

Digital Switching
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Lecture - 35

I think start up start that part. So, we looking at sip rectified and we discussing the forward invite structure which was there. So, I will actually move head from there, there is 1 public address never change; so 2 and form actually for that. But the context is that point of time when this require time is being sent, were the actually that person is. So, if will equally notice in the contract field, after shift colon what are the user name at the rate.

Then it is first for Ails is, pc33.atlanta.com, because her soft phone is actually being given the particular DNS name at the run time. So, that actual location at the entity of at that point. But actually outside from, because she make keep on changing are IP addresses this cannot happen here applying the phone and some other places at different name. So, this cannot be use as universal Id and when she is telling the for example, visiting card you we cannot start, how she will modify all for the visiting cards, which is already going to distributed.

So, this to be universal name is does not change; that universal name is related to domain name. And this context in also there is what we called, location server or rise star. So, wherever she will be change, she will actually for this for display whatever it is public URI, SIP URI corresponding this will be another URI. So, this will be raised at the location services. You do not know for example, about that Bob Ails, does not know bob current contact that is our problem.

That show invite has been sent which goes to the SIP proxy, SIP proxy sends to the domain of where the bob is there. Then, that proxy talks to the location sever and rise star finds out this particular public URI of bob. What is current to the contact? And once it knows the current contact actually do it makes a invite requests sent to that sent to the contact URI machine. And while returning back that the bob will be same putting up of this contact.

So, both bob, Ails will be there actually current contacts they can do direct pairing on that basis. They can during directs signaling, after that signaling has to be routed through

proxy it as to be mention even the invite request is sent. Because to the enter we can directly unless. In the request setup, invite request they set in header fields which has been for example, in the forward invite: first thing we putting at the via, every SIP proxy see was putting via entry.

So, by the time it reach to the bob they will 3 wire which there is work is. This wire actually tells when the response has been sent back, this not be sent back, directly it has by via this. So, what are the top most via thing they response will be always send there was the no via. They response, they would send by directly; which the context, which was there in the invite a structure in that request. So, that explicitly done actually here they will bob response to become that response a structure.

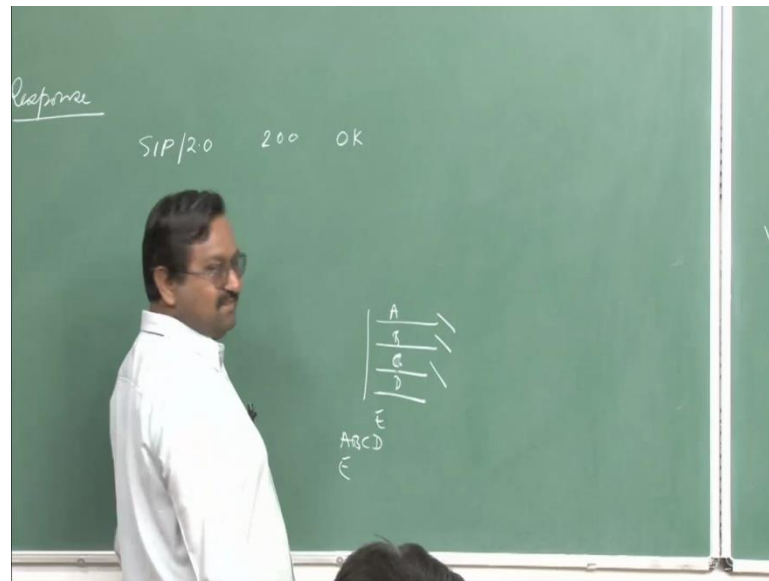
Because, there I think quite certain things, which are also not clear earlier; I that relies the way as instruction does not here at simple. Then of course, it is own kind of a layering a structure at the specification, it does not how you go through the implement. But layering structure which as identify also tells, how the software will be implement. So, this also typical that will be used vertically 4 layered structure for implementation.

So, I thing today I will fast of all go with the response, I thing already finished all the fields which was there invite request nothing as in left. So, response thing you have to look at them of course, will move to particular layer to which use inside the well SIP what we called entities. There can be many Sip entities and then we have to actually understand have been talk in full on less state a proxies.

There not actually, there 4 entities technically, I was not explain about is state full proxy for can be respected to multiple things. So, we have call it state full, we have transactions state full we can what we call B to B agent, back to back actually. So that also can be there, there will be minor certain differences each one of them actually different probability all kind of elements can be there.

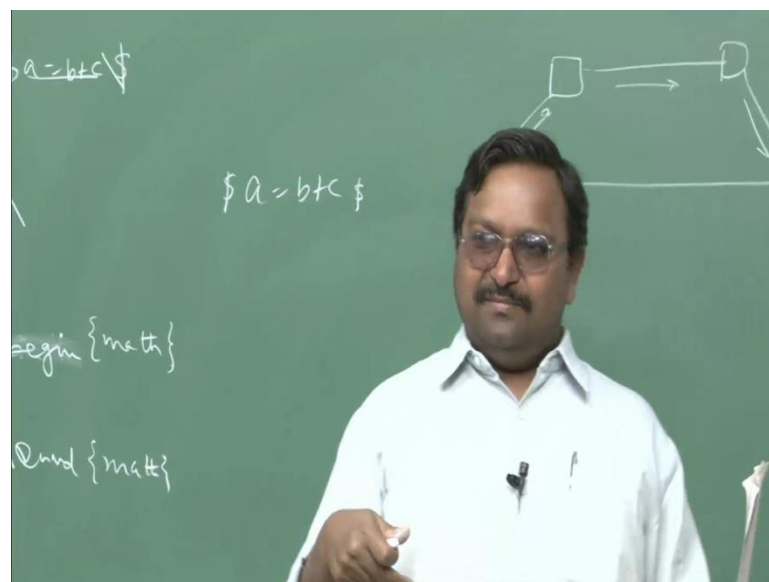
Usually most of them these things are also happen even other design, which are property, not the simplest. But the take different form, same thing must be Skype there, even google talk some of the many of them implement we are functionality we are in shifted in names must be different. But architecturally yes, these are a very generic structure. And this is flat over time early actually some differences because of this. So, coming to the we thing want.

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So, the response which will be there and I think which response talking about. So, invent was sent to be in the direction.

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Then each one of them own via headers first 1 read by this, second 1 by this, third 1 by this, 3 via headers which 1 there is thumb rule most of the fields actually copied. When the response will be related most of the fields copied back in to the response. So, this example currently am given as example written as specification for the request and response structure itself; there is formalized specification then given.

So, usually it be look something like this. So, this first line in the response we always start with this thing. The first thing will be SIP usually it is a character case in sensitive, but machines are expected it always capital letters. The way it is done with HTTP also. This literal listing, it is not number; while HTTP is counted as number, but does not matter for the implementation goes.

But conceptually is difference they actually have capital lot of thing from step HTTP in this case. Now there will be always is a space, 1 is space; there cannot be 2 spaces. There has to be exactly 1 is space correct. So, space character cannot be used in side this strings that important here. It as to be escaped, escaping all of this to understand or not. All of you most we have lets some points of time, for document process system.

So let us, a very noise them this 1 control character this 1; we want to type letter. How we will that? Is way to type this character? How will do that to be done, dollar is for some mathematically substance we write to equation. We will go mathematical done there purpose. Suppose I will put this string itself should be visual line text how... we will writing a book we will take very we do not explain it how to methane.

So, put the character, but moment repotted we write a math equation a equal to b plus c we write this, we do not write this thing. How we will get dollars? We have use at the I thing sequence, there is special character which is this. If I put this character just before this, the special meaning of this is lost. This also the special means, I can also put this. This no literal this things, these to combine when there will be pass will be now we will something like this, this is what do the escaping.

But the polynomial character this we shown, then were I put ever back slash it remove the special meaning test we this. It is new line no it not a new line in case of latter. This is the removing what will be for your escaping earlier character otherwise we cannot print this. It is not new, check is an escaping character is not possible. It will be used for that purpose, where very simple thing like you have math mode; we put something like this.

Begin is, typically slash begin math we can something like and then all this are special characters. There is start with, but this can be escape by putting just 1 back slash before this. Then new line which serene places we can using I will tell you were, actually we

write out if we call the text this configuration file is Unix. So, single back slash it is use as what we call it will be braking at a technical system is C programming.

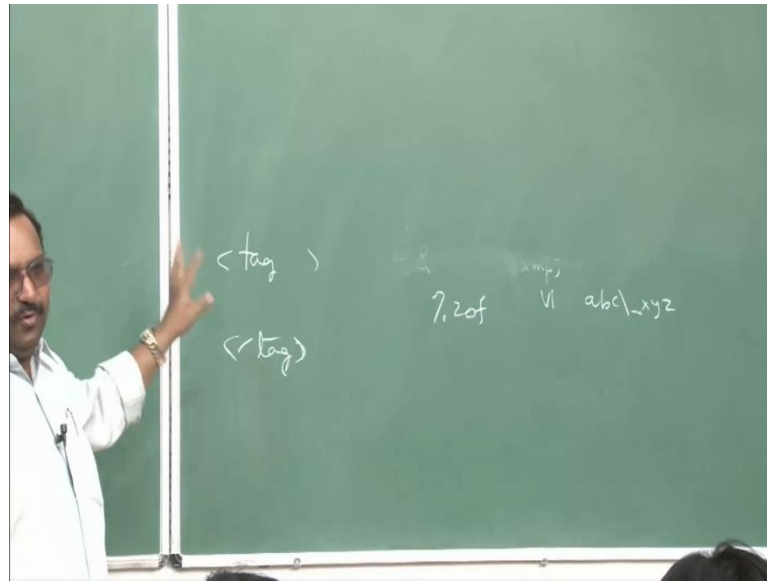
But actually consider it as a 1 single line. So 1 very single large line can be broken when written to go to still file what we are writing whatever slash, whatever slash, whatever slash. Now, when the machine going to pass it this a b c d it actually it as, a b c d a new line like this. So, sometimes for example, we you implementing pairs in other things lines become too long for the messages.

Then usually you do it. That use common use again that special character there in this case. But then given a string whenever doing print of we have to print this particular thing then there is a again problem, use a printf command when you put this, then there is a problematic actually. So, you if we want to print this self again do again skip. The skipping is, a good motion if SDLC teaching talk to about this escaping.

So, what was the escaping, then the checkout could not be construct because 06 1s 0 is the start header, 06 should be not 6 contain 1 should not be happening this string. So, implemented in bit of that escaping actually root. After every 5 1s as 0. So, there are only 5 1s then actual data n is 0 it is not adding a 0.

So, that receiving said it simply removed same prove also applying them. So, certain control characters contain cannot be kept in the string they have to be escaped. Otherwise you cannot interpreted, happens using HTTP to be transport are XML skim as were searching actually have a special meaning.

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I think remember this XML is, clearly I put tag, I think closed tag, now I want to put this actually should in XML then we have to do it. They are some fields and this is only the literal string they should not be interpreted by XML parser. So, there is a corrected one called Ampersand, but when we use in HTTP we write this thing as something else which comes there something like this forwarding that. So, we use Amp; something else here.

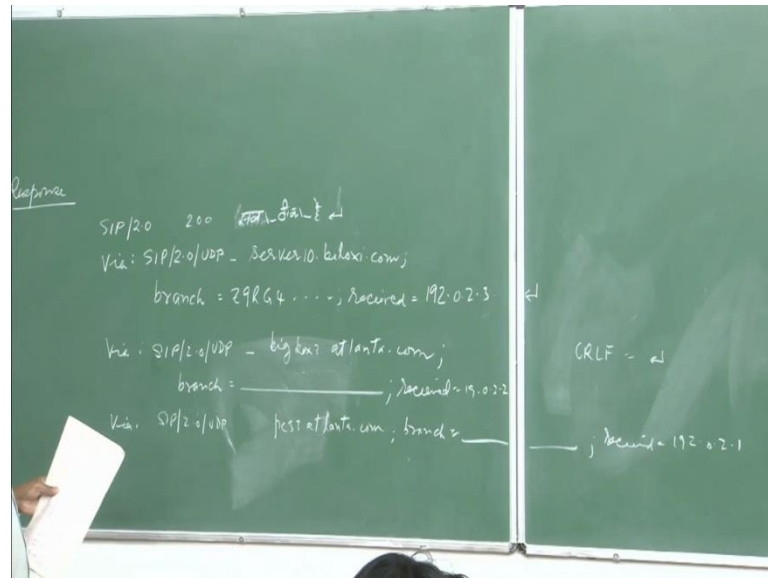
Then initial command, initial character this 4 characters, 5 characters represent by a single character. Sometimes in the URL which actually using we must be using percentage 20f something similarly URL. That is actual to a single character, but that is URL encoding. So, URL encoding see on that.

So, all control characters which have a special meaning are converted to something else, in the reverse on again reverse convert text place and that; however, file names we can use space. In UNIX otherwise whenever we put a file name that the separation in 2 arguments. But file name can actually have a space, how give you file which can be it is abc there is a space there xyz; when I will do alert usually we will see abc xyz.

We will the single 2 files, here of 2 files, but now we want the abc space xyz we can do not the file. Because the moment we can see as will assume that 2 arguments, it is not 1 argument. Whenever we have to do we have to use we put a back slash and it space. And then it will be taken as a string. So, the control functionality of the space has been abort it.

The whole thing has taken string by a VI editor. So this is I think computing pretty common, same thing will be required here lies want to do apprise at the string is the lot of ways every, but as it all the time will be done knowing here ok.

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So, the first will be this then of course as a told that 3 guys already we are headers as putting all the 3 of them. Again this header, this expert, this format it says the 1 we have going to send back the response a SIP 2.0 complaint proxy. It is going to UDP transport what that as to be used an communicating, but as the guy intercepting this we are send the response as this. We remember this, this one was server proxy dot com. So, what was some this guys when send the response that, when we to the person. And it actually remove this to a via field when the response will be move further. The 200 for the machine this is the interpreted is a basically, the first field we always version number is 6 format 1s single is space this will that to be the machine.

Or the automata which is implemented there its software and will be under sting this particular thing says, that finite machine will change the state. This is for the humanize; machine will not prepare will not here. We can even write if we permitted, we can actually write that will also permitted. Remember ask that spaces when we have to actually header field in this case, which is an I thing except languages colon action.

So, machine will not to do units does not matter for a UTFE number all encoding. So, fate any languages in the world in all most all languages we have UTFE recordings can

be used for transactions. So, for I thing not seen anything can excepting country were English not use commonly language. They actually doing the code by their languages, but India will be jumps at following only English.

But in Hindi were in actually exciting, but I thing sip server India no body mange that mostly build on whatever open source that ever, but there not suppose English as kept on the Hindi most of the engineers going to manage. But they know English may be after tenth class we stop reading Hindi, but have the English, but technically process. Trouble represents, but it mostly China, Japan, Russia then of course French countries language peoples.

So, there English is not every permanent language, but some of the us most of things first English is there, but because it as it also become English and French it always fined at the English at every all, the Hindi most speaking and biggest speaking languages largest number. Since, is first I thing French are some French, I thing big long French and English, Hindi I can 4 something somebody we are going the list.

But we still do not have any implementation that. But we do now permit are URL for example, the when we going to browse, we can type in URL of your browser in Hindi; we can possible for that firebox permits that. In UTFT and that will be resolve by DNS and actually go to your site. So, as not very good actually providing a domain name in Hindi for google.

We can try it use go to check with them, but multiline domain are of visual because of very thing as to be in to a fate all extend this is also UTTF way of this is not as sky characters set. Only thing this particular thing as been specified, this particular thing specified, this can be Hindi, does not matter. If it is only keywords to be in English, but administer specified 3 that we cannot switch for computer language; computer does not understand the languages, formal testing this a byte code.

So this particular byte sequence means this. If building affect that based on that. So, in fact lot of we actually going to build up a machine, we write the software we do not remember this will characters usually need not; we can converted only whatever we cannot to identify variable that's it. So, this will have to we can semi colon; now remember it is semi colon it is not separate value.

This is the header field, this is the value; value is the always be separated by comma, they are multiple value their existing for header a value semi colon is nothing but is for this particular value itself there is three is converted. So, this semi colon branch will be some random sequence equally mention same thing earlier also. And this gives the IP address of the were it as go back, second we of will be there skipping copy we have written last time we last time.

So, this will be actual which 1, so I did first this will be big box. 3 dot Atlanta dot com semi colon here also semi colon. We are unicorn different line, they all to be same line. There is no CRL in fact I we should write another character called this is carry the data c r l f. There is time is, whatever printer technically printing 1by 1 the character here. So, currently moving back to 0 colon, the line it is the next line; c r l f technically carried it is 1, l f is another 1 2 characters actually.

So, different machines find system is the actual time is different ways words on of line technique URL. So, this as to be there. So, in this case the end of line is not here, end of line happens here, so I should explicitly mention that. This actually word for keyword first keywords, but I am using c r l f representing by this. We also branch number, which is sign by the machine.

Similarly, there will be thread 1 which is added by the senders. This 1 single space we are not 2 spaces exactly is 1 space that it is specifications. The last 1 will set pc33Atlanta. com. it will also a branch, for random string. And then of course, reaming the field. So, 2 field will be copy directly as, this 2 field what was is actually earlier? It as Bob. 2 field which was their first latter always capital, then small unless word actually changes.

The IP that particular sever time that proxy dot com and that want mean, so for find out, but my gases should be this there no purpose for this. So this is random string it must be, then transaction this is between the proxy and the bomb. In the client for the bomb this particular 1 between the proxy; second proxy in the client, this is between the 2 proxies, this between the first client from the proxy.

So, this basically in specification because of this may be seeing multiple things for example, multiple invites. So, when the response is, we give to figure out for which 1, for session as not to be... In fact, many parameters which can be math together, what

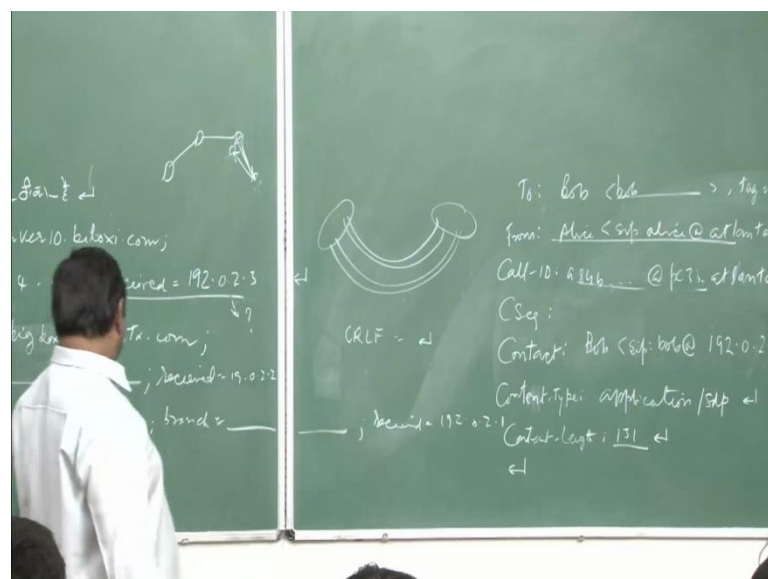
was linear go to the bottom thing is not actually math the first thing here this thing there itself. Now about we are actually it their just a minute thing, then men as to potation change should not any post tension is the r f c so for is used document I will did partially.

There have no receive, I think this is then must to be the IP address of the machine. We received, we the responding back must be fall that. So, that can figure out we have actually sent in the math will be response. Now there is random is, 1 that must be logic it does not matter. That is a packet circuit is, a message transaction for between to the applications, it does not move from the part it is the UDP connection.

Otherwise the UDP packet is routed through. Actually the physical network in the IP layer you need not DNS anywhere; we do not bought, we do not call it as, a SIP server. We actually leave it the question mark and we can study the SIP proxy and we will find out, and we will discuss. So, we are not clear and we cannot figure out what would be the meaning interpretation, leave a question mark and let's investigate. That is the basic strategy.

So, this I will... whenever I will find out I will tell find out at that time I will tell. Because I do not know how much I will able to go through the process; where it is given. So, let us whatever concept we can pick up, let us pick up those. In any way the end of implementing software we have to find out, so that we have to read full of it and we have to find it out that is the meaning of this.

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I am not so far rise to the specification of wire structure. So, 2 field again will contain here, the only difference and rest of remain everything same that is bob angular brackets within which SIP URI actually will be there. SIP URI all the strings are be escaped here, angular brackets cannot be used in inside the SIP URI that is very important. You have to use all the strings, which are escaped the strings. Wherever URI has to be communicated and we cannot use the angular brackets in your email it has a same way.

For example, I cannot have a something like this email is not permitted, because there is the angular brackets. These are used enclosed the email itself, even the angular brackets are used for a special programming that is for only templates. That is a new concept which are later come on earlier see it was not there. But current NCC actually specifies these templates, which are pretty powerful.

I write the same code, I will be generated code for whatever my requirement depending on the requirement that is different piece of code. So, whatever may be SIP colon bob at the rate bull axe dot com and then we have a tag this is something that is newly added. And this forms important tag, the so remember the 2 tags 1 is, into 1 is in from and 1 what we call Id.

These 3 things are put together it is dialogue, it is not a transaction. When I send invites, when comes back. In fact, any response which is 1 xx will complete the transaction is the final response is only 1 xx is the provisional response that is the non-final response. So, transaction is over. But you might do other transactions ultimately you have to by as a transaction.

So, all transactions which finals all dialogues, should actually have same tag value in to, tag value in from and tag value in colon that has to be the same. Then that associates of the same dialogue actually happen. Because 1 guy may do a multiple calls, when a message comes it associate to the call. So, this triplet is code error for the identification of the calls; this takes the values some random history from will be copied it be whatever in ails the things are already sent.

I think I had Ails SIP column Ails at the rate Atlanta.com. What was sent by in invite, this tag was exactly copied from the 1 has received in invite. So, we have 2 different invites comes this comes from the same tag, the call dialogue will be different; this, this

and the call Id 3 unit are called call dialogue till the time. The whole call is over when the bye comes actually or error happen, even after that the dialogue will be maintained.

So, there may not root the signal message through this thing proxy see, whatever the call has been set up when 2 signals directly. Then, also call are also specified can be done. Yes unless the report route is also configure by this proxy. If at any point of time invite has sent, one of the proxy is record root and puts the own address there. And there it will be maintained through both with the babul maintained when he receives invite, the same field will be copied by back in the response.

Otherwise, we will receive it the both do signaling only to that proxy. Because that is the record root for the particular dialogue has maintained; mention in the beginning. Then, the parallel sent the call termination go to that. In current case example will be taken that is the record root has not been inserted will forwarding invite. So, by will happen via to via along with root proxy. The via would not be have put will not the response be avoided could has been sent to last via which is this 1.

So, invite goes this way the comes in this side. Only problem in that case is, if it is call for state proxy it will not know the status of call through or not through. If you know the call of proxy this via address has to be put, by call of the state proxy and not transaction is state proxy the transaction state proxy is different thing. Transactions happens only, between a client and proxy the transaction is happening between these.

Then the transaction is happening between these, hence this is the transaction user running I will come this particular structure actually. And when the response sending back if it is strict less proxy, this is not remembering anything. Whatever comes this simply forwards to this; when something comes back, it sends it back that it, does only proxy. So, I will actually that figure which is required the comeback by this thing. Then you will have call id this is going to be same, which was there in earlier communication.

Then write remember this is a response, there will be a specified this of this. Then C sequence this will also will be copied from invite, there was a pathetic scheme there is a corresponding sequence number this result as a pathetic scheme it was executed. So, the sender will able to figure out the response to response the command. When it is sends to next command, then it again number will change some commands will gets missed out, it figure out.

They are not received the response of another command has got 1 I am not able to got response of 2, but got response of 3. But it figure out the particular commands have not been executed, but all final response for all commands would arrive back. This sequentially number actual help it then of course, this is contact which is not there in earlier what will be added. This will be telling that, this bob this is will not be bob sip colon bob at the rate of bull axe compute this will be where he is, actually staying current location.

This way the bearing will be done, an interestingly SIP is not URL. The telephonic that is tell URL, which is also used by lot of things; sip also used by carry not only sip. But also tell URL, but how they are interpreted is different question. So, in this case 0.2.4 now I think the I got it what is happened is, IP address has said to be a proxy, from this giving the answer back. This is the proxy it is telling while, receiving the packet of particular IP address, while sending the response back.

And it is responding the back whatever it is the result from here, it is technically possible that this is the another machine; which is running here invite comes in this the invite receives from here. And this is put via entry from this particular from another machine setting from the same domain. So, it was sending here the response will be sent here with a different machine. Because the via entry was done this server 10, there is server 1, server 2 , sever 3, server 9, server 10.

So, invite is receive from this IP address has response to go back, this that was actually this and, then same thing will be copied back this. The copied back remember, only this thing was vary depending from where we receive the interpretation there should be, cannot be anything else now. If they has to been, then even it could not require just put the via field he will look up, but then in that case why this erred the question is, this guy sends the response back. This person already knows the IP address got it.

This IP address is no use of this guy, why this need to be aired? The bob is already invite that time only this, when you sending this messages to this guy is, a response. This is only for verification purpose this domain I am sending the message back to the you, but the response I am sending was receive to me invite is receive from this route. So, I received it from here and this is where send back you are sending an information and you are telling this particular thing was exactly invited here.

By this proxy this is again, separate thing and this is 2 different again and in details going to send this thing back to him, then both of them will be same you are right. Then both of them on the same IP address, but here clue is I think RFC is specifically naming done is also discussed. Server 10 has must probable done intentionally, why not only server dot black she dot com in the text. Server 1, server 2, server 10 actually telling here is different servers, when proxy is sending this must be this IP address IP address then it must be put it 192. 0.1, 0.2, 0.3. This will said in r f c even the naming are also further people can understand, there should not misunderstanding the system they can make out lot of things to this mechanism by this must be the result. So, this is the fourth IP address this, which you have to clarify that contact. Now pc33 Aleah dot com corresponds to 192 0 2 1.

This particular client then the of course, I think state forward contact type not 4 is for bob. So, this ails contacts would not be copied Ails contact will give that side, Ails contact will comes from different side. Yes, for bob is the contact the guy was sending the response that was the contact of the person who sent the request. This from field is not for the response, because the response is not going back to the bob and it is not from Ails. So, that can also be one of the confusion, this talks about invite messages this is corresponding to the invite which is from ails to bob. Yes, this response is originating from contact so contact is the 1 who is originating. Yes, because remember these tag values and call Id 3 things becomes the call dialogue from the call dialogue. What is the important? Is will form not response by call, then start a dialogue call dialogue is only 1.

Invite is one of the transaction; which is happening inside a dialogue. In this transaction will be completed, where this will go back final response. Call Id exactly same, this will be same number at the rate pc33 at atlanta.com last time we written back a84b at the rate of Atlanta.com like in this case; content type not, contact type content type this is mine type specification again.

This is again a session description. So, this basically what kind of call is going to set up all parameters, which are now being accepted by the Bob? So, earlier class I told a video call to be made and video will be this content and audio will be with this content. And now set up the call, this guy may back I will want video in this we have only audio, but no video go to be there. The sub set of that is content type, content length so number of

the obtained by x which are there. And then of course, remember each one of them c r l f is there important whatever the important.

We may be say 131 I may be write here, another c r l f even you do not have any payload, any content attached even, then this has to be there even you put content length equal to 0. Then, also this carries the lines incidence it be there. So, we are actually create we have to through a buildup header file, for the application never this, because of others that do will not expected in that case. This you can try this thing if we wish estimating the possible do a TELNET port number 80 of web server, both associates do not give a user name.

And don't given TELNET is, a machine is space use specially prod that the TELNET has to be done. By default I thing 23 TELNET is 23, FTP is 21. So, most of the people do not know, then taken which of the ports you give to TELNET space machine to be login. But telnet is not to be protocols, it is to be clear text protocol can be used, then we can specified port number 80. We do a TELNET proxy TCP connection will be set up.

Similarly, there is if not login password, because no that is not TELNET server all side. There is not all sides there is no TELNET e diamond there is TELNET e port it is a web server mostly Apache. We are passing or may be something else, but they needs a line, then we will write get whatever is the first command is type it out nothing will happen once you press it 1 enter. You have to write down all other header fields when the center fields, then only the header will be interpreted by the machine on the other end.

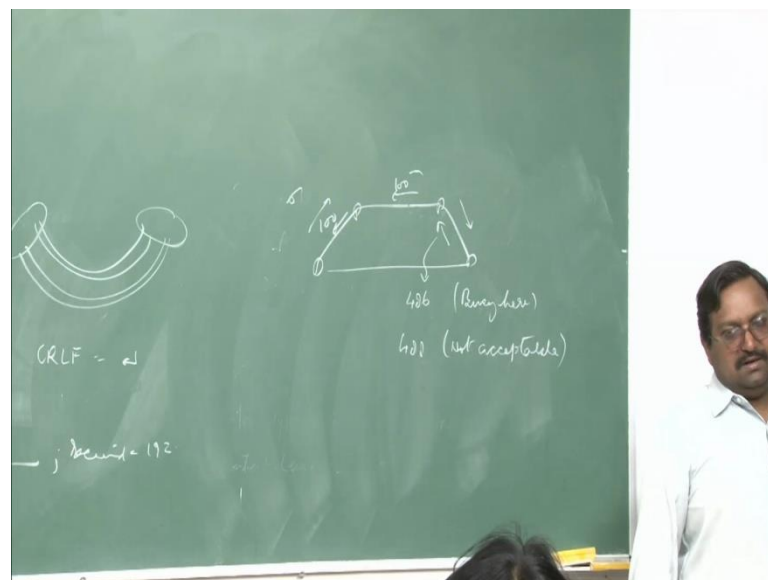
Because what is happening is, technically by strictly I am creating an which, is a TCP connection between 2 machines. As you pressing the characters will just be there is any algorithm, which keep on waiting for certain number of farm and we will be transported. This will keep on single character could, but will not start interpreting still it comes out 2 c r l f together; when it is figures out that 2 c r l s together, header is finish now let me parse it.

Then after that, once passing the figure out; how many characters are this suppose to receive after this. Then keep on missing those many bits, then the HTTP request is all over. Because most the HTTP is now using passing connection same HTTP connection now, we can use for another HTTP request. Earlier days for every HTTP request we have

separate TCP connection, response comes means, TCP connection closed. Next 1 again, will do same thing.

So, persistent was implemented later on actually. Because first you have to do only once TCP connection, that was forward that actually removed; same thing the concept is also used here is, the length of the context which will start from this line onward. If it is 0, then there is no nothing is end; there is no end of the file of the UNIX system. That is based on, UNIX system file character, your Microsoft earlier file systems actually using is any end of the file character on the end. Then purely it is based on how many bits have been from the beginning, then it breaks when the file is over. So, the file is that is what the file is tropically when it is closed to the complete transaction.

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For example now, what can happen is this guy sending is the first thing is 100 this will also receive 100; when the invite was sent. This is actually send something like 486 also. And giving this example it is busy here, it is one of the port I will specify which part 1 axis for what, 2 axis for what, 3 axis for what, 4 axis for what. Now this call is 486 is not receiving from this person. This is send by bob, then bob may be talking with somebody.

Then this proxy can decide now try let me call to a voice mail box, this is typically use for those kind of applications. If you want to change the parameter of the session in between, you will again sending another invite. But now your tags and call Id still will be maintained same; so that invite is a, reinvoke. Because it is not a fresh value, that fresh

value is maintaining these 2 entities. In fresh invite the fresh invite is basically; that means, send the new parameters new HTTP. If it is expectable, you will get 200 back.

So, this new invite need not be sent via proxies, this can be peer to peer that is important. Unless the record route thing is in the beginning. And then of course, it can send 488 which is not acceptable that is the meaning. We remember these things are application specific, these are not hard. This can be rewritten by you; this can understand this only. The interpretation group that once we can write it; it is not a these are numbers.

If this comes the call will come the older whatever the agreement they had actually. This things if the band width of the channels are approved; there is band width testing machine, the band width becomes best it goes for a better quality. Again and again I am not a capability if band width goes down, then we will goes down. We can keep on negotiating on that basis, but remember for media transport it is separate then the signaling. For the yes, now after this we have to think about the layers, how we are for the concept of the layers.

So, I think that we will discuss on Monday's class then. Any other question? Proxy can decide. Usually what happens is, the telecom operator with whom that server whatever he say means, that I always involves whatever I am not do that directly. But of course, both of end points has contact override if they wish. But they are not supposing to as per the standard. Basically doing it is only for signaling path, not for media.

If you want a media proxy or media gate way between, we will not actually we will first send back we will create 2 create in that case. That means, this is basically the structure this is the media gate way. So, signal happening in this way then could be 1 option and then media goes in this fashion. There is another way of signaling this guy wants to go through media gate way or may be there actually there media is getting the signaling to this guy.

Then do a signaling allow, not a tricky thing; telling him this is, the end user and making him pair with him and for this half media get control. Now even this can be used, not can be issue. And for him actually now it s pairing and then there is a bob; the bob pairing with this thing. So 1 signaling path is this, other one is between these entities.

This is another way of doing, this is what we call back to back end users ends. B2B UE. So URI is a server here and URI server is here, URI client is here. In the back to back combined together. And you can also build up tricks for example, for signaling we have to be BUA, but you may do mediator is that is also possible.