

Building a Home Web Server

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This Presentation

- ... is posted on my site, at <http://www.rootcentral.org>.
- Look for a “Site News” entry with a link to the presentation.

Why Host at Home?

- \$\$\$ - saving the cost of hosting
- Security – avoiding shared hosting
- Ultimate control over the server
- A great learning experience

The Downside

- Bandwidth limitations
- Significant learning curve
- Security issues must be addressed
- Your ISP's terms of service

Is It Right for Your Site?

- Consider anticipated traffic levels
- How critical is uptime?
- Data security & backups
- Time commitment

Requirements

- Broadband Internet connection
- Domain name
- Domain name service (DNS)
- Firewall
- Web server

Broadband Connection Types

- xDSL (usually ADSL for home use)
- Cable modem
- Wireless
- T-1 / Fractional T-1

Speed / Throughput

- Measure your current connection:
 - <http://www.speakeasy.net/speedtest/>
- My SBC DSL:
 - 1220 kbps down, 300 kbps up
- YMMV

Your Own Domain

- Who wants a site named “adsl-68-73-138-210.dsl.wotnoh.ameritech.net”?
- Choosing and researching a name
 - Whois tools
 - nameboy.com, etc.

Registering a Domain Name

- Choosing a registrar
 - Price
 - Reputation
 - Maintenance tools

Registrars

- ICANN accredited registrar list – <http://www.icann.org/registrars/accredited-list.html>
- Network Solutions (Verisign) – <http://www.networksolutions.com>
- GANDI - <http://www.gandi.net>

Domain Name Service (DNS)

- Translating names to numbers
 - e.g. "www.rootcentral.org" to "68.73.138.210"
- Dynamic vs. static IP addresses
- Finding a moving target -
dynamic DNS services & clients

Dynamic DNS Services

- Selecting a dynamic DNS provider
 - <http://www.technopagan.org/dynamic/>
- Subdomains - their domain vs. yours
 - e.g. "rootcentral.dyndns.org"
- Backup mail server
- Client software support

Firewall First!

- Don't put *anything* online without a firewall!
- Determine scope of protection
 - Periphery vs. on-server? Both?
 - DMZ?

Selecting a Firewall

- Base architecture
 - Packet filter vs. stateful inspection
- Features
- Hardware vs. software
- Software platform
- Ease of use is critical

Hardware vs. Software

- Hardware firewalls
 - Dedicated appliances
 - Built into routers
- Software firewalls
 - iptables / ipchains
 - Single-purpose Linux distros

Some Free Software Firewalls

- Freesco (runs from floppy)
 - <http://www.freesco.org>
- SmoothWall (terrific web interface)
 - [Http://www.smoothwall.org](http://www.smoothwall.org)
- IPCop (spun off from SmoothWall)
 - <http://www.ipcop.org>

Set Up Firewall

- Use NAT (network address translation) to translate private to public IP addresses and vice-versa.
- Allow access from the Internet to port 80 on web server. Use port forwarding if web server has a private address.

Set Up Web Server

- Use that old 386 / 486 / Pentium
 - CPU & memory affect compiling, graphic manipulation and encryption
- Choose a Linux distro
 - I prefer Debian for ease of installations and updates.

To RAID or Not to RAID

- Redundant array of independent disks
- Provides data protection from hardware failures (*not* mistakes)
- More drives, performance issues
- Hardware or software based
- Level – usually 1 (mirroring) or 5

Install and Secure Linux

- Install minimal system
- Get security updates
- Shut down unneeded services
 - Check inetd / xinetd config files
 - Use netstat to check for open ports
 - Use external port scanner service

Install Web Server Software

- HTTP daemon – Apache, tux, etc.
- Database engine – MySQL, PostgreSQL
- CGI Scripting language – Perl, PHP, Python, Ruby, Java
- I like Apache / MySQL / PHP!

Configure HTTP Daemon

- Apache
 - Set domain name, doc root, user/group
 - Deny all access to root directory
 - Specifically allow access to doc root
 - Tweak ExecCGI, symlinks, overrides
 - Disable indexes

Test Web Serving

- Test sample page in browser
- Troubleshoot any problems
- Common problems:
 - Apache config
 - File ownership / permissions
 - Firewall settings

Develop the Pages

- On the server using text-based tools
 - or more likely...
- On your [Windows | Linux] workstation w/ text or GUI tools
 - Upload using ftp, webdav, scp, etc.

Questions

