Free IT Athens' Web Infrastructure

FRITA/CHUGALUG Meeting
2016-02-03
BLFoley

Forensic Systems Administration

- Not a crime; definitely a mystery
- Timeline:

Dec 13		
Dec 16	Frita notices the website is weird	Communications with DreamHost Support
Dec 18	Everything breaks and is magically fixed	
Jan 3	Matt realizes that the timeclock (FOD) is misbehaving	
Jan 6	I realize Dec 13 is probably when FOD actually broke (maybe the website, too)	

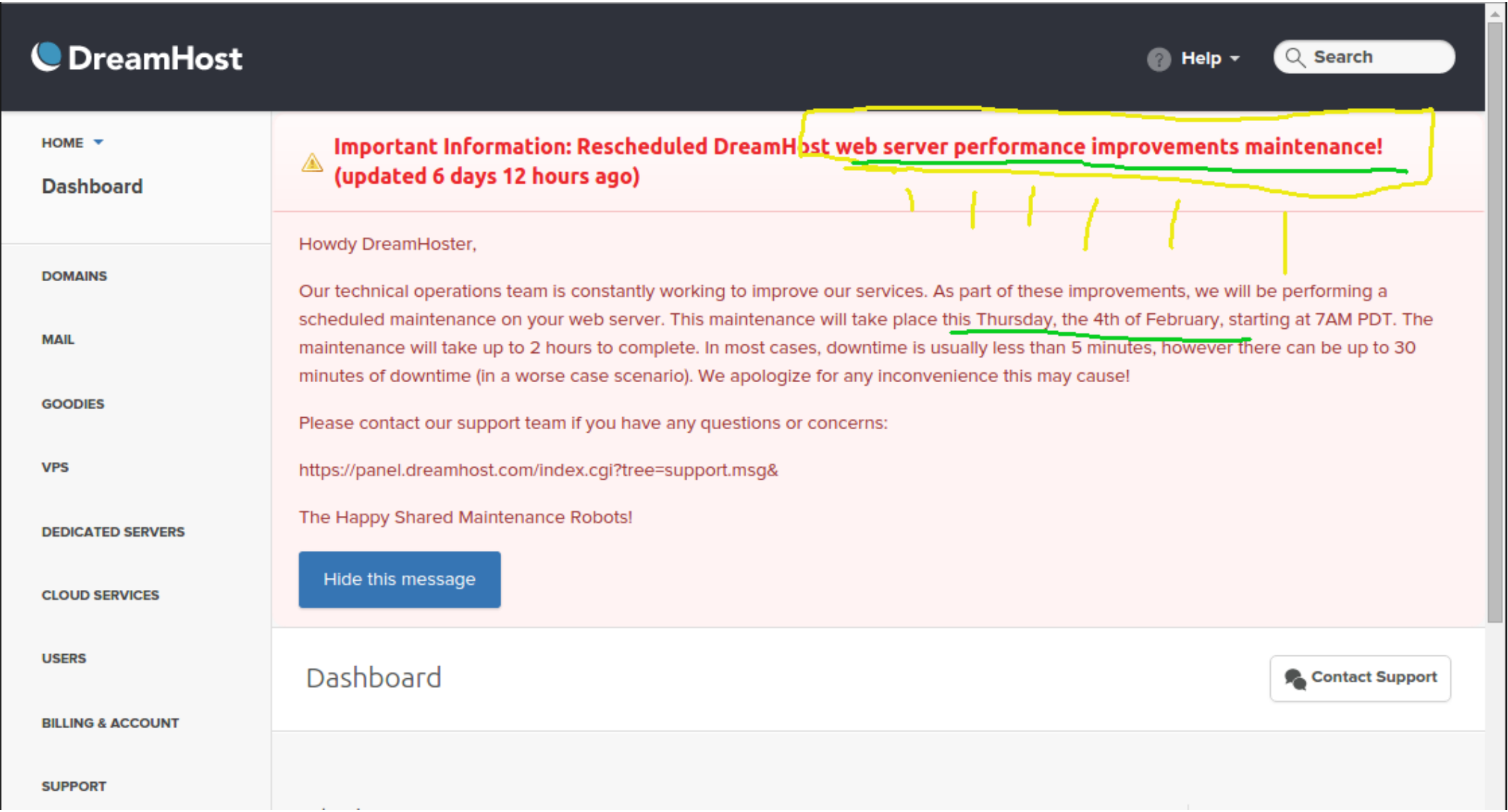
Sparse Documentation

- Login information for accounts
- Website addresses
- er.... that's about it

DreamHost

- Hosts FRITAs online applications:
  - Website (freeitathens.org)
  - Timeclock (records.freeitathens.org)
  - ...etc...

Prime Suspect



Best Guess Timeline

DreamHost does some upgrades, possibly in phases

Dec 13

Dec 16 — Frita notices the website is weird

DreamHost fixes something about the upgrades

Dec 18 — Everything breaks and the site is magically fixed

Jan 3 — Matt realizes that the timeclock (FOD) is misbehaving

Jan 6 — I realize Dec 13 is probably when FOD actually broke

Making Sense Of It All

- DreamHost is probably wonderful web-based
- But, I know the command line
- Here is FRITA's home directory:

```
[20:21:08] [freeitathens@evans ~]$ /bin/ls --color
1422548954671-1.jpg                          Help_Local
Admin                                        logs
Admin_help                                   Mail
Archive                                      Maildir
arindam_tmp                                  meetingnotescron.html
bin                                          mysql_backups
cron.log                                     mysql.nolie.freeitathenswp.1.mix.dump.db.sql
Debug                                        mysql.nolie.freeitathenswp.6.mix.dump.db.sql
development.freeitathens.org                 mysql.nolie.wordressdev_freeitathens.1.mix.dump.db.sql
development_freeitathens_org_fritadb_trac    Newfiles.tar.bz2
djangodev.freeitathens.org                   opt
Done                                         pos.freeitathens.org
downloads                                    railsdev.freeitathens.org
Dreamhost_htaccess_files.tar.gz              records.freeitathens.org
drupal.freeitathens.org                      src
freeitathens.org                             svn
freeitathens.org.bak.possibly.hacked         svn.freeitathens.org
freeitathens.org.off                         timeclock.freeitathens.org
freeitathens.org.old.worked.before.DB.upgrade usr
Frita_backups                                wordressdev.freeitathens.org
gruplcron.sql                                wordressdev.freeitathens.org.old
Grupl_daily_rpt.pl
[20:21:08] [freeitathens@evans ~]$
```

Cruft *n.*

1)Anything that is **left over**, **redundant** and **getting in the way**. It is used particularly for **superseded and unused** technical and electronic hardware and **useless, superfluous or dysfunctional elements in computer software**
https://en.wikipedia.org/wiki/Cruft

2)David Millians' favorite cussword.

Cruft Happens

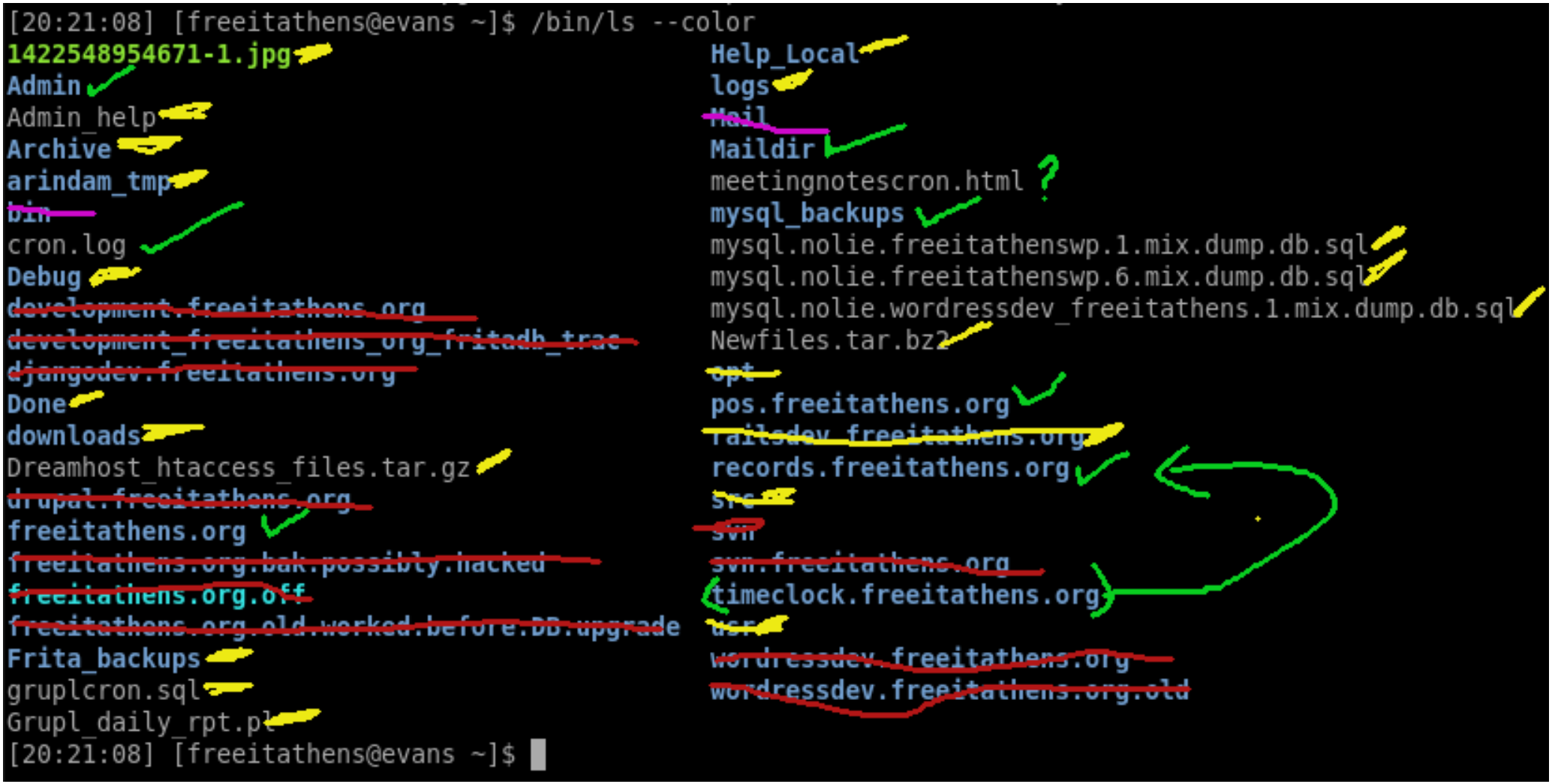
- Normal and understandable
  - Mostly from users who fear deleting something important because they don't know what is important
  - I made some myself...
- Makes figuring out what is important extra special difficult
  - Which directories are active?
  - What do they depend on?

Not So Elementary

```
[20:21:08] [freeitathens@evans ~]$ /bin/ls --color
1422548954671-1.jpg                        Help_Local
Admin                                      logs
Admin_help                                 Mail
Archive                                    Maildir
arindam_tmp                                meetingnotescron.html
bin                                        mysql_backups
cron.log                                   mysql.nolie.freeitathenswp.1.mix.dump.db.sql
Debug                                      mysql.nolie.freeitathenswp.6.mix.dump.db.sql
development.freeitathens.org               mysql.nolie.wordressdev_freeitathens.1.mix.dump.db.sql
development_freeitathens_org_fritadb_trac  Newfiles.tar.bz2
djangodev.freeitathens.org                 opt
Done                                       pos.freeitathens.org
downloads                                  railsdev.freeitathens.org
Dreamhost_htaccess_files.tar.gz            records.freeitathens.org
drupal.freeitathens.org                    src
freeitathens.org                           svn
freeitathens.org.bak.possibly.hacked       svn.freeitathens.org
freeitathens.org.off                       timeclock.freeitathens.org
freeitathens.org.old.worked.before.DB.upgrade  usr
Frita_backups                              wordressdev.freeitathens.org
gruplcron.sql                              wordressdev.freeitathens.org.old
Grupl_daily_rpt.pl
[20:21:08] [freeitathens@evans ~]$
```

Anyone got time on Watson?

Best Guesses



Red = dead yellow = not likely to be currently important, but maybe
Magenta = empty or mostly empty green = definitely in use

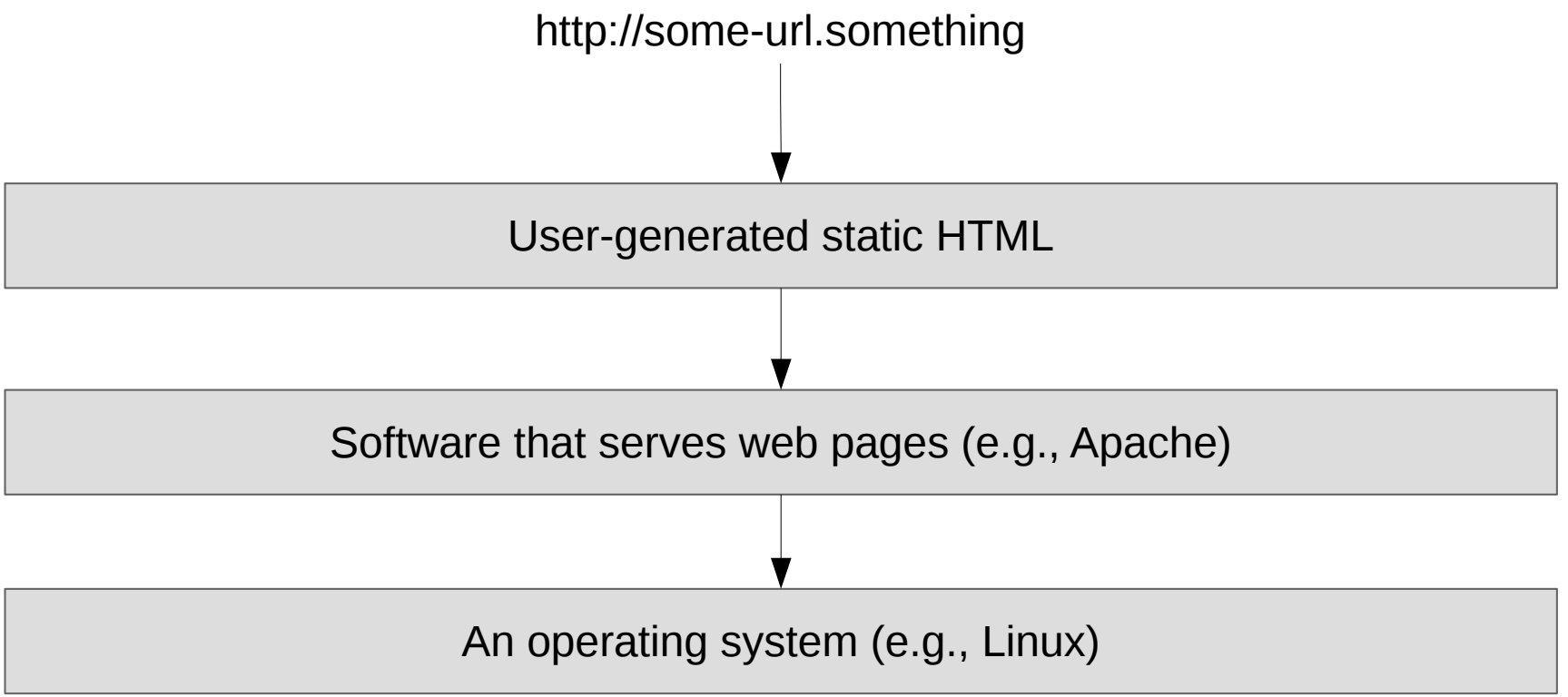
THE STACK

Solution Stack

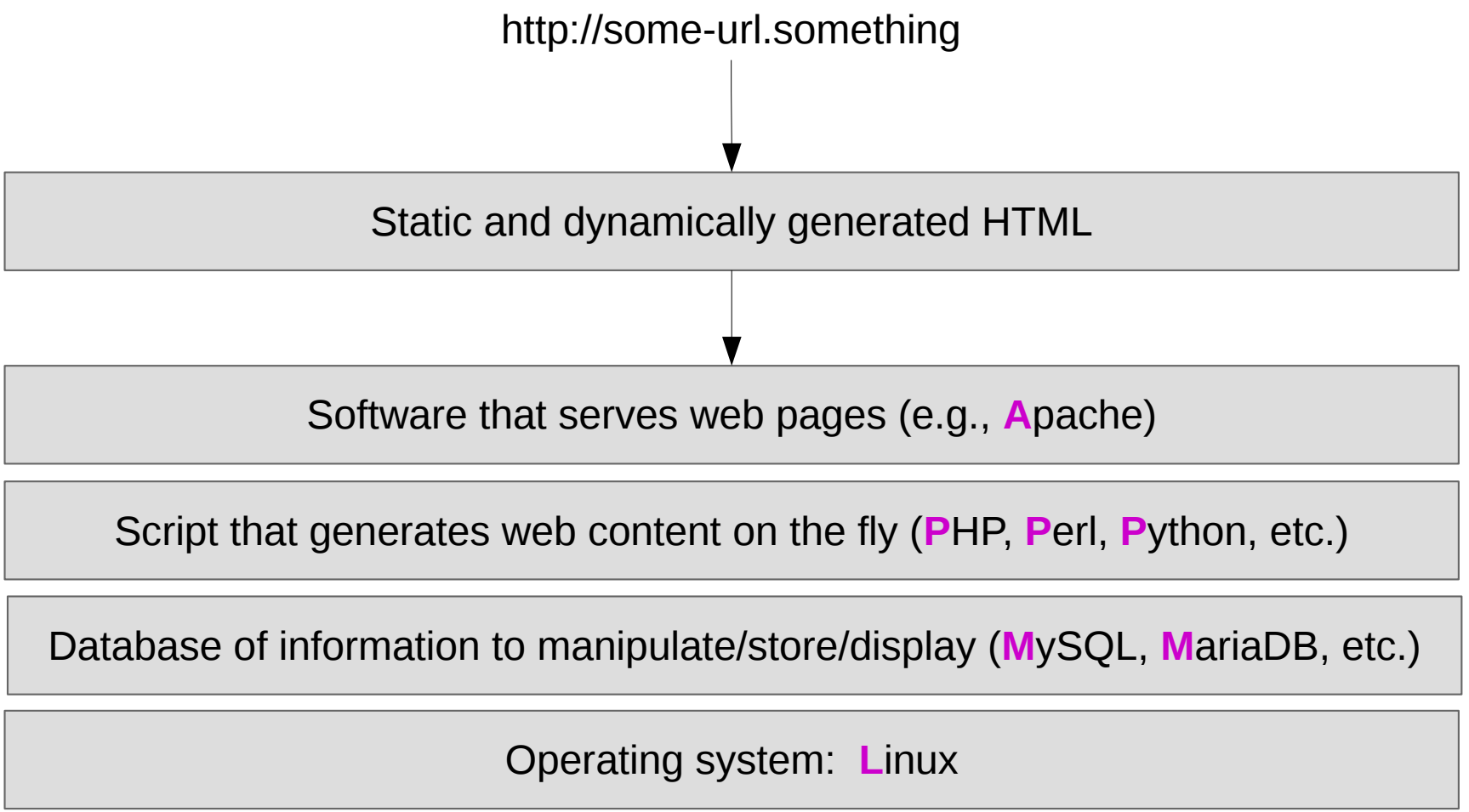
- In computing, a solution stack or software stack is a set of software subsystems or components needed to create a complete platform such that no additional software is needed to support applications. Applications are said to "run on" or "run on top of" the resulting platform.
- That is, it's the stuff you need to run the site
- FRITA's sites run “on top of” some sort of stack

https://en.wikipedia.org/wiki/Solution_stack

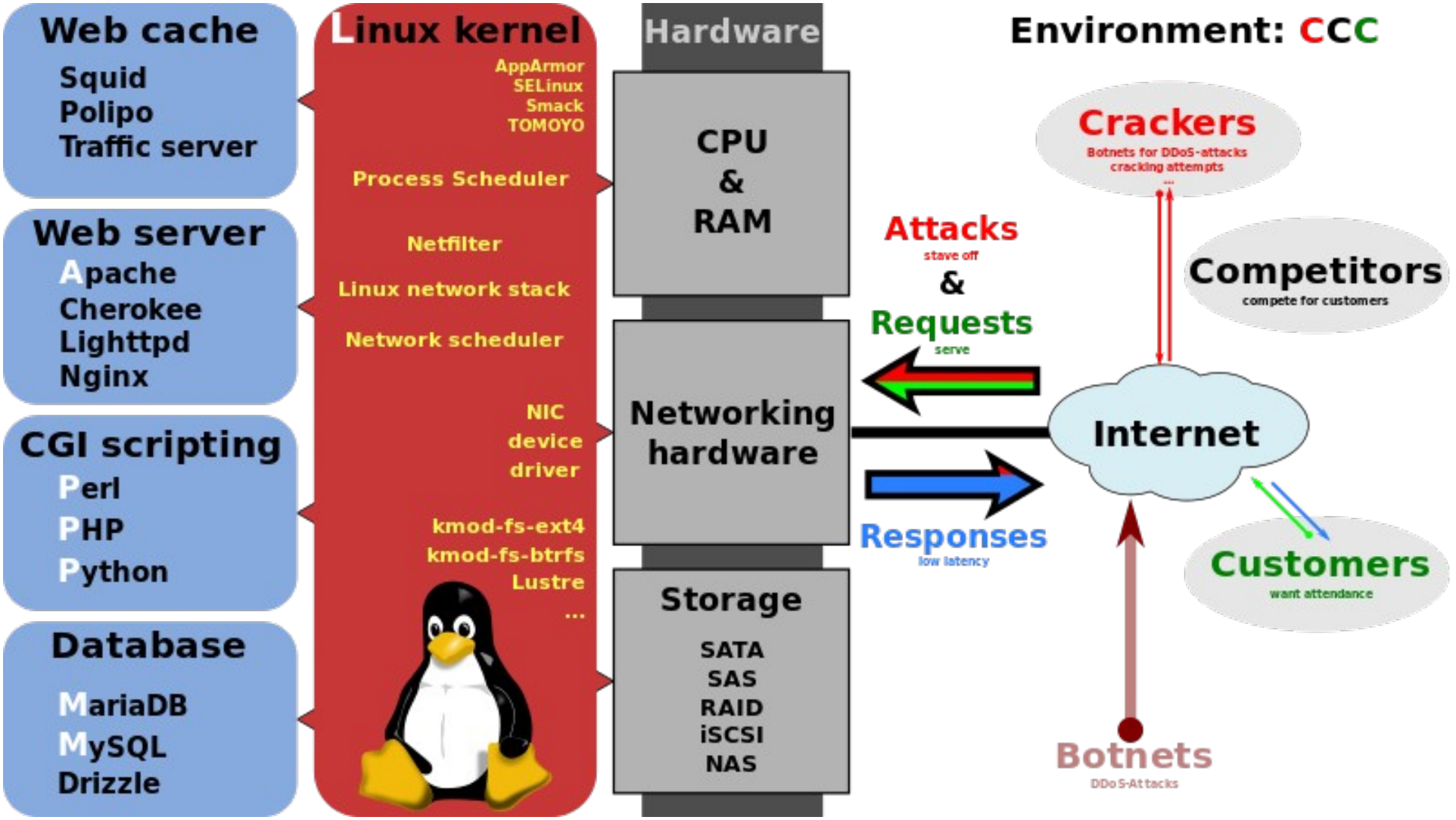
Simple Website Stack



LAMP Stack

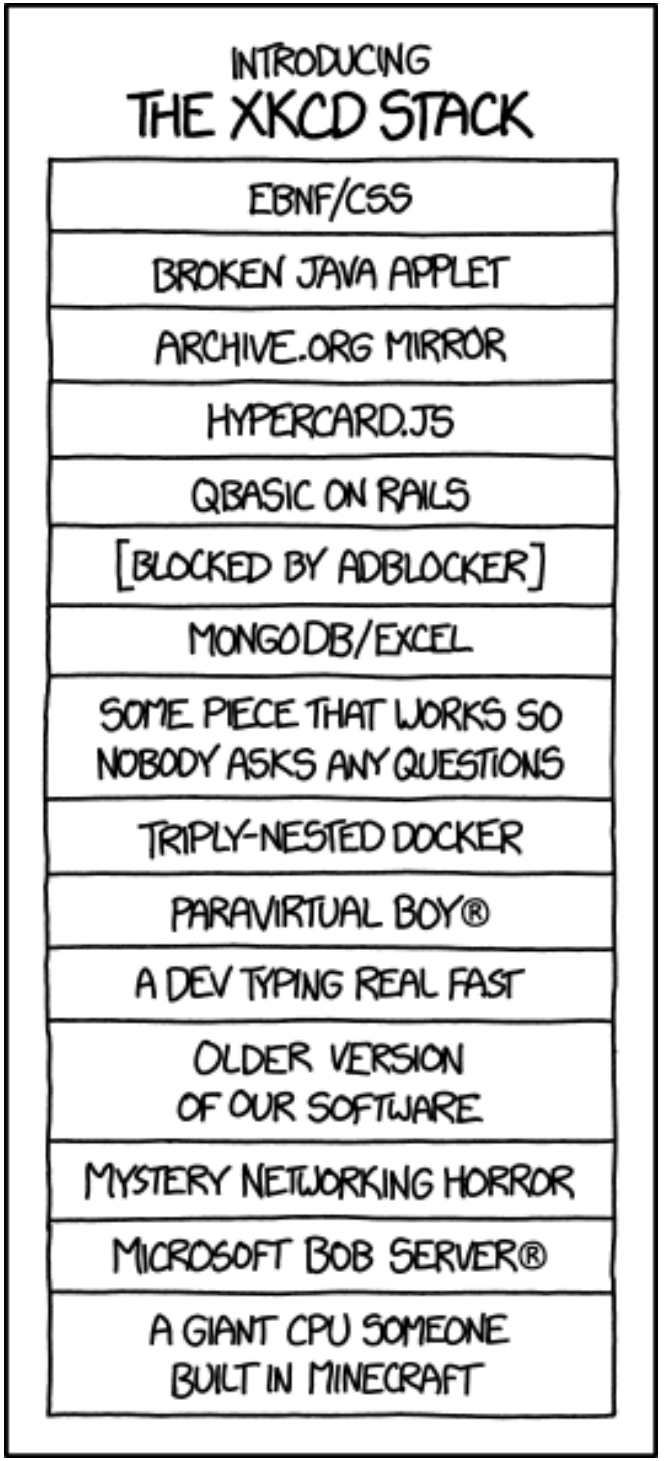

http://some-url.something
Static and dynamically generated HTML
Software that serves web pages (e.g., Apache)
Script that generates web content on the fly (PHP, Perl, Python, etc.)
Database of information to manipulate/store/display (MySQL, MariaDB, etc.)
Operating system: Linux

LAMP Stack In Context



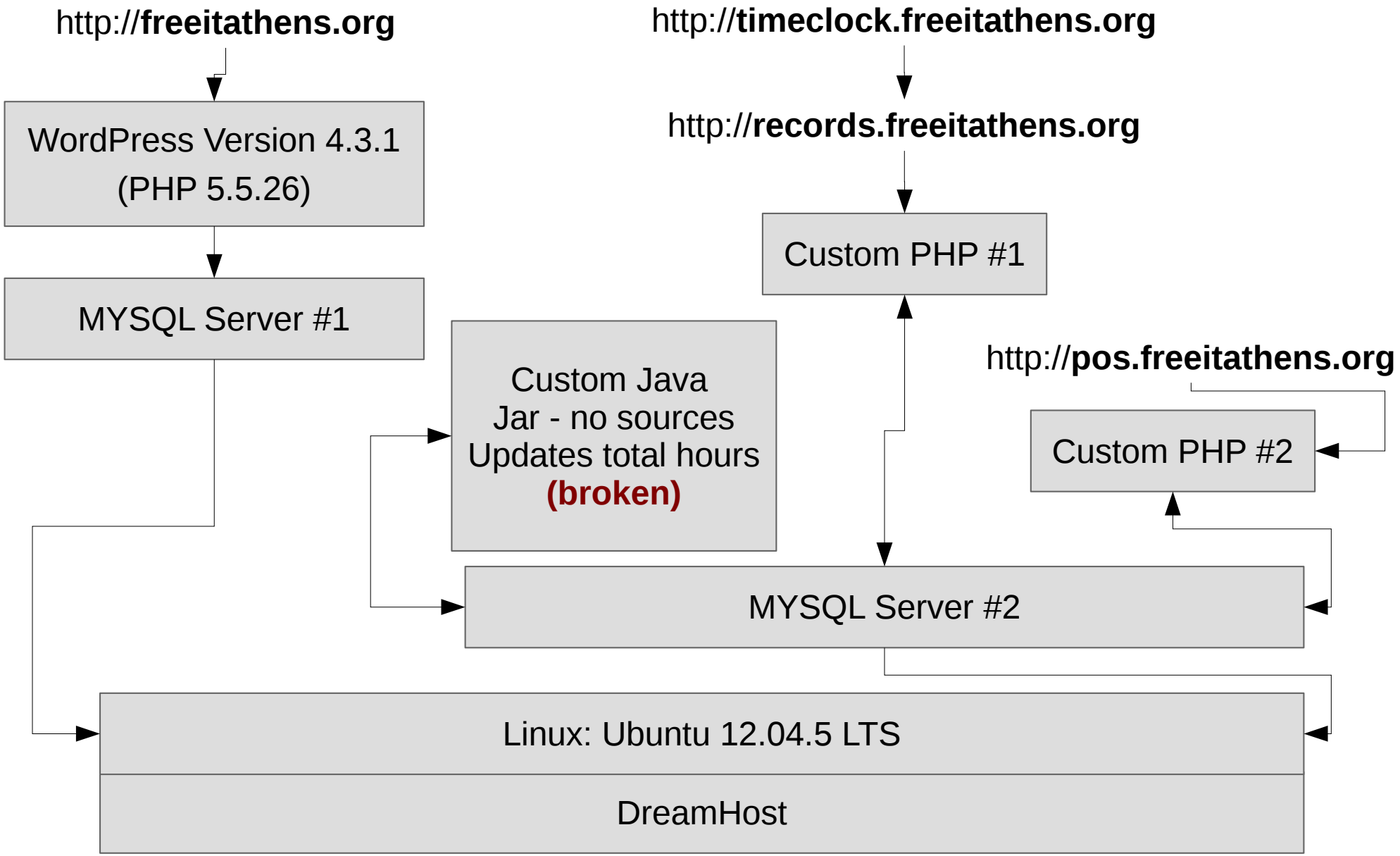
Focus here for this talk

https://en.wikipedia.org/wiki/LAMP_(software_bundle)

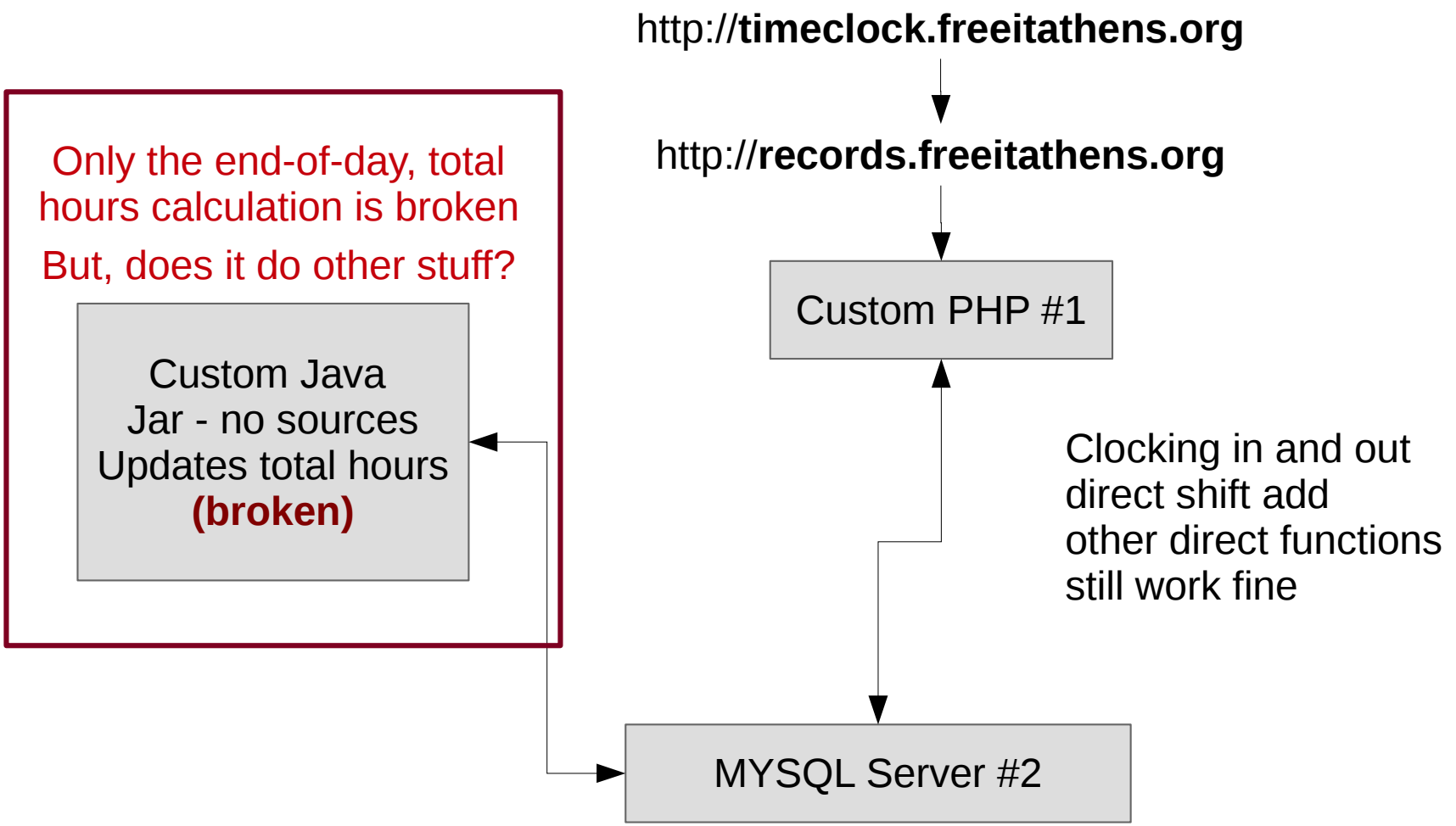


http://xkcd.com/1636/

The FRITA Stack



The Time Clock Basically Works



The Records Database

```
$ mysql -h [hostname] --database=[databasename] -u [username] -p
Enter password:
...
mysql> show tables;
+--------------------------------+
| Tables_in_fritaoperations      |
+--------------------------------+
| ClientVisits                   |
...
| Shifts                         |
| Timeclock                      |
...
| Volunteers                     |
| account_emailaddress           |
...
+--------------------------------+
50 rows in set (0.00 sec)

mysql>
```

The Timeclock Table

```
mysql> show columns from Timeclock;
+--------------+---------------------+------+-----+---------+----------------+
| Field        | Type                | Null | Key | Default | Extra          |
+--------------+---------------------+------+-----+---------+----------------+
| id           | bigint(20) unsigned | NO   | PRI | NULL    | auto_increment |
| volunteer_id | int(11) unsigned    | NO   | MUL | NULL    |                |
| time         | datetime            | NO   |     | NULL    |                |
| clockingIn   | tinyint(1)          | NO   |     | NULL    |                |
| activity     | varchar(45)         | YES  |     | NULL    |                |
+--------------+---------------------+------+-----+---------+----------------+
5 rows in set (0.00 sec)

mysql>
```

Clock-in and -out is working

```
mysql> Select * from Timeclock;
+-------+--------------+---------------------+------------
+-------------------------------+
| id    | volunteer_id | time                | clockingIn | activity
      |
+-------+--------------+---------------------+------------
+-------------------------------+
|     5 |            5 | 2012-09-10 13:02:55 |          1 | NULL
      |
|     6 |            5 | 2012-09-10 16:17:44 |          0 | Infrastructure and
Programming |

...

| 11773 |          403 | 2016-01-31 13:07:13 |          1 | NULL
      |
| 11774 |          404 | 2016-01-31 13:07:28 |          1 | NULL
      |
| 11775 |          397 | 2016-01-31 13:09:48 |          1 | NULL
      |
| 11776 |          379 | 2016-01-31 16:22:34 |          0 | Other
      |
+-------+--------------+---------------------+------------
+-------------------------------+
11764 rows in set (0.21 sec)

mysql>
```

0 = clocking out
1 = clocking in

Java isn't

```
$ java -jar
/home/freeitathens/records.freeitathens.org/cronjobs/timeclockCron/FRITARecordsCron.
jar
java.sql.SQLException: Unknown or incorrect time zone: 'America/New_York'
    at com.mysql.jdbc.SQLError.createSQLException(SQLError.java:1075)
    at com.mysql.jdbc.MysqlIO.checkErrorPacket(MysqlIO.java:3566)
    at com.mysql.jdbc.MysqlIO.checkErrorPacket(MysqlIO.java:3498)
    at com.mysql.jdbc.MysqlIO.sendCommand(MysqlIO.java:1959)
    at com.mysql.jdbc.MysqlIO.sqlQueryDirect(MysqlIO.java:2113)
    at com.mysql.jdbc.ConnectionImpl.execSQL(ConnectionImpl.java:2568)
    at
com.mysql.jdbc.PreparedStatement.executeInternal(PreparedStatement.java:2113)
    at com.mysql.jdbc.PreparedStatement.execute(PreparedStatement.java:1364)
    at FritaCron.EODTimeclock.main(EODTimeclock.java:115)
```

Not sure if it's worth fixing, and I can't easily tell what exactly it does.

If time: see site live