UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE PATENT TRIAL AND APPEAL BOARD

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GOOGLE LLC, :

Petitioner, : Case IPR2025-00806

v. : U.S. Patent No.

SANDPIPER CDN, LLC., : 8,645,517

Patent Owner. :

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Deposition of BILL LIN, Ph.D.

Conducted Virtually

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Pages 1 - 256

Reported by: Debra A. Whitehead

Deposition of BILL LIN, Ph.D., conducted virtually.

Pursuant to notice, before Debra Ann Whitehead, E-Notary Public in and for the Commonwealth of Virginia.

A P P E A R A N C E S

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C O N T E N T S

EXAMINATION OF BILL LIN, Ph.D. PAGE
By Mr. Haars 5

EXHIBITS MARKED IN TODAY'S SESSION

(None marked)

EXHIBITS MARKED IN PRIOR SESSIONS

(Not Attached)

EXHIBIT PAGE
Exhibit 1001 6
Exhibit 1003 6
Exhibit 1005 202
Exhibit 1006 68
Exhibit 1007 99

P R O C E E D I N G S

BILL LIN, Ph.D.

Having been duly sworn, testified as follows:

EXAMINATION BY COUNSEL FOR PATENT OWNER

BY MR. HAARS:

Q All right. Good morning, Dr. Lin.

A Good morning.

Q Would you please state your full name, full legal name, for the record, please.

A Bill Lin.

Q All right. And you understand that you are having your deposition taken today in connection with the declaration you provided in IPR Proceeding Number IPR2025-00806?

A Yes.

Q All right. And this proceeding concerns U.S. Patent Number 8,645,517. Correct?

A Yes.

Q All right. And if I refer to that patent today as the '517 patent, will you understand what I'm referring to?

A Yes.

MR. HAARS: Let's go ahead, and if you want to download both the Exhibit 1001, which is the '517 patent.

(Exhibit 1001, previously marked, not attached.)

MR. HAARS: And Exhibit 1003, which is your declaration.

(Exhibit 1003, previously marked, not attached.)

A How do I download these?

(A discussion was held off the record.)

Q Dr. Lin, if you'll just open those documents for me, please.

A Give me a moment, I'm downloading them now.

(A discussion was held off the record.)

Q Do you have those documents opened?

A I do.

Q All right. So take a look at Exhibit 1003. And this should be the declaration you submitted in this proceeding.

Is that correct?

A Yes.
Q All right. So do you continue to hold the opinions that you submitted in this declaration?
A Yes.
Q Turn to the very last page, Page 110.
A I'm there.
Q Is that your signature on this page?
A Yes.
Q Did you review your declaration in preparing for this deposition today?
A Yes.
Q During your review, did you come across any errors in the declaration?
A No.
Q Are there any opinions that you'd like to change or clarify before we get started?
A No.
Q And you understand that you are under oath today. Correct?
A Yes.
Q And that you understand that you are here

to give complete and accurate testimony?

A Yes.

Q Is there any reason why you can't give complete and accurate testimony today?

A No.

Q Have you been deposed before?

A Yes.

Q About how many times?

A Twenty-some times.

Q Twenty-some times?

How many of those were for patent proceedings?

A You mean IPR, like IPRs?

Q Well, let's just say patents generally; litigation, IPR?

A I think nearly all of them.

Q Nearly all of them. Okay.

So give or take, 15 to 20?

A Yeah, it would be predominant -- it would be still over 20.

Q Over 20. Okay.

And how many of those, how many of the

depositions have been for IPR proceedings?

A I don't remember, but there would be far more for IPR proceedings than for trials.

Q All right. So then since you've done this over 20 times, you know the drill. But I will just go over some basic ground rules just to make sure we're on the same page.

So everything you say today will be written down by the court reporter. So I'll ask that you please give verbal answers to my questions so that the transcript is clear.

Does that sound fair?

A Yes.

Q And if you don't understand any part of a question today, will you let me know so that I can clarify?

A I will.

Q And if you answer my question, I'm going to go ahead and assume that you understood the question.

Is that fair?

A I think that's fair.

Q And of course if you don't understand, you can let me know, and I can try to clarify.

A It sounds fair.

Q So from time to time your counsel may object to questions that I ask.

Do you understand that you still need to answer the questions unless your counsel instructs you not to answer?

A Yes.

Q And just generally I'm going to take breaks, I'm going to take a break every hour or so, maybe a little bit less than an hour. But if you would like a break at any time today just feel free to let me know, and I will try to accommodate you as best I can.

Does that sound good?

A Thank you.

Q All right. And the only thing I'll ask on breaks is if there is a pending question that you will go ahead and answer that pending question before we then take the break.

Does that sound good?

A Sounds reasonable.

Q And now please confirm during my cross-examination today that you will not confer with counsel or anybody else regarding the substance of the deposition, including during breaks?

A I confirm that I will not.

Q Thank you very much.

All right. Let's talk generally about your declaration here. Did you write the declaration yourself?

MR. ANDERSON: I'll just counsel the witness not to reveal any privileged information, but you can otherwise answer the question.

A The opinions expressed in my declarations are my opinions.

Q Approximately how much time did you spend on your declaration?

A I don't remember. Maybe somewhere on the order of 30 hours. I don't remember exactly.

Q Did you talk to anybody outside of counsel for Google in the process of preparing

your declaration?

A No.

Q Let's go ahead and talk about today's deposition.

What did you do to prepare for the deposition today?

A I've reviewed my declaration, I've reviewed the '517, I reviewed various things that I've cited in my declaration. Those are some of the things I remember.

Q Anything else?

A I had some meetings with counsel.

Q Who did you meet with?

A Chris Anderson and Alex Boyer.

Q And were those meetings in person or by video?

A By video.

Q And approximately how long did you spend preparing for the deposition?

A I don't remember. I just started last -- maybe towards the end of last week.

Q Okay.

A So a few days.

Q Let's take a look now -- well, before we do that, so since we're remote today, I would just want to kind of get an understanding of your location.

So where are you now?

A I am at home in what I normally use as my office, and that's in a city called Encinitas in San Diego area.

Q And what equipment are you using today to -- or I guess what technical equipment do you have in that room with you?

A I have my laptop on my desk and otherwise the -- yeah, my desk is clear.

Q What programs do you have open on your laptop?

A Right now only the -- the Chrome web browser, which is what I'm using to look at PDF, and the Zoom application.

Q All right. Let's turn to your declaration, Paragraph 51.

A Paragraph 51, did you say?

Q Yes, please.
A Please go ahead.
Q All right. So this paragraph discusses your proposed level of ordinary skill in the art for this proceeding. Correct?
A Yes.
Q And part of that, part of your proposal, is at least two years of work or research experience in the field of content delivery, management, or networks.
Do you see that?
A Yes.
Q Just tell me a little bit about your experience in the field of content delivery, management, or networks.
A So I am a professor at University of California San Diego. I've taught classes related to networking. My own research involves networking at various levels, including -- networks of course deliver content. And so I've published a number of papers in the field.
I am a principal investigator at the U.S.

San Diego Center for Wireless Communications -- I'm sorry, I am a principal architect for the Center for Wireless Communications, but I'm also a principal investigator in the Center for Network Systems, which is a center that works broadly on networking and network system problems.

I can go on and on. I've been the general chair for several top-tier networking conferences that -- that addresses content delivery problems as well as other networking problems. So I can go on.

Q Yeah, that sounds good. I understand that you have a long CV and you have a lot of accomplishments in the field of networking.

I guess my question is more specifically, what experience do you have on -- or specifically in content-delivery networks, or content-delivery management?

A So specific on content delivery management is part of networking, is part of our curriculum, is part of things that we teach, and is -- professors working in the field of

networking are -- know content delivery material.

Q So do you teach content-delivery networks in your -- in the classroom, in your classes?

A I've taught network classes, of which the things taught in the classes are used for content delivery.

Q Do you have -- so do you have any experience working outside of academia in content-delivery networks?

A I've worked -- I've served as a consultant to companies before, advisor to companies, and companies that do content delivery.

Q Can you tell me a little bit about that, about those consulting experiences?

A So, you know, several things is -- my career is pretty long. So I think one that I can think of is a company called Teradici, where I was an advisor, and they are about content over the network.

I've worked on -- as an expert on other cases involving content delivery. So I -- yeah, so again, I've worked on research in networking

that are technologies that are used in content delivery.

Q Okay. Sounds good.

All right. Let's look back at your declaration, Paragraphs 43, so a few pages back.

A Forty-three. Give me a moment to review it.

Q Yeah, take your time.

A Please ask your question.

Q All right. So this paragraph discusses just the general technology at issue in this case.

Correct?

A Yes.

Q And that general technology relates to content-delivery networks?

A Yes.

Q How would you define a content-delivery network?

A I think -- I think I would address the -- my analysis in the -- in the claim elements, so we can go to that. Because I think "content delivery" is a word in these claims, and I want to

be careful in telling you about my opinions.

Q We'll get to the claims in a bit now. So let's say sort of outside of the claims, I think content-delivery networks generally, that's kind of a known term and a known -- it's a known term of art, is that correct, "content-delivery network"?

A Yes.

Q So divorced from the claims for the time being, how would you define just in general at a high level what a content-delivery network is?

A I think, as I stated, you were asking me about Paragraph 43. Is that correct?

Q Yes.

A Yeah, so I think -- I think I provided a general description about content-delivery networks in this paragraph, which are geographically dispersed servers for delivering content to end users. And, you know, so we can go on.

DNS servers are used, they take domain names from end user requests and return IP address

from servers for mapping to the domain. So I think that paragraph describes at a high level what content-delivery network are.

Q Okay. And there is a sentence in this paragraph towards the end on Page 29 stating that, "Multiple servers may be mapped to a single domain."

Do you see that sentence?

A Yes.

Q All right. I just want to sort of break this sentence down for a second.

What does it mean for a server to be mapped to a domain?

A So the domain name server when there is a request, it will return a server to serve that -- serve that request. And there may be multiple servers that can be mapped to that request.

Q Well, when you say, Mapped to the request, what -- how is it mapped? In what way is it actually mapped?

A Well, I think that at the high level, I think is easier just to say that in a single

domain, there just may be multiple servers associated with that domain.

Q There are multiple servers associated with the single domain. Okay.

But ignoring -- I'm speaking more kind of specifically. I'm not interested in the fact that multiple servers may be mapped to a single domain; but just more in when you say, Mapped to a domain, what does that mean?

A I just mean what I just said, which is multiple servers may be -- may be associated with a single domain.

Q Well, how are they associated?

A As an example, they are available to a DNS server to choose from.

Q They are available to a DNS server to choose from. Okay. And how does a DNS server know that a server is mapped to a domain?

MR. ANDERSON: Objection. Form.

A I think for these questions I can go to the parts of my declaration where I've expressed opinions to your questions with respect to the

claims.

Q Well, again, so I'm just speaking generally now. I just kind of want to get a feel for how the technology works before we dive into the claim.

Is there -- so in a DNS server, there is a domain that's mapped to a particular other server. I just want to understand what that mapping is and what it actually shows.

A I think --

MR. ANDERSON: Objection to form.

A I think at the Paragraph 43, I think I am trying to express at high level that for single domain, there may be multiple servers for -- for example, for the DNS server to choose from.

Q Okay. But so the DNS server includes some sort of record that maps an IP address to a domain.

Is that correct?

MR. ANDERSON: Objection. Form.

A I mean, DNS server has some way of determining what server is available to it for a

single domain, and it has a way of choosing one.

Q Well, what is the way -- what is one way of determining what server is available to it for a single domain?

MR. ANDERSON: Objection. Form.

A Yeah, so I think, as I've stated, the -- the associated with a single domain there may be multiple servers. And a DNS server can choose from those multiple servers for -- for that single domain.

Q Well, how does it choose?

A It chooses by some software code running on some hardware.

Q What is a DNS server?

A Well, a DNS server stands for domain name service server. And as the same implies, when given a domain name -- request to a domain, it returns -- looks up, and one way returns IP address of a server.

Q So how does it look up the IP address of a server?

MR. ANDERSON: Objection. Form.

A I don't think there is any one, you know, particular way. I mean, in general it knows what servers is available to that domain, and it has some way of choosing which one to return.

Q All right. Now let's take a look down at Paragraph 45 of your declaration, which is just one page down.

A Please go ahead, ask your question.

Q Yep. So this very first sentence here states, "The DNS server selects a particular server for responding to a request based on policies stored in a policy database."

Do you see that?

A Yes.

Q All right. Explain how the DNS server uses policies for responding to a DNS request.

A So here in this paragraph I'm talking about '517, that's the first point I want to make. And '517 explains that a DNS server can be used to respond to a request based on policies.

And the next part of the sentence says the patent explains that these policies is

constructed as a hierarchical decision tree.

Q So the policies described in the '517 patent are applied in response to DNS requests by a DNS server?

MR. ANDERSON: Objection. Form.

A So my first sentence in Paragraph 45, I said the DNS server selects a particular server for responding to a request based on policies stored in a policy database. That's what's described in the '517.

Q Okay. So a DNS server receives a DNS request, and then that DNS server selects a -- the correct -- or an IP address based on a policy.

Is that accurate to say?

MR. ANDERSON: Objection. Form.

A So the DNS server selects a particular server in the form of an IP address in response to requests based on policies stored in the policy database.

Q Okay. Does the '517 patent describe any policies that are not applied in response to DNS requests?

A Does it apply any policy that doesn't respond to a request?

I have to review -- if you give me a little bit of time to review the '517 and my declaration, I can respond back to you.

Q Yeah, if you want to take some time and take a look.

A So offhand I don't remember if the '517 talks about applying policies outside in response to a request. But if you can point me to parts of the '517, I'd be happy to review it and let you know what I -- if I said anything in my declaration.

Q So I don't think there is anything in your declaration on this, but I guess so I will just kind of ask.

Sitting here today, you don't know of any policy described in the '517 patent that is not applied in response to a DNS request?

A I don't remember. I think if -- if you can point me to one, I'd be happy to address it.

Q Okay.

All right. Now let's take a look at Claim 1 of the '517 patent.

A Yes, please.

Q All right. So taking a look at this claim -- or are you there?

A Yes. I'm looking at the -- yes, I'm on Paragraph 72 of my declaration.

Q Paragraph 72 of your declaration? Okay. Well, let's go to the actual patent, Exhibit 1001, which I believe you have open.

A Yes.

Q I think that would be easier for this. And if you scroll, it's kind of on the last or second-to-last page of that patent.

A Second-to-last page. Okay.

Q Do you see Claim 1?

A I'm getting there. Yeah.

Q All right.

A Just to let you know, I -- on my desk I just want to let you know I've got a pen and a piece of paper to take notes. But I've also printed just the table of content to my

declaration, just to let you know.

Q Okay.

A Yeah, go ahead, please.

Q All right. So if you're looking at the patent and Claim 1, Element B states, "Using said GUI to obtain at least one policy for direction of network traffic."

Do you see that?

A Yes. 1.B, yes. "Using said GUI to obtain at least one policy for direction of traffic." Yes.

Q What is a "policy" as recited in this claim?

A I think in the context of Claim 1, is a policy for providing a response to a request.

Q That doesn't answer my question exactly. I'm just curious what a policy is.

MR. ANDERSON: Objection. Form.

A A policy is how the DNS server should respond to a request.

Q Is a policy a rule?

A I think it can be, yes.

Q It can be.

Can it be something else?

A I think the policy is something that, in the context of Claim 1, is something that the DNS server will use to select the response.

Q Okay. But a policy has a meaning. The word "policy" has a meaning.

Would you agree with that?

A I'm not sure I would agree with that in a generic way.

Q You don't agree that the word "policy" has a meaning?

A It has a meaning.

MR. ANDERSON: Objection to form.

A It is an English word, so it has an English word.

Q Well, what is the meaning of the word "policy"?

A Well, again, it is -- could be some -- somebody like a rule that -- that is used to -- in the context of Claim 1, to choose the response.

Q So it could be something like a rule, but

it doesn't have to be a rule?

A Yeah. I think the -- I think rules is fine.

Q Rules is fine.

A Yeah.

Q All right. So let's just make sure.

So would you agree that a policy as used in Claim 1 is a rule?

MR. ANDERSON: Objection. Form.

A Well, again, I think my opinion is that a policy is something that's used by the DNS server to select a response. And 1.B requires a GUI to support the setting of at least one policy using a decision tree representing rules.

Q Okay, well, I'll go back to my question then.

What is the meaning of the word "policy" as used in this claim?

MR. ANDERSON: Objection. Form.

A Again, I think a policy in the context of this claim is something that the -- the DNS can -- can use to provide the response.

Q So the definition of the word "policy" is something that the DNS can use to provide the response?

MR. ANDERSON: Objection. Form.

A Yeah, again, I think a policy is -- is something that tells the DNS how to -- tells the DNS how to choose the response.

Q What is that something that tells the DNS how to choose the response?

MR. ANDERSON: Objection. Form.

A Yeah, I think the -- the '517 talks about different ways that the -- that choice could be made. And in my analysis of the prior art they also provide those ways of choosing the response.

Q Okay. We'll get to the prior art. I just want to focus on the claim for now, just this one word, and just kind of get to the understanding of how you interpret the word "policy."

So I'll ask it again. What is the meaning of the word "policy" in this claim?

MR. ANDERSON: Objection. Form.

A Again, I think what I said is that it is something that the DNS should follow in choosing the response.

Q And what is that something?

A Yeah, it's just information that's available to the DNS.

Q A policy is information that is available to the DNS that lets the DNS choose a response?

MR. ANDERSON: Objection. Form.

A Yeah, I think you're asking me for a high-level definition. And I think a policy in the context of Claim 1 is something that a DNS server uses in choosing a response.

Q And it can be any information that the DNS server uses to choose the response?

A Well, I think the '517 talks about particular types of information, like the location and things like that.

Q Okay. Let's open up -- this is Paper 14, the Institution Decision in this case.

MR. HAARS: Can we get that pulled up on the -- or uploaded to the chat, please.

Q Dr. Lin, can you open that document, please.
A I have it open.
Q All right. Can you turn to Page 19.
A Please go ahead.
Q Actually, okay. In the first full paragraph of that -- of Page 19 -- well, actually, stepping back. So scratch that question.
Go to Page 1, which is the very first page.
A Page 1?
Q So do you understand this is the Institution Decision by the PTAB in this proceeding?
A Yes.
Q Have you read this document?
A I have.
Q Yeah. Okay. All right. Now let's go back to 19. And the first full sentence -- or the first full paragraph, the first sentence in that paragraph states, "We agree with Patent Owner that its understanding of a policy as a rule is

consistent with the disclosure in the '517 patent that a policy may be created by generating a decision tree representing the ATC rules."

Do you see that?

A Yes.

Q So would you agree that the PTAB has interpreted the claim policy as a rule?

A I think that the PTAB statement that -- that the understanding of a policy as a rule is consistent with the disclosure of the '517. I agree with it. It's fine.

Q Okay. So you don't disagree with the PTAB here?

A I don't disagree with what the PTAB wrote here, that the understanding of a policy as a rule is consistent with the disclosure of the '517.

Q Do you --

MR. ANDERSON: Objection to form.

Q Do you agree that a policy is a rule?

MR. ANDERSON: Objection. Form.

A I think that's consistent with the disclosure of the '517. I agree with what the

PTAB wrote.

Q Now, would you agree that the meaning of a policy as used in the '517 patent claims is a rule?

MR. ANDERSON: Objection. Form.

A Can you restate the question, please?

Q Yeah, sure. That was not a very good question, I agree.

Would you agree that in Claim 1 of the '517 patent where it recites, "a policy for direction of network traffic," that means a rule for direction of network traffic?

MR. ANDERSON: Objection. Form.

A Again, I think your policy or rule, those are two words. I'm okay that they're consistent with each other.

Q Okay. Can the policy mean anything else other than a rule?

A Again, I think -- I think I agree with what the PTAB wrote here, that policy as a rule is consistent with the disclosure.

Q All right. Now let's take it back to

your declaration, and I am looking at Paragraph -- please turn to Paragraph 45. This is the same one that we were just looking at.

A Okay. Please.

Q All right. So the second sentence in this paragraph states, "The '517 patent explains that these policies are constructed as a hierarchical decision tree."

Do you see that?

A Yes.

Q What does it mean for a policy to be constructed as a hierarchical decision tree?

MR. ANDERSON: Objection. Form.

A I -- as I said earlier, policy is something in the context of Claim 1 that the DNS server uses to choose the response. And in this case that policy in '517 is presented as a hierarchical decision tree.

Q What is a hierarchical decision tree?

A I think it's just a decision tree.

Q What is a decision tree?

A Well, I think that decision tree contains

some information; for example, the -- the geolocation is one example of something that's in the decision tree.

Q How would you define a decision tree?

MR. ANDERSON: Objection. Form.

A A decision tree is some node that have edges going out of it to other nodes and is a graph that has -- is a tree. It just means that there is no reconversion later on. So it's a tree as a data structure.

Q It's a data structure?

A Well, it's a -- it's a representation of something.

Q It is a representation of data?

A It certainly is a representation of data, yes.

Q Okay. So back to this sentence. You state that "The policies are constructed as a hierarchical decision tree."

So how is a policy constructed as a hierarchical decision tree?

MR. ANDERSON: Objection. Form.

A Well, one way to think about it is, is that the tree contains information and possible choices from that information. And so it's -- this is information presented in the tree form.

Q Does a hierarchical decision tree contain multiple policies?

MR. ANDERSON: Objection. Form.

A So at the high level, a tree is just some kind of data structure. It has some nodes, it has some branches, and is -- on a DNS server, if it were to use such a decision tree, it would have some software to -- to implement some decision algorithm. And it depends on that piece of software what it does.

So I don't know if there is a singular way I can answer your question. But '517 does talk about some ways you could decide on which server to respond.

Q All right. So then a decision tree is hierarchical. What do you mean by hierarchical?

A I think if you -- I'm not sure I -- so as I said, hierarchical decision tree I think is a

decision tree. You -- you have a top of the tree, and you have branches which form subtrees, and then there are subtrees after that.

So I guess you can think of this as being hierarchy.

Q Let's take a look at a specific decision tree in the patent, maybe kind of ground this conversation a little bit. Turn to Column -- in the '517 patent, turn to Column 8, Line 55, please.

A Give me a moment. Fifty-five.

Q Yes.

A Give me time, because I want to look at Figure 3.

Q Yes.

A I'm sorry, which column again, please?

Q Column 8, Line 55. It's the last full paragraph on that page, in Column 8.

A Give me a moment.

Q Yep.

A Please ask your question.

Q All right. So this paragraph, starting

at Line 55, describes a -- or states -- the second full sentence states, "Figure 3 depicts an exemplary subscriber policy hierarchy or a decision tree built based on various types of subscriber policies."

Do you see that?

A Yes.

Q Would you agree that the '517 patent equates a policy hierarchy with a decision tree?

MR. ANDERSON: Objection. Form.

A Can you ask the question one more time?

Q Yeah. Would you agree that the '517 patent equates a policy hierarchy with a decision tree?

A No.

Q You would not agree with that.

Why not?

A Well, the first sentence makes that clear. Right? The policies may be hierarchically constructed to form a decision tree.

Q Okay. But when a policy is hierarchically constructed, then it forms a

decision tree?

MR. ANDERSON: Objection. Form.

A I think two points. First one is that the '517 does not equate policies to decision tree, it just says it may be. And I think '517 is saying the policies may be -- may be represented as a decision tree.

Q Okay. Would you agree that the example decision tree shown in Figure 3 is a policy hierarchy?

MR. ANDERSON: Objection to form.

A I just think that Figure 3 shows an example of policy depicted as a decision tree.

Q But the '517 patent describes it as a policy hierarchy. Correct?

MR. ANDERSON: Objection. Form.

A Where? Where are you seeing this?

Q Back on Column 8, Line 50 -- or the paragraph starting at Line 55, but the second full sentence states, "Figure 3 depicts an exemplary subscriber policy hierarchy or a decision tree built based on various types of subscriber

policies."

A I see that.

Q So you would agree that the '517 patent describes Figure 3 as a policy hierarchy.

Correct?

A Say that question one more time?

Q Would you agree that the '517 patent describes Figure 3 as a policy hierarchy?

A It's what it says. Figure 3 depicts an exemplary subscriber policy hierarchy or a decision tree.

Q So then you agree that the '517 patent describes Figure 3 as a policy hierarchy?

MR. ANDERSON: Objection. Form.

A I think it says exactly what it says. It depicts an exemplary subscriber policy hierarchy or a decision tree.

Q So the '517 patent describes Figure 3 as both a policy hierarchy and a decision tree.

Do you agree with that?

A I think it says "or a decision tree."

Q Or a decision tree.

So it says it's either one?

A Yeah, the sentence reads what it says.

Q Okay. Well, let's break the sentence down here. I just want to understand what the sentence means.

So in Figure 3, does Figure 3 -- okay. Scratch that.

Does Figure 3 depict a decision tree?

MR. ANDERSON: Objection. Form.

A That sentence, I agree with what it says. Figure 3 depicts an exemplary subscriber policy hierarchy or decision tree built on various types of subscriber policies.

Q Okay. But that doesn't answer my question.

I just want to know, does Figure 3 depict a decision tree?

MR. ANDERSON: Objection. Form.

A I think "or" means that it depicts either -- first either A or B. So it depicts a decision tree.

Q It depicts a decision tree?

A I'm okay with that.
Q Okay. Does Figure 3 depict a policy hierarchy?
MR. ANDERSON: Objection. Form.
A Yeah, I think the sentence, I agree with the sentence. It says that Figure 3 depicts an exemplary subscriber policy hierarchy or decision tree built on various types of subscriber policies.
Q Would you agree that a policy hierarchy is the same thing as a decision tree?
MR. ANDERSON: Objection. Form.
A Yeah, I'm not sure I would agree with that.
Again, I think the Figure 3 is depicting a diagram based on various types of subscriber policies, and the rest of the paragraph explains how that -- how that diagram can be used to make some choices.
Q Can you give me an example of when a decision tree is not a policy hierarchy?
MR. ANDERSON: Objection. Form.

A Can you repeat the question?

Q Can you give me an example of when a decision tree is not a policy hierarchy?

MR. ANDERSON: Objection. Form. We are getting close to an hour. Can we take a break soon, next few minutes?

MR. HAARS: Yeah. No, that sounds good, as soon as we kind of finish this natural line of questioning.

A I think in this Figure 3, the way it describes it in Line 55, 56 and so forth, I think it says what it says, which is it describes a subscriber policy hierarchy or a decision tree. I don't know if I can fully give you an answer about whether decision tree is different than a policy hierarchy.

Q Okay. So just to make sure the record is clear, you cannot fully give an answer about whether a decision tree is different than a policy hierarchy?

MR. ANDERSON: Objection. Form.

A I think -- I think right now I cannot

think of an example for you. But I agree with the sentence that Figure 3 depicts an exemplary subscriber policy -- policy hierarchy or decision tree built on various types of subscriber policies. I agree that's what it states in the specification.

MR. HAARS: Okay. All right. I think we can go ahead and take a break. Right at an hour. Let's do, what, ten, 15 minutes, Dr. Lin?

THE WITNESS: Yeah, ten minutes should be fine.

(A recess was taken.)

BY MR. HAARS:

Q Dr. Lin, welcome back.

A Yes.

Q During the break did you discuss the substance of your testimony with anybody?

A No, I didn't speak with anyone.

Q All right. So let's turn back to Figure 3 of the '517 patent.

A Do you want me to look at -- I cannot do both at the same time. Do you want me to look at

Figure 3 or Paragraph 55?

Q It's -- well, I'll just say it's your call. We're going to be discussing the -- we're going to be discussing both, I think, so ...

A If you give me a moment. Let me see if I can open two copies of it, one to the figures and one --

Q Sure. That might be the easiest way to do it.

A Give me a moment, please.

Q Yeah, take your time.

A Okay, I have both open. Please.

Please go ahead.

Q All right. So looking at the actual text on Column 8, Line 59, it says, "In Figure 3, the continental-based distribution policies 220 are used to first direct a selection process limited to a particular continent."

A I see that.

Q Okay. Explain what that means.

MR. ANDERSON: Objection. Form.

A I think the sentence you read describes

exactly what it means. The continent-based distribution policies first direct a selection process limited to a particular continent.

Q Okay. How do those policies direct that selection process?

A Can you repeat the question?

Q Yes. How did the continental-based distribution policies direct the selection process limited to a particular continent?

A So the policy itself in the next sentence says that -- the policy itself says that if the client is located in Asia, the continental-based policy may direct the further selection within servers that are located in Asia.

Q So the policy itself has logic that is used to direct the selection process?

MR. ANDERSON: Objection. Form.

A Well, the DNS server has some -- in this case if a DNS server were to use this diagram, it would have some software that would do what the sentence says, which is to it may direct further selection within servers located in Asia.

Q So the DNS server has software that applies the continent-based distribution policies?

MR. ANDERSON: Objection. Form.

A The policy -- the DNS server may direct further selection within servers that are located in Asia.

Q So the DNS server has software that uses the continental-based distribution policies to direct a selection process limited to a particular continent?

MR. ANDERSON: Objection. Form.

A I guess I think just what the sentence -- again, the policy may direct further selection within servers that are located in Asia, if the client is located in Asia.

Q Well, up above, or earlier you said that the DNS server has some sort of software that guides this process. How does --

MR. ANDERSON: Objection to form.

Q Well, let me restart that.

So earlier you said that the DNS server has software that guides the selection process.

How does that software interact with the policies?

MR. ANDERSON: Objection. Form.

A I think what -- what this sentence says, it may decide to direct the further selection within servers that are located in Asia, if the client is located in Asia.

Q Yes, I understand what the sentence says. I'm asking how that process is carried out?

A Well, for the server to carry out this, it would presumably know that the client's located in Asia, and it's got some software code that says if the client is located in Asia, it may direct further selection of servers located in Asia.

Q Okay. So the server first -- or determines the location of the requesting user.

Is that correct?

A I'm sorry, one more time, please?

Q The DNS server determines the location of the requesting user.

Is that correct?

A The information --

MR. ANDERSON: Objection. Form.

A The DNS server in this case would know the client's located if -- presumably knows that the requesting client is located in Asia because the sentence presupposes that. Right?

Q Yes, the sentence presupposes that, I agree.

My question is, how does the DNS server know that?

A The -- there will be information in the request for the server to know -- to know that, for example.

Q In the DNS request?

A For example.

Q For example. Okay. And then so based on that location, the DNS server directs the further selection within the servers that are located in Asia?

A Yeah, the sentence says they may do that, yes.

Q And is that -- is that logic found in the policies themselves?

MR. ANDERSON: Objection. Form.

A Can you ask your question one more time?
Q Yeah. So is the logic that is carried out by the DNS server found in the continent-based distribution policies themselves?
A So the DNS server if -- if it chooses to direct client located in Asia to servers that are located in Asia, that could be a policy. And it would be some software that would make that decision. And that software would use the -- a -- for example, a decision tree with the information to make that decision.
Q Okay. The decision tree found in figure -- well, scratch that.
Is the decision tree found in Figure 3 applied by the DNS server in response to receiving a DNS request?
MR. ANDERSON: Objection. Form.
A I can go back and read the rest of the columns. But I believe that is what he's describing, yes.
Q All right. So now let's go down to Column 9, the very first paragraph. And the first

sentence there states, "As noted, a policy may be created by generating a decision tree representing the ATC rules that the user (content provider/subscriber) wants to apply."

Do you see that?

A Yes.

Q So the system in the '517 patent allows the user to specify specific rules that he wants to apply to -- in responding to a DNS request?

A I'm sorry, the sentence reads, "The policy may be created by generating a decision tree representing the ATC rules" --

Q Yes.

A -- "that the user wants to apply."

I agree that's what it says.

Q So the user specifies the rules?

A It says that it wants to apply. But presumably if the user wants to apply some rules, yes, some way of defining it.

Q And what rules is this sentence referring to?

A I think it's generally just referring to

ATC rules.

Q What are ATC rules?

A I have -- would have to look back earlier in the specification. I think it stands for adaptive traffic, and I need to go back and see what the C stands for.

Q Okay. Well, just I'm not concerned about the acronym, but just generally what are ATC rules?

A Yeah, I think these are rules that the user wants to apply in how the DNS should respond to a request.

Q Okay. All right. So let's talk about the structure of the tree a little bit more.

So this paragraph in Column 9 states that the -- there is a sentence -- or the second full sentence says, "At the leaves of this tree (referred to as resource nodes) the user specifies the answers that the user wants ATC to provide in response to a DNS request."

Do you see that?

A Yes.

Q So what is a resource node in a decision tree?

A I think a resource node as indicated here can be -- can be servers in the form of IP addresses or CNAMEs.

Q And the resource nodes are -- will specify answers that the user wants the ATC to provide a response to a DNS request. Correct?

A That's what it says.

Q What is the definition of a node as used in a decision tree?

A Yeah, I'm not sure there's a, you know, formal definition. But a node in a -- in a tree is just a node in a tree, which is normally depicted in, you know, some kind of circle. And then it has branches to subtrees.

Q So in this -- in Figure 3, point me to an example of a node, any node.

MR. ANDERSON: Objection. Form.

A Well, we can start with the top one, the continental-based policy.

Q Okay. Is that a resource node?

MR. ANDERSON: Objection. Form.

A If -- if this is viewed as a tree, if Figure 3 is viewed as the tree, then the sentence refers to the leaves as the resource node, and everything else as decision nodes.

Q All right. Well, what is a leave in this tree -- leaf in this tree?

A So again, I think this is continuation from the previous discussion about Figure 3. Leaf typically refers to something that has no branches, no edges, no outgoing edges.

Q Okay. So for instance, in the bottom right corner of Figure 3, Node 250C is a leaf?

A Yes.

Q And it is also a resource node?

A Again, it's just a figure. But the Paragraph 9 -- Column 9, the paragraph at the top, says that at the leaves of this tree, they refer to it as resource nodes.

Q All right. And so the next sentence in that paragraph states, "At the branches of this tree the user specifies the various decision

criteria that the user wants to apply."

Do you see that?

A Yes.

Q And this sentence also refers to the branches of the tree as branch nodes?

Is that correct?

A Yes.

Q What is a branch node?

A So in this description it talks about the leaves of this tree as resource nodes, and it would imply that everything else is considered branch nodes, or branches.

Q So is a branch node required to have branches extending from it?

A I think the -- it's a conceptual thing. So it is referencing this tree that -- that's -- that we're talking about, and is defining the leaves -- well, it says the leaves of this tree are resource nodes, and presumably implies everything else are branch nodes.

Q Point me to an example of a branch node in Figure 3.

MR. ANDERSON: Objection to form.

A I mean, again, the sentence here -- the sentence here seems to imply that leaves are resource nodes, and everything else are branch nodes. And so a normal definition of a leaf is a node with no outgoing branches. So everything else would be considered branch node. And, I mean, if you point me to one, I will let you know whether I agree it's a branch node or not a branch node.

Q What about a continent-based distribution policy 220; is that a branch node?

A It seems reasonable.

Q It seems reasonable that it is a branch node?

A Yes.

Q But you're not sure?

A I will agree that is a branch node.

Q All right. So let me --

MR. ANDERSON: Objection to form.

Q Okay. What about region-based policies 230; is that a branch node?

A Yeah, I can agree to that.

Q All right. So this sentence that we were just discussing in Column 9 states that "The user specifies the various decision criteria that the user wants to apply."

What does decision criteria mean in this sentence?

A I'm sorry, which sentence please?

Q It's the one, two -- third sentence down at the very top of Column 9. So starting on Line 6. "At the branches of this tree (referred to as branch nodes) the user specifies the various decision criteria that the user wants to apply."

A I see the sentence.

Q What is the decision criteria that the user wants to apply? Well, scratch that.

Let me ask, what does "decision criteria" mean in this sentence?

A So as an example, on the continent-based policy, a decision criteria is -- could be that the user wants a decision to be based on the continent.

Q Okay. Does the decision criteria relate to the branches extending from the branch node?

MR. ANDERSON: Objection. Form.

A Well, so first of all, the diagram just has, you know -- it's just a diagram. I think the continent-based policy, presumably the user wants the decision to be based on continent, on the country-based policy, presumably the user wants the decision to be based on country-based information. And load share policies, for example, it could be based on something about load share. Right?

So I'm not entirely sure I understand your question.

Q Well, let's -- okay, that's fair.

Let's look down at the next -- so Line 13, or the second full paragraph, it's either Line 13 or 14 on Column 9. And this is discussing the branches of the decision tree. Correct?

A Yes.

Q And it says, "The branches can be selected based upon different criteria," and then

it lists several examples of criteria.

Do you see that?

A Yes.

Q So would you agree that one example of a decision criteria for a branch node is to split on a world zone?

A Yeah, it -- I agree with the -- I agree the specification lists several examples, split on world zone, split on country. I agree that's what it says.

Q And so those -- the criteria that are listed, those are decision criteria that can be specified by a branch node in a decision tree?

A It can be specified, yes.

Q All right.

A So let me clarify that answer -- question.

I think in Figure 3 you can see, for example, split on country, there is a node called country-based policy. And so if your question is does the '517 teaches that you can split on these features, then my answer is absolutely yes,

because it says so. I am not quite sure what your other question is. But clearly it indicates that splitting on country or world zone can be used to make the decision.

Q All right. So these examples given here, split on world zone, split on country, et cetera, these are examples of decision criteria that can be specified by a branch node.

Do you agree with that?

A So let's suppose we have an example where the DNS server is splitting on country.

Q Yes.

A I will agree that Figure 3 as a tree depicts country-based policy as a node in the tree. I will agree to that.

The DNS server will have some criteria of how to pick that. I am not sure what your question is. There's -- the DNS server will have a way to decide based on country, but I'm not sure if -- if your question is does the DNS server have a criteria to make that decision based on country, yes.

If you're saying is there something in Figure 3 that tells me what that is, I'm not sure. But I will agree that DNS server can execute policy based on country, and it will have a decision criteria to choose.

Q Okay. Sounds good.

All right. Now let's go -- I want to look at Figure 10B. And I'll also point you to the corresponding text in one second.

A 10B?

Q Figure 10B, yes.

A 10B. Okay.

Q And that's Column 25, starting at Line 8.

A Give me a moment, please.

Q Yeah. Take your time.

A So I will first note that in -- in the bottom of Column 24, it talks about 10A and 10B together. Yeah, and I will note that -- yeah, I will note that they talk about both of them together.

Q Okay. All right. We're looking at Column 25, Line 8. It states that "Figure 10B

shows an exemplary decision tree."

Do you see that?

A Yes.

Q Is the decision tree shown in Figure 10B a policy hierarchy?

A I mean, it is a decision tree, and it specifies its use as a policy.

Q And the policies are arranged in a hierarchy?

MR. ANDERSON: Objection. Form.

A Yeah, I'm not sure. I mean, it's the tree.

Q Is a decision tree itself hierarchical?

A Yeah, you asked me that earlier. I think of a tree as just a tree. So, yeah, it's a tree.

Q And this decision tree in Figure 10B specifies different policies at different levels of the hierarchy within the tree?

A Again, I read this as a tree, and there are different levels of the tree.

Q Okay. But do you agree that the decision tree in Figure 10B specifies different policies at

different levels of the hierarchy within the tree?

MR. ANDERSON: Objection. Form.

A I mean, I guess it's -- my answer is the same. I agree this is a tree, and it indicates at different levels of the tree what information is being used to make a decision.

Q Okay. But that doesn't answer my question. That answers a different question.

So Figure 10B do you agree is a hierarchical decision tree, or a decision tree that shows hierarchy?

A Well, I said it's a decision tree, and trees have levels, yes.

Q Okay. And at different levels of that tree, the decision tree represents different policies.

Do you agree with that?

MR. ANDERSON: Objection. Form.

A So I -- I think the -- the way to think about it is the decision tree has information about what information is being used to make a decision, and is showing you choices. And

ultimately a DNS server has to execute instructions in software to implement a policy.

Q All right. Look at the line on Figure 10B that says, "At splits on country."

Do you see that?

A Yes.

Q Is that a branch node in the decision tree?

A Yes.

Q And what is the decision criteria specified by that branch node?

MR. ANDERSON: Objection. Form.

Q Well, let me reask the question.

Does that branch node specify decision criteria?

A So it depends on -- so what I will say is the following: I will say that the -- there is a node that says the -- some decision should be made based on country code, and it gives some subchoices. There will be some software with actual instructions that will know what this means. So the -- the DNS will have some code that

will read this, and they will make some decision based on the -- a policy, on information that specified in this figure.

Q Okay. So let me make sure I understand what you're saying.

So you're saying that this figure doesn't itself specify the actual software or code that is used to implement the policy, but it just represents that instruction in a GUI form?

Is that accurate?

MR. ANDERSON: Objection. Form.

A I think one can interpret the information provided in this Figure 10 as decision criteria. But ultimately it's the software that executes instructions that actually make the decision.

Q Okay. But does this -- sorry, scratch that. Let me reask this question.

Figure 10B depicts a graphical user interface. Correct?

A Yes.

Q And that graphical user interface allows a user to build a policy?

A To specify policy, yes.

Q To specify policy.

And using this GUI, the user can specify decision criteria that will then be carried out by the DNS server when responding to DNS requests?

MR. ANDERSON: Objection. Form.

A I can agree that this decision tree allows users to specify features to make decisions on, and it can specify, for example, choices, and this can be viewed as decision criteria. And ultimately there is a server that has detailed instructions of how to -- how to follow what is specified in this decision tree.

Q All right. So looking specifically at the line that says, "splits on country code," does that line represent decision criteria that was input by the user?

A Yeah, again, I will -- I will assume that this is a user interface where the user has indicated that the user wants to split on a country code, and then these are the choices underneath it. I can agree to that.

Q All right. Let's move on now to a new exhibit.

MR. HAARS: And if we could please add to the Chat Exhibit 1006. And this is the Hasan reference.

(Exhibit 1006, previously marked, not attached.)

Q Dr. Lin, can you please open that document and let me know when it is ready.

A I have it open now.

Q All right. All right. Actually, let's -- before we actually get to the reference itself, let's turn to Paragraph 58 of your declaration where you discuss this reference.

A Give me a moment to review it.

Q Yep.

A Okay. Please ask your question.

Q All right. So I'm looking at the very last sentence on Page 38. And it says, "Hasan's GUI provides a hierarchical layout of the system in a familiar tree structure, with the root being the data center, and the branches being the

facilities, subscribers, devices and log servers, as shown for example in Figure 6A."

A Okay.

Q Does the GUI described in Figure 6A represent a decision tree?

A 6A is what I have in -- on the top of Paragraph 39. Right?

Q Yes.

A Yes.

Q That is a decision tree?

A Yes.

Q How is it a decision tree?

MR. ANDERSON: Objection. Form.

A Well, I would need to look back at Hasan to see that he explicitly called it a decision tree. I think he does.

Q Yeah, take your time if you would like to look.

I can tell you that, you know, that sentence that we just looked at on Page 38 of your declaration, quotes Hasan calling it a familiar tree structure.

A Can you point me to the column, please?
Q Let's see. You have -- so this is in your declaration that you cited, I believe that citation is to Column 8, Line -- starting at Line 19.
A Thank you.
Okay. I see that. Line 25 or so.
Q Yes.
A All right.
Q So I will reask the question.
A Can you repeat the question, please?
Q Yes. Yes. Let me -- I'm just ...
Explain why you believe that Hasan's GUI shown in Figure 6A is a decision tree.
MR. ANDERSON: Objection. Form.
A I think it's the same way that I explained earlier. It has some -- some information that can be viewed as a node, and it shows subnodes underneath, and it shows subnodes underneath. And so together it can be viewed as a tree.
Q Is there any difference between a tree

structure and a decision tree?

A A tree doesn't necessarily have to involve decision nodes, if that's your question.

Q Does the GUI in Figure 6A of Hasan involve decision nodes?

A Yes, let me --

MR. ANDERSON: Objection. Form.

A In the -- to the extent that it lists names of nodes and it lists name of subnodes, and so forth.

Q Well, what decision is involved?

MR. ANDERSON: Objection. Form.

A Again, I think it is a -- is a -- is a tree. And -- and when it's used to represent something like a policy, then it becomes a decision tree.

Q Does Hasan teach that that tree is used to represent something like a policy?

A It teaches about using it for -- for management, and in the management of things it's implementing decisions based on what's specified here.

Q Based on what's specified where?
A Let me have a look, please.
Q Yep.
A So, yes. So Hasan uses this tree GUI to specify policies. And so in that -- in that sentence is making decisions based on the policies that are being -- being specified.
Q What policies does Hasan disclose?
MR. ANDERSON: Objection. Form.
A I think in my analysis, for example, under the first ground, I point to Column 7 in Hasan that talks about that Hasan GUI allows administrator to configure devices and serve as configuration data and policy information. And in that paragraph it talks about using the GUI to specify policy information.
And I think if we go to other claim elements, I think I have other examples of which I talk about this.
Q All right. So where -- what -- can you point me specifically to where you're talking about? You said Column 7 of Hasan?

A Yeah, in Column 7 of Hasan, Paragraph -- I mean, Lines 7 to 26, it talks about using a GUI, especially Line 17, Using the GUI, the administrator can configure a device and serve as configuration data and policy information.

So at least Hasan is talking about using the GUI to specify policies.

Q So in Hasan, I want to understand how Hasan works.

So looking at Figure 6A for Hasan, let's kind of break down what this GUI is showing, actually.

So if you look at the tree structure on the left-hand side, it says Data Center 0.

Do you see that, in Figure 6A?

A Yes.

Q What does Data Center 0 represent?

A It could represent the global data center view, as an example.

Q And then it has -- so the GUI has --

A Give me one moment. I want to open up another copy of the --

Q Yep.
A -- of Hasan so I can look at the specification and figure separately.
Q Take your time.
MR. ANDERSON: Counsel, we're at about another hour, too. Maybe we should look at taking a break soon, if we can.
MR. HAARS: Yeah, that will work with me. We can come back to this line of questioning after the break.
Q Or, Dr. Lin, unless you want to continue. If that's all right with you, take a break now?
A I think okay with me either way. Can you just remind me before we take a break what question you were asking me and what line?
Q I don't think there's an outstanding question.
A Okay. Then let's take a break.
MR. HAARS: Let's just take a break.
(A recess was taken.)
BY MR. HAARS:
Q Dr. Lin, welcome back.

A Thank you.
Q During the break did you discuss the substance of your testimony with anybody?
A No.
Q All right. So before the break we were discussing Hasan's GUI shown in Figure 6A.
Correct?
A Yes.
Q And we were in the process of sort of understanding the -- what this GUI shows in the tree structure on the left-hand side. So we talked about the data center, and you said that was the global data center. And then on the two -- on subtrees below that it says, Budapest, New York, Paris, San Francisco.
Do you see that?
A I do.
Q What do these nodes stand for, or represent, sorry?
A So if you look at Column 8 of Hasan?
Q Yes.
A Starting at Line 48, which is the last --

starting with Line 49, which is the last paragraph on Column 8, it describes what Figure 6 shows.

Q Yes. Okay. So what do the nodes, Budapest, New York, Paris, and San Francisco represent?

MR. ANDERSON: Objection. Form.

A So let me refer to Column 8 of Hasan. It talks about Figure 6 depicting policies, including definition of access control privileges and mapping of devices' IP address and so forth. So that's how it characterizes Figure 6.

And to your question about Figure 6, the -- the tree diagram is used so that it can identify certain IP addresses and certain servers to apply access control privileges and mapping of IP devices.

Q Okay. Well, that doesn't exactly answer my question.

I just specifically want to know what these nodes, Budapest, New York, Paris, and San Francisco represent in Figure 6A of Hasan?

A So for example, if it's trying to

identify a mapping to a server access control as described in Column 8, then it -- the tree would indicate whether the -- the object is located in Budapest or New York and so forth.

Q Okay. So these are locations where data center objects are located?

A At a high level, Hasan in Paragraph 8 talks about specifying access control and mapping of IP addresses, and the tree provides a way to -- to locate those objects.

Q Okay. So, for instance, where it says, The New York node has a subnode that says NY1.

Do you see that?

A Yes.

Q Would you agree that the node labeled New York is a location where the node labeled NY1 is located?

MR. ANDERSON: Objection. Form.

A I think like the -- what we talked about earlier with respect to Figure 3 of '517, ultimately there's some server that's executing some instructions, and -- and so the server that's

executing some instruction would -- would look at whether something was under New York, and whether it's under New York 1, and so forth, in order to do access control privileges and so forth.

Q Well, I'm -- so let's take a step back, because I think we're maybe talking past each other for a second. I really just want to understand what these objects are in this GUI. So I don't -- I'm not interested right now in the access control privileges. I just want to get a layout, kind of a common ground of what I'm looking at here.

So New York, for instance, is a location.

Right?

A Yes.

Q Would you agree with that, New York is a location?

A I would -- I would agree with that generally, yes.

Q Generally. Would you agree that New York as shown as a node on this is a location?

MR. ANDERSON: Objection. Form.

A New York shown in this GUI is used to specify policies. And I give an example of a policy that Column 8 describes.

Q Well, that doesn't answer my question.

Would you agree that New York as shown on this as a node represents a location where portions of the data center are located?

MR. ANDERSON: Objection. Form.

A I guess if you put an analogy to what we talked about earlier in Figure 3, then Asia's a location as an example.

Q Well, again, that doesn't answer my question. I'm not interested in Figure 3 of the patent; I'm interested in Hasan.

So would you agree that the New York node shown in Figure 6A of Hasan represents a location where the NY1 node is located?

MR. ANDERSON: Objection. Form.

A Again, I think it's depicting a tree, is depicting -- it describes in Column 8 that is being used to specify policies. And I think is trying to say that if a -- you know, it's trying

to identify an object in order to identify some policy. And then it may go through is the object in New York, is it within NY1, and so forth.

Q So each of these nodes represent a data center object?

MR. ANDERSON: Objection. Form.

A I don't think -- I'm not sure that's what -- the way to think about it. Maybe the leaves are the objects. The -- the GUI is providing a hierarchy of these objects.

Q Okay. Right. So the GUI provides a hierarchy of the objects, but the nodes in the hierarchy -- the nodes in the GUI show the specific objects as arranged in a hierarchy?

MR. ANDERSON: Objection. Form.

A I am not sure I understand. But what the GUI is showing is under Data 0, their choice is Budapest, New York, Paris, San Francisco. And under New York, their choice is NY1, NY2, and under NY1 there are other choices.

Q Yeah. So all I want to know is, what does New York -- is it -- what does New York

represent there? Is it a choice? I'm not sure I understand your opinion -- your interpretation of Hasan.

MR. ANDERSON: Objection. Form.

A Yeah, Hasan provides a GUI for decision -- for tree structure that is used to specify policies.

Q All right. Let's take a step back here and look at Hasan, yeah, Column 8, Line 19.

A Column 8, Line 19.

Q That paragraph.

So would you agree that -- sorry, are you ready?

A Yes.

Q So would you agree that Hasan's GUIs show a virtualization topology?

A Well, the sentence says, "Using a GUI, the management administrator perceives the virtualization topology through a set of views."

That's what it says.

Q Yes. So point me in Figure 6A to the virtualization topology.

MR. ANDERSON: Objection. Form.

A I mean, it's not referring specifically to 6A or -- but you could view the -- the tree as a form of topology.

Q Okay. So the tree is a topology?

A It can be viewed that way.

Q Is the tree shown in Figure 6A a topology or not?

A It can be viewed that way.

Q But can it also not be viewed that way?

MR. ANDERSON: Objection. Form.

A You would have to give me examples what you mean.

Q My question is, is this a topology? And it's a yes-or-no question.

A Well, my answer is what it -- what Hasan is teaching here is that it can be perceived as a virtualization topology.

Q It says, "The administrator perceives the virtualization topology through a set of views."

This tree shows a view. Correct?

MR. ANDERSON: Objection. Form.

A The whole paragraph talks about how it can be perceived as -- as a type of view.
Q Yes. So the tree shown in Figure 6A is a view?
A Yeah, it can be viewed that way.
Q It can be viewed as a view?
A Yes.
Q Well, Hasan -- Hasan says that it's a view. So let's take a step back.
Column 8, Line 49.
A Forty-nine?
Q Forty-nine.
A Okay.
Q Well, I guess 48. "Exemplary GUI views are shown in Figures 6A through 6E. Figures 6A through 6D are views available to the NOC administrator."
Do you see that?
A Yes.
Q So would you agree that Figure 6A depicts a view?
A Yeah, I think I already agreed to that.

I mean, it shows a view. And it can be perceived as a view. I already said so.

Q Okay. And then going back to Column 8, Line 19, Hasan describes -- or defines a view as a hierarchical layout of the data center. Correct?

A That's what it says.

Q Okay. So the view shown in Figure 6A depicts a hierarchical layout of the data center?

A That's what it says, "As used herein, a view is a hierarchical layout of the data center."

Q Okay. So then when you're looking at this hierarchical layout of the data center, each node in this view represents an object of the data center. Correct?

MR. ANDERSON: Objection. Form.

A I'm not sure I would agree with what you just said or how you characterized it. Ultimately the servers are the servers. And you -- there's no such thing as a data center that spans the entire world. Right?

And so ultimately the tree shows a geolocation partitioning of these eventual servers

or objects.

Q All right. Give me one second here.

All right. Let's look at, still on Column 8, but Line 30.

A Give me one moment, please.

Q Yep. Take your time.

A I apologize. Are you asking me to look at Column 8, which line again, please?

Q Column 8, Line 30.

A Give me a moment.

Q The paragraph starting with, "Each view can have varying depths."

A Okay. What is your question?

Q So this paragraph refers to objects.

Correct?

A It does more than refer to objects.

Q Yes. So, but it does refer to objects?

A Yes.

Q And those objects can be selected?

A Yes.

Q And when those objects are selected, various management capabilities can be performed

on the object?

A Yes.

Q So now relating that back to Figure 6A, point me to an object shown in this view.

A Well, in accordance to this paragraph, an object can be at different levels. Right?

Q Uh-huh.

A And it talks about each object, like a data center facility, subscriber. So is talking about objects at different levels of the tree. And it talks about -- let me double-check here. So the rest of paragraph basically talks about -- well, first of all, again, repeating, the object can be data center facility, subscriber, different levels. It talks about properties of these objects can be managed by interface, can be viewed or edited. Right? Meaning that the user interface provides you to modify the properties. And it talks about properties relating to administrative access, access control, and these type of things.

So it talks about all of these things

with respect to objects. So in my view, it is talking about how the GUI can define policies using this tree.

Q Okay. Well, let me reask my question, because I don't think you answered it.

In Figure 6A, point me to one example of an object shown in the view?

MR. ANDERSON: Objection. Form.

A Well, I mean, one example is that NY1 is selected as an object.

Q Okay. So NY1 is an object?

A Yes.

Q Okay. What about Kaiser; is Kaiser an object?

A I think the paragraph here talks about what objects can be, and it talks about properties that can be used -- can be edited or provided for different objects. And it talks about objects as these properties as related to policies, for example related to access control.

So I think it talks about the different types of objects, including NY1 being a device as

one type of objects.

Q All right. And so on the right-hand side it shows summary information for the NY1 object.

Correct?

A As an example, yes.

Q Yes. In Figure 6A, that's what is shown.

Do you agree?

A Yes, it shows some information about -- some properties of NY1.

Q And so NY1 is a device in the facility of New York, and it has an IP address.

Do you agree with all that?

MR. ANDERSON: Objection. Form.

A This is an example of a -- of a GUI, and the information shown on 6A is the information shown on 6A. Specifically provides a device management IP address port, as it appears.

Q And so using the GUI on the right-hand side, you can set the device name -- or I'm sorry, so let me scratch that.

Using this GUI shown in Figure 6A on the right-hand side, you can set -- or users can set

the device name, the device type, the device facility, the device management IP address and port, and the software version for the device.

Is that correct?

MR. ANDERSON: Objection. Form.

A Figure 6A shows some examples.

Q Yes. We're discussing the examples shown in Figure 6A. In Figure 6A, the user interface shown here, users are allowed to specify all of those things that I just said?

A Yes, it appears so.

Q So when you -- so when you click on an object of the NY1, when a user selects the NY1 object, that brings up this device summary information page for device NY1?

MR. ANDERSON: Objection. Form.

A I -- please go on.

Q Is that correct?

A If you -- Figure 6A shows five pieces of information on the right-hand side in association with NY1.

Q Yes. And that information appears when

you select the NY1 object on the left-hand side?

A Yes. I think more generally Column 8 talks about properties that could be viewed and edited.

Q So the left-hand side shows objects. And when a user selects an object, it allows the user to then input configuration information for that object?

A I think more generally Hasan talks about the GUI can be used to define policies. And so this is one depiction of information that can be provided, but other information can be provided as well.

Q Okay. Now let's get back to my original line of questions now that we understand what is being shown in Figure 6A.

Explain why this GUI represents a decision tree?

MR. ANDERSON: Objection. Form.

A So Hasan talks about the GUI being used to specify policies. And we talked about earlier any kind of server that -- that it -- that

implements the policy has some software to implement some code.

And in this tree it shows geolocations of -- of servers and -- or, you know, devices. And the way you get to the device is by, you know, software code could look at data center, look at whether it's in Budapest or New York, and look at what's underneath, as an example.

Q So you say, "Software code could look at the data center, look at whether it's in Budapest or New York, and look at what's underneath, as an example."

Correct?

A Yes.

MR. ANDERSON: Objection. Form.

Q Point me -- point me in Hasan where it discloses that.

A I think my analysis of the claim elements is in combination with other -- the other prior art, I think is clear that Hasan teaches the GUI, teaches the GUI for a decision tree, and is applicable to policies, and policies for some form

of network management.

And so if you're asking me questions related to a specific claim element, I'd like to go to it and explain to you how I've applied the prior art.

Q So we'll get to that. Right now -- and I understand that your opinions also involve other references combined with Hasan. But right now I just want to understand your interpretation of Hasan by itself. That way we can sort of -- it will better inform how I understand your proposed combination.

So I would like to know whether or not you think that Hasan on its own -- or scratch that.

I would like to know why you believe that Hasan on its own teaches a decision tree via this GUI?

MR. ANDERSON: Objection. Form.

A I'm not sure. Can you ask the question one more time, please?

Q Yes. It's your opinion that the view

shown in Figure 6A of Hasan is a decision tree.

Correct?

A I think more specifically in my analysis involving the claim elements that talks about decision tree, it is in combination with another prior art.

The reason why I think the combination meets the claim limitation is because Hasan talks about using a tree structure, talks about using that to specify policies. And the type of policies that are in the '517 that are also described in other prior arts can be used in combination with Hasan to provide the GUI, G-U-I, for those trees.

I'm not sure I have argue -- let me just double-check, please.

Q Yeah. So I can point you -- I think we can kind of short-circuit this a little bit. I can point you to Paragraph 77 of your declaration.

A Please.

Q And I'm looking at the -- Page 49, so the paragraph rolls onto the next page. The sentence

starting with, "A POSITA would thus have recognized."

A Yes, so what I wrote -- yes, I see that sentence.

Q So I understand that it's your opinion that the combined GUI -- the combined Beaumont-Hasan GUI supports the setting of at least one policy using a decision tree representing rules.

My question is, do you believe that Hasan on its own teaches a GUI that supports the setting of at least one policy using a decision tree representing rules?

MR. ANDERSON: Objection. Form.

A So we are clear on my statement here, at least on the part, A POSITA would thus have recognized the combined GUI, in this case the combined Beaumont-Hasan GUI to support the setting of said at least one policy using a decision tree representing rules. Right? So we are on the same page, that's what I said. Right?

Q Yes. Correct.

A And I think one way to answer your question is, I have not expressed any opinions whether Hasan on its own would meet this claim limitation.

Q Okay. Right. So -- and I agree with that. I don't think that is in your declaration.

But I'm asking you now if you have any opinions on whether or not Hasan teaches a decision tree representing rules on its own?

MR. ANDERSON: Objection. Form.

A So I have not -- the essence of your question is does Hasan alone meet this claim limitation. And I have not done that analysis.

Q Okay. So you did not do that analysis in preparing your declaration for this proceeding?

A So I have not done any analysis either in preparation for -- either in preparation of the declaration or in preparation for the deposition today. I have not done any analysis whether Hasan alone meets this claim limitation.

Q Okay. Are you able to answer that question, sitting here today?

A I would need to carefully analyze. I have not offered an opinion. And I don't think I can just offer that opinion sitting here right now, without some detailed analysis.

Q How long would it take to provide that detail -- perform that detailed analysis?

A I don't know.

Q All right. Let's look back at Hasan, Paragraph 3, starting at Line 39.

A Give me one moment, please.

Q Yeah, take your time.

A Hasan, what --

Q Column 3, starting at Line 39.

A Column 3, starting at Line 39.

Okay. Can I read it, please?

Q Yes, please read that paragraph.

A Please ask your question.

Q All right. So this passage describes -- roughly describes the invention of Hasan as "a virtual management system for a network facility such as a data center or any facility having a plurality of components which can be organized as

objects for presentation in a virtualized environment." Correct?

A That's what it says.

MR. ANDERSON: Objection. Form.

Q Does Hasan teach any techniques for resolving DNS requests?

A I have not offered an opinion. I can look. I don't recall that Hasan refers to a DNS, but I've offered no such opinion regardless.

Q Okay. But sitting here today, you don't know of any teaching of Hasan for resolving DNS requests?

A So I think the particular opinion that I've offered in my declaration is that, like Beaumont and Ben-Shaul, which I know you will get to, Hasan is about network management, and it's about user interface.

At the bottom of 17, I don't know what line, somewhere around Line 60, I guess, it does refer to an embodiment in which -- so starting at Line 57, it does talk about one embodiment, this is implemented using a content service

application. And in that paragraph it mentions about DNS. But I think I have not made any claim with -- regarding -- in my declaration whether Hasan is teaching about DNS. But DNS is discussed at the -- at the bottom of this column.

Q Okay. But this column doesn't teach any technique for resolving a DNS request.

Would you agree with that?

MR. ANDERSON: Objection. Form.

A I don't see specifically in this paragraph that I pointed you to discussing about how DNS resolves requests.

Q Okay.

A It just talks about that it's -- it's, you know, one embodiment is related to content services and dealing with appropriate DNS settings.

Q All right.

MR. HAARS: So we're almost at the top of the hour here. I'm finished with Hasan, so I'm about to move on to a new exhibit, which so it might be a natural place to take a break.

Dr. Lin, are you interested in a break, interested in lunch?

THE WITNESS: Again, are you expecting another couple of hours still after lunch?

MR. HAARS: I think it will be at least a couple hours here. We've got to get through a couple more exhibits, the primary references here. So I think --

Off the record.

(A recess was taken.)

BY MR. HAARS:

Q Dr. Lin, welcome back.

A Thank you.

Q During this break did you speak with anybody about the substance of your testimony today?

A No. No.

Q All right. Let's get back to it.

MR. HAARS: So can we please put Exhibit 1007 in the chat. It's Beaumont.

(Exhibit 1007, previously marked, not attached.)

Q Dr. Lin, when you get that open can you turn to Paragraph 32 for me, please.

A Okay, I'm there.

Q All right. This figure -- or this paragraph discusses Figure 4, which is an illustrative DNS, according to principles -- in accordance with principles of the invention.

Do you see that?

A Yes.

Q All right. So this DNS, this is a DNS server?

Is that correct?

A It appears so, yes.

Q And you see in both Figure 4 and also in the accompanying Paragraph 32, the DNS 400 includes name server software.

Do you see that? And it's labeled -- I'm sorry, name server software 411.

A 411. I'm looking. Give me a moment, please.

Q Take your time.

A On Figure 4?

Q Figure 4, and also discussed in Paragraph 32. And it's the large square on the right-hand side of --

A I see it. Thank you. I see it now.

Q And do you see that the name server software comprises a receiving module 412, a map retrieving module 413, a selecting module 414, and a returning module 416?

Do you see those?

A Yes.

Q Are these software modules?

A That's how it's described in Beaumont, that 411 is the name server software.

Q And each of the modules in the name server software, these are each software modules?

A It would appear that they can at least be software modules.

Q What else could they be?

A I'm okay with them being software modules.

Q Okay. So let's just make sure the record is clear. Would you agree that receiving module

412, map retrieving module 413, selecting module 414, and returning module 416, are software modules?

A That sounds reasonable.

Q So then you do agree that they are software modules?

A I think so. Sounds reasonable.

Q Okay. Now, look further down in that paragraph. It discusses the selecting module 414.

A Which line, please?

Q And take your time if you want to read.

A Oh, I see.

Q Line --

A Yeah, there's no good line numbers.

Q No line numbers here. But it's about --

A Starting with what?

Q Let's see. Where is the --

A Which module are you referring to again, please?

Q I was referring to selecting module 414. And the sentence is, "After receiving the requestor identifier from the receiving module,"

and then it goes on to discuss about the selecting module.

Do you see that sentence?

A I'm reading it right now.

Q Yep.

A Please ask your question.

Q So the selecting module retrieves from the preference database 453 a preference number associated with each retrieved mapped address and the requestor identifier.

Do you see that?

A Yes.

Q Now, given that this is a software module, would you agree that the selecting module implements software instructions that instruct a computer to perform this functionality of retrieving a preference number?

A Yes.

Q Okay.

A I think it's correct that these modules are -- can be software modules. So yes, I can agree to that.

Q All right. And then further down, I think it's the last full sentence in that paragraph, it says, "The selecting module 414 selects an address based on the retrieved preference numbers, preferably one with the highest preference number."

Do you see that?

A I see that.

Q And a similar question: Given that this is a software module, would you agree that the selecting module 414 includes software instructions that instruct a computer to select an address based on the retrieved preference numbers?

A I mean, any -- any software that's implementing some functionality would be implementing instructions. That's a -- that's intrinsic.

Q Yes. Okay. All right. So this sentence here, it ends with "preferably one with the highest preference number."

So preferably a rule of selecting the highest preference number.

MR. ANDERSON: Objection. Form.

Q Do you see that?

A I see that it is in a way specifying a policy. Right? It's saying that -- I mean, we can talk about other parts of it. But essentially preference number is something that a user can define. And if a -- if a user wants a policy of selecting Server A instead of Server B, the user can set a higher priority or preference number for A versus B.

So, yes, the sentence says it can select -- it can select a -- something based on the preference number, that's what it says.

Q Yep. Okay. So if -- so in the example given here where the selecting module selects an address based on the -- or selects the address that has the highest preference number, would you agree that the selecting module implements instructions, software instructions, that instruct the computer to select the highest preference number, the IP address with the highest preference number?

MR. ANDERSON: Objection. Form.

A Well, let me break it down.

So Beaumont teaches that if you -- if two servers can be selected, A versus B, a user can express the policy that A should be selected over B. And it does so by defining a preference number for A that's higher than B. And if it wants B to be -- if the policy -- if the user wants the policy of B to be selected instead of A, that's the policy, then you can set the preference number for B versus higher. So that's what the preference number can be used for.

And like anything that's implemented on the DNS server or any server that's in software, software is always in the form of instructions.

Q Okay. And so when -- so the -- would you agree that the selecting module specifies a rule for selecting an address based on the retrieved preference number?

MR. ANDERSON: Objection. Form.

A Well, I think throughout Beaumont it's clear that the preference database itself is

specifying policies. And one policy is to select Server A over Server B as an example. And that can be done by, for example, setting preference number for A to be higher than B.

But again, anything in any server, including a DNS server, will be in the -- if it's in software, it will be in the form of instructions.

Q Okay. So let me just kind of go back to my question.

In the example given here in Paragraph 32, where the selecting module selects an address with the highest preference number, that selecting module specifies a rule to select the address with the highest preference number. Correct?

MR. ANDERSON: Objection. Form.

A Again, I think the preference database is what's specifying the policy. But again, any software that implements any policy has to be in the form of instruction.

Q Is that instruction implemented by the selecting module a rule?

A Well, I think the -- the -- there are several things. Not just in this paragraph, but throughout Beaumont it teaches different embodiments of policies. And -- and so the user can specify these policies in the preference database. And the -- any software, including a selecting module, would implement the policy by means of instructions.

Q Okay. Well, that doesn't -- that doesn't fully answer my question. My question -- well, I guess let me ask a different question.

In Paragraph 32, in the example given where the selecting module selects an address with the highest preference number, what does the software of the selecting module -- what instruction does the software of the selecting module specify?

MR. ANDERSON: Objection. Form.

A Well, I mean, machine -- instructions are particularly machine instructions, which are a bunch of 0s and 1s that we don't -- it's hard for us to talk about; they're just 0s and 1s.

But if you -- if you're asking -- I guess I'm not sure what you're asking.

Q So I guess my question is, the selecting module in that scenario provides a -- specifies an instruction for the DNS server to select an address with the highest preference number.

Correct?

A I think we can make a distinction. I think we can make a distinction regarding the preference database specifying policies or rules, and some software implementing the rules.

Is that what you're asking?

Q Yes. Yes, that's -- well, that's in line with what I'm asking.

I guess my question is, it's -- I think it's more fundamental than that, or it's simpler than that. Let's say, I just want to know the selecting module provides an instruction instructing the DNS server to select an address with the highest preference number.

A So if I may, I think the -- your question may be the same as what you might have asked me

earlier about the '517 itself.

You know, to the extent that a tree specifies policy, the Beaumont also specified policy in the database, the preference database.

Just as in '517 in here, anybody implementing the policies of rules would be by means of some instruction, some software code. I don't know how to describe what that software code would look like because ultimately it would be machine instructions. But the preference database is specifying policy, and software is implementing such policies.

Q Okay. All right. Let's --

A In other words, any diagram you show me in -- any diagram you show me in '517 by itself doesn't do anything. Right? At the end, server has to have software that executes instruction. By itself it doesn't do anything; it's just a picture.

Q Okay. All right. Well, let's take a step back here. So Paragraph 32 lists two functions performed by the selecting module. The

first one that we discussed is to retrieve from preference database a preference number associated with each retrieved mapped address and the requestor identifier. Correct?

A I think -- I think you read it correctly.

Q And so the selecting module provides an instruction to the computer to retrieve preference numbers from that preference database. Correct?

A The software has some instruction to implement some policy.

Q Yeah. So it accesses the preference database and retrieves one or more preference numbers from that preference database. Correct?

A As stated in this, in this sentence, it is retrieving some preference numbers from some preference database, yes.

Q And it has software instructions instructing the computer to perform that function?

A To the extent that any -- any software is based on instructions.

Q So then the answer is yes?

A Yes, software has to have instructions.

Q Okay. And those instructions tell the computer to access the preference database and retrieve one or more preference numbers?

A I mean, I think the -- I don't think the sentence is so detailed. I mean, it simply says that the selection -- the selecting module will select an address, preferably one based on the highest preference number. I think that's what it says.

Q So right now I'm talking about a little higher up in the paragraph.

A Okay.

Q Where it says, "Selecting module retrieves from preference database a preference number associated with each retrieved mapped address and the request for identifier."

A Let me see. I'm sorry, how many sentences above that sentence?

Q It's a couple above it. The full sentence starts with, "After receiving the requestor identifier from the receiving module"?

A Give me a minute to find that sentence,

please.

Q Uh-huh. It's a couple above where we just were.

A Okay.

Q All right. So the functionality described in this paragraph or in this sentence states that, "The selecting module retrieves from the preference database a preference number associated with each retrieved mapped address and the requestor identifier."

Right?

A I see that.

Q And so my question is, does the selecting module implement or specify instructions that instruct the computer to perform those functions?

A Well, maybe I can try to answer this way. I think preference number is one of the decisions that a policy specifies. And again, the preference number is a decision point. The preference database can express a policy to select Server A over Server B by expressing a higher preference number for A versus B, or the other way

around.

So the preference database is specifying policies, and the software -- I mean, to the extent that it's retrieving policy from the preference database in implementing the policy, that's fine with me.

Q Okay. But that wasn't my question. I didn't mention policy at all.

My question is, does the selecting module specify instructions for the computer to retrieve preference numbers from the preference database?

A Again, a software is executed in the instruction. And if there -- if the sentence says that the selecting module -- what -- again, it doesn't say that. But I think it does in the previous paragraph. Let me just read it one more time. Let me look at it one more time.

Okay. So in the sentence before, starting with "after," in the latter part of that sentence it says, "Selecting module 414 retrieves from preference database 453 a preference number associated with" dot, dot, dot.

And so that action, what the sentence describe, would be described -- would be implemented in software as instructions. Again, as with all software.

Q Okay. Now, similarly, down below in the last -- or the second-to-last sentence that we were discussing, it says that, "Selecting module 414 selects an address based on the retrieved preference numbers, preferably one with the highest preference number."

Now, my question is, does the selecting module specify instructions that instruct the computer to perform the functions in that sentence?

A There are some software code that -- that describes implementation of whatever is described here. Software engineers can write code in many different ways.

Q So the selecting module specifies some software code that instructs the DNS server to select an address based on the retrieved preference numbers?

MR. ANDERSON: Objection. Form.

A What is your question?

Q So the selecting module specifies some software code that instructs the DNS server to select an address based on the retrieved preference numbers?

A I mean, in general. I guess I'm not understanding the question. Because I said earlier that, you know, preference is a decision feature, like country is a decision feature. And, you know, you can specify the policy that Server A should be selected over Server B by introducing a decision feature called preference number and assigning A a higher software number.

If a feature is based on a destination domain or, you know, a country, any software would have to retrieve that information and execute some code to implement the policy.

So I guess I'm not understanding your question. I mean, any kind of decision-making, assuming that involves the data structure or database, would have to retrieve some information,

and then make some decision based on that retrieved information.

Q Okay. Let me reask my question. It's not a -- yeah, this is not something that's meant to be tricky. I just -- and I'm just asking like generally how software modules work and how this software modules work.

So because the Paragraph 32 says that the selecting module selects an address based on the retrieved preference numbers, my question is simply, does the selecting module provide some software code that instructs the computer to perform that functionality?

A It would be reasonable that there is some code that reads that information. That seems reasonable.

Q That reads what information?

A The preference number information.

Q And --

A Anything --

Q Go ahead.

A No. Go ahead.

Q So then there's a code -- okay. There is software code in the selecting module that reads preference numbers, and that then selects an address based on those preference numbers.

Is that right?

A Well, the way I see it is, the preference database specifies a policy, and the software code is implementing that policy. And as part of implementing that policy, it may be retrieving that information from the database.

Q So again, I'm just generally asking generally how a software module works. Right? It provides some software instruction instructing the computer to perform some functionality.

Correct, generally?

MR. ANDERSON: Objection. Form.

Q Setting aside this selecting module. If you have a software module, that software module has lines of code that instruct the computer to perform some functionality. Correct?

A Yes, software gets compiled to machine instructions, and a server hardware will execute

those instructions.

Q Okay.

A Instructions I think are -- just to be clear, these are machine instructions. These are not what we think of maybe -- maybe the term "instruction" is a little bit complicated.

But instructions are like, you know, read this memory location, add these two registers together, move this register to that register. That's what instructions normally mean.

Q So the lines of code get translated into some actual instructions that the computer can read?

A Yes. Usually it's called instruction set of some sort.

Q Instruction set, yes.

So then if you look at the selecting module, does it provide lines of code that get translated into instructions that instruct the computer to select an address based on the retrieved preference numbers?

A I'm sorry, I guess I'm not understanding

the question. Because -- and maybe I can -- you can clarify the question by -- by the analogy.

The -- a preference number is a decision feature. And the policy, for example, can be that if Server A has a higher preference number, that's the one that gets selected over B.

You know, previously when we were talking about the '517, we talked about, for example, a country. Right? Being a decision node or branch. And in that case just the same here; there has to be somewhere in the software that reads the country and executes some instructions to do something else.

I think that there's no difference here.

Q Well, we're not talking about the '517 patent or the claims. I'm just talking about this paragraph in Beaumont and this corresponding figure. And I just want to know how this figure works independent of anything else.

A But I think your question is whether the preference database specifies rules or if the software specifies the rules. I think that's the

essence of your question. And I --

Q No. The essence of my question is simply, does the selecting module provide lines of code that ultimately instruct the computer to select an address based on the retrieved preference numbers?

A In the same way --

MR. ANDERSON: Objection. Form.

A In the same way as any other decision variable, is if you say there's some lines of code that says, if country equals X, you know, do this; or if preference number is Y, do that. Then from that perspective I think is -- it is software instructions that's executed on a server.

Q And those software instructions are specified by the selecting module?

MR. ANDERSON: Objection. Form.

A Well, in this case, you know, looking at this specific paragraph, it is saying that selecting module is the one that's implementing a policy of selecting an address, for example, with the highest preference number.

Q Okay. Right. So the selecting module implements a policy of selecting an address, for example, with the highest preference number. And the selecting module then must have -- must provide some sort of lines of software code that instruct the computer to perform that functionality.

MR. ANDERSON: Objection. Form.

Q Right?

A In the same way that if it was deciding based on country code or any other possible decision variable.

Q Okay. But we're not discussing country code. This paragraph doesn't discuss country codes or other decision variables. This paragraph discusses preference numbers. So all I want to know about is preference numbers.

And all I want to know is does the selecting module provide an instruction to the computer to perform the functionality of selecting an address based on the retrieved preference number?

MR. ANDERSON: Objection to form.

A So in this example it is saying that -- which is what I already describe. In this example it is saying that the policy is to select Server A over Server B if A has a higher preference number than B.

If your question is to implement that policy, does their software instruction to read the preference number and then compare the preference numbers between A and B, then I'm okay with saying that as part of the implementation of a policy, it would do something like that.

Q Okay. That is my question. That's all I really want to know. But I'm not talking about policies. So forget -- because Beaumont doesn't mention policies.

So all I'm asking is, does the selecting module provide a software instruction to read the preference number and then compare the preference numbers between A and B, and then select an IP address based on that comparison?

A And my answer --

MR. ANDERSON: Objection to form.

A And my answer is, if -- if a specified policy is based on preference number or if a specified policy is based on country code, the policy is defined by the database or data structure as part of implementation. I will not disagree with you. In fact, I will agree with you that the software would read the preference number or read the country code and do some sort of comparison instruction. So I agree with that.

Q Okay. But again, you keep talking about policies in your answer. But my question doesn't have anything to do with policies. My question is talking about what it says in Paragraph 32 of Beaumont. So let me just start again. Because I don't think we're on the same page here exactly.

My question is simply, does the selecting module specify -- well, let's scratch that. Let's start kind of at a simple question.

Does the selecting module specify lines of software -- or software code?

MR. ANDERSON: Objection. Form.

A The selecting module, if it's implemented in software, which I agree it can be, will be in the form of some lines of code and some software language, yes.

Q Okay. And what do those lines of software code instruct the computer to do?

A I don't know how the software would be written. There are many ways to -- you know, we can say there are infinite ways to write software. And so I don't think I can cover the universe of different things.

But if you're asking me -- or I will answer it, the -- if the software module is selecting an address -- I mean, I'm sorry, if the sentence says the software module is retrieving a preference number from a database, and is selecting the highest preference number, then it is reasonable that it would have some software that retrieves the preference number and makes some comparison of the preference number. That's reasonable.

Q Okay. Well, it's reasonable. But is

that actually what's happening in Beaumont's system?

MR. ANDERSON: Objection. Form.

A Yeah, I think -- let me try to answer it one time. Hopefully this will be the final answer.

Any policy that a software implements, if the policy is to retrieve -- is based on the highest preference number, then I think it's reasonable to say that there's some software that's retrieving the preference number, and there's some software that's comparing the preference number. So I have no problem with that. And I agree to that many times already.

Q Okay. All right. So then this sentence at the bottom of Paragraph 32, it doesn't limit the rule or the instruction to selecting what the highest preference number is, as you preferably select the address with the highest preference number; but you could also select based on other criteria. Correct?

MR. ANDERSON: Objection. Form.

A So in other paragraphs in Beaumont he describes other -- other policies.

Q So for instance, Beaumont contemplates selecting an address with the lowest preference number, for instance. That could be a select rule in Beaumont.

MR. ANDERSON: Objection. Form.

Q Is that correct?

A I think the word "preference number" means preference. And so if you're -- let me see if I can understand your question.

Are you asking the question that -- just as a -- as a hypothetical, that -- put aside Beaumont for a moment. Right?

Are you saying that -- that a feature, even if it's described -- so I think -- the first thing I will say is that Beaumont only teaches the highest preference number. I think that's the first thing I will say.

Q Well, but it says, Preferably one with the highest preference number. Correct? So would you agree that Beaumont contemplates other

selection criteria related to the preference number?

A Not necessarily related to the preference number, but it also explains other decision features.

Q Well, let's read this sentence again. It says, "Selecting module selects an address based on the retrieved preference number, preferably one with the highest preference number."

So then the selecting based on the highest preference number is preferable, but that's not the only selecting rule contemplated by Beaumont. Correct?

MR. ANDERSON: Objection. Form.

A So it says the address is based on the retrieved preference number. "Based on" to me means it is one of the consideration. And "preferably the highest number" is just another statement, right? But there could be other decision features.

Q Okay. Yeah. So for instance --

A Of which preference number is one of

them.

Q For instance, the software could pick the lowest preference number as the selecting criteria. In other words, the preference number -- let's just make sure we understand each other here.

I'm just saying right now they're saying -- so if you look at Figure 3, the highest preference number is Preference Number 9 in, it looks like Row 322. But if you were -- a person could say, well, I want to --

A Give me a moment while I look that up, please.

Q Okay.

A Okay. Please go ahead.

Q Right. So they're selecting based on the highest presence number, that's Preference Number 9. But you could say, I want the system to be implemented so that it selects the lowest number, because Number 1 is -- in some people's minds, Number 1 is the one I should select. Even though the number is lower, it represents a higher

preference.

Do you see that, or do you understand that?

A So I think --

MR. ANDERSON: Objection to form.

A I think reading the Beaumont specification, it is clear that Beaumont talks about other decision features. And so I think, with respect to Figure 3, we have to look at other places in the specification which I speak to in my declaration. It teaches, as an example, that you first check on the destination domain. And once you have the destination domain, among the entries you may pick -- you can then use the preference number as the criteria.

So as you pointed out, if I look at number -- the preference column alone with Number 9, that may well be the highest number. But in the sentence you asked me to read, you know, it says, "based on," which is it can be based on preference number. One with the highest -- one with the highest number.

The caveat is that it may be the ones among the destination domain. So the destination domain is, for example, 156192, then the nine would not be selected, because the first decision variable is the destination domain.

So I think that's what Beaumont meant in his sentence, that, you know, whatever we just read, something to the effect that it's based on the preference number, preferably one with the highest number. And an example that is given is that we may not want to pick one with the highest number. We may want to pick one that's based on destination domain of the client first.

Q So that's what you think that sentence means?

A That's an example. Because it is very explicit in describing the scenario that I just described.

Q All right. Okay. So then let's just speak hypothetically.

Hypothetically, somebody could implement the selecting module to select an address with the

lowest preference number. Correct?

MR. ANDERSON: Objection. Form.

A In the same way that your earlier example, one could hypothetically implement, you know, a continent to pick the one that's furthest away. Right? I am not sure it's useful to answer hypotheticals.

Q Okay. Well, I'm going to ask my question again.

Hypothetically, one could implement the selecting module to select an address based on the lowest preference number. Correct?

MR. ANDERSON: Objection to form.

A That's not the teachings in Beaumont. And so I think a reading of this, of Beaumont, I think is clear that every reference to a preference number means the highest.

Q Okay. But we're speaking hypothetically now.

Hypothetically, one could implement the selecting module to select an address with the lowest preference number. Correct? They could

write those lines of code and instruct the computer to do that.

MR. ANDERSON: Objection. Form.

A I don't agree that's what the teaching of Beaumont is about. I just don't agree that's what is being taught by Beaumont.

Q Okay. Well, I know that. But I'm speaking hypothetically here.

Hypothetically, one could do that.

Correct?

MR. ANDERSON: Objection. Form.

A And are you allowing for the hypothetical when something says, country-based, that the code would pick specifically a country that's farthest away? Are you allowing for that hypothetical?

Q No, I am not. My hypothetical is the exact same as what's in Beaumont, but the selecting module is -- has lines of code that instruct the computer to select an address with the lowest preference number.

A I just -- I just disagree. I don't think that hypothetical applies to the teaching here.

The teaching here is clearly talking about the highest number throughout.

Q But it's a hypothetical. Right? So let's kind of talk in hypothetical language here.

One could do that. One could write that code?

A So --

Q And in that instance, Number 1 would represent the highest preference. Even though it's the lowest number, it would represent the highest preference. That's what I mean by this.

Right?

MR. ANDERSON: Objection.

Q And then Number 9 would represent the lowest preference. But these are user-entered, manually-entered preference values. Right?

A Yes.

Q Right. So the user can decide whether or not the user wants Preference Number 1 to represent the highest preference or Preference Number 9 to represent the highest preference.

Correct?

MR. ANDERSON: Objection. Form.

A But the teaching in Beaumont -- so let me see if I can answer this way.

The Beaumont consistently teaches that if preference number were to be used, it would be the highest number. And the user is implementing some number. And the number, if it wants A to be selected over B as a policy, it would specify a higher preference number for A over B. And we already discussed that purpose of software is to implement a policy that specified in, for example, a preference database. And if the software is not implementing the policy, then it is not implementing the policy.

So in your hypothetical, software doesn't have to implement policy, it can just do whatever it wants, if somebody decides to write software that doesn't do what it's supposed to do.

Q Okay. So once again, I haven't -- I'm not talking about policies. I'm not talking about implementing policies. I'm talking about a hypothetical in which the selecting module is the

same as it is described in Paragraph 32, but the difference is it selects an address with the lowest preference number instead of the highest preference number. Correct?

Let's just -- you understand that that could happen? Let's -- assume that it has happened. All right?

MR. ANDERSON: Objection. Form.

A Okay.

Q Assume that it has happened, somebody did that. Now, in that selecting module, that selecting module would provide software code instructing the computer to select an address with the lowest preference number.

Do you agree with that?

MR. ANDERSON: Objection. Form.

A I think the preference database in Beaumont, just like '517 patent, these features are defined, and they have human understanding of the meaning means. And policies are defined with respect to that understanding.

Preference number in this case, as taught

in Beaumont, is to assign it as a priority. The higher the priority is the -- the server is based on the higher preference number.

If the -- Beaumont is not exclusive in terms of defining features that can be defined, that can be based on. But any feature, to the extent it's just English words, as English words defining policies, there is an understanding to what that means. And Beaumont is very clear to what it means to have what the preference number means.

If Beaumont wants to have a different feature, you know, they can define a different feature. But preference number in this case is clearly to mean the highest preference number first.

Q Okay. But that doesn't come close to answering my question. Because, remember, the question is we're presuming --

A It does. It does --

Q We're presuming the premise that somebody has implemented a selecting module that selects

the address with the lowest preference number. There's the baseline of the question. We accept that premise.

In that selecting module, then, that selecting module implements instructions, software code, that instructs the computer to select an address with the lowest preference number.

MR. ANDERSON: Objection. Form.

A And that would be -- again, these are just English words. And for English words to matter, we have to have an agreement to what the English word means.

And if you're -- so I think there are two different question you may be asking. Can the software developer go rogue and just not implement the policy as specified. Right? Just write code that doesn't do what the policy specifies. That's one situation. I don't think that's what you're asking. Right? Because, of course, any software can go rogue.

I think the different question you're asking is can there be a separate decision

variable that -- that has a different meaning. And I think Beaumont is not -- is not exhaustive in all of the possible decision features. But in respect to this particular one with retrieved number, it describes it in a certain way, and it's only specified to mean one way. And a user specifying the entry values for this would have to first understand what that feature means.

In other words, the user is not simply just entering any arbitrary number. When a user specifies the policy when defining the database, it has an understanding of what those features mean. And throughout Beaumont it clearly teaches what this feature means, and that's why it's able to say things like the highest preference number.

And as I said earlier, it's not based solely on the preference number. And so it can be the case that destination domain, it can be the case whether the health of the server is working or not. That's why it says, you know, preferably one with the highest preference number. But if it's not in the destination domain as taught

elsewhere, it may not be selected. Right?

So in any kind of policy there has -- and these are just English words -- there has to be some understanding to what it means. And the user that's entering the values has to know what it means. And if it -- if it wants something else other than what is being taught here, it can be something else. But I don't think your question is whether the software developer can just say, Let's do something completely opposite. Right?

Q No, of course that's not my question.

So let's -- in your answer assume then also that the user knows to enter the lowest value means the highest preference. All right. So now we're good.

In that case we have a system that everybody understands Preference Value Number 1 means the highest preference. So then in that scenario, the selecting module includes software code that instructs the computer to select an address with the lowest preference number.

A You just said something contradictory.

You said something to the extent that --

MR. ANDERSON: Objection.

A -- everybody understands the preference means the highest number first, but somehow you want the code to select the lowest one first?

Q No. The lowest number represents the highest preference.

So Number 1 means, This is my top server, this is my Number 1 server that I want to select first. Right? But it's the lowest number, it's Number 1, but it means the highest preference.

Does that make sense?

MR. ANDERSON: Objection. Form.

A Again, Beaumont is not exhaustive in all the different features that can be expressed in a preference database. The names of the features are just names of features, regardless of how you represent the -- the preference database.

In other words, anything that's expressed in a preference database, regardless of the representation, is inherently based on some common understanding of what the words mean.

So if the user is entering a value with the understanding something called preference number is based on the highest one first, then the user will enter a larger number for a preferred server. If the -- if the application of Beaumont is to -- is to have a different column or different feature that has a different meaning, then the user can enter the value appropriately to reflect those -- those numbers.

So it -- it's no different than examples even given in '517.

Q Okay. But we're not talking about '517.

A It matters, because your hypothetical --

Q It does not matter, because we're talking about Beaumont only. Divorce it from the '517 completely. That's the parameters of the question. Right? I'm not interested in the '517; I'm interested only in Beaumont. And all I want to know is, in the scenario that we've outlined, would that selecting module provide software codes -- code instructing the computer to select an address with the lowest preference number?

MR. ANDERSON: Objection. Form.

Q Assume the scenario, assume all of it is good, and this is how the system has been designed, and the user knows it, and the designer knows it. In that scenario, the selecting module would include software code instructing the computer to select an address with the lowest preference number.

MR. ANDERSON: Objection. Form.

A And my answer I guess is the same. Which is -- I think it's the same. Which is, preference number as described in Beaumont has a certain meaning. And if you want to -- if someone wants to have a different column that has a different meaning than a preference number, they can do so. And the user would have a -- would understand what that means.

But here the preference number is clearly defined, and it means a certain way. And -- and the most importantly, the user that's providing the value has an understanding what it means.

I'm not precluding -- maybe that's what

your hypothetical is. I'm not precluding that there's some other column that -- where the numbers could mean something different. What I am saying is that in reference to preference number in Beaumont, it is clear what -- what he intended to say.

Q Okay. Let's move on from this one. Let's move on from the hypothetical, but let's go back to what actually is said in Paragraph 32. "The selecting module selects an address based on the retrieved preference numbers." And I think we have agreed before that the selecting module, as all software must, simply provides software code that instructs the computer to perform the functionality that is listed in -- that is described in Paragraph 32. Correct?

MR. ANDERSON: Objection. Form.

A I think I've already agreed that --

Q Okay.

A -- if implementing a policy requires retrieving a preference number and comparing them, then of course they are implemented in software by

some instructions.

Q And those softwares implement rules for selecting an address. Correct?

A So I said earlier that at least in the context of Beaumont, the preference database is where the policy or rules are specified. And the software is implementing the rules. And part of the implementation may require to read something called preference number and may require to compare the preference numbers.

Q What's the definition of a rule?

A Again, it -- I think it's similar to what we discussed earlier. In the context of DNS, is how the DNS should resolve the requests.

MR. ANDERSON: Objection to that question.

A Is the -- yeah, again, the DNS is implementing -- I mean, the DNS software is implementing some policy to select the response, the server.

Q Okay. So the DNS software is implementing a policy to select the server.

A Yes. Is that a question?

Q No. Sorry. Scratch that.

Well, let's go back to my original question, which I don't think you answered it, but what is the definition of a rule?

MR. ANDERSON: Objection.

Q Aside from DNS, in general what does the word mean?

MR. ANDERSON: Objection. Form.

A Again, I think earlier you asked me if I agreed policy and rules -- if policy means rules. And you pointed to Institution Decision. Then -- then -- then, yes.

And, you know, policy and rules are the same thing. Policy then, as well as the rule, tells you -- tells you -- tells the DNS server what server should return as a request. So given a request, it needs to return a server. And the rules or policy is the basis that the server returns that address of server.

Q All right. Now let's talk about the Preference Table 453 in Figure 4 and also

discussed in Paragraph --

A Figure 4? I'm sorry. Figure 4?

Q Beaumont Figure 4 and also discussed in Paragraph 32. Same paragraph we've been discussing.

A Uh-huh. Yes.

Q That Figure 4 depicts a preference database table. Correct? Preference Database Table 453?

A Yes.

Q Okay. And the preference database table stores preference values that are input by the user. Correct?

A Well, not just preference value, but it stores the types of examples that Figure 2 and Figure 3 shows.

Q So among other things, the preference database table stores preference values that are input by the user?

A It can store preference values shown in Figure 3.

Q Okay. But the -- but the Preference

Database 453 stores preference numbers because it says that the selecting module retrieves from the preference database 453 a preference number associated with each retrieved mapped address.

Right?

A Yes, in the example paragraph you told -- that we've been discussing, it gives an example of a policy. And in that policy, based on preference number, yes, it's consistent with Figure 3, and it's consistent with the table containing that preference number.

Q Okay. Does the preference table include any software code?

A Does it execute -- does it provide any software code. Can you clarify that question?

Q Well, let's scratch that question for now.

What is a preference value?

MR. ANDERSON: Objection. Form.

A As I said earlier, the teaching in Beaumont is, for example, if you want Server A to be selected over Server B, you express a higher

preference number.

Q So a preference number, as stored in the preference table, is an integer. Correct?

A It can be.

MR. ANDERSON: Objection to form.

Q Can it be anything else?

A I don't think it's limiting. I don't think it's limiting, but is an example. And I think it goes on elsewhere, I would have to search for it. It says that the preference can be expressed as a number, as an example. And I think it also says elsewhere that other things can be used as preference.

Q Okay. But when we're talking about a preference value input by the user, that preference value is an integer?

MR. ANDERSON: Objection. Form.

A Again, I don't think it's limiting in that sense. I think Beaumont teaches elsewhere that preferences can be other things.

Q Point me to it.

A Let me see. It may take a while.

Q Okay.

A I don't want to spend too much time. So upon a quick glance, I think Beaumont clearly talks about other things that could be in the preference database table, so estimate a distance and other things like that. But I'm not sure that it ever refers to preference number as anything different than a number. But it does say that there could be other things, other decision fields, that could be used in the -- that are specifies in the preference database or preference table.

Q Okay. Fair enough.

A But I think you're probably right that it never refers to a preference number other than a number.

Q Okay. Fair enough. All right. That's good.

All right. So then that number is just a piece of data. Correct?

A To the extent that -- again, I think we spoke about earlier. In any representation, there

is an understanding between the humans that are creating that representation and the meaning of the representation.

So your question one more time, please?

Q The preference number as stored in the preference table 453 is just a piece -- is just data. Correct?

A No.

MR. ANDERSON: Objection. Form.

A I disagree. The Beaumont throughout is explaining how the preference number, what it means and how it's being used. And it's just not an arbitrary number.

And the example I keep giving is if a user wants to specify policy of choosing Server A over Server B, it picks a higher preference number for A over B. So these numbers are not just random.

Q All right. Let's take a step back.

What is a database?

MR. ANDERSON: Objection. Form.

A I mean, the database -- the word

"database" by itself could broadly mean something to store data.

Q Okay. Is that how it's -- what is the -- is the preference database 453 something to store data?

A Throughout Beaumont it clearly describes what the preference database is and how it is being used. And it's being used to specify policies. So that's the -- that's what the use is for. And of course to do that, it has to store information.

Q So it stores data?

A Like I said, you know, as a generic word, a database, including any database, would have to be something -- would at least include something that stores data. But I think throughout Beaumont, Beaumont is very clear what Beaumont's preference database is all about.

Q Okay. So the data is used in particular ways. But the database itself only stores data?

MR. ANDERSON: Objection. Form.

A The preference database -- so first of

all, you'll agree that Beaumont describes policies that the DNS -- Beaumont provides teaching for policies for DNS to select servers. It describes the preference database as the mechanism in which to specify those policies.

Q I'm not talking about policies. I haven't talked about policies one time in this entire discussion about Beaumont.

My question is simply, the database stores data. Correct?

MR. ANDERSON: Objection. Form.

A The database stores more than just data. Right? So it does store data, but it's more than data.

Q Explain how it's more than data.

A It's specifying policies.

Q It's policies. Where does Beaumont mention policies?

A So in different paragraphs, including Paragraph 23, it talks about policy. Even if it doesn't use the word "policy," it describes how the DNS selects a server in response to requests.

And so anybody reading Beaumont will understand that Beaumont is teaching DNS policy.

Q Okay. But that's not explicitly taught in Beaumont, though?

A If you ask me if I search for the word "policy" does it exist, I'm not sure it does. But a person of ordinary skill, reading this art, would understand this to be policy.

Q Okay. I understand your position on that. Now, back to my question. Does the preference database 453 store data?

MR. ANDERSON: Objection. Form.

A And I think I already said it's not storing just data. But of course the policy information that -- the policy that it captures is also a form of data. So is -- at least it's more than just data. I think that's my answer.

Q Okay. Point me to policy information that is stored in the preference database. Point it. Give me one example?

A One example --

MR. ANDERSON: Objection. Form.

A I'm sorry, one example of what?

Q Of policy information that is stored in the preference database.

A Well, I think I just gave you one that we've been talking about.

Oh. Incidentally, I should say that Beaumont clearly talks about the representation of the preference database, while it's presented as the table, can also be a tree. So I think that's one thing.

The description -- the disclosure in 23 that talks about looking at -- I think it's in 23 -- that look at the destination domain, and then looking at the servers that are available in that destination domain, and then choosing one based for -- on preference number or, you know, these kind of things, these are all, in my view, policies, and they are all -- they're all captured in the table. And again, with the example I keep using is if a user wants to choose A over B, then he will understand to specify higher preference number for A over B.

Q Okay. Does the preference database table 453 store software code?

A I don't think that's a requirement.

Q A requirement --

A Preference database is a database. It in itself doesn't necessarily -- I mean, of course there is software implementing the database. I'm not sure your question.

Q The information stored in the preference database, does that include software code?

A As I said earlier, the preference database, just like the 501 -- the '517 information, they capture policy, and there's some other software code that implements the policy.

Q Okay. So there's no software code actually stored in the preference database table?

MR. ANDERSON: Objection. Form.

A I think my simpler answer is the table specifies policy, and there needs to be some other -- a DNS server will implement the policy using software.

Q Okay. Well, that doesn't answer my

question. So my question is, does the preference database table store software code?

MR. ANDERSON: Objection. Form.

A I'm not sure necessarily. I don't think Beaumont speaks to it one way or the other. But I don't think it matters. Because, in my opinion, the preference database as it is, specifies policies.

Q Okay. I understand that you don't think that it matters. But my question is simply, does it store software code?

A I don't think -- I think Beaumont is silent on this.

Q Okay. Can you point me to any software code stored in the preference database table in Beaumont?

MR. ANDERSON: Objection. Form.

A Yeah, I just said I think Beaumont is silent on this.

Q So the answer is no?

A It's not saying one way or the other.

MR. ANDERSON: Objection.

Q But you cannot point me to any examples, then?

MR. ANDERSON: Objection.

A That's what I mean by silent.

Q So let's just make sure the record's clear. Can you point me to any examples of software code being stored in Beaumont's preference table?

MR. ANDERSON: Objection.

A I don't -- I don't think I see one.

Q Okay. All right.

MR. HAARS: I think we've been going over an hour here. Do we want to take a quick break?

THE WITNESS: Sure. Thank you.

(A recess was taken.)

BY MR. HAARS:

Q All right. Dr. Lin, welcome back.

A Thank you.

Q Same question I've asked after every break. Just for posterity here, did you discuss the substance of your testimony with anybody during the break?

A No.

Q All right. Thank you very much.

All right. So I want to go back to Beaumont and turn to Paragraph -- give me one second here, actually -- 31. And if you want to read through that.

A Okay. Please go ahead and ask.

Q All right. So the very first sentence in this paragraph states that, as illustrated -- "Although as illustrated above, the rule for selecting the best content delivery server in accordance with the principles of the invention is the shortest estimated distance to the client."

Do you see that sentence?

A Yes.

Q All right. So I want to discuss that rule for selecting the best content delivery server.

So there is a rule for selecting a content delivery server that is -- that is the shortest estimated distance to the client.

Correct?

A Correct, that's what it says.

Q Okay. How does Beaumont implement that rule?

MR. ANDERSON: Objection. Form.

A So I think it describes somewhat here and somewhat elsewhere. Figure 3 clearly has a estimated distance field that you can see that's optional.

Do you see that it?

Q Yep.

A And so Beaumont teaches that it makes a decision based on the client's destination domain. And it has the shortest estimated distance information, which is relative to that destination domain.

And so it uses this to select the server, based on the embodiment described here.

Q Okay. So first it selects the destination domain, and then among those servers that have the same destination domain, it selects the server with the shortest estimated distance to the requestor?

MR. ANDERSON: Objection. Form.

A Beaumont teaches -- I need to find the paragraph, but that's effectively what Beaumont teaches.

Q Okay. And you discuss this in your declaration somewhere. I'm trying to find it, because I think that would be easier to --

A Yeah. Can you go to Paragraph 79? I have a picture there.

Q This is of your declaration?

A My declaration, yes. Paragraph 79 is on Page 49, which is PDF 50.

Q Yeah. Yeah. Okay. There. So Paragraph -- yeah. It looks like Paragraph 80 is what I'm looking for here.

So down at the bottom of Page 50, there's a sentence stating, "In other words, Beaumont system first identifies working," and then it goes onto the next page?

A I'm with you.

Q Okay. All right. So this -- you're describing how Beaumont selects a server using

estimated distance to the requestor. Correct?

A Let me see if that's what I said here.

Yeah. In Paragraph 80 talks about the DNS server using the estimated distance from -- using the estimated distance from the destination domain to select a working content delivery server. Yes, that's what I wrote.

Q Yeah. Okay. And so that embodiment -- so the embodiment discussed at the top of Paragraph 31, where it uses estimated distance, the user doesn't necessarily put in a preference value. Correct?

MR. ANDERSON: Objection. Form.

Q Or scratch that.

In that embodiment of Beaumont that uses the estimated distance as a selection feature, it does not consider a manually entered preference number. Correct?

MR. ANDERSON: Objection. Form.

A So I think, first of all, Figure 2 and 3 are examples of preference databases. Preference -- Figure 2 doesn't have a preference

column. Preference 3 has one. And there are other columns that are indicated as optional. So I want to make that point.

But otherwise, what I wrote here is that the DNS server uses the -- can use the estimated distance from the -- in general that DNS server can use the estimated distance from a content delivery server to the destination domain as a selection criteria.

Q Okay. All right. So looking back at Paragraph 31, it's discussing a rule for selecting the best content delivery server. We didn't really get to the bottom of this last time, but I would like to know your definition of the word "rule."

MR. ANDERSON: Objection to form.

A Well, I mean, Paragraph 31 right off the bat talks about the rule for selecting the best content delivery server. Right?

Q Uh-huh.

A And so it talks about preference number, and it talks about estimated distance. And so

what is your question?

Q My question is, what is the definition of the word "rule"?

A I'm not sure that I have a tight dictionary definition for you. But I can explain to you in my analysis how I've applied the -- how I apply the term to the analysis.

Q Is a rule different than an instruction?

MR. ANDERSON: Objection. Form.

A I think we can make a distinction between software that implements something versus the specification of the policies and rules. They're not the same thing.

Q So you think -- so a rule is different than an instruction?

MR. ANDERSON: Objection. Form.

A If we -- if we limit the word "instruction" to machine instructions, as an instruction set for a processor and a server, then I think they're different things.

Q Well, what if we don't limit the word "instruction" to an instruction set for a

processor, or just the general definition of the word -- the general use of the word "instruction" and the general use of the word "rule"?

MR. ANDERSON: Objection. Form.

A I think in my analysis to -- you know, where the word "rule" comes up as a -- or the word "policy" comes up as a term in a claim element, I have explained how I have -- how I have applied those terms in my analysis.

I don't think I have provided any analysis to what the word "instruction" means. And I think -- I think I don't know if I have a definition for you.

I think when I talk about instructions, that I was talking about machine instructions that a processor executes. But beyond that context of what the word "instruction" means, I don't think I have an opinion right now as to what the word "instruction" means.

Q So then in Paragraph 31 when it discusses the rule for selecting the best content delivery server, is that rule implemented in software?

A I think I've already stated earlier a distinction between specification of policies and rules, and the implementation of rules. And I've already agreed that software is where the implementation of rules occur.

Q Okay. So I just want to get to the bottom of this here then.

So the clause after the comma in this sentence, at the end of the sentence says, "other rules such as selecting" --

A I think it would be more accurate -- sorry to interrupt you. Sorry to interrupt.

Q Please go ahead.

A I think it would be more accurate to say that something like the preference database specifies the rules and policy, and software is what gets executed to select a server based on those specified policies or rules. I think that's a more accurate way of saying it.

Q All right. So then back to the question then. Or I'll just start over here. Looking at the first sentence in Paragraph 31 of Beaumont,

there's a clause after the comma at the end of that sentence that states, "Other rules such as selecting one based on user preferences can be used as well."

Do you see that?

A I'm sorry, "other rules such as selecting one based on user preference." Yes.

Q So would you agree that Beaumont distinguishes between a user preference and the rule for selecting a content delivery server?

Those are two separate things?

MR. ANDERSON: Objection. Objection to form.

A I guess I don't understand the question.

Q Well, Beaumont talks about rules, and it talks about user preferences. And the rules are -- and one rule is to select a server based on user preferences.

So would you agree that a rule is a separate thing than a user preference?

MR. ANDERSON: Objection.

A I think -- I'm not sure I agree with what

you just said. I mean, you know, you can have selecting based on user preference as a rule, and you could have composed that with other rules to form -- form rules. I'm not sure that we need to make a distinction.

In other words, selecting something based on the highest user preference is a rule. And I'm not sure we need to make a distinction.

Q Make a distinction between what?

A You are trying to say that somehow user preference -- selecting based on user preference is somehow distinct from a rule.

Q No, that's not what I'm trying to say.

My question is simply, Beaumont describes rules for selecting the best content delivery server. Correct?

A That's what it says.

Q Okay. Beaumont also describes preference values. Correct?

A Yes.

Q And those are separate things.

Is that right?

MR. ANDERSON: Objection to form.

A I'm not sure I have made that distinction one way or the other in my -- in my opinion. I don't think I've expressed an opinion one way or the other. Preference number is certainly a decision feature, and selecting something based on the highest preference number to me sounds like a rule. But I'm not sure I've offered an opinion one way or the other if there's such a distinction.

Q So then is it fair to say that Beaumont describes rules for selecting a content delivery server based on some decision feature?

MR. ANDERSON: Objection. Form.

A Yeah, I guess I'm not sure that I've offered an opinion one way or the other. And I'm not sure that there needs to be a distinction.

Q Okay. But reading this sentence in Beaumont, you've agreed that Beaumont describes rules for selecting content delivery server, and you have also agreed that Beaumont describes user preferences. Correct?

A I agree.

Q And knowing what you know about Beaumont and reading this sentence, are you able to make a determination of whether Beaumont describes rules as separate from the user preferences?

MR. ANDERSON: Objection. Form.

A My opinion is that the -- the preference data -- the preference database specifies rules and specifies policy.

Q So then your opinion is that a -- that those two components are not distinct?

MR. ANDERSON: Objection. Form.

A I've already said earlier that I think that the preference table, in order for a user to provide values, they have to have an understanding of what the feature means. And in doing so, it is not just values; it has a rule implicit. Again, I have not made an explicit analysis one way or the other.

But it seems to me that when you have the highest value first, you are expressing a rule.

Q So is it your opinion then that

Beaumont's preference table implicitly stores rules?

MR. ANDERSON: Objection. Form.

A My particular opinion is that policies and rules are specified by the preference database.

Q Well, before you said that the preference table has rules implicitly.

A I don't know if I said that. Can you ...

Q Yeah. Let's see. "I think that the preference table, in order for a user to provide values, they have to have an understanding of what that feature means. And in doing so, it is not just values, it has a rule implicit. Again, I have not made an explicit analysis one way or the other."

MR. ANDERSON: Objection.

Q So is it your opinion that the preference values implicitly represent rules in Beaumont?

A I think my --

MR. ANDERSON: Objection. Form.

A I think my opinion is Beaumont teaches

policies for DNS server to select a server, and Beaumont teaches that the preference table is used to specify the policy. I think that's the -- that's the scope of my opinion.

Q So before when you said that the preference table has a rule implicit, that was incorrect?

MR. ANDERSON: Objection. Form.

A Well, I don't know how I said it, and I -- if I said it one way, I don't know how I said it. But again, I think I've been consistent during this testimony that the preference database specifies policies.

Q And does it specify policies explicitly?

A I think it specifies policies.

Q Okay. Well that doesn't answer my question. Is it your opinion that the preference database table explicitly specifies policies?

MR. ANDERSON: Objection. Form.

A Give me a moment.

Q Take your time.

A Can I ask you to ask the question again,

please?

Q Sure. Is it your opinion that Beaumont's preference database table explicitly specifies policies?

MR. ANDERSON: Objection. Form.

A I -- I think my -- I don't know if I've offered opinion explicit or implicit. But I think I've offered an opinion that it specifies policy.

Keep in mind that my analysis -- keep in mind that Beaumont teaches that the preference database can be represented as a table or a tree. And keep in mind that my analysis, in combination with Hasan, provides a GUI for specifying these policies in a tree form.

And so I think, sitting here, I think the preference database, represented either as a table or tree, represents policy. And I think it's -- I think it can be explicit.

Q You think it can be explicit?

A I think it can be viewed as explicit, yes.

Q How so?

A The -- Beaumont teaches these different policies and explains in these paragraphs what the policies are. And as I said earlier, the -- the -- I think Beaumont teaches policies. I think it says it can represent as a tree form or a table form. And I think the -- it represents policy because it talks about looking at the destination domain, it talks about looking at the estimated distance, talks about the preference number, it talks about other features.

So it's describing the policy that it should be used to choose a server.

Q Okay. But are those policies explicitly stored in the preference database table?

MR. ANDERSON: Objection. Form.

A I think the information is stored in the preference database. And I think a person of ordinary skill in the art, reading Beaumont, would understand that to be the case.

Q What information is stored in the preference database table?

A Well, it describes the different decision

features.

Q So the preference database table stores decision features.

MR. ANDERSON: Objection. Form.

A Yes. And it describes in Beaumont the -- it describes in Beaumont that you look at the destination domain of the request and you look at the estimated distance and so forth.

Q And so the destination domain and the estimated distance, those are examples of decision features?

MR. ANDERSON: Objection. Form.

A Yes, they are examples of decision features.

Q Okay. And those are stored in the preference database table?

A They are stored in the preference database, yes.

Q And Beaumont discloses rules for selecting the best content delivery server, based on those decision features?

MR. ANDERSON: Objection to form.

A I think in my analysis, I think going back to my earlier example, I think the -- Beaumont discloses rules and policies, for example by the preference number. And again in my earlier example, if the user wants to specify the policy that A should be selected over B, it would specify by a higher preference number. And I already said earlier that a preference database can be in the form of a table or tree as Beaumont has taught, and in my analysis, I think combined with Hasan, provides the GUI to specify the policies described by Beaumont in such a graphical user interface.

So I think all that is consistent with what I've said so far.

Q Okay. But we're not talking about Hasan or the combination of Hasan. Right now I'm just talking about Beaumont. And I'm not talking about when Beaumont data is stored as tree structure. I'm just talking about the preference database table.

So in Beaumont when a preference database table is used, the preference database table

stores decision features. Correct?

A Repeat that?

MR. ANDERSON: Objection. Form.

A Repeat?

Q In Beaumont, when a preference database table is used, that preference database table stores decision features for selecting a content delivery server?

A No. It specifies policies and specifies rules.

Q Does it specify a policy explicitly?

MR. ANDERSON: Objection to form.

A I think Beaumont is clear on its teaching on policies.

Q Okay. But that doesn't answer my question.

Does the preference database table store policies explicitly?

MR. ANDERSON: Objection. Form.

A I think the answer is yes.

Q Point me to a policy stored in Beaumont's preference database table.

MR. ANDERSON: Objection. Form.

A I think the way the preference database table in -- in Beaumont describes policies, specify policy, is similar to the way the '517 is taught. So I think I can point you to an example where -- how '517 teaches policy being specified the same way.

Q Okay. So I'm not interested in the '517 patent right now. I'm only interested in Beaumont. And I only want to know, does the preference database table in Beaumont explicitly store policies?

A I think --

MR. ANDERSON: Objection. Form.

A I've already said that the table in Beaumont specifies policy. And in my analysis, it's an analysis of the '517. And if you look at '517, my understanding of specification policy is consistent with how it's described in '517.

Q Point me to a policy that is stored in Beaumont's preference database table.

MR. ANDERSON: Objection. Form.

A I think I've already described what the table -- what the policies are. I can point you, the analogous way that the '517 teaches that specification policy.

Q So in Figure 3 of Beaumont, the preference database table, is it your opinion that these preference values stored in Column 373, those, themselves, are policies?

MR. ANDERSON: Objection. Form.

A It is my opinion that the preference database table specifies policy.

Q Is it your opinion that the preference values themselves are policies?

MR. ANDERSON: Objection.

A I think the preference database specifies policy. I think that's been my opinion.

Q Okay. I understand that's your opinion, but that's not my question.

The preference values in Column 373 in Figure 3 of Beaumont, are those policies?

MR. ANDERSON: Objection.

A I think that the table is policy.

Can I point you to '517, where it informs me of what the intent of the word -- what the intent of policy is?

Q We can talk about the '517 patent later. But right now, again, I just want to know about Beaumont.

So in Column 373, setting aside the word "policy," is the preference values in Column 373, are they rules?

MR. ANDERSON: Objection.

A I think -- I think the rule in selecting the highest preference number is a rule. And I think that is what the -- the table means in the example depicted by Beaumont.

Q So the rule is to select the highest preference number.

Is that what you said?

A That's what is taught in Beaumont.

Q Okay. So then the preference values themselves are not rules themselves?

MR. ANDERSON: Objection. Form.

A Well, I'm repeating my answer. I think

the preference database table specifies policy. And the way the user can specify policy is, if he wants Server A to be preferred over Server B, he will specify a higher preference number. And I think that's how he can specify policies by the table, as an example.

Q Okay. But that doesn't answer my question.

Are the preference values themselves policies?

MR. ANDERSON: Objection. Form.

A I don't know how to answer your question. I have already used the example that if a user wants to express the preference of Server A over Server B, then he can enter a higher value for Server A over Server B. And by the values -- by the table entry that the user provides is -- is changing policy, or specifying policy.

Q Okay. So you can't answer the question of whether the preference values themselves are policies?

MR. ANDERSON: Objection. Form.

A I think I've already said that depending on the values providing, it is specifying policy.

Q So then it's your opinion that the preference values are policies?

MR. ANDERSON: Objection. Form.

A If a user can change how the server behaves by assigning a higher priority for one server over the other, then it's changing policy.

Q Okay. So then the preference values themselves are themselves policies?

MR. ANDERSON: Objection. Form.

A I think my opinion is that the preference table, the preference database table, specifies policy.

Q Yes, I know that's your opinion, but it still doesn't answer my question.

So sitting here today, you cannot answer the question of whether or not the preference values are themselves policies?

MR. ANDERSON: Objection. Form.

A So I think looking the opinions expressed in my declaration, I've expressed that the

preference database specifies policies, and I have given example throughout here -- throughout here, that if a user wants to have a policy of Server A being selected over Server B, then he can specify a higher value. And if he changes the value, he will change the policy or the -- how the server selects the server. And I think my answer overall is the preference database specifies policy, and in combination with Hasan, it provides the GUI to specify in the tree form.

Q Okay. So sitting here today, do you have an opinion to the question of whether the preference values themselves specify policies?

MR. ANDERSON: Objection.

Q Do you have an opinion on it?

A I think my answer is what I have been answering, I'd like to keep that to be my answer.

Q But that's not an answer to the question. That's an answer to some other question.

A No. Let me try again, please.

I think the -- the user can change policy by specifying the preference values. And so by

changing the preference values is changing policy. And I think the table itself specify policy. And I'm not sure that -- I think those are the opinions that I've expressed today and that -- and through my declaration.

So I think preference number, if you -- if the user changes the preference number, it's also changing the policy. It's affecting the policy.

Q Then would you agree that the preference number is a policy?

MR. ANDERSON: Objection. Form.

A Do you make a distinction between -- so I think my answer is yes. I think depending on the -- depending on what the preference number is, depending on the distance, all of these things are part of the policy.

Q So your opinion is the preference number is part of a policy.

A Yes, I think is -- now I think we're just splitting words, because it is part of a policy, yes.

Q So in your opinion, the preference database table stores at least part of policies?

MR. ANDERSON: Objection. Form.

A My opinion is that the preference database tables specifies policy.

Q And those policies are specified by the preference number?

A Not solely based on preference number, but the table provides -- the table specifies policy.

Q But the policies are specified partially by the preference number?

A I guess I don't really know if it makes a difference.

Yeah, again, I don't see the -- I guess I don't see the point. I mean, I still want to refer back to the '517, where it clearly describes how policy is -- you know, what it means to specify policies. And I think my application in my analysis of Beaumont is consistent with the '517 own disclosure about what it means to specify policies.

Q So are you not going to answer my question?

MR. ANDERSON: Objection. Form.

A I'm not sure that I'm not answering your question. I gave you my answer.

Q My question has been for the past 20 minutes, are the preference values stored in Beaumont's preference database tables, are those preference values policies?

MR. ANDERSON: Objection. Form.

A So I guess I've already said that the table specifies policy. And so from that perspective, information provided in that table is also part of specification of the policy. So I guess my answer is yes. I guess the table specified policy, so then the information in the table also specifies policy.

Q Okay. Sounds good. Are we -- I kind of lost track of time here. Are we close to an hour?

A We're not. I'm happy to take a break. Are you at a natural point to take a break?

Q No, not necessarily. I just wasn't sure.

I just lost track of time, and I just wanted to make sure we weren't blowing by the hour. So we can keep going. Is that right?

A Okay.

MR. HAARS: Go ahead. Sorry, Chris.

MR. ANDERSON: We came back around 4:55. 4:55. So we can go for another 15 minutes or so. That should be good.

Q All right.

A Actually, can I get an guesstimate of -- for some reason I maybe drank too much during lunch. I wouldn't mind a small break. Do you have an idea of --

Q Well, let's just take a break now then, if you have to use the restroom or freshen up.

A Do you have a little bit more to go on Beaumont or a lot more to go on Beaumont?

Q Well, that's kind of up to you. I've got several more questions in Beaumont. I think probably it won't -- we won't be able to wrap up in 15 minutes, given how things have gone so far.

MR. ANDERSON: We can go off record here?

We're taking a break?

MR. HAARS: Sorry?

MR. ANDERSON: We can go off record here?

MR. HAARS: Yeah, let's go off record.

(A recess was taken.)

BY MR. HAARS:

Q Dr. Lin, welcome back.

A Yes. Thank you.

Q During the break did you discuss your testimony with anyone?

A No.

Q All right. Will you please turn to Paragraph 78 of your declaration. It's on Page 49.

A I'm there.

Q All right. So I want to just try to get a better understanding of how you are incorporating -- or how you are combining Beaumont and Hasan. So in Paragraph 78 you state that, "Incorporating Hasan's GUI would have no effect on the storage of the preference table in Beaumont's network."

A I'm sorry, in my declaration, Paragraph 78?

Q Yes.

A Okay. Yeah, I see it now. Thank you.

Q Yeah. It's the second sentence. All right. So I'll just start -- I'll just read that again. You state in Paragraph 78 that, "Incorporating Hasan's GUI would have no effect on the storage of the preference table in Beaumont's network."

Do you see that?

A Yes.

Q All right. So in -- your combination of Beaumont and Hasan would maintain Beaumont's preference table?

A Well, as I said earlier, Beaumont taught that the -- and is explicit in saying so, that the preference database can be represented as a table, but can also be represented as a tree.

And Hasan talks about the GUI for capturing a tree, for capturing policy. And so I think what I meant here in this paragraph is the

combined Hasan, Beaumont-Hasan GUI would capture the policy of Beaumont in the GUI of -- of Hasan.

And again, Beaumont already expressed that the preference table, the preference database, can be a tree as well.

Q Okay. So the combination of -- in your combination of Beaumont and Hasan, there is no preference table?

A I think I meant to say --

MR. ANDERSON: Objection. Form.

A Again, Beaumont is explicit in saying that the preference database can be represented as a table or a tree. So the main point of Beaumont is about a preference database.

Q Okay. But I'm trying -- again, I'm trying to understand.

In the combination, the combination does not include a preference table, does it?

MR. ANDERSON: Objection. Form.

A I think in the preceding paragraphs, 76 and -- particularly 76, I cited the Beaumont, that says, Beaumont acknowledges that although

presented as a table, other data structures such as a tree can be used.

And I think my combination with Beaumont, particularly the Beaumont-Hasan GUI, is describing a tree. And so in that combined user interface, I think it would be representing the preference database as a tree.

Q Okay. So there is no preference database table, there is a preference tree?

MR. ANDERSON: Objection. Form.

A I think the same database, preference database information, would be captured.

Q In a tree form?

A If you combine it with the Hasan GUI, as I have analyzed, then the GUI would be for tree form.

Q Okay. So I want to kind of understand a little bit further your combination.

So in your combination the user would input Beaumont's preference numbers using Hasan's GUI. Correct?

A It could.

Q So for -- so I'm looking right at Paragraph 77 of your declaration. The second sentence in Paragraph 77 states, "For example, given the description in the Hasan, selecting a server would bring up a menu enabling an administrator to assign the preferences shown in Figure 3 of Beaumont."

A Yes, that's what I say "could."

Q All right. And then that data that is input, those preference numbers, are then stored in a tree structure in the combined system?

MR. ANDERSON: Objection. Form.

A I think -- this is related to your earlier question. I think the preference database specifies policy. And I think preference numbers specifies policies.

And what this paragraph is saying is that the combined Beaumont-Hasan GUI can be used to bring up a server where the administrator can assign a preference number, or assign preferences shown in Figure 3. So that's what I wrote here.

Q Yeah, so I understand that. So the user

enter -- inputs the preferences via the GUI. And then where is that data stored in the combined system?

A It would be stored in the -- in the -- somewhere in that tree representation associated --

Q In the tree representation.

So the tree representation is a data structure?

MR. ANDERSON: Objection. Form.

A So your question is, is tree considered to be a data structure.

Is that the question?

Q Yes, that is the question.

A A tree is normally considered a data structure, yes.

Q Okay. And that's how Beaumont describes it as well. Right?

A Beaumont I think explicitly said in my sentence above, although -- although referring to the preference database is presented as a table, other data structures such as a tree can be used,

yes.

Q So both the preference table and the preference tree are data structures?

A It -- it says what it says, which is, the preference database can be presented as a table or it can be presented as a tree.

Q And both the table and the tree are types of data structures?

A I think -- I think what it says is that other data structures, such as a tree. So at least -- Beaumont at least view that tree as the data structure.

Q And the tree is what is used in a combined system. Correct?

A In the combined user interface.

Q In the combined user interface.

A In the combined GUI, yeah. Yes.

Q Well, Beaumont's tree is a data structure. Correct?

MR. ANDERSON: Objection. Form.

A Can you continue with your question?

Q Yeah. So my question is, the

underlying -- I guess my understanding of your combination -- and I just want to confirm this, make sure that it's correct -- is that you -- users input the preference numbers via -- or using Hasan's GUI, and those input preference numbers are then stored in the tree data structure of the combined system?

A I think that sounds approximately right.

What I said here is that -- I think is it back in Paragraph 78 that I'm looking at? Seventy-seven. Okay. Give me a moment again.

Q Uh-huh.

A I'm just saying that given the description in Hasan, one could select a server and assign a preference number to -- to that server.

Q Right. But those preference numbers have to be stored somewhere. Correct?

A Yes.

Q And is it your opinion that they're stored in the tree data structure taught by Beaumont?

A I think it can be stored in a -- in a data structure in Beaumont, yes, it's in some form of tree.

Q You think it can be stored or that's where it is stored?

A Well, so, I think it's -- yeah, I think that's a high level, it can be stored in the data structure. I'm fine with that.

Q All right. And so then when receiving a DNS request, the combined system would access that data structure, the tree, in order to retrieve the preference numbers in order to select the best content delivery server.

Is that correct?

MR. ANDERSON: Objection. Form.

A I think here I'm just describing one possibility.

Q Where are you describing a possibility?

A I'm expressing an opinion in 77 that, you know, as an example, given the description in Hasan, we could use the GUI to break up the server, and we could assign a preference number,

assign preferences to that server.

Q Okay. Yes. Right. I understand that. And you don't opine on kind of the underlying storage in your declaration, but you have said here today that that -- those input preference numbers would be stored in the -- in the tree data structure. Correct?

MR. ANDERSON: Objection.

A No, I -- I had said today that those preference numbers will be stored in the preference database. And I have said that the Beaumont teaches that this preference database could be represented as a tree.

Q Yes. Right. Okay. So in a combined system, when a DNS -- when the DNS server receives a DNS request, it retrieves preference values from that data structure in order to select the best content delivery server. Correct?

MR. ANDERSON: Objection. Form.

A So I think I can agree with that combined GUI allows you to specify a preference number, a preference associated with a server. And I -- I

mean, I think I can be in agreement that this is stored in a -- in a data structure.

Q Okay. Well, then please explain how those preference numbers are then accessed when responding to a DNS request.

MR. ANDERSON: Objection. Form.

A So the -- can you ask the question one more time?

Q Please explain how the preference numbers in the combined system are retrieved when responding to a DNS request?

A So as an example, at a -- at a tree node, it can have choice of five servers. And the -- it could be that the software will retrieve the preference numbers of those five servers and pick the one with the highest server number as an example.

Q All right. So then just to make sure the record is clear on this, then when responding to a DNS request, the preference numbers are retrieved from the tree data structure?

MR. ANDERSON: Objection. Form.

A It's retrieved from the preference database.

Q But you've told me earlier that in -- the combined system doesn't use the preference database; it uses the preference tree.

A I didn't say that. You said that.

MR. ANDERSON: Objection. Form.

Q You didn't say that?

A I did not say that.

Q Okay. So in the combined system, the combined system then maintains Beaumont's preference table?

A So again, a preference database is what's taught in Beaumont, and Beaumont clearly said that this database could be represented as the table or it could be represented as a tree. And if you look at the claim elements, which is what I'm expressing my opinion on, the claim element talks about setting at least one policy using decision tree.

So in my combination I showed that it meets the claim limitation because Beaumont

teaches that a preference database can be represented as a table or a tree, and Hasan teaches a GUI for specifying this tree representation.

So that's why I am saying that the combination of Beaumont-Hasan meets Claim Limitation 1B.

Q Let me ask you this: Does the combined Beaumont-Hasan system store preference values in a preference database table?

MR. ANDERSON: Objection. Form.

A I think the preference database, regardless of whether it's represented as a table or a tree, specifies policy. In talking about the combined Beaumont-Hasan GUI, I'm talking about how the policies can be set using a decision tree representing rules.

Q That's not my question. Let's -- in Beaumont -- set aside the combined system, we're just talking about Beaumont for now.

In Beaumont, users manually input preference values. Correct?

A In Beaumont users can manually input preference values, yes.

Q And those preference values are then stored in the preference database table?

A It's stored in the preference database.

Q Okay. But Beaumont also teaches that that preference database -- the data can be arranged or can be stored in a tree structure.

Correct?

A Yes.

Q So it can teach either a --

A The database can be presented as a table or a tree, yes.

Q So the data can be stored in a table form or in a tree form in Beaumont. Right? We agree on that. Okay.

My only question is whether or not the combined system stores those preference values in tree form or in database form?

MR. ANDERSON: Objection. Form.

A They're not mutually exclusive. It can be stored in a database form, but the database can

be represented as a table or a tree.

Q So it can be stored -- you can have a data structure that's both a table and a tree at the same time?

A No. No. I said a preference database can be presented as a table or as a tree.

Q Right. And which one is it presented in in the combined system?

A I think my analysis here with respect to 1B, the claim element requires the setting of one policy using decision tree. And so in the combined representation, the policy would be using a decision tree.

Q Okay. Let's move on.

MR. HAARS: Please pull up Ben-Shaul.

THE WITNESS: Can you provide it, please?

(Exhibit 1005, previously marked, not attached.)

Q All right. And while we're pulling that up, I'm going to direct you to Paragraph 61 of your declaration.

A Give me a moment, please.

Okay, I have if open. Which paragraph of my declaration would you like me to go to?

Q Sixty-one.

A Sixty-one.

Q All right.

A Go ahead, please.

Q So Ben-Shaul's network includes edge servers and EdgeDNS servers. Correct?

A Yes.

Q What is an edge servers?

A In the context of Ben-Shaul, the edge servers are the ones that's providing the content.

Q They're providing the content to who?

A To provide the -- so there's a DNS request, the DNS request goes to the EdgeDNS server. The DNS -- the EdgeDNS server will apply some policy, and it will return the IP address of -- of an edge server for the -- for the delivery. In other words, it's the EdgeDNS server is directing traffic by selecting one of these edge servers to return as the response.

Q And so then after the EdgeDNS returns an

edge server, the user connects to the edge server, and the edge server provides content to the user?

MR. ANDERSON: Objection. Form.

A It's in the same way as '517. The role of DNS server is to have a request, and for it to return a server, typically in the form of IP addresses. And the IP address that the DNS server will return would be an IP address of one of these edge servers.

Q Okay. Right. And then once the user connects to the edge server, then the edge server provides content to the user. Correct?

A In the same way that is described in the '517.

Q So then is the answer to my question yes?

A Yes.

Q And edge servers coordinate with origin servers. Correct? In Ben-Shaul?

A Yes.

Q What is an origin server?

A So this is described in Ben-Shaul Column -- or Paragraph 8 as a -- as an example.

So if you go to Paragraph 8 in Ben-Shaul, it talks about, at the origin server, HTML pages are modified by assigning of URLs, of selected resources. They are typically images with domain name -- domain name system names of server content delivery and distribution provider.

I think the point is -- is that it might be the server -- yeah. So as an example, it could be the one that replies to the client the desired pages. But then that page may contain embedded objects, and then that's where the DNS is used to resolve which of the edge servers should be providing those embedded objects.

Q So an origin server is a web server. Correct?

MR. ANDERSON: Objection to form.

Q It can be?

A It can be.

Q And that, the origin server, provides content to the edge server, and then the edge server then --

A That's not what I said.

Q No. No. I'm moving on.

So the edge -- well, I guess is it accurate to say that the origin server provides content to the edge server?

A I think an easier way to think about it is, when a client requests something, it may contain these embedded objects that has to get from somewhere.

To get these embedded objects, the client would ask the DNS to resolve the request, and the request, the DNS server would then return a -- a server in the context of Ben-Shaul it's an edge server, that would provide that embedded object.

Q Okay. What embedded objects are you talking about? Point me to where Ben-Shaul talks about the embedded objects.

A Images?

Q Or your -- or your declaration.

Images?

A Images, as an example.

Q Can you point me to where you're talking about?

Actually, you know what? Scratch that question.

All right. What is an EdgeDNS server?

A It's an edge -- it's a DNS server.

Q And what role does the EdgeDNS play in Ben-Shaul's system?

A So in Ben-Shaul's system, a DNS request will go to an EdgeDNS server, and the EdgeDNS server will implement certain policies. And in implementing those policies it will return, for example, an IP address of an edge server to serve the content.

Q Point me to the example of a policy that is applied by the EdgeDNS server.

A I think the Ben-Shaul is pretty extensive in describing this. It spends a lot of time talking about something called CDML, the XML format. And if you know XML, XML is a tree. So it talks about extensively how policies are captured in the CDML representation, which itself is a tree. It talks about the front edge tool, which is the GUI for editing this CDML. It talks

about the CDML editor. And so these are the GUIs that are used to edit the policies that are captured in the CDML.

So we could -- that's the high level.

Q Okay. Point me to one CDML policy that is executed by the EdgeDNS server.

MR. ANDERSON: Objection. Form.

A So give me a moment, please.

Q Take your time.

A So let me answer the question in two parts.

So policies are defined using these front edge tools and CDML editors. And as I said, CDML itself is a tree, because XML is a tree. So it provides the GUI for describing policies in the CDML form.

The policies are pushed to the edge server in a -- in a form that the server can execute the policy, to implement the policy. And so I think, you know, it's hard to read CDML code, but it talks about, at least in Figure 10, a depiction of a portion of the CDML representation.

Q Figure 10 depicts a CDML representation?
A It depicts a information -- give me a moment, please.
Q So I can point you to Paragraph 313 of Ben-Shaul.
A Yeah, I think that's --
Q Might be a good -- might be a good place to start here.
A Thank you. Give me a moment, please.
Yes, please go ahead and ask your question.
Q So my question was, does Figure 10 depict a CDML representation?
MR. ANDERSON: Objection. Form.
Q Let me ask the question another way.
Does Figure 10 itself show a CDML policy?
A Give me a moment, please.
MR. ANDERSON: Objection. Form.
A Okay. Would you mind repeating the question, please.
Q Sure. Does Figure 10 show a CDML policy?
MR. ANDERSON: Objection. Form.

A The -- I think the paragraph 313 here reflects that the front edge tool, which I think is -- talks about earlier about the CDML editor, is what's used to specify the policies in the form of CDML.

And I think what this Figure 10 is showing is how this will be depicted in -- in this hierarchical map of edge servers.

MR. HAARS: I'm sorry, I need to take a quick break. Go off the record.

(A recess was taken.)

BY MR. HAARS:

Q All right. Sorry about that.

So, Dr. Lin, I apologize, I missed your -- most of your last answer, but so I'll just reask the question.

Does Figure 10 show a CDML policy?

MR. ANDERSON: Objection. Form.

A I think Ben-Shaul describes using the front edge tool and the CDML editor, which is a form of GUI as well. It describes how those can be used to describe policies for DNS service. And

the Figure 10 is an example of grouping of servers by, for example -- you know, by country, by city, and so forth. And what Ben-Shaul teaches is that policies can be defined for -- for this.

And so I think the -- the combination of the front edge tool and the CDML representation will allow you to define policies at least based on geographical location.

Q Okay. But this -- the GUI in Figure 10 itself is not a policy, though. Correct?

A The -- well, GUI is never the policy, that's one thing. GUI is just a user interface; it's never -- it's never the policy.

Q Yeah.

A But Ben-Shaul clearly describes the CDML implementing -- or specifying policies for DNS service, and it specifies that the front edge tool and the CDML editor can be used to specify those policies. And this is showing that the grouping by geographical locations, or policy based on geographical location, is visually shown on Figure 10.

Q So I asked you before to point me to a CDML policy that is implemented by the EdgeDNS server.

Can you do that? I can point you to Paragraph 154 of your declaration.

A 154?

Q Yep. And at the very top of Page 76 you state that "Ben-Shaul provides specific examples of software executed by the EdgeDNS's hardware in the form of pseudocode fragments, demonstrating the EdgeDNS comprises hardware in the combination of software."

So you cited to Ben-Shaul Paragraph 361 to 364 for this software executed by the EdgeDNS.

A Give me a moment, I'm reading the -- I'm reviewing the passage in Beaumont.

Q Yeah, take your time.

A I think your question is, in my paragraph, you're asking about Paragraph 154 in my declaration, were you?

You're on mute.

Q Sorry about that.

So my question was just to point me to policies executed by the EdgeDNS. So for instance, Beaumont in these paragraphs, in Paragraphs 361 through 364, describes Listing 13, Listing 14, and Listing 15. Correct?

A It appears so, yes.

Q Okay. Do those listings represent policies executed by the EdgeDNS server?

A My main point in this paragraph 154 where I talk about the -- where I talk about this section, is that I'm just citing example where Ben-Shaul talks about specific examples of software executed by the EdgeDNS hardware in the form of pseudocode fragment. I'm just showing that it is running hardware and software.

Q Yes, I understand that. My question is, do Listings 13, 14, and 15 show examples of policies that are executed by the EdgeDNS server?

Well, so let me ask another question. You said in your declaration that these paragraphs show examples of software executed by the EdgeDNS.

Correct?

A I said that these are examples of software executed by the EdgeDNS, yes.

Q Yes. Okay. Now, are they examples of policies executed by the EdgeDNS?

Dr. Lin, do you have an opinion if these are policies executed by the EdgeDNS?

A Give me a moment, please. I am reviewing this portion of the Ben-Shaul. Give me one moment, please.

I think in Paragraph -- in this Paragraph 361 to 364, and more generally this section that starts on the bottom of -- well, that starts on Paragraph 358, talks about certain function of the DNS server with respect to its cache. And so my citation of this portion of the Ben-Shaul specification is to just to show that Ben-Shaul meets the limitation of hardware and software.

I didn't say that this is the portion that shows policy.

Q Okay. I understand that. I'm asking you now if this portion shows policy?

A I think I would need a more careful

review. But on -- on first glance, this section appears to be about cache replacements, clearly not entries. And it's not talking about policy or even the implementation of policy.

Q Okay. All right. Let's turn then to Paragraph 193 of Ben-Shaul. And that's up on Page 14, or Page 30 of the PDF.

A What paragraph number, please?

Q Paragraph 193.

A 193? Thank you. And where do I cite to 193 in my declaration, if at all?

Q Well, I'm not sure, but you're free to look. But I'm asking just about these paragraphs right now.

A Give me one moment to see if I've actually expressed an opinion based on this paragraph.

It does not appear so.

Q Okay. Well, then I would like to know your opinion about these paragraphs.

So the start -- well, I guess first of all, have you read this portion of Ben-Shaul

before?

A Yes, I would have reviewed the entirety at the time I was preparing the declaration.

Q You would have or you did?

A I did.

Q All right. So starting at Paragraph 193, if you look down for the next several pages, this describes Listings 1 through 12.

Do you see that?

A 1 through 12. Okay. That's a lot of material to review.

Q You don't need to review it all right now. Just do you see that?

A Yes, I see the listings, yes.

Q So in Paragraph 193 discusses -- well, I guess in Paragraph 192 it is describing that these are CDML policies. Correct?

A It says in the second sentence, "These constructs encapsulate various policies that could be attached to content."

Q Listing 1 in Paragraph 193, it describes that, A fresh copy of a page is fetched if it has

been modified since last stored.

Do you see that?

A I'm sorry, you're looking at Listing 1?

Q Yeah. Paragraph 193 describes Listing 1, yes.

A Which sentence are you looking at, starting with?

Q It says, "For example, a refresh(0) expression attached to a page."

So would you agree that Listing 1 is an instruction to an edge server to fetch a page when that page is expired in the edge server?

A So I think earlier when you asked me about the other section -- I forget the listing numbers -- I think my opinion there at the earlier listings is I was just trying to show in my declaration that Ben-Shaul meets the limitation of hardware and software. I think that was the reason why I cited those paragraphs.

I think here these are pseudocode. So as an express -- so it says that the CDML can be used to provide the high-level construct to some policy

that's attached to a content. And for example, it says here, Refresh expression attached to page implies -- you can read the rest.

Q Yep. Is this policy executed by the EdgeDNS server?

A It would appear so, yes.

Q It would appear so. Based on what? Does the -- let me strike that.

The EdgeDNS server fetches copies of web pages?

A Let me have a look again, please.

Q So if you look at the sentence I pointed you to in Paragraph 193, it says, "For example, a refresh(0) expression attached to a page implies that as soon as a page expires in the edge server 48, a fresh copy is fetched if it has been modified since last stored."

So would you agree that this policy is executed by the edge server?

A It could be, yes.

Q It could be. Is it executed by the EdgeDNS?

A I don't have information on this portion of the specification to -- to -- it doesn't -- it doesn't say so.

Q EdgeDNS server does not fetch copies of web pages, does it?

A Normally --

MR. ANDERSON: Objection to form.

A Normally it does not.

Q So let's look at Listing 2. Paragraph 196. And Paragraph 196 describes Listing 2, and the -- that paragraph includes a sentence that says, "For example, a given URL may be associated with a policy," and it states that certain regions --

A Paragraph 197?

Q 196.

A 196. Sorry. "For example."

Q "For example, a given URL may be associated with a policy that states that certain regions should download a given URL only after 5 o'clock p.m. local time. This could be expressed by the following pseudo CDML code."

Do you see that?

A I'm looking at it.

Q Okay. Is this -- is the CDML code implemented in Listing 2 executed by the edge server?

Well, let me point you to the line in Listing 2 that says, Document URL name equals news dot HTML.

Do you see that?

A Yes.

Q The actual CDML pseudocode?

A Yes.

Q What is that line instructing -- what does that line represent?

MR. ANDERSON: Objection. Form.

Q Would you agree that that line represents the URL to be downloaded?

A I -- I have not offered an opinion about this portion of the specification, and I -- I don't know if I can offer you an opinion now.

Q But we just read Paragraph 196 that states, "For example, a given URL may be

associated with a policy that states that certain regions should download a given URL only after 5 o'clock p.m. local time."

Correct?

A That's what it says.

Q So based on that, do you have an opinion on whether Listing 2 specifies a URL that should be downloaded by -- at a given time?

A I don't have an opinion further than what is stated in Paragraph 196.

Q So you don't know whether or not Listing 2 is executed by the edge server?

MR. ANDERSON: Objection. Form.

Q Dr. Lin, do you have an opinion on that?

A An opinion about -- one more time, please?

Q Do you have an opinion as to whether Listing 2 is executed by the edge server?

A I don't have an opinion on that.

Q Now, looking through the rest, Listings 3 through 12, do you have an opinion as to whether or not any of those listings are executed by the

edge server?

A So I think I said earlier -- I think I said earlier that the policy -- different types of policies can be defined in CDML, in a CDML editor in the front edge tool. And the -- and I think I said earlier that the -- the policies get pushed to the EdgeDNS for resolving the domain name. And I think I have to find the passage in Beaumont. But somewhere in here it talks about the way that it gets the policy, it's not necessarily in the form of a CDML.

So to your question, I don't know if any of the CDML listings shown that you asked for runs on the EdgeDNS. On the other hand, somewhere in Beaumont -- I mean in Ben-Shaul -- I have to look -- it talks about the DNS implementing the policy, but not necessarily in the CDML form.

Q Okay.

A But that doesn't mean that some front edge tools was not used to specify the policies.

Q Fair enough. Let's turn to Ben-Shaul Paragraph 42.

A Please go ahead.

Q So Ben-Shaul in Paragraph 42 and then -- describes a differentiated content and application delivery model.

Do you see that?

A That's what it says.

Q What does Ben-Shaul mean by "differentiation" here?

MR. ANDERSON: Counsel, can I propose we take a break after this question or ...

MR. HAARS: Yeah, after this question works.

A So I think if I can point you to the abstract that talks about this in the first couple of sentences. If I can refer -- let me know when you're there.

Q Yep, I'm here.

A So it talks about, A technique for centralized and differentiated content and application delivery that allows content providers to directly control the delivery of content based on regional and temporal preferences, you know,

client identity.

So it is talking about how an EdgeDNS can resolve which server to provide based on some of this differentiation stated here in the abstract.

Q Okay.

MR. HAARS: Let's take a break.

(A recess was taken.)

BY MR. HAARS:

Q Dr. Lin, welcome back.

A Thank you.

Q Did you speak with anybody about your testimony on the break?

A No.

Q All right. So let's turn back, we were discussing Ben-Shaul's differentiation.

A Which paragraph again was I looking at?

Q So we were discussing Paragraph 42 before the break. Now I want to look at Paragraph --

A Go ahead, please.

Q Sorry?

A Go ahead, please.

Q Turn to Paragraph 43 of Ben-Shaul. And

take your time to read it.

A Forty-three.

Q Yep.

A All right.

Q Have you finished reading Paragraph 43?

A Yes.

Q So this paragraph discusses content-based differentiation. Correct?

A Yes. That's how it is labeled.

Q Yep. And there is a sentence, the second sentence down says that, This content differentiation may affect the priority on cache --

A You're talking about 43 or 44?

Q Forty-three.

A Second sentence?

Q Second sentence -- well, I guess not counting the label.

A Okay. "This may affect the priority" --

Q "This may affect the priority," yes.

"This may affect the priority on cache in terms of replacement scheme, the frequency of

invalidation and mirroring policy."

So this content-based differentiation is applied by the edge server?

A Well, in general in the preceding paragraph, 41, it talks about the DNS is responsible to return the IP address of either the edge server or another server. And this control is defined by this policy server.

Q Okay. But I'm talking about Paragraph 43.

So does an EdgeDNS perform caching?

A An edge -- not in -- not in this context.

Q Does the EdgeDNS perform mirroring policy?

A I'm not sure. A DNS would certainly know which servers have access to a certain context, so that's a form of mirroring.

Q And then there's a sentence that says, "For example, in e-commerce resources that are associated with a transaction should be assigned a relatively high priority."

Does the EdgeDNS assign priority to

different types of content?

A At least it could assign priority with respect to which server should be returned, and the different servers may contain different contents. So it may prefer one server -- content server over another content server.

Q Is that what this sentence is describing?

A The sentence just says resources that are associated with a transaction should be assigned a relatively high priority. That's all it says.

Q Do you have an opinion on whether this content-based differentiation is performed by the edge server?

A Well, I mean, a DNS has to be involved in knowing which servers are available for certain content.

Q Okay. Look at the last sentence in Paragraph 43. "Also, applications that can migrate can be executed at the edge server, thereby off-loading the origin site and improving response time."

So would you agree that this

content-based differentiation is performed by the edge server?

A I would -- I would agree that an EdgeDNS has to select which edge server. So the sentence just talks about applications that can be moved to an edge server, and that's what this sentence is saying.

And then certainly an EdgeDNS server will be involved in selecting the edge server.

Q But would the EdgeDNS be involved in migrating the application to the edge server?

A The EdgeDNS would not be involved in migration. But that's not what this sentence is saying.

Q What is the sentence saying?

A It just says applications that can migrate can be executed at edge server, that's all it's saying.

Q Is the EdgeDNS involved in executing applications at the edge server?

MR. ANDERSON: Objection to form.

A No. The applications or the content

would be at the edge server.

Q Okay. So would you agree that this content-based differentiation described in Paragraph 43 is performed by the edge server?

A I would agree that the edge server is providing the content, and the differentiation would have to be supported by the DNS that returns the edge server, and would be provided by the edge server.

But my answer is that I think the EdgeDNS would be involved.

Q The EdgeDNS is involved.

A But I will agree it's the edge content that is providing the application or the content.

Q Does the edge -- does this content-based differentiation -- well, scratch that.

Does this paragraph describe any techniques for resolving DNS requests by the edge server, EdgeDNS server?

A This paragraph is not about what you just said.

Q So it's not about resolving DNS requests?

A It's not describing how the DNS would resolve the requests.

Q Okay. Look at Paragraph 44, and read that one. That's a different type of group -- or different type of differentiation.

A I have read the paragraph.

Q Does this paragraph describe techniques for resolving DNS requests?

MR. ANDERSON: Objection. Form.

A I think it does, in the same way that it does for 43. I think it is the DNS server that returns which edge server is used to respond to a request. And so an EdgeDNS server is -- is used to resolve part of this regional and group differentiation.

Q Okay. Well, for Paragraph 43 you said it's not describing how the DNS would resolve requests. Correct?

A I guess I'm -- I'm saying that in 43, in order for a DNS to resolve which edge server, to the extent that there is one server is providing one priority of content and another one is

providing another priority of content, it has to have some policy to resolve that request.

But what I said is that the -- the paragraph doesn't point out DNS, but a DNS would be involved in selecting which server to serve up the content.

Q Point me to where Ben-Shaul teaches that.

MR. ANDERSON: Objection. Form.

Q Scratch that question.

Let's look at again Paragraph 44, and the sentence about in the middle of that paragraph states, "Or the same URL may be translated to different physical resources depending on the region or organization in which the request is made."

A Yes. And precisely that's the role of the DNS. It takes a request and translates it to an edge server to serve up the request. And so that's precisely how regional group differentiation can happen and so --

Q Does the edge server -- sorry, go ahead. I did not mean to cut you off.

A So the same URL could be resolved by the DNS server to different physical resources, meaning to different edge server.

Q Does the EdgeDNS resolve URLs or does it resolve domains?

A Well, URL contains domains. Right?

Q Yes. But this is referring to a URL.

A So again, the URL contains the domain and has to be resolved to -- DNS is required to translate a domain or URL to different physical resources, in this case depending on region organization.

Q Well, a DNS doesn't request -- doesn't resolve URLs to physical resources, does it?

MR. ANDERSON: Objection. Form.

Q It resolves domains?

A Yes, again, the domain -- the URL contains the domain.

Q Yes. But the -- but the DNS only deals with domains. Correct? It does not deal with resources, it does not deal with the other parts of the URL that correspond to resources. Correct?

MR. ANDERSON: Objection. Form.

A Well, again, you're asking me to just read this right now, and so I think my opinions with respect to the claim elements are what I said in the declaration.

Q Is this the first time you're reading this paragraph?

A No, it's not the first time. But I filed my declaration in April of last year, is ten months ago.

Q So is it your opinion that Paragraph 44 describes techniques for resolving DNS requests?

MR. ANDERSON: Objection. Form.

A Well, I -- I'm reading the preceding Paragraph 41. "The EdgeDNS is responsible to return the IP address of either the edge server or another server." Right? Whose URL resides in these domains.

So you're asking me, you know -- you're asking me in Paragraph 44 what could be the role of the EdgeDNS, and I think I explained it to you.

Q Okay. Look at the last sentence of

Paragraph 44. "A certain resource may be visible in whole or in part to only some organizations, but not to others."

This is a service that's provided by the edge server. Correct?

MR. ANDERSON: Objection. Form.

A Again, I don't think it says explicitly -- you know, again, I think the preceding Paragraph of 41 talks about the EdgeDNS resolving domains, as I read it.

Q Okay. Does an EdgeDNS make resources visible to only some organizations but not to others?

MR. ANDERSON: Objection. Form.

A The DNS knows about the client that's requesting the DNS request. And so, you know, I -- it's not limiting in terms of how the DNS could resolve these requests. So it could request it based on regional, on regional basis. I'm not sure I need to preclude the DNS basically saying if, you know -- if it comes from this client, these are the servers available to it. I'm not

sure that I will commit myself to that.

Q Does the DNS know which resource is being requested?

MR. ANDERSON: Objection. Form.

A DNS often does redirection. So it could be on a domain level that it makes some decisions. I don't think I've expressed an opinion in my declaration about this. But --

Q Okay. So you don't have an opinion on whether the EdgeDNS performs the functionality in Paragraph 44?

MR. ANDERSON: Objection. Form.

A I do have the opinion that the EdgeDNS performs some form of regional differentiation. I'm not sure that I offered an opinion that it covers every sentence in this paragraph.

Q Let's turn to Paragraph 163 of your declaration, please.

A 163?

Q Yes. Third sentence in that paragraph.

A Let me get there to 163. A moment, please.

Q Yep.
A If you give me a moment to go off record, I would like to turn on some lights.
Is that okay?
Q Sure. Sure.
A Okay, I'm back.
Q All right. Are you at 163?
A Yeah. Let me briefly review, please.
Maybe you can ask your question, then I can review it.
Q Yep. So I'm looking at the third sentence that says, "A POSITA would have understood that the hierarchical map is a decision tree representing rules because directives apply to edge servers based on whether the edge servers are included within the groups."
Do you see that?
A Yes.
Q Explain how the directives apply to edge servers based on whether the edge servers are included within the groups?
A Explain --

MR. ANDERSON: Objection. Form.

A Explain one more time, please?

Q Explain how directives apply to edge servers based on whether the edge servers are included within the groups.

A Well, a POSITA would know that this hierarchical map is a decision tree because it can follow whether location is in Israel or not. And if it is within Israel, if it's within Haifa, Jerusalem, or Tel Aviv, and so forth. And so a POSITA would understand that this is such a decision tree representing rules.

Q Point me to where it says that in Ben-Shaul, please.

A Well, here I said that a POSITA would have understood.

Q So Ben-Shaul doesn't say that?

A Give me a moment.

Q Well, you cite to Paragraph 309 for that statement.

A And I'm trying to see what figure it is referring to, because it cites a number of

components in a figure.

Q Yeah, I believe -- let's see.

A If you know, let me know.

Q I think it's referring to Figure 9. Or 7 -- I'm actually not sure. Let me look closer. Yeah, I think it's referring to Figure 9.

A Let me have a look.

Q Well, let me ask you this: Does Paragraph 309 mention DNS anywhere?

A So in my declaration I believe I was referencing a different diagram, perhaps Figure 5, that has an EdgeDNS. So --

Q Where -- well, you cited to Paragraph 309. Did you mean to cite to Figure 5?

Is that what you're saying?

A Give me a moment.

Q All right. Well, let me reask the question.

Does Paragraph 309 describe DNS anywhere?

A I'm reviewing it right now.

Q Okay.

A I think I am merely citing to 309 to show

a disclosure in Ben-Shaul that talks about the grouping of servers. But the context in which I talk about 163 is about -- that is about a grouping of servers which can be represented as a tree or subtree. And in the context of DNS, a POSITA would have understood that this hierarchical map or decision tree would represent rules of -- you know, which edge server to apply to, or which edge server to select. So I think I'm only citing to 309 to show the disclosure about grouping of edge servers.

Q So, but you make a -- you make an assertion that directives apply to edge servers based on whether the edge servers are included within the groups. And then you cited to Paragraph 309.

Do you not have any support for your statement that directives apply to edge servers based on whether the edge servers are included within the groups?

MR. ANDERSON: Objection. Form.

Q Well, let me ask this another way. Does

Paragraph 309 support the statement that directives apply to edge servers based on whether the edge servers are included within the groups?

MR. ANDERSON: Objection to form.

A I think my opinion is just what I wrote here, which is, a hierarchical map is a decision tree representing rules, because it can be applied to edge servers based on whether edge servers are included within the group. I think that's just a general statement.

Q I know that's your opinion. I'm asking where that opinion -- what is the basis for that opinion in Ben-Shaul?

A Well, in this Paragraph 309 it talks about a grouping of servers, grouping of edge servers. And it talks about the application of policies to a group of servers. And so that's what it says in 309. And it supports my statement that -- supports my statement that a hierarchical map is a decision tree representing rules, and where the directives is applicable to whether edge servers belong to a group or not.

Q Does Ben-Shaul disclose using its GUIs to write policies that are applied in response to a DNS request?

MR. ANDERSON: Objection. Form.

Q Dr. Lin, do you have an opinion on that?

A Can you repeat the question one more time? I was reviewing some --

Q Yeah, sitting here right now, do you have an opinion as to whether Ben-Shaul discloses using its GUIs to draft policies that are applied in response to a DNS request?

A So Ben-Shaul talks about specifying policies using GUI, and it talks about in Figure 5 a -- the role that EdgeDNS in selecting an edge server. And so the -- Ben-Shaul talks about using some kind of tree-based GUI for specifying policies. And because it talks about situation where it talks about the EdgeDNS, I think a person of ordinary skill in the art would understand that the mechanism for specifying policies using a tree would -- could also be used to specify policies that an EdgeDNS follows.

Q Okay. So a person of ordinary skill in the art would understand that Ben-Shaul's GUIs could be used to specify policies that the EdgeDNS follows.

Is that your opinion?

A A person of ordinary skill in the art would know that the GUI and the -- the GUI and the tree representation is being taught to use to specify policies. And it describes in Ben-Shaul the DNS or EdgeDNS in resolving requests. And I think a person of ordinary skill in the art would understand that the different policies in the Ben-Shaul system would -- could use the same GUI editors.

Q Look at Paragraph -- you mentioned Figure 5 of Ben-Shaul. Look at Paragraph 177 of Ben-Shaul, which discusses Figure 5.

A Do you know what PDF page that is? Seventy-seven. Let me just try to find it.

Q 177.

A 177.

Q It's on PDF Page 29. At the very top

left.

A 171, right, did you say?

Q 177.

A 177. Okay.

Q And so I just want to ask you about one sentence in this paragraph. It is about three or four sentences down. It says, "The configuration of the EdgeDNS 40 and its coordination with the client regional DNS server 22 is controlled by DNS directives that originate from one or more policy control servers."

Do you see that?

A Yes, let me read it. Let me read it.

Yes, I see that.

Q Is it your opinion that a DNS directive is a policy applied by the EdgeDNS?

MR. ANDERSON: Objection. Form.

A So it talks about -- so I think this is -- this is basically what I was trying to say earlier.

The Ben-Shaul talks about GUI for specifying policies. These policies could be

stored on policy control servers. And what this sentence is saying is the configuration of the EdgeDNS, and so forth, is controlled by directives coming from this policy server. That's what I was trying to say earlier.

Is that ultimately Ben-Shaul's teaching how policies can be specified. And this sentence confirms what I said earlier, which is policies that are specified on this policy control server is, in essence, provided to the EdgeDNS to follow. And so that's what this sentence says. The configuration EdgeDNS and its coordination is controlled by these directives from this policy server.

Q Okay. And it's your opinion that Ben-Shaul's GUIs can be used to write these DNS directives?

MR. ANDERSON: Objection. Form.

A I think in general Ben-Shaul teaches how policies can be written, or can be specified for this policy server. And it describes the GUI for specifying these policy. And I think the DNS is

the entity -- the EdgeDNS is the entity that selects the edge server. And I think this is saying that it gets this information from this policy server.

Q Okay. But does -- is the GUI used to write these DNS directives?

MR. ANDERSON: Objection. Form.

A I don't think it -- it -- first of all, I don't think it -- so first of all, I think I said earlier that the GUI tool is used to specify the policy in a certain way. And whether that policy is just a direct copy over the DNS or whether it gets represented in the way that a DNS server may prefer, I think is -- is -- doesn't matter.

The point that does matter is Ben-Shaul describes a GUI for specifying these policies, and the EdgeDNS server is controlled by these directives or policies that are specified using the GUI.

Q So I understand that you don't think it matters. But my question is, is the -- is Ben-Shaul's GUIs used to write DNS directives?

MR. ANDERSON: Objection. Form.

A Let me review this whole paragraph in its entirety. Give me a moment.

I don't have more than what I said, which is this sentence suggests that the configuration of the EdgeDNS gets its -- gets its information from these policy servers.

Q Okay. Turn please to Paragraph 174 of your declaration. And look at the last sentence in --

A 174?

Q 174. And look at the last sentence in that -- well, no, I'm sorry, 175. And look at the last sentence in that paragraph. And it says, "In the example above, the IP address for the server Haifa may be returned based on its location in Israel."

Do you see that?

A Yes.

Q What is your basis for that statement?

A That is, for example, depicted in Figure 10. So let me look at the above example. Give me

a moment.

Q That Figure 10 is shown on Page 85 of your declaration.

A I think it's what I said, the Figure 10 shows that Haifa is a -- is a leaf and is an answer, and has an IP address. And that's what it says.

Q Well, so my question is, what is the basis for the statement?

A That's what Figure 10 shows.

Q How does Figure 10 show that an IP address for the server Haifa may be returned based on its location in Israel?

A Well, I said that -- so first of all, a person of ordinary skill in the art would have understood that a server has an IP address. So even if Figure 10 doesn't say IP address, I think a person of ordinary skill in the art would have -- would understand that a server has an IP address.

And -- and so in the -- in this example, if the request is -- branches down to Haifa, then

the Haifa server will be selected. And again, a person of ordinary skill in the art would know that a server has an IP address.

Q Okay. What is your basis for thinking that a DNS request would branch down to Haifa?

MR. ANDERSON: Objection. Form.

A In the -- yeah, again, I think we've talked about this before. Again, the -- the Haifa is located underneath Israel. And one could imagine that this figure could expand into Europe, can expand to Asia and other things. So my basis is a person of ordinary skill in the art would understand that the selection of Haifa is because the request is in Israel. And in this case, in my discussion, I presuppose that Haifa is the leaf, and that's the answer that it will return.

Q So is it your opinion that the EdgeDNS server considers this hierarchy when responding to a DNS request?

A It's my opinion that Beaumont teaches a GUI for specifying policy, and this is just an example. And in this example the selection of

Haifa is because the request is within Israel.

Q So is it your opinion that the EdgeDNS, when responding to a DNS request, considers which group, which edge server group, the server belongs to in responding to that request?

MR. ANDERSON: Objection. Form.

A I think the short answer is yes. Can you ask the question one more time?

Q Yeah. So is it your opinion that when responding to a DNS request, the edge server -- or the EdgeDNS considers which edge server group the particular edge servers are in in responding to that request?

A If that's the specified policy, then yes.

Q Well, where does Ben-Shaul teach that that's the specified policy?

A Again, Ben-Shaul teaches that there's a GUI for specifying policies.

Q Uh-huh.

A And it talks about DNS or EdgeDNS as part of the system that is considered. An EdgeDNS needs that policy to implement, to decide which

server to return. And in the previous sentence that we looked at together, we said that the EdgeDNS gets this kind of information from the policy server.

So I'm not saying that this is the only type of policy, but this is an example of a policy.

Q So edge -- does Ben-Shaul teach an example of an EdgeDNS policy that considers edge server groupings?

MR. ANDERSON: Objection. Form.

Q Does it explicitly teach a policy that -- an EdgeDNS policy that considers edge server groupings?

MR. ANDERSON: Objection. Form.

A I think the -- the -- my answer is what I just said, which is, I think Ben-Shaul describes a GUI for describing policies. It describes systems involving the EdgeDNS. And it says in a sentence that the configuration of DNS comes from the policy server. I think those are my support for my statements.

Q So sitting here today, can you point to an example in Ben-Shaul of an EdgeDNS policy that considers edge server groupings?

MR. ANDERSON: Objection. Form.

A So I think my opinion is Figure 10, together with the sentence that we talked about earlier that the EdgeDNS is configured according to a policy server. And that the GUI provides -- Ben-Shaul provides GUI for specifying policy. I think the combinations of all of those things is why I think a policy such as Figure 10 can be defined for an EdgeDNS server.

Q But that's not an example of an EdgeDNS policy that considers edge server grouping.

Correct?

A Again, I think I've cited to the passages in my report. And so we talked about earlier that Ben-Shaul talks about grouping. But I think my opinion is that a person of ordinary skill in the art would understand that -- would understand the support that I talked about earlier is -- would understand that Beaumont teaches how an EdgeDNS

might be configured based on such policies.

Q But does Ben-Shaul explicitly teach a policy applied by the EdgeDNS that considers edge server groupings in resolving an DNS request?

MR. ANDERSON: Objection. Form.

A I think the -- I think what I said is the person of ordinary skill in the art would understand that the specification talks about the edge server getting its configuration from the policy server. It understands that policies can include grouping. And so I think a person of ordinary skill in the art would understand that the groupings can be applied to EdgeDNS.

If you're asking me if there's a paragraph that talks about it, you know, at length about it, I'm not sure I can cite one for you right now.

Q So sitting here today, you can't cite me a paragraph in Ben-Shaul that discloses an EdgeDNS policy that considers edge server groupings?

MR. ANDERSON: Objection. Form.

A I don't believe I cite to additional

passage other than what I've cited in my report. And I don't think I am offering any new opinions beyond what I cite in my report today.

MR. HAARS: All right. Let's take a break. I think I might be done, but I want to check real quick. And we only have a few minutes on the record I believe anyways. We have about, what, five minutes left on the record before seven? Let's go off real quick.

(A recess was taken.)

MR. HAARS: All right. Dr. Lin, I'll make this short. I have no further questions.

THE WITNESS: Thank you.

MR. ANDERSON: Yeah, we have nothing further from the petitioner's side.

We reserve the right for Dr. Lin to review and sign his transcript also.

(Off the record at 8:11 p.m. EST.)

ACKNOWLEDGMENT OF DEPONENT

I, BILL LIN, Ph.D., do hereby acknowledge that I have read and examined the foregoing testimony, and the same is a true, correct and complete transcription of the testimony given by me, and any corrections appear on the attached Errata sheet signed by me.

_____ _____

(DATE) (SIGNATURE)

C E R T I F I C A T E

I, Debra Ann Whitehead, E-Notary Public in and for the Commonwealth of Virginia, do hereby certify:

That BILL LIN, Ph.D., the witness whose deposition is hereinbefore set forth, was duly sworn by me before the commencement of such deposition and that such deposition was taken virtually and is a true record of the testimony given by such witness.

I further certify that the adverse party, GOOGLE LLC, was represented by counsel at the deposition.

I further certify that the deposition of BILL LIN, Ph.D., occurred virtually, on Monday, January 26, 2026, from 12:01 p.m. to 8:11 p.m. EST.

I further certify that I am not related to any of the parties to this action by blood or marriage, I am not employed by or an attorney to any of the parties to this action, and that I am in no way interested, financially or otherwise, in the outcome of this matter.

IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of January, 2026.

My commission expires:
October 31, 2027



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