

Blackboard, Instructional Web Space, and Campus Files

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Domain/Scope

The domain consists of files being used by faculty, students, or staff for course, study, or research purposes, or for campus community group (e.g., WSA, sports teams, interest groups) activities, and which are stored in Blackboard, in other web space (e.g., condor, the Media DB), or on a fileserver such as Dragon. Both shared and unshared files are included. For example, a student may maintain a copy of coursework in Dragon, and copy that coursework to shared course space on Dragon or Blackboard. Faculty team-teaching or working on departmental searches may share files through Dragon. In addition, faculty may share files with off-campus collaborators through the facility called "fileshare" (supported by ITS). Also, administrative staff work together and alone on documents related to departmental assignments and support of campus clientele. The distinguishing feature of this domain is storage owned and/or controlled by the end-user (versus the Library or other content provider).

The domain includes static documents such as published journal articles, book chapters, or datasets, and "live" documents that are or intend to be edited during the period of use. For example, a live document might be a course syllabus, reading list, or schedule, any course assignment being created by a student, or presentations (e.g., PowerPoint, Keynote) created by faculty or students, research data being analyzed, or funding proposals and applications.

Existing Practices

Blackboard

Blackboard is a course management system—an web-based environment, constructed for course-use, which provides easy-to-use interfaces for instructors to make files available to students, provide digital submission of assignments, manage course-related online discussion boards, etc. The most common use of **Blackboard** is as a secure (open to class roster only) document repository for a course, where the instructor can upload documents (Word files, PDFs, PowerPoint, etc.), and students can view and/or download them.

File management in Blackboard has improved with the last upgrade, even though there is no content server associated with it. Previously, files uploaded to a course Blackboard were available only in that Blackboard at the location they were originally put. Now, however, instructors can move and copy documents between pages and courses once uploaded to the system. They cannot share the documents with someone else's course, however, and to access a particular document, they need to go to the course containing the document (versus a separate repository).

eRes

As an alternative to using Blackboard, the Library supports **eRes** as a course-related document repository, primarily for digitized journal articles and book chapters, but also sometimes web pages and audio files. Analog documents are digitized for faculty as part of the service provided by the Library. These documents are then stored on the eRes server and access to them is provided by a class password shared by the instructor and students.

Dragon

The primary file-sharing facility on campus is Dragon, a Microsoft network server on which all current students, faculty, and staff have home directories, and on which all departments have a shared space for its members (e.g., ITShome). Use of Dragon across the many campus departments varies widely.

Dragon also houses the ITS software repository (PCSoft and MacSoft) from which installers are run and licensing information is obtained. The Dragon APPS volume serves out some software applications, software documentation, and datasets available to users via Dragon, such as through the APPS volume.

Dragon provides another means for faculty to share course documents with students. ITS has set up a number of course folders on Dragon, within which there are areas where students can maintain their own files, others where files are group-owned, and yet others that are student read-only. In at least two cases, we set up Dragon drop-boxes where students can submit their assignments to their instructor.

Unlike Blackboard, files stored on Dragon can be edited *in situ* by users with the proper permissions. In Blackboard, changing a file requires it to first be downloaded, then edited, then re-uploaded.

Some campus interest groups (e.g., Global Change) and student groups (e.g., WesPrep) use or have used Dragon as a repository for sharing and co-editing documents.

Condor and Compute Servers

The web server, **condor**, and the computes **rintintin** and **chloe**, are also used as course file repositories. Condor tends to be used by faculty who prefer to maintain "traditional" course web pages, and rintintin and chloe are specifically used for distributing and storing course-related datasets and large files (e.g., remote sensing data for EES 326/328) that need to be processed by applications on those servers.

All courses currently have a course web space on condor (see <http://www.courses.wesleyan.edu>) where faculty have larger disk space quotas than in their personal web space. Condor is of use for sharing documents from instructor-to-student, but without the overhead of Blackboard. Generally this means of file-sharing is used by faculty comfortable with HTML coding, SFTP, or who don't want to deal with the entire Blackboard environment.

Faculty often request advice from the ACMs on the best system to use for their particular course needs. For example, the slow HTTP upload capability of Blackboard makes it a poor choice for sharing large files (e.g., maps, large datasets). There are limitations on where and how students can upload to Blackboard, so in many cases where students need to share files, Blackboard may not be the best choice.

Fileshare

As file sizes have gotten larger, it has become unfeasible to transfer files to another use as email attachments. Wesleyan does not run an anonymous ftp server for security reasons, and these two facts combined have made it difficult for our researchers to collaborate with off-campus colleagues. As a solution to this problem, we put together a 3Tb system called **fileshare.wesleyan.edu** in which faculty can have an account which permits outside guests sftp and scp access via authenticated accounts. This space appears as a symlink in the condor/rintintin/chloe account of the faculty member.

To provide the amount of disk space needed by some users, we instituted a “free” 10 Gb rule for any faculty/staff wanting an account, but a fee for space needed beyond that. We currently have eight science faculty using this service, but more are expected from the social sciences and art and humanities.

Strengths

The strengths of the current course-related file spaces are independent of the whole picture. Each system on its own tends to be clear-cut to the users familiar to that system, and within the functions that it provides.

Weaknesses

1. **Too much variety:** Many users are not aware of the variety of systems we have, or, if they are, are left wondering if there's something else on our network that would suite them better. In other words, users know how to interact with their favorite system, regardless of whether or not it best suites their purposes, and in fact, we do sometimes see instructors using a system which is not the best choice given the activities and level of sharing required by the course.
2. **Inconsistent access methods/Disconnect between spaces:** There is a wide variety of methods for accessing the different (e.g., SFTP, http, smb, afp), with differences in access from one platform to another (e.g., mounting a remote dir in Windows XP versus Mac OS X). But also access methods for the same system

overlap in ways that most users are unaware of. For instance, one can SFTP to condor, but also mount it locally via smb or afp.

3. **Ownership of space sometimes confused:** Some problems stem from administrative decisions that were thought at the time to be the most clear-cut solution to a given problem. Years ago, faced with increasing requests by faculty for greater condor quotas to accommodate increasingly large course-related file collections (e.g., Powerpoint slides, PDFs), but before our adoption of a course management system, ITS developed the **wescourses** space. This space, linked to faculty condor space has a filesystem that is dynamically updated each semester to provide course-specific web space for courses. For example, a space for BIOL182, taught by Steve Devoto and Fred Cohan this last semester is found at <http://sdevoto.web.wesleyan.edu/wescourses/2006s/biol182/01/> . Co-taught courses like this one are rare on campus, but most common to the sciences. They are prone to particular problems under the wescourses setup. Because of how we run our web server, the terminal directory and its files must be owned by one or the other instructor, but cannot be co-owned. Thus in the sciences, where co-taught courses is most common, there is a semi-annual struggle to make the space work for the course, either by having one instructor completely take over authoring duties, or by requiring the pair use FrontPage to edit the site, which allows for shared authoring control. In addition to the difficulties faced by the instructor, the highly canonical file system (based on instructor's name, semester, courseid, and section number) was transparent only to ITS personnel. To help users find these pages, we constructed a finding aid--a link in the course's wesmaps entry to a page detailing the web resources available for the course (<http://www.courses.wesleyan.edu>).
4. **Permissions structures lack granularity and end-user control:** Dragon's file-level permissions structure is set up so that one can only add users who have access to the parent dir. We cannot give, for instance, all faculty full control of the Courses volume, otherwise they would be able to edit all course folders, not just their own.
5. **Variations in quota:** With the wescourses space, we attempted to apply unlimited quotas to separate out course use of the space from personal webspace usage. However, these quotas are not in fact independent and this has caused confusion (this is a communication problem on the part of ITS rather than a problem with the system).
6. **Version control system:** We have no system, outside Wikis, with built-in version control. The ability to track authorship, edits, and provide editorial routing would be of great use to some of the groups currently using Dragon as a shared repository and would also greatly benefit individual users working on or with their own research materials.

Opportunities

The current discussions and planning for a media repository provides some basis for discussing enterprise level content management systems.

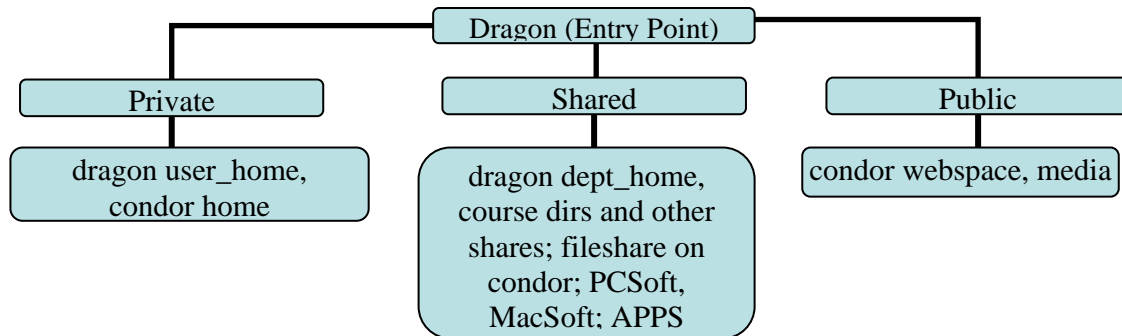
Threats

Continuing our current mode of operation is a viable option, things will not fall apart abruptly in a year or some other interval as a result of not changing. But the technology is available to allow us to fix these problems, and as a result, provide users with a more coherent system of file-sharing and storage.

Content management systems are gaining ground in the Higher Education community and as such we have the opportunity to potentially address a multitude of problems with a single solution. The adoption of an enterprise content management system would, of course, require a great deal of planning, outreach, and user training.

Short-term Recommendations

In the short-term, we have discussed modifying the structure and inter-relatedness of Dragon and condor file spaces so that when a user logs into to Dragon, they see their Dragon home dir and within that subdirs representing private, public (web), and shared spaced. This solution is theoretically possible through NSF mounting of dragon to condor, but James Taft and his team have not yet managed to get it operating under the required conditions . By unifying the filesystems we would solve at least a few of the



problems discussed above, but not issues of quota, user-controlled permissions,

Long-term Recommendations

Adoption of content management server is a longer-term goal. This solution would solve most of the problems listed above, but would require extensive user training and outreach to implement successfully.

Readings and Links

HarvestHive <http://www.harvestroad.com>

- [HarvestRoad](#)²'s [HarvetsHive](#)² product has been endorsed by [MiCTA](#)². As a member institution, Wesleyan is eligible for an almost 50% discount on this product (<http://www.micta.org/0010awards.asp>)

Xyθος WebFile Server

http://www.xythos.com/home/xythos/industries/industry_edu_web.html

- Xyθος [WebFile](#)² Server is the foundation of the Blackboard Content System

IBM DB2 Content Management

<http://www-306.ibm.com/software/data/cm/>