CERN Document Server Software

1) Context
2) Interoperability
3) Submission
4) Search
5) Preservation

CERN, OAI3 Workshop, Geneva

Once upon
~ time …

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AJOR
ANGES

1 - 9
Dec. 1

3- Open Archive Initiative is launched (in 1999)

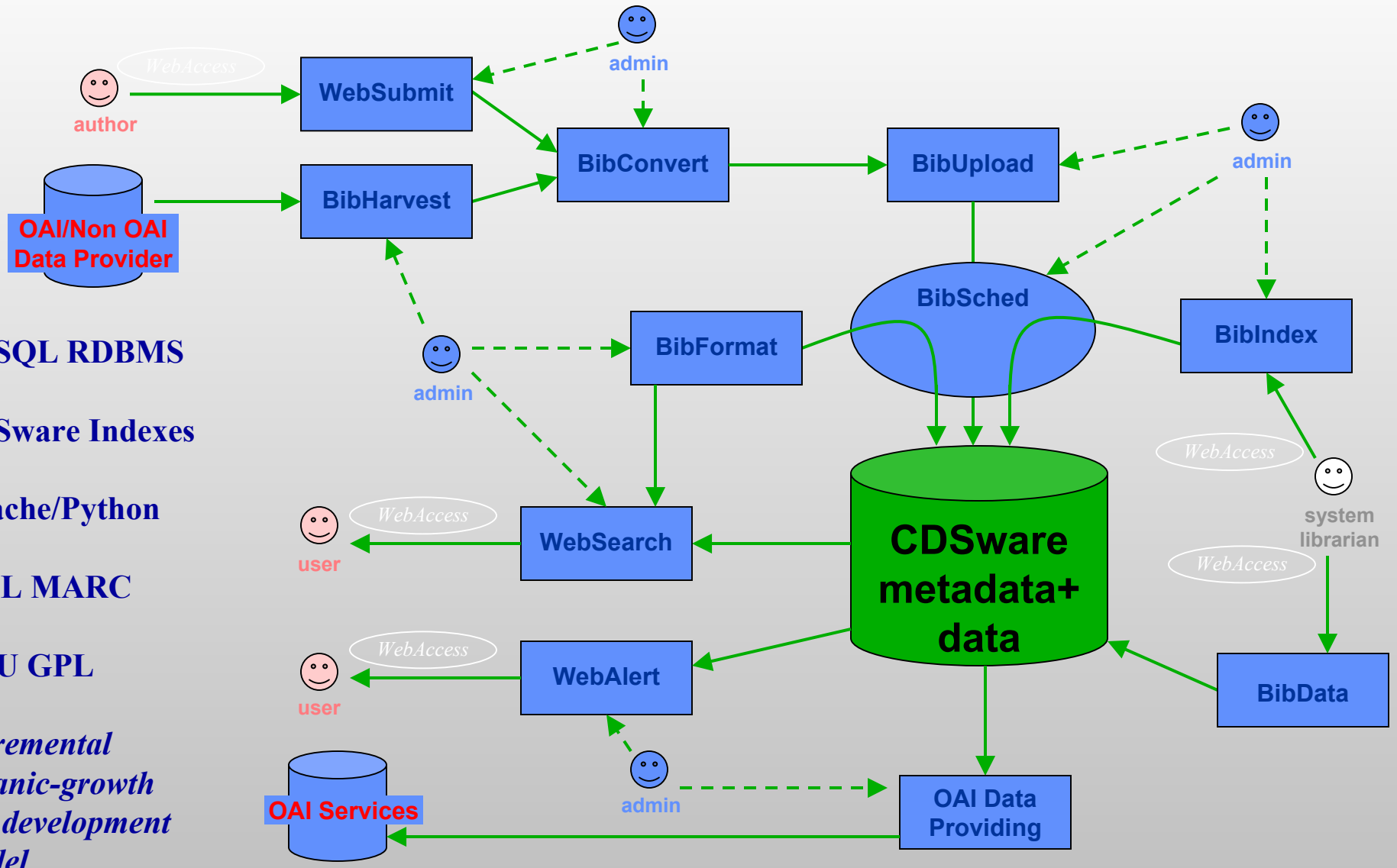
2- First www server (Dec. 1990)

ALEPH Integrated System used at CERN

CDSware OAI-compliant distributed as GPL

1993: CERN preprint server → Library Server → CERN Doc Server

CDSware Architecture .



ySQL RDBMS

DSware Indexes

pache/Python

ML MARC

NU GPL

crementa
ganic-growth
V development
odel

CDSware Interoperability

- **OAI Harvesting**
  - OAI Harvester: BibHarvest
  - Non-OAI Harvester: BibConvert
  - At CERN: more than 80 distinct sources are harvested
- **OAI Providing**
  - Records can be private, public and “OAI-public”
  - OAI Sets can be defined using any search criteria
- **Search Output Formats**
  - XML MARC; XML Dublin Core and more…
    - Any query is “OAI-ready”
    - Eg: OAI harvester could harvest only papers written by Ellis, J.
    - Eg: OAI harvester could harvest only title fields
- **Applications built on top of CDSware**
  - APIs to CDSware available
- **Connection with other Search Engines**

CDSware Submission process

- **Each collection can have its own submission policy**
  - Direct submission
  - Submission with monitoring
  - Submission with simple approval
  - Submission with peer review/refereeing and editorial board
- **Each collection can have its own record definition**
  - Metadata fields (mandatory, optional, controlled at input time…)
  - Full text formats
  - Revised versions
- **Each submission has its own process management**
  - With an HTML administration interface
  - To define submission screens
  - To define actions to be applied
- **'Batch submission' mode**
  - BibHarvest, BibConvert and BibUpload modules

CDSware Search

- **Google-like speed up to 1,000,000 records**
  - **Web Application server ←→ DB server**
  - **DB insufficient: in-house performance-driven index design**
  - **Fast marshalling & fast set intersections:**

query	*no.hits*	*search time*
• cern	223,843	0.07 sec
• of	439,793	0.07 sec
• of cern	109,635	0.10 sec
• of cern the this	11,940	0.17 sec

- **Combined metadata/fulltext/reference search**
- **Multi-stage search guidance system**
- **Personalization: baskets, email alerts**
- **Navigable collection trees**
  - **Primary and Virtual orthogonal views**
- **Internationalization: multi-language interface**

CDSware: Long term preservation

- **CDSware at CERN**
  - "Certified Information System" (CIS)
  - Considered as a long term electronic archive
  - Hosts the official CERN Archives
- **MARC21 based: LOC standard**
  - XML MARC is the internal representation of CDSware records
- **Records deletion policy**
  - Record IDs never change
- **Full text automatically converted to PDF**
  - CERN Conversion server can be plugged in (GNU GPL)
- **Digital content disseminated… via OAI !**


RN Document Server
Search
Submit
convert
agenda
webcast
bulletin
library
news | help | language: CZ
CERN Document Server
Over 630,000 bibliographic records, including 250,000 fulltext documents,
of interest to people working in particle physics and related areas.
Covers preprints, articles, books, journals, photographs, and much more.
Search 650,252 records for:
any field
Search
Browse
Search Tips :: Advanced Search
Narrow search:
Articles & Preprints (521,214)
Published Articles (156,571) Preprints (289,833) Theses (26,534) Reports (25,652) CERN Internal Notes (6,452) CERN Committee Documents (24,105)
Books & Proceedings (50,310)
CERN Divisions (46,193)
Accelerator Sector (9,251) Administration Sector (22,222) Research Sector (12,348)
Sector (2,452)
CERN Experiments (8,720)
LEP Experiments (2,667) LHC Experimer
CERN Projects (1,043)
LHC Project (1,043)
- 650 000 different records
- 350 000 full texts
- 450 different collections
-1000 new preprints per week
- 70 % from ArXiv
- 5 % from CERN
- 25 % from 80 other so
125,000 distinct hosts/clients in 2003
12,000 distinct hosts/clients per month
120,000 searches per month
5,000 OAI harvesting requests per month
Document Server :: Search :: Submit :: Help :: Personalize
ed by CDSware v0.1.2.20040119

CDSware: Conclusions

- Used in many places (dozen of installations)
- Dedicated support from CDS team (charged)

- Extending traditional library systems
- Designed to evolve
- Suitable for mid to large size repositories (1M recs)

http://cdsware.cern.ch