

Bill Quinn

Linux master

It's the mission of the LPI's Bill Quinn to spread Linux training all round the UK. Neil Mohr asks how that's going...



The Linux Professional Institute has been around since 1999, when it was founded in Canada. Since then it's had 15 years of steady growth with some spectacular

increases in its popular LPIC in recent years. We sat down with the head of the UK arm of the LPI, Bill Quinn, to assess what this means for the Linux landscape across the globe, how it's feeding into UK education and how the LPI remains relevant in a rapidly changing FOSS world.

Linux Format: What's your background?

Bill Quinn: About 15 years in IT, nine of which were at a CISCO Gold partner, and then I entered the open source world by working with a Red Hat partner. I worked for them for four to five years, again stepped out and contracted in the open source world for four or five years, then set up my own company towards the end of 2012.

LXF: So how does the LPI connection work?

BQ: The way the LPI works is that you have LPI Inc based in Canada and it appoints affiliates in various parts of the world. We won Master Affiliate for UK and Ireland in January 2013. The previous two companies I worked with had been the Master Affiliate for the LPI. So I've been working with them in total for five or six years.

LXF: There's just the one affiliate per region?

BQ: That's correct. I'm the Master Affiliate for the UK and Ireland. The role is quite simple: it's to recruit training partners such as Verhoef Training, where we are today, academic partners such as the University of Greenwich and Birmingham City University, and to grow people being certified in Linux. Part of that is talking about Linux and talking about open source. Many people don't realise what a prolific resource open source is and how widely used it is.

LXF: The LPI hasn't been around that long. It was founded in '99?

BQ: It was, and since then it's gone on to be the number one in Linux certification training with the current figure being around 370,000 people passed. [LXF: *That figure has exploded in the last five or six years.*] It has been on that hockey stick and even now 2013 has been a record year for the LPI. It had the most exams ever done, we've recruited the most training partners and we're seeing the same again this year.

LXF: Was that expected?

BQ: I think it was a mixture of pleasant surprise and expectation. I've certainly seen it coming since the banking crisis because that was an interesting turning point for the industry, as it



was the first time there wasn't a demand for IT professionals or at least a shortage, as they were being made redundant. That's when people started to realise "I have to make myself valuable to an employer, I have to be able to demonstrate my skills. So I need to invest in training, I actually need to pass an exam that shows my skills as well." So that's when they started turning to the certification.

The other one is the growth in client services. We also talk about big data as well, but these all come from the source products. So you have countries like Ireland: in its 2013 action plan for jobs it stated that it wanted to stay the Tech Capital of Europe, [and for this] it needs Linux skills.

LXF: Is Ireland managing to keep its tech jobs?

BQ: Ireland is something of a frustration for me. Unemployment

there is around 18% and goes up to around 27% in certain regions. The government there has done a very successful job of getting [tech] companies into Ireland. You've got like Google, Microsoft, Red Hat, LinkedIn, Twitter – the list goes on and on. Unfortunately they haven't been addressing the skills shortage and quite a few companies have been challenging the government as they've been having to import skills to Ireland. To me it's a really ridiculous situation where they've created the jobs but are then unable to fill the jobs.

LXF: What was the original idea in '99 for the LPI?

BQ: It was the formal recognition that one of the challenges that companies have is that they

need someone to go to for help and support, and they need a benchmark for that help and support. So the LPI recognised that we needed to implement formal and structured training, with clear objectives that were built by what's demanded from the industry, and provide the necessary training.

LXF: So how's that evolved over the years?

BQ: In one sense it hasn't evolved! The LPI is still very true to the core beliefs, and they still reach out to the community and ask "Have we got this right?" and have a debate. I think the biggest evolution has been LPI Essentials. This was introduced about two years ago (2012),

ON THE IMPORTANCE OF TRAINING

"It's ridiculous how Ireland has created tech jobs but then been unable to fill them."

and that was again driven by demand. We had our existing qualifications, LPI 1, 2 and 3, but the feedback was the LPI 1 was too hard for some people that needed a launchpad effectively. So we create a specification that was Linux Essentials. One of the aims was it had to be achieved by 16+ – it needed to be focused on schools, so we could get people from an earlier age into the profession – but the whole process was very transparent. We engaged with academia, with professionals and said "This is our concept, have we got it right?" They subsequently helped us shape it – the majority of the questions that have been created for Linux Essentials have been provided by academia and by people in the industry. The LPI goes through a rigorous process. The

» questions are reviewed: "Is the grammar correct, is the way the question is put correct, can it be misinterpreted, can we make it better, are they too hard, too easy?"

LXF: So how do you work with the community to ensure that their needs are being met?

BQ: The LPI is very open and transparent. It runs a wiki at wiki.lpi.org where all the objectives are posted and the time-scales for revisions are posted. We have a number of people that are subscribed to mailing lists, so when we put a change of curriculum out... It's a very polite mailing list, but you can see that people are passionate about part of the Linux land – they don't get too nasty about it, they put across a very constructive argument about it. So we reach out to the mailing lists. I do a lot of marketing, so when the LPIC-1 changes I'll let people know the process has started, so they can get involved in the process.

LXF: So in terms of structure, the LPI 3 was introduced last. Do you see much demand for it?

BQ: The programme was always designed to be a tiered programme, so people could have progression. So LPIC-1 and LPIC-2 can prepare you for enterprise, but LPIC-3 is very much about a specialised part of the enterprise, for example high availability or virtualisation. To answer the question you're asking, yes it is in demand. You see it come up in adverts, you see some companies that do specify it. Some use it as a benchmark. So for example Netgear are in the process of training their engineers in LPIC-1. So yes, it is being recognised in the industry.



LXF: So it sounds like the LPI is engaging with government to get it into the curriculum?

BQ: The short answer is yes. In the last few months I've had a few meetings at the Houses of Parliament and the House of Lords. It's a very long-winded process, a single academic framework that's QCF in England. Before academia can pick up the LPI it has to be QCF'd, and we're going through that at the moment. Having said that, some universities and colleges are running their own LPI courses using our objectives based on their academic teaching. We've also had conversations with schools where they're using Raspberry Pis in computing classes and they're effectively doing an after-school club based on Linux Essentials.

LXF: To integrate the Raspberry Pi into the curriculum, the Key Stages, and to train the teachers is a huge job.

BQ: It's a massive process. It can be summed up in three short steps: you need the curriculum to be QCF'd, you need the awarding bodies to then pick it up equivalent to a GCSE or A Level, and then you need the teachers trained on it. All of that is a phenomenal amount of work.

LXF: So you could have a GCSE in Linux?

BQ: The reality is I'd be very surprised in the short to medium term if we did have something called GCSE Linux. It's more likely to be named around Computing or Maintaining Servers. This is something e-skills are very keen to adopt. Previously with QCF every single certification had to be QCF'd. This ended up making it unwieldy for e-skills to manage and work with, as you had Windows 2003, 2008, 2010, 2012, the LPI and so on. What e-skills wants to move towards is a more generic QCF.

LXF: I guess Microsoft wouldn't be too happy about a course just teaching Linux? But if government is moving more towards open source standards...

BQ: It's not just the UK government. I think it's business as well. It again comes back to the recession. Invariably budgets were tight. I was coming across places that didn't have any room for expansion – they used their IT budget to keep the lights on. That has been a very important catalyst. I hate to say they've been forced to look at open source, but traditional die-hards kind of went "No open source, as it's out of our comfort zone".

LXF: It was back in the early 2000s that Microsoft was aggressively attacking Linux, saying it would increase business costs. It seems Microsoft was right to be afraid, but it seems like it has taken longer to become mainstream?

BQ: I think it has taken longer to get into the mainstream. I think Microsoft has got a lot of

people, a lot of areas it's not keeping up with. You just have to look at the innovation that Apple is coming up with. You can look at what Google is doing – Google is reaching into Microsoft territory very heavily. So it's not just Linux moving in on Microsoft.

LXF: The last five years has seen a sea change from everyone working offline on the desktop to working online in the cloud, which is all Linux powered.

BQ: The other one that you mentioned that made me smile was just about every year, usually around January, someone says "This will be the year of Linux on the desktop", and invariably it never happens. But over the last couple of years, particularly with smartphones, people are using cloud applications, and the end user doesn't care what the end operating system is, so long as they can do the job they're trying to do. What they're not realising is that they're actually using a Linux-based system.

LXF: Not entirely relevantly, but this is where perhaps Canonical is going down the right path. It's looking at having Linux as the core on all these different platforms. You'll be running services off the cloud and the experience remains the same no matter what device you're using.

BQ: That was supposedly the same strategy Microsoft adopted with Windows 8, and that's why you've got the user interface you have. So if you're using a laptop or a desktop it's the same as your mobile phone – they want this same experience from one device to another device. But I think where Microsoft got it wrong is, the interface on the phone or tablet is very different from the interface on a desktop or laptop. The way to interact with a desktop and laptop is very different from how you interact with a tablet or phone. I think that's what Canonical has recognised.

LXF: You mentioned trying to get more women involved in the IT industry. How are you approaching that in regards to the LPIC?

BQ: We've identified a particular MP who's female and comes from the IT industry, and we're effectively trying to form a group not just with the LPI but the other groups with certification such as Microsoft and CISCO. They've all got the same issues, along with the enrolling bodies because of the education element. Ultimately this has to start with schools and go all the way through. We're forming a working party that's sponsored by this particular MP, and potentially we're going to get a group launched. We'll see.

LXF: I've read the ratio of boys to girls in science, engineering and IT classes dwindles incredibly fast as you move from GCSE to A-level to degree, down to around 10%.



BQ: I think there's two things that need to change. One is the stereotypes that are associated with the IT industry. There is a perception that it's male dominated, that these people are geeks, don't wash, have pizza boxes piled up, etc etc. The reality is, the IT industry is as professional as any other business – the consultants have to work as professionally. It's getting the right role models out there to aspire to. We're not necessarily talking about the CEO of Yahoo – that's probably too high a level. But if you can see there is someone about my age working in this industry making a good wage, it makes it achievable for them.

It also requires making the curriculum interesting. I think that's the big challenge that Michael Gove is tackling at the moment. It wasn't just the females, it was also the men who were getting bored by the teaching of office applications, which was what ICT was about. But Michael Gove's strategy is computing as preparing them for University and getting them to do stuff. Good schools are clever at making it cross-curriculum. So there's one school which did a Raspberry Pi project where the computer class sent a weather balloon up in to the atmosphere that was taking readings and photographs. So that was also the geography project, and because of the photography,

was that it'd be an after-school coding club for children, and instead of having a teacher teach it, it'd effectively be peer to peer. So the teacher would be there as the bench source, but really it was the kids saying "Hey, look what I've done, this is really cool!" and using that to spur people along. They have been incredibly successful.

LXF: One of key things the Raspberry Pi Foundation is doing, is not so much pushing the Pi but pushing Linux into the school curriculum and ensuring the teachers can actually teach this to the children.

BQ: The Raspberry Pi is an incredible invention. For the price point it makes it very accessible for schools. It's something I've talked about. You've got a £30 device – it's throwaway, it's the same cost as a school book. It removes many of the challenges schools have with IT. The main thing is the teachers learning Linux and how to do things with it. It's quite good.

LXF: So Linux Essentials was aimed at schools?

BQ: We built LPI Linux Essentials with 16+ year-olds in mind because we're very much hoping for schools and post-GCSE, but we're very much aware that there are children much younger than that learning Linux Essentials. It

was basically built first of all to give people an introduction to open source – if you haven't come across it before it's a little bit of an unusual concept, and it's quite important they understand licensing and

the difference between a closed-source licence and an open source licence. It then progresses onto the basic command line so they can get around.

LXF: So for the LXF reader with a knowledge of Linux who wanted to get a job, would the LPI be part of that?

BQ: It would! First of all I would recommend they try to benchmark their knowledge. One of the questions I really hate is when someone asks "I've been working with Linux for two years. Do you think I could pass the LPIC-1?" Well, it depends on how much and what you've been doing! So I always recommend people go to wiki.lpi.org, have a look at the objectives and give themselves an honest appraisal of their knowledge, asking "Am I comfortable in this subject area?" People do get caught out, especially people who are working in the industry, because their job role is in a particular area and they do the same sort of thing day-in day-out, but aren't familiar with a certain area or aren't doing it in the right way. So they go in thinking they're going to pass but don't. So benchmark yourself against the wiki, then either

get trained with a professional training company or you can do it yourself – whichever is most appropriate for you. There are also colleges and universities that are embedding it into their academic qualifications as well. But ultimately, take the exam and you'll get a piece of paper proving you're actually certified.

LXF: How are universities or colleges offering the LPI?

BQ: It's two very different models, which is the difference between Higher Education and Further Education. Colleges will either be doing a short period, say 10 hours, three times a week on Linux Essentials, or they might be doing an HND on server maintenance and Linux is just part of that. Universities are taking a very different approach: they'd be doing a degree in Computer Science or Security and have to meet the needs of industry. So they take our objectives, wrap them around their curriculum so they're still teaching computer science or security but using our objectives. So at the end the student can get a degree but can also go on to get the LPIC as well.

LXF: That seems like a good approach.

BQ: Birmingham City University are very vocal on this, that having a degree is just one part. It's a very competitive market, so you have to do everything to make yourself employable, so aligning their course with a professional certification works well for them. You also have the interesting one as well that very few people outside of the UK would know how good a degree is from a particular university. By having an industry recognised certification, it supports that degree – it shows a level of knowledge that's transportable. **LXF**

ON GETTING PUPILS INTERESTED

“Stereotypes must change, but the IT curriculum must be made interesting, too.”

pupils could use it in the art class as well. So one computer project, multiple classes.

LXF: Practical projects like that help grab pupils' imaginations.

BQ: That was part of the problem of just teaching applications. Children don't necessarily understand the importance of spreadsheets. [*LXF: Who does??*] Out of a class of 40 students, how many are actually going to use spreadsheets on a regular basis? Whereas if you can show them how to capture data and then manipulate that in a spreadsheet or database, they're still learning how to use that application but in a much more engaging way.

LXF: I'm going to talk about Minecraft again. As soon as girls or boys realise they can hack Minecraft by coding, they're straight into that sort of thing.

BQ: Have you come across *CoderDoJo*? It came out of Ireland. Bill Liao was the person who did it and effectively came up with the concept. It's open source programming, and because it's open source you don't need to buy expensive software to get going, etc. The idea