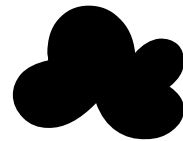# Servers in teh cloud

twetter/insta: @girlapalooza #devopsgirls

Why the cloud??

Meet my PC: LSP (Lumpy Space Princess)

-   7 years old
-   Created for gaming
-   Chucking fits

Hardware is in dire need of replacement.

# Solution 1: Upgrade my PC

# Solution 2: Rent a server



Google data center,
Lenoir, North Carolina

# Solution 2: Rent a server

EC2 (Amazon Elastic Compute Cloud) is a web service that provides resizable compute capacity in the cloud.

What can we customise?

- Different instance types and sizes (CPUs, memory, GPU)
- Storage (EBS vs. Ephemeral)
- Networking (Low or enhanced)
- Monitoring (On or off)

http://www.ec2instances.info/

# Solution 2: Rent a server


Amazon EC2

**G2 Double Extra Large**

- 15 GB RAM
- 8 CPUs
- 60 GB HDD
- Running Windows

Comes out to $0.70/hour

# Result

$950.00 or $0.70/h*

* Disregarding Australian internet speeds

# AMIs (Amazon Machine Images)

- The operating system your instance
- Eg. Ubuntu, CentOS, Microsoft Server 200X
- You can customise and package your own images
  - Eg. Package an Ubuntu image to run Wordpress on start up

How do I talk to my server?
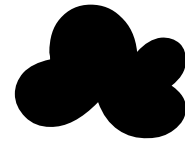
# Command Line
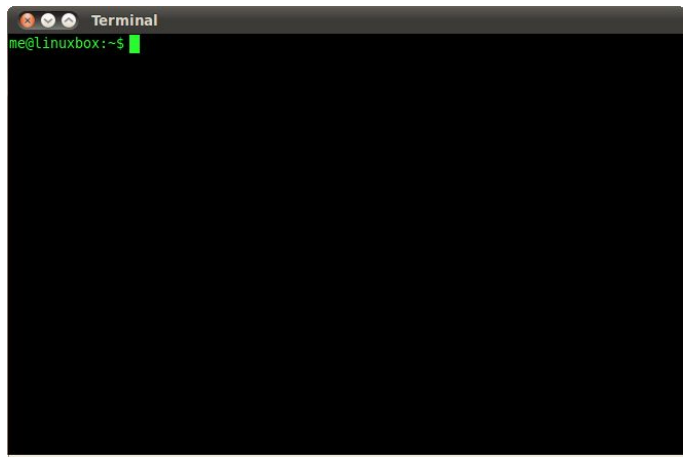


**cd \<directory\>**         Change directory

**ls \<directory|file\>**    List details

**sudo**                     Do as super user

**mkdir \<folder name\>**    Make directory

Windows users need to use PowerShell.

# SSH (Secure Shell) ☁
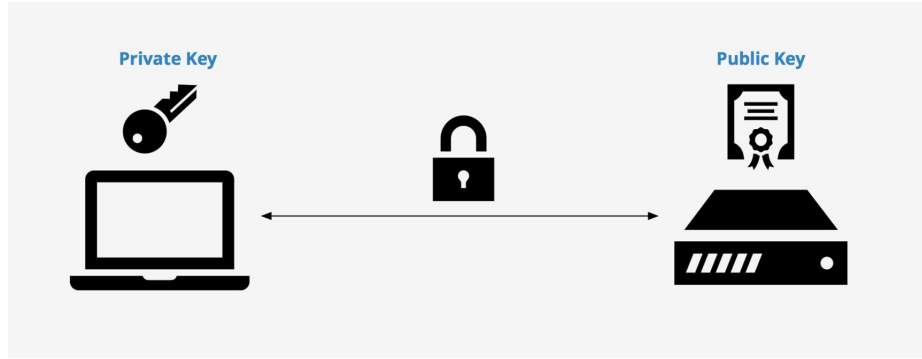


- A protocol that lets you securely communicate with a server via the web
  - Secure file transfer
  - Issue secure commands
- Comes with all Linux/Unix distributions (including Mac OS X)
  - You can SSH into your Android device using the SSHDroid app
  - You can install SSH on Windows (PuTTY)

# SSH ♣ Usage

- **sshd** is on the server that needs to be running
  - **d** stands for Daemon - listens for incoming SSH connections
- Configurable
  - ~/.ssh/configs

# SSH ♣ Authentication Methods

-   Password
-   Host-based authentication
-   **Public/private keypair**

# SSH ☁ Anatomy

username    destination    key pair file

ssh ubuntu@meow.com -i cat-key.pem

# SSH ♣ How key-pairs work?
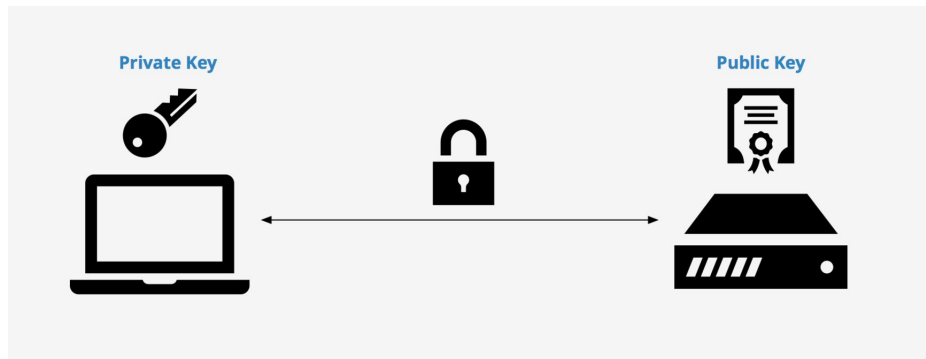


- Generate using **ssh-keygen** or the Amazon interface:
  - **id_rsa** (private key stored on client in ~/.ssh)
  - **id_rsa.pub** (public key stored on server in ~/.ssh/authorised_keys)

# Command Line: Scripting

```
sudo yum install -y php php-mysql mysql mysql-server httpd
```

**mysql**  database
**php**    programming language
**httpd**  apache server

# Command Line: Scripting

```
wget "https://wordpress.org/latest.tar.gz"

sudo tar xvfz latest.tar.gz -C /var/www/html/ --strip-components=1
wordpress

sudo chown -R apache /var/www/html/
```
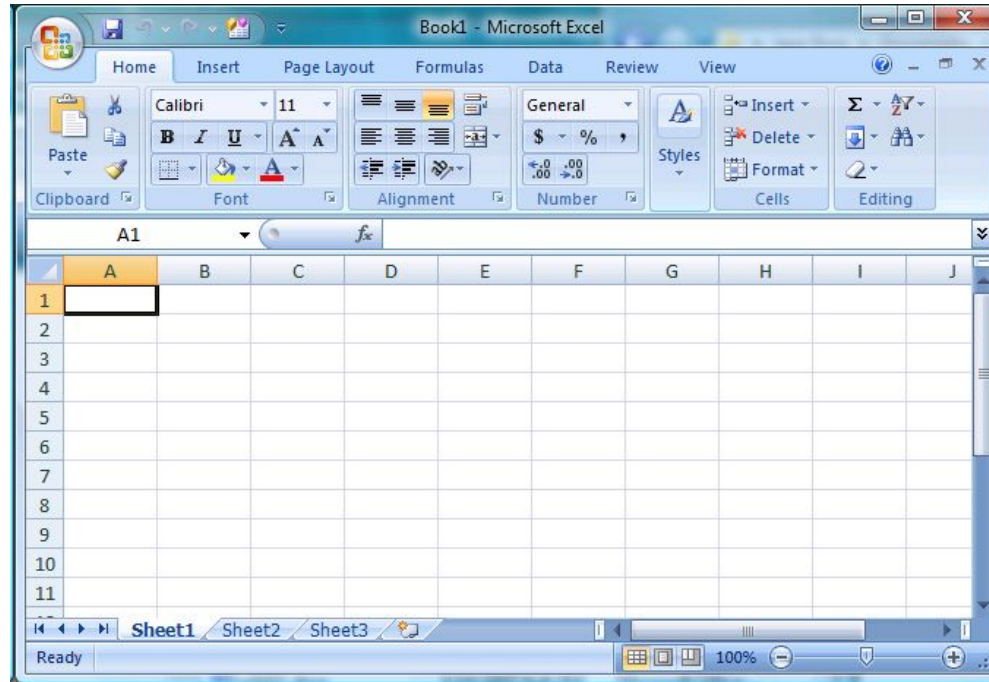
# Command Line: Scripting

```
sudo service httpd start

sudo service mysqld start
```

# Security Groups (Firewalls)



```
HTTP      80
HTTPS    443
SSH       22
```

# Database

# Database

```
mysql -u root -p

CREATE DATABASE cats_db;
GRANT ALL PRIVILEGES ON cats_db.* to 'mei'@'localhost' identified by
'sekret_password@xx9000';
FLUSH PRIVILEGES;
```

# What we're going to do

- **-** Generate SSH keypair
- - Launch an instance
- - Log onto an instance
- - Install and start a webserver
- - Provide some content
- - Security group updates

kweschunz?

@meiwengy