The Pay for Print Initiative at Kalamazoo College

Ken Arthur, Associate Director of Systems & Networking
Mary Griswold, Circulation Supervisor
Stacy Nowicki, Reference Librarian
Why was pay for print necessary?

- **Paper waste**
  - 1 recycle bin per lab per day

- **Budget**
  - Paper budget depleted halfway into the year
  - Toner cartridges
  - Printer maintenance
Survey, July 2000

- Oberlin Group and CLAC
- Details of cost, vendor, funding, etc.
- Some colleges implementing pay for print
- Many considering it
Timeline

1999
- Initial discussions about pay for print

Summer/Fall 2000
- Investigated software packages
- Surveyed Oberlin Group and CLAC colleges

Spring 2001
- Tested software; Preliminary marketing

Summer 2001
- Continued marketing; Implemented software

Fall 2001
- Final marketing phase
The “K” Environment

- 3 PC labs running Windows 2000
- 2 PC/Macintosh labs
- 1 Macintosh only lab
- Library Reference PCs
- 1 printer / lab + 2 printers in Library = 8 printers
- NT 4.0 Print Server
- Students have individual logins
- Macs running Mac Administrator, authenticate w/ NT 4.0
Finding a Solution

- Identified several possible solutions
  - All too expensive (more than $10,000)
- With help of CLAC survey, learned of PCounter
- PCounter – www.andtechnologies.com
  - $495 + $150/year maintenance
- Fits environment at Kalamazoo College
Set price per page
- 1 print credit = $0.10 = 1 printed page

Each user gets print quota ($10+ per quarter)
- Staff and faculty need quotas too ($50)
- Staff and faculty given free quota boosts as needed

Works across NT domains

Cost of print job subtracted from quota
In Labs, user identified by login account name
In Library, PCounter prompts for username and password
When quota used up, print jobs are rejected
Can buy additional quota at Library Circulation Desk
Already handles money transactions
Provides extended hours
PCounter – Server Setup

- Data Service
  - Needs file share on server
  - All users have read access
  - Quota administrators need write access
- Print Monitors
  - Monitor and handle print queues
- Pcontrol
  - Configuration Management Program
PControl
PControl - Configuration

- Global Settings
- Printers
- Popup
- Services/Ports

**Pcounter shared directory**: C:\PCOUNTER

**Delete paused jobs after** 5 Minutes

**Numerical Format**: Currency

**Get user information from**:
- Primary Domain Controller: \DRAGON
- Other server: \DRAGON

**Data Server**: \DRAGON

- Log rejected jobs

- Data server options
- Messaging configuration
- Default printer configuration
- Registration and trial period
- Import global/popup settings from

- OK
- Cancel
- Apply
- Help
PControl – Printer Config

**Settings**
- **Accounting:** User account balances and Log File
- **Action if below low balance limit:** Delete job
- **Banner (Separator) template:** None
- **Duplex handling:** Ignore
- **Pause all jobs:** Super Pause
- **Count jobs in advance for display:** No

**Workstation Popup**
- Enable popup window (Jobs are paused)
- Keep job paused after popup

**Reject Job Types**
- Postscript
- PCL
- Unknown
- Text
- EMF
- JNL

[Options for include banner in pagecount, disable print notification, allow unknown users to print]
PCounter – Printer Setup

- Isolate printers
  - On own subnet
  - Can only communicate with print server
  - Prevents bypassing print queues
- Lock paper trays on printers and copiers
  - Prevents paper theft
Connect to PCounter print queue
- Win 2000 – vbs script to automatically connect printer at login
- Macintosh – defined via Mac Administrator
- Macintosh system name must be same as user login
- Set with Mac Administrator
PC labs only: install wbalance.exe
- Allows user to see balance
- Must be logged in as self to be useful
- Shows up in System Tray
Library PCs only: install ppopup.exe
• Allows PCounter to prompt user
• Shows up in System Tray, can be hidden
PCounter – Administration

- PAdmin Application
  - Provided to everyone who needs to change quotas
    - All librarians
    - System administrators
  - Deposit funds
  - Charge funds
  - View print history
  - Create print-only accounts (not in NT domain)
  - Create reports by user, printer, etc.
## PAdmin

### Pcounter Administrator: RESNET

<table>
<thead>
<tr>
<th>Username</th>
<th>Fullname</th>
<th>Balance</th>
<th>Low balance limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>k00ar01</td>
<td>Annika C. Rigole</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00ar03</td>
<td>Alexander F. Rupp</td>
<td>6.40</td>
<td>0.00</td>
</tr>
<tr>
<td>k00as01</td>
<td>Ai Sasaki</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00as02</td>
<td>Andrew J. Senesi-Good</td>
<td>8.40</td>
<td>0.00</td>
</tr>
<tr>
<td>k00as03</td>
<td>Alex O. Ghezi</td>
<td>1.30</td>
<td>0.00</td>
</tr>
<tr>
<td>k00as04</td>
<td></td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00as05</td>
<td></td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00at01</td>
<td></td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00at03</td>
<td></td>
<td>8.90</td>
<td>0.00</td>
</tr>
<tr>
<td>k00at04</td>
<td></td>
<td>7.80</td>
<td>0.00</td>
</tr>
<tr>
<td>k00at06</td>
<td>Aurelie H. Noon</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00av01</td>
<td>Abbie J. VanDerWege</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00ay01</td>
<td>Asa L. Young</td>
<td>8.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00az01</td>
<td>Alec M. Zaki</td>
<td>9.20</td>
<td>0.00</td>
</tr>
<tr>
<td>k00az02</td>
<td>Angela M. Ziech</td>
<td>4.90</td>
<td>0.00</td>
</tr>
<tr>
<td>k00bb01</td>
<td>Erian S. Benthem</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00bb02</td>
<td>Benjamin N. Bimber</td>
<td>8.80</td>
<td>0.00</td>
</tr>
<tr>
<td>k00bb03</td>
<td>Eo F. Borgerscn</td>
<td>7.60</td>
<td>0.00</td>
</tr>
<tr>
<td>k00be01</td>
<td>Brittany D. Edwards</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00bf01</td>
<td>Benjamin J. Finchem</td>
<td>10.00</td>
<td>0.00</td>
</tr>
<tr>
<td>k00bf02</td>
<td>Erett E. Foster</td>
<td>10.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

- **Deposit** (Alt+D)
- **Charge** (Alt+C)
- **Set Balance** (Alt+B)
- **Set Low balance limit** (Alt+L)
- **Print History**
# PAdmin – User Report

User print totals: 06/12/2001 to 10/29/2001

<table>
<thead>
<tr>
<th>User</th>
<th>Fullname</th>
<th>Jobs</th>
<th>Pages</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>RESNET\98sj01</td>
<td>Sara B. Jonikaitis</td>
<td>44</td>
<td>382</td>
<td>38.20</td>
</tr>
<tr>
<td>RESNET\98mh02</td>
<td>Mary J. Hofmeister</td>
<td>67</td>
<td>347</td>
<td>34.70</td>
</tr>
<tr>
<td>RESNET\98cc03</td>
<td>Cameron J. Cichocki</td>
<td>89</td>
<td>300</td>
<td>30.00</td>
</tr>
<tr>
<td>RESNET\98sh01</td>
<td>Shea E. Hogan</td>
<td>55</td>
<td>299</td>
<td>29.90</td>
</tr>
<tr>
<td>RESNET\98sl03</td>
<td>Selena M. Lum</td>
<td>30</td>
<td>290</td>
<td>29.00</td>
</tr>
<tr>
<td>RESNET\98df01</td>
<td>Daniel T. Flewelling</td>
<td>31</td>
<td>286</td>
<td>28.60</td>
</tr>
<tr>
<td>RESNET\98kn03</td>
<td>Kelley L. Nyquist</td>
<td>31</td>
<td>273</td>
<td>27.30</td>
</tr>
<tr>
<td>RESNET\98da02</td>
<td>Derek R. Atkins</td>
<td>26</td>
<td>268</td>
<td>26.80</td>
</tr>
<tr>
<td>RESNET\98ek01</td>
<td>Eve J. Khlyavich</td>
<td>42</td>
<td>268</td>
<td>26.80</td>
</tr>
<tr>
<td>RESNET\98pc02</td>
<td>Peter D. Cowan</td>
<td>27</td>
<td>258</td>
<td>25.80</td>
</tr>
<tr>
<td>RESNET\98np01</td>
<td>Nathan C. Phenicie</td>
<td>65</td>
<td>254</td>
<td>25.40</td>
</tr>
<tr>
<td>RESNET\97aw03</td>
<td>Andre J. Wayne</td>
<td>62</td>
<td>251</td>
<td>25.10</td>
</tr>
<tr>
<td>RESNET\98al03</td>
<td>Angela L. Lujan</td>
<td>36</td>
<td>251</td>
<td>25.10</td>
</tr>
<tr>
<td>RESNET\98as04</td>
<td>Allison C. Scheurer</td>
<td>53</td>
<td>244</td>
<td>24.40</td>
</tr>
<tr>
<td>RESNET\98eb02</td>
<td>Elizabeth S. Bielby</td>
<td>38</td>
<td>244</td>
<td>24.40</td>
</tr>
<tr>
<td>RESNET\99km07</td>
<td>Kathryn L. Moore</td>
<td>10</td>
<td>220</td>
<td>22.00</td>
</tr>
<tr>
<td>RESNET\98sh02</td>
<td>Samira K. Hull</td>
<td>38</td>
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<td>21.10</td>
</tr>
<tr>
<td>RESNET\98et01</td>
<td>Erin L. Thoresen</td>
<td>14</td>
<td>210</td>
<td>21.00</td>
</tr>
<tr>
<td>RESNET\98ih01</td>
<td>Inga A. Hofer</td>
<td>37</td>
<td>210</td>
<td>21.00</td>
</tr>
<tr>
<td>RESNET\98ag01</td>
<td>Alana B. Graziano</td>
<td>38</td>
<td>209</td>
<td>20.90</td>
</tr>
</tbody>
</table>
**PAdmin – Printer Report**

**Printer print totals: 06/12/2001 to 10/29/2001**

<table>
<thead>
<tr>
<th>Printer</th>
<th>Jobs</th>
<th>Pages</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>\DRAGON\P-Curricular</td>
<td>36</td>
<td>270</td>
<td>27.00</td>
</tr>
<tr>
<td>\DRAGON\P-DE205</td>
<td>892</td>
<td>3834</td>
<td>383.40</td>
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<tr>
<td>\DRAGON\P-DE307</td>
<td>1996</td>
<td>9695</td>
<td>969.50</td>
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<tr>
<td>\DRAGON\P-DowLab</td>
<td>290</td>
<td>1094</td>
<td>109.40</td>
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<tr>
<td>\DRAGON\P-LangLab</td>
<td>73</td>
<td>146</td>
<td>14.60</td>
</tr>
<tr>
<td>\DRAGON\P-OU309</td>
<td>1428</td>
<td>5179</td>
<td>517.90</td>
</tr>
<tr>
<td>\DRAGON\P-OU312</td>
<td>224</td>
<td>387</td>
<td>39.70</td>
</tr>
<tr>
<td>\DRAGON\P-OU313</td>
<td>2030</td>
<td>8538</td>
<td>853.80</td>
</tr>
<tr>
<td>\DRAGON\P-Reference1</td>
<td>939</td>
<td>4117</td>
<td>411.70</td>
</tr>
<tr>
<td>\DRAGON\P-Reference2</td>
<td>472</td>
<td>1919</td>
<td>191.90</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td>8380</td>
<td>35189</td>
<td>3518.90</td>
</tr>
</tbody>
</table>
PCounter - Quotas

- Put students in appropriate NT groups
  - All students, first-years, seniors
- Query College Administrative Database
- Turn query result into NT script
- Assign quota to NT group
- Adjustments to be made beginning of every quarter
PCounter - Rollout

- Test in Spring 2001
  - Turned on in one PC lab and one Mac lab
  - Invisible to users
  - Allowed users to go beyond quotas
  - Publicity campaign towards end of quarter
- Implement in Summer 2001
  - Turned on for all labs
  - Visible to users
  - Wrap up details (set quotas, isolate printers, lock trays, etc.)
- Live in Fall 2001
PCounter - Issues

- Printing errors are higher profile
  - Students don’t want to be charged for errors
  - Extra burden to investigate, adjust quotas

- Seniors who aren’t seniors
  - Not officially seniors but doing Senior Project
  - Missed when querying database for seniors
  - Will fix next year with more complex query
Policies

- **Amount to charge**
  - 10 cents is the same as photocopies

- **Dealing with guests**
  - Special accounts

- **Dealing with printer problems**
  - Credits for printer errors

- **Point of contact**
  - Circulation desk has extended hours
  - Already handles monetary transactions
Policies

- **Student standing**: Determines number of free credits

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Allotted Free Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year fall</td>
<td>150 pages</td>
</tr>
<tr>
<td>First year winter and spring</td>
<td>100 pages per quarter</td>
</tr>
<tr>
<td>Sophomore fall, winter, and spring</td>
<td>100 pages per quarter</td>
</tr>
<tr>
<td>Junior fall, winter, and spring</td>
<td>100 pages per quarter</td>
</tr>
<tr>
<td>Senior fall</td>
<td>300 pages</td>
</tr>
<tr>
<td>Senior winter and spring</td>
<td>100 pages per quarter</td>
</tr>
</tbody>
</table>
Policies

Policy/FAQ Web site:
http://www.kzoo.edu/is/library/printing/
Marketing

- Spring 2001
  - Visited campus groups
    - Presidential Advisory Committee
    - Student Commission
    - EnvOrg (recycling)
  - Emailed campus-wide message
  - Created Policy/FAQ Web site
  - Article in the *Index* (student paper)
Marketing

- **Summer 2001**
  - *Connections* (newsletter for new and returning students)
  - *Faculty Handbook*
  - *Parent Handbook*

- **Fall 2001**
  - *Compass* (newsletter for New Student Orientation)
Love a Tree!
Please help conserve paper and toner

Printing Services are in Effect:

Use your Print Credits Wisely!

http://www.kzoo.edu/is/library/printing/
Call the Help Desk at x5800 with questions!

Printing Services are in Effect!

How Many Print Credits do You Get?

<table>
<thead>
<tr>
<th>Quarter</th>
<th>Allotted Free Credits</th>
</tr>
</thead>
<tbody>
<tr>
<td>First year fall</td>
<td>150 pages</td>
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<tr>
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<td>300 pages</td>
</tr>
<tr>
<td>Senior winter and spring</td>
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</tr>
</tbody>
</table>

Use your Print Credits Wisely!

http://www.kzoo.edu/is/library/printing/
Call the Help Desk at x5800 with questions!
Created form for adding print credits
Training

Created form for reporting printer problems

Print Problem Report Form

Time and Date print job was sent: 

Name of staff member or lab assistant reporting problem: 

<table>
<thead>
<tr>
<th>Location</th>
<th>Dew 203</th>
<th>Dew 307</th>
<th>Dew 224</th>
<th>OU 312</th>
<th>OU 313</th>
<th>OU 309</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Language Lab (Dew 207)</td>
<td>Fine Arts Lab</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Library</td>
<td>Reference 1</td>
<td>Reference 2</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

What type of file was printed? (ex: website, Word, Excel, PDF, jpeg, etc.)

Which software was used when printing? (ex: Word, Acrobat, Netscape, etc.)

Does an Error Message appear? 

Yes  No

Please write down the exact Error Message shown on screen: 
(If possible, please include a screen shot of the error message).

Please describe in detail the nature of the printing problem:

Were Print Credits deducted from student's account? 

Yes  No

Name of student whose printing account was affected:

User name of student whose printing account was affected:

Please tell the student to bring all pages that printed incorrectly to the Library Circulation Desk for appropriate credit to his or her printing account.

Library staff only:

Print credits resolved by:
Developed instructions for administrators

- Instructions (adding/deleting credits)
- How to clear print queue
- How to deal with printing problems
- Forms

Training sessions for library staff
Changes in Library and Labs

- Word 97 viewer vs. full program in Reference
- Increased change available at circ
- Locked paper trays on copiers and printers
- Enabled library supervisors to clear print queues
Results and Impact

- Paper and toner use down
- Much less paper waste
- Fewer toner cartridges replaced
- Photocopying up
- Increased printing in rooms?
- Few student complaints