

Discussion -- Open Source Policies

moderated by [Timothy Druckrey](#)



RealVideo: [Modem](#) | [ISDN](#)

[Timothy Druckrey](#): So, two quite interesting and very distinct models. There are obviously a lot of questions from the audience, so I think the best thing to do is... let's save some of the attack on Andreas.

[Tim O'Reilly](#): Actually, I think I'm first in line...

[Timothy Druckrey](#): Okay let's not save the attack, so we'll take questions, there are microphones, please step up to the mike.



Audience -- [Richard M. Stallman](#): Hello, my name is Richard Stallman [Laughter], and I'd like to talk somewhat about what Apple is doing, because, in general free software and open source software are the same category of software -- almost the same category of software. Mainly where they differ is in what they say about the software. What they say is

important. But here we see one example of where they are not exactly the same category, because the Apple Public Source License apparently is considered to qualify for open source but I came to the conclusion that it does not make the software free software. There are two serious problems with that license which I'd be very glad to see Apple fix in the future, but as far as I can see they have not fixed it yet.

One of them is that it does not respect privacy and that is, according to this license, if you make a modified version of the software and you actually start running it, to do real work yourself, you are required to publish your changes. Now, free software means you must be free to publish your changes, but that doesn't mean that you should always be compelled to publish them, so that was one issue.

The other issue is that the freedom to use the code that you have been given has really only been lent to you, if there is any kind of dispute with Apple then Apple can simply say "You have to stop using this part of the code." And they can do that any time somebody complains to them. Now they may feel that it's not worth their while to spend money to fight that claim and if they choose not to, then you don't even have the chance, because Apple says, "We suspend (earlier it was "we terminate", "we revoke") your rights to use this code," then they just say "We suspend it until we win the case, which if we are going to bother not contesting it we won't win." So the rights that you get to use this code, even insofar as it is up to Apple, they are not irrevocable, they could be snatched away from you. Now we can't really say that we have freedom if the ones who are supposedly letting us have that freedom could take it back. Now of course, no matter what Apple does, there will always be the danger that somebody could say "Even Apple has no right to release this" and they might sue Apple and they might win and then they might come after you and you might give up. You know, Apple can't stop that from happening. We don't expect them to stop it, but they must not magnify the danger, and the problem with the current Apple license is it magnifies this danger.

In the US, where the patent office is crazy, and where there are tens of thousands of insane software patents, somebody could threaten to sue Apple with one of these insane US software patents and Apple could say "Gee, we don't think we can fight that, we'll suspend people's right to use that code," and then you, here in Germany, will be hurt by that US software patent, because when Apple says "We are suspending your right to use this code," well the software patent from the US has no validity in Germany, but Apple's copyright has validity in Germany, so this is another example of how that kind of provision, any such provision in a license, where the copyright holder can revoke your right to use their copyright, based on somebody else's claim, any such provision must be considered unacceptable.

Now, I am not saying this with the idea of saying Apple is a monster. Apple has clearly made a sincere attempt to try to work with our community, but the way they have done it is something we must not accept as a compromise, it is not. The problem is too serious, it's not something on which we should be willing to make an accommodation. We have to insist that Apple should do as many others have done and handle these issues right.

There's one other point, though, that I have to make. The representative of Apple said that this is the first time that an a commercial operating system has gone open source. Well, although the Apple Public Source License does count as Open Source, it's not accurate to say that the whole operating system is open source, because that license is used for selected parts of the system, not for all of it, unless, please tell me if this is no longer true, but this is what Apple announced, back when they announced this license. And so it turns out that the most interesting part of the

operating system for most purposes are those that are neither free nor open source. And the parts that are open source, it turns out are not very useful by themselves, so for those of us who really believe in our freedom, and who are going to use nothing but free software, then even assuming Apple fixes these problems in the license and those parts of the system, assuming they become free software, even then, it will not do us very much good, because we can't make any use of those pieces of the operating system. They duplicate parts of the system we already have in the GNU/Linux system and in the BSD systems. We already have code to do those jobs. The parts that really would have extended the scope of what we can do those are the parts they didn't release the source for. So we can again hope that this will change and perhaps with things like the streaming server, perhaps they are starting to release code that really will extend our community. But we have to be very careful with any company and look at exactly what have they done. Is it really contributing to extending the community of freedom, or isn't it. [applause]

Timothy Druckrey: Thank you, I just wanted to briefly say, that I think tomorrow afternoon, and I can be corrected if I'm mistaken, that there's actually gonna be a workshop about the issue of intellectual property and the issues that you raise. Thank you for that extended comment.



Andreas Haas: Okay, First of all, as we are talking about version numbers, we have in there, the sign that there is something which is work in progress, and you have seen that we have already done some severe changes from version 1.0 to version 1.1. What you shouldn't forget is that we are a vendor, we have to sell products. We do not want to try to fight

someone, what we do want to do is offer services, possibilities to you, make our platform more attractive to you, give our platform more strength in the fights of the OS wars because as we are a vendor of an operating system, we are in that war, that's true.

The first thing is about the privacy, correct me if I'm wrong, but I think we have changed that in version 1.1. So you don't have to sign up somewhere to download the software. So we changed that part of the license. [RMS's voice from audience] I have the actual license with me so I can point out what we changed. To the last thing, where you say, actually we haven't really made anything open source that is interesting. I'd consider that as not true, because Darwin, the project which is the core operating system foundation for MacOS X server is a complete operating system. We now can get into discussions about what else is needed for an operating system and it will be very philosophical, but the fact remains that you can

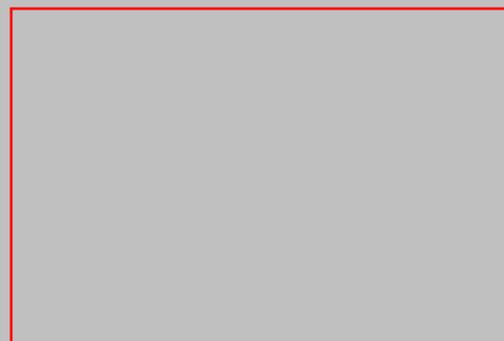
download a binary, take a dumb machine and install it and you have an operating system there which is asking you with a prompt for making your input. You can then install Apache and have an Apache server up and running on a Power Macintosh. So we do have a complete operating system there.

Yes, you are right we have not included everything that might be interesting for you to have the open sources, because you might remember there is a product that we want to sell, MacOS X Server, and yes, there are parts in there that different people might be attracted to and so they consider that what we did is not enough. Well, this depends on the point of view that you have. You have mentioned it already that we are also working on that. We want to give out technologies and make them open source which do two things: help us in improving the technology and keep us as a leading technology player in the industry because we are vendors. We have to earn money, we have to be profitable to continue working on our technologies and make new developments. So Quicktime streaming server might be the most interesting part for you and I can assure you that there will come more of them. [RMS's voice from audience] Well I can't reject this argument because, according to my opinion this is really depending on your point of view, how you look at things. You are staying on the way that you say that everything is only good if it is free. [RMS: Absolutely!] Well Okay.... [Laughter, applause]

Timothy Druckrey: Richard, can we at least give him some credit for the streaming server.

Andreas Haas: Okay, and our statement is: everything is good, that has us, I mean you and me, make money.

Audience -- Edmund Humenberger: I want to first give a comment about the Server X. I really don't see what the community does gain from Apple, because almost all the things that Apple releases are already free products. So, releasing Apache, well... what is the advantage the community can get of that? Apple releases the Mach kernel, well that is already available. So, we don't get anything from my point of view which is of any value for the community.



The second thing is, you release the streaming server. Don't trust the marketing, trust Slashdot. As long as I can remember, Apple is releasing the streamer itself, but not the encoder and the decoder. So, it's true that MPEG4 might be based on Apple technology, but this technology for encoding and decoding as I know will be not

released. So we do have a streamer, it's Icecast, its a free product and it can stream, but the technology where the knowledge is in is the encoder, and my question is will the encoder and decoder be released from Apple for MPEG4?

The other thing is Firewire, well its great news to hear that Apple is releasing all the information about Firewire and wants to put it in open source. The problem with Sony for example is that they use a proprietary interface and there is no way to transform or to get data from a Sony camera through the Firewire into a Linux box because Sony is using proprietary technology. On the video boards of Miro for example, they don't have their own technology, they have to buy Sony boards to get the data from the Sony camera onto the PC or the Apple computer, so that's a problem with Firewire. And I want to say one thing to O'Reilly about Microsoft attacking the web: they are attacking the community with features. They just add features, useful features and people are using it because it has additional features. And what we should take care about is just to offer the users new features, additonal features, so that they just stay with the community. Thank you.

Andreas Haas: First on the Quicktime streaming server: in terms of a server, the package is complete. You are definitely right when you say that there is still some technology needed to encode the software, and right now the available solution is already done from a third party, Sorenson Broadcaster, which is needed for building a live broadcasting stream for example. This should go to them, the question of whether they would make their source code available. I don't believe that because they have their business built up on this.

[Voice from audience] Well what you can do is you can build up your own solutions based on this quicktime streaming server, because right now, for example, there is no real encoding/decoding software running on a Unix-based system, MacOS X based system or Darwin based system which could do the encoding and decoding right on the machine itself. I don't know what we will do in the future. As you might have realized, Apple Computer stopped making announcement about future products. We only talk about present products, so I can't make a statement to questions of what we might do in the future in terms of real product announcements or something like that.

The second thing is, you said that Firewire is not working in the way we expect it to because it is no longer a standard because Sony has put something proprietary on it. Well I do not really understand where did you realize this, because we sell our product, its a Power Macintosh, there is Firewire built in, you can install Final Cut Pro for example, one of our softwares, then you can connect it to a camcorder from Sony and you can download and load back [voice from audience]. What we now have, you remember the roadmap with the two strings of operating systems, the

upper one the MacOS does not contain open source code, the lower one the MacOS X Server does contain the open source code. We work together also with the Linux community to give them all the information from the hardware side, all the specifications, to make sure that they are able to develop further Linux versions for PowerPC which run on our Macintosh, and we have also made available, or are making available the I/O Driver kit which exactly would do what you are asking for. The source code is free, you could write your own driver to use the Firewire ports that are already in MacOS X server, in Power Macintosh hardware and then you could access the streams that might come from the Sony videocam. The standards specifications are there, the hardware is also there, all you have to do is go to the website, get the driver kit and write your code. Why we haven't done this right now is simple. We have MacOS X Server, this is a server product and right now we didn't have the support of a DV camera on our list for a server product. It is definitely on the list for the client product, but it was not on the list of a server product. Right now I'm not sure if we have already put it there, though you might see it in the next server release, but it will come and you could write it by yourself right now.



Audience: Yes I would like to address a question to Tim O'Reilly. I think you made some very interesting observations there, especially regarding this hardware-software-infoware paradigm, and I think at the beginning of the eighties we had a gap between hardware and software and now I think we have the gap between the software and the infoware. And I

think you also made a very interesting observation there regarding the service that is needed for the user when you talked about Amazon.com. So how do you think it will be possible to get a big open source community together to fill this gap, basically to sort of keep this piece of software in between there open source, instead of proprietary?

Tim O'Reilly: Well, there's several issues there and I'm not sure that I have any clear answer to any of them, but one thing that I think is extremely important is for the open source community to reach out to people who we have not necessarily thought of as part of our constituency or part of what Eric Raymond calls our 'tribe'. And these are people like, for example, developers in the Palm community, because I think that handheld devices are going to be extremely important in the future as information delivery devices and you have a community there that doesn't have a strong open source tradition. We need to educate them, we need to reach out to them, we need to say well, you know, come a little closer. In a similar way there's been a lot of heat over the *Gini License because its not quite right, and I say 'come closer.' I think these guys are working on problems that the open source community

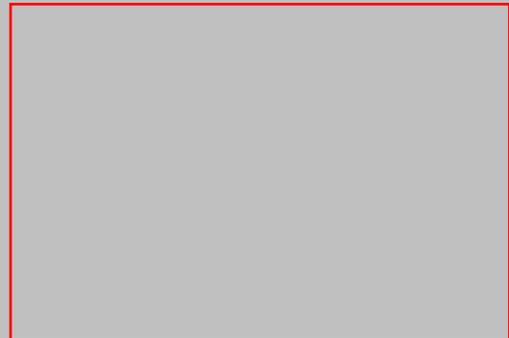
needs to warm up to and so we need to get closer with these people.

All of the interesting work isn't being done by the open source community. Microsoft started to use this as a slogan: "We realize all the smart people don't work for us." Well I think its also true of the open source community, all the smart people don't work for us, and so we need to figure out how to reach out to them. Other constituencies, for example there are a lot of people, web developers, custom web development houses who think of the software they build for their clients as proprietary. We have to start getting those guys to think about what they can constructively release to the community. For example, we are working with a company called USWeb who are doing a bunch of stuff for our website, and they're kind of forcing us down certain development paths because they've got a lot of pre-built functionality that we'd like to use and it's their proprietary stuff. Now unfortunately some people, -- I'm not like Richard, I don't say, I'll only use free stuff, so we've had to use some proprietary stuff because they've got a bunch of functionality that would be harder for us to rebuild independently. So I'm trying to encourage them: 'Hey, free that stuff so that it works on Apache, free this stuff so that other people can use it.' And we have to understand what business models work to encourage that kind of behaviour for companies who are building effectively a new proprietary layer on top of the open source layer.

Audience: The problem, I think is that, especially in the open source community, there are a lot of people that don't really need the users. They would be quite happy to live with themselves [laughter]. So how is it possible basically to get more awareness for the problems of the users?

Tim O'Reilly: Well, I think that's somewhat overstated. I believe that there are many many people in the open source community who are remarkably attuned to users. There's kind of a myth that goes around there that open source are hackers and they don't understand the needs of ordinary users. But hey, you know, Linux is easier to use now than Windows, the problem is that people take for granted that Windows doesn't work. You know if they actually tried to use some of the functionality, they'd really be in trouble.

Audience: Some more questions to Mr. Haas from Apple: I did a presentation on Linux and PowerPC at Linux-Tag at Kaiserslautern University three weeks ago, perhaps you've heard of it, and one of the most commonly asked questions was 'why can't we play these nice Quicktime videos on our beautiful PowerPC G3 under Linux?' We need more of a



player support. If you do a proprietary format like Quicktime, which it still is unless it's standardized by ISO, and if you don't support MPEG1 or MPEG2 playback with the streaming server, we need something like just a client-side interface for Linux or for any free operating system. There are some patches to X and the free video player for Linux with some proprietary Sorensen decoding patches which are hard to get to work, so why isn't there some work done in this direction? I know there is the Java client now, but I didn't try it so far. It's probably ridiculously slow on any non-accelerated Java machine. So are there any plans to do a client-side video player for Linux, or any open source platforms?

Andreas Haas: As you might have realized, this open sourcing from Apple is something which is really new to us. When we started this Apple Public License stuff, it didn't take very long that we realized that the community told us to go fishing. So we went back to our desks and tried to rework the whole stuff to make it more fitting to the needs of the community. And this process has not ended yet, we are still right in the middle of that. No, not in the middle of fishing, in the middle of evolving this open source initiative from Apple. I really don't know what products and what technologies are going to be open source in the future, but I do know that with the step making Quicktime 4 the base foundation layer for MPEG4, we are on the way to what you are asking for. Right now, and I have to say it again and again, and I clearly understand that you do not like that, but we want to sell our products, and imagine if you would all start buying, or developing Darwin, all your clients would have to buy MacOS or Windows which would give us half of the market share, as we right now have. We are selling half of our Quicktimes to Windows systems and half of them to MacOS systems.

Audience: But is it really that you earn your money from the software, from the MacOS with a 3,500 DM PowerMac G3? So Linux runs great on these machines except for the X server, which is the next topic I want to talk about [laughter].

Andreas Haas: Well actually, you are definitely right, with this step in the direction of open source, there is some vital stuff missing there, and a Quicktime player is definitely one of them. I don't think that we will make this open source, but I think that you will see some Quicktime players on Linux [**Question:** It doesn't have to be, it just has to be available]. I know, I know, but right now there is no current project there and I can't tell you what we are going to do in the future, in future products, but there is a good chance that this will happen.

Audience: Yeah the next question: one problem with the X server on recent PowerMacs, the Blue and White G3s, is that it is just a frame buffer device driver. So it's dog slow, I can't say it another way, just because ATI doesn't want to release the specifications. Is there a way for Apple to do better on the graphics chips

producer, just to release the specifications to the XFree development team? So we demoed a great computer, a 300Mhz G3, and we showed moving a window in a park mode and it was really really slow because it was a completely unaccelerated X server, because there is no information available so far as I know. So can Apple do something about it, because there is a market volume that Apple produces for ATI? We could just blame ourselves for it, we had a fast computer, it was faster than everything we had on the booth, and moving windows was just ridiculous.

Andreas Haas: Yes, this depends on the number of, ... it's a question of business. The more systems we sell from ATI, the higher the pressure is we can put on them, and believe me, you've seen Steve on certain ways, and believe me there is pressure. But we still have to raise the number of systems we are selling to get forward in that direction. On the other hand, MacOS X server right now is not dedicated to do client jobs, to run Quicktimes. You are absolutely right, right now the display engine is quite slow. It will change, we are changing the complete display engine technology by moving to MacOS X client.

Audience: Yeah, but I'm not talking about MacOS X but about Linux. What about help for the free software developers who don't have the internal non-disclosure specs from ATI?

Andreas Haas: And I clearly see that there is something that we have to work on, but as I said, we are kicking asses there but we are not selling enough systems right now.

Audience -- Richard Stallman: Get a different machine! [Laughter]

Andreas Haas: Focussing is about saying 'no', says Steve Jobs from time to time. And here is the point: there is a marvelous graphics engine out there, it's from ATI, so we are using it and we have to buy in with other stuff. You are right, we would love to change it, but right now we are not in the position to change it.

Audience: Okay, just one more question from me. Why did Apple stop the direct support for Mk-Linux? There were three to five engineers from Apple working only on Mk-Linux and about a month ago it just stopped, and Apple stopped its support for Mk-Linux.

Andreas Haas: You have been in CERN and saw this presentation in Switzerland? [**Audience**: No.] You are not referring to that? So we are still supporting Linux. We are supporting both the Mk-Linux distribution and the PowerPC distribution.

Audience: Yes, of course, but there were some people really from Apple working on the Mk-Linux core, and these people are, what I read on Slashdot, no longer working on it. So is it just that you need the people to work on MacOS X?

Andreas Haas: I consider that as the true reason for that unless, ... If we didn't fire them, it's something like that. No, I think this is in fact a problem, we have a very tight time schedule for going forward with the development of our operating system and we need literally every single person. And the statement is clear, we are supporting Linux.

Audience: Just one more question, okay? What would Apple, just an opinion of you, what would Apple think about a binary compatibility mode in Linux so you can execute MacOS X or MacOS X server binaries?

Andreas Haas: This is a very good question...

Audience: Would you get in trouble there? Because it works fine with IBCS on Intel platforms and Solaris emulation on Sparc.

Andreas Haas: This is a very good question and I can't comment on it, I'm sorry.



Audience: Still beating on the Apple, sorry. I'll start with the X window issue: it might be enough for most of the user side to force ATI to make an X server that runs on the machine so we can just use it, even if you don't have the specification this might be enough for a starter. The next thing would be about the Quicktime client situation. You have already a good start

with Quicktime on the MacOS X server machines, and this would be a good base to port Quicktime clients to other Unix systems. So just go ahead, I'd like to see that. For example on FreeBSD which mostly runs on Intel machines.

Andreas Haas: Correct me if I'm wrong, but I've seen some Quicktime players on Silicon Graphics machines.

Audience: I'm not aware of that, my concern would be about your commitment to supporting Linux, especially on your machines, about the new G3 Blue and White. I'm quite astonished that the Linux kernel doesn't run on my machine. So what did you change on the June Revision besides the CPU speed, that isn't documented on the web pages? I don't know why the kernel doesn't boot. It says 'DMA error' and woof... 'no disk'.

Andreas Haas: I think we should take this question and discuss it afterwards, because this sounds more like an Apple assistant question. I'd love to solve this problem...

Audience: It's part of the question about the documentation you are supposed to publish. There is no information that you changed anything and there's no new system that's booting on it. And another thing would be to publish information about older hardware that is somewhere in the storage rooms of many many people who once a time bought an apple machine, and might be interested in using it, say for a router or something and can't use it because the old systems aren't documented. For example, I've got a PowerBook that's a nice machine. It can run BSD but I just can't display on it. So either I would have two, one on MacOS as a display and the other as a machine itself, or I can't do it. So I would like to see some documentation even on older machines, that have no money value anyway, because they are 68K machines.

Andreas Haas: I must be true, I am not really clear about what the different problems are that you have, but let me put it this way...

Audience: The problem is that they are not documented.

Andreas Haas: Yeah, the hardware documentation is complete.

Audience: Apparently there is nobody who knows how to operate the display of my PowerBook, so it doesn't work. So apparently the documentation is incomplete. I haven't read all the technotes and so on, I have accessed it because I work for a company that is a registered developer. But maybe there's people who aren't developers and can't access these documentations.

Andreas Haas: Okay, what we should do here is build a kind of workshop to train you what to do to get it up and running, because you can install Linux for PowerPC on WallStreet. We can try that later. You can install it and it's booting. Yes, we do change things in every release and there are changes in ROM and there are changes somewhere on the hardware, but they are briefly described, put in the so called developer paper, and this is available to the Linux community as well. And as we don't supply Linux with software code itself, the Linux community has to possibly rewrite some stuff, so it can be possible the distribution that you tried to install on the new one is simply not running because you're missing a fix for something, and this is when I say we have to set up a workshop and work it out, because it will work.

Audience -- [Rishab Ghosh](#): Believe it or not, I'm actually not going to say anything about Apple. There was something about users vs. developers in the open source community. When I asked Linus Torvalds about that in an interview, he said that he now thinks that the user base for Linux is actually more important for the growth of Linux than the developer base, because of the feedback. I think clearly, developers in the open source community do value users because they are developers in another sense of the word. The same amount of time developers would take, because they are using their own software, other users contribute simply by using it.

Another thing is that I don't think we should get too worried about Bill Gates and Apache, because it's been three years since he said that Apache is their biggest competitor and normally three years is enough for Microsoft to clobber anybody, and Apache has more than %50 of the market share, and it's only been growing. The only people who have been losing out from Microsoft's server seem to be Netscape and NCSA. And Microsoft's market share is actually growing less than Apache's, even now, although Apache has a much bigger, twice as big a market share. So I think that Tim, you were saying that we need to persuade application developers like Amazon to be more open about what they are doing. That's not going to be particularly easy because what they are doing is the application. Amazon's interface is not openly available, you can't download Amazon's scripts for instance, and if you did then there would be nothing that they had other than the fact that their warehouse is nearby or their deals with publishers -- that and their brand would be the only thing that set them apart from anyone else. Amazon is in not a very different situation from Apple: Amazon wants to sell its services, and anybody really can buy books from a warehouse. It's true that a lot of other free web sites have put up scripts, so you have open source in the sense that there are lots of free shopping basket perl scripts available. But Amazon's own scripts are not going to be available.

Tim O'Reilly: Right, let me just jump in here because there are several questions. One of the things, and this is probably where I differ from many people in the open source community: I try to look at it a little bit sideways, a little bit differently. I agree that, for example, I'm not sure that the issue for Amazon is to say: here is our shopping cart or here is the code for our associates program so other bookstores can use it. I don't think that's the point, but I do think there is a new layer of standards. For example, one of the things that we

are doing with Amazon right now -- and this I feel like is one of the real frontiers in the computer industry -- is, basically, cooperating servers, never mind the client software. There are certain kinds of data that we can't supply to them easily and they said: 'Oh well, what we're gonna do is we're going to have what they call a cul-de-sac where you can run a server that actually provides data dynamically to the Amazon service.' So for example, they have limits in the size of files that they will put up. When we want to put up free sample chapters or our indexes which are too long for their size limits we're actually running that on our server, which then sort of interoperates with Amazon's. Well that cul-de-sac software seems to me to be a key way of creating this new open layer on top, where servers can cooperate. And I think they could keep that proprietary code, but it would be a lot better for the community if there were some standards about how to cooperate in passing that kind of information back and forth. So it's for example that XML data layer that we need to get them thinking about: 'Oh, I guess its alright for us to share here.' They're not gonna share everything, but there's a lot of things that they could do in a proprietary way or there's other things that they could do in an industry standard way, that would, basically, make the environment better for cooperation.

Audience -- [Rishab Ghosh](#): I think that when you get into another layer, what you call infoware, it's exactly like a company like Apple: it's a hardware company which is making software free, but it's not going to make its hardware free. Similarly you've got a company like Amazon which you might be able to persuade to make the application interface free, but you are not going to persuade them to make their software free. It's at a different level. Just as companies who build their own software, like Sun developed Tcl just to make their scripting easier and then made it open, because their main interest was their hardware as their base layer. Amazon's proprietary stuff might be their software and their interface...

[Tim O'Reilly](#): Absolutely, and I think that proprietary and free... you know, I don't think that it's gonna be the ultimate victory of one over the other. People are going to make choices and to me at least, the goal is to persuade people to make choices that in general are better for the community rather than worse, to look ahead over time, and say 'Well gosh, if we make this decision things are going to become less innovative, their gonna become more locked in, if you take this path they are going to be more open and there's gonna be more ability for people to enter the market, to cooperate. And finding that balance is to me the important thing.

I had a great conversation with Walt Mosberg. He's a columnist for the Wall Street Journal, writes a column called "personal technology" and being a fairly influential journalist he gets to sit down once a year with Bill Gates and Steve Balmer, and he told me this great story, he said, 'You know, I said to Balmer, if you guys would just dial back the greed only five percent people would like you a lot better,' and he

said Balmer said, 'Yeah, you're probably right.' The point is that I don't think that Microsoft would have to become a paragon of free software in order for them to be doing better things for the community. I'd be willing to have them dial back their greed just five percent. And that's a lot of my goal, to get companies to give us a couple of points and to think about things that they can do that enable a community of developers, not because they ought to, but because it's really good for them.

A lot of what's really interesting to me about the open source community is that it's a software development methodology that produces good results. And I believe that companies will want to adopt it because it works, because there are good effects, they can see the effects. And that's of course what companies like Apple are trying to figure out: they are trying to understand the science of open source, they are trying to figure out, 'well let's try this and see what happens,' and clearly the feedback from the market is going to tell people whether the license that they're using is working or not. Apple has objectives: they want to get developers, they want to get users happy, and if it doesn't happen as a result of the license they try, they are gonna try something different. I'm very heartened by the way companies are coming towards the open source community and they're trying things and I think it's great, if they don't work, then that's good information. Let's try it in the marketplace, because I really believe that the marketplace will actually prove that open source works. It's not like something you do because it's like taking your medicine.

Audience: I have a small question for Apple. Why did you invent the new license and didn't trust using the BSD license or another existing license?

Andreas Haas: Well, it is exactly the way Tim said it, we are trying to move forward in the direction of the open source and we have looked

at many licenses. There is the GNU license, there is the BSD license, as you said, Apache has its own license, everybody is writing their own. Sun does it, SGI does it, IBM does it, everybody does it. Apple decided to try its own attempt, because it shouldn't be something, you know... if we copy one and it's wrong, everybody says, 'Oh why didn't you take this and why didn't you take that?' So we consider it way much better to try to do this on our own way as we did. We bring out the license, we try to attract developers and users, if it doesn't work, we have to go back and sit over it and try it again. So what we will end with is something that you like and we can live with.

Tim O'Reilly: One thing that I want to add: one of the things that I think is a really

good model for the open source community is the way the Internet standards have evolved with a community process through the IETF. And one of the things I'm actually urging members of the open source community to do is to follow some of the same patterns. For example to get together working groups. Right now, everybody goes off and writes their own license, and I've actually been starting to agitate behind the scenes to create something that might be kind of a 'licensing task force working group,' kind of much the way the IETF says, 'Hey anybody interested in working on this?' and then people kind of go hash over implementations. Let's see if we can reduce the proliferation of licenses. I don't think we'll get down to one license that solves every problem, but I think it's certainly possible that we can keep from having twenty or thirty different licenses. It certainly seems that we should be able to come up with one, for example, that meets the concerns of large companies while also addressing the very very important issues that are raised by people like Richard, who's been a visionary on the licensing front for twenty or more years.

Richard M. Stallman: Speaking of licenses, if anyone is thinking of writing a license and would like me comments, I'm willing to give them in confidence to anyone if they're interested in my help in making a license that's useful for the free software community. But I came up to the mike again because I wanted to address the topic that Tim O'Reilly raised. Some of you might know about our major disagreements on other issues, but that's not what he spoke about. And I think that this distinction between hardware and software and infoware is an interesting one and that you addressed it very well from the open source point of view. That being a matter of looking for a development methodology of making things that work and judging success to a large extent in the same concept of market share or number of users that is used as a criterion by the proprietary software developers. Now, looking at that same concept, that same situation from the Free Software point of view, I bring to this a different idea of goals and a different idea of a criterion.

The goal in the Free Software movement is to extend our freedom. 'Ours' meaning that of whoever wants freedom to work together so that freedom spreads over a wider range of activities. And so our criterion isn't really about market share, ever and it's only secondarily about 'Do we have good technology, does the program work reliably?' Obviously if it works badly enough it won't be useful, but otherwise we can fix it, so that's just a side issue. The important thing is: How many activities can we do without giving up our freedom? What is the range of things that we can do on a computer which has just free software on it, where we don't have to compromise our freedom to do any of those things?

Now when you apply this criterion to things like web servers that answer certain kinds of questions for you, that communicate with you, you find an interesting thing: a proprietary program on a web server that somebody else is running limits his freedom perhaps, but it doesn't limit your freedom or my freedom. We don't

have that program on our computers at all, and in fact the issue of free software versus proprietary arises for software that we're going to have on our computers and run on our computers. We're gonna have copies and the question is, what are we allowed to do with those copies? Are we just allowed to run them or are we allowed to do the other useful things that you can do with a program? If the program is running on somebody else's computer, the issue doesn't arise. Am I allowed to copy the program that Amazon has on it's computer? Well, I can't, I don't have that program at all, so it doesn't put me in a morally compromised position, the way I would be if I were supposed to have a program on *my* computer and the law says I can't give you a copy when you come visit me. That really puts me on the spot morally. If a proprietary program is on Amazon's computer, that's Amazon's conscience. Now I would like them to have freedom too. I hope they will want freedom, and they will work with me so that we all get freedom, but it's not directly an attack on you and me if Amazon has a proprietary program on their computer. It's not crucially important to you and me whether Amazon uses a free operating system like GNU plus Linux, or a free web server like Apache. I mean I hope they will, I hope free software will be popular, but if they give up their freedom, that's just a shame it's not a danger to us who want freedom.

What matters with infoware and freedom is the freedom as applied to the information we get. If we get a web page, are we free to mirror it? If there is an encyclopedia online somewhere, can everybody access it, are we free to mirror it, can we add new articles to it? If there is courseware, textbooks, the web-equivalent of textbooks, you read it and you study a subject and you learn, are these free? Can you make modified versions of it and re-distribute them to other people? So we -- humanity -- have a gigantic job ahead of us to spread freedom into the area of infoware and that's what the free software community has to do with infoware.

Tim O'Reilly: I agree, I think that there are a lot of interesting issues. Think about, for example, maps.yahoo.com: what if it gives the wrong directions? Can we fix it? Many of us who deal with websites, for example, that have data up there, have a real problem if we get the wrong data. And there is a very analagous situation to software, where for example, we provide data to Amazon, they get it wrong, and we can't fix it. You know we've got to send them mail, and they say 'Oh we'll get around to it later,' and maybe it never gets fixed.

But there are further issues, we keep branching out. There are types of information that you don't want to have modified. This gets into the whole issue of identity online and digital signing, those kinds of things, because for example, if I make a statement of opinion, as opposed to a statement of fact, I sure as heck don't want somebody to modify it and 'improve' it and pass it off as what I said. So there are some very very interesting social issues that we are going to get into. I think that the Internet is going to change everything. We think we've seen a lot of change in

the last few years and I think we haven't seen anything yet.

Audience: Hi I have two thoughts. One to Tim O'Reilly and one to Richard Stallman. Tim O'Reilly said as closing remark of his speech, that if Linux wins the server war, it doesn't matter because the battleground goes forward. That's not true, Linux winning the server war is required for the battleground going forward, and therefore it does matter.



Tim O'Reilly: Yes, actually that's true, I guess what I'm really trying to address was, I feel like the focus purely on the operating system layer may miss the point. Obviously if Linux 'wins' as in 'totally crushes Microsoft on the operating-system/server level,' then everything else falls into place. But in the way of things that usually doesn't happen. We'll see shifts in market share. Suppose it was, Linux gets up to 30 or 40% because we are all focussed there and meanwhile all the people who are building web applications are increasingly becoming proprietary. That's really gonna retard Linux's penetration into that next 60%. Somebody earlier mentioned the Apache market share and I think there's something that's somewhat deceptive about that. I would actually bet that there are probably more individual developers using IAS than there are using Apache today. And the reason for that is that those enormous market share numbers of Apache come from hosted sites that are being run by ISPs, whereas many of the IAS sites are run by individuals. And so Microsoft is making a pretty good attack on the web space. And as people have powerful web applications that are based on ASP [application service provider] for instance, they aren't going to say, 'Oh yeah, I'm going to replace my NT server with a Linux server,' because they are gonna have a big investment. Now maybe there'll be products like ChiliSoft that say, 'we can run our ASP on top of Apache,' but its a barrier, and that's all I'm saying. I think that the open source community needs to spend some time really working on the kind of web application tools that web developers are increasingly depending on to build this application layer.

Audience: And my thought in Stallman's direction is, he means that proprietary software on a web server doesn't matter because it's the owner of the web server who has problems with his freedom. That's not true, I as a client of this server have a problem with this proprietary software too, because for me, privacy matters and I don't know which copies of private data or which logging or anything the owner of this software can do...

Richard M. Stallman: May I answer? I understand the issue, and I agree that the privacy issue for websites and elsewhere is important, I don't think it really directly

relates to the question of free software on the server, because even if they are using free software on the server, they only need to use ftp to copy that data to someplace else to give it away to somebody else, or some other company, so they can betray your privacy with free software.



Timothy Druckrey: I think there will be ample time to address Richard's positions tomorrow, it's quite late...

Audience: I wasn't ready... I see the freeness of software on a website as a material form. It's not a license problem, it's a problem if you can check the software, if there is an ftp client ready

to export your data, if you can look in this website -- that's freeness of the website software. That's not a matter of the freedom of source code, that's a constitution of it, but it's more.

Richard M. Stallman: I think that you're raising an issue which is interesting, but it's a different issue. Free software vs. proprietary software, that is not the only important moral issue in the world. We shouldn't try to stretch it to include everything that is important. You are talking about, 'Can you as a user of a website, find out exactly what that website is going to do?' And that's a complicated subject in its own right, but it's a separate subject from the question of whether the programs they are running are free software.

Applause.

(transcription Christopher M. Kelty)