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THE MAGAZINE OF USENIX & SAGE

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Summary of the USENIX Board of Directors Actions

by Ellie Young

Executive Director

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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
- Scholastic 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
- Mobisys, 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

USENIX Association Financial Report for 2001

by Ellie Young

Executive Director

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 I 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

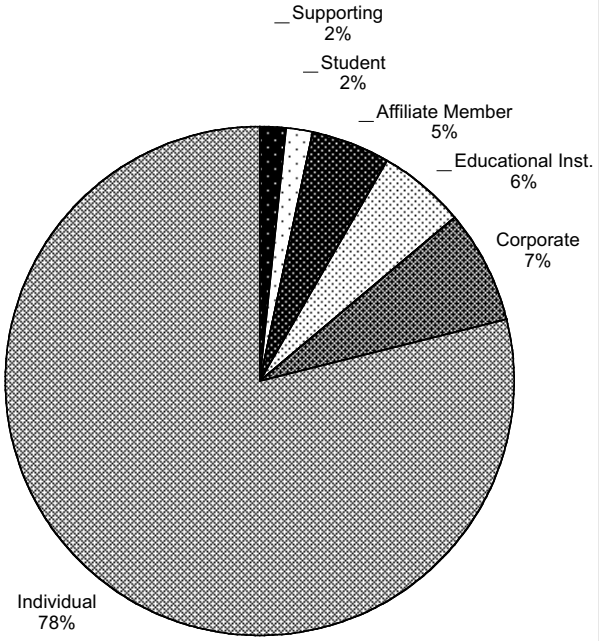
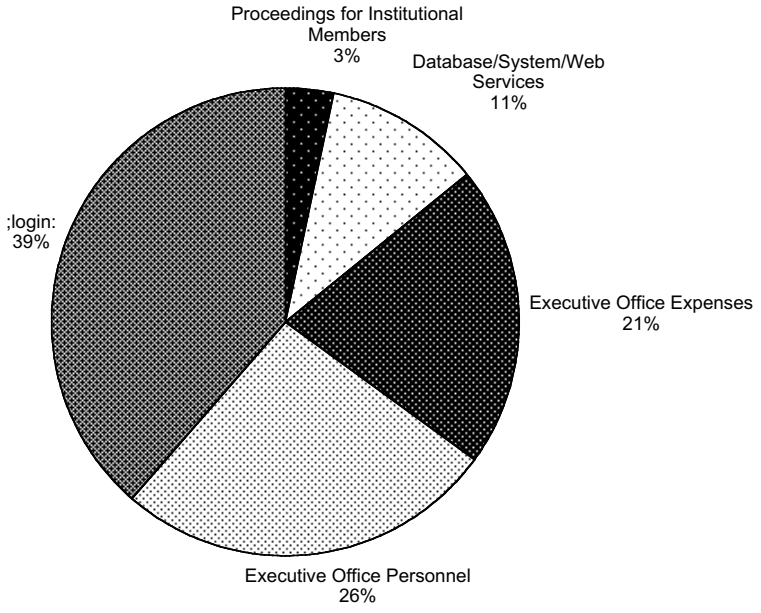


CHART 2
Where Your 2001 Membership Dues Went



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

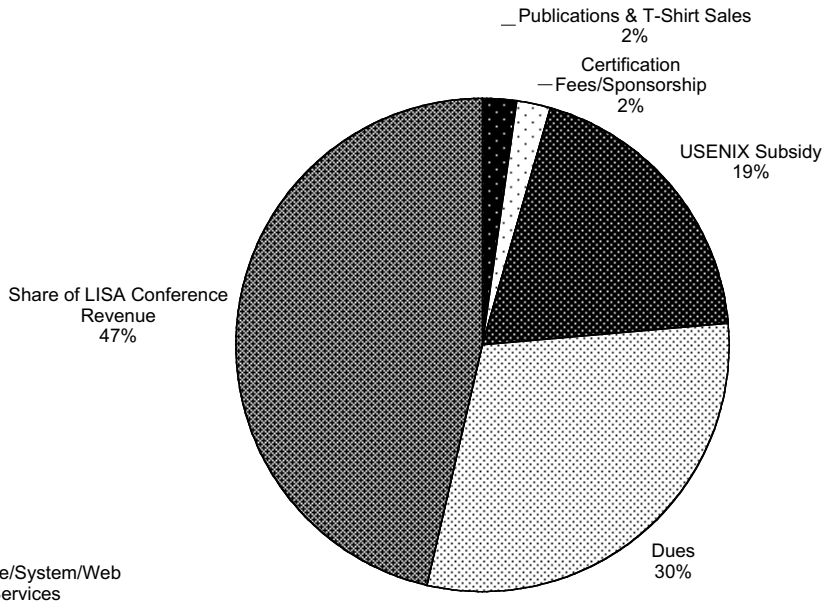
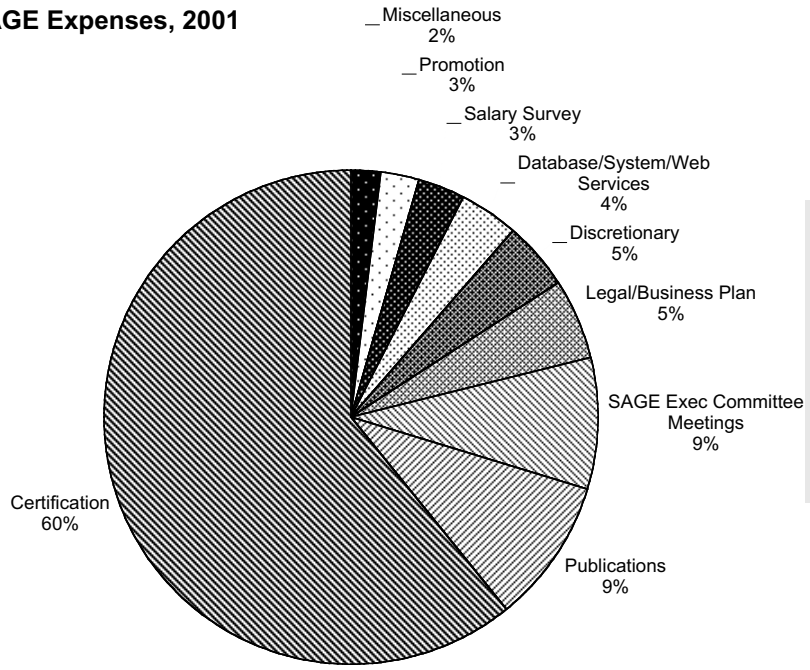


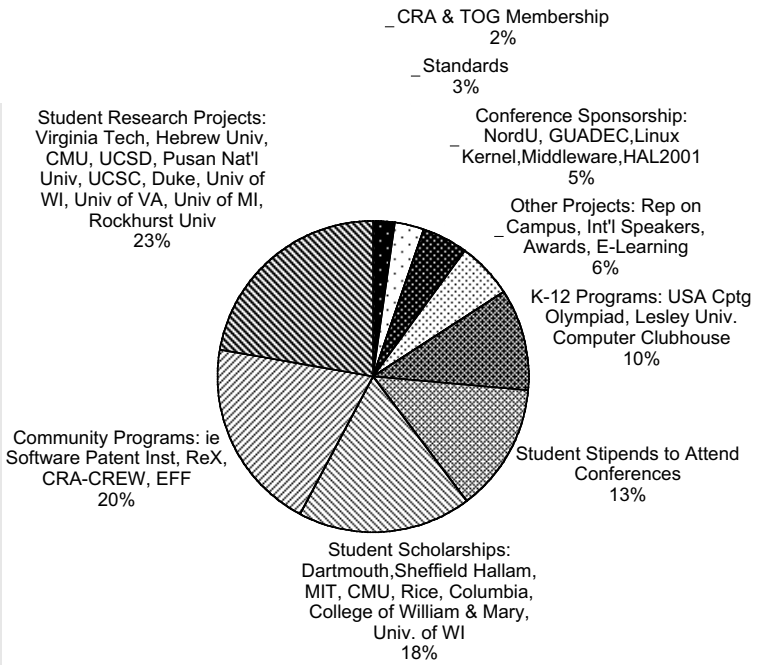
CHART 4
SAGE Expenses, 2001



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



USENIX ASSOCIATION
STATEMENTS OF ACTIVITIES
For the Years Ended December 31, 2001 and 2000

	2001	2000
Operating revenues:		
Conference and workshop revenue	$ 3,506,275	$ 6,005,509
Membership dues	739,856	947,846
SAGE dues & other revenue	151,820	255,294
Product sales	20,676	30,064
SAGE Certification	10,750	51,000
Total operating revenues	4,429,377	7,289,713
Operating expenses:		
Program services:		
Conference and workshop revenue	4,063,800	4,574,677
Programs and membership	629,833	658,447
Student programs, Good Works, and projects	981,806	1,044,583
SAGE	349,713	404,974
SAGE Certification	287,793	61,949
Total program services	6,312,945	6,744,630
Suppport services:		
Management and general	349,870	307,935
Fund raising	27,067	32,117
Total support services	376,937	340,052
Total operating expenses	6,689,882	7,084,682
Net operating (deficit) surplus	(2,260,505)	205,031
Net investment income and nonoperating activities		
Donations	532	50,000
Interest and dividend income	240,445	298,381
Net realized and unrealized losses on investments	(1,185,139)	(348,608)
Investment fees and costs	(94,171)	(115,966)
Net investment income and nonoperating activities	(1,038,333)	(116,193)
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	2001	2000
Current assets:		
Cash & cash equivalents	$ 476,185	$ 2,212,063
Accounts receivable	66,936	364,982
Prepaid expenses	108,977	94,123
Inventory	31,225	20,149
Total current assets	683,323	2,691,317
Investments at fair market value -reserve fund	6638588	8,084,438
Property and equipment:		
Office furniture and equipment	422,576	497,378
Less: accumulated depreciation	(183,204)	(209,984)
Net property and equipment	239,372	287,394
Total assets	$ 7,561,283	$ 11,063,149
LIABILITIES AND NET ASSETS		
Current liabilities:		
Accounts payable and accrued expenses	$ 633,503	$ 860,225
Deferred revenue	63,045	39,350
Total liabilities	696,548	899,575
Net assets:		
Unrestricted net assets:		
Board designated	6,638,588	8,084,438
Undesignated	226,147	2,028,135
Total unrestricted net assets		
Temporarily restricted net assets		51,000
Total net assets	6,864,735	10,163,574
Total liabilitites and net assets	$ 7,561,283	$ 11,063,149

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

	2001	2000
Cash flows from operating activities:		
Change in net assets	$ (3,298,838)	$ 88,838
Adjustments to reconcile change in net assets to net cash (used in)/provided by operating activities:		
Depreciation	77,455	67,545
Net investment income designated for long-term purposes	(94,289)	(69,304)
Realized and unrealized losses on investments	1,185,139	348,608
(Increase) decrease in assets:		
Accounts receivable	298,046	(249,427)
Prepaid expenses	(14,854)	(36,281)
Inventory	(11,076)	(1,605)
Increase (decrease) in liabilities:		
Accounts payable and accrued expenses	(226,723)	725,661
Deferred revenue	23,695	39,350
Net cash (used in) provided by operating activities	(2,061,445)	913,385
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
Additions to reserve fund		(903,933)
Purchases of property and equipment	(29,433)	(199,911)
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

	Conferences and Workshops	Programs and Membership	Student Programs, Good Works and Projects	SAGE	Sage Certification	**Total Program**	Manage-ment and general	Fund Raising	**Total Support**	**2001 Total**	2000 Total
Operating Expenses											
Conference & workshop-direct	$ 2,656,037	$	$	$	$	**$ 2,656,037**	$	$ 10,099	**$ 10,099**	**$ 2,666,136**	$ 3,318,804
Personnel and related benefits:											
Salaries	783,827	116,359	6,716	73,539		**980,441**	130,109		**130,109**	**1,110,550**	1,025,320
Payroll taxes	58,227	8,644	499	5,463		**72,832**	9,666		**9,666**	**82,498**	70,536
Employee benefits	143,834	21,352	1,232	13,495		**179,913**	23,876		**23,876**	**203,789**	206,199
Membership/proceedings		40,102				**40,102**			**0**	**40,102**	45,613
Membership/login:		343,088				**343,088**			**0**	**343,088**	337,923
SAGE expenses				184,797		**184,797**			**0**	**184,797**	186,627
SAGE Certification expenses					287,793	**287,793**			**0**	**287,793**	61,949
Student programs, Good Works, and projects			967,193			**967,193**			**0**	**967,193**	977,038
General and administrative	421,876	100,288	6,166	72,419		**600,748**	186,219	16,968	**203,187**	**803,935**	854,673
	$ 4,063,801	$ 629,833	$ 981,806	$ 349,713	$ 287,793	**$ 6,312,945**	$ 349,870	$ 27,067	**$ 376,937**	**$ 6,689,882**	$ 7,084,682

Fifteen Years Ago in USENIX

by Peter H. Salus
USENIX Historian
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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
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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.

Alex Schwender

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 a 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 Montgomery Blair HS in Silver Spring, MD
Adam D'Angelo, senior from Phillips Exeter Academy
Tiankai Liu, sophomore 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:

```
C+E S-L M
R O T I A
A W H N F
S E A T A
B E S M R
```

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... ... ... .... ....
......S
```

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.

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

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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, wireless 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

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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.