Lawrence Manning

ACTIONS
SPEAK LOUDER

Linux Magazine caught up with Lawrence Manning, the Development Director and Chief Architect behind the SmoothWall Firewall project. In the past Lawrence has contributed bug reports and the occasional fix to various Open Source projects, including the Linux Kernel

Linux Magazine – How did the SmoothWall project first start?

Lawrence Manning – Around February of 2000 I met Richard Morrell through a local Linux User Group. I helped Richard set up a server on his home network, for file and print sharing. A few months later Richard told me he had been hacked and was looking at various firewall solutions for his dial-up account. He had looked at a few (LRP etc.) but was not happy with any of them, mostly because they were a pain to set up. So I told him that I would happily set him up a Red Hat box with a couple of CGI scripts to dial and hang up his modem, and it would do basic masquerading. It was VERY basic – just a couple of CGIs written in bash on top of a Red Hat box. Richard was quite impressed, especially with how quickly I got it working.

After that, we together had the idea to turn this into something you could install on a stand-alone box. We also went to our LUG and asked for their thoughts on this idea of ours. Mostly they had ideas we didn't want to consider at all, like running it off CD-ROM.

By July I had a basic Web interface for setting up PPP settings. This was still running on my desktop machine though; there was no installer or anything. The next stage was to take a Linux distro and strip it down to its smallest size, though still with enough services and libraries for our code. By pure chance my Red Hat 6.2 CD-ROM had become damaged, so I hunted around for an alternative. Richard, who worked for them at the time, had given me a copy of VA Linux 6.2, so I used that; it's basically Red Hat with a few improvements anyway. I stripped it down to about 50Mb of "essentials".

The next stage was to work on an installer. I looked at a few options: *ncurses*, a graphical one, or just a pure text-based installer with no fancy menus. A graphical one was out of my range entirely, and *ncurses* was interesting, but it seemed to take a lot of code just to do simple things. So I went for *libnewt*, the API used by the Red Hat text-based installer. This library has served us well over the years. I should say that although it LOOKS similar, there is no common code between the SmoothWall installer and Red Hat's.

There were still problems to solve, like how to fit it all onto a floppy disk. The only interesting thing to say about this time is that the network installer was added because it was the only way I could do installs at the time; I didn't have a CD burner. Even up to the first release of 0.9 (early September) CD installation was untested. In fact it was broken in the first release, so we did a release of 0.9.1 a few days later, which fixed the problem.

So, by mid-September we had a SourceForge project registered and we had mailing lists on SourceForge, etc. We also had a small team of testers. Things plodded along quite slowly, until Richard had the project registered on Freshmeat. I remember well: Richard phoned me up the next day and asked me to guess the number of overnight downloads. It was about 50 and that was amazing for just one night! So that's the early history of SmoothWall, up till around October 2000.

Linux Magazine – What dictated the early decisions?

Lawrence Manning – With regard to programming, common sense is the best answer I can give. The best way to explain this is to give some examples.

I used *libnewt* because it was a very fast library to develop in. If you wanted an error dialog to appear, the code was already written so it was a single function call. Every dialog I needed at the time was already written so *libnewt* was easily the best tool for the job.

We originally chose, and have stuck to, Apache for obvious reasons. It's reasonably fast, obviously very secure and tested, and it was also fairly well known by us. That's another thing that cropped up again and again: where there are two options, I tended to choose the one I knew best, even if I thought it had some shortcomings.

Likewise, the CGIs were written in Perl. While this is an obvious choice, the reason I chose to use it was that I had done some Perl at University and it seemed like the best language to use. I don't especially like programming Perl (I am more at home with C) but it

has proven to be a pretty good choice over the years. Some of the old code was really bad though! I am still learning the language, to be honest.

Linux Magazine – How did the team come together?

Lawrence Manning – Through the mailing lists, and on IRC. Oftentimes, someone from the outside would have a really good idea and we would see that and "invite" them in. Neuro (William Anderson) came with us with proposals for jazzing up the (then) really dull interface with some nice graphics. Richard and myself, to an extent, were really hostile to this but we saw he had huge talent in graphical work, so eventually he became part of the team.

Similar stories can apply to various others. The team is split quite neatly into two groups, a core group, and an outside group. The simplest way to explain this is to say that the core group put the hours in and are dedicated to the project, so we can all depend on each other when things need to be done, especially with regard to security patches and the like.

Linux Magazine – How are suggestions dealt with?

Lawrence Manning – We evaluate them and work out if it meets our criteria. Is it where we want SmoothWall to go? Does it introduce any vulnerabilities – potential or otherwise? How long would it take to implement it?

One thing that pretty much sums it up is: just because it can be done, doesn't mean it should be. We still get people wanting us to put Sendmail or Samba on, something we dismissed at day one. Often, someone has already had the same idea, or we have had it, and already rejected it. Sometimes there are absolute gems though, and it's a question of "why didn't I think of that!"

Linux Magazine – What are the fun elements of being in a programming team?

Lawrence Manning – I suppose the nicest part about it is that many of the people in the SmoothWall team have become best mates.

It is no exaggeration that we're almost all family now. There is social and relational interaction that goes way beyond work or coding. We live very much in each other's pockets regardless of geographical location. Maybe that's why some people wanting to "join" the team just simply can't and won't ever cut the grade.

Linux Magazine – What do you use to keep the code tree in sync?

Lawrence Manning – For the old GPL Smoothie, it was mostly done by me being fed bits of code and merging it in (along with testing) by hand. In Lite we have a full private CVS tree.

Linux Magazine – Why was SmoothWall Limited started?

Lawrence Manning – SmoothWall Limited was started for a very simple reason: to keep SmoothWall alive. Without having a company behind it, both Richard and I would have to get "normal" jobs, and would have very little time to work on SmoothWall. I don't think it is big of me to say, but without me and Richard there wouldn't really be a future for Smoothie. Someone could of course take it up, but it wouldn't be the same. And besides, I LOVE working on it, and the only way for me to keep doing the thing I love was to start a company and try to make a business out of it. This is what we have done, and so far we have been more successful then we could have hoped.

That's the simple reason. Also Richard, with a family, simply couldn't afford to keep paying for it forever. A lot of the community think this stuff just happens; it doesn't. It costs a LOT of money.

Linux Magazine – Why was George Lungley persuaded to join the team?

Lawrence Manning – George was a major player in corporate IT systems for councils and corporations of twenty plus years standing. Also a SmoothWall user, George was very much the straight man to myself, Richard, and William. George has also created, from virtually nothing, a company that ended up being sold for millions of pounds to a multinational corporate chain. No Linux company in the UK can claim to have done this. We do sometimes wonder why he wants to be involved when the community kick off. I think he views the community with the same scepticism and bewilderment that we all do at times.

Linux Magazine – How much time has been invested?

Lawrence Manning – Well, I have worked on SmoothWall for just over a year, full time. Before that I spent maybe three to four hours a day on it. Other people like William and Dan Goscomb have invested similar amounts. Richard has invested about the same amount of time, and a very considerable amount of money.

Linux Magazine – How does SmoothWall Lite differ from the 0.9.9 GPL version?

Lawrence Manning – It is a complete rewrite. There is no common code at all. 0.9.9, and the GPL base served us well for the best part of two years, however the time has come to start again. All code rots, and at some point it has to be time to start anew. Dan has some great ideas and I personally can't wait to see them come to fruition.

Linux Magazine– How does the team focus on direction?

Lawrence Manning– The team is just that, it's a team. Imagine a spider with eight legs. All have to move in one direction to achieve anything. Like a spider, we also have to cling on for dear life sometimes when spinning a Web with no resources. Dan Goscomb and William Anderson work with Richard on focus. Richard will suggest ideas, looking

at competing proprietary products and use a commercial focus to suggest ideas. Dan will say "OK, I can do that but it needs to be coded thus", William will then come in and design the graphical glue to hide all the skeleton that lays beneath. Dan and William provide (on Lite) the bones of the exterior. Richard is the catalyst, as he has relationships with players in the Linux hierarchy that we don't. His job is to use these contacts to talk to comms hardware vendors and the like and give us the driver support that we need.

Linux Magazine – What was the reasoning for Lite being Closed Source?

Lawrence Manning – Lite is a product that has to remain free. We are committed to it being free. Although it may use some GPL code, we will use common proprietary compiled elements from SmoothWall Ltd. and from other companies we have relationships with. We are not about to suggest these other third parties look to GPL their code: it won't happen. Being Closed Source is the best way to produce a good product, in OUR case. This is because it is the only way that we that the product we care about can remain competitive in important areas, like device compatibility.

After the rampant abuse of our rights as developers by the IPCop team, and others, there is no way we will share advantage with the community. And there is no doubting this point. I do not want to go into details or get into a debate. But we were abused. No one would ever fork the kernel, change it's name, and claim absolute credit. Yet this is exactly what they have done. Also, if we did Open Source a lot of the common code it would disadvantage our resellers and our credibility in the corporate paying world. The community has no real role in the "fee paying world" that subsidises the servers that power the "community"; it's a food chain. We don't particularly want to become consumable items – we would much rather be the supplier.

Linux Magazine – What are you hoping to concentrate on developing in the future?

Lawrence Manning – I really want to get started on our Enterprise level products. We have some fantastic ideas for the "ultimate" SmoothWall, and I can't wait to get started on it. It is hard to explain to a non-coder, but when you see your ideas that you had while doing the most mundane of everyday tasks, when you see them come into reality, it's an amazing thing. Still now, when people say "we are using Corporate Server in our hospital/school/whatever", I get a huge buzz. It's going to be an even bigger buzz in the future, when we are truly up there with the big boys, competing on a level playing field.

Linux Magazine – What is the advantage of the Corporate Server?

Lawrence Manning – Corporate Server is a fully

rounded, "corporate" product, compared to GPL, which is a home level server product. Our competition to Corporate Server is GPL. However they are very different products, not bedfellows. Corporate Server has features and has code that shares common boundaries but the expectation levels are totally different.

Corporate Server is also modular, so you can bolt on things like an x.509 certificate authenticate VPN management, complete with Windows remote Road Warrior support. SmoothHost is our module that allows you to replace a Cisco PIX for 10 per cent of the comparative price. This is all gone into in greater detail on the Web site (details are below).

But even without the modules, Corporate Server has features that make it "stand proud" with the other servers and services provided by your typical corporate network.

Linux Magazine – Do you still get to play RuneQuest?

Lawrence Manning – Sadly not. Friends separate, and people have "grown up". I would love to get into online gaming in a big way, but I don't have the time!

Linux Magazine – I heard you are using a PPC machine?

Lawrence Manning – I'm playing with a PPC box at the moment. It's a complete pig to get going! If anyone has any experience running Linux on a powerstack, I'd appreciate it!

Linux Magazine – Tell us about your brother Virgil. He's the Emmy award winning animator behind such classics as "Walking with Dinosaurs". What does he think of your success?

Lawrence Manning – He's happy for me. But he's so laid back, it's hard to surprise him at all! This guy meets film stars every now and then, has been to the USA more times then I've been to London (I live in Southampton). Yes, he is impressed I'm a company director and how many users SmoothWall has.

Linux Magazine – What do you do to relax after coding?

Lawrence Manning – Well, I'm a big Star Trek fan... And I try to do a bit of cooking every now and again. Just normal stuff. But I'm a computer geek through and through. Coding can be very relaxing!

Linux Magazine – If you could change just one thing what would it be?

Lawrence Manning – I'd like the community to grow up and stop being so rude and one minded. It can be a horrid place to work on occasion. If the community started behaving more maturely and more like the talented developers that they are then it would be a much nicer world. We'd also get adoption of Open Source further and faster. Right now some of them, a small minority, are a bad advert. I'd also like to have as many Corporate Server customers as we have GPL users.

Info
SmoothWall Ltd.
Web site
http://www.smoothwall. co.uk/