

# Bookshelf.EXE - BX

- A dynamic version of Bookshelf
  - Automatic submission of algorithm implementations, data and benchmarks into database
- Distributed computing
  - Distribution of execution of algorithms
- Scripting with data dependencies
  - Allows for control and data flows for a sequence of executed algorithm implementations

# Bookshelf.EXE - BX

- Nomenclature
  - Vicereine; main controlling server software
  - Diplomat; client (computational hosts) software
- Network backend
  - XML RPC
    - RPC standard
      - XML data encoding
      - HTTP network transport
    - C/C++, Perl, Python, etc. compatible
    - All communications between modules

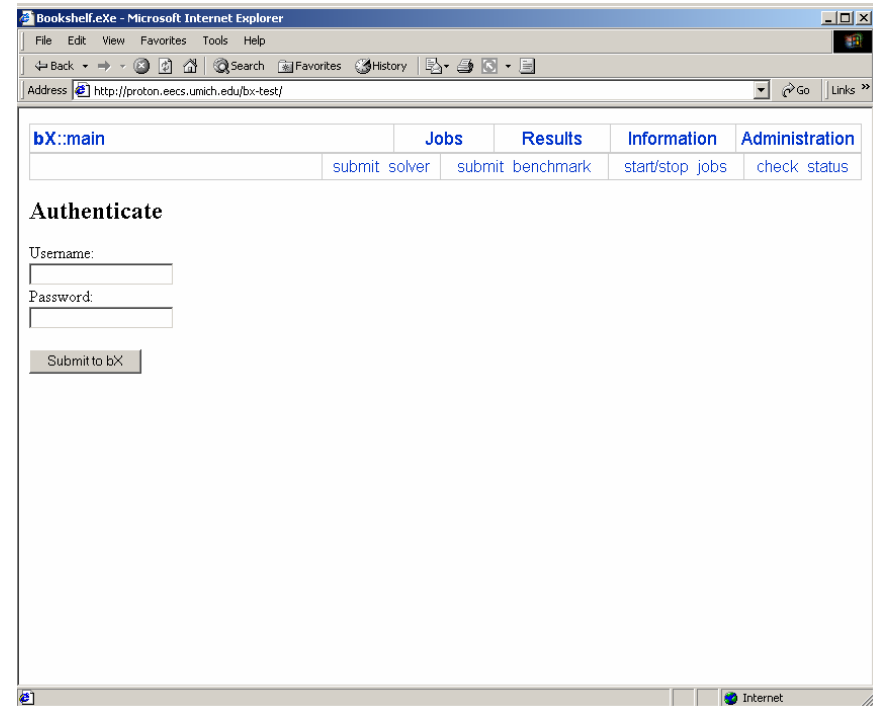
Key:

Implemented

In progress

# Bookshelf.EXE – BX

- Web interface
  - PERL CGI; communicates to BX via XML RPC
  - Preliminary interface:
  - Submit job and data
  - Results



# Bookshelf.EXE – BX

- Scheduler
  - Basic “least load” scheduler
    - Plan: Add several heuristics as provided by user
- Data logistics and storage
  - Berkeley DB2 backend for internal state
  - NFS for network transport
    - Plan: A URL scheme to specify locations
- Data consistency
  - Callbacks/delegations from server

# Bookshelf.EXE

- **Data properties**
  - Executables
    - Architecture, binary format
    - Input and output formats
  - Data/Benchmarks
    - MIME-like type
      - Creates affinity with executables
- **Current client (Diplomat) functionality**
  - Start job, kill job, query client
- **Current server (Vicereine) functionality**
  - Authenticate (insecure), start job, kill job, submit executable, submit benchmark

