



# Hansel minutes

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 # 19

May 29, 2006

### Torrent! Torrent! Torrent!

Scott talks about BitTorrent and its many uses, applications, and websites. As always, great resources abound!

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(Music)

**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 #19 recorded Monday, May 29th, 2006. Support for Hanselminutes is provided by Code Smith Tools, makers of Code Smith, an extensible template based code generator for .NET. "Generate your code your way, faster," online at [codesmithtools.com](http://codesmithtools.com). And by [peterblum.com](http://peterblum.com), "Start with better controls, finish with better sites," online at [peterblum.com](http://peterblum.com). Support is also provided 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, the focus is BitTorrents.

(Music)

**Carl Franklin:** Hi! This is Carl Franklin, you are listening to Hanselminutes. Here we are again for another great show. Scott, hi! How are you?

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

**Carl Franklin:** I am doing great.

**Scott Hanselman:** Happy Holidays.

**Carl Franklin:** Happy holidays to you too, it was a good weekend.

**Scott Hanselman:** It was.

**Carl Franklin:** So, we are talking about BitTorrent today.

**Scott Hanselman:** BitTorrent, video squishing things you can do with BitTorrent optimizing BitTorrent, how it works, and various legalities.

**Carl Franklin:** And that would be a good time for a disclaimer, would it not?

**Scott Hanselman:** It would indeed.

**Carl Franklin:** Yeah.

**Scott Hanselman:** We cannot, we are not lawyers, we are not legal nor illegal people, we are just guys talking to you on your iPods, hopefully in double speed if you are not wasting your time, and we have no way to know whether this is legal or not legal. Carl what have you found in your research?

**Carl Franklin:** Well I found that certain things are legal to share and certain things are not and the

list of legal things is small indeed. However, there are some major television studios that are now coming out with -- and media companies that are now coming out with BitTorrent feeds but you know they have their own terms and conditions, there isn't just blanket stuff. I've heard people say that you know fair use means if I can watch something on my TV, then I don't feel bad going to download it if I missed it. While that may be true, it still may be illegal. So you really need to check your laws for the particular media that you are trying to download.

**Scott Hanselman:** Absolutely and it's fair to say that using BitTorrent and the BitTorrent Protocol is certainly a legal thing.

**Carl Franklin:** Yes.

**Scott Hanselman:** It really gets down to gray area when you download something odd.

**Carl Franklin:** It's all a matter of what you are downloading.

**Scott Hanselman:** Yeah but don't think poorly of the protocol but like you said, Warner Brothers is going to allow downloads of their shows, there is information about that at [shrinkster.com/fhz](http://shrinkster.com/fhz).

**Carl Franklin:** Yeah.

**Scott Hanselman:** On Warner Brothers' agreement with BitTorrent. Okay so what is BitTorrent?

**Carl Franklin:** What is it?

**Scott Hanselman:** BitTorrent is, I call it a kind of equivalent of a protocol if a protocol could shout. Like BitTorrent is a bunch of people getting into a room and going "Hey! I've got this version of this file," and, "aaah, aaah," and then just screaming and yelling at each other.

**Carl Franklin:** You've ever seen the stock market guys on Wall Street, and they're just screaming and yelling at each other.

**Scott Hanselman:** It's exactly. It's the stock market protocol.

**Carl Franklin:** Yeah.

**Scott Hanselman:** It's basically, there is a hundred gig file or some giant file I want to get and you know downloading it classically from Carl Franklin studios means that I tie up one of your connections...



**Carl Franklin:** Right.

**Scott Hanselman:** And if you want to distribute that to a million people, let's say it's a really popular file, the more people that want to get that file, the fewer can.

**Carl Franklin:** Yeah.

**Scott Hanselman:** So you get squeezed. So BitTorrent tries to solve that problem of the more people who want it, the fewer do.

**Carl Franklin:** Yeah.

**Scott Hanselman:** To the more people who want it, the more people who can. BitTorrent works better with popular files.

**Carl Franklin:** It also works really-really well with podcast clients because a podcast client you know will typically wake up when there is new stuff right. And when there is new stuff, you have thousands, possibly tens of thousands of clients trying to download the same file at the same time, and if those files are big, why BitTorrent is just perfect for that because Bit...

**Scott Hanselman:** Right.

**Carl Franklin:** The rule of BitTorrent is, the more people that are downloading simultaneously, the faster everybody gets the file. That's a simple rule you can remember.

**Scott Hanselman:** Exactly, the protocol says hey, I've got you know parts 2, 6 and 8 of this file and you have parts 3, 4 and 2 of you know 3, 4 and 5...

**Carl Franklin:** Right.

**Scott Hanselman:** ...let's exchange them. So you may for a very long period of time have just chunks of a file and another guy may have chunks, and no one in the swarm has the entire file yet but perhaps amongst the group of us, the union of us, we have the whole file.

**Carl Franklin:** Right.

**Scott Hanselman:** If we stand in line long enough, we'll all get the complete file.

**Carl Franklin:** Right and...

**Scott Hanselman:** Now after you have got the complete file, you've got to stay on line though because there is an unspoken moral code within

BitTorrent, which actually is not unspoken, it's baked under the protocol...

**Carl Franklin:** It's totally baked.

**Scott Hanselman:** If you leech, then you'll be less likely to get good bandwidth downloads later. So once you are done downloading something with a BitTorrent client, stay online for at least as long as you are on before.

**Carl Franklin:** Right.

**Scott Hanselman:** To seed the swarm, the swarm is the group of computers that are all kind of simultaneously sending and receiving that file. And seeding is when you have got the complete copy and in order for BitTorrent to work, you have to have at least one person in this swarm have a complete copy...

**Carl Franklin:** Right.

**Scott Hanselman:** Of the file and be a seeder. So actually we're super seeders for you.

**Carl Franklin:** Yeah that's right at Pwop, we distribute all of our content with BitTorrent as an option and we've put together a bunch of Pwop ambassadors of which Scott is one, and these guys basically have some decent bandwidth, doesn't have to be huge bandwidth, but you know cable modem bandwidth. And they've put together, a BitTorrent client that's looking at all of the feeds that we offer. And so basically whenever we publish any new show, these guys have agreed to you know download it and seed it and so what we end up with is, for every show we have a at least 25-30 seeds. And then on top of that we've got you know more people that aren't Pwop ambassadors that are just using BitTorrent and using it correctly. And we also stagger the RSS, so that when we first publish a show, all of the -- only the ambassadors get access to it and when they are seeded about a half-an-hour later, then we actually publish the main feed and everybody else is looking at it gets it really-really fast.

**Scott Hanselman:** Right so the fastest way to get any of the shows, including this one, is with BitTorrent. One of the problems of course is that, BitTorrent uses a lot of ports and often times most corporate offices won't allow BitTorrent.

**Carl Franklin:** Right.

**Scott Hanselman:** So BitTorrent for you as a personal protocol as something that you'll use at home...



**Carl Franklin:** Yeah.

**Scott Hanselman:** ...is really great, but because you are connecting to a lot of other computers, a lot of other peers, you'll have a number of problems or you may have a number of problems you might want to deal with. The first one is that your router, whatever router you may be using, may not be prepared for such an aggressive protocol opening so many outgoing and incoming ports. So there are some optimizations you can do on various firmwares and if you just search for the name of your firmware, the name of your router and BitTorrent optimization, you'll find it I've got an article about Linksys firmware optimization using the DDRT firmware at [shrinkster.com/fi2](http://shrinkster.com/fi2) and it's just as a matter of changing some of the how many connections are allowed open, how many do I accept to be allowed open on my router. And now some people have said, and I have not found this to be the case, but some people have said that when Windows XP Service Pack 2 came out, that they were having some problems. One gentleman blogged about this at [shrinkster.com/fgh](http://shrinkster.com/fgh), saying that they had locked down the TCP stack when Service Pack 2 came out and it was connection attempts that they would lock down to I think 10, and this was to avoid worms. So BitTorrent can look like a worm to you, your TCPIP stack or your firewall, because it's so aggressively opening at ports but I haven't had to go to any of the lengths that these other folks have done, trying to raise the number of connections. The limit for connections used to be 65,000 plus in Windows XP and now apparently it's 10. Have you had to deal with any of this Carl?

**Carl Franklin:** No, I haven't. We are running MicroTorrent on a server and that server doesn't have -- hasn't complained yet of any such connection problems and it's been...

**Scott Hanselman:** So, you are running Windows 2000 or Windows 2003, I would assume not Windows XP?

**Carl Franklin:** We are running it on 2003. That's right, we are not running it on XP.

**Scott Hanselman:** So I don't know if there is a difference between the two but I have not seen that to be a problem, but if you search for XP Service Pack 2 and BitTorrent limits, there is a lot of people out there who insist that you need to actually go in and patch your TCPIP.SYS. I've gotten BitTorrent downloads in excess of 600 to 700 K a second over a Comcast Cable Modem, so I've not found that to be the case.

**Carl Franklin:** Same here yeah.

**Scott Hanselman:** Yeah, but be aware that that might be one thing. The more common thing is to just go in and tweak the number of connections. Also supporting UPnP, universal plug and play, which is a protocol by which an application can request a port from your firewall, is a useful thing.

**Carl Franklin:** Well here is what I know about this and I think you are about to say it too, which is that a lot of people consider UPnP to be a security hole.

**Scott Hanselman:** They do.

**Carl Franklin:** Yeah UPnP means an application can open a port and if you allow applications to open ports, if some rogue application wedges itself in there by some other you know, means, it can use...

**Scott Hanselman:** Or by using UPnP right...

**Carl Franklin:** Or...

**Scott Hanselman:** You have a very polite virus that requests the port.

**Carl Franklin:** Yeah right, there you go. So you know if that happens, then you could be opening yourself up for a lot of problems.

**Scott Hanselman:** Yeah so what I've done with MicroTorrent, which is the utility that you have mentioned that's at [utorrent.com](http://utorrent.com) or [shrinkster.com/fi0](http://shrinkster.com/fi0). MicroTorrent, which I cannot say enough nice things about, what a fantastically, just a -- it's a small, Xcopy deploy, no install, doesn't crash, runs in the background, it's just fantastic.

**Carl Franklin:** It is wonderful.

**Scott Hanselman:** This little tool will tell you whether or not you have the appropriate ports forwarded, and I just picked a high level port and opened it up and forwarded it to my system. Typically before version 3.2, BitTorrent used to use port 6881-6889 and now they have extended that all the way up through 6999; these are all TCP/IP ports because BitTorrent isn't using a UDP. But I have just opened the one port and had no trouble.

**Carl Franklin:** But you can open -- you can use any ports you want, that's kind of the cool thing about BitTorrent is when, and we are going to get into what a tracker is, but when you connect to a



tracker you tell it what ports you have open. And so, as long as your firewall has those ports open, the problem there of course is that by using non standard ports, other clients may be attempting to connect when those out going ports are not allowed on their firewalls.

**Scott Hanselman:** That is true. You do want to have outbound access no matter what on port 6969, which is what BitTorrent uses to talk to a tracker; this is the server that manages that kind of a process. Typically those are almost always on the 6969, but you just need outbound access. Nine times out of ten though, BitTorrent will work just fine in your home, as long as you allow it on your software firewall and open at least one port on your hardware firewall. Now an interesting thing, I don't know whether you have had this trouble, but I have been shut down in three different hotels for running Torrents.

**Carl Franklin:** No, I don't usually run Torrents in hotels, but maybe that's why I haven't.

**Scott Hanselman:** Well so this gets to the kind of the original point of this whole conversation, which was this thing called tvRSS, which I had mentioned to you before I said, well we've got to do a show on this. I have a tendency to be on the road, I'll miss a show, we have talked about [orb.com](http://orb.com) and different ways that I could connect in stream and show it to myself, but [tvrss.net](http://tvrss.net), [shrinkster.com/fhv](http://shrinkster.com/fhv), is a place where you can get RSS feeds, containing Torrents with copies of the most recent TV shows, popular shows, the West Wing, things like that. So I wanted to download The Daily Show and watch it in high quality video, not streamed, but just download it and watch it on the plane later. So I started up this Torrent and within ten minutes I lost all connectivity with that network and they wouldn't give me DHCP. When I called the hotel support, they said, that if you open more than 20 ports going out, that they'll shut you down and ban your MAC address. So I convinced the nice lady to knock that off, stopped running the Torrent, but check this out, did a couple of downloads, loaded up my regular feed reader, VPN'd into work and tried to check my email and got banned again. So it's not BitTorrent, it's simply opening 20 ports. If you are a multitasker, as I am known to be, you will get nailed. So even doing something as simple as multitasking at this particular Marriott Hotel, got me banned and that was a real disappointment. So do be aware of what you are doing. This is probably not a hotel specific thing, more and more people don't want folks monopolizing bandwidth with Torrents.

**Carl Franklin:** Yeah and it may not be a Marriott thing either, may just be that the IT department in that particular hotel has that policy.

**Scott Hanselman:** In this case they said that it was the -- I forget the name of the provider, but it is one of those providers that you recognize the name of, when you go to the hotel. When I dialed the Marriott extension they forwarded me off to IT for transport or whatever the name of the provider was, but I think that that kind of thing is going to happen more and more as people build that into their firmware. Like I don't think Starbucks wants me to run a Torrent inside of Starbucks. But interestingly, I was able to get it working the next day by going into the MicroTorrent and setting the maximum connections to ten.

**Carl Franklin:** Right.

**Scott Hanselman:** And just told MicroTorrent, don't even try to talk to more than ten. Now the download was really slow, but it did actually happen. And you can see these ports that you have got open by using Sysinternals' great TCPView utility that we've talked about before on the show, [shrinkster.com/fhh](http://shrinkster.com/fhh), fantastic stuff.

**Carl Franklin:** Sysinternals, man. They totally rock!

**Scott Hanselman:** So, if you go to [tvrss.net](http://tvrss.net) and download MicroTorrent, you just run it, no install and you would set up the RSS feeds, from the RSS preferences section of MicroTorrent, and you can set up a filter. Just put the name of the show you want, you can put in like Lost or West for West Wing and it will do a wildcard search and it will download these files. And these are usually high def files, these aren't crappy rips off of some guy's cable. This is a high quality HDTV rip with commercials removed and that's where we start getting into legality. And then those are about 300-400 Megs. I downloaded the whole series of a great show I watch called, "How I Met your Mother" on ABC and we discovered it half way through the season; we wanted to catch up, but it wasn't on DVD so we went back to tvRSS and grabbed it. And here's the cool part, we talked a little bit about this on our second or third show, but once you get those giant files, you want to squish them, right, you want to get them onto your portable devices. And I just can't say enough nice things about Videora, [videora.com](http://videora.com), [shrinkster.com/fhi](http://shrinkster.com/fhi), this is a converter squisher and there's lots of them out there, but this has the friendliest interface and it's very inexpensive and they have hardware specific free versions for the PSP, for the Xbox, for your TiVo. So I use this to



download these shows, I squish them using the Xbox 360 converter and I just copy them over to my Media Center and then watch them later on the Xbox with the Media Center Extender. You can also squish these for your iPod or squish them on to your PSP using PSP Video 9, [shrinkster.com/vhn](http://shrinkster.com/vhn). Seems complicated, but if you just kind of get that workflow, you set up your feeds at tvRSS, you get [utorrent.com](http://utorrent.com), you pick the shows you want and then when they come down, you squish them overnight with Videora. It's much more intuitive thing than you would think and it makes long plane rides really a joy.

**Carl Franklin:** There is a great audio encoder, re-encoder out there called VirtualDub. Have you used VirtualDub?

**Scott Hanselman:** I haven't.

**Carl Franklin:** VirtualDub allows you open any AVI file and then you can use a separate WAV file, you can use for audio, and it's great. You know what it's great for? We use it for replacing the audio track in the video. So when we do dnRTV, we have a somewhat crappy sounding audio track and then we go in to Adobe Audition and extract the WAV file from the AVI, extract the audio into a WAV. Then we do the processing on the audio and cut out any coughs and blurbs and stuff like that and make it louder and noise free. And then what we do is, we use VirtualDub to just use a direct stream copy mode from the WAV file into the video and save it as a new AVI; it works every time. But it can also take any video and Codec and turn out any other kind of video with any other kind of Codec in any kind of size. So, it's good, it's a free tool.

**Scott Hanselman:** That's cool. An awareness of these audio formats, these multiple tracks that you have just brought up, actually fits right into if you ever do ripping of DVDs. You want to take a DVD that you own on the road with you, there is an interesting guide at [shrinkster.com/fhj](http://shrinkster.com/fhj) that talks about in the ripping process, you know, DVDs have multiple layers of audio. You have got Spanish and French and English, and English 2.0 and English 6.1. You can save a lot of space by making sure that you only rip the audio that you are going to care about. Something that a lot of people forget and they wonder why their rips are so huge and why they squish poorly. Now speaking of that we'll get back to free content, so if you are not feeling that tvRSS is for you, if you are concerned about the legality of it, there is a free High-Definition TV show that you can get at [mariposahd.tv](http://mariposahd.tv) that's at [shrinkster.com/fhl](http://shrinkster.com/fhl). And this is a bunch of Americans who moved to Argentina and have decided to put on the

Internet's first High-Definition 1080i TV show. If you have never seen HD before, maybe you have seen at Best Buy, or at the store and you want to see what HD really looks like, you are probably running a monitor that's at least 1024. You can get information about the different High-Definition video resolutions at [shrinkster.com/fhq](http://shrinkster.com/fhq), but 1080i is one of the highest quality standard definitions that you would get from High Def, there is 720P, which is the one that most people think of there is 1080i and then one day there will be 1080p.

**Carl Franklin:** What are the actual pixel widths and heights of those, 1080i is what?

**Scott Hanselman:** Well I don't, I think it's 1980 I think if you go to [shrinkster.com/fhq](http://shrinkster.com/fhq).

**Carl Franklin:** 1920 or 1980 yeah.

**Scott Hanselman:** Yeah 1920, I think it is. And if you want to see this for yourself, see a high-definition TV show, you can go to [shrinkster.com/fhl](http://shrinkster.com/fhl). Download this Mariposa TV show, it's mostly pretty girls and nice scenery and what not around Argentina. It's modeling and fashion and stuff like that. They have got a pretty slick site; they have got three episodes of this little TV show. It's kind of like a travel channel kind of a thing, and download it with MicroTorrent and run it using Windows Media Player version 9 or above, these are the versions of Windows Media Player that support that High-Definition Codec; compressor/decompressor is what Codec stands for. And you can to experience that for yourself, it's pretty amazing to see HighDef, especially on a computer monitor it's so crisp.

**Carl Franklin:** MicroTorrent has RSS support but from what I understood it was a little sketchy last time I checked. What's the situation with that?

**Scott Hanselman:** With the version 1.5 that I have been using, it has been absolutely the number one best, I cannot say enough nice things about how awesome this tool is.

**Carl Franklin:** About the RSS support is what I am talking about.

**Scott Hanselman:** The RSS support is fantastic...

**Carl Franklin:** Okay.

**Scott Hanselman:** I run nine different feeds, it updates every 15 minutes, I can say on a per feed basis or per filter basis where I want stuff



saved, so the West Wing goes in that folder and dnrtv goes in this folder.

**Carl Franklin:** That's great.

**Scott Hanselman:** It's really very nice support, especially with the 1.5 version, is the one that you want to look at. I think it came out in April.

**Carl Franklin:** Yeah we actually use that in PwopCatcher and PwopCatcher, as you know is an RSS aggregator for enclosures. It will-- PwopCatcher will use both HTTP downloading and MicroTorrent internally. So the current version that's out there at [pwopcatcher.com](http://pwopcatcher.com) right now, will ask you to download MicroTorrent, and we have permission to do this I have talked about this before a little bit. But the version that's coming up next will have MicroTorrent embedded as a DLL, so good stuff.

**Scott Hanselman:** There is lots of great tools out there that you--BitTorrent downloads, you may already be using some, like for example, if you used GetRight, [getright.com](http://getright.com) and say, download multiple part downloader, it's a file downloader that lets you do pausing and resuming and parallel downloads of large files.

**Carl Franklin:** Yeah.

**Scott Hanselman:** The 6.0 Beta is adding really good BitTorrent support including support for uploads. So if you are all ready using a tool like that, you may see just like Carl has mentioned, that more and more people are embedding BitTorrent into their programs...

**Carl Franklin:** Right.

**Scott Hanselman:** Just embedding it using a library, and I think that the fact that GetRight is getting on board with that is a fantastic thing.

**Carl Franklin:** Hey what's up with Warner Brothers, we mentioned them before and they are coming out with a feed, are they not?

**Scott Hanselman:** That's what they say but I haven't seen anything other than the press release. The idea is that the day after their shows come out they are going to have them up on the net to be downloaded. I think the idea is that someone's finally explained to the suits that when you send information out via TV it's shouting, right, it's standing on the top of the of the tallest mountain around your neighborhood and shouting it out...

**Carl Franklin:** Right.

**Scott Hanselman:** And BitTorrent is the same exact thing and whether people pick it up over the air or they pick it up over the BitTorrent, they are going to get it so...

**Carl Franklin:** And you know what it actually ends up saving the money because they are using the Internet infrastructure that's already there and they have to spend less money on their existing infrastructure.

**Scott Hanselman:** I think that in the next year or two we will probably see a major TV show or studio, release a show exclusively on the web or release it a day or two before on the web, in order to build up some buzz. Like you know release a new version of some TV show on Tuesday in order to get people stoked for must see TV on Thursday.

**Carl Franklin:** I think you will even see a Microsoft eventually, I don't know if they are going to use BitTorrent, but they may use their-- they have got a research project called Avalanche that they are working on that is essentially BitTorrent plus plus. And that I can't imagine that they won't be taking advantage of this for things like operating system, releases on MSDN and other releases on MSDN. I mean have you ever tried downloading a new version of an operating system or anything when it gets released on MSDN? Forget it; and these guys have more bandwidth than God so...

**Scott Hanselman:** Yeah, I just downloaded Vista yesterday and it was over a single connection using the Microsoft file transfer manager.

**Carl Franklin:** Yeah.

**Scott Hanselman:** It's like nine hours to download this DVD, it was ridiculous.

**Carl Franklin:** Yeah, so that's just screaming for a BitTorrent protocol.

**Scott Hanselman:** Interestingly though, I have read, and I don't know if this is true or not, but I have read that upwards of 30% of the Internet's traffic now is BitTorrent traffic. It is a very chatty protocol.

**Carl Franklin:** Yeah I read it was more than that. In fact it was last year that it made up the majority of Internet traffic, surpassing email and web.

**Scott Hanselman:** Unfortunately a lot of that is stuff people don't own and I think that's where people get worried. I mean personally I will



download a TV show if I was going to tape it and it missed it. I won't rip movies that I don't own, I am not going to go and download a movie off of the net because you can go to Blockbuster for a buck you know.

**Carl Franklin:** Right, also it doesn't mean that the majority of internet users are BitTorrent users because look at the sizes of the files that they are downloading. I mean one DVD transferred is how many emails saying -- you know even how many Spam emails right you know thousands, hundreds of thousands.

**Scott Hanselman:** No, it's a very good point my entire year's email might be a single DVD.

**Carl Franklin:** Exactly so, you know you've got to put it into perspective. In fact my entire outlook PST compressed is probably less than a single DVD.

**Scott Hanselman:** Right, all of the email you have ever sent.

**Carl Franklin:** Right.

**Scott Hanselman:** But unfortunately I think that the reason that people download these DVDs illegally and taking things illegally is, more of the sense that they are beating the system and less that they really need it.

**Carl Franklin:** I agree.

**Scott Hanselman:** I will happily pay for content. I think the world will happily pay for content and that's why iTunes succeeds and why iTunes insist that 99 cents is the price of their stuff.

**Carl Franklin:** Right.

**Scott Hanselman:** And that is a perfectly reasonable price to sell something for. Two bucks for a TV Show or what is it 2.99 for a TV Show?

**Carl Franklin:** Yeah.

**Scott Hanselman:** 1.99, I am not sure I haven't got a video iPod yet, the wife won't let me do it.

**Carl Franklin:** (Laughing)

**Scott Hanselman:** But one day, one day.

**Carl Franklin:** You know it begs a question, we talked about this on Mondays too; do you really want to be watching TV shows on a postage stamp size screen?

**Scott Hanselman:** The only times when I can see that happening is on a plane or in a commute.

**Carl Franklin:** Right, yeah.

**Scott Hanselman:** But if I would say this though and I am on the west coast and you are on the east, so you might know more about this but if you are coming in on the Long Island rail road it got pretty dull coming into Manhattan, you might want to watch something, watch last night's Daily Show.

**Carl Franklin:** That's true, that's very true. I have taken up to reading books on planes.

**Scott Hanselman:** Yeah I have a commute that's one exit so, there is little that I can do just going up one exit I can ride my bike to work so. But if I were taking the train, taking the Max train here or the Electric Train downtown, I think I would probably watch a half hour show.

**Carl Franklin:** Coming back from Amsterdam from the Netherlands too on the flight back in the airport in Amsterdam, I picked up The Da Vinci Code and I started reading it as I was waiting for my plane and I finished it right after we touched down. I was literally like ten pages left when I was walking off the plane, and I didn't start reading for fun until I met my wife and she is a voracious reader. But that was a fun experience, it was especially cool not to have to worry about gadgets and stuff and it's the simple things sometimes that we forget about.

(Laughs)

**Scott Hanselman:** See for me the simple things are flying back from Pittsburgh couple weeks ago watching what the heck movie was I watching, I forget what it was but I was watching a movie that I squished down at the PSP and...

**Carl Franklin:** Yeah.

**Scott Hanselman:** ...my battery in my laptop had long died, my two hour battery life on my big heat sink of an IBM laptop and I watched that movie and I watched actually I think I watched two back to back movies and a TV show.

**Carl Franklin:** Wow!

**Scott Hanselman:** Didn't even think about the battery life on my PSP, my PlayStation Portable, and for me that's the simple things, not having to worry about battery life.



**Carl Franklin:** So there are some other sites that are out there to support the PSP for this kind of stuff?

**Scott Hanselman:** Yeah, PSP Video 9 at [shrinkster/fhn](http://shrinkster/fhn) gives you a video or a squishier that will put a video into a format that the PSP can understand. And if you are going to be downloading video via BitTorrent on to your system, you might want to tweak some of the speeds and there is a number of sites that give you tips on how to get the most out of your bandwidth. One of them is a tweaking BitTorrent Speeds at [shrinkster.com/fi4](http://shrinkster.com/fi4). And of course my optimization's page at [shrinkster.com/fi2](http://shrinkster.com/fi2).

**Carl Franklin:** Okay.

**Scott Hanselman:** The number one mistake that people make when they are setting up BitTorrent is not forwarding that at least one port to allow someone to connect to your system from the inside.

**Carl Franklin:** Right.

**Scott Hanselman:** As soon as the swarm notices you are not contributing they will lower your speed.

**Carl Franklin:** Yeah the leeching is the biggest problem in and I see that now I mean we have how many thousands of people that download our shows, including this one, with BitTorrent and yet we still never had more than 50 or 60 seeders at a time.

**Scott Hanselman:** The rule of thumb is to keep the Torrent open at least as long as you had it open before. So if it took you an hour to download, keep it open for an hour even twice as long, just to give back and that makes sure that everyone will get a piece of the show.

**Carl Franklin:** Yeah, isn't there a setting in MicroTorrent where you can tell it how long to keep seeding after downloading?

**Scott Hanselman:** Yeah, there is the notion of a ratio. So if you have downloaded a 100% may be you want to upload a 100% or 150%. So you can set that in the preferences of MicroTorrent and say that my seeding goal is 150% of what I downloaded and then you can set it to either limit the speed by throttling or by actually stopping the Torrent after it's reached its seeding goal.

**Carl Franklin:** Nice.

**Scott Hanselman:** So if you had a lot of stuff you wanted to download you could just set the ratio that you want and it will automatically throttle them back or stop them as they go. And it's a nice way to stagger your downloads making sure that you are giving back as well as receiving the files that you want to get.

**Carl Franklin:** And let's end with a concise synopsis of how BitTorrent works at [howstuffworks.com](http://howstuffworks.com), BitTorrent.htm at [shrinkster.com/fhs](http://shrinkster.com/fhs), a good overview of how BitTorrent works. And thank you very much Scott for sharing your BitTorrent knowledge with us and experience.

**Scott Hanselman:** No problem.

**Carl Franklin:** And as for you, dear listener, we will talk to you next week on Hanselminutes.

(Music)