

# Drupal Database Selection

Tim Bell

6<sup>th</sup> June 2011

Database Futures Workshop



- CERN's web environment
- Introduction to Drupal
- Choices available
- Experience from the selection



- CERN web sites are for a variety of purposes and with a wide range of skill sets by web masters
  - Services
  - Departments
  - Projects
  - Personal / Clubs
- With over 10,000 web sites hosted at CERN, this is a huge audience to address
- Sites have diverse layouts
  - Navigation
  - Logos
  - Themes
- The ENTICE community of web masters was created
  - Attended by Department, experiment and DG communications teams
  - Selected Drupal as the base toolkit

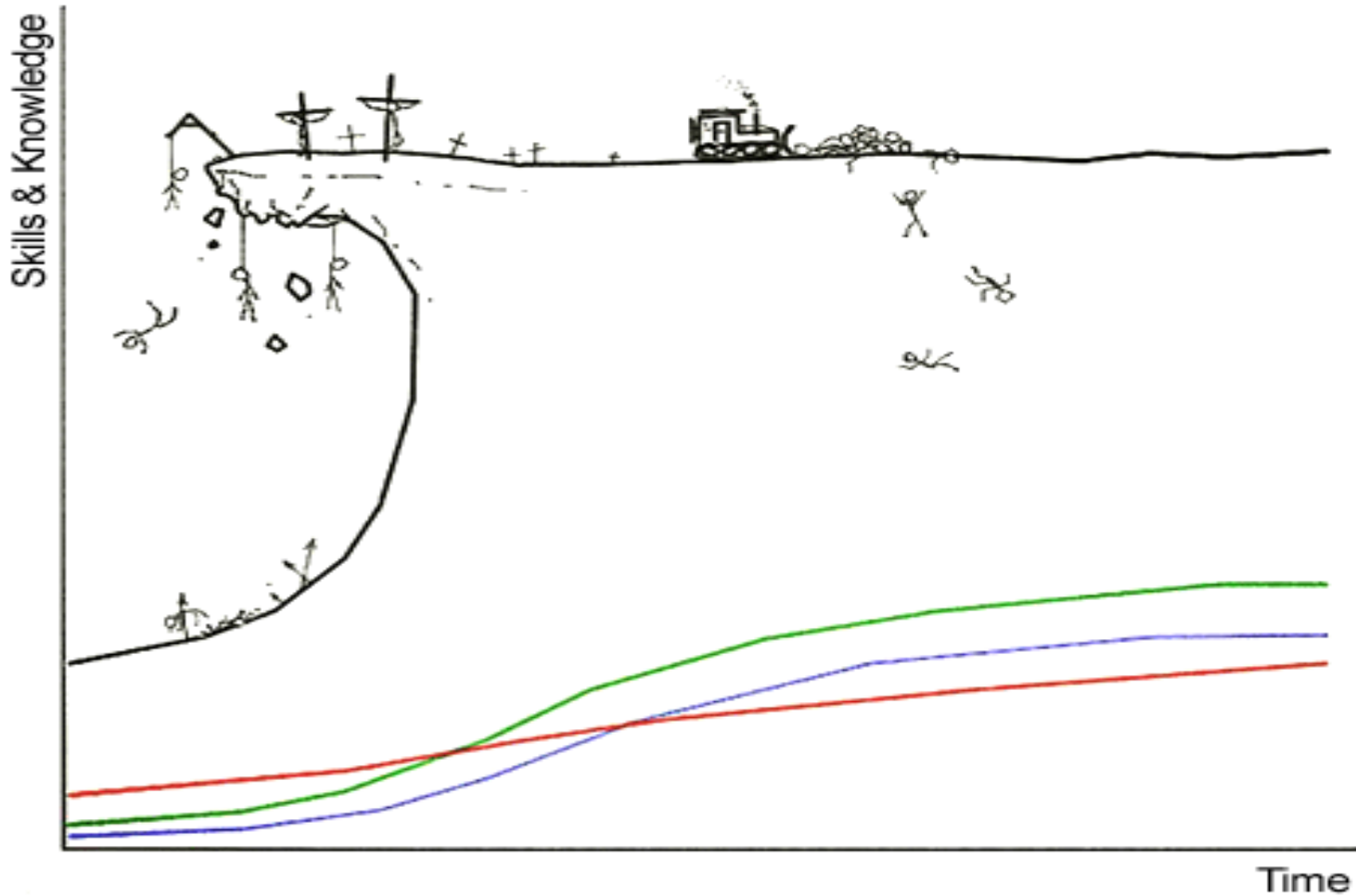


- Drupal is a sophisticated web based system to allow users to publish and manage their content
  - Open source
  - Community supported
  - Demonstrated at scale
  - Used on 1.5% of the world's web sites
- Lego kit approach
  - 7,000+ Custom modules
  - Blogs, Shops, News, Corporate Sites, ...
- Examples
  - <http://www.whitehouse.gov/>
  - <http://www.bbc.co.uk/>
  - More at <http://drupal.org/cases>



- The Drupal service took an alternative approach to how to provide functionality for end users
- Strong separation between infrastructure and content
  - IT runs and supports the infrastructure only
    - Web services
    - Database
    - Security
    - Backup
    - Monitoring
  - The ENTICE community builds on this to provide content
    - CERN Themes
    - CERN Modules such as Indico feeds, Phonebook blocks, CDS Integration
    - Content managers share FAQs and assist each other
- Major dependency on the Internet community at [drupal.org](http://drupal.org)

### Learning curve for popular CMS



- ModX
- Joomla!
- Wordpress
- Drupal

*Drupal Database Selection*





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**Exhibit by ALICE artist supports Sendai Earthquake relief efforts**

Quarks, Black Holes, CERN & its surroundings was the title of the art exhibition by ALICE physicist Jan Hladky, which was on display in the CERN main building earlier this month.

**More News**
[Postdoc position available at Lund University](#)
[Notice of ACAT 2011 Workshop](#)


**Highlights****School children visit ALICE as they learn about scientific method**

Local school pupils have been visiting ALICE - and learning what goes on at CERN - as part of a scheme to introduce children to the principles of the scientific method.

**News from the run**

After a successful period of tests and calibrations in April, ALICE started taking data with minimum bias trigger at 3.5 TeV on 25 April. The LHC delivered stable beams up to 3 May and ALICE collected more than 200 million events.

**ALICE getting ready for Quark Matter**

During the last weeks, the rhythm of the lives of many ALICE members has been set by preparations for Quark Matter 2011, the 22nd International Conference on Ultra-Relativistic Nucleus-Nucleus Collisions.

**Features and Editorials**
[Exhibit by ALICE artist supports Sendai Earthquake relief efforts](#)
[Focus On: Sabyasachi Siddhanta](#)

## ANGELS & DEMONS

the science behind the story

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### Videos

In *Angels & Demons* Tom Hanks plays Harvard academic Robert Langdon, who discovers evidence of the resurgence of an ancient secret brotherhood called the Illuminati - the most powerful underground organization in history.

When Langdon finds evidence that the Illuminati have stolen antimatter from a secret laboratory at CERN, which they plan to use as a devastating weapon to destroy the Vatican, he and CERN scientist Vittoria Vetra begin a race against time to recover the antimatter and prevent catastrophe.

But what is antimatter? Is it real? Is it dangerous? What is CERN?

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## Could this be real?

PAULINE GAGNON, 31 MAY 2011

On Monday, April 4th, the CDF collaboration from Fermilab released a new paper, announcing they were seeing "something". Read "something" as in unexpected, unusual, beyond anything known. Exactly what every experimental physicist hopes for! This news made headlines and spread through the High Energy Physics community faster than gossip. This is very exciting, and if it turns out to be real, it'd be the biggest discovery in many decades!

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## From pico to femto

PAULINE GAGNON, 27 APR 2011

By the most radiant sunny Easter Sunday, sixteen of us are in the ATLAS control room, keeping an eye on several dozens computer screens while the Large Hadron Collider (LHC) is breaking one record after another.

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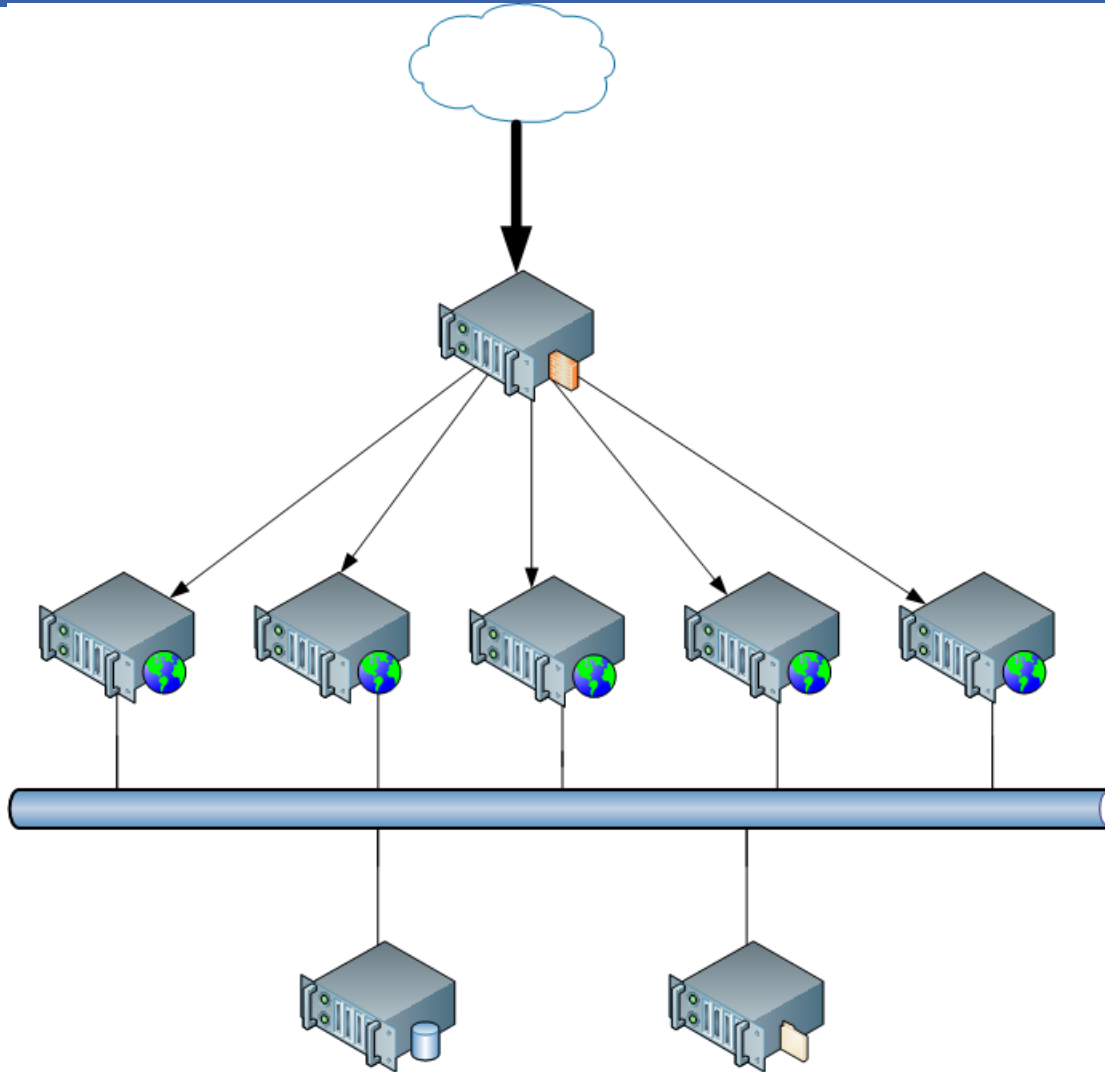
## Featured contributors



*Rolf Heuer, Director General of CERN*



*Pauline Gagnon, ATLAS*



Front end:  
proxy,  
web servers

Back end:  
file,  
database,  
NFS,  
ldap servers

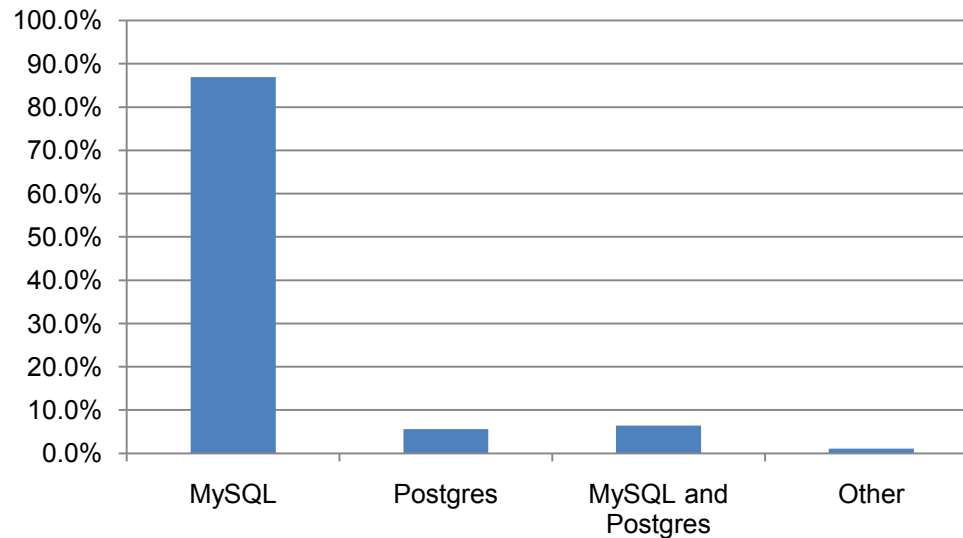


- Provides the storage of
  - Web site configuration settings
  - Most of the content other than static files
- Requirements
  - High availability for 24x7 data delivery
  - Robust as it will contain CERN's institutional content
  - Performance under high load such as First beam day
  - Primarily read-only access with limited need for transactions
    - Write by content managers and 'comments'



- Drupal 6 came with MySQL in the core code
  - Modules could access the database directly
  - ... the brave could use others
- MySQL dominated usage

Drupal 6 Database Share

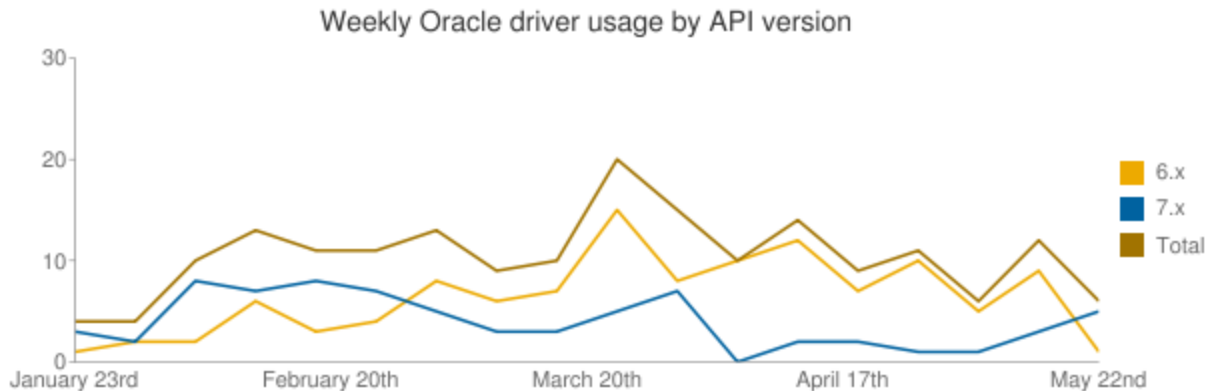
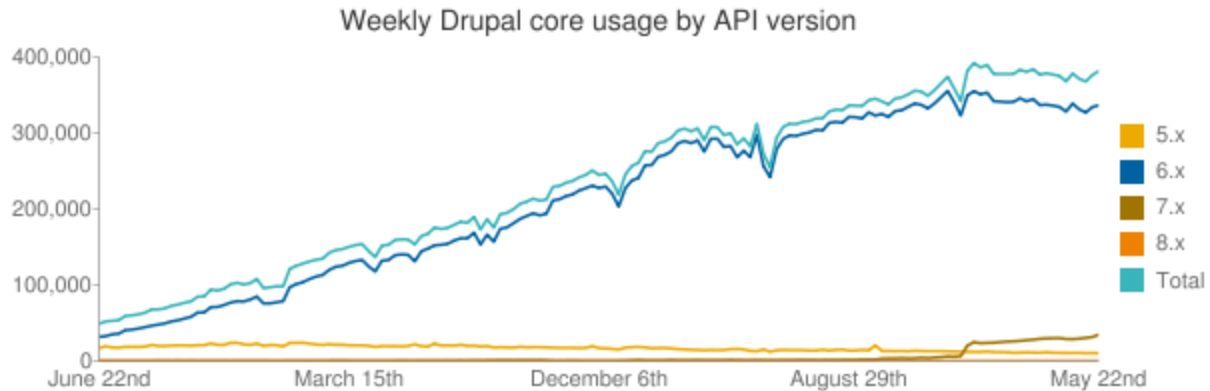




- Drupal 7 has a database abstraction layer
  - Released in December 2010
  - Direct DB access still possible but discouraged
  - MySQL and Postgres implementations included in the core code
  - Oracle and MS/SQL code contributed by the community
- MySQL continues to dominate deployments



- Only 12 of 350,000 sites use Oracle today



- Selection was a balance between
  - Following the default configuration (i.e. MySQL)
  - Using CERN standard services (i.e. Oracle)
- Concerns that
  - Modules may not be coded to portability layer
  - Internet modules only tested on MySQL
  - We'd have to prove it was not an Oracle problem
- Example issues reported with Oracle
  - Reserved words
  - Maximum length of constraint names
- MySQL was selected



- CERN Drupal Infrastructure is now in production
  - Kick off in October, Production in June
  - MySQL database run by IT/DB
- Drupal.org 7 core and modules stabilising
  - Many modules still in beta
  - Content managers are on the learning curve
- Database choice has been the right one
  - Supporting rapid changes needs confidence in testing
  - Database has run smoothly during pilot and production





- ENTICE
  - <http://entice.web.cern.ch>
- Drupal
  - <http://drupal.org>
- Sample sites on CERN Infrastructure
  - <http://alicematters.web.cern.ch>
  - <http://blogs.web.cern.ch>
  - <http://android.web.cern.ch>