



Hanselminutes

Hanselminutes is a weekly audio talk show with noted web developer and technologist Scott Hanselman and hosted by Carl Franklin. Scott discusses utilities and tools, gives practical how-to advice, and discusses ASP.NET or Windows issues and workarounds.

## Text transcript of show # 69

June 21, 2007

### Building a Developer PC

Scott and Carl chat about building your own PC with a focus on the developer, rather than the gamer.

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**Lawrence Ryan:** From [hanselminutes.com](http://hanselminutes.com), it's Hanselminutes, a weekly discussion with Web developer and technologist Scott Hanselman, hosted by Carl Franklin. This is Lawrence Ryan, announcing Show #69, recorded live, Thursday, June 21<sup>st</sup>, 2007. Support for Hanselminutes is provided by Telerik R.A.D. controls - the most comprehensive suite of components for Windows Forms and ASP.NET Web applications, online at [www.telerik.com](http://www.telerik.com). And by .NET Developer's Journal - the world's leading .NET developer magazine, online at [www.sys-con.com](http://www.sys-con.com). In this episode, Scott and Carl discuss current hardware and building a new developer machine.

**Carl Franklin:** Hi, this is Carl Franklin and you are listening to Hanselminutes from [Hanselminutes.com](http://Hanselminutes.com). I am here with Scott Hanselman again. Hi, Mr. Scott.

**Scott Hanselman:** How are you, sir?

**Carl Franklin:** I am fine, what's up this fine day?

**Scott Hanselman:** Well, I finally got permission from the wife to build my computer.

**Carl Franklin:** The dream machine as it were?

**Scott Hanselman:** This is the ultimate developer rig, the new computer for the home,

**Carl Franklin:** Awesome.

**Scott Hanselman:** I was going to buy a MacBook, I have been talking about this on and off, but I even went and put it into my shopping cart on [apple.com](http://apple.com), and I let it sit there for a bit. I went to the Apple store at the mall, and put it altogether and thought about it, but I just couldn't justify \$4000 at this point when I figured I don't really use the Mac Mini that I have right now. So, I'm just going to hang back a little bit on the Mac, but I do use my home PC a lot. It's a P4 and it's just not cutting it for me right now, and I have had a lot of bad experiences with Vista, and I just felt that I needed to get this machine fresh.

This is one of those computers that I think we all have had at one point or another, where we build it ourselves, we went down to Fry's and then we continue to make it a Franken Computer adding a part here and there and couple of hundred bucks at a time, trying to keep it alive, but it's just not happening for me. So, I wanted to put together my own machine, but I realized that since, gosh, I haven't been really good at building hardware since the Pentium 3, Pentium 4 days, and all of this new Core2 Duo stuff, it was a little out of my expertise, so I called Jeff Atwood from Coding Horror...

**Carl Franklin:** That's what happens when you have an IT department at your disposal.

**Scott Hanselman:** It's funny how that works, but I really wanted to make a great machine and then I realized that as I looked around on the Net, there is so many people building ultimate gamer rigs, I'm just not interested in an ultimate gamer rig, I wanted an ultimate developer rig. Just like if you built a machine, you would want it to be a really good video and audio editing rig.

**Carl Franklin:** Yeah, well it's funny. I thought about this when you told me about today's topic and you know a developer rig doesn't really need to be the mondo-gigando powerful thing, in terms of processor speed, more RAM is good of course, but I don't think it has to be up there with -- once the machines that are going do video processing per se or real-time rendering or anything like that, just because a compiler is pretty darn fast even on a slow machine by today's standard.

**Scott Hanselman:** Well and one of the other things that I wanted to be able to deal with from a developer perspective is things like Parallel Builds, like in Orcas, MSBuild allows you to tell it how many processors you wanted to -- how many processes you want to spin up to do parallel builds, so that's the kind of thing where putting together, a Quad-core System might be a real benefit.

**Carl Franklin:** Now that you mention it Scott, I think that maybe the power would be good, if you are going to be running Virtual PC's or VMware sessions, which many developers do, or even Virtual server to do testing against server configurations. So, in that sense yes, you probably do want more power.

**Scott Hanselman:** Yeah, I wanted to find a balance between the money, price performance ratio. First I said well, maybe I will just go nuts, I will spend \$4000-\$5000, make it a business expense and buy the ultimate computer, but it seemed to me -- and I talked with Jeff Atwood, my friend from [codinghorror.com](http://codinghorror.com), that there is really a sweet spot around anywhere between \$1600 and \$2000, where you can put together quite a machine, and if you go and spend double that or triple that, you really don't get twice the machine or three times the machine. You get some amazing stuff, but the difference between a \$200 processor and a \$500 processor and a \$900 processor, it's really all just kind of artificial, its prices are always dropping, anything you buy now of course is going to be obsolete in a few years, but we wanted to find that balance.



(00:05:06)

**Carl Franklin:** I always found to sweet spot pretty easy to identify, by going to [newegg.com](http://newegg.com) and looking in each category, processors and whatever and then sort by most popular and then...

**Scott Hanselman:** Yeah, they're really smart over there.

**Carl Franklin:** Yeah, it's not just the best rated, because sometimes the best rated will also be the most expensive, but the most popular tells you where the sweet spot is for any given component.

**Scott Hanselman:** And [newegg.com](http://newegg.com) is where I ended up buying the stuff. The list that I purchased -- the list of products I purchased was at [shrinkster.com/q50](http://shrinkster.com/q50), and there is a lot of really interesting discussion going up on the blog right now, because a lot of folks have found places where I could have potentially squeezed a couple of \$100 here and there, saved some money, everyone has got opinions about motherboard brands of course, and everyone has got opinions about hard drives.

**Carl Franklin:** And of course the longer that post stays there, the more comments you are going to get, because of the prices will be changing.

**Scott Hanselman:** Here is basically what we tried to put together thinking again about the developer. So, I have got a Steel ATX Mid-Tower Case from Antec.

**Carl Franklin:** Nice.

**Scott Hanselman:** I could have gone bigger and heavier, there is a guy who does custom cases and there is also cases that you can get where the entire case is a giant Heatsink, big aluminum.

**Carl Franklin:** Zalman.

**Scott Hanselman:** Exactly, but this particular one was a balance, it's a little spendy for a case, it's a 150 bucks, but it's a gunmetal black, real dark case, it literally fit in with the way I like things and it's a Mid-Tower, so it's big enough, that we will be able to put some sound damping.

**Carl Franklin:** By the way I used these cases myself and I love them.

**Scott Hanselman:** You do?

**Carl Franklin:** Yeah.

**Scott Hanselman:** So, this is the Antec P182 that we got. I don't know a lot about motherboards anymore, I was an ASUS guy for a while, I had used ABIT. Well, I have gotten a lot of negative flack for the choice we made, which was an MSI motherboard. Jeff and his experiences found that it's actually a pretty decent motherboard; it's got the NVIDIA nForce Chipset on it. It's an LGA775 Intel Motherboard, it's a pretty decent motherboard, it's got all of the things you would expect as far as lots of USB Ports, it's got Gigabit LAN built into it, it's got really nice cooling. The chipset is setup with aluminum pipes and some really nice Northbridge passive cooling. Jeff really likes to focus on how is this thing going to be as quite as possible and as powerful as possible. My current system is a real loud system, it is really obnoxious, it sounds like a jet plane.

**Carl Franklin:** I don't really see anything wrong with this, I would want to make sure that the chipsets for the NVIDIA Northbridge and Southbridge exist for Vista before I bought that, but you can see that the total -- there is a 195 reviews and 77 % of them are positive, so I would say that's pretty good, that's telling.

**Scott Hanselman:** It's interesting how in the kinds of purchasing decisions that folks make, whether it be here or on Amazon, that you can really count on the reviews. There is a balance that gets found when you get a lot of reviews, more than a few dozen. You can get a real good sense about the real world experiences that folks have.

**Carl Franklin:** Yeah, and the thing to do isn't to read the positive reviews, read the negative ones. See what the negative reviewers say about them, sometimes they are just mad, because it took them three weeks to get it out the door or something like that, but sometimes people have legitimate problems.

**Scott Hanselman:** Yeah, and one of the things that's also worth watching out for is whether or not you get a sense that this particular motherboard manufacturer is focused on having the BIOS updated a lot, getting the Firmware updated. They may have problems initially, but if they can deal with them or offer you other benefits through constantly your often updated firmware, particularly for the Overclocker, this is a real viable thing to watch out for. So, I am not unhappy with this motherboard, but there is certainly something I could swap out at some point. I do like also that this one has an external SATA connector, so I have got options for my external hard drives. I have got a lot of external



hard drives, and the stuff that I do, I run a lot of VM's on external hard drives.

Well, this has a FireWire port and all of the requisite USB ports, having an external SATA connector is a nice benefit I think, as more and more drives switch over to SATA, which as a bandwidth gets you something like three gigabits a second.

**Carl Franklin:** Now are you actually running this machine now, or you are just ready to order it?

**Scott Hanselman:** I am not. So, what we did is we ordered it, and I've shipped it down to Jeff in California and I am going down to San Francisco on Friday and I am going to meet up with him at his office, and we'll build it.

**Carl Franklin:** So, we'll have to have a follow up show of course and you can tell us what you liked and what you didn't like.

(00:10:02)

**Scott Hanselman:** Yeah, hopefully we will get Jeff on the show with us and he can explain, because this is not just a matter of putting it together. Certainly, folks that listen to this podcast are the kinds of folks who could put together a machine, it's not just the pouring it into a container, but the follow up show we'll do, we'll talk about, what are the kinds of things we can do to make it silent? There is a lot of people out there, that are focused on making silent PC's, there is a great website at [shrinkster.com/q52](http://shrinkster.com/q52), it's silent PC Review. [Silentpcreview.com](http://Silentpcreview.com), that has a lot of focus on what can you do to find that balance between performance and being silent? For example, I am going with a Western Digital Raptor drive for my main system drive...

**Carl Franklin:** Very nice, 10,000 RPM.

**Scott Hanselman:** This is a 10,000 RPM drive, and it spins real loud, but there is techniques you can do to dampen that kind of sound that a drive like that makes. For example, suspending it inside of a container that has basically suspending it in the air via rubber bands. There is sound damping and vibration damping kind of equipment that you can plug into it and all those kind of things....

**Carl Franklin:** You can do what I do, is you could just put it in a closet.

**Scott Hanselman:** Yeah, you know that's funny. I used to do that, once I took a box and I just shoved in the closet, the problem was that it made the closet really hot and that particular box

would overheat a lot, because I did a poor job of doing the cooling. Now, a lot of people have been going back and forth on whether a developer machine really needs RAID, and RAID specifically for mirroring.

I go back and forth on this myself, but I already have a Western Digital 150 on my current machine, that was the very last piece of hardware that I bought to make that machine faster. I'm thinking I am going to take that drive, once I have brought everything over to the new system, and I am going to end up mirroring my system drive. Because there is kind of two things to worry about, there is the getting the box back from the dead, do you mirror it, do you do RAID on your system drive so you can bring it back? Or the other option of course, other than just doing RAID Mirroring for your system drive is to take images a lot, whether you use something like Acronis True Image or whether you use Windows Home Server.

What is going to happen as a developer when your machine dies? Whether your C drive blows up or whether your data drive blows up. So, there is kind of two different things to deal with there. I do both, I like RAID, but I also take images all the time.

**Carl Franklin:** Speaking of RAID and drives, you should head on over to [shrinkster.com/o4x](http://shrinkster.com/o4x) and check out the STEC Zeus Solid State Drive, which is no moving parts, it's a Flash drive that's up to 256 gigs.

**Scott Hanselman:** That will be pretty expensive.

**Carl Franklin:** Pretty expensive. I think I remember Richard Campbell telling me that they are hoping to get the price down to \$2 a gigabyte by 2010 or something like that.

**Scott Hanselman:** You know that will happen by 2009 or end of next year.

**Carl Franklin:** But it's over 200 times faster than a 15000 RPM enterprise hard disk drive, but that's what happens when you don't have any magnetic media.

**Scott Hanselman:** It's interesting that they are making hard drives faster and faster, they are upping the MTBF, the Meantime before Failure. Some drives have double the MTBF of another drive, a number of people on the comment said that I should get a little bit higher RPM drive rather than the Raptor, get the Mac Store Atlas, which is now at 15,000 RPM.

**Carl Franklin:** I didn't know that they had one.



**Scott Hanselman:** Also the Seagate Cheetah, which will do 15,000 RPM. So, for really heavy IO, these particular drives are pretty hardcore, they can do basically 300, 400 megabytes a second theoretically, they also include a lot of cache -- 16 Meg cache on the drive itself, with only a 3.1 millisecond seek time.

**Carl Franklin:** Wow!

**Scott Hanselman:** But here is where the balance happens right? A drive like that is going to cost you \$500, \$600. Like for example, if you were going to go and get an Atlas, it might cost you 500 bucks, you want to do RAID, then suddenly you are looking at more than the cost of the entire system being spent just on that. So, would you really get 50% more speed? I don't know, but from a price performance balance, the Western Digital Raptor, 10,000 RPM drive is about 200 bucks, and you can find them around for 175 if you hunt versus a \$500 or \$600 drive with a 15,000 RPM.

**Carl Franklin:** Also the faster they go, usually the lower capacity they go up to.

**Scott Hanselman:** Yeah, the 15,000 is right now at 150 and the Western Digital for a long time was a 75 gig drive, now with the perpendicular configuration that they are using, they are able to get more on that, but I don't know if I want my bits that close to each other frankly.

(00:15:01)

**Carl Franklin:** Well, my machine actually has two Raptor 15,000 RPM 150 drives mirrored as a boot drive.

**Scott Hanselman:** 15,000 RPM?

**Carl Franklin:** I am sorry, 10,000 RPM.

**Scott Hanselman:** Okay.

**Carl Franklin:** Yes. Mirrored with onboard RAID, so that is my boot drive.

**Scott Hanselman:** And that works well?

**Carl Franklin:** It works great. It's very fast.

**Scott Hanselman:** Are you using the built-in RAID on the motherboard?

**Carl Franklin:** Yes I am, because I also have a PCI Express RAID Controller, but that's for the data.

**Scott Hanselman:** Interesting. Now, for me on this particular instance, I am just going to have a data drive that will be a kind of a standard Seagate Barracuda, it's only a \$100, it will be a 500 gig drive and that will just be d for data. I have got a lot of external drives, and you know I used to hoard video, I would have my Media Center recording video and I used my computer as a DVR. I am doing that less and less and I am realizing that with things like [blockbuster.com](http://blockbuster.com) and Netflix, the movies that I want to watch can be gotten quickly.

There's no reason for me to hoard all of this stuff, so, while I used to have a terabyte-and-a-half of this kind of stuff, all my DVDs ripped on to the machine. It seems for me at least personally that the psychic weight of having to worry about whether that data has backed up or safe, didn't become worth the benefit. So, I am finding less and less that I need that kind of storage and now I am just focusing on having images of all of the machines in my house backed up. It's more important to me to be able to get my wife's laptop back from the dead than it is for me to hoard video of DVDs that I already have.

**Carl Franklin:** Right, so let's talk about the processor that you chose here.

**Scott Hanselman:** Now, this was an interesting one, because this is where I was not very educated about this, but I wanted to find a processor that wasn't going to be kind of like the whatever Intel is selling for a \$1,000 processor. I didn't want to just get a standard Core 2 Duo, I wanted something a little bit more, and Jeff suggested the Core 2 Quad Q6600.

**Carl Franklin:** Quad meaning it has four dies?

**Scott Hanselman:** Yeah, it's a quad-core processor.

**Carl Franklin:** Holy crap!

**Scott Hanselman:** Now, when I bought it, it was \$531; it's already down to \$498 and one of the tipsters in my blog post here said that the price of that Quad Q6600 is going down to \$266 on July 22<sup>nd</sup>.

**Carl Franklin:** Oh my goodness.

**Scott Hanselman:** So, I jumped the gun and it cost me 250 bucks, but the general impression is that this is the processor to have, they are cutting it in half again on July 22<sup>nd</sup> and you'll be able to -- now if you wanted to, then you would get the Core 2 Extreme. So, there would be the E6700.



**Carl Franklin:** I never understood the difference between the regular Intel chips and the Extreme chips. Do you know the difference?

**Scott Hanselman:** I don't. Hopefully, someone will send us a note; we'll get a flood of mail explaining what the difference is. I really don't like the way that they do these -- I don't know anymore; it doesn't make any sense. Maybe I am an old school, but once I figured out 46SX versus 46DX, I figured that all was right with the world. But now it's like the Core 2 Quad Q6600 versus the Core 2 Quad E6700, it's very confusing. Now, some people argue that the four cores aren't really necessary, but if you've ever seen me on a machine, I know you have, I tend to have a lot of things going simultaneously; I switch around a lot. I am very likely to fire a process off in the background and then go and do something else. I also sometimes do some kind of personal processor farming, where I will actually pin a process down to a processor.

Then again, with Orcas having this notion of a parallel build, you can get 25-30% more performance by running off multiple instances of MSBuild for real large builds. So, for me, that was definitely a valuable thing. Well, I did spend too much money, because I didn't wait till July to buy it. The word on the street is that that's the processor to have and according to Jeff, that along with the MSI Motherboard makes for a very overclocking friendly system. So, we might be able to get that 2.4 gigahertz to go up to 3, 3.1 which could squeeze extreme level speeds out of a non-extreme processor.

**Carl Franklin:** I am not so sure that you are going to see a big difference running a developer machine with that change.

**Scott Hanselman:** Between what and what?

**Carl Franklin:** 2.4 and 3. whatever. I am not so sure you'll see a difference, but it is interesting. I think maybe if you were a gamer, you'd be more interested in that. Now, tell me about the enormous Heatsink cooler thing that you've got here. What is that all about?

(00:20:05)

**Scott Hanselman:** Yeah, this is the Scythe, I know it's called a Ninja basically. It's a giant CPU cooler. I've got a giant one on my system right now.

**Carl Franklin:** It looks like something that you'd see at the Indianapolis 500.

**Scott Hanselman:** Yeah, it's absolutely huge and we had to do some measurements to make sure that it would have room inside of the system.

**Carl Franklin:** Right.

**Scott Hanselman:** It's got copper parts, it is real big, it's a little bit less quality than the Zalman heatsinks, which are very well thought of. But it apparently cools very, very well. It's huge, but it doesn't really matter that it's huge, because once it's mounted in there, if it's mounted correctly, it doesn't put too much lateral pressure on the processor. One of the problems with some of these giant CPU coolers is that if they don't really clip well to the motherboard, they can torque the motherboard and also put a lot of lateral pressure on the chip itself.

**Carl Franklin:** Yeah, you have got to be very careful when putting them in. One thing I like about this and I am just looking at the picture here, is that it's got pipes going up either side into these radiator type heatsinks and they sandwich a fan. So, there's a fan in the middle and then the heatsinks are on either side of that, so those things are getting hot and then of course the fan is cooling them off directly.

**Scott Hanselman:** This was a balance; I didn't really feel like spending a \$100 and few for a cooler. So, for \$35, it's a pretty decent one. It apparently works very well. If you are overclocking like a 6600 and you overclock it to 3 Gigahertz, you can get idle temperatures of about 30 Celsius, which is pretty reasonable and definitely cooler than my current system runs. Now again, it's huge, but it cools the things down and it stays quiet and that's really the whole point, is to kind of keep that case temperature, keep that CPU temperature around 30 Celsius.

**Carl Franklin:** Now, you went with the 520 Watt power supply, what was your thinking there?

**Scott Hanselman:** Well, this core share power supply is also very well thought of and I know that Jeff has a lot of experience with this particular one. I have a tendency to put a lot of drives in my cases. Even though I am an external hard drive guy, you might be -- if I decide to do RAID, I might have four different drives in there, along with two pretty large Video cards. I don't want to have any chance that I am not going to have enough wattage. Most often you don't need this kind of wattage; you can get away with 300 watts.

**Carl Franklin:** But having more is the safe thing. It's a safety policy.



**Scott Hanselman:** In this case, having more is pretty safe. It's got a very, very quiet fan that varies its RPM based on temperature. It's got a real nice modular cable that lets you basically choose the cables that you want; they are very kind of focused on just getting the job done. You use just the cables you want; no more no less, as opposed to having a big giant fan of cables that pops out of it. That allows you to have much better airflow in your case. Just use the cables you need.

**Carl Franklin:** One thing you should be careful of when you are buying a power supply, if you are going to get one that's big and I mean my power supply I don't mind telling you, is a megawatt; it's a 1000 Watts. I had a problem with it, because it was so long that it was like solving one of those puzzles that Desaware always has at their booth at the shows. They have those little logic puzzles, they are like things that are interlocked, only by twisting them together in the right way and moving your hands in a certain way can you take them apart. That's what the experience was like getting this in the case. It barely fit.

**Scott Hanselman:** Is it pretty loud?

**Carl Franklin:** No, it's not loud at all, but it was just big and even though it was a big case, the openings that were available for me to put things in, it just was a little too big for it. But I did get it in obviously.

**Scott Hanselman:** This is a pretty comfortable size and with the 520 Watts, it's going to give me enough power to do whatever kind of overclocking that I need, and it's also very well thought of, as a very quiet power supply and even though it's twice as much as your average off the street power supply, I don't think that a power supply is a place you want to really...

**Carl Franklin:** I agree.

**Scott Hanselman:** Skimp.

**Carl Franklin:** No, you don't want to take a chance. You've mentioned overclocking now three or four times and I am curious as to why you think you are going to be needing to overclock?

**Scott Hanselman:** I don't think I am needing to overclock, but I don't want to spend a \$1,000 on a processor to get the kind of performance that I need. I feel like conservative overclocking and still getting a great deal of stability is just free speed. Even if you are only getting 15, 20% more speed out of it, if you can get the thing rock solid, if you can run something like a Prime95 or one of

those benchmarks and run the thing really, really hot for two, three days and have it not bluescreen on you, have no trouble at all, have no stability issues, then why wouldn't you want to?

(00:25:06)

**Carl Franklin:** I don't know, something about that just strikes me as a little bit odd that for a developer machine, do you really need to take the risk, and that's what you are really doing. The manufacturer has set the speed saying, "This is a safe speed for this processor." When you overclock, you are just sort of tempting fate I think. So, I don't know...

**Scott Hanselman:** Yeah, I understand your point of view. From my point of view, it was about the fastest developer rig that I could get for this price performance ratio, and for me a very conservative overclock gave me the performance I want without increasing the price.

**Carl Franklin:** Right, I would just recommend you try it without overclocking first and see if it's acceptable.

**Scott Hanselman:** Oh yeah, I'll do benchmarks both ways. Of course, when doing overclocking, you want to make sure not only is the processor well known for overclocking well, is the motherboard friendly to the overclocker? Does the power supply provide the right amount of voltage to be able to do that? Do you have memory that will appreciate that kind of overclocking? Some memory is not overclocking friendly, also some memory requires a little bit more voltage than the average motherboard wants to give it. So, we have to think about those kind of things when making these decisions.

**Carl Franklin:** Yeah.

**Scott Hanselman:** Then we just ended it up with some Kingston RAM, I'm going to get four gigs just in case I want to run 64-bit. I'm trying to get 4.1 gig sticks, very inexpensive, only \$200.

**Carl Franklin:** Well, that's interesting. That looks like good RAM and the reviews are pretty good, so...

**Scott Hanselman:** Yeah, everyone has got opinions about these kind of things. Either you don't want to skimp, but at the same time you don't want to spend double if you don't have to. So, fortunately with a building assistant out of components like this, worst case scenario just means that I'll have to find another component. Of course, the option would have been to go with a Dell otherwise, but I like the benefit that this



kind of modular design gives me. If this RAM doesn't work out, I'll get something else. You live and you learn.

**Carl Franklin:** Alright Scott, let's save the best for last; your Video Card. I see it's a PCI-Express16 which right there tells you this is a serious video card. Anybody who is doing, getting a new video card these days should be looking at PCI-Express16.

**Scott Hanselman:** Yeah, this is a pretty decent balance. This is a GeForce 8600. It's 256 Meg card. It's not a super-duper \$500 video card, but it is a pretty serious video card. It's based I could say on NVIDIA'S 8600 GTS core. It's a dual with PCI Express Card, so it's a big, big card. It's got two DVI outputs, so one video card will run two monitors happily.

**Carl Franklin:** And both of those are dual link, right?

**Scott Hanselman:** Yeah, the DVIs are dual link, yes. So, I was thinking you're referring to SLI, because we are getting two of these cards that are about 150 each and a lot of folks assumed when we put two cards in the spec that we were talking about running the SLI. That would give you some pretty serious performance for a pretty decent price. But for us, it was about running four monitors, not about linking them.

**Carl Franklin:** Or you could actually run two 30-inch monitors like the Dell or Apple 30-inch monitors, which are right now I think some of the biggest monitors you can get.

**Scott Hanselman:** Yeah.

**Carl Franklin:** Pretty cool if you wanted to do that. So, how many monitors do you plan to run with this thing?

**Scott Hanselman:** Well, right now at home I've got two, but I'm considering getting two more 22-inch flat screens and putting them on the right and left hand side respectively and kind of bracketing my current dual monitor system.

**Carl Franklin:** That's interesting. I have a single Dell 30-inch display and I find that I don't miss having two monitors. Having that little bump in the middle and having to physically move my head a lot. But with 2560x1600 resolution, you can pretty much get a lot of stuff in there, but I can't say that I wouldn't like to have another one.

**Scott Hanselman:** It really is a kind of a religious argument. A lot of people think why not have just a giant 30-inch? When I was visiting, some guys

up in Seattle, they had one giant 30-inch widescreen Dell and they had two 22s turned on their side so that their width was the same height as the 30 inch. They would have them left and right, so they had a total of three monitors.

**Carl Franklin:** That's what Richard Campbell has. That's his setup.

(00:29:47)

**Scott Hanselman:** Really? It just seems like a really nice balance. The other thing I like about this particular card, this is from MSI, is it's already overclocked. They've got a big cooler attached to the thing. There's ways to make the fan silent, because the video card fan has a tendency to make these things really, really loud. What you can do is, you can – there's tips actually in the reviews of this particular card up on Newegg, where you can kind of fool around with the way that the fan plugs into the card and you can get the fan running slower. It sort of runs silently or darn near silent.

So, it not only overclocks nicely, but it's got a pretty decent cooler of its own that they've added on to the reference design. So, it seemed like a real good balance. I am not someone who is going to spend the amount of money I spent on my Xbox on a single video card. But when I play the occasional game, I'd like it to work. But additionally, if I am going to have all of the Eye Candy of Vista, I don't want to have to think about.

**Carl Franklin:** I agree.

**Scott Hanselman:** Gosh, why isn't Aero fast enough? If I minimize a Window, you know damn it, I want that Window to go boom and minimize. Right now my ATI Radeon is just really struggling with Aero and I pretty much had it with ATI at this point.

**Carl Franklin:** Well Scott, it's been a great show, I mean we don't usually talk about hardware like this, but I find it cool to just take a look and see what the state of the art is. So, thanks for that and we'll have to catch up later after you get it and have been running it for a few weeks and let us know how it works.

**Scott Hanselman:** Yeah, and I would really encourage listeners to send in their opinions, because I don't claim in any way to be an expert on this kind of stuff. I am just a guy who reads a lot. I trust Jeff; we've gone back and forth in the assembling of this machine. He cares about the overclocking and getting it right with a level of passion and detail that I don't necessarily share. I



wanted to find a machine that wasn't just a stock Dell that had some future proofing to it. It was good balance. I think I've put together a pretty decent machine.

**Carl Franklin:** Yeah, I would say so.

**Scott Hanselman:** I know that a lot of our listeners are putting together their own machines, so I am really interested in what they have come up with to squeeze out the last little bit of speed out of a developer machine.

**Carl Franklin:** Awesome, with that we'll see you next week on Hanselminutes.