the question. 10 Q. When does business use of a piece of 11 equipment become nonpersonal? 12 A. When that equipment is used by multiple 13 parties in the pursuit of business interests. 14 Q. Do you mean multiple people or multiple 15 parties? 16 A. Multiple -- multiple parties. I guess 17 parties includes people. 18 Q. Well, let me ask it a slightly different 19 way. 20 If somebody buys a piece of equipment for 21 their business and only their employees use that 22 equipment, is that still personal use of the	Page 28 1 A. I don't understand the question. 2 BY MR. ROBINSON: 3 Q. Would your opinion change if the computer 4 were used as a server? 5 MS. O'BRIEN: Objection, form. 6 A. My opinion regarding what? 7 BY MR. ROBINSON: 8 Q. Whether it is a consumer device. 9 MS. O'BRIEN: Objection, form. 10 A. If it's server hardware running a server 11 operating system within a business with multiple 12 users, then it is a server. 13 BY MR. ROBINSON: 14 Q. What if it is server hardware that only 15 the purchaser uses? 16 MS. O'BRIEN: Objection, form. 17 A. I don't understand your question. 18 BY MR. ROBINSON: 19 Q. If a consumer purchases server hardware, 20 uses it as a server for their business, but they're 21 the only user, is it a consumer device? 22 A. No.
Page 27 1 purchaser? 2 MS. O'BRIEN: Objection, form. 3 A. No. 4 BY MR. ROBINSON: 5 Q. Even though they're all employees of the 6 purchaser? 7 A. Yes. 8 Q. Okay. So to be clear, a business owner 9 that purchases a computer for their business, if 10 they use that computer themselves, that's personal 11 use, correct? 12 A. Yes. 13 Q. But if a person purchases a computer for 14 their business and employees of their business use 15 that computer, then that's not personal use of the 16 purchaser? 17 MS. O'BRIEN: Objection, form. 18 A. That's my opinion. 19 BY MR. ROBINSON: 20 Q. Is that true even if the computer only 21 serves as a client device? 22 MS. O'BRIEN: Objection, form.	Page 29 1 Q. Is it personal use? 2 A. Is that a question? 3 Q. Yes. 4 A. I don't understand the question. 5 Q. If a consumer purchases server hardware, 6 uses it as a server for their business, but they are 7 the only user, is that personal use? 8 MS. O'BRIEN: Objection, form. 9 A. Personal use with respect to what? I 10 don't understand the question. 11 BY MR. ROBINSON: 12 Q. "Personal use" is a term that you've used 13 to define consumer device. 14 A. It's one of them. 15 Q. Okay. That necessarily depends on what 16 is or isn't personal use. 17 So in this instance, I'm asking you to 18 apply that term to the instance of a consumer 19 purchasing server hardware, using it as a server for 20 their business, but where they're the only user. 21 Is that personal use? 22 A. No.

Page 30 1 Q. Why not? 2 THE WITNESS: Sorry. I cut Elizabeth 3 off. We didn't hear you. 4 MS. O'BRIEN: I apologize. I said: 5 Objection, form. 6 THE WITNESS: Can I have the question 7 again? 8 BY MR. ROBINSON: 9 Q. If a consumer purchases server hardware, 10 uses it as a server for their business, but they are 11 the only user, is that personal use of that server 12 hardware by the consumer? 13 MS. O'BRIEN: Objection, form. 14 A. No. 15 BY MR. ROBINSON: 16 Q. Why not? 17 A. Because it's a server; it's intended to 18 be used for multiple purposes, for multiple parties. 19 Just because the use is by a single person doesn't 20 mitigate the type of hardware or the operating 21 system that's being used on that particular piece of 22 equipment.	Page 32 1 detail, Dr. Williams. 2 If I have a hardware -- sorry, a server 3 equipment that has the processor, the memory, 4 storage, some, you know, network cards, and I've got 5 a personal computer that has the same list of 6 components, fundamentally, what's the difference 7 between the server hardware and the consumer 8 hardware? 9 MS. O'BRIEN: Objection, form. 10 A. Well, as I explain in paragraph 73, those 11 are the characteristics of a server, and I think 12 it's fairly clear from my declaration. 13 BY MR. ROBINSON: 14 Q. But these are functional things that 15 certainly have to be supported by some hardware 16 components. 17 But I'm asking you: If you've got server 18 hardware and personal consumer hardware that has the 19 same list of components and the consumer hardware is 20 configured to function with all of these things, 21 fundamentally, what's the difference? 22 A. Well, at the detailed level, there is a
Page 31 1 Q. But the same would not be true of a 2 personal computer that is -- runs a server operating 3 system and is configured to act as a server. That 4 would still be a consumer device for personal use, 5 right? 6 MS. O'BRIEN: Objection, form. 7 A. Because it is consumer equipment running 8 a consumer operating system. 9 BY MR. ROBINSON: 10 Q. What if it runs Linux server operating 11 system? 12 A. It's still consumer equipment. Still, 13 hardware is consumer hardware. 14 Q. Just at a fundamental level, what's the 15 difference between consumer hardware and server 16 hardware? 17 MS. O'BRIEN: Objection -- 18 BY MR. ROBINSON: 19 Q. We're talking about the same functional 20 components. 21 A. We've already discussed this. 22 Q. I don't think we have on this level of	Page 33 1 difference, and it's in the capabilities of that 2 hardware. It's in the design of the interconnection 3 of the components you're listing. It's in the 4 selection of the type of components that you're 5 listing. It is the capabilities of information flow 6 into and out of those components that provide a 7 distinction between those two pieces of equipment. 8 Q. So on a fundamental level, to find the 9 difference, we've got to get down to the 10 interconnection of components, the types of 11 components, the capabilities of information flow, 12 really to that level of detail to be able to 13 quantify the differences. Is that accurate? 14 MS. O'BRIEN: Objection, form. 15 A. My car and the delivery truck that the 16 FedEx person drives are both made of metal, rubber 17 for the tires, they both use gasoline, they both use 18 internal combustion engines, they both have a 19 steering wheel, they both have an accelerator, but 20 they're fundamentally different. And the difference 21 is the capabilities of that piece of hardware and 22 what it's designed to do.

Page 34 1 So if you ask me: Dr. Williams, is this 2 a consumer-level automobile or is this a delivery 3 truck, I'd be -- it would be easy for me to tell the 4 difference. And it's the same level of comparison 5 in your question. 6 BY MR. ROBINSON: 7 Q. With the delivery truck, say we're 8 talking about vans, all right, you've got a personal 9 van and a delivery van. The big difference in 10 the -- 11 A. No, I'm talking about -- 12 Q. -- delivery -- 13 A. I'm talking about a FedEx truck. 14 Q. A FedEx truck, okay. So it's got a big 15 box, right, plenty of room to put packages in there. 16 And I assume your car is not a big box truck. 17 That's an easy enough difference to articulate. 18 I'm just asking if you can do the same 19 thing for a hardware device and a personal device 20 that is -- or a server hardware and a personal 21 device that's configured to act as a server with the 22 same list of components.	Page 36 1 about automotive options. What I will ask you about 2 is computer options. 3 What are the differences in those 4 components between server hardware and a personal 5 computer hardware that has the same list of 6 components? 7 A. Well -- 8 MS. O'BRIEN: Objection, form. 9 THE WITNESS: Sorry. I cut you off. 10 MS. O'BRIEN: Objection, form. 11 Apologies. 12 A. Well, the list of components at the -- at 13 a layer of abstraction may be similar. It has 14 memory. Well, the memory of a consumer device is 15 entirely different than the memory of a server 16 device when looking at the capabilities of that 17 memory, the organization of that memory, and think 18 the specifications of that memory, like the speed of 19 operation, its power consumption, et cetera. 20 The -- it may have a processor. Well, 21 the processor typically will be different between 22 consumer hardware and server hardware in terms of
Page 35 1 A. Your question that led to that statement 2 is, well, they're both made of the same components. 3 Well, they're not both made of the same components. 4 A server isn't a computer -- consumer hardware, just 5 like trucks and autos are not made of the same 6 components. 7 Q. I'm not going to ask you questions -- 8 A. I'm not done with my answer. 9 Fundamentally, they're steel, they're rubber, 10 they're gasoline, they're internal combustion 11 engines. They're displays, they're steering wheels, 12 maybe a radio. So those components, at a level of 13 abstraction, are the same. 14 So what's the difference between those 15 two? It's how they're designed, how they're 16 implemented, what the relationship between those 17 components is, the capabilities of -- that those 18 components provide. 19 So it's the same analysis with consumer 20 equipment and server equipment. 21 Q. Well, Dr. Williams, I don't think you're 22 an automotive expert, so I won't ask you questions	Page 37 1 speed, in terms of number of threads that it can 2 simultaneously handle, in terms of input and output, 3 in terms of the types of buses it interfaces with. 4 So the devil is in the details here. You 5 can't discuss this at the level of abstraction that 6 you're trying to discuss it at. 7 BY MR. ROBINSON: 8 Q. So knowing the difference between 9 consumer hardware and server hardware depends on the 10 capacity, the organization, the configuration of the 11 memory, and it depends on the speed, the number of 12 threads, and the configuration of the processors. 13 Are there any other details that it 14 depends on? 15 A. Well, I'm sure I could go into others, 16 but that's a pretty good characterization. 17 Q. Please do go into the others. 18 A. Okay. Well, let's look at the ports. 19 The speed of the ports in the server is typically 20 faster than a consumer computer. The number of 21 ports, as I've discussed earlier, is typically 22 larger. The routing of those ports into a

Page 38 1 processing element is -- in a server is built for 2 high throughput as opposed to a consumer computer, 3 which is typically built for just functionality. 4 Let's look at the power supply. The 5 power supply on a consumer piece of equipment might 6 run on batteries exclusively, might be plugged into 7 the wall in a 110-volt low-amperage connection, 8 whereas the server typically would be connected into 9 a rack-type environment with dedicated power 10 connections at high amperage. 11 Q. Any others that you can think of off the 12 top of your head? 13 A. Well, we talked about the memory. We 14 talked about the processor. We talked about the 15 ports. We talked about the power supply. 16 The types of printed circuit boards used, 17 the I/O capabilities for user interface are 18 different. 19 Q. So starting with the memory, how much 20 memory does a piece of equipment have -- have to 21 have to be server hardware instead of a personal 22 device?	Page 40 1 BY MR. ROBINSON: 2 Q. And then you talked about high amperage 3 versus low amperage. 4 How high does the amperage have to be for 5 a piece of equipment to qualify as server hardware 6 instead of consumer hardware? 7 MS. O'BRIEN: Objection, form. 8 A. Well, again, consumer hardware may 9 operate off of batteries, and in such case, be low 10 amperage and low voltage. Servers have the 11 capability of having a more dedicated, robust power 12 supply, so it has more energy that can be provided 13 to the processor. 14 BY MR. ROBINSON: 15 Q. And where is the boundary between those 16 two, sir? 17 A. The boundary is when comparing two pieces 18 of equipment, you can tell the server-capable 19 equipment by its superior capabilities. 20 Q. So you know it when you see it? 21 A. I know it when I'm comparing multiple 22 pieces of equipment.
Page 39 1 A. You mean an absolute number? 2 Q. Sure. 3 A. I can't tell you that. Depends on what 4 year it is, what the capabilities of the server 5 you're trying to design is, and -- and what type of 6 memory we're talking about. 7 Q. So how about the processor? How fast 8 does a processor have to be to qualify as server 9 hardware as opposed to a consumer device? 10 MS. O'BRIEN: Objection, form. 11 A. Typically those processors in servers are 12 faster than consumer devices, and specified for 13 certain temperature profiles for that processor and 14 tested to be reliable processors as opposed to 15 consumer-level processors. 16 BY MR. ROBINSON: 17 Q. How reliable do they have to be to be 18 server processors instead of consumer processors? 19 MS. O'BRIEN: Objection, form. 20 A. They have to be -- they have to pass 21 certain voltage variability and temperature profile 22 tests typically to be put into servers.	Page 41 1 Q. Okay. I'm going to put Exhibit 1001 into 2 the chat. If you would please let me know when that 3 comes up. 4 A. I have it. 5 Q. Is that the '826 patent, sir? 6 A. It is. 7 Q. Can you point me to anywhere in that 8 document that it says anything about processing 9 capability, power supply, memory, and these other 10 specific characteristics that you've listed in terms 11 of distinguishing between server hardware and 12 consumer hardware? 13 A. These are all -- this discussion has been 14 all based on the knowledge of a POSITA. 15 Q. So none of it has been based on the 16 disclosure in the '826 patent? 17 A. The '826 uses terms that would be 18 understood by a POSA -- 19 Q. But it doesn't -- 20 A. -- if you accept the particular time of 21 filing. 22 Q. But the '826 patent does not discuss any

Page 42 1 of the specific characteristics that you just 2 described as distinguishing between hardware for a 3 server and hardware for a consumer device? 4 A. It doesn't explain Ohm's law. It doesn't 5 explain gravity. It doesn't explain metallurgy. It 6 doesn't explain silicon processing. It assumes all 7 these capabilities as background to the patent. 8 Q. That sounded like a no to my question. 9 Was that a no to my question? 10 A. My answer is that a POSA would understand 11 the context in which he's reading the patent and the 12 context that they understand is the capabilities 13 that we've been discussing. 14 Q. Okay. That didn't answer my question 15 either, so I'll ask it again. 16 The '826 patent does not discuss any of 17 the specific characteristics that you described as 18 distinguishing between hardware for a server and 19 hardware for a consumer device, does it? 20 A. Answer: The '826 assumes that the POSA 21 would understand everything we've just been 22 discussing in disclosing its specification.	Page 44 1 correct? 2 A. My answer is it doesn't have to. 3 Q. And it doesn't, correct? 4 A. It's not necessary. 5 Q. That's irrelevant to whether it does or 6 it does not. 7 I'm asking a very foundational question: 8 It either has the words or it doesn't. I think we 9 can agree that it doesn't have those words, right? 10 MS. O'BRIEN: Objection, form. 11 A. Which words are you asking about? 12 BY MR. ROBINSON: 13 Q. All of the things that we've just 14 discussed in terms of processing speed, memory, 15 format and capacity, power supply, amperage, 16 dedicated power supply versus battery -- it doesn't 17 have any of those things described in terms of 18 distinguishing between server hardware and consumer 19 hardware, does it, sir? 20 MS. O'BRIEN: Objection, form. 21 A. My understanding, it does not have to 22 provide that information.
Page 43 1 Q. And by -- 2 A. The '826 does not have to go back to 3 Ohm's law and power curves and voltage capabilities 4 and silicon processing and metallurgical processing, 5 et cetera, in order to define what its patent is 6 about, what its invention is about. 7 So the knowledge of a POSITA in coming to 8 this patent is what we've been discussing. 9 Q. So just to make sure we're clear, when 10 you say the '826 assumes that the POSA would 11 understand everything we've been discussing, that's 12 the reason why the '826 doesn't actually describe 13 everything we've just been discussing? 14 MS. O'BRIEN: Objection, form. 15 A. My answer is the '826 does not have to 16 describe everything we have been discussing because 17 that is within the knowledge base of a POSITA 18 reading the patent at the time of application. 19 BY MR. ROBINSON: 20 Q. But the corollary to does not have to 21 describe everything is that the '826 doesn't 22 describe everything that we've just been discussing,	Page 45 1 BY MR. ROBINSON: 2 Q. Whether it has to or not is secondary. 3 It does not describe those things, does 4 it? 5 A. It -- the specification assumes that the 6 POSA brings that to the specification. 7 Q. And that's why it's not included in the 8 specification, is it? 9 A. Well, Ohm's law is not included in the 10 specification. Semiconductor processing is not 11 included in the specification. Gravity is not 12 included in the specification. 13 Q. Dr. Williams -- 14 A. There are many things -- the laws of 15 physics are not included in the specification. 16 There are many things that aren't 17 included in the specification that the specification 18 builds upon, and the specification is building upon 19 the knowledge of a POSA at the time of the 20 application, and these things that we've been 21 discussing are knowledge of a POSA. 22 Q. Dr. Williams, the specification does not

Page 46 1 explain that server hardware has a higher amperage 2 than consumer hardware, does it? 3 A. Doesn't need to. 4 Q. But it doesn't, does it? 5 A. Are you asking if those words are typed 6 within the specification? 7 Q. Yes. 8 A. No. 9 Q. Does the specification say anything about 10 hardware or servers having faster processors than 11 consumer devices? 12 A. Are you asking if those words are typed 13 within the specification? 14 Q. Yes. 15 A. No. 16 Q. Does the specification include any words 17 about server hardware having more memory than 18 consumer hardware? 19 A. Are you asking if those words are typed 20 within the specification? 21 Q. Yes. 22 A. No.	Page 48 1 BY MR. ROBINSON: 2 Q. In fact, the only place the specification 3 uses the word "consumer" is in the background of the 4 invention; isn't that correct? 5 A. Yes. 6 MR. ROBINSON: We've been going a 7 little over an hour. Why don't we take a 8 quick bathroom break. 9 THE STENOGRAPHER: Off the record. 10 (Recess taken, 10:05 a.m. to 11 10:15 a.m. PST) 12 THE STENOGRAPHER: Back on the 13 record. 14 BY MR. ROBINSON: 15 Q. Dr. Williams, would you please -- do you 16 have the ability to open two documents at once on 17 your screen right now? 18 A. I do. 19 Q. Would you open the '826 declaration and 20 the '622 declaration side by side, if you can. 21 A. Yes. 22 Q. Are you aware that the '826 patent and
Page 47 1 Q. Does the specification say anything about 2 the number of threads that a processor needs to 3 handle in server hardware versus consumer hardware? 4 A. Are you asking if those words are typed 5 within the specification? 6 Q. Yes. 7 A. No. 8 Q. The specification doesn't actually say 9 anything about consumer hardware in the context of 10 its invention, does it? 11 MS. O'BRIEN: Objection, form. 12 (Pause.) 13 A. In the prosecution, there was a 14 discussion of this, this point. 15 BY MR. ROBINSON: 16 Q. Okay. Let's start with my question, 17 Dr. Williams. 18 The specification doesn't say anything 19 about consumer hardware in the context of describing 20 its invention, does it? 21 MS. O'BRIEN: Objection, form. 22 A. In a fashion it does, yes.	Page 49 1 the '622 patent are related? 2 (Clarification requested by the 3 stenographer.) 4 A. I don't recall. 5 BY MR. ROBINSON: 6 Q. So I'll represent to you, sir, that they 7 are related. 8 THE WITNESS: Are you able to hear 9 me, sir? Are you able to hear me? 10 THE STENOGRAPHER: Yes. 11 MR. ROBINSON: Yes. 12 BY MR. ROBINSON: 13 Q. I'll represent to you, sir, that they are 14 related patents. 15 If you would, please, go to page 2 of 16 your '826 declaration and page 2 of the '622 17 declaration. 18 Do you see on the '826 declaration -- 19 A. I'm not there yet. 20 Q. Okay. 21 A. Page 2. 22 Q. That's the table of contents, to be

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1 clear. 2 A. Okay. You mean the table of contents? 3 Q. Yes. 4 A. All right. Go ahead. 5 Q. Do you see in the '826 declaration under 6 Claim Construction at subpart D.1, it says: Purely 7 Role-Based Constructions Contradict the Court's 8 Claim Construction Order? 9 A. I do. 10 Q. And in the '622 declaration, do you see 11 where it says the same -- same phrase under 12 subpart VIII.A? 13 A. Yes. 14 Q. Okay. And sticking with the '622 under 15 subpart VIII.B, do you see where it says Purely 16 Role-Based Constructions Contradict the Court's 17 Code200 Alice Order? 18 A. Yes. 19 Q. And then back to the '826 declaration, 20 under VIII.D.2 on page 3, it says the same phrase, 21 Purely Role-Based Constructions Contradict the 22 Court's Code200 Alice Order?	1 Constructions Contradict the Figures of the 2 Specification? 3 A. I see it. 4 Q. And then back to the '622, skipping ahead 5 one page to subpart E where it says the same thing, 6 Purely Role-Based Constructions Contradict the 7 Figures of the Specification? 8 A. I see it. 9 Q. And then subpart F in that '622 10 declaration, do you see where it says: Purely 11 Role-Based Constructions Contradict the Applicant's 12 Prosecution History Statements? 13 A. Yes. 14 Q. And back to the '826 declaration, do you 15 see where, under subpart 6 it says the same thing, 16 Purely Role-Based Constructions Contradict the 17 Applicant's Prosecution History Statements? 18 A. Yes. 19 Q. And then in subpart 7 in your '826 20 declaration, do you see where it says Purely 21 Role-Based Constructions are not Appropriate? 22 A. Yes.
Page 51	Page 53
1 A. Yes. 2 Q. Okay. And sticking with the '826 3 declaration, subpart 3, do you see where it says 4 Purely Role-Based Constructions Contradict the 5 Court's Teso Alice Order? 6 A. Yes. 7 Q. Okay. And back to the '622 declaration, 8 under VIII.C, where it says the same thing, Purely 9 Role-Based Constructions Contradict the Court's Teso 10 Alice Order? 11 A. Yes. 12 Q. Then under subpart D in that '622 13 declaration, it says: Purely Role-Based 14 Constructions Contradict the Express Claim Language? 15 A. I see it. 16 Q. And then back to the '826 declaration in 17 subpart 4 where it says the same thing, Purely 18 Role-Based Constructions Contradict the Express 19 Claim Language? 20 A. I see it. 21 Q. Okay. And then in the '826 at subpart 5, 22 do you see where it says: Purely Role-Based	1 Q. And back to the '622 declaration, under 2 subpart G, do you see where it says the same thing, 3 Purely Role-Based Constructions are not Appropriate? 4 A. Yes. 5 Q. So the arguments against role-based 6 constructions in the '622 declaration advance the 7 same seven primary points as you advance in 8 your '826 declaration here, correct? 9 A. The headlines are the same, yeah. 10 Q. Okay. And you understand that the board 11 rejected those arguments in the IPR of the '622 12 patent? 13 A. No. 14 Q. It did. 15 Does that make you reconsider any of your 16 opinions that you've offered here? 17 A. No. 18 Q. As we sit here today, can you tell me 19 anything that's different about those seven 20 arguments that you've made here versus the seven 21 arguments that you made with the same headings in 22 the proceeding involving the '622 patent?

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1 A. I would just refer you to my declaration 2 in this case. 3 Q. All right. So let's skip ahead to 4 page 101 of your declaration in this case. 5 A. Yes. 6 Q. And in parallel to page 84 of your 7 declaration in the '622 -- or the '622 patent. 8 A. Yes, I'm there. 9 Q. And you see the heading A in both of 10 those declarations? 11 A. Yes. 12 Q. Both of those are addressed to 13 Kocherlakota, right? 14 A. Yes. 15 Q. And if you look at paragraph 177 in 16 the '622 declaration and paragraph 212 of the '826 17 declaration, they're both addressing whether 18 Kocherlakota discloses the first server in the 19 preamble, correct? 20 A. Yes. 21 Q. And even more specifically, whether 22 Kocherlakota's proxy server 17 meets the first	1 be -- can only be met by something that is always 2 and exclusively functioning as a server, but that 3 Kocherlakota's proxy server 17 sometimes functions 4 as a client under the role-based constructions and 5 so couldn't meet it; is that fair? 6 A. That is fair. 7 Q. All right. And that's the same -- the 8 same thrust of the argument that was made in 9 the '622 declaration, correct? 10 A. I haven't reviewed the '622 declaration. 11 Q. Well, why don't you take a look at 12 paragraphs 179 and 180 and let me know. I'm sorry, 13 it's paragraph 177 in the '622 declaration. 14 A. And the question again? 15 Q. The thrust of the argument in the '622 16 declaration was also that because Kocherlakota's 17 proxy server 17 sometimes acts as a client device, 18 in your opinion, that it could not meet the first 19 server of claim 1, correct? 20 A. 177 says what it says. Your summary is 21 approximately correct. 22 Q. Okay. So it's the same argument relative
Page 55	Page 57
1 server of the preamble, correct? 2 A. Yes. 3 Q. And the thrust of that argument in both 4 is that Kocherlakota's proxy server at some times 5 acts as a client and so therefore would not qualify 6 as a first server, correct? 7 MS. O'BRIEN: Objection, form. 8 A. Well, I think you're asking about 9 paragraph 213 in my declaration. 10 BY MR. ROBINSON: 11 Q. So what I'm asking is: In the '826 12 declaration, you argue that proxy server 17 wouldn't 13 qualify as a first server because it sometimes acts 14 as a client, correct? 15 MS. O'BRIEN: Objection, form. 16 A. Well, I say what I say in paragraphs 212 17 to 214. I'm not sure what you're asking about. 18 BY MR. ROBINSON: 19 Q. I guess I'm -- I'm just trying to 20 summarize the thrust of the argument, sir. 21 It seems to be in paragraph 213 that what 22 you argue is the first server of claim 1 has to	1 to Kocherlakota in the first server in the '622 2 declaration as in the '826 declaration? 3 A. It's a similar argument, and again, I 4 don't agree with the role-based construction as it 5 is. 6 Q. Understood. And I don't mean to 7 imply that -- 8 A. We're in an assumed world of role-based 9 constructions, but I don't agree with that. 10 Q. Okay. But you understand the world of 11 role-based constructions is the world that the board 12 has repeatedly applied for this set of related 13 patents, correct? 14 A. I don't know that. 15 Q. Okay. Moving ahead to heading B starting 16 on 102 of the '826 declaration and page 85 of 17 the '622 declaration. 18 A. I'm there. 19 Q. Okay. So do you see at paragraph 215 of 20 the '826 declaration where it says "sending... the 21 first content identifier"? 22 A. Yes.

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1 Q. And it goes on to make a similar argument 2 that we discussed for the preamble in that proxy 3 server 17 sends a request, proxy server 17 is 4 operating in the role of a client, and therefore 5 can't be a server during performance of that sending 6 step. 7 Do you see that, sir? 8 A. I see paragraph 217, yes. 9 Q. Was what I just explained about 10 paragraph 217 accurate? 11 A. Well, I think you paraphrased it, but my 12 opinion is what's typed there. 13 Q. And the opinion is that under the 14 role-based constructions with which you disagree, 15 that when a proxy server sends a request, it acts as 16 a client, and so that it can't be a server, correct? 17 A. Under the purely role-based 18 constructions, proxy server 17 cannot be a server 19 during performance of this method step. Proxy 20 server 17 is not operating in the role of a server 21 and therefore does not meet the Petitioner's 22 construction for a first server during performance	1 arguments. The wording is -- 2 Q. So -- 3 A. The wording of the claims is different. 4 The wording of the argument is different. 5 Q. But as we sit here today, you can't 6 articulate any substantive difference between them? 7 A. Well, the substantive difference is that 8 the words of the claim are different. The 9 expression of my opinion is different between these 10 two. 11 Q. How do the words of the claim change the 12 substance of the argument? 13 A. Can I have this patent, the 11,190,622? 14 Q. You certainly can. I'm curious why the 15 quoted claim language isn't enough to address the 16 argument that it addresses, but -- 17 A. Ah. It's the claim language. This is 18 1c. 19 (Pause.) 20 A. May I have the question again, please? 21 BY MR. ROBINSON: 22 Q. As we sit here today, you can't
Page 59	Page 61
1 of this method step. 2 Q. And that's -- flipping back to the '622 3 declaration, that's the same argument that's made in 4 paragraphs 178 and 179 for the '622 patent, correct? 5 I'll clarify that a bit: 178 through 6 180. 7 A. In my opinion, under the purely 8 role-based constructions, when proxy server 17 sends 9 the first URL to the first web server, proxy server 10 17 is operating in the role of a client, not a 11 server. Therefore, under the purely role-based 12 constructions, proxy server 17 cannot be a server 13 during performance of this method step. 14 Q. So it's the same argument between 15 the '622 patent and the '826 patent, right? 16 A. It's a similar argument. 17 Q. Okay. How does it differ? 18 A. Different words. 19 Q. But substantively the same? 20 A. They're similar. 21 Q. Do they differ in any substantive way? 22 A. I would just say they're similar	1 articulate any substantive difference between these 2 two arguments, can you? 3 A. '622, claim 1, is a method performed by 4 the first client device, and the '826 is a method 5 for use with a web server. 6 Q. I'm sorry, did you say the '622 is a 7 method performed by the first client device? 8 A. Method for fetching by first client 9 device, the method by the first server comprising -- 10 method for the -- by the first server comprising. 11 And 1c is sending in response to the selecting the 12 first URL to the first web server using the selected 13 IP address, and 1d is sending in response to the 14 receiving of the first content identifier using the 15 selected IP address of the first content identifier. 16 Different words. 17 Q. Let's go back to the declarations. 18 The '826 declaration at paragraphs 215 to 218 and 19 the '622 declaration at paragraphs 178 to 181, those 20 paragraphs and the arguments in them address sending 21 by the first server. 22 Tell me what's different about those

Page 62 1 arguments, if anything, related to sending by the 2 first server. 3 (Pause.) 4 A. Those words -- the words are different. 5 The claim is different. In one case we're talking 6 about a URL. In the other case we're talking about 7 the -- in the current case we're talking about first 8 content identifier. 9 However, the role-based construction 10 argument is similar between the -- 11 BY MR. ROBINSON: 12 Q. It's the same argument, right? 13 A. Similar. 14 Q. Okay. We can go around it again. 15 Tell me what's substantively different 16 about the argument that you make about whether or 17 not a first server sends something? 18 MS. O'BRIEN: Objection, form. 19 A. Well, in one case we're sending the URL; 20 the other case, we're sending a first content 21 identifier. 22 ///	Page 64 1 proxy server 17 receives a response, it's operating 2 in the role of a client, not a server, and 3 therefore, the proxy server can't satisfy the web 4 server recited in claim 1, correct? 5 MS. O'BRIEN: Objection, form. 6 A. Under role-based constructions, that's 7 fair. 8 BY MR. ROBINSON: 9 Q. Okay. And so in paragraph 184 for 10 the '622 declaration, it's the same argument, right? 11 A. It's a very similar argument. 12 Q. Tell me how that argument differs from 13 the one that we just summarized for the '826 patent. 14 A. Again, it's similar. It's all based on 15 the fallacy of the role-based constructions being 16 appropriate and the role of this particular element 17 17 in the network being at some points in time a 18 client and at other points in time a server under 19 role-based construction. 20 Q. So with respect to receiving the first 21 content from the web server, the argument between 22 these two is identical, that proxy server 17 can't
Page 63 1 BY MR. ROBINSON: 2 Q. Does your argument address that 3 difference? 4 A. It's inherent in the discussion of the 5 claim. 6 Q. Does what is being sent impact the role 7 in which the proxy server 18 [sic] is operating in 8 any way, shape or form that you have articulated in 9 your declaration? 10 A. No. 11 Q. Okay. Let's skip ahead one more page, 12 heading C. 13 A. Yes. 14 Q. Paragraphs 219 to 222 in the '826 15 declaration address limitation of the first server 16 receiving the first content from the web server. In 17 the '622 declaration, paragraphs 182 to 185 address 18 the limitation in the '622 patent of the first 19 server receiving the first content from the first 20 web server. 21 The thrust of the argument, beginning at 22 paragraph 221 in the '826 declaration, is that when	Page 65 1 be a server because during this step it's receiving 2 and is therefore operating as a client, correct? 3 A. Correct. 4 Q. Okay. Let's skip ahead one more page to 5 heading D, one more page in both. 6 In the '826 declaration, paragraphs 223 7 to 229 are addressing the limitation of a list of IP 8 addresses stored in the first server. 9 A. Is that a question? 10 Q. Yes. 11 Do you see that? 12 A. I see that. 13 Q. Okay. Is there a difference between a 14 group of IP addresses and a list of IP addresses? 15 A. At this level of abstraction, no. 16 Q. What's the difference in the level of 17 abstraction? 18 A. A list has a particular meaning to a 19 POISA. For example, a link list is a type of 20 software structure. And at this level of 21 abstraction, a list is just a collection of IP 22 addresses. It doesn't have -- it doesn't have

Page 66 1 implied structure. 2 (Pause.) 3 THE WITNESS: Is there a question 4 pending? 5 BY MR. ROBINSON: 6 Q. Is any of your -- do any of your 7 arguments from paragraphs 223 to 229 depend on 8 whether the IP addresses are in a list versus a 9 group? 10 (Pause.) 11 A. The structure of Kocherlakota is a 12 requirement of Kocherlakota; however, the 13 argument -- or the opinion expressed here regarding 14 disclosure for prior art purposes does not depend on 15 that particular structure of Kocherlakota. 16 BY MR. ROBINSON: 17 Q. Okay. One more page ahead in the '826 18 declaration, starting at paragraph 230. 19 A. Yes. 20 Q. That argument addresses selecting an IP 21 address from the list according to a criterion, 22 correct?	Page 68 1 Q. Okay. And, in fact, the argument 2 spanning paragraphs 230 to 251 in the '826 3 declaration is essentially the same as the argument 4 in the '622 declaration spanning paragraphs 188 to 5 208, correct? 6 MS. O'BRIEN: Objection, form. 7 A. No. 8 BY MR. ROBINSON: 9 Q. How do they differ? 10 A. They're addressing different claim 11 language, different patents. 12 Q. How do the substantive arguments differ 13 in terms of what Kocherlakota allegedly does not 14 disclose? 15 MS. O'BRIEN: Objection, form. 16 A. Well, Kocherlakota does not change 17 between these two documents. What's changed is the 18 claim language that's being addressed and the patent 19 that's being addressed. 20 BY MR. ROBINSON: 21 Q. One of which selects an IP address from 22 the group and one of which selects an IP address
Page 67 1 A. Yes. 2 Q. Okay. And at page 88 of the '622 3 declaration, paragraph 190, there's another argument 4 that addresses selecting, in response to the 5 receiving of the first URL from the first client 6 device, an IP address from the group. 7 Do you see that? 8 A. Yes. 9 Q. All right. And if you scan ahead to 10 subheading 1 on page 108 of the '826 declaration, 11 that's the same subheading as is on page 90 of 12 the '622 declaration, correct? 13 A. Yes. 14 Q. And on page 109 of the '826 declaration, 15 that is the same subheading that is on page 91 of 16 the '622 declaration, correct? 17 A. Yes, the subsection names are the same. 18 Q. Okay. And the same is true of the 19 subsection name that appears on page 110 of the '826 20 declaration and page 93 of the '622 declaration, 21 correct? 22 A. Yes.	Page 69 1 from the list? 2 MS. O'BRIEN: Objection, form. 3 A. Is that a question? 4 BY MR. ROBINSON: 5 Q. Yes. The '622 selects it from a group, 6 and the '826 selects it from a list, correct? 7 MS. O'BRIEN: Objection, form. 8 A. Can I have the... 9 (Pause.) 10 BY MR. ROBINSON: 11 Q. I tell you what, I can be more specific. 12 Let's start at paragraph 234 of the '826 13 declaration. Your opinion expressed there is that 14 proxy server 17 does not, quote, select a proxy 15 server, but merely applies an applet where the 16 selection has already been predefined. 17 Do you see that, sir? 18 A. Sorry, I was on a different page. Where 19 are you? What paragraph? 20 Q. Paragraph 234 of the '826 declaration. 21 A. 234. Yeah. I'm at 234. 22 Q. Okay. Your opinion expressed there is

Page 70 1 that proxy server 17 does not select a proxy server, 2 but merely applies an applet. 3 Do you see that, sir? 4 A. I do. 5 Q. Okay. Let's flip back to paragraph 192 6 of the '622 declaration. 7 A. 192. I'm there. 8 Q. Do you see in the last sentence of that 9 paragraph, sir, where you express your opinion in 10 the '622 declaration that proxy server 17 does not, 11 quote, select a proxy server, but merely applies an 12 applet? 13 A. Yes. Again, Kocherlakota has not changed 14 between these two documents. 15 Q. And, in fact, the argument about what's 16 different between Kocherlakota and the claims has 17 not changed between these documents, on this point, 18 at least, has it? 19 MS. O'BRIEN: Objection, form. 20 A. Well, the documents say what they say, 21 unless you'd like me to go through sentence by 22 sentence.	Page 72 1 selection is predefined as opposed to the proxy 2 server making it, correct? 3 A. Yes. Again, Kocherlakota hasn't changed. 4 Q. Okay. And, in fact, these are making the 5 same argument as to what Kocherlakota is lacking as 6 it's compared to the claims? 7 MS. O'BRIEN: Objection, form. 8 A. Well, the documents say what they say. 9 This expression of what Kocherlakota is teaching is 10 the same because the document hasn't changed. 11 BY MR. ROBINSON: 12 Q. Okay. Let's skip ahead to paragraph 287 13 of the '826 declaration and paragraph 223 of 14 the '622 declaration. 15 A. 286, and what was the other one? 16 Q. 287 and 223. 17 A. 287 and 223. I'm there. 18 Q. These are both addressing the Cohen or 19 Cohen prior art reference, correct? 20 A. They are. 21 Q. And Cohen hasn't changed either, has it? 22 A. Not to my knowledge.
Page 71 1 BY MR. ROBINSON: 2 Q. Well, the phrases I just read to you are 3 identical, aren't they, sir? 4 A. Yes. Again, Kocherlakota has not changed 5 between these two documents. 6 Q. Okay. And sticking with paragraph 192 in 7 the '622 declaration for a moment, the 8 second-to-last sentence ends by saying that: which 9 proxy servers are to be used for a particular URL is 10 made before the request comprising the first, slash, 11 second URL is received. 12 Do you see that? 13 A. Yes. 14 Q. Okay. And then in paragraph 234 of 15 the '826 declaration, it says: the proxy server 17 16 does not select a proxy server, but merely applies 17 an applet where the selection has already been 18 predefined. 19 Do you see that? 20 A. Yes. 21 Q. So the thrust being that no selection is 22 made because it merely applies an applet, and the	Page 73 1 Q. Okay. So moving ahead to paragraph 225 2 in the '622 declaration. 3 A. Yes. 4 Q. The argument there is that -- well, 225 5 to 226 -- that Cohen's proxy redirector 104 is 6 operating in the role of a client, not a server, and 7 therefore, under the purely role-based 8 constructions, it can't be a server; is that 9 correct? 10 A. The paragraphs say what they say. I'm 11 not sure what your question is. 12 Q. And the paragraph -- so paragraph 226 13 says that: under the purely role-based 14 constructions, proxy redirector 104 cannot be a 15 server during performance of this method step 16 because, in the preceding sentence, it's operating 17 in the role of a client, correct? 18 A. Right. 19 Q. Okay. And referring back to the '826 20 declaration, looking at paragraphs 296 to 297, 21 especially in paragraph 296, the argument is that 22 Cohen's proxy redirector 104 would function in the

Page 74 1 role of a client, and so cannot satisfy the server 2 of claim 1, correct? 3 MS. O'BRIEN: Objection, form. 4 A. During the method steps recited in 5 limitations 1d and c, proxy redirector 104 is 6 operating in the role of a client under the purely 7 role-based constructions. Therefore, proxy 8 redirector 104 would meet both of Petitioner's 9 constructions of the disputed claim terms. 10 Petitioner fails to establish that proxy redirector 11 104 is a server as opposed to a client device under 12 the purely role-based constructions. 13 BY MR. ROBINSON: 14 Q. Is that the entirety of your answer, sir? 15 A. So as shown in paragraph 295, Cohen does 16 not disclose a first server as recited in the 17 preamble of claim 1 under the purely role-based 18 constructions. 19 Q. So ultimately, that conclusion is based 20 on the same argument that was made in the '622 21 patent, that proxy redirector 104 operates in the 22 role of a client in some aspects and so would not	Page 76 1 A. Correct. 2 MR. ROBINSON: Okay. We've been 3 going almost another hour. Let's take another 4 quick break, maybe 10 minutes? 5 THE STENOGRAPHER: Off the record. 6 (Recess taken, 11:06 a.m. to 7 11:15 a.m. PST) 8 THE STENOGRAPHER: Back on the 9 record. 10 BY MR. ROBINSON: 11 Q. Dr. Williams, what is DNS resolution? 12 A. It's a resolution of an address that is 13 typically a mnemonics to an absolute IP address. 14 Q. When you say an address, typically a 15 mnemonics, is that what is commonly referred to as 16 a URL? 17 A. Yes. 18 Q. Or a web page? 19 A. Yes, for example, Google.com and the DNS 20 service would resolve to a particular IP address, 21 204.198.52.6. 22 Q. And what does resolve mean in that
Page 75 1 qualify as the first server, correct? 2 MS. O'BRIEN: Objection, form. 3 A. Well, again, Cohen has not changed 4 between these two documents, so how Cohen works in 5 its -- its -- and proxy redirector 104's aspect with 6 regards to the claims, is -- is -- has not changed 7 in this period of time. So Cohen hasn't changed the 8 role-based construction -- assumption has not 9 changed. 10 BY MR. ROBINSON: 11 Q. So Cohen's disclosure is the same between 12 these two declarations, correct? 13 A. What's discussed in 295, 296 and 297 with 14 regards to the disclosure of Cohen and the 15 interpretation of Cohen's proxy redirector 104 has 16 not changed in this period of time. 17 Q. Okay. 18 A. With regards to the role-based 19 construction. 20 Q. Okay. And the role-based constructions 21 and your disagreement with them also has not changed 22 between these two declarations, correct?	Page 77 1 context? 2 A. It's being referenced between the 3 Google.com and the particular numbers of the IP 4 address. 5 Q. So when you -- when you say resolved in 6 that context, for example, a user may type 7 Google.com into their browser, and at some server, 8 that Google.com would be resolved or correlated to 9 the IP address to retrieve Google.com? 10 A. Yeah, I think the appropriate term is 11 de-referenced, so there's -- it's looked up 12 between -- there's a lookup process between 13 Google.com and the particular number of IP version 14 4. 15 Q. Okay. And DNS is not -- DNS resolution 16 is not required to store IP addresses, is it? 17 A. I don't understand the question. You 18 mean at the DNS server? 19 Q. On any computing device. So if a 20 computing device receives IP addresses, it can store 21 them, correct? 22 A. I don't understand the question. You

Page 78 1 mean in the process of de-referencing? 2 Q. I mean independent of DNS resolution, a 3 device can store IP addresses, can't it? 4 A. You mean can a computing device store 5 Google.com or an IP version 4 address? Is that your 6 question? 7 Q. Well, let's call Google.com the URL, and 8 let's call the IP address the sequence of numbers. 9 A. Okay. 10 Q. So a computing device can store IP 11 addresses even without DNS resolution, can't it? 12 A. By store, you mean put it in memory, put 13 that information in memory? 14 Q. Sure. 15 A. Can I have a clean question? I don't 16 understand the question. 17 Q. A computing device can store IP addresses 18 even without DNS resolution, correct? 19 A. Store in memory, yes. 20 Q. Okay. And a computing device can receive 21 IP addresses through other means besides DNS 22 resolution, correct?	Page 80 1 resolution? 2 A. Yes. 3 Q. Okay. And -- 4 A. By "go to that," you mean open -- 5 Q. Retrieve the IP address. 6 A. No. Receive the information at that IP 7 address. 8 Q. Okay. And a device could receive a list 9 of IP addresses in other ways too, couldn't it? 10 A. In ways other than what? 11 Q. In ways other than a user typing in an 12 individual IP address. 13 A. I don't understand the question. 14 Q. A user could type in a list of -- 15 A. In a browser -- 16 Q. -- IP addresses, correct? 17 A. In a browser window, typically you only 18 enter one IP address, not a list of IP addresses. 19 Q. Outside of a browser window, a user could 20 store a list of IP addresses on a computer, couldn't 21 it? 22 A. Can a list of -- can a list stored on a
Page 79 1 A. Yes. You mean -- you mean just receive 2 the information, not process it in any particular 3 way? 4 That's how I'm interpreting your 5 question. 6 Q. Okay. A computing device or browser can 7 use an IP address even without DNS resolution, 8 correct? 9 A. So is your question can I open a browser 10 and type in an IP address and have that browser 11 obtain the information on the server that represents 12 that IP address? 13 Q. Okay. If you want to answer that 14 question, go for it. It's a good start. 15 A. I'm just trying to understand your 16 question. I think that's what you're asking me. 17 Is that what you're asking? 18 Q. That's what I'm asking you now. 19 A. Yes. 20 Q. Okay. So a user can open a browser, type 21 in a URL -- or sorry, can type in an IP address and 22 can go to that without having to go through DNS	Page 81 1 computer contain IP addresses? Yes. 2 Q. Okay. And a list of IP addresses could 3 be sent to a computer outside of a browser window, 4 couldn't they? 5 A. A list of IP addresses can be sent to 6 another computer without using a browser program, 7 yes. 8 Q. And the computer to which that list is 9 sent could store the list of IP addresses, correct? 10 A. Yes. 11 MR. ROBINSON: All right. Pass the 12 witness. 13 MS. O'BRIEN: Can we take a short 14 five-minute break and reconvene at -- it will 15 be 28 after, according to my clock. 16 MR. ROBINSON: Sounds good. 17 MS. O'BRIEN: Thank you. 18 THE STENOGRAPHER: Off the record. 19 (Recess taken, 11:23 a.m. to 20 11:28 a.m. PST) 21 THE STENOGRAPHER: Back on the 22 record.

Page 82 1 MS. O'BRIEN: I have no questions for 2 the witness. But thank you very much for your 3 time today, Dr. Williams. 4 THE WITNESS: You're welcome. 5 (Time noted: 11:29 a.m. PST) 6 --000-- 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	Page 84 1 I HEREBY CERTIFY that I have read this 2 transcript of my deposition, and that this 3 transcript accurately states the testimony given by 4 me, with the changes or corrections, if any, as 5 noted. 6 7 8 9 10 X _____ 11 TIM A. WILLIAMS PhD 12 13 14 15 16 17 18 19 20 21 22
Page 83 1 C E R T I F I C A T E 2 3 I, MICHAEL E. MILLER, FAPR, RDR, CRR, Notary 4 Public, do hereby certify: 5 That TIM A. WILLIAMS PhD, the witness whose 6 deposition is hereinbefore set forth, was duly sworn 7 by me and that such deposition is a true record of 8 the testimony given by such witness; 9 I further certify that I am not related to any 10 of the parties to this action by blood or marriage, 11 and that I am in no way interested in the outcome of 12 this matter. 13 IN WITNESS WHEREOF, I have hereunto set my 14 hand on December 20, 2024. 15 16  17 Michael E. Miller 18 Fellow of the Academy of Professional Reporters 19 Registered Diplomate Reporter 20 California CSR #13649 21 22	Page 85 1 ERRATA SHEET FOR THE TRANSCRIPT OF: 2 CASE NAME: CASE IPR2024-00126 3 DEP DATE: DECEMBER 19, 2024 4 DEPONENT: TIM A. WILLIAMS PhD 5 Pg. Ln. Now Reads Should Read Reason 6 _ _ _ _ _ 7 _ _ _ _ _ 8 _ _ _ _ _ 9 _ _ _ _ _ 10 _ _ _ _ _ 11 _ _ _ _ _ 12 _ _ _ _ _ 13 _ _ _ _ _ 14 _ _ _ _ _ 15 _ _ _ _ _ 16 _ _ _ _ _ 17 _ _ _ _ _ 18 _ _ _ _ _ 19 _ _ _ _ _ 20 21 X _____ 22 TIM A. WILLIAMS PhD

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