Chapter 2

Open Source Operating Systems in Libraries

Research in Context

Prior to 1999, mentions of any open source operating system in mainstream library literature like LibraryLit, ERIC, or LISTA were hard to find. Linux might have been everywhere at Comdex or the consumer electronics exhibition,[1] but no one was writing about using Linux, OpenBSD, or FreeBSD for desktop computing in a public setting. (OpenBSD and FreeBSD are still difficult to find anywhere in library literature.) In 1999, mentions of Linux started to appear, albeit sparsely. Daniel Chudnov wrote about open source software generally and suggested that the open source model offered greater freedom for libraries to make improvements to their software.[2] Robin Peek questioned whether Linux might challenge Windows in more general terms, citing reliability issues with Windows as a reason for looking at Linux.[3] Gordon Hoke questioned whether Linux might make a suitable operating system for a document management system.[4] He cited the advantages of a free, open source operating system, but at that time Linux still seemed a possibility for the future, rather than the present. Nevertheless, Linux was picking up steam, bolstered by support from computer industry giants like IBM.[5]

By 2000, the literature was listing plenty of evidence that Linux was making headway as a server operating system, and also that there was more general interest in open source software. Roy Tennant started out the year writing about open source software in *Library Journal.*[6] Various product announcements included new support service for Linux. Ex Libris announced support service for Linux in March.[7] Innovative Interfaces also announced support service for Linux that year.[8] Libraries were beginning to use Linux, but mostly for server applications. Simon Bains and Howard Richardson wrote about CD-ROM networking with Linux at City University, London.[9] Hoke wrote about Linux again in *E-Doc,*[10] and Doug Johnston wrote about using Linux for servers in his school district, with Apple Macs as workstations.[11] Edward Corrado, presenting at Internet Librarian that year, was a rare advocate of Linux on public workstations in an academic setting, Rider University.[12]

The discussion of Linux as a server operating system continued in 2001, with Michael Schuyler and Eric Sisler both writing about the software.[13] But it was not until 2002, with Paul Lewis's article in *Computers in Libraries,* that someone gave serious notice to Linux as a workstation operating system.[14] Lewis also discussed specific applications: OpenOffice, Evolution (e-mail), and GIMP (graphics). In that same year, Robert Hassett wrote an MSLS thesis on using Linux and open source applications in a high school.[15]

The next year saw the emergence of a new theme: the role that open source software and Linux in particular might play in bridging the digital divide.[16] The year 2003 also saw another mention of Linux in a school environment from Walter Minkel. He cited low costs and reliability of the Linux operating system as reasons for its use at the Riverdale school district in Oregon. More significantly, he described a configuration that included thin clients and used the Linux Terminal Server Project (LTSP) software.[17] School districts have subsequently been much faster to adopt the LTSP software for thin-client systems than have libraries generally.[18]

In 2004, there was a messy fight–ultimately won by Microsoft–for the hearts and minds of the Newham Council (in the UK) over whether the council should install open source software or upgrade its Microsoft software. This debate caught the attention of many open source advocates.[19] In the library world, Brian Auger first reported Howard Public Library's implementation of its own custom Linux distribution.[20] In the same year,

Kathleen Peters described her Coquitlam Public Library's project to replace Windows-based systems with Userful's DiscoverStation product (now Userful Desktop), a Linux-based workstation product that includes some proprietary management components. Ease of administration and reliability were key reasons for her library's decision to move forward with the Userful product.[21]

Advocacy for Linux as a Windows alternative continued to grow in 2004, as Tracy Farmer supported Linux as an alternative to Windows.[22] At LITA, Perry Horner described the Linux deployment at the Arizona State University West (which has since been replaced with a university-wide Windows-based application suite).[23] Finally, Andrew Pace wrote a humorous article for *Computers in Libraries* about thin-client computing for libraries, in which he described cost savings and ease of administration as key benefits of the architecture.[24]

The year 2005 saw additional mentions of Linux as a potential desktop or workstation operating system, as opposed to using it exclusively as server software, in the library. Gary Roberts wrote about getting Linux to work on a laptop.[25] Ken Cheetham described Linspire 5, a Linux distribution with an easy installation and configuration process that might be suitable for ordinary users.[26]

In 2006, the Howard County Library was again mentioned a number of times in the press. (See more later in the issue.) In addition, Roger Evens wrote about open source software, server applications, and staff and public workstations at the Oslo Public Library.[27] Reid Goldsborough also suggested that Linux deserved examination as a Windows alternative.[28] In March, Rachel Singer Gordon and Michael Stephens went beyond the operating system and described various free applications and resources, including OpenOffice.org and GIMP.[29]

A review of the Edubuntu Linux distribution from within the K–12 school community came from Jeff Hastings in 2007,[30] as did additional mentions of Howard County Library that have continued into 2008.[31] It should be noted most of the mentions of Howard County Library and its successes with open source software have not been within the library literature, but rather in the local press. Howard County markets its services aggressively to the local community.

While this selective literature review is reflective of the general library literature, it is not comprehensive. Still, it is clear that open source software on public-access workstations has not been a major topic of discussion within the mainstream library literature. When it does appear, three reasons for utilizing open source operating systems (and applications) have been mentioned consistently: cost savings, greater reliability, and ease of administration. While these are certainly not the only benefits of using open source software, they are particularly important in light of the current economic crisis. As library funding becomes more and more sparse, spending less on software and technological support is a necessity for many librarians.

As we will see from the case studies in this report, libraries that choose to use open source public workstations cite those reasons, among others, as factors that drove them to explore alternatives to proprietary workstation software.

Notes

1. "Linux Everywhere at Comdex," *Library Systems* 18 no. 12 (1998): 91.
2. Daniel Chudnov, "Open Source Software: The Future of Library Systems?" *Library Journal* 124, no. 13 (Aug. 1, 1999): 40.
3. Robin P. Peek, "Will Linux Challenge Windows?" *Information Today* 16, no. 3 (1999): 16.
4. Gordon E. J. Hoke, "Time to Operate," *Inform* 13, no. 3 (1999): 90–94.
5. "IBM Serves Linux: Netfinity 3500 M10 Server Offers Low-Priced Linux Optimization," *InformationWeek* 747 (1999): 105.
6. Roy Tennant, "The Role of Open Source Software," *Library Journal* 125, no. 1 (Jan. 1, 2000): 36.
7. "Ex Libris Announces ALEPH 500 Support of Linux, Unveils ALEPH Cluster," *Information Today* 17, no. 3 (2000): 57.
8. "Innovative Installs Linux on Millennium," *Computers in Libraries* 20, no. 6 (June 2000): 20.
9. Simon Bains and Howard Richardson, "Linux and CD-ROM Networking: An Academic Library's DIY Solution," *Online* 24, no. 2 (March/April 2000): 54–56.
10. Gordon E. J. Hoke. "Making Friends with Linux," *E-Doc* 1, no. 1 (2000): 77.
11. Doug Johnston, "Lining Up for Linux: Should Your District Be Using It?" *Book Report* 19, no. 2 (2000): 38.
12. Edward M. Corrado, "Linux Outside the Cave: Using Linux on a Public Internet Workstation," in *Internet Librarian 2000: Proceedings of the Internet Librarian Conference,* ed. Carol Nixon and Jennifer Burmood (Medford, NJ: Information Today, 2000): 20–25.
13. Michael Schuyler, "A Look at What's on the Horizon," *Computers in Libraries* 21, no. 1 (2001): 61–62; Eric Sisler, "Linux in Your Library?" *School Library Journal* (Fall 2001): 12–14.
14. Paul H. Lewis, "Why Linux Works for Libraries," *Computers in Libraries* 22 no. 10 (2002): 22, 28–30, 32–35.
15. Robert E. Hassett, "The Chapel Hill Linux Lab: A Case Study in the Use of Linux and Other Open Source Applications in the High School Setting," (MSLS thesis, University of North Carolina at Chapel Hill, 2002).
16. Jeffery James, "Free Software and the Digital Divide: Opportunities and Constraints for Developing Countries," *Journal of Information Science* 29, no. 1 (Jan. 2003): 25.

17. Walter Minkel, "Linux at the Right Price," *School Library Journal* 49, no. 4 (2003): 32–33.
18. "LTSP Success Stories," LTSP, http://wiki.ltsp.org/twiki/bin/view/Ltsp/SuccessStories (accessed Jan. 7, 2009). This faster rate of adoption may have been prompted by the creation of a special version of the LTSP software just for schools. The case studies page on the K12Linux in Schools website lists about 70 case studies since 2001; the page has been deleted, but the old page can be accessed at http://web.archive.org/web/20070702004658/k12ltsp.org/casestudy.html. The success stories page on the regular LTSP website lists additional schools, including the Atlanta public school system, and describes Atlanta's 2006–2007 pilot project with LTSP this way: "4400 students, 2200 thin clients, 233 classrooms, 31 servers, 6 months, 4 engineers, 1 HUGE success."
19. Lucy Sherriff, "Newham and Microsoft Sign 10-Yr Deal," *The Register* (Aug. 16, 2004), www.theregister.co.uk/2004/08/16/msoft_newham_10yr_deal (accessed Jan. 9, 2009).
20. Brian Auger, "Living with Linux," *Library Journal* (April 15, 2004): 16, 18.
21. Kathleen A. Peters, "Drowning in PC Management: Could a Linux Solution Save Us?" *Computers in Libraries* 24, no. 6 (2004): 6–8, 60–62, 64.
22. Tracy Farmer, "Making the Most of Technology: Linux as an Alternative Solution," *Arkansas Libraries* 61, no. 3 (2004): 14–18.
23. Perry Horner, "Arizona State University West Library/Linux Deployment: Executive & Technical Summary," LITA National Forum 2004, www.ala.org/ala/mgrps/divs/lita/litaevents/2004forum/CS_Linux_West_Library.pdf (accessed Jan. 28, 2009).
24. Andrew K. Pace, "The Atkins Diet for Library Computing," *Computers in Libraries* 24, no. 6 (June 2004): 38–40.
25. Gary Roberts, "Linux Adventures on a Laptop," *Computers in Small Libraries* 25, no. 5 (2005): 33–35.
26. Ken Cheetham, "Linspire 5: Linux-Based Operating System Software," *Multimedia Information & Technology* 31, no. 3 (2005): 94–96.
27. Roger Evens, "Delivering Sizzling Services and Solid Support with Open Source Software," *IFLA Journal* 32, no. 1 (2006): 22.
28. Reid Goldsborough, "Now You Can Have Your Cake and Eat It Too," *Information Today* 23, no. 6 (2006): 37, 39.
29. Rachel Singer Gordon, and Michael Stephens, "Free Finds for Frugal Libraries," *Computers in Libraries* 26, no. 3 (March 2006): 44–45.
30. Jeff Hastings, "Do You Edubuntu?" *School Library Journal* 53, no. 7 (2007): 18–19.
31. Amy Begg De Groff, "Using Open Source to Give Patrons What They Want," *Computers in Libraries* 28, no. 3 (2008): 8–9.