SeedMeLab

http://SeedMeLab.org

Creating data centric websites for researchers and research projects

SeedMeLab

http://SeedMeLab.org

Share…

Manage…

Search…

Visualize…

…data, *as never before!*

SeedMe: Stream **e**ncode **e**xplore and **d**isseminate **M**y **e**xperiments

Cloud drives: Cloud hosted solutions such as dropbox, onedrive, etc.

CMS: Content management system

DAM: Digital asset management

Consumable data

- Useful at a glance

- Can be handled by stock web browser

- Displayable on many devices (Phone – PC)

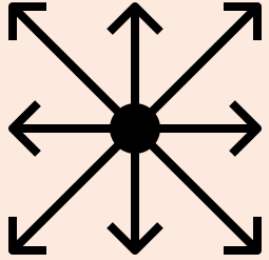**Hot data:** High value data at a given time

Data creation ^{n}

Data use/reuse ++

Research teams +

Trends

- Data doubling every year
- Sprawling data governance issues
- Open data and FAIR data mandates by Government & Sponsors

Lack of powerful and rich data management solutions

Problem

Information dispersion
- Scattered data and its context leads to content fragmentation and poor information/knowledge retention
- Painful to maintain and enforce qualitative controls

Weak presentation
- Data presented without context makes its consumption difficult

Dark data
- Lack of context makes data harder to search/find, its essentially lost from a practical standpoint
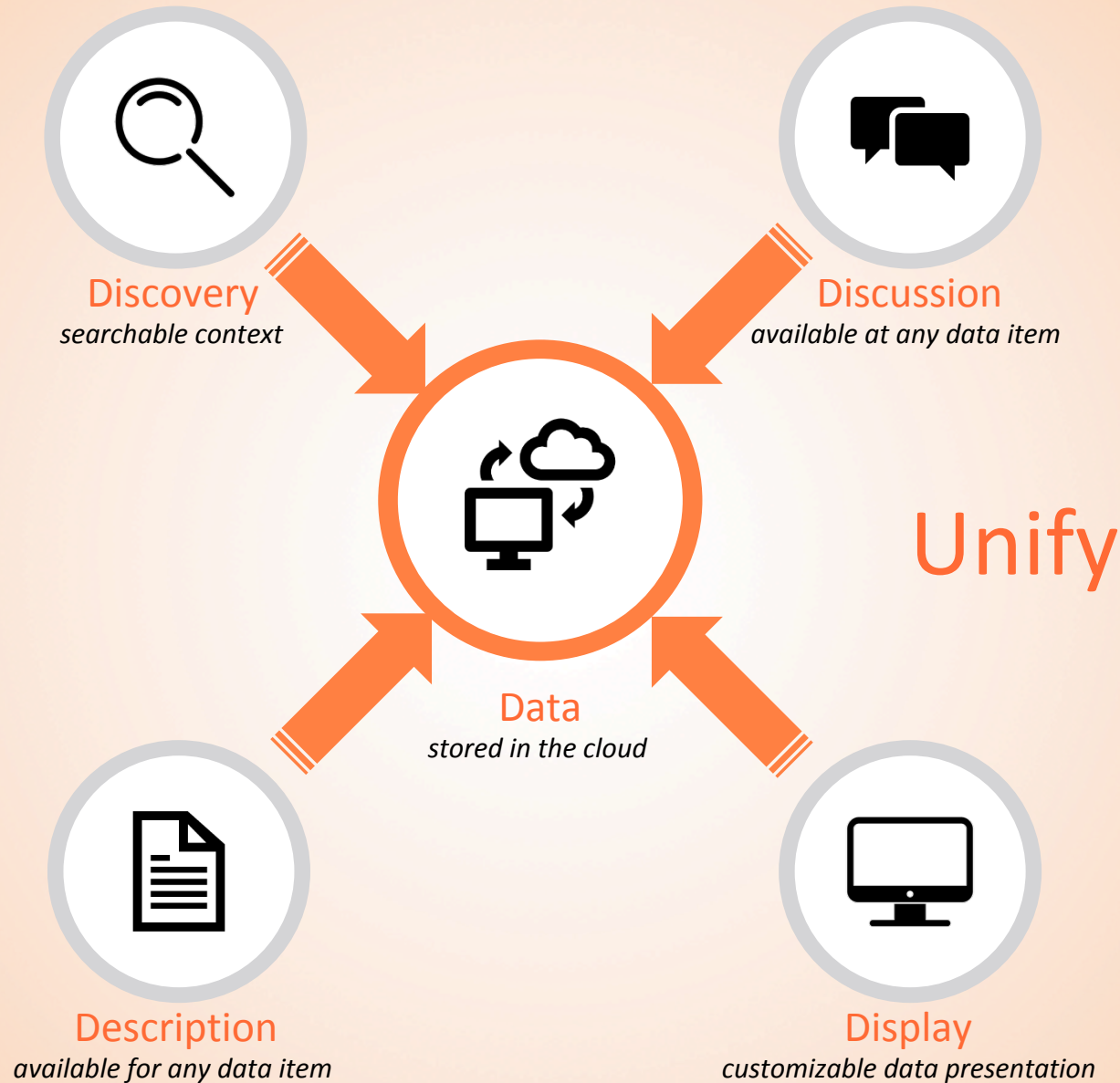- Most people cannot find their own data

Usual stumbling blocks

Access control

Collaboration

Storage

Transfer

Automation

Discovery
searchable context

Discussion
available at any data item

Unify

Data
stored in the cloud

Description
available for any data item

Display
customizable data presentation

A branded data hub for your team and collaborators to accelerate productivity and retain context for the future.

Features

Designed for researchers
Streamline and make your data more valuable. Accelerate your research with improved efficiency.

Organize and share data
Organize data as familiar folders/files and easily share it privately with collaborators or make it public.

Deep context
Add context to any data item and discuss it via a simple commenting system, which serves as an excellent resource when writing research articles.

Rich metadata
Add relevant fields along with your data for quick and easy reviewing, filtering, and searching.

Visualize and present
Present your data in a consumable form via automatic visualizations and rich formatted text that supports scientific notation.

Extend your brand
Add distinction to your brand and data by including a custom domain name, logo, and layout when using the platform as your website.
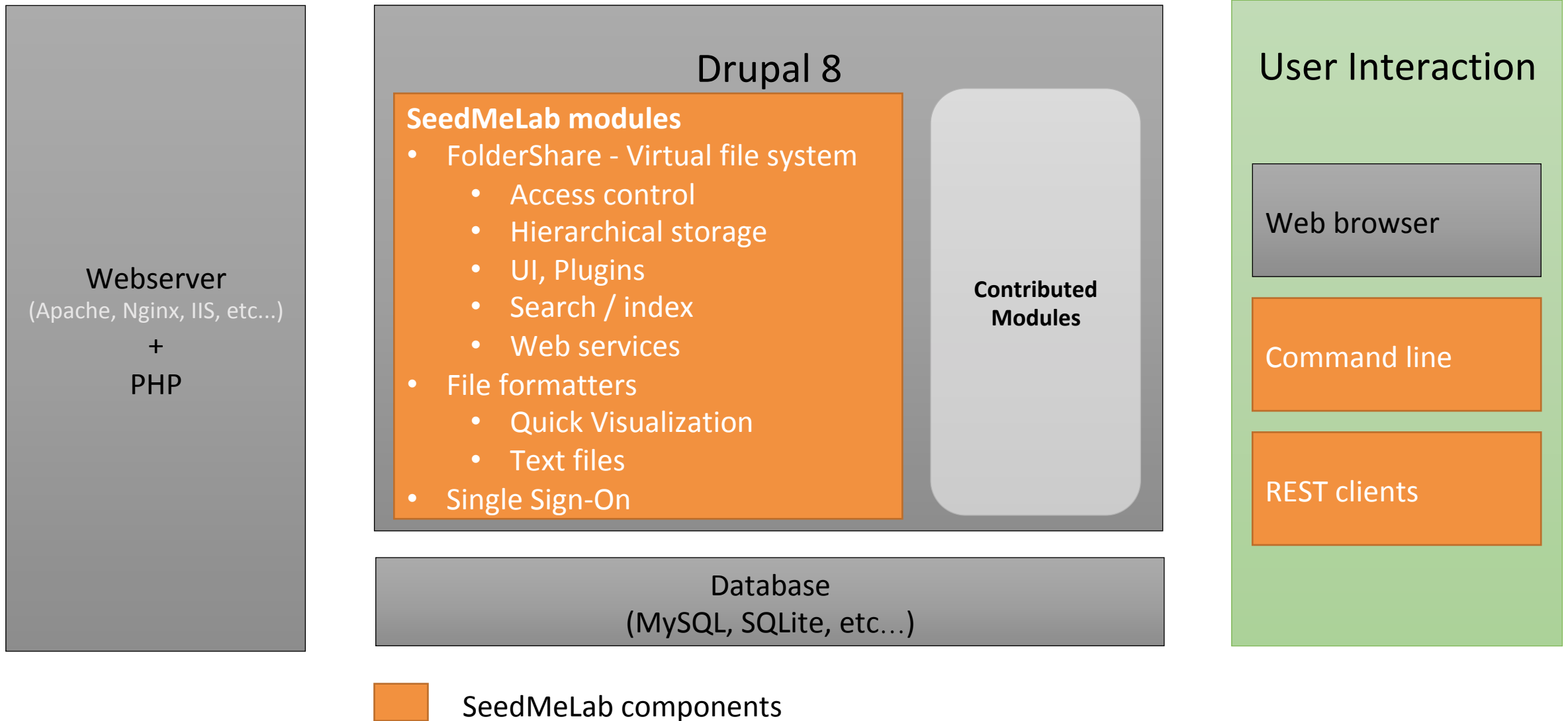
Integrate
Automate your data flow with our API.

Versatile access
Access your data on phone, desktop or supercomputer.

SeedMeLab Architecture

Webserver
(Apache, Nginx, IIS, etc…)

\+

PHP

Drupal 8

SeedMeLab modules

- FolderShare - Virtual file system
  - Access control
  - Hierarchical storage
  - UI, Plugins
  - Search / index
  - Web services
- File formatters
  - Quick Visualization
  - Text files
- Single Sign-On

Contributed Modules

Database
(MySQL, SQLite, etc…)

User Interaction

Web browser

Command line

REST clients

SeedMeLab components

Drupal - Content Management System

Large ecosystem
Battle tested

Modular &
Extensible
drupal.org/modules

Periodic updates

Extensive
Support
drupal.org/drupal-services

Open source
Versatile deployment options

Drupal 8
- Used by significant number of large and complex websites
- 2200+ modules with security advisory
- 160+ themes with security advisory
- 3,000+ contributors from 1200+ companies
- Periodic updates (1st and 3rd Wednesday of month) + Roadmap
- 1000+ Drupal service providers

Who uses Drupal?

drupal.com/showcases

Academia

Columbia
Duke
MIT   500-1000 Drupal sites
GaTech   in many universities
Princeton
UC Boulder
...

Government

DOE websites
Mass.gov
NASA
Unicef
USDoT
Whitehouse.gov
...

Industry

AMD
Johnson & Johnson
IBM
Pfizer
Nasdaq
The Weather Channel
...

Competitive Landscape

SeedMeLab	Features	Competitors
Arbitrary data and metadata	**Focus**	Arbitrary data
Read and/or Write	**Sharing**	Read and/or Write
Tree	**Organization hierarchy**	Tree
Yes	**Expandable metadata**	No
Yes	**Data Description**	For text documents only
Yes	**Data Discussion**	For text documents only
Automatic for CSV & JSON files	**Visualization**	No
Customizable	**Branding & layout**	Fixed
Yes	**Expandable as a website**	No
On-premise or Cloud	**Hosting options**	Central
Yes	**Open Source**	No

Product

Side-by-Side Comparison

Google Drive

SeedMe

Relativistic Laser-Plasma Simulation Group

| DATA | MY ACCOUNT | LOG OUT |

Home » Pers...

Custom branding & domain

Coulomb Implosion
Owned by you

Name	Modified	Owner	Size
📁 Total electric field	Mon, 01/28/2019 - 14:10	John Doe	25.65 MB
Snapshots of the total electric field $E = \sqrt{E_x^2 + E_y^2}$. The color-coding is			
📁 s_n_e	Mon, 01/28/2019 - 14:26	John Doe	6.90 MB
Snapshots of the electron density. The color-coding is n_e in 1/m3.			
📄 OpenGL mesh memory use.csv	Mon, 01/28/2019 - 14:10	Carl Smith	1.30 KB
Bench mark of OpenGL performance			
📄 input.deck	Mon, 01/28/2019 - 14:10	Carl Smith	4.35 KB
Input parameters used in this simulation			
📄 E_tot_0011.png	Mon, 01/28/2019 - 14:10	Carl Smith	719.40 KB
Snapshot of final total energy			

5 items | Image slideshow

PIC simulations of a rectangular plasma with a cavity irradiated by 4 laser pulses.

$\lambda = 1\ \mu$m - laser wavelength;

$I = 5 \times 10^{18}$ watt/cm^2 - peak intensity of each laser pulse;

$n_e = n_i = 30 n_{crit}$ - initial electron and ion densities;

$R = 60$ nm - radius of the cavity;

cell size is 2 nm by 2 nm; 20 electron macro-particles and 20 ion macro-particles per cell;

Laser electric field is in the plane of the simulation;

Each pulse is $\Delta t = 20$ fs long, with the field envelope given by $(1 - \cos(2\pi t/\Delta t))/2$.

Product

Side-by-Side Comparison

Google Drive

SeedMe

Description on any item

Product

Side-by-Side Comparison

Google Drive

Search Drive

My Drive > Coulomb Implosion

Name ↓		Owner	Last modified
📁	Total electric field	me	2:24 PM me
📁	s_n_e	me	2:27 PM me
📄	OpenGL mesh memory use.csv	me	2:24 PM me
📄	input.deck	me	2:24 PM me
🖼	E_tot_0011.png	me	2:24 PM me

SeedMe

Relativistic Laser-Plasma Simulation Group

Search...

DATA	MY ACCOUNT	LOG OUT

Home » Personal files

Coulomb Implosion
Owned by you

Search folder...

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ns | Image slideshow

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e;

20 ion macro-particles per cell;

en by $(1 - \cos(2\pi t/\Delta t))/2$.

FolderShare comments

Submitted by Carl Smith on Mon, 01/28/2019 - 14:13

Permalink

OpenGL benchmark

I have added the results from OpenGL benchmarks

🖉 Edit   💬 Reply

Discussion on any item

Product

Side-by-Side Comparison

Use cases

Research group hub

- Strengthen your brand with your data
- Use as collaboration hub
- Use for data management plan
- **Example: Laser Plasma Lab @ UCSD**

Community hub

- Community customization for metadata, workflows and data management
- **Example: FlowGate project @ J. Craig Venter Institute**

Application data hub

- Integrate applications to share demonstration data, test datasets and highlighted content
- Make cloud available for user contribution
- Data publishing
- **Example: CIPRES Gateway, GenApp Gateway**

Cyberinfrastructure services at campus

- Provide SeedMeLab at your campus
- **Example: UC Boulder, Univ of Nebraska Lincoln**

SeedMeLab Team

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