The WolfWare Course Management System at NC State

Lou (Lou) Harrison  
Associate Director for Technology Development

Jim Blair  
Web Applications Developer

Learning Technology Service
Distance Education and Learning Technology Applications
NC State University
What is WolfWare?

WolfWare is an environment and set of tools designed to assist faculty in managing their web based instruction.
What is WolfWare?

WolfWare also provides a homework submission tool, messaging forum, mailing lists, and the ability to easily password protect web content.
Where did it come from?

WolfWare development began in the Computer Science Department at NC State.

WolfWare grew from a suite of command line Unix tools and scripts used for submission of assignments and locker management.
Where is it now?

WolfWare is now a project of:
Learning Technology Service
Information Technology: Systems
College of Engineering: Information Technology
Lockers

WolfWare is based on a locker model from the Andrew File System (AFS). Lockers are filesystem containers.

In WolfWare, lockers hold content. Web content, submitted homeworks, streaming media, logs…
WolfWare allows standard content tools to create/modify Web pages.

- Dreamweaver
- ColdFusion
- FrontPage
- Any text based editor (vi, emacs, notepad, pico, etc.)
WolfWare Tools

- WolfWare Toolbox (Admin Tool)
- Course Email (Mailing Lists)
- Message Board
- Submit (Homework Submissions)
- Submit return (Beta testing)
- GradeBook (in development)
- Chat (in development)
- htaccess Wizard (in development)
WolfWare Toolbox

- Request a new WolfWare locker
- View/Print Class Roll
- Manage Support List
- Manage “Extras”
- Edit/Update the Boilerplate
- Configure WRAP Protect directory
- Manage Mailing List Access
- Manage Messageboard/Submit
- Manage Locker Quota
WolfWare Toolbox

- Demo
Mailing Lists

• Configurable by support
• Allows instructor to email a course: 
  eng666-001@wolfware.ncsu.edu (support only)
• Allows instructors/TAs to be contacted: 
  ma141-sup@wolfware.ncsu.edu (anyone)
• Allows anonymous course comments: 
  e115-001-comments@wolfware.ncsu.edu (anyone)
• Uses preferred email lists (TRACS for students, Telecommunications for faculty)
# Mailing List Admin

**Mailing List Address:** WW101-001@wolfware.ncsu.edu

<table>
<thead>
<tr>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Open to all users</td>
<td>Anyone in the world can send email to this list.</td>
</tr>
<tr>
<td>Open to everyone in this section</td>
<td>All students and support people associated with this section of this course can send email to this list.</td>
</tr>
<tr>
<td>Open to support users</td>
<td>Only people listed as support for this section can send email to this list.</td>
</tr>
</tbody>
</table>

**Additional Users:**
Here you can list the userids of people who should have access to this list in addition to those in the group selected above.

**Prohibited Users:**
Here you can list the userids of people who should be blocked from sending email to this list, even if they appear in one of the categories selected above.
Submit

- Web-based interface (platform independence)
- Allows any type of file to be submitted
- Uses SSL to secure the homework as it is transmitted
- Secure file storage area
- Allows groups to be defined
- Web Access to Submitted materials
- Submit Return
Submit Admin

- Demo
Message Board

- Allows discussion forums
- Instructor configurable
- User access can be restricted to read/post
- User access can be restricted to class/section/realm
- Controls set per forum/per section/per class
Message Board Admin

• Demo
GradeBook

- SpreadScript Engine
- Preconfigured for traditional grading schemes
- Highly configurable for advanced users
- Student & Instructor Views
- Formula builder
- Grade genie
- Upload/Download spreadsheets
- Insert grades from other tools
- Sends grades to Registration and Records
GradeBook

• Demo
Chat Tool

- Instructor configurable start & end
- Entirely web based
- Several security models
- Stores chat transcript
Chat tool

- Demo
htaccess Wizard

- Access control over course web space
- Security settings at a glance
- Preconfigured for common settings
- Highly configurable
- Auto-updater tracks class rolls
htaccess Wizard

• Demo
WolfWare is

- Tightly tied to campus systems
  - Registration & Records
  - Other campus databases
  - AFS file system
WolfWare is

- Easy to use, web interface
- Robust, well written, not prone to errors
- Redundant, running on multiple servers
WolfWare Stats

<table>
<thead>
<tr>
<th>Current Stats</th>
<th>Entire University</th>
<th>Using Wolfware</th>
<th>Percent in WolfWare</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>32561</td>
<td>22792</td>
<td>70%</td>
</tr>
<tr>
<td>Course-Sections</td>
<td>6288</td>
<td>1982</td>
<td>32%</td>
</tr>
<tr>
<td>Courses</td>
<td>3149</td>
<td>818</td>
<td>26%</td>
</tr>
<tr>
<td>Curricula</td>
<td>135</td>
<td>86</td>
<td>64%</td>
</tr>
</tbody>
</table>

% Students
% Sections
% Courses
% Curricula

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WolfWare is not (yet)

- Readily adaptable to other uses
  - Research use
  - Extension use
  - 24x7x365 Course presence
WolfWare has

• Several semesters of use
  – And feedback from users

• We have heard many comments

• We are listening!
WolfWare II is

- Currently in Development
WolfWare II is

• A locker management system
  – Manage AFS space
  – Support course lockers
  – Support other locker types
    • Research
    • Collaborative
    • ...
WolfWare II will

• Allow for permanent web/AFS presence

• Allow mapping of current semester data to a WolfWare workspace

• Provide more flexibility for “off-model” instruction and research
WolfWare II will

• Integrate with WebCT tools
• Integrate with DELTA Portal
• Integrate with other tools and services
  – Registration & Records
  – Library Services
  – WebAssign
WolfWare II Model

- Registration & Records Data
- Mailing Lists
- DELTA Portal
- Reg & Rec
- Library
- other partners

Users
- R&R mappings
- students
- extras
- support users
- user-defined groups

AFS Files
- private content
- www content
- WebCT content
- large media
- submit
- messageboard
- courses.ncsu.edu
- WebCT server
- RealAudio server

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What does this mean?

- More flexibility in teaching
- Better management of other lockers
- Better reporting
- More standardization
- Better interfaces to other tools
NC State’s Interest in OKI

- Open Knowledge Initiative (OKI)
  - http://web.mit.edu/oki
- DELTA at NC State
  - Combining DE with the TLT arena
- NC State Open Source Strategy
  - Our chosen strategic direction
  - http://www.ncsu.edu/it/open_source/
- Commercial tools lacking
How OKI will help NC State

• Help us migrate from monolithic course management solutions to a modular approach
• Synergy - the whole is bigger than the sum of the parts
• Better tools, voice in the architecture, new ideas, collaboration, training, different viewpoints, frequent flyer miles...
Work To Date

• **WolfWare** - In house course management system that leverages AFS filesystem to allow distributed replicated content servers
  – Used by ~70% of student population
• **Wrap** - In house authentication system that allows authentication across web servers, and through trusted third parties
Current Related Projects

• WolfWare II Development - fix all the things we didn’t get right the first time, add functionality, modularity
• Wrap 1.6+ Development - Add functionality and separate authentication from authorization
• DELTA Portal project - prototype in ColdFusion
Current OKI Project

• WolfWare generalization project - rewrite and generalize parts of WolfWare for generalized AFS locker management
Criteria For Success

• Quality of learning environment
• Ease of use by the “80%”
• Modularity allows choice and flexibility
• Journey helps us develop
  – Collaboration
  – Synergy
• Economies of scale
WolfWare Team

- Lou Harrison, Associate Director, LTS, DELTA
- Jim Blair, Web Developer, LTS, DELTA
- Charles Brabec, Systems Programmer, ITD Systems
- Tim Lowman, Systems Programmer, ITD Systems
- Jeff Webster, Systems Programmer, ITD Systems
- Ellen McDaniel, Manager, Web Services, ITECS, COE

Partners
Thank you!

Any questions?