

Deposition Transcript

Case Number: IPR2024-00497

Date: November 13, 2024

In the matter of:

CISCO SYSTEMS, INC. v UMBRA TECHNOLOGIES LTD.

DR. A.L. NARASIMHA REDDY

**CERTIFIED
COPY**

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

CISCO SYSTEMS,	)	Case No.
INC.,	)	IPR2024-00497
	)	
Petitioner,	)	U.S. Patent No.
	)	10,630,505
v.	)	
	)	
UMBRA	)	
TECHNOLOGIES	)	
LTD.,	)	
	)	
Patent Owner.	)	

A deposition of DR. A. L. NARASIMHA
REDDY was taken pursuant to notice before
Joanne Bryan, RPR, CRR, via videoconference,
on Wednesday, November 13, 2024, beginning at
10:00 a.m.

Page 2 1 APPEARANCES: 2 3 PATRICK D. MCPHERSON, ESQ. PATRICK MULDOON, ESQ. Duane Morris LLP 4 901 New York Avenue N.W. Suite 700 East 5 Washington, D.C., 20001 (202) 776-5214 6 pdmcperson@duanemorris.com PCMuldoon@duanemorris.com 7 For the Petitioner 8 JOEL GLAZER, ESQ. Devlin Law Firm LLC 9 1526 Gilpin Avenue Wilmington, Delaware 19806 10 (302) 449-9010 jglazer@devlinlawfirm.com 11 For the Patent Owner 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 3 1 I N D E X 2 TESTIMONY OF PAGE 3 DR. A. L. NARASIMHA REDDY 4 By Mr. Glazer 4 5 6 E X H I B I T S 7 NAME DESCRIPTION PAGE 8 Exhibit 1006 United States Patent Application 9 Publication No. US 2010/0275017 A1 10 Iyer 21 11 Exhibit 1005 United States Patent No. US 12 10,177,957 B1 Hankins 42 13 14 15 16 17 18 19 20 21 22 23 24 25
Page 4 1 THE COURT REPORTER: The 2 parties and their counsel agree that 3 while I am a licensed court reporter, the 4 witness may be in a state where I am not 5 licensed. The parties stipulate that 6 this deposition may be taken before me. 7 If any party does have an objection to 8 this manner of reporting or anything 9 stated above, please state so now. 10 Hearing none, we can proceed. 11 The attorneys appearing in 12 this deposition acknowledge that I am not 13 physically present in the deposition 14 room, that I will be reporting this 15 deposition remotely, and that I will 16 administer the oath to the witness 17 remotely. 18 DR. A. L. NARASIMHA REDDY, 19 having first been duly sworn, was 20 examined and testified as follows: 21 BY MR. GLAZER: 22 Q. Good morning, Doctor. 23 A. Good morning. 24 Q. Could you please provide your 25 full name for the record?	Page 5 1 A. Sure. Narasimha Reddy 2 Annapareddy. 3 Q. Dr. Reddy? Am I pronouncing 4 that right? 5 A. Yeah. 6 Q. Okay, great. Have you ever 7 been deposed before, Dr. Reddy? 8 A. Yes. 9 Q. About how many times? 10 A. Probably 20, 20, more than 20 11 times. 12 Q. Okay. So this is old hat for 13 you. But just to make sure we're all on the 14 same page, I'm going to go over some of the 15 ground rules. I'm sure you've heard these 16 almost two dozen times now, but I'm just 17 going to go over them again just so we're 18 all on the same page. 19 I'm sure your counsel spoke 20 with you about this, but you understand that 21 you're here today to testify with respect to 22 two different matters: IPR 2024-00270 and 23 IPR 2024-00497. Correct? 24 A. This is regarding two patents. 25 Yes. 505 and 595. Yes.

Page 6 1 Q. Great. And you understand 2 that I'll be asking you questions today and 3 to the extent that you understand those 4 questions and can answer them, you will 5 provide answers to the questions. Right? 6 A. Yes. 7 Q. Great. And you understand 8 that your counsel may object to a question, 9 but unless you're explicitly instructed to 10 not answer the question, I will expect an 11 answer. Okay? 12 A. Yes. 13 Q. Great. And your answers have 14 to be verbalized, so, you know, shaking your 15 head, nodding your head are not going to be 16 good enough for this record. We're going to 17 need words. Okay? 18 A. Sure. 19 Q. Great. If my questions are 20 ever unclear, please let me know. I'm happy 21 to clarify or re-ask the question. ~~I want~~ 22 to make sure that the answer you're 23 providing is to the question that you 24 understand. Does that make sense? 25 A. Yes.	Page 7 1 Q. And you understand your 2 testimony today is under oath? 3 A. Yes. 4 Q. We'll take breaks as needed. 5 If you ever need a break, please just ask 6 me. The only exception is if we're in the 7 middle of a question, then I would ask that 8 you answer the question before we take the 9 break. Is that all right? 10 A. Okay. 11 Q. And lastly, I just have to ask 12 this because we're remotely. Is there 13 anyone else in the room with you or are you 14 in contact with anyone else right now other 15 than who's on this call? 16 A. Other than my dog, Gandof, who 17 is here. 18 Q. I love that name. And if that 19 changes at all throughout the deposition, 20 you'll let me know. 21 A. I will. And if he needs to go 22 outside, I may just have to take a break and 23 open the door for him. 24 Q. I may have to do the same, so 25 that's totally fair.
Page 8 1 A. Okay. 2 Q. How did you prepare for 3 today's deposition? 4 A. I went over the documents. 5 Q. Which documents specifically? 6 A. The 505 patent, 595 patent to 7 my -- my reports for those patents. And 8 maybe other things as well. 9 Q. I apologize if I take some 10 time between your answer and my next 11 question. I'm just taking notes on what you 12 say. I promise I'm paying attention. 13 Did you have conversations 14 with any counsel? 15 A. Yes, I have. 16 Q. And without getting into 17 specifically what you talked about, who did 18 you speak with? 19 A. With two Patricks. Muldoon 20 and McPherson. 21 Q. Great. Thank you. And about 22 how long did you spend preparing? 23 A. Probably -- I don't know. 24 Four to eight hours, probably, maybe more. 25 Q. Do you have any notes with you	Page 9 1 right now from those conversations? 2 A. No. 3 Q. Any annotated documents -- 4 A. No. 5 Q. -- or anything like that? 6 A. No. 7 Q. Okay. I'd like to start with 8 your declaration. For the purposes of 9 exhibit marking, I'm just going to refer to 10 document exhibit numbers in the 595 patent 11 IPR. To the extent that I will be using an 12 exhibit that is not in the 595 IPR, I'll 13 make sure to make that clear, but exhibit 14 numbers will be to that specific IPR. So 15 I'm going to share my screen -- 16 MR. McPHERSON: Dr. Reddy, do 17 you have clean copies of the documents 18 with you? 19 THE WITNESS: I do. 20 MR. McPHERSON: Joel, last 21 time we did the deposition, I guess 22 whoever taking it from your team 23 stipulated that he could just use the 24 clean copies. If you did want to share 25 your screen -- because it gets awkward

Page 10 1 trying to share the screen and looking 2 back and forth, so whatever you want to 3 do, but he's prepared -- he has clean 4 paper copies there -- 5 THE WITNESS: I don't have 6 paper copies. I want to be clear. I 7 have clean copies on my computer. 8 MR. MCPHERSON: Okay. 9 Whichever's easier to do. 10 MR. GLAZER: That's fine. 11 BY MR. GLAZER: 12 Q. As long as the versions that 13 are on your computer are as they were filed 14 and have no annotations or anything like 15 that. Is that right? 16 A. Yeah. 17 Q. So we'll do it this way. So 18 we'll start with Exhibit 1003 from the 595 19 patent IPR. 20 A. Okay. You may want to just 21 tell me what the -- is that my declaration? 22 Q. That is exactly right. Yes. 23 A. Okay. 24 Q. Did you review this in 25 preparation for today?	Page 11 1 A. Yes. 2 Q. Great. If you could please go 3 to paragraph 60, page 24. 4 A. Page 24, you said? 5 Q. Yes. Just let me know when 6 you're there. 7 A. Okay. I'm on page 24. 8 Q. Okay. And could you just in 9 your own words describe to me what this 10 section of your report is addressing? 11 A. So you're talking about 12 paragraph starting from 60? 13 Q. Yes. 14 A. Okay. Let me take a look. 15 This is under the state of the art 16 description for the -- for the report? 17 Q. Yes. And specifically the 18 subsection 1 -- subsection 51. 19 A. So here we're talking about 20 previous prior art here. They're talking 21 about tunnels. 22 Q. When you prepared this section 23 of your report, what documents did you 24 review to -- to prepare this discussion? 25 A. You're talking for today or
Page 12 1 you're talking about when I filed the 2 declaration? 3 Q. When the declaration was 4 originally drafted. 5 A. I think the documents are 6 listed as part of the declaration. Let me 7 make sure. I typically list all the 8 documents here. They should be in the 9 beginning somewhere. 10 Q. And just to be clear, I 11 understand that you do list all documents 12 that you reviewed to prepare this 13 declaration. I'm saying specifically for 14 this subsection of the report. 15 A. So I'm obviously using what is 16 known at the time, what I'm expecting a 17 person of ordinary skill would know at the 18 time, and some of these patents were -- 19 probably came through the discussions. 20 Q. Discussions with who? 21 A. Discussions from the -- I'm 22 sure this is probably -- this document -- 23 this prior art stuff was probably supplied 24 by the counsel. 25 Q. Did you review the 595 patent	Page 13 1 or the 505 patent in preparing this section 2 of your report? 3 A. Can you repeat that question? 4 Q. Sure. When you prepared this 5 subsection of the report, subsection 51 6 titled Communication Tunnels, did you 7 analyze the 595 patent and 505 patent to 8 prepare this section? 9 A. Yes. I mean, obviously we 10 would have to see what those patents are 11 talking about in order to provide that 12 proper background, yes. 13 Q. Did you provide that analysis 14 somewhere in your report with respect to 15 communication tunnels? 16 A. I thought we were just going 17 over that. Didn't you ask me to look at 18 section 60 -- I mean -- 19 Q. Sure. So to clarify, I asked 20 if you had analyzed them to prepare this 21 section and now I'm asking if you provided 22 that analysis in your report. 23 A. I'm not sure I'm understanding 24 the question. 25 Q. Sure. So you say that you

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1 looked at the 595 patent and 505 patent to
2 prepare this section on communication
3 tunnels. I'm asking if you explicitly
4 provided the analysis you performed in this
5 report.
6 A. So this is a background
7 section and it is describing some of the
8 limits of the -- regarding tunnels here.
9 Q. Okay. And this is based only
10 on prior art -- correct -- or alleged prior
11 art?
12 A. This is based on the prior art
13 knowledge of somebody who should be on the
14 -- what the skill and the art at the time.
15 Q. So the first line, "The use of
16 tunnels was well-known in the art," could
17 you please provide your understanding of
18 what a tunnel is at the time of the
19 inventions?
20 A. Yes. A tunnel can be -- can
21 be used for lots of different reasons. For
22 example, like -- let me give you an example
23 and that would be probably easy to
24 understand.
25 Let's say we have a system

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1 tunnel you encapsulate a packet. On the
2 other end of the tunnel you decapsulate the
3 packet.
4 Q. Okay. And does the
5 encapsulation happen to be ingress point?
6 A. Ingress point of what?
7 Q. Of the tunnel.
8 A. It could be, and it could be
9 depending on how things are constructed.
10 You could construct tunnels out of tunnels,
11 tunnels inside tunnels. So there are lots
12 of different complicated ways of doing
13 things, so it would depend on the specific
14 scenarios.
15 Q. Okay. Specifically for the
16 595 patent and the 505 patent, where would
17 encapsulation occur?
18 A. Can you repeat the question?
19 Q. Sure. Specifically for the
20 challenged patents that we're talking about,
21 the 595 and the 505, where would
22 encapsulation occur in order to use the
23 tunnel?
24 MR. MCPHERSON: Object to the
25 form of the question.

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1 with IP6 and wants to talk to another system
2 with IP6 address and they're going on public
3 internet that may not be using IP6
4 everywhere so they may not understand IP6
5 addresses. So in order for these two
6 systems to talk to each other, you may
7 create a tunnel that has IP4 headers and you
8 will encapsulate IP6 packet within an IP4
9 packet. Tunnel is through the IP4 internet
10 and when it gets to the other end you,
11 decapsulate it and do the IP6 packet to the
12 end system. So that would be a tunnel.
13 So tunnels are used for
14 various reasons. One of the reasons that
15 I'm just explaining to you here would be to
16 deal with protocol differences in different
17 parts of the network.
18 Q. Got it. That's helpful.
19 Thank you. So in order to encapsulate, what
20 are some of the, I'll say -- what does a
21 tunnel comprise in order to do that
22 encapsulation? What are the parts of a
23 tunnel? Does that make sense?
24 A. Typically you have two ends to
25 a tunnel, so one tunnel -- one end of the

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1 THE WITNESS: I'm not sure I
2 understand the question. So if you have
3 something specific we may want to refer
4 to the patent and we can get to that.
5 BY MR. GLAZER:
6 Q. I'm really just trying to
7 understand encapsulation as a concept at the
8 time of the invention. Right? So an aspect
9 of the tunnel is that it transfers
10 encapsulated data. Is that correct?
11 A. That's correct.
12 Q. Okay. And encapsulation has
13 to occur before it travels through the
14 tunnel. Correct?
15 A. Yes.
16 Q. So my question is where would
17 encapsulation occur.
18 A. Yeah, I already mentioned. So
19 wherever encapsulation could occur, the
20 beginning of the tunnel, and then that
21 packet could be re-encapsulated, but it's
22 going through a second tunnel, for example,
23 so encapsulation can happen at multiple
24 locations.
25 Q. And when you say

Page 18 1 "re-encapsulation," does that mean it was 2 unencapsulated at some point after entering 3 the tunnel? 4 A. It could be, and it could also 5 be that a tunnel gets re -- goes through 6 another tunnel at some point in time 7 depending on the scenarios. 8 Q. Okay. Is there ever an 9 instance where encapsulation would be -- an 10 encapsulation would replace a different 11 encapsulation? 12 A. Sure. Sure. You could have 13 a -- let's say for example you could stitch 14 together a series of tunnels, so you would 15 go from Tunnel 1 to the end of Tunnel 1 and 16 you would decapsulate it and then 17 re-encapsulate it as you enter Tunnel 2 to 18 go to the tunnel through to -- tunnel 19 through to get to the end of the Tunnel 2. 20 Q. Okay. And looking back at 21 paragraph 60 in your declaration, ~~is that~~ 22 what's being shown here in figure 4 of Iyer? 23 MR. MCPHERSON: Object to the 24 form of the question. 25 THE WITNESS: Okay. Could you	Page 19 1 please ask the question again? 2 BY MR. GLAZER: 3 Q. Sure. So you mentioned that 4 re-encapsulation could occur after it leaves 5 one tunnel and enters another tunnel. So 6 what specifically I'm looking at here is 7 paragraph 60, figure 4 at the bottom of 8 page 24. Do you see that? 9 A. Right. 10 Q. And Tunnel 1, the purple line. 11 A. Right. 12 Q. Is that an instance where a 13 packet would be unencapsulated and then 14 re-encapsulated while traveling through that 15 tunnel? 16 A. It's potentially possible 17 because of the -- depending on how things 18 are implemented, it is possible. For 19 example, the device 400b to I think the 20 controller 200 here, so you would have a 21 tunnel and then that 200 could decapsulate 22 it and re-encapsulate it as it goes from 200 23 to 400a, for example. 24 Q. Okay. So 600b would be the 25 first tunnel -- and I'm sorry. I'm trying
Page 20 1 to make sure I understand what you're 2 saying. So if I say something wrong, please 3 feel free to correct me. 4 The data packet is traveling 5 through 600b, it's unencapsulated at 200 and 6 then re-encapsulated to travel through 600a 7 at which point it reaches 400a. Is that 8 right? 9 A. That could be, but this would 10 be effectively as if there is a direct 11 tunnel from 400b to 400a through the 12 controller 200. 13 Q. Right. 14 A. By stitching together two 15 tunnels, yeah, through the control. 16 Q. And that stitching could 17 include de-encapsulation, re-encapsulation? 18 A. That's correct. 19 Q. Thank you. You mentioned in 20 paragraph 60 peer-to-peer tunnels. Is it 21 your understanding that a peer-to-peer 22 tunnel can include intermediate points? For 23 example, item 200 in figure 4, would that be 24 an intermediate point? 25 A. Can you repeat that question?	Page 21 1 I'm trying to look at the figure here and 2 trying to understand what your question is. 3 Q. Sure. I guess it would be 4 better if I just ask it generally first. 5 What is your understanding of a peer-to-peer 6 tunnel? 7 A. Okay. I'll have to look 8 through Iyer because I put this here in 9 codes. It's probably coming from Iyer. 10 Q. Sure. 11 MR. GLAZER: And we'll just go 12 ahead and enter that one. It's Exhibit 13 1006. 14 (United States Patent 15 Application Publication No. US 16 2010/0275017 A1 Iyer marked as Exhibit 17 1006 for identification.) 18 THE WITNESS: Okay. Do you 19 want me to open Iyer? 20 BY MR. GLAZER: 21 Q. Yes, sir. 22 A. Yes, I opened the patent. 23 Q. Great. 24 A. Okay. What was the question? 25 Q. Sure. Based on Iyer, what is

Page 22 1 your understanding of a peer-to-peer tunnel? 2 A. Okay. So I'm going to reed 3 through here to just make sure what that 4 thing is. Constructs access -- so I think 5 here -- yeah, let me just clarify here. 6 This is being talked in the 7 context of wireless networks, and wireless 8 networks have a notion of 9 infrastructure-supported wireless network 10 and a peer-to-peer network. And a 11 peer-to-peer network basically means that I 12 don't need necessarily an access point as an 13 infrastructure to support communication. 14 And most of our laptops now, for example, 15 have wireless capability to be able to do 16 this as well. 17 And so when a wireless node 18 talks to another wireless node without 19 having to go through an access point, for 20 example, it's typically called a 21 peer-to-peer connection. That's probably 22 what the patent is referring to because it's 23 talking about wireless networks here. 24 Q. Okay. What is an access node 25 in the context of Iyer?	Page 23 1 A. So here in this picture -- let 2 me just go back. So that would be -- I want 3 to make sure. I think it's 200. Let me 4 just make sure it is the correct. Yes. So 5 that would be 200 in the figure. 6 Q. What's an example of an access 7 node? 8 A. So access node is the two 400s 9 in this example in the figures. Access 10 nodes are 400a, 400b. I think it's what 11 there were shown here in the picture. And 12 the access point infrastructure node would 13 be the 200 that's the controller. 14 Q. Okay. Would an access node be 15 something like a computer? 16 A. In this example it could be a 17 wireless computer, wireless laptop, it could 18 be a phone, whatever that thing would be, so 19 that would be that, yeah. 20 Q. I apologize. Give me one 21 second. 22 A. I want to be clear here. The 23 Iyer -- I'm just looking at the patent. It 24 anticipates -- I'm sorry. Shouldn't be 25 using the word. Teaches that one or more
Page 24 1 access nodes which provide wireless and wire 2 network services to clients. So they're 3 actually seeing this as a node that actually 4 provides access to wireless services. 5 Q. Okay. Thank you. Dr. Reddy, 6 is it your opinion that the example in Iyer 7 where unwrapping occurs at the intermediate 8 point 200 is an end-to-end tunnel? 9 MR. MCPHERSON: Object to the 10 form of the question. 11 THE WITNESS: Okay. So the -- 12 I want to be careful because this is one 13 of the terms in the claims and whether -- 14 and we have to be mindful of what the 15 inventors think the end-to-end tunnel is 16 and we have to apply those terms here. 17 BY MR. GLAZER: 18 Q. Okay. Keeping that in mind, 19 please proceed. 20 A. Okay. So if that is the case, 21 then we would probably want to go to looking 22 at the prosecution history of the patents 23 because they have kind of defined what 24 this -- what their understanding of 25 end-to-end tunnel is.	Page 25 1 Q. So I want to focus on your 2 report here. The analysis that you provided 3 only discusses Iyer. Correct? 4 MR. MCPHERSON: Object to the 5 form of the question. 6 THE WITNESS: It provides more 7 than Iyer. I'm not sure what you're 8 saying. There's a whole lot of things in 9 the report than Iyer. 10 BY MR. GLAZER: 11 Q. Sure. I'm talking 12 specifically, again, paragraph 60, the 13 discussion Communication Tunnels. 14 A. Paragraph 60 is talking about 15 Iyer, yes. 16 Q. Okay. So I'm asking 17 specifically in the context of Iyer, is it 18 your opinion that this purple line labeled 19 Tunnel 1 represents an end-to-end tunnel? 20 MR. MCPHERSON: Object to the 21 form of the question. 22 THE WITNESS: Okay. So I will 23 need to go back and look at the -- the -- 24 again, as I said, the prosecution history 25 to make sure I applied them correctly

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1 here. So if you want me to take the
2 time, I'd be happy to do that.
3 BY MR. GLAZER:
4 Q. The prosecution history for
5 which patent?
6 A. 505 I think has the -- has
7 end-to-end tunnels.
8 Q. Okay. I think that's a very
9 long document so I'm not sure that would be
10 productive at this moment. But what -- do
11 you have an understanding of what an
12 end-to-end tunnel is without looking at that
13 document?
14 A. So my understanding from --
15 again, this is a little bit of memory
16 because I have to, you know, it's -- I don't
17 have the document in front of me, but --
18 inventors have defined end-to-end during the
19 prosecution history. Would be helpful to
20 look at it.
21 Q. So sitting here -- I just want
22 to confirm. Sitting here right now you're
23 not able to provide me your understanding of
24 an end-to-end tunnel?
25 A. I can tell you what my memory

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1 specifically in the 505 patent IPR.
2 A. Okay. So let me pull that up.
3 I see this in column 33 of 505. That's the
4 first reference I see here with end-to-end.
5 Q. Okay. And does that help you
6 come to an understanding what an end-to-end
7 tunnel is?
8 A. So here I'm trying to read
9 through here. It is one tunnel between
10 EPD-1 and AP-1. This is joined to a second
11 tunnel between AP-1 and EPD-2, so that's
12 what that is. Talking about stitching
13 together tunnels here.
14 And then I'm talking --
15 looking further down, figure 34, this
16 illustrates tunnel -- this variation
17 illustrates an end-to-end GVN tunnel between
18 edges of two LANS. The difference between
19 this variation and 303 is that there is a
20 second AP-2 inserted into the path to
21 represent another joining of tunnels: AP-1
22 to AP-2 and AP-2 to EPD-2.
23 So here it seems like based on
24 this, my understanding would be that
25 end-to-end tunnel is the -- is -- is

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1 says but I don't want to -- I don't want to
2 be -- go on a limb and tell -- rely on my
3 memory. It would be easier to look at the
4 documents.
5 Q. Would just looking at the
6 patent itself help you rather than the whole
7 prosecution history?
8 A. I could try, and I don't know
9 if the end-to-end tunnels are defined in the
10 patent, but I can definitely try.
11 Q. Okay. Let's do that, then.
12 Let's look at Exhibit 1001.
13 A. The 595 patent or 505 patent?
14 Q. 595 patent.
15 A. Okay. Is it okay if I pull it
16 up on my computer here?
17 Q. Yes, please. I've done the
18 same here.
19 A. Okay. Yeah, I don't find
20 anything here that says end-to-end, but --
21 but it is just, you know, within a minute I
22 may not have found it but maybe it is there
23 inside the document.
24 Q. Okay. Let's try reviewing the
25 505 patent, then. This is Exhibit 1001

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1 constructed out of stitching independent
2 tunnels.
3 Q. I'm sorry. Independent what?
4 A. Multiple tunnels.
5 Q. Multiple tunnels. And what
6 specifically in what you just read indicates
7 that it's more than one tunnel?
8 A. Because here, for example, the
9 first on column 33, it says in 15 there's
10 one tunnel between EPD-1 and AP-1 and this
11 is joined to a second tunnel AP-1 to EPD-2,
12 so this is creating a tunnel between EPD-1
13 and EPD-2 by joining two tunnels.
14 And then it's extending the
15 discussion further down to line 29. That's
16 saying that there is a second AP-2 inserted
17 into the part to represent another joining
18 of tunnels: AP-1 to AP-2 and AP-2 to EPD-2.
19 So it's talking about joining tunnels to
20 form an end-to-end tunnel.
21 Q. I want to make sure I
22 completely understand what you're saying.
23 You're saying that there is one tunnel
24 between EPD-1 and AP-1 and this is joined to
25 a second tunnel, AP-1 and EPD-2. You're

Page 30 1 saying that these two sentences combined 2 create a single tunnel? 3 A. That's exactly what this is 4 saying here. If you go further down, it is 5 talking about -- so let me give you the 6 context here. From -- figure 33 illustrates 7 tunnel from LAN to EPD to LAN -- to server 8 AP to EPD to LAN, and then that is 9 explaining how that tunnel is created from 10 EPD-1 to EPD-2, and that's exactly what this 11 is describing here. 12 And in trying -- it clearly 13 says here this variation illustrates an 14 end-to-end tunnel between edges of two LANs 15 via one service AP, and it is showing you 16 how that has created this end-to-end tunnel 17 going from EPD-1 to AP-1 and from there to 18 AP-1 to EPD-2, joining together. 19 Q. We talked earlier about the 20 concept of re-encapsulation. Right? 21 A. Yes. 22 Q. Can you tell whether 23 re-encapsulation occurs in this end-to-end 24 tunnel that's being discussed? 25 A. Let's take a look to see where	Page 31 1 is the case. I don't see a description of 2 encapsulation at all here in this patent. I 3 don't see the word at all. I just did a 4 search through it. 5 Q. Can you tell whether the 6 concept of what re-encapsulation describes 7 is discussed in this patent? 8 A. Based on what this is here, I 9 just read through in column 33, that's -- 10 that's basically what's going on here. 11 Q. Sorry. Can you say 12 specifically where? 13 A. So when you're talking about 14 joining two tunnels, and that's what you 15 expect to happen. 16 Q. So at the end of one tunnel 17 you would expect de-encapsulation? Is that 18 correct? 19 A. So one way to do this exactly 20 what's being described here in this column 21 -- 33 would be is that a packet gets 22 encapsulated at EPD-1 and de-encapsulates at 23 AP-1 and gets re-encapsulated at AP-1 and 24 then de-encapsulated at EPD-2. 25 Q. Would de-encapsulation and
Page 32 1 re-encapsulation occur every time a data 2 packet leaves a tunnel and enters another 3 tunnel? 4 MR. MCPHERSON: Object to the 5 form of the question. 6 THE WITNESS: Can you repeat 7 the question again? 8 BY MR. GLAZER: 9 Q. Sure. Would de-encapsulation 10 occur every time a data packet leaves a 11 tunnel? 12 A. Well, you're asking me whether 13 it always happens, but it would happen 14 generally, so it may be possible to 15 construct things that may not be necessary, 16 but I will need time to think about that 17 stuff. 18 Q. Okay. How about at the time 19 of the -- these inventions, is that 20 something that would have been occurring? 21 A. I mean, in general practice 22 when you join tunnels together, that's what 23 you would expect to happen. 24 Q. Okay. Does encapsulation 25 occur every time a data packet enters a	Page 33 1 tunnel? 2 A. So this could happen at two 3 different places. One, it could happen at 4 the beginning of the tunnel, but it is also 5 possible that the sending host is aware of 6 some of this stuff and can be getting things 7 ready as well, or somebody in between. So 8 depending on implementation it could happen 9 anyways, but the basic idea is the tunnel is 10 expecting the packet to be in certain form, 11 and as long as that packet is in that 12 certain form, it would be okay. 13 Q. So the encapsulation would 14 occur before it actually enters the tunnel? 15 Is that right? 16 A. Before it enters or as it 17 enters. I mean, we could parse those 18 things, but the packet is going -- is 19 expected to be of certain form within a 20 tunnel. 21 Q. Okay. Thank you. So turning 22 back to the 505 patent, Exhibit 1001, EPD-1, 23 do you see that there? We've been 24 discussing it. 25 A. Right.

Page 34 1 Q. Is it your understanding that 2 that stands for endpoint device? 3 A. Let's take a look. Yes. That 4 seems to be the case. 5 Q. And what is an endpoint 6 device? 7 A. So here, I'm looking at figure 8 33. That's what we were just looking at. 9 It seems to be the beginning of a tunnel. 10 Q. I'm sorry. What's on the 11 screen, is that -- 12 A. I'm looking at figure 33 on 13 505. Yes, here, yes. 14 Q. All right. Thank you. And 15 I'm sorry. I don't -- I'm not sure if you 16 answered. 17 A. I answered saying it says at 18 the beginning of this tunnel here EPD-1 19 based on this figure here. 20 Q. Sure. I guess I'm asking more 21 conceptually what is an endpoint device. 22 A. Okay. So let's take a look at 23 what the patent says. So here the -- 24 obviously the data is going from LAN1 going 25 to LAN2, but let's see what the patent says	Page 35 1 about endpoint device. 2 Okay. So here -- at least I'm 3 looking at 505, column 2 -- "Provide a 4 simple endpoint device or software which can 5 be installed by their customers onto their 6 own devices to connect to their service 7 provider's cloud servers." 8 Q. I'm sorry. Which line in 9 column 2? 10 A. I'm reading here about lines 11 17 or so afterwards. 12 So it seems like it could be a 13 device or software. That's what they're 14 saying. But let me read a bit more. Okay. 15 It seems like this endpoint device can do 16 lots of different functions. It's further 17 defined in -- at least mentioned in column 4 18 of 505. It seems like endpoint device could 19 be doing DNS lookups, endpoint device could 20 be doing smart routing. So it has a bunch 21 of functions associated with it. 22 Q. Can you provide an example of 23 an endpoint device, like a specific type of 24 device? 25 A. It could be, for example, a
Page 36 1 Edge Router, seems like, based on what this 2 is, or this could be a DNS server, this 3 could be a -- I need to read further, but 4 this could be -- because based on functions 5 it's providing it could be many number of 6 devices. 7 Q. What are some of the other 8 devices it could be? 9 A. So I just mentioned to you DNS 10 server. And let me see what else it says 11 here. It's very clearly providing cloud 12 services, so this could be an Edge Router. 13 It could be a firewall. It has a bunch of 14 functions here. It says it could perform 15 firewall services. It also seems like it 16 provided tunneling service. So it has 17 multiple functions. 18 Q. Thank you. Earlier when we 19 were discussing tunnels, we discussed the 20 concepts of -- I know we've already, you 21 know, sort of beaten this, but the ideas of 22 encapsulation, de-encapsulation, 23 re-encapsulation. Correct? 24 A. Yes. 25 Q. Could re-encapsulation occur	Page 37 1 within a tunnel between two end points? 2 A. Yeah. I mentioned this 3 already to you before. I could have a 4 tunnel and then somewhere along that tunnel 5 enters another tunnel, in which case that 6 could -- that could happen. So you could 7 take a packet that's encapsulated and put an 8 encapsulation on top of it, if that's what 9 you're asking. 10 Q. So it would leave one tunnel 11 and reenter another tunnel, the data packet. 12 Is that right? 13 A. So that's the description 14 that's -- so when you join two tunnels, that 15 would be the case. That's what we discussed 16 earlier, if that is the question. 17 Q. Okay. Turning back to figure 18 4 of Iyer, paragraph 60 of your declaration. 19 Let me know when you're there. 20 A. Yes. 21 Q. The elements labeled 600b and 22 600a are identified in Iyer as tunnels. 23 Correct? 24 A. What was the question? 25 Q. Sure. Elements 600a and 600b

Page 38 1 of figure 4 in Iyer are identified as 2 individual tunnels. Correct? 3 A. Let me -- let me look through 4 it and see what it says here. 5 Okay. What was the question 6 again? 7 Q. Sure. In figure 4 of Iyer, 8 element 600a and 600b each represent an 9 individual tunnel. Is that correct? 10 A. So I'm reading through Iyer. 11 It says here as shown -- this is in 12 column -- column 2 -- page 2. Sorry. It is 13 in paragraph 24. It says "As shown for 14 access nodes 400a and 400b, tunnel 600a and 15 600b such as the GRE tunnels are established 16 between the access node and controller 200. 17 Such tunnels may be established on a peer -- 18 peer -- peer -- per-access node basis or on 19 a per-network access with one network 20 established -- with one tunnel established 21 for each individualized wireless network." 22 Okay. Now what is the 23 question again? 24 Q. 600a and 600b, that's tunnels 25 plural. Correct?	Page 39 1 A. That's correct. Tunnels. 2 600a, 600b, right. 3 Q. So a data packet traveling 4 from element 400b through 600b and entering 5 element 200, once the data packet reaches 6 200, would it be de-encapsulated? 7 A. As I mentioned before, that 8 would be the case. We're stitching together 9 600b and 600a. You would de-encapsulate it 10 at the controller, re-encapsulate it going 11 onto 600a. 12 Q. Okay. And keeping in mind 13 that de-encapsulation would occur at 200, 14 it's your opinion that this purple line 15 labeled Tunnel 1 represents a single tunnel? 16 A. So effectively that's what is 17 going on. So if you are trying to get to, 18 for example -- yes. You could stitch 19 together an end-to-end tunnel from 400a to 20 400b through the controller by stitching 21 600a and 600b together. 22 Q. So by "stitch together," you 23 mean you would be using two different 24 tunnels to create what you label here as 25 Tunnel 1?
Page 40 1 A. I mean, this is similar to 2 what is being done in 505. We just went 3 over it. That is talking about how EPD-1 4 and AP-1 and AP-1 to EPD-2. This is exactly 5 the same process that's going on. 6 Q. Sure. I'm asking specifically 7 for Iyer, though. 8 A. Right. So that's -- I'm 9 trying to explain it to you. If you know -- 10 we just went over the 505 and I'm trying to 11 tell you this is exactly the same process 12 that's going on. 13 Q. So without talking about 505 14 or 595, I'm asking specifically about Iyer. 15 MR. MCPHERSON: Object to the 16 form of the question. 17 BY MR. GLAZER: 18 Q. So specifically with respect 19 to Iyer, to create what you label as Tunnel 20 1 in paragraph 60 of your report, does that 21 require joining the two different tunnels, 22 600a and 600b? 23 A. That would be one way to do 24 this, but let me just be -- see if Iyer says 25 anything different here. But that would be	Page 41 1 -- in a general practice that would be one 2 way to do it. Let me see if anything more 3 is said here. 4 Okay. So Iyer doesn't 5 specifically say anything more. 6 Q. Okay. Thank you. I'm getting 7 ready to switch gears here and we've been 8 going for about 50 minutes now, so now might 9 be a good time for a ten-minute break and 10 then we'll come back and start on the next 11 topic. 12 A. Sounds good. 13 (Brief break taken.) 14 BY MR. GLAZER: 15 Q. Dr. Reddy, I want to go back 16 to your declaration, Exhibit 1003. 17 A. 595 or 505? 18 Q. 595. 19 A. Okay. 20 Q. Paragraph 139. I'll bring it 21 up here. Let me know when you're there. 22 A. 139, you said? 23 Q. Yes. Page 54. 24 A. Yes. 25 Q. And I'm just going to read it

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1 here. "Hankins discloses that the
2 controller receives a request from a gateway
3 311 (endpoint device) for a list of
4 available servers including tunnel servers
5 (access point server). For example, Hankins
6 discloses that gateway 311, in one logical
7 broadcast domain, may request services
8 available from gateway 321 in another
9 logical broadcast domain."
10 In the context of this
11 paragraph, 139, what do you mean by
12 "services"?
13 **A. Could you say that again?**
14 **Q. Sure. What do you mean by**
15 **"services" in this paragraph?**
16 **A. Okay. So let's take a look at**
17 **what Hankins says. Let me pull it up.**
18 **MR. GLAZER: We might as well**
19 **mark that as 1005 in the 595 patent IPR.**
20 **(United States Patent No. US**
21 **10,177,957 B1 Hankins marked as Exhibit**
22 **1005 for identification.)**
23 **THE WITNESS: Okay. So here**
24 **at least in Hankins in for example column**
25 **8, it talks about a number of services.**

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1 **A. Okay. Hang on. Let me get**
2 **there first. Go ahead.**
3 **Q. You said that Hankins**
4 **discloses that the controller receives a**
5 **request from a gateway 311 for a list of**
6 **available servers. Correct?**
7 **A. Yes.**
8 **Q. And the example you provide is**
9 **that Hankins teaches -- Hankins discloses**
10 **that gateway 311 in one logical broadcast**
11 **domain may request services available from**
12 **gateway 321. Is it your opinion that**
13 **requesting a list of available servers is**
14 **represented in Hankins by requesting**
15 **services?**
16 **A. So typically this is how**
17 **things get done. So typically there is a**
18 **server that provides the services. So if**
19 **you're looking for trying to get some**
20 **service, you wouldn't need to look for that**
21 **server which is providing the service.**
22 **For example, you know, the**
23 **things that we just read through, there's a**
24 **thing called domain name service, and domain**
25 **name service in a network is typically**

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1 **It is talking about web services,**
2 **third-party services, audio services,**
3 **video services, e-mail services, and so**
4 **on and so forth. SMS, voice over IP,**
5 **calendar services, database services,**
6 **domain name services, a whole bunch of**
7 **things. File services.**
8 **BY MR. GLAZER:**
9 **Q. So these all describe a**
10 **capability?**
11 **A. These are basically defining**
12 **or describing bunch of services, yes.**
13 **Number of services.**
14 **Q. So is it your opinion that**
15 **those services -- sorry. Let me phrase this**
16 **a different way.**
17 **So is it your opinion that the**
18 **595's discussion of a list of available**
19 **servers is represented in Hankins by a**
20 **request for services?**
21 **A. Say that again. I'm not sure**
22 **I understood the question.**
23 **Q. Sure. So going back to**
24 **paragraph 139 of your declaration,**
25 **Exhibit 1003 --**

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1 **provided by something called a DNS server,**
2 **which stands for domain name server, service**
3 **server. And so you would look for that**
4 **domain name server in order to get that**
5 **domain name service.**
6 **Q. Is the request to the**
7 **controller for a list of domain name servers**
8 **in Hankins?**
9 **A. Say that again.**
10 **Q. In Hankins, is the request for**
11 **available servers as -- as you're describing**
12 **it the request for DNS servers?**
13 **A. I just read through domain**
14 **name service. Let me just make sure what it**
15 **says there. But I was just giving you that**
16 **in a general context. But let me see what**
17 **it says here in Hankins.**
18 **So it specifies domain name**
19 **services. Let me see what else it lists.**
20 **Q. And you say that's in column 8**
21 **of Hankins?**
22 **A. Yes.**
23 **Q. Which line?**
24 **A. Okay. So it starts here at**
25 **line 22. And it goes on to say here "For**

Page 46 1 example, a server may provide now known or 2 later to be developed service arrangements, 3 derivatives, but not limited to," and lists 4 a whole lot of services. And it has domain 5 name service as one of them. 6 Q. It has domain name service as 7 a service being provided? 8 A. Yes. It's on line 31, for 9 example. Line -- sorry -- 30. 30. 10 Q. Okay. I want to make sure 11 that I'm asking this in the right way. The 12 list that you just provided under column 8 13 starting at line 22 describes the list of 14 services provided by a server. Is that 15 correct? 16 A. That's correct. 17 Q. And you're saying that that 18 teaches the list of available servers of the 19 595 patent. Is that correct? 20 A. No. I think what we're 21 talking about here is Hankins. I'm trying 22 to make sure we understand. Right? So 23 we're talking Hankins here. 24 Q. Sure. So let's go back to 25 your declaration, then, paragraph 139.	Page 47 1 A. Right. 2 Q. Exhibit 1003. 3 A. Okay. 4 Q. Where the example you provide 5 for Hankins teaching of a list of available 6 servers is a request for services. 7 A. Right. 8 Q. So my question is: Is the 9 list of services taught in Hankins, is that 10 teaching the disclosure of the 595 patent 11 list of available servers? 12 A. We could go back and take a 13 look at what 595 says and see if there's an 14 intersection. Let's go take a look at what 15 595 says. 16 Okay. So 595 is talking about 17 at least available service being the access 18 point server. 19 Q. I'm sorry. Could you please 20 tell me where you're looking in the 595 21 patent? 22 A. I'm looking at, let's say, 23 line 3, for example. It says "wherein at 24 least one server among the list of available 25 servers and access points" -- let me just
Page 48 1 rephrase it. In claim 3 it says "wherein at 2 least one server among the list of available 3 servers is an access point server." 4 Q. I'm going to stop sharing for 5 one minute. 6 So to be clear, it's your 7 opinion that the access point server of 8 claim 3 is a service taught by Hankins in 9 column 8? 10 MR. MCPHERSON: Object to 11 form. 12 THE WITNESS: Yes. I think -- 13 so I'm just talking about what are -- you 14 asked me what are the servers -- servers 15 or services discussed in 595 and I just 16 pointed you to what is the service that's 17 pointed there. Right? 18 BY MR. GLAZER: 19 Q. So -- 20 A. Okay. 21 Q. I just want to be clear. An 22 access -- sorry. The access point server in 23 claim 3 of the 595 patent is a service. Is 24 that your opinion? 25 A. So a server provides a	Page 49 1 service. Server can provide multiple 2 services and one server could have, as I 3 mentioned before, a domain name service, 4 firewall service, access point service, 5 bunch of things rolled together into one. 6 Service could be provided by hardware or 7 software depending on implementation. So a 8 server could provide multiple services. 9 Short answer, yes. 10 Q. I understand that a server 11 could provide services. I'm asking 12 specifically about claim 3, an access point 13 server. Is it your opinion that an access 14 point server is a service provided by a 15 server? 16 A. Access point server would be 17 a -- providing a service, yes. 18 Q. But it is not a service 19 itself. Is that correct? 20 A. A server provides a service. 21 Q. Thank you. So going back to 22 paragraph 139 of your declaration, Exhibit 23 1003. 24 A. Yes. 25 Q. Services can be requested.

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1 A. Right.
2 Q. Correct?
3 A. Mmm-hmm.
4 Q. What in the network is
5 deciding which service is ultimately used?
6 A. Well, depends on what the
7 request is and depends on what the user is
8 trying to do. I'll just give you an example
9 just to tell you how this likely works in a
10 normal network.
11 For example, if you go to a
12 browser and type, let's say, www.cnn.com if
13 you want to go to CNN's website to see the
14 news today. What the browser has to do is
15 to somehow get that cnn.com, translate into
16 an IP address. And that would be normally
17 provided by something called a domain name
18 server, and that's a DNS server. And so the
19 browser would go looking for the service.
20 In order to do this, it will go looking for
21 that server which provides that service.
22 So the browser would
23 automatically get that name result, cnn.com,
24 to an IP address and then actually send the
25 packet to the cnn.com to request the web

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1 A. The browser -- so let me back
2 up a little bit. So I'm talking about in
3 general context. So when you are asking for
4 a service in this example, the user is
5 asking for the service to get the web page
6 from CNN. Right? So -- and implicitly
7 number of things has to happen in order for
8 that service to be provided.
9 So the first step of the thing
10 that I mentioned to you is to be able to get
11 the machine server who is going to provide
12 you that cnn.com's web page, and that is
13 going to be done through the domain name
14 services solution. And once you have that
15 IP address result, then you have to make a
16 network connection, and then the network
17 connection brings in the HTTP pages to be
18 able to show you the CNN's web page.
19 So there are a series of
20 services when you type in www.cnn.com that
21 happen. I was just providing you one
22 example of this domain name service, how
23 that would happen.
24 Q. Okay. Let's take one aspect
25 of that whole transaction. The request for

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1 page at cnn.com.
2 So in this example, a service
3 has to find the server in order to get the
4 service, and that service request may
5 originate from user typing something into
6 the request, or explicitly or implicitly
7 services may be requested from that.
8 Q. When you say "browser," do you
9 mean an endpoint device?
10 A. So I'm not -- so the Iyer
11 defines "endpoint device" as something else
12 and this thing would be a different thing.
13 So I don't want to get into the thing, but
14 when you talk -- the browser is on a laptop
15 or a mobile handset.
16 Q. Okay. So the browser --
17 A. It could be on another device
18 that provides, for example, network
19 connectivity.
20 Q. Got it. I apologize. I
21 didn't mean to interrupt you.
22 I want to understand what is
23 doing the decisionmaking. I understand that
24 the browser is doing the decisionmaking,
25 but --

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1 a DNS server, let's say. Does the browser
2 receive a list of all DNS servers that it
3 could use?
4 A. Yes, it is possible. In fact,
5 for -- let's say -- I'm trying to think
6 back, and way back in 2000, typically DNS
7 was used for what is called round robin load
8 distribution. So if CNN decided that it
9 wants its load to be distributed across
10 multiple servers, it could provide multiple
11 DNS -- multiple IP addresses.
12 Q. Does the browser receive the
13 full list of DNS servers, or is it only
14 given the DNS server that it should use
15 based on the round robin that you just
16 described?
17 A. So it might get -- so it might
18 get one and then it might get another one
19 depending on what's going on. If the load,
20 for example -- so it will -- somebody -- it
21 could be -- the decision could be made at
22 various points in time among the choices.
23 And this could -- this happens at various --
24 various levels.
25 Q. I'm sorry. What do you mean,

Page 54 1 "various levels"? 2 A. The choice of service, for 3 example. 4 Q. Levels of what? 5 A. I mean -- so for example when 6 you are trying -- so this is, again, broad 7 context. I'm not talking about any specific 8 to here. Maybe it's -- Patrick is probably 9 saying, "Why is he teaching networking 10 here?" But when you ask for name service, 11 that name service can get resolved at 12 various locations in the network. 13 Q. Okay. But it wouldn't always 14 be the browser that's deciding which server 15 it wants to use. Is that correct? 16 A. I don't see immediately where 17 the browser could decide, but it could 18 decide, but it would be once you get an IP 19 address you're going to make a connection to 20 that IP address. 21 Q. Okay. 22 A. Yeah. 23 Q. So it's actually the reverse 24 of what I said. The browser almost never 25 decides what server it actually uses. Is	Page 55 1 that right? 2 A. I don't want to speculate. It 3 is possible to build a thing that says here 4 are two choices, you could do this, but I 5 don't immediately know where that may be the 6 case or not the case. I don't want to 7 speculate. 8 Q. Okay. Understood. I want to 9 turn to the 595 patent. 10 A. Yes. 11 Q. Claim 15. Sorry. Let me 12 share my screen. 13 So we have the control 14 server's configured to receive a request for 15 a list of available servers. Right? 16 A. Where are you referring to? 17 Q. In claim 15. This would be 18 limitation, I guess, 15c. 19 A. Okay. 20 Q. The control server is 21 configured to receive a request for a list 22 of available servers. Do you see that? 23 A. Control service configure to 24 provide. So further down it says receive a 25 request. Yes.
Page 56 1 Q. Okay. Where is the request 2 being received from? 3 A. Say that again. 4 Q. Where is this request for a 5 list of available servers being received 6 from? So what's sending the request? 7 A. It says here "Receive a 8 request for a list of available servers from 9 a first endpoint device." 10 Q. Okay. So in response, the 11 control server is sending to the endpoint 12 device the list of available servers. Is 13 that right? 14 A. Yes. It says -- at the end of 15 the claim, it says "Transmit the ordered 16 list of available servers to the first 17 endpoint device." 18 Q. So in the context of the 595 19 patent, specifically claim 15, what is 20 deciding which server to use? 21 A. Okay. So let's take a look 22 here. 23 Q. And you can feel free to look 24 at the defending claims 16 through 20 if 25 that would be helpful.	Page 57 1 A. Okay. So what was the 2 question? 3 Q. Sure. So once the endpoint 4 device has received the list of available 5 servers, what is deciding which server to 6 ultimately use? 7 A. Okay. So let's take a look at 8 what the claim says. 9 So I don't think it mentions 10 anything here about what's -- what's being 11 done. All it says is the claim ends after 12 transmitting the ordered list of available 13 servers. 14 Q. What is the purpose of 15 transmitting the list of available servers 16 to the endpoint device? 17 A. I mean, I don't -- I -- we 18 have to look back to the -- the description 19 on the patent to see -- decide what that 20 would be, but the claim is not saying 21 anything but what is being done. 22 Q. Based on your understanding of 23 this technology in general, if a device is 24 receiving a list of available servers, why 25 would it be receiving that list?

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1 A. In general, broad terms, as I
2 mentioned before with the domain name
3 service, I could decide -- for example, I
4 may have a CNN web server close to Dallas.
5 Reddy is making a request from College
6 Station, Texas, so I could give him servers
7 that are close to College Station saying,
8 hey, there's a server for you in Dallas,
9 there's a server for you in Houston, you can
10 choose one of these things based on your
11 proximity, for example. Or it could be that
12 the links to Dallas and Houston are
13 congested and maybe based on the network
14 bandwidth or latency you might offer
15 different things based on performance.
16 There could be a number of
17 reasons why you would want to provide.
18 Maybe it's availability, maybe it is better
19 quality, for example. Maybe depending on
20 the device characteristics, I might say
21 based on the device you have, appropriate
22 content may be in this location. So it
23 would be a number of reasons why you would
24 want to do that.
25 Q. And based on all those

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1 Q. Is it your understanding that
2 the endpoint device in claim 15 would be
3 forwarding that information onto another
4 device?
5 A. 15 doesn't say anything.
6 Q. But an endpoint device in
7 general. Would an endpoint device be
8 forwarding that information onto something
9 else?
10 A. It depends. Again, it depends
11 on how we define endpoint device. It could
12 be a proxy server which is acting as an
13 endpoint device, in which case the endpoint
14 device, the proxy server, could be passing
15 this information further to the client
16 behind it.
17 Q. So sitting here you can't tell
18 me whether an endpoint device would be
19 receiving the list and not transferring it
20 on somewhere else?
21 A. It's clearly receiving it.
22 That's what claim 15 says.
23 Q. But not transferring it onto
24 someone else?
25 A. That depends on

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1 considerations you just listed -- location,
2 bandwidth -- all those, the device that
3 received the list of available servers could
4 then choose which server it wanted to use?
5 Is that correct?
6 A. That would be -- that would be
7 the reason why you would want to provide a
8 choice.
9 Q. Okay. So in claim 15 here,
10 because the endpoint device is receiving the
11 list of available servers, it would be
12 selecting which server to use -- the
13 endpoint device, I mean?
14 A. I mean, claim 15 doesn't say
15 anything about that.
16 Q. But conceptually based on what
17 we were just talking about, the device that
18 receives the list would be choosing which
19 server to use. Does that apply to claim 15?
20 A. Depends on how the
21 implementation is going to be done. That
22 device could be further passing it on to
23 actual service that is requested or it could
24 be acting as a proxy, for example. So
25 depending on how the implementation is done.

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1 implementation.
2 Q. Okay. Thank you. If the
3 endpoint device is not sending that list
4 onto another device, would the endpoint
5 device of claim 15 be selecting which server
6 it uses based on the -- possibly based on
7 the considerations you just provided --
8 location, bandwidth, those things?
9 MR. MCPHERSON: Object to the
10 form of the question.
11 THE WITNESS: So that would be
12 one reason why you would want to prorate
13 choices.
14 BY MR. GLAZER:
15 Q. And then the endpoint device
16 would be making the choice. Is that
17 correct?
18 A. We already went through this.
19 Depends on the implementation.
20 Q. And I'm -- so in the
21 hypothetical that I provided, where the
22 endpoint device is the ultimate receiver of
23 the list of available servers and it's not
24 being forwarded onto someone else. Does
25 that make sense?

Page 62 1 A. Okay. Yes. In that case you 2 would choose depending on the criteria you 3 have whether you're choosing network 4 bandwidth or latency or the reliability of 5 the connection, geography connection, whole 6 number of reasons as we discussed before, 7 you probably would make a choice. 8 Q. When you say "you," you mean 9 the endpoint device? 10 A. Well, depending on 11 implementation, right. So in the 12 hypothetical, maybe the endpoint device is 13 making the decision. It would be the one 14 that will do it. 15 Q. Thank you. I want to go back 16 to round robin. I'm not sure I fully 17 understand what that term means. "Round 18 robin selection of a server." What does 19 that mean? 20 A. So round robin basically is 21 let's say I have five servers that ~~are~~ 22 providing a web service and I want to be 23 able to distribute load across those five 24 web servers so that they get load equally. 25 So then what I could be doing is when you	Page 63 1 come and ask me for that server, I would 2 give you the IP address 1, and Patrick 3 McPherson comes and asks me for the same 4 service, I'll give him the server number 2, 5 and when Joanne comes and asks me the same 6 server, I'll give her server number 3. When 7 Patrick Muldoon comes and asks me for the 8 server, I'll give him server number 4. And 9 the intent is that by distributing these 10 requests to among the servers that are 11 around, I would be distributing the load 12 across them. 13 Q. How would the load be 14 distributed if the services are provided 15 just based on a list like that? 16 A. So in this example that I'm 17 quoting, the servers are all different 18 machines and they're all handling multiple 19 requests for web service, and so the intent 20 would be to -- if there are a thousand 21 ~~connections~~ coming in for the service and I 22 have five servers, each one would get 200 23 connections so they would be equally loaded 24 in terms of trying to share the load across 25 the five of those machines.
Page 64 1 Q. Okay. But that doesn't 2 necessarily take into consideration network 3 bandwidth. Is that right? 4 A. The example that I'm quoting 5 you in this example, it is -- it is trying 6 to -- the server -- server capacity is what 7 you're concerned about in trying to do this. 8 But you could do this for network-related 9 reasons very similarly in other cases. 10 Q. Okay. Thank you. Is there a 11 case where a device can make a request for a 12 list of available servers and in response 13 receive just a single server that was 14 selected by round robin? 15 MR. MCPHERSON: Object to the 16 form of the question. 17 THE WITNESS: It's possible, 18 because, again, it depends on the request 19 is going through a proxy and the proxy 20 could be getting those choices and the 21 proxy might make the decision for you. 22 BY MR. GLAZER: 23 Q. Is it your understanding that 24 that situation that I just described is 25 taught by the 595 patent or the 505 patent?	Page 65 1 A. What is taught? I'm not sure 2 what you're asking. 3 MR. MCPHERSON: Object to the 4 form of the question. 5 BY MR. GLAZER: 6 Q. Sure. So the situation I just 7 described where an endpoint device makes a 8 request to a control server for a list of 9 available servers. Is it possible that the 10 response to that request from the control 11 server is a single server selected by a 12 round robin, in your opinion? 13 MR. MCPHERSON: Object to the 14 form of the question. 15 THE WITNESS: I would have to 16 look through the patent to see if it 17 mentions round robin. 18 BY MR. GLAZER: 19 Q. Okay. We don't need to do 20 that. I was just wondering if it was 21 something you could know off the top of your 22 head. 23 MR. GLAZER: Actually if you 24 guys could give me another ten minutes 25 just to look over my notes, we may be

Page 66 1 done here. 2 MR. MCPHERSON: Okay. 3 THE WITNESS: Okay. So we 4 come back at 10:45? Or -- 5 MR. GLAZER: Yeah, 11:45. 6 Thanks. 7 (Brief break taken.) 8 BY MR. GLAZER: 9 Q. I just want to clarify one 10 thing that we talked about earlier, and I'll 11 share my screen. Back to your declaration, 12 Exhibit 1003, at paragraph 60, page 24. Let 13 me know when you're there. 14 A. Okay. Hang on one second. 15 Yeah. 16 Q. So we talked about a data 17 packet entering a tunnel and being 18 encapsulated. Right? 19 A. Yes. 20 Q. And then when it leaves the 21 tunnel, it's unencapsulated or decapsula- 22 Is that right? 23 A. Depending on -- yes. And it 24 may be re-encapsulated as it goes to the 25 next tunnel. Yes.	Page 67 1 Q. Okay. Beyond just 2 encapsulation, whatever process the data 3 packet undergoes at the beginning of the 4 tunnel, is that whole process reversed at 5 the end of the tunnel so you effectively get 6 the same data packet at the end of the 7 tunnel that you had at the beginning of the 8 tunnel? 9 A. Say that again. 10 Q. Sure. So the data packet at 11 the beginning of the tunnel undergoes some 12 sort of process, some sort of change so they 13 can travel through the tunnel. Right? 14 A. Right. 15 Q. So at the end of the tunnel, 16 is that process reversed so that you get the 17 same data packet at the end of the tunnel 18 that you had at the beginning of the tunnel? 19 A. Depends on implementation. 20 There are some implementations, for example, 21 in something like onion routing where that 22 may not be the case. So depending on the 23 implementation, depending on what the 24 purpose of the tunnel is, it may not 25 necessarily be the case.
Page 68 1 Q. When would it not necessarily 2 be the case? 3 A. For example in this example 4 about something called onion routing, so 5 where I'm trying to hide what is the origin 6 of the packet, what is the destination of 7 the packet, and you don't want any 8 intermediary to know where this packet is 9 heading, you construct a series of tunnels. 10 And the way -- the whole idea is to obstruct 11 or obfuscate this part where the packet is 12 taken. In such cases you want to be able to 13 hide some of this information and you do 14 this through intelligent, you know, 15 obfuscation. 16 Q. Is that a common practice, the 17 type of onion encapsulation you just 18 described? 19 A. Onion routing has been in 20 service for -- I mean, yeah, it's been used 21 heavily for almost, let's say, 15, 20 years 22 probably now. 23 Q. Okay. 24 A. And this is a common thing 25 that people use especially in places where	Page 69 1 there's a censorship or other things that 2 people -- people don't want the government 3 to be watching what you're doing, for 4 example. 5 Q. Sure. Is that type of onion 6 routing the type of encapsulation that's 7 contemplated in Iyer and in the 505 and 595 8 patents? 9 A. No. We're talking about 10 normal tunnels here in Iyer. 11 Q. Okay. 12 A. Not related to onion routing, 13 yes. 14 Q. Okay. 15 MR. GLAZER: I have no further 16 questions. 17 MR. MCPHERSON: Okay. We have 18 no redirect. 19 MR. GLAZER: Dr. Reddy, thank 20 you very much for your time. Patrick, 21 thank you for your time, and Joanne, 22 thank you very much for your time as 23 well. 24 THE COURT REPORTER: 25 Mr. McPherson, are you ordering the

1 transcript? 2 MR. MCPHERSON: Yeah. Just 3 regular delivery for us. 4 MR. GLAZER: We will need 5 regular delivery for the final 6 transcript, but we will need a rough 7 within the next 24 hours. 8 (Adjourned at 11:57 a.m.) 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25	Page 70 DR. A.L. NARASIMHA REDDY NOVEMBER 13, 2024 STENO.COM JOB NO. 1283631	1 CERTIFICATE OF REPORTER 2 3 4 I, Joanne Bryan, Registered 5 Professional Reporter, Certified Realtime 6 Reporter, and Notary Public, do hereby certify 7 that the proceedings, evidence, and objections 8 noted are contained fully and accurately in 9 the notes taken by me of the preceding 10 deposition, and that this copy is a correct 11 transcript of the same. 12 13 14 15 16  17 JOANNE BRYAN, RPR, CRR 18 19 20 21 22 23 24 25	Page 71 STENO.COM JOB NO. 1283631
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