inside:

USENIX NEWS

Young: Summary of the USENIX Board of Directors Actions
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Good Works Reports
The following is a summary of the actions taken by the USENIX Board of Directors at their meeting in Monterey, CA on June 12, 2002.

Finances
An internal audit for 2001 was performed for the Association by an outside accounting firm, Burr, Pilger and Mayer. See page 85 for more information.

The 2002 budget was discussed, and due to the decline in conference attendance and projected deficit of $1,500,000, the following actions were taken:

Transfers from the reserve funds to the operating funds from January, March and May 2002 were approved, and approval was given for $500,000 to be moved later this year.

It was agreed to publish 6 issues of ;login: in 2002 (vs. 7).

Expenditures for Student Programs will be reduced by 50% as follows:

- Additional applications for Student Research Grant and Scholars program will not be entertained for the remainder of 2002.
- Fewer funds will be available for the Student Stipend Program which enables students to attend USENIX conferences.

The Board will cut back on discretionary and travel expenses.

No further expenditures on the E-Learning pilot program will be made.

Conference registration fees for technical sessions will be increased by $100.

Student registration fees for all conferences will be 50% of the regular tech session fees.

No other requests for funding good works beyond the two grants listed below will be considered this year.

The staff will prepare budget scenarios for 2003 for the Board’s consideration this summer.

Grants
USENIX will support EuroBSDCon in 2002 with a grant of $6,000.

USENIX will again be a sponsor at the $10,000 level of the Grace Hopper Celebration of Women in Computing Conference in 2002.

SAGE
SAGE and SAGE Certification presented budget forecasts that would reduce some of their direct expenses for the remainder for 2002. The Board agreed to continue to support and subsidize both programs at a net deficit of $600K in 2002.

Committees and Liaisons
The following committees and liaisons were established:

COMMITTEES:
- Executive : Jones, Darmohray, Gilmore, McKusick
- Prizes & Awards: Hall (chair)
- SAGE Review Committee: Hume, Parter, Hall, Kolstad, Young
- Scholaristic Services: Mary Baker, Darrell Long (chair), Rubin.
- STG Committee: Hume, Jones, Hall, McKusick

USENIX BOARD LIAISONS:
- Computing Research Association: Jones
- SAGE: Hall
- SAGE Interim Certification Board: Bennett

USENIX CONFERENCES LIAISONS:
- LISA, Philadelphia, Dec. ’02: Rubin
- CARDIS, Nov. ’02: Honeyman
- OSDI/WIESS, Boston, Dec. ’02: Jones
- FAST, Mar. ’03: Honeyman
- USITS, Seattle, Mar. ’03: Honeyman
- M obisys, SF, May ’03: Jones
- USENIX Annual, San Antonio, June ’03: Honeyman
- Freenix, Jun. ’03: McKusick
- Security, Aug. ’03: Rubin
- BSDCon, San Mateo, Sept. ’03: McKusick

OTHER CONFERENCES (USENIX-RELATED):
- NordU: Hall
- EuroBSDCon: Honeyman

Young is the Staff Coordinator for each of the committees and is included on each mailing list.

THANKS
John Gilmore has made a donation of $15,000 to support the Association’s Student Stipend Program in 2002. This program provides funds for travel, registration fees, and hotel expenses to attend USENIX conferences.

We hope that this generous donation will encourage others to do the same.

USENIX is most grateful.

Ellie Young, Executive Director
ellie@usenix.org

by Ellie Young
Executive Director
e Ellie@usenix.org

The following information is provided as an annual report of the USENIX Association’s finances and represents the Association’s statement of revenue and expenses for the year. Accompanying the statements are several charts that illustrate where your membership dues go, and what is spent on Good Works.

Audit
An audit was conducted by Burr, Pilger & Mayer, L.L.P. for the year ending December 31, 2001. The full financial statements and text of their report is available from the Association. The conclusion reached by the report is that “In our opinion, the financial statements present fairly, in all material respects, the financial position of the USENIX Association as of December 31, 2001 and the changes in its net assets and its cash flows for the year then ended in conformity with accounting principles generally accepted by the United States of America.”

Financial Statements Summary.
These are challenging times, and USENIX is suffering from the overall downturn in the economy and, in particular, of the computer industry. In 2001, cash was down $1,735,000; the Reserve Fund was down $1,445,000; Net assets were down by 32%; Revenues down by 39%. This all translates into a very bad year financially. The USENIX Board has taken several actions (see above) to deal with this difficult situation.

USENIX MEMBERSHIP DUES & EXPENSES
USENIX averaged 8,300 members in 2001, and 58% opted for SAGE membership as well. Chart 1 shows the total USENIX dues income ($740K) for 2001, divided into membership types. Chart 2 shows where those dues were spent.

Please note that all costs for producing conferences, including staff, marketing, and exhibitions, are covered by revenue generated by the conferences.

Chart 1
USENIX Membership Revenue Sources, 2001

Chart 2
Where Your 2001 Membership Dues Went
SAGE
Chart 3 shows SAGE income and sources of support in 2001 ($455K). Chart 4 provides a breakout of SAGE expenses ($473K).

CHART 3 SAGE Revenue Sources, 2001
- Publications & T-Shirt Sales 2%
- Certification Fees/Sponsorship 2%
- USENIX Subsidy 19%
- Share of LISA Conference Revenue 47%
- Dues 30%
- Use of LISA Conference Revenue 6%
- Miscellaneous 2%

CHART 4 SAGE Expenses, 2001
- Certification 60%
- Salary Survey 3%
- Miscellaneous 2%
- Promotion 3%
- Salary Survey 3%
- Database/System/Web Services 4%
- Discretionary 5%
- Legal/Business Plan 5%
- SAGE Exec Committee Meetings 9%
- Publications 9%

USENIX PROJECTS AND GOOD WORKS.
Chart 5 describes how the money allocated to Good Works, and Projects ($496K) was spent in 2001.

CHART 5 Programs & Good Works Projects, 2001
Total Spent $967,192
- CRA & TOG Membership 2%
- Standards 3%
- Conference Sponsorship: NordU, GUADEC, Linux Kernel, Middleware, HAL2001 5%
- Other Projects: Rep on Campus, Int'l Speakers, Awards, E-Learning 6%
- K-12 Programs: USA Cptg Olympiad, Lesley Univ. Computer Clubhouse 10%
- Student Stipends to Attend Conferences 13%
- Student Scholarships: Dartmouth, Sheffield Hallam, MIT, CMU, Rice, Columbia, College of William & Mary, Univ. of WI 18%
- Community Programs: Software Patent Inst, ReX, CRA-CREW, EFF 20%
- Supporting Projects: Student Research Projects: Virginia Tech, Hebrew Univ, CMU, UCSD, Pusan Nat'l Univ, UCSC, Duke, Univ of WI, Univ of VA, Univ of MI, Rockhurst Univ 23%
### USENIX ASSOCIATION STATEMENTS OF ACTIVITIES
For the Years Ended December 31, 2001 and 2000

#### Operating revenues:
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference and workshop revenue</td>
<td>$3,506,275</td>
<td>$6,005,509</td>
</tr>
<tr>
<td>Membership dues</td>
<td>739,856</td>
<td>947,846</td>
</tr>
<tr>
<td>SAGE dues &amp; other revenue</td>
<td>151,820</td>
<td>255,294</td>
</tr>
<tr>
<td>Product sales</td>
<td>20,676</td>
<td>30,064</td>
</tr>
<tr>
<td>SAGE Certification</td>
<td>10,750</td>
<td>51,000</td>
</tr>
<tr>
<td><strong>Total operating revenues</strong></td>
<td>$4,429,377</td>
<td>7,289,713</td>
</tr>
</tbody>
</table>

#### Operating expenses:

##### Program services:
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Conference and workshop revenue</td>
<td>4,063,800</td>
<td>4,574,677</td>
</tr>
<tr>
<td>Programs and membership</td>
<td>629,833</td>
<td>658,447</td>
</tr>
<tr>
<td>Student programs, Good Works, and projects</td>
<td>981,806</td>
<td>1,044,583</td>
</tr>
<tr>
<td>SAGE</td>
<td>349,713</td>
<td>404,974</td>
</tr>
<tr>
<td>SAGE Certification</td>
<td>287,793</td>
<td>61,949</td>
</tr>
<tr>
<td><strong>Total program services</strong></td>
<td>$6,312,945</td>
<td>6,744,630</td>
</tr>
</tbody>
</table>

##### Support services:
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Management and general</td>
<td>349,670</td>
<td>307,935</td>
</tr>
<tr>
<td>Fund raising</td>
<td>27,067</td>
<td>32,117</td>
</tr>
<tr>
<td><strong>Total support services</strong></td>
<td>$376,937</td>
<td>340,052</td>
</tr>
<tr>
<td><strong>Total operating expenses</strong></td>
<td>$6,689,882</td>
<td>7,084,682</td>
</tr>
</tbody>
</table>

**Net operating (deficit) surplus** (2,260,505) (205,031)

#### Net investment income and nonoperating activities
<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Donations</td>
<td></td>
<td>532</td>
</tr>
<tr>
<td>Interest and dividend income</td>
<td></td>
<td>240,445</td>
</tr>
<tr>
<td>Net realized and unrealized losses on investments</td>
<td></td>
<td>1,185,139</td>
</tr>
<tr>
<td>Investment fees and costs</td>
<td></td>
<td>(94,171)</td>
</tr>
<tr>
<td><strong>Net investment income and nonoperating activities</strong></td>
<td>(1,038,333)</td>
<td>(116,193)</td>
</tr>
</tbody>
</table>

**Change in net assets** (3,298,838) 88,838

**Net assets, beginning of year** 10,163,573 10,074,735

**Net assets, end of year** $6,864,735 $10,163,573

### USENIX ASSOCIATION STATEMENT OF FINANCIAL POSITION
December 31, 2001 and 2000

#### ASSETS

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current assets:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cash &amp; cash equivalents</td>
<td>$476,185</td>
<td>$2,212,063</td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>66,936</td>
<td>364,982</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>108,977</td>
<td>94,123</td>
</tr>
<tr>
<td>Inventory</td>
<td>31,225</td>
<td>20,149</td>
</tr>
<tr>
<td><strong>Total current assets</strong></td>
<td>683,323</td>
<td>2,691,317</td>
</tr>
<tr>
<td>Investments at fair market value -reserve fund</td>
<td>6638588</td>
<td>8,084,438</td>
</tr>
<tr>
<td><strong>Property and equipment:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Less: accumulated depreciation</td>
<td>(183,204)</td>
<td>(209,984)</td>
</tr>
<tr>
<td><strong>Net property and equipment</strong></td>
<td>422,576</td>
<td>497,378</td>
</tr>
<tr>
<td><strong>Total assets</strong></td>
<td>$7,561,283</td>
<td>$11,063,149</td>
</tr>
</tbody>
</table>

#### LIABILITIES AND NET ASSETS

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Current liabilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued expenses</td>
<td>$633,503</td>
<td>$860,225</td>
</tr>
<tr>
<td>Deferred revenue</td>
<td>63,045</td>
<td>39,350</td>
</tr>
<tr>
<td><strong>Total liabilities</strong></td>
<td>696,548</td>
<td>899,575</td>
</tr>
<tr>
<td><strong>Net assets:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unrestricted net assets:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Board designated</td>
<td>6,638,588</td>
<td>8,084,438</td>
</tr>
<tr>
<td>Undesignated</td>
<td>226,147</td>
<td>2,028,135</td>
</tr>
<tr>
<td><strong>Total unrestricted net assets</strong></td>
<td>51,000</td>
<td></td>
</tr>
<tr>
<td><strong>Total net assets</strong></td>
<td>$6,864,735</td>
<td>$10,163,573</td>
</tr>
<tr>
<td><strong>Total liabilities and net assets</strong></td>
<td>$7,561,283</td>
<td>$11,063,149</td>
</tr>
</tbody>
</table>
USENIX ASSOCIATION

STATEMENTS OF CASH FLOWS
For the Years Ended December 31, 2001 and 2000

<table>
<thead>
<tr>
<th></th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cash flows from operating activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Change in net assets</td>
<td>$ (3,298,838)</td>
<td>$ 88,838</td>
</tr>
<tr>
<td>Adjustments to reconcile change in net assets to net cash (used in)/provided by operating activities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depreciation</td>
<td>77,455</td>
<td>67,545</td>
</tr>
<tr>
<td>Net investment income designated for long-term purposes</td>
<td>(94,289)</td>
<td>(69,304)</td>
</tr>
<tr>
<td>Realized and unrealized losses on investments</td>
<td>1,185,139</td>
<td>348,608</td>
</tr>
<tr>
<td>(Increase) decrease in assets:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts receivable</td>
<td>298,046</td>
<td>(249,427)</td>
</tr>
<tr>
<td>Prepaid expenses</td>
<td>(14,854)</td>
<td>(36,281)</td>
</tr>
<tr>
<td>Inventory</td>
<td>(11,076)</td>
<td>(1,605)</td>
</tr>
<tr>
<td>Increase (decrease) in liabilities:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Accounts payable and accrued expenses</td>
<td>(226,723)</td>
<td>725,661</td>
</tr>
<tr>
<td>Deferred revenue</td>
<td>23,695</td>
<td>39,350</td>
</tr>
<tr>
<td>Net cash (used in) provided by operating activities</td>
<td>(2,061,445)</td>
<td>913,385</td>
</tr>
</tbody>
</table>

Cash flows from investing activities:

| Purchases of investments       | (5,646,360) | 5,812,861 |
| Proceeds from sale of investments | 5,646,360 | 5,812,861 |
| Withdrawals from reserve fund  | 355,000     | 295,474   |
| Purchases of property and equipment | (29,433) | (903,933) |
| Net cash provided by (used in) investing activities | 325,567 | (808,370) |
| Net (decrease) increase in cash and cash equivalents | (1,735,878) | 105,015 |
| Cash and cash equivalents, beginning of year | 2,212,063 | 2,107,048 |
| Cash and cash equivalents, end of year | $ 476,185 | $ 2,212,063 |

USENIX ASSOCIATION

STATEMENT OF FUNCTIONAL EXPENSES
For the Years Ended December 31, 2001 and 2000

<table>
<thead>
<tr>
<th>Conferences and Workshops</th>
<th>Programs and Membership</th>
<th>Student Programs, Good Works and Projects</th>
<th>SAGE Certification</th>
<th>Total Program</th>
<th>Manage-ment and general</th>
<th>Fund Raising</th>
<th>Total Support</th>
<th>2001</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operating Expenses</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conference &amp; workshop-direct</td>
<td>$ 2,656,037</td>
<td>$ 10,099</td>
<td></td>
<td>$ 2,666,136</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Salaries</td>
<td>783,827</td>
<td>116,359</td>
<td>6,716</td>
<td>73,539</td>
<td>980,441</td>
<td>130,109</td>
<td>130,109</td>
<td>1,110,550</td>
<td>1,025,320</td>
</tr>
<tr>
<td>Payroll taxes</td>
<td>58,227</td>
<td>8,644</td>
<td>499</td>
<td>5,463</td>
<td>72,832</td>
<td>9,666</td>
<td>9,666</td>
<td>82,498</td>
<td>70,536</td>
</tr>
<tr>
<td>Employee benefits</td>
<td>143,834</td>
<td>21,352</td>
<td>1,232</td>
<td>13,495</td>
<td>179,913</td>
<td>23,876</td>
<td>23,876</td>
<td>203,789</td>
<td>206,199</td>
</tr>
<tr>
<td>Membership/proceedings</td>
<td>40,102</td>
<td></td>
<td></td>
<td></td>
<td>40,102</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Membership/login</td>
<td>343,088</td>
<td></td>
<td></td>
<td></td>
<td>343,088</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SAGE expenses</td>
<td>184,797</td>
<td></td>
<td></td>
<td></td>
<td>184,797</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SAGE Certification expenses</td>
<td>287,793</td>
<td></td>
<td></td>
<td></td>
<td>287,793</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Student programs, Good Works, and projects</td>
<td>967,193</td>
<td>0</td>
<td>967,193</td>
<td>977,038</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>General and administrative</td>
<td>421,876</td>
<td>610,288</td>
<td>6,166</td>
<td>72,419</td>
<td>600,748</td>
<td>186,219</td>
<td>16,966</td>
<td>203,187</td>
<td>803,935</td>
</tr>
<tr>
<td>Total</td>
<td>$ 4,063,801</td>
<td>$ 629,833</td>
<td>$ 981,806</td>
<td>$ 349,713</td>
<td>$ 4,312,346</td>
<td>$ 349,713</td>
<td>$ 376,937</td>
<td>$ 6,689,882</td>
<td>7,044,582</td>
</tr>
</tbody>
</table>

Vol. 27, No. 3
Fifteen Years Ago in USENIX

by Peter H. Salus
USENIX Historian
peter@matrix.net

At the USENIX Board meeting on March 26–27, 1987, the Board (Stephen C. Johnson, Marshall Kirk McKusick, Alan G. Nemeth, John S. Quarterman, Deborah K. Scherrer, Wally M. Wedel, and David A. Yost) unanimously approved the Business Plan proposed by Rick Adams and Mike O’Dell to found a service to be called UUNET.

I was authorized to meet with the Association’s lawyer and account accountant and to sign checks for up to $35,000 for “the initial period.”

The actual service began in mid-May. As I write this it has just celebrated its 15th birthday.

In retrospect, it’s hard for me to be unemotional about this: I was an enthusiast when Rick made his first proposal to the Board in Monterey in October 1986. I was thrilled when UUNET was a clear success within a few months. This was one USENIX project that was far more successful than anyone dreamt it would be, back in 1986–87.

Congratulations Rick and Mike…and the farsighted Board members.

USACO News

by Rob Kolstad
kolstad@sage.org

The USA Computing Olympiad (sponsored by the USENIX Association) has completed all but one phase of the 2001–02 season. After five Internet-based contests, 15 finalists were chosen to attend training camp at the University of Wisconsin-Parkside, home of Don Piele, the Olympiad’s director.

Finalists were:

Seniors:
Adam D’Angelo Phillips Exeter, CT
Jacob Burnim Montgomery Blair HS, MD
Gary Sivek TJHSST, VA
Steven Sivek TJHSST, VA

Juniors:
Timothy Abbott, TJHSST, VA
Stephen Guo, Monta Vista HS, CA
Po-Ru Loh, James Madison Memorial HS, WI
Anatoly Preygel, Montgomery Blair HS, MD
Yan Zhang, TJHSST, VA
Yoyo Zhou, TJHSST, VA

Sophomores:
Jongmin Baek, Cupertino HS, CA
Brian Jacokes, TJHSST, VA
Tiankai Liu, Phillips Exeter, NH

Freshmen:
Eric Price, TJHSST, VA
Alex Schwendner, Home school, TX

Long-time readers might note several familiar names, including the Sivek twins from Thomas Jefferson High School of Science and Technology. Again this year, TJHSST supplied the most students.

Freshman Alex Schwendner, a home-schooled student from Austin, Texas, was crowned this year’s overall national champion, having placed high in all of the Internet contests, often against extremely difficult competition.

The training camp was the most competitive ever. Seniors are invited only if they have a significant chance of making the team. This year we had a record five seniors, all of whom were fighting for one of the four spots on the international traveling team. This year’s big contest (the International Olympiad on Informatics – IOI) will be held in Seoul, Korea, on August 18–25.

Training camp included a “fun contest,” which started the first night and continued as evening entertainment through the week (a challenging game-strategy program), and six programming contests throughout the nine-day event. Four of those contests were three hours in length; the remaining pair were grueling five-hours long. The results of these contests determined the team of four that will represent the USA in Korea.

The coaching staff toiled long and hard to create a full year of contests to challenge the competitors through the week.

Coaches included:
Reed Barton, MIT freshman and last year’s IOI world champion (and four-time gold medallist at the International Math Olympiad)

Hal Burch, frequent USENIX speaker and Lumeta engineer

Russ Cox, MIT grad student and Plan 9 release engineer

Brian Dean, MIT grad student and Akamai employee

Rob Kolstad, Executive Director of SAGE

In total, over 20 high-caliber problems were created, written up, solved multiple times, supplemented by test data, timed, and inserted into the contest-grading system (sometimes requiring a special program to check output from the finalist’s entries). It takes about 8 to 12 hours to create a high-caliber problem that will pass muster at the elite level of competition these students were exhibiting... lots of work this year for the coaches.

Recreational activities (including Frisbee golf, the not-exactly-LISA Quiz Show, swimming, movie night, and bowling) kept the competitors busy every day from 8 a.m. to 10 p.m.

After seven days of camp, the IOI team selection came down to the final contest, with half of the finalists still in the running for the final four slots. After an agonizing discussion and repeated evaluation, the coaches chose four IOI representatives:

Jacob Burnim, a senior from Exeter Academy
Tiankai Liu, sophomore from Phillips Exeter Academy
Adam D’Angelo, senior from Phillips Exeter Academy
Alex Schwendner, home schooled freshman from Austin, Texas.

Camp Director Don Piele kept operations running extremely smoothly. Don is also running the IOI in the USA for 2003 – contact him at piele@uwp.edu if you or your organization wish to assist in sponsorships for this event, which promises to attract competitors from around 80 countries. Don raised the bar this year for public relations by sending daily reports of camp activities to parents via email. He also posted a few dozen digital pictures every day.

The competitors had a great time as evidenced by letters from them and their parents directed to USENIX, the sole sponsor of the USACO. Jacob Burnim’s mother wrote a particularly nice note (see sidebar).

The 2002-03 USA Computing Olympiad will start in October of 2002. Free training is always available at http://train.usaco.org; over 7700 students from around the world are currently registered.

Please join me in wishing the best for these outstanding students and encouraging any excellent pre-college programmers that you know to check out the USA Computing Olympiad at http://www.usaco.org.

SAMPLE TRAINING CAMP CONTEST PROBLEM : Sentence Finder (Parade Magazine)
The cows read Parade Magazine in the Sunday newspaper and really enjoy the sentence-find puzzles. Here’s one:

The goal is to start at the C (to the left of the plus) and end at the S (to the left of the minus). Each move requires you to move to an adjacent, not yet used, letter by moving vertically, horizontally, or diagonally. As you traverse the letters, fill in this English-language sentence (more clues are given here than you will normally get):

C... ... ... ... ... ... ... ... ... ... ... ... ... ...

In this case, the sentence is the standard cow-maxim taught to all the calves:

COWS ARE THE BEST FARM ANIMALS.

Given a puzzle and a dictionary of words, deduce the sentence that the puzzle represents. The dictionary should be read from a file named dict.txt. The dict.txt that will be used during grading can be downloaded for inspection. You will be allowed 1.0 CPU second on a 750MHz Pentium IV to find the answer.

Letters of Thanks
To Dan Geer
USENIX Board President

I am writing on behalf of myself and my husband Ira Burnim to thank you for the generous support USENIX provides to the USACO program run by Don Piele and his associates.

USACO has really made a different in our son Jacob Burnim’s life. From the time he first discovered it on the Internet during his freshman year, it has provided him with the most challenging, stimulating, and enjoyable piece of his scientific and technical education. Even though he attended one of the best high school math, science, and computer science magnet programs in the country, his school could not provide him with the sophisticated learning experience he has enjoyed and is enjoying through USACO. His three camp sessions at the University of Wisconsin-Parkside were all great, and of course he is thrilled to be going to the IOI in Korea before he begins his studies at Caltech.

Jacob told us if he ever has money to give away, he would like to help support USACO – a good indication, I think, of how much the program means to students who participate in it.

Rob Kolstad, Executive Director of SAGE

Brian Dean, MIT grad student and

Russ Cox, MIT grad student and

Hal Burch, frequent USENIX

Exeter Academy

SAGE

Akamai employee

Plan 9 release engineer

International Math Olympiad)

Brian Dean, MIT grad student and

Russ Cox, MIT grad student and

Hal Burch, frequent USENIX

Exeter Academy
Again, thanks very much for your support.

Sincerely yours,

/s/ Elizabeth Samuels

To Ellie Young:

As parents of a three-time USA Computing Olympiad finalist we would like to thank USENIX for its support. The USACO competition has enabled our son, Adam, to orient his interest in math and computer science. His focus on the contests became the most important part of his co-curricular high school experience. The friends and relationships he has established through USACO are wonderful. The advice and guidance from the USACO coaches, especially Rob Kolstad, is invaluable. Beyond programming information, he has helped Adam in his college search providing information about computer science departments across the country.

To illustrate how much the USACO competition means to Adam consider that the training camp this year in Wisconsin conflicts with his high school graduation. Without hesitation he chose the Olympiad week over the graduation ceremony. We are happy that he has the opportunity to compete for the international team.

The support your company provides for young computer programmers goes a long way in setting standards of interest and excellence. You should be commended for the support. As parents we feel both proud and fortunate to be a small part of this experience.

/s/ Susan and Raymond D'Angelo

Good Works

Mobility Support in a Publish/Subscribe Middleware

An abstract of work done with the Support of USENIX and Nlnet under the ReX exchange program. See http://www.usenix.org/XS/rex/ for information and full reports on this program.

by Mauro Caporuscio
mauro_caporuscio@katamail.com

This work focuses on the integration of a publish/subscribe middleware service with mobile components and applications. Publish/subscribe middleware is considered a good platform for the integration of loosely-coupled components on a large-scale. However, none of the implementations of publish/subscribe middleware available today is specifically designed to support mobile applications. Such applications are gaining popularity with the introduction of wireless data communication and portable computing devices such as PDAs or 3G cellular phones. Our idea is therefore to study how to design a publish/subscribe middleware capable of serving mobile applications. This effort consists of two parts: First, we studied the performance of an implementation of a publish/subscribe middleware built on top of a wireless network. Second, we studied the additional service-level requirements posed by mobile, wireless applications over the publish/subscribe middleware. In this paper, we present the results of our performance study, and the design and implementation of an auxiliary service-level support for mobile applications.

Thanks to USENIX

by Craig Soules
soules@ece.cmu.edu

My primary focus over the last year has been different two different research topics in the area of operating systems. The first project is called self-securing storage, and my focus has been on creating a space efficient versioning file system. The second project is online reconfiguration within an operating system. I have submitted papers on both of these projects to USENIX’s OSDI 2002.

My work in self-securing storage has been on designing and implementing a comprehensive versioning system. This system uses a combination of file system techniques in novel ways to provide significant benefits in space utilization for versioned metadata while minimizing performance overhead. By combining a log-structured layout, multiversion b-trees, and a technique we call journal-based metadata, we were able to provide an increase in metadata space efficiency of over 80%, reducing the overall space needed for versioning by nearly 40%. This was work done with the help of my advisor and two other students, John Strunk, and Garth Goodson.

My work in online reconfiguration describes the benefits of having a single mechanism for reconfiguration within the operating system and describes our implementation of such a mechanism with IBM’s K42 operating system. Once such a mechanism is in place, the system can easily support a number of well-known advances, such as application extensions, adaptive algorithms, and dynamic monitoring. We provide object hot-swapping and interposition within K42, and use it to implement a number of these benefits, concretely outlining the advantages and overheads of our approach.

I’d like to thank USENIX for the financial assistance I have received and I hope to have more interactions with the USENIX community as I continue with my degree.