Beginning System Administration DeCal

Week 10 - Case Studies & Applications

April 27, 2009

Today

We've covered a lot of material from how to use the command line to setting up our own server from scratch. What's next?

- Case studies
- Server management
- Signing and encrypting mail with GnuPG
- ???

Server Management

Where to begin?

We've covered: what to do with a server, and how to do it.

What you were given: a server, operating system, bandwidth, ample amount of space, and the skills needed to take full advantage of them :)

What do you do now?

Server Management

Necessities

Briefly talked about in lecture 4 (or 5). You'll need:

- a server
- network connection
  - IP address (IPv4? IPv6?)
  - bandwidth
- operating system
- skills (you've got some of this)

If you're doing sysadmin work for a company, a department, or an organization, you may or may not have flexibility with the above.

Server Management

Server

Many different ways to acquire a server and make use of it; how much of it do you want to maintain? What do you need/want to use it for? (Sorted by increasing flexibility and costs)

- Shared hosting (shell access?)
- Virtual private server (VPS)
- Managed hosting
- Dedicated server
- Colocation

Server Management

Network connection

Things you need to consider:

- IP address (how many?)
- bandwidth
- domain names?

Again, depending on how you set up or acquire your server in most cases will affect how your network connection will be.

Server Management

Network connection (examples)

"Co-locate" your own server at home, using Comcast as your ISP.

Lease a VPS monthly and focus on rolling out applications or using it to provide redundancy for other services.

Others?

Server Management

Operating System

We've worked a bit with Solaris and Debian GNU/Linux. These operating systems are widely used, but there are a lot more in use. Evaluate each operating system, what it has to offer, and install it! Some common distributions:

- CentOS (Red Hat Enterprise Linux)
- Fedora (developed by Red Hat)
- Gentoo
- OpenSUSE
- Slackware
- Ubuntu

Server Management

Skills

You guys have learned a lot!

- Unique aspects of this class.
- There's still more to go!
- Other aspects and specialization: network management, email servers, network routing, database administration (DBA), distributed computing.

Remember to take advantage of all the resources available!

Next: Case Studies

Administrative Stuff

- 4/27: today's lecture + work day
- 5/4: last lecture + work day
- 5/11: project presentations (306 soda)
- Get any homework/labs in before 5/11!
- No new required homework/labs.

Case Studies

Introduction

One server, potentially many users. This certainly doesn't scale well. Limitations on:

- Redundancy
- CPU load
- I/O load
- Network connections
- Principle of least privilege

Case Studies

California Engineer

Case Studies

California Engineer

Open Computing Facility

Case Studies

California Engineer

Open Computing Facility

Residential Computing