



Sex and Linux at Salon

**Jeffrey J. Radice, jjr@salon.com
Senior Unix Systems Administrator**

**Chad Dickerson, chad@salon.com
Vice President of Technology**



salon.com

What is Salon?

- **founded in November 1995 by David Talbot and other staffers from the San Francisco Examiner**
- **a publically-traded Internet media company (NASDAQ:SALN) that produces original content and hosts two online communities (the WELL and Table Talk).**
- **based in San Francisco with offices in NY and DC (120+ employees overall)**
- **coverage includes breaking news/commentary, technology, arts & entertainment, health & body, books, media, travel, "Mothers Who Think" (parenting), people and comics**
- **recognized leadership in the coverage of Linux, Apache, and open source software, including profiles and interviews of Larry Wall, Eric Allman, Richard Stallman, Eric Raymond, and others**



salon.com

Systems requirements of an Internet journalism operation

- **Web servers capable of handling bursty and unpredictable traffic**
- **Ad serving and reporting**
- **Community servers**
- **Content staging and publishing system**
- **Traffic analysis and auditing**
- **Simple remote administration**
- **E-mail, DNS, file sharing, printing**



salon.com

Timeline

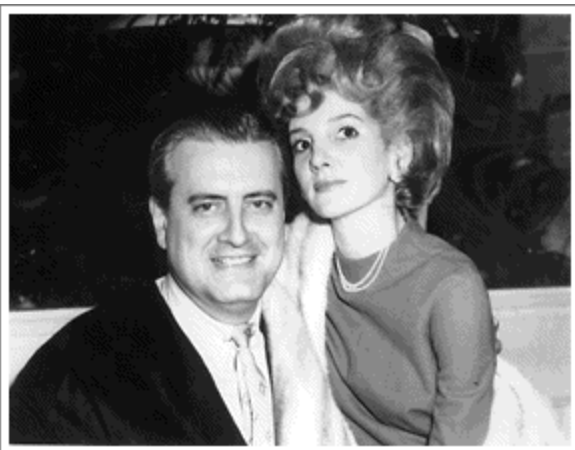
July 1, 1998 -- New technical management

- VP of Technology hired at Salon, an NT shop with no UNIX presence
- Systems infrastructure mostly on NT
 - web servers (Netscape 3.5)
 - content staging server
 - ad server (Netgravity/Oracle)
 - community server (Lundeen's WebX)
 - DNS server (Metainfo)
 - file/print server (NT services, using MacFile sharing)
- Eudora Mail Server on Mac 6100 (!)
- Rather frequent crashes, reboots, inexplicable failures accepted as "normal"
- Previous experience with high volume web serving at CNN gave the initial motivation to migrate web serving infrastructure to Solaris/Sparc
- The cost of Sun hardware/software forced consideration of other options



salon.com

Sex? Meet Congressman Henry Hyde. . . and his mistress





salon.com

Rebuilding infrastructure and restructuring staff

late September 1998 - January 1999

- Salon involved in round of financing
- Ordered Salon's first Linux box from VA Research
- Hired Jeffrey (November 1) to begin extending our Unix expertise

What we needed that our NT architecture wasn't giving us

- STABILITY
- full, demystified (i.e. no GUI) access to configuration options for critical information services, especially DNS and sendmail
- scriptability of key processes (log rotation, content uploads)
- access to a stable set of free tools (sendmail, rdist, Perl)
- job scheduling (cron!)

- remote administration over low bandwidth connections (PC Anywhere - ugh)
- decentralized, distributed ad serving (Netgravity vs. RealMedia)
- detailed logging with configurable logging levels (Event Viewer vs. syslog)
- ability to rapidly acquire solutions -- bypassing purchasing process
- Sleep at night, pager-less evenings



salon.com

Getting started

- Gaining executive buy-in and organizational support
- Creating custom Red Hat install
- Install additional tools, focus on security
- Leveraging existing hardware
- Choosing hardware vendor for pre-built systems



salon.com

First production machine -- Table Talk/WebX

- Lundeen, while supporting NT, strongly urged migration
- NT system performed poorly, crashed daily
- NT system died days before planned migration, on a Friday of course
- no unplanned reboots since (110 days uptime)
- Lundeen recommended that similar sites running his software (including CNN.com) follow our example in terms of OS and hardware



salon.com

DNS

- Mail bouncing problem due to inexplicable truncation of zone file
- Inability to interact with admin interface, slow java admin GUI
- Move to Linux was simple -- but the clock was ticking
- Command line administration much easier and scriptable



salon.com

Web Servers

- NT/Netscape -- scriptability difficult, even with Perl
- Content uploads manually intensive
- Apache was ideal and free -- ability to analyze and tweak performance critical
- Apache API vs. NSAPI
- Needed support for enterprise ad server software (Salon largely ad-supported)



salon.com

Ad Server

- Serving models -- centralized network (Netgravity) vs. distributed architecture (RealMedia Open Ad Stream)
- RealMedia strongly supportive of Linux/Apache (mod_oas)
- Near-zero ad serving downtime since migration (April 1999)



salon.com

Other pieces

- Moved outsourced e-mail lists in-house using ezmlm and qmail
- Simplified management of logs and storage
- Security



salon.com

Planning/staffing

- Plan vs. results
- Site redesign and implementation of new database-driven content production system
- Company growth -- staff and site traffic doubled
- Good news -- ability to attract highly-talented applicants for open positions
- We're still hiring -- <http://www.salon.com/jobs/>



salon.com

Final analysis

- Great uptime all around, especially web servers, WebX, ad serving
- Security improved -- peace of mind
- Much better scalability and performance measurement
- Improved company morale, even for non-technical staff
- Cost savings on software combined with greater flexibility



salon.com

Looking ahead, lessons learned

- Still need to migrate SMTP server, file/print services, and e-commerce application
- Staffing -- don't underestimate the pain of a quick move from NT to Linux
- Regardless of the pain, don't be afraid to do it either