

TREETIPS

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Introducing ...

tRelational

Migrating data from ADABAS to a relational database management system (RDBMS) can be very difficult, due to the complex data structures available with ADABAS. ADABAS data structures such as Periodic Groups and Multiple Value Fields have no relational counterparts. Sites must determine if these structures should be normalized, implemented as single columns, or if they are needed at all. In addition, the use of Sub-Descriptors, Descriptors on Multiple Value Fields, and the inclusion of Periodic Group Fields within a Super-Descriptor further complicate migration from ADABAS to an RDBMS.

Many other factors can interfere with migration to an RDBMS. For example, sites may choose to use ADABAS file and field definitions stored in PREDICT to create RDBMS tables and columns. Unfortunately, field names and lengths in the PREDICT userviews for a given file may be inconsistent with each other, or with the PREDICT file definition. These **inconsistencies must be detected and resolved**.

Differences between generated PREDICT objects and physical ADABAS files are possible. The physical files may contain unused fields and descriptors. New development may require additional fields defined in PREDICT but not currently added to the physical file. Field attributes (i.e., format, length, descriptor, etc.) may vary between the physical file and the related PREDICT objects. These **differences must be resolved** before migrating to an RDBMS.

When comparable data structures exist in ADABAS and in the RDBMS, **it is not always appropriate to implement the data the same way**. For example, consider ADABAS descriptors and the comparable RDBMS structure, indices. The site may have several fields on an ADABAS file defined as descriptors due to historical requirements. Any unnecessary ADABAS descriptors should not become indices in the RDBMS. Eliminating the unnecessary descriptors will help to **avoid performance degradation** in the RDBMS. The site may also have fields which are not being used. Unless the fields are planned for future use, it is possible that the fields should not be migrated to the RDBMS. Therefore, the site must **consider current and future use of the data** when migrating it.

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TSI Becomes Award Finalist

TSI is a finalist in the **Positive Performer Awards** competition sponsored by Inc. Magazine and MCI. TSI is one of 40 finalists chosen from over 300 entrants from around the country.

To become a finalist, Treehouse Software **demonstrated our commitment to our customers**, our knowledge of the market, our level of customer satisfaction, our use of customer feedback in product development, our emphasis on quality, and more. We were judged by a panel of experts including CEOs of companies known for their customer commitment, consultants specializing in customer focus, and the editors of Inc.

Will we win the award? We don't know yet. Wish us luck, and watch *TREETIPS* (and Inc. Magazine) for the outcome! ▲

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Editor's Sproutings

by Michael Salsbury



New Face in the Treehouse: Carla Wolfinger

Carla Wolfinger joined Treehouse Software in April from CISCORP. Carla was subcontracted to Eaton Cutler-Hammer Corporation, Westinghouse Products Division, where she worked as a Senior Security Analyst. Carla served as a NATURAL Security Administrator and also developed applications.

Prior to working at CISCORP, Carla was employed by Software AG. At SAG, Carla was an ADABAS/NATURAL instructor and technical support representative. At SAG, Carla gained experience with VSAM, NATURAL CONSTRUCT, CICS, PREDICT, and COMPLETE.

Carla is currently assigned to the N₂O Development Team.

Looking for a Solution?

In TREETIPS#17, we published an N₂O Word Search puzzle and promised to provide the solution in this issue. Due to space limitations, we are unable to publish the solution. If you would like to receive the solution, call, write, or fax Michael Salsbury at TSI.

TREETIPS

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The TSI staff continues to collect lots of "frequent flyer miles".

Joyce Maguire attended the SAGGROUP meeting in **Australia** with our Australian affiliate, **CCA**. She provided an update on the latest developments in our products, especially SECURITRE, N₂O, and PROFILER. As the Project Leader for SECURITRE and PROFILER (and as an experienced N₂O user), Joyce was able to provide relevant information. While "down under", Joyce visited several clients to answer their questions and discuss their interests.

Carrie Love, Jim Rock, and Gull Hastings attended the **Software AG International Symposium** in Strasbourg, France. Our people also received a guided tour of the **SAGD** educational facilities in **Darmstadt**. While in Europe, we visited customer sites in **Germany** and **Belgium**. These sites gave us many insights into their change management and security needs. The sites' requests were relayed to the N₂O and SECURITRE development teams and added to the enhancement lists for those products. One of the sites we visited has since purchased N₂O, so we feel these visits were definitely successful.

Don Boring, Karen Hirst, Cheryl Stamp, and Michael Salsbury attended the **CAUCUS** in Fayetteville, **Arkansas**. (See the CAUCUS article on page 4 of this issue for more information.)

Karen taught a PROFILER class in **California**. The site wanted to get the most from PROFILER, and felt that an on-site class was the best way to do this. During the class, a student used PROFILER to solve a potentially serious problem in a program that this student was developing.

Karen, Cheryl, Michael, and **Richard Jacobson** were invited to a **state government office** to present and discuss our products with representatives from several state agencies. The state is very interested in SECURITRE, N₂O, and PROFILER. Following the state government trip, Karen and Cheryl visited sites in **North Carolina**. These sites were especially interested in PROFILER and N₂O.

We consulted at a site which is using AUDITRE to propagate data changes from **ADABAS to Sybase**. This will help the site keep its mainframe ADABAS databases in sync with its Sybase databases under UNIX.

Jim Lumpp traveled to a site in **Massachusetts**. They discussed N₂O and how the many different N₂O features, including N2OEDIT, security, batch and on-line migration, checkout/checkin, XREF integration, and Autocompile, would help the site enhance their development environment.

Don and Cheryl went to **Chicago**, attended the Chicago user's group meeting, and visited four sites in the area. At the meeting, they were asked to make an impromptu presentation of N₂O. Satisfied N₂O users spoke up in support of N₂O. Of the four sites visited after the meeting, three were already using one or more TSI products and were considering additional purchases.

Jim Rock, Carrie, and Karen presented PROFILER and N₂O to a site in **Baltimore**. **Debbie Lape** traveled to **New Jersey**, to hold N₂O training at a customer site there.

But our travels are not over. We will hold additional meetings around the country, and around the world, and we will be visiting sites in **Birmingham, Richmond, Philadelphia, Chicago, St. Louis, Kansas City, and Indianapolis**. In the near term, we plan to hold a seminar in **Charlotte**. If you would like us to visit your area, please let us know. ▲

DP's Deadly Sins

by Randy Ebeling, University of Texas at Austin

About the Author:

Randy Ebeling is the Director of Data Processing at the University of Texas at Austin. This article is condensed from the paper that Randy presented at the 1994 meeting of the Cooperative ADABAS Users with College and University Systems (CAUCUS) in Fayetteville, Arkansas. Randy's presentation of this paper earned him one of four "best speaker" prizes awarded at the CAUCUS.

There are many ways to manage computing professionals, and there are many more ways to do it incorrectly than ways to do it right! While I do not suggest that we are correctly performing all possible tasks of managing Information Technology (IT) professionals, we have reached conclusions over the years that definitely work for us. I offer these as lessons we've learned. If you desire to implement any of these ideas at your site, I urge you to NOT do so until you have molded them by the "shapes" of the cultures and philosophies that reign at your organization.

Deadly Sin #1

Reliance on past success is probably the most deadly attitude of all that we will discuss. It is the one against which we most often struggle. Thinking that you've "finally gotten the right answer" to any particular question lures you into this first sin. J. Paul Getty said, "In times of rapid change, experience is your worst enemy". Our job is to handle (or respond in light of the current situation to) problems, not "just straighten 'em out".

Realizing that answers to technological questions often change due to circumstances, you should never let anyone say they have resolved a problem until they have also provided an estimate of when and how the proposed solution will begin failing, and have proposed a probable solution for that eventual failure!

Deadly Sin #2

Failure to build the "right kind" of environment is another deadly sin. A difficult pressure to overcome is the demand for instant response to every situation. While quick responses are indeed generally necessary, the tendency to operate an environment in a constant "crisis mode" is often overwhelming, especially in the constantly changing IT world.

An environment can be built which responds to the pressure for an immediate solution to every problem. Such an environment requires commitment to in-house development, belief and investment in people, and development of the right work environment. Emphasize support of standards that promote quality, dedication to excellence, working together to achieve goals, focusing on commitment and service to users, balancing creativity and reality in problem-solving, and a "We're all in this together!" attitude. There is not one "right kind of person" nor one "right kind of environment"! The most important aspect is the development of people with diverse backgrounds into a cohesive unit committed to working together.

Deadly Sin #3

The failure to build the right kind of environment is often due to the sin known as a **lack of executive-level support and commitment**. This is generally caused by not properly "making our case" for why executives should use technology. Executives tend to see IT as a cost to be controlled rather than an opportunity to add strategic value. This sin is difficult to correct. Part of the solution involves convincing executives that IT can leverage (rather than save) time, assist them in making informed decisions, improve communication by making others more accessible, and act as a catalyst in workflow evaluation.

Deadly Sin #4

Many of the sins discussed here create a cyclical situation (i.e., one leads to another). This adds to the difficulty of escaping the cycle. The cycle is even more difficult to break due to a sin known as **failure to commit to a software architecture**. Without

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DP's Deadly Sins

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CAUCUS In the Natural State

This year's Cooperative ADABAS Users with College and University Systems (CAUCUS) meeting was hosted by the University of Arkansas in Fayetteville, Arkansas, from April 24-27, 1994. Over 180 people attended, from more than 50 organizations (including TSI).

TSI attended many sessions, and also made several presentations. Don Boring presented "Change Management: A NATURAL Programmer's Best Friend". Karen Hirst presented "Implementing a Proper Quality Assurance and Testing Program". Michael Salisbury presented "Addressing Security Weaknesses in the ADABAS/NATURAL Environment". TSI also presented N₂O, PROFILER, and SECURITRE.

Four presenters judged as the "best speakers" received \$250 prizes (one of which was provided by TSI). Randy Ebeling of the University of Texas at Austin won a prize for "DP's Deadly Sins". Tom Dimock of Cornell University won for "Distributed Computing at Cornell: The Future of Mandarin". Van Adams of the University of Delaware won for "Departmental Accounting: Only the Shadow System Knows". Carl Jacobson of the University of Delaware won for "Client/Server=Improved Customer Services".

At the end of the CAUCUS, TSI drew business cards for three door prizes. Randy Ebeling won a Treehouse attache. Tiajuana Chestnut of the University of Arkansas won a Treehouse jacket. Charles Rinehart of Memphis State University won a CD stereo system.

The Treehouse attendees found "CAUCUS in the Natural State" to be an excellent learning experience, and great fun. We encourage all educational sites to participate in CAUCUS '95 at the College of William and Mary in Williamsburg, Virginia, in March 1995. We hope to see you there!

this commitment, each "solution" is seen independently, resulting in a hodgepodge of disjointed technology. To overcome this sin, emphasize the employment of good, robust, fully-functional tools to be used by all developers. The synergy produced by having a large number of trained people using a common set of tools is staggering.

Deadly Sin #5

The most heinous DP sin I have observed is "**management by magazine article**". All of us regularly read industry journals. This task is important if we are to be successful and properly informed. However, it is also important to remember that EVERY magazine is printed to sell magazines! While magazines purport to assist us in decision-making (and in fact they often do!), the latest survey or the hottest topic should not replace our own independent thinking and evaluation. Popularity is an extremely poor substitute for critical thinking.

Deadly Sin #6

Self-help is everywhere! There must be hundreds of "How To..." seminars every day across the country. **Failure to properly manage people and build a supportive, cooperative environment** is another deadly sin.

While "self help" seminars serve a purpose, commitment to a few, simple, fairly administered common sense ideas about the dignity of every person brings about the same result. Such ideas include acquiring the art of kindness and persuasion, putting considerations of human dignity above others, removing all double standards of behavior, starting all requests with "please", giving credit where it is due, overcoming the fear of change, and having respect for all individuals.

Deadly Sin #7

The final sin can be described as a **failure to properly focus**, or a lack of vision. In some ways, this sin is related to Deadly Sin #4. However, it is much larger than a lack of a commitment to a software architecture. Focus or vision is the aspect of our work that provides the framework through which new approaches, techniques, and technologies can be evaluated.

Search for a simple solution before embarking on a course full of complexity. V. Paul Giardina said in EXPLAIN magazine, "complexity is often the path of least resistance for the designer. It is either the result of lack of knowledge or lack of adequate thought. The simple way of doing something is not usually the one that first springs to mind."

In light of today's emphasis on development of the "information superhighway", I propose that more time be spent focusing on "**How do I order a pizza?**" People want information technology that simplifies their jobs and is easy to use. Generally, we start with mountains of data to create ounces of information. Certainly, an information highway must be built! But, as information systems providers, our focus should be on delivery of real work.

Conclusion

There are many ways to manage computing professionals. Not all techniques are equally successful. Through the years, The University of Texas at Austin has used a "trial and error" approach to numerous management techniques to build a high-quality staff dedicated to excellence, rapid development of applications, and having FUN while doing it. I trust that you will find these ideas helpful and useful in your efforts to do the same. ▲

TRIM Gets Slim

TRIM Finds the Problem!

While talking to one of our customers about PROFILER and N₂O, one of our salespeople was told:

"TRIM helped me debug a problem for one of my users. The user complained that the system was bogged down because of an upgrade we had recently installed on our system. However, TRIM showed that the problem was not related to the upgrade, but to the user's application code."

Thawing Mainframe Purchase "Freezes"

Several sites we have spoken with have "frozen" mainframe software purchases. They are considering switching to new operating systems, new databases, etc., and want to avoid buying software which may be "useless" in their new environment.

People at these sites often tell us they really need our products, but the new "directive" prohibits purchasing them. For example, they need change management, but cannot invest in a product that they may not be using in 6 months, or even in a few years. They asked if we can help them.

Treehouse Software and its affiliates offer alternative pricing for short-term use of TSI products. The exact pricing depends upon several factors, including CPU group and the length of the usage period. If you are in a situation where your site needs any of our products for a short period of time, attractive pricing is available. Contact TSI or a TSI affiliate today for more information and a price proposal.

The TRIM Development Team is putting the finishing touches on a new release of TRIM, Treehouse Software's ADABAS/NATURAL Performance Monitor. What can you expect in the new release?

CLOG5

As promised, TRIM supports the new CLOG V5 format. Several of you asked for this capability, and we are happy to provide it to you.

Idle Mode

TRIM User-Exit-4 collects ADABAS performance statistics for displaying on-line via the Real-time Monitor (RTM). If the site does not use the RTM, or has not yet used the RTM against a particular database during the current session, it may be undesirable to incur the overhead needed to gather the statistics for "potential" viewing. Therefore, the new release of TRIM offers an "Idle Mode" option for TRIM User-Exit-4.

In Idle Mode, statistics collection in TRIM User-Exit-4 is deactivated. This can reduce the processing performed in TRIM User-Exit-4 by about 90%. Talk about "slimming down"!

Idle Mode can be activated and deactivated at specific times of the day via the TRIM Time Adjustable Parameters (TRMTAP). For example, the DBA may wish to activate Idle Mode between the hours of 7:00 p.m. and 8:00 a.m., when no one is in the office to use the RTM. At 8:00 a.m., Idle Mode is automatically deactivated and TRIM begins collecting statistics.

Idle Mode may also be activated and deactivated "on demand" through the RTM. This option puts Idle Mode, and the overhead savings it provides, right at your fingertips.

XUQ

The TRIM Extended User Queue (XUQ) involves the concept of maintaining TRIM's own "user queue" in synchronization with the ADABAS User Queue. This XUQ maintains a variety of useful data not currently kept in the ADABAS User Queue. In order to maintain our XUQ, we have to carefully manipulate and search the table, to ensure good performance.

With ADABAS V5, the concept of "users" changed. A Logoff and Logon under ADABAS V4 did not change the "user". Under ADABAS V5, however, a "new" user is created in the ADABAS User Queue. To keep pace with ADABAS 5, TRIM XUQ processing had to adapt and evolve.

This is one example of behind-the-scenes work continuously being done at TSI to keep TRIM functioning with each new release of ADABAS and NATURAL. Other improvements (many of which are internal and invisible to the user) have also been made in the new TRIM release.

Commitment

We remain committed to the enhancement and support of TRIM. A staff of full-time developers is busily preparing for the next release, which is expected to include many "quantum leap" improvements over previous TRIM versions.

To learn more about TRIM, contact Treehouse Software or your TSI affiliate today! ▲

An Interview with Jerry Scott

Who Is Inco Alloys International?

Inco Alloys International, Inc., is the world's leading producer of high-performance nickel-based alloys. About 80% of the people on the DP staff work with ADABAS and NATURAL. Inco uses ADABAS and NATURAL for all of their mission-critical applications.

Who Is Jerry Scott?

Jerry has been involved in data processing for 15 years, 14 of these with Software AG products. Prior to joining Inco, Jerry worked for another ADABAS site in the Southeast.

TSI: *Had you seen any of the Treehouse products before joining Inco?*

Jerry: During my employment at another ADABAS site, we looked at ADABAS/NATURAL performance monitors, and selected TRIM. It was the easiest to use, the most powerful, and the most efficient of the monitors we tested. TRIM also didn't require us to code on-line "reports" just to see what was going on in the database. I always found TRIM to be an excellent product with first-rate support. When I came to Inco and found that no performance monitor was available, I already knew which one to buy: TRIM from Treehouse Software.

TSI: *Has TRIM met Inco's needs?*

Jerry: Yes! In fact, during the first week of our TRIM trial, I found some programs issuing extremely inefficient ADABAS calls. Some of these calls took five minutes to process. After we tuned those programs, the same calls processed in under a second. As a result, we saved more than the cost of TRIM that first week! Management was very glad that I had convinced them to look at TRIM.

TSI: *Why was your management reluctant to consider TRIM?*

Jerry: They felt that the primary vendor, in this case Software AG, was in the best technical position to develop systems software products for ADABAS and NATURAL. They didn't think a third-party vendor like Treehouse Software could develop such a tool without significant help from SAG. Fortunately, I convinced them to give TRIM a chance. They were very impressed by what I told them about the responsiveness of the developers and the quality of the products. They found it reassuring that Treehouse has been in business for over 11 years and has over 500 product installations worldwide. They finally agreed to bring TRIM in for a trial. Once they saw what it could do, they immediately approved the purchase.

TSI: *What prompted Inco's interest in N₂O?*

Jerry: We weren't doing the best job of managing changes to our NATURAL and 3GL code. We had the typical problems of programmers overlaying, or potentially overlaying, each others' work. We needed to regulate who moved source code into Production, and to keep an audit trail. Programmers needed to be responsible for doing their own migrations, but we needed the proper controls over what they did. I knew N₂O was the only tool that would meet all our needs.

TSI: *Have you worked with any other change management products for NATURAL?*

Jerry: When I arrived at Inco, a competing NATURAL change management product was on the shelf, gathering dust. I decided to install that product, even though I had seen it before and wasn't impressed. I thought that the vendor might have improved it since I had last seen it. I spent two weeks to get it installed and running. After talking with those who would be using the product once I got it installed, I learned that it didn't address many of their most important concerns. They would probably never use it, so I abandoned the product. The results we had gotten from TRIM, combined with the fact that we were getting nothing for the maintenance we were paying for that competitive product, convinced management to give N₂O a try.

TSI: *Did you have any trouble installing N₂O?*

Jerry: N₂O was very easy to install. In about 2 hours, I had N₂O installed and running. It was nothing like the lengthy process I went through with the competing product.

TSI: *Did the programmers begin using N₂O immediately?*

Jerry: A few did, but having an idea of how the competing product operated (or didn't), they were convinced that change management wouldn't help them. They felt change

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SAGD Attends Treehouse Class!

At our request, SAG Darmstadt agreed to host a training session in June. The training covered PROFILER for NATURAL and SECURITRE externals and internals. Barb Friedman, a senior TSI developer, provided the training, and was supported by TSI's Guil Hastings and Hans-Peter Will, a senior technician from MaK Data System, our German affiliate. Representatives of several SAGD product development teams attended.

The purpose of the "training" was to ensure that SAGD is well-informed about the many popular ancillary products originating from Treehouse Software, so that SAGD can better support their customer base. Therefore, TSI fully exposed the technical details of its products, keeping no "secrets" from SAGD. SAGD offered some pointers which will help us overcome some of our development challenges, and we helped SAGD solve a problem they were having with NATURAL Security. As a result of the full-day information exchange, TSI and SAGD are better able to maintain compatibility between our products, resulting in direct benefit to our mutual customers.

The best training always includes some humor. At SAGD's request, logic exists in PROFILER which disables monitoring of programs in the NATURAL library "SYSLIB". This was an understandable request, because there is no need for users to monitor SAGD's code. SAGD personnel are quite impressed with PROFILER, but they want to use it to monitor the code they develop — which of course resides in SYSLIB. We laughed as we created a zap to PROFILER to enable monitoring of SYSLIB so that SAGD developers could realize the full benefit of PROFILER.

The excellent exchange of information broadens SAGD's knowledge of our products, strengthens the Interface Partnering Agreement between our two companies, and assists TSI in its mission — development of products complementary to the SAGD offerings. We thank SAGD for their cooperation and hospitality.

SAGD attendees expressed an interest in learning more about our other products. We hope to return to SAGD soon, to discuss the internal workings of other TSI products.

An Interview with Jerry Scott

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management would be confusing and cumbersome, and that it would get in the way of their work. However, the few who did look at N₂O initially began to convince others to try it.

TSI: *How do the programmers feel about N₂O now?*

Jerry: They feel that N₂O is very flexible. N₂O adjusts to all of their methodologies. N₂O lets them keep source code in the existing NATURAL libraries, rather than moving it to some sort of repository. N₂O helps them coordinate and track their work, avoiding accidents and mistakes. Instead of standing in their way, N₂O helps them get more work done.

TSI: *What are some of their favorite N₂O features?*

Jerry: Checkout/checkin helps them stay out of each other's way. They know that if an emergency arises, N₂O will allow them to bypass checkout/checkin in order to respond quickly to a problem. They also like the XREF at the Target feature of N₂O Autocompile. The Source Program Compare utility is another favorite, because it enables them to easily see what has changed between versions of a program. Of course, the feature most enjoyed by the developers is that N₂O migrates their code without them having to ask the DBA to do it.

TSI: *Do you often get to speak with Treehouse developers?*

Jerry: I've always been able to speak directly to the developers whenever I need to. Sometimes, they call me to ask my advice about a planned enhancement. Occasionally, I call them to offer suggestions for improving their product. They always listen to me, and have often implemented my suggestions in the next release of N₂O. I don't get this kind of response from other vendors, and I rarely (if ever) get to speak with their developers.

TSI: *Would you recommend Treehouse products to other sites?*

Jerry: Yes, the Treehouse products I've been exposed to are the best available. They work even better than advertised. Sites who purchase so-called "competitive products" without giving the Treehouse products a try are making a major mistake. I find TRIM and N₂O to be world-class performers, enthusiastically supported by Treehouse. Treehouse seems to really have a handle on certain disciplines related to SAG products, such as change management and performance monitoring. And this new quality assurance tool, PROFILER for NATURAL, seems to be growing in popularity. I'll have to take a look at it.

TSI: *Do you feel that the Treehouse products help you get more from your use of ADABAS and NATURAL?*

Jerry: The Treehouse products have helped us improve the quality and performance of our applications. They have added significant value to our use of ADABAS and NATURAL. I strongly urge SAG to develop a closer working relationship with Treehouse Software. Most of the major DBMS vendors have strong third-party partnership programs, attracting many third-party tools and applications vendors. SAG does not have a strong plan, or many third-party vendors. I consider this a significant liability for SAG, and I plan to speak with SAG Darmstadt in the near future to discuss how third party vendors like Treehouse Software add value to their enterprise. It is important for SAG to support Treehouse in every way possible. Treehouse has its finger on the pulse of the ADABAS/NATURAL community. Treehouse knows what the customers want, and works hard to see that we get it. SAG needs Treehouse Software. ▲

**Es ist soweit!
Die "ADABAS-Bibel" ist da!**

Das von vielen erwartete Buch "Effizienter DB-Einsatz von ADABAS" liegt endlich vor und umfaßt jetzt über 650 Seiten. Für DV-Leiter, Systemtechniker, Datenadministratoren, Datenbankadministratoren und den qualifizierten Anwender, aber auch für Direct-Code- und NATURAL-Programmierer bietet es "heißes" Wissen, vermischt mit "brandaktuellen" Software AG - "News".

Als Besonderheit enthält dieses Buch eine Diskette mit einem universell einsetzbaren RESSOURCEN-MONITOR für die MVS-Welt. Die Meßwerkzeuge sind natürlich in Assembler geschrieben und liegen im Source-Code vor, so daß Sie auf die eigenen Belange sowie für andere Betriebssysteme leicht abgeändert werden können. Da der größte Einflußfaktor auf die ADABAS-Performance in der Anwendungslogik liegt, werden in Verbindung zum TP-Monitor und den Datenbankzugriffen die Direkt-Programmierung und NATURAL eingehend besprochen sowie die Parametrisierung dieser 4GL-Sprache erörtert. Damit es aber nicht zu einem Leistungsproblem kommt, erfolgt sehrausführlich das Thema Datenbankdesign.

Beim Einrichten der Datenbank werden auch Spezialanwendungen und die Blockgrößen eingehend behandelt. Anhand von Themenschwerpunkten, wie beispielsweise der Bufferpool oder die Queues und Threads, werden sämtliche relevanten ADABAS-Parameter eingehend erörtert und in einer übersichtlichen Tabelle mit anderen Einflußgrößen, Response-Codes etc. zusammengestellt. Unter dem Thema "Optimierung der Verarbeitung" erfolgen insbesondere Erläuterungen über die ADABAS-Cache-Möglichkeiten. RAID-Technologien werden ebensowenig ausgespart wie ADABAS DYNAMIC CACHING. Sicherung und Recovery wird zusätzlich durch einen Aktivitätenkatalog detailliert beschrieben.

Bitte umblättern, ausfüllen und faxen an:

Storr's Book-Service
Dieter W. Storr
Herrngasse 5
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Bestellung per Fax: 06196/643119

Bradford's PROFILER Experiences

Gene Buck, of The Bradford Exchange in Niles, Illinois, sent us a printout of some PROFILER for NATURAL test statistics collected by a Bradford consultant for one of Bradford's batch NATURAL programs. The summary portion of the Program Listing report for that program indicated the following information:

STATISTICS FOR LIBRARY: MKPPB PROGRAM: PP001NPB

PROGRAM RUN COUNT:	2
CPU TIME, MILLISECONDS (MSEC):	291206.40
ADABAS ELAPSED TIME, MILLISECONDS (MSEC):	4808258.32
TOTAL STATEMENT EXECUTIONS:	18112089
TOTAL EXECUTABLE STATEMENTS:	467
EXECUTABLE STATEMENTS EXECUTED:	99
PERCENTAGE OF EXECUTABLE STATEMENTS EXECUTED:	21.20

As we see here, the consultant ran this program twice during the testing session, using over 290,000 milliseconds of CPU time and over 4,800,000 milliseconds of ADABAS time. The program had **over 18,000,000 statement executions**, yet only 99 out of the 467 executable statements in the program were actually executed during this testing session.

Many experts contend that "80% of program execution exercises only 20% of the program's code". Bradford's results in this case seem to substantiate the claim. In spite of the fact that this program had millions of statement executions, **the executed statements represented only about 20% of all the executable code** in the program. Bradford now knew that they would need better test data and procedures to execute the remaining 80% of the code in this program.

Other PROFILER reports enabled Bradford to determine that only about **50% of the internal subroutines and non-procedural blocks** in the program were executed, and that **only about 45% of the database/work file loops** in the program had been tested. Using the Program Listing report, the consultant was able to easily determine which statements had not executed. This helped him to improve the test data and procedures to ensure **near 100% coverage**.

When asked how PROFILER has helped The Bradford Exchange, Gene told us "We are just starting to use PROFILER but **we can see that it will do a good job for us** in identifying untested code. Some of our code is CONSTRUCT-generated and therefore contains lots of INCLUDE code. The current version of PROFILER does not distinguish between program line numbers and INCLUDE code line numbers. I'm happy to hear that the new version of PROFILER will address this INCLUDE code issue. **PROFILER is really a nice product.**"

Fortunately, The Bradford Exchange has PROFILER to show them where their testing efforts had previously been ineffective. Many sites, however, do not yet have PROFILER. As a result, these **sites have no way of knowing** if they are really testing 100% of their code. They may think that they are testing their applications thoroughly, when they might only be achieving the same 20% coverage achieved by The Bradford Exchange before PROFILER was used. Who knows what problems may lie ahead for sites without PROFILER?

If your site doesn't have PROFILER yet, **don't put it off any longer**. Call Treehouse Software today! All you stand to lose are the bugs in your NATURAL applications!▲

Introducing tRelational

(continued from page 1)

Availability and Additional Information

To help sites learn how tRelational will benefit them, Treehouse offers a "Pilot Project Option". For this Pilot Project, tRelational consultants will travel to the site and provide five days of tRelational service, migrating up to 3 ADABAS files to the target RDBMS. This option gives the site an opportunity to determine the value of tRelational to the organization. This Pilot Project is available at a nominal fee. The customer is under no obligation to continue with tRelational beyond the Pilot Project.

tRelational is expected to be available in September 1994. (The tRelational Tools are designed for the exclusive use of the tRelational consultants, and are not available for purchase, lease, or rental.) If you are interested in arranging a Pilot Project, or full tRelational service, make your reservation now by contacting Treehouse Software sales representatives.

A tRelational Overview is available. Please contact TSI for a copy of the Overview or for more information about tRelational.

There are many decisions to make during a migration project, many problems to solve, and many issues to consider. Sites performing migrations manually may find that the volume or complexity of their ADABAS data is a roadblock to migration, or that the duration and scope of the project cause **budget or resource problems**. It can be difficult to ensure that the many tasks are performed accurately in a manual process. Faced with these difficulties, **sites are looking to Treehouse Software for help**. We have responded by creating tRelational.

What is tRelational?

tRelational is a tool-assisted service for migrating from ADABAS to an RDBMS. Treehouse consultants use sophisticated software, known as the tRelational Tools, to gather and analyze information about the site's use of ADABAS. The tRelational Tools help the consultants perform the following services:

- Analysis of the ADABAS file structures
- Analysis of the usage of ADABAS data by current applications
- Development of a Logical Data Model for the RDBMS
- Physical implementation of the Logical Data Model
- Consolidation/migration of data from ADABAS files to RDBMS objects

Avoiding Migration Problems

Using information collected by the tRelational Tools, the consultants will help with many tasks that cannot be solved by software tools alone, such as:

- Determining whether Periodic Groups and Multiple Value Fields should be normalized or implemented as single columns
- Eliminating unused fields and descriptors
- Resolving discrepancies between physical database structure and PREDICT file and user view definitions
- Identifying inconsistent names in different PREDICT user views for the same file, and resolving these inconsistencies
- Analyzing ADABAS data usage and the impact of usage on RDBMS design
- Converting the format, length, and null suppression of ADABAS fields to their RDBMS equivalent
- Developing a logical model for the RDBMS data
- Choosing naming standards for the RDBMS objects
- Determining which RDBMS indices should be built
- Calculating the Tablespace, Indexspace, and other object sizes for the RDBMS
- Implementing the physical model for the RDBMS data
- Migrating the data from ADABAS files to RDBMS tables
- Improving the performance of the RDBMS and/or ADABAS
- Ensuring the referential integrity of the data

When assisting in these areas, important aspects such as future development, performance, and ease of access are all taken into account by the consultant. Treehouse consultants are **migration experts**, familiar with the nuances of migrating data from ADABAS to an RDBMS. The consultants work with the site to properly implement relational database structures, tune the RDBMS for peak performance, and make every effort to ensure that the migration is a success.

(continued on next page)

Introducing tRelational

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tRelational Benefits ADABAS, Too!

Much of the information gathered and analyzed by tRelational could be helpful in a site's on-going use of ADABAS. tRelational can help identify unnecessary full record reads, unused descriptors, file searches based on fields not defined as descriptors, and other performance issues. File usage data could be used in tuning the database for retrieval versus update activity. Thus, tRelational has value for sites which are not migrating to an RDBMS (or are not migrating all data immediately), but wish to learn more about their data and how they are using it.

Partnerships with RDBMS Vendors

As an **Oracle Business Alliance Partner**, Treehouse Software has access to consultants and information which can benefit those sites migrating from ADABAS to Oracle. Treehouse is also an **IBM Business Partner**, which can benefit those sites going to DB2. Partnerships with other RDBMS vendors are being pursued, so that we can provide complete service to our customers.

Multiple RDBMS/Platform Support

tRelational supports Oracle, DB2, DB2/6000, Sybase, Informix, SQL-DB, and other SQL-based relational database management systems. The tRelational Tools reside on an MVS, VM, VSE, or Siemens mainframe, but can help to migrate data from the mainframe to any platform (including UNIX).▲

NATURAL Tip

Line Numbers and Large Arrays, Revisited

In the last issue of TREETIPS, we discussed a quirk which causes NATURAL to interpret four-digit array dimension values as statement numbers. For example, in the following statement:

```
01 #MY-ARRAY (2048)
```

NATURAL interprets the "(2048)" to be a reference to statement number 2048 in the program. As one of our developers discovered while reading the SAG documentation, the problem can be solved by preceding the number with a slash, as in:

```
01 #MY-ARRAY (/2048)
```

The solution discussed in the last issue, adding a leading zero to the number, also works. In the current issue of his newsletter, *Inside Natural*, Steve Robinson also discusses this quirk and points out these solutions.

Dynamic Positioning in MUs, PEs, and Arrays

Chris Kraus of the City of San Antonio provided this tip. If your NATURAL program needs to dynamically position to a specific occurrence in an array, MU, or PE, consider using an appropriate variation of the following code:

```
0010 DEFINE DATA LOCAL
0020 01 #IDX (P3)
0030 01 #IDX2 (P3)
0040 01 MY-VIEW OF MUNCOURT-FINES
0050 02 OFFENSE-CODE
0060 02 DATE-EFFECTIVE (#IDX)
0070 02 DATE-UPDATE (#IDX)
0080 END-DEFINE
0090 MOVE 3 TO #IDX
0100 MOVE 1 TO #IDX2
0110 FD1.
0120 FIND (1) MY-VIEW WITH OFFENSE-CODE = 'ZZZZB'
0130 DISPLAY MY-VIEW.DATE-EFFECTIVE (#IDX2)
0140 MY-VIEW.DATE-UPDATE (#IDX2)
0150 END-FIND /* FD1.
0160 END
```

In this example, the DISPLAY statement shows the third occurrences of DATE-EFFECTIVE and DATE-UPDATE in MY-VIEW.DATE-EFFECTIVE (#IDX2) and MY-VIEW.DATE-UPDATE (#IDX2). In the MY-VIEW definition, DATE-EFFECTIVE (#IDX) and DATE-UPDATE (#IDX) define MU or PE fields where #IDX specifies the offset index within the database occurrence.

This technique can also be used to retrieve a range of occurrences in an array, MU, or PE. For example, DATE-EFFECTIVE (#IDX:#IDX+9) defines an array with a size of 10 occurrences. By specifying the offset, #IDX, as a variable, it is possible to position the program within the occurrences of an MU, PE, or array. This technique is very useful when working with large arrays which might result in DATSIZE problems.▲

SAG Symposium in Strasbourg

Software AG held its **International Symposium in Strasbourg, France**, from April 24-27. Treehouse sent **Carrie Love** of the N₂O Development Team, **Jim Rock** of the North American Sales Team, and **Gull Hastings** of International Operations, to the Symposium. In addition to the three TSI representatives, an additional ten people from the various Treehouse European affiliate companies also attended. **MaK DATA SYSTEM** of Germany, **Fairware** of France, **Metastore** of Belgium, and **Blenheim Software Ltd.** of England all joined TSI at the Symposium. TSI and the affiliates contributed toward a shared booth in the vendor area.

There were approximately 1,350 attendees at the Symposium, representing a wide variety of organizations. TSI and the affiliates met attendees from all of Western Europe, as well as Argentina, Brazil, Mexico, the United States, Canada, Japan, Hong Kong, South Africa, Israel, Bulgaria, the Czech Republic, and Russia. Many vendors were also represented, including Hewlett-Packard, CONSIST International, ICL, AT&T, and Novell.

The TSI representatives attended sessions by speakers such as **Buzz Aldrin** (one of the first men on the moon), **Peter Schnell**, and **Hans-Dietrich Genscher**. TSI attended several other sessions. At the vendor booth, we had the opportunity to provide on-line demonstrations of TSI products to interested attendees. This exchange of information was invaluable to TSI and its affiliates. It was especially gratifying to see the attention SAGD gives to vendor participants, by providing well-exposed vendor areas, and by encouraging customers to visit the vendors.

After the Symposium, TSI met with the affiliates to discuss topics of mutual interest, such as development plans, product literature, and support issues. We shared common experiences and suggestions on how we can each improve our operations. TSI then went to Darmstadt to discuss training with SAGD (see "SAGD Attends Treehouse Class!" on page 7).

TSI and its affiliates believe that the Symposium was successful from a number of standpoints, and we look forward to participating again in the future. ▲

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MaK DATA SYSTEM

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Softeco Sismat

(Italy & Switzerland)
39-2-738-6501

System Networks (Asia) Ltd.

(Southeast Asia)
852-523-6949

Where Are They Now?

It's always nice to hear of the success and activities of SAG old-timers. We just recently heard from **Chris Wooldridge**, formerly of SAG and Oracle. Chris, an avid downhill skier, and his wife, Jeanne, will be making a lot of flights from their Seattle home to their new venture in New Mexico. We have just received a press release announcing that the Wooldridges -- two brothers and their families -- have joined forces to acquire, renovate, and operate the historic **Hotel Edelweiss**, a charming 16-room lodge located on Taos Ski Valley's slopes. Chris' brother, Tim, an experienced hotelier and chef de cuisine, will serve both as the hotel's general manager and executive chef. Tim's wife, Ann-Marie, will be the hotel's restaurant manager and pastry chef. We wish Chris and Tim and their families much success in this new venture. I am sure that Chris would like to see some of his old friends on the slopes this winter, so we are placing information here on how to contact the hotel for reservations and information:

Hotel Edelweiss
P.O. Box 83
Taos Ski Valley, NM 87525
Phone: (505) 776-2301
Fax: (505) 776-2533

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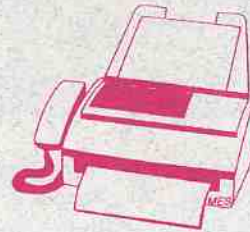
Treehouse Software products and services include:

- tRelational** - Tool-assisted ADABAS to RDBMS migration service
- PROFILER for NATURAL** - NATURAL quality assurance and testing tool
- DynaDoc** - NATURAL application documentation tool
- N₂O** - NATURAL application change management system
- N₂O/3GL** - 3GL support within N₂O
- SECURITRE** - Centralized security administration for ADABAS/NATURAL
- TRIM®** - ADABAS/NATURAL performance monitor
- AUDITRE** - ADABAS auditing tool
- AUTOLOADER** - ADABAS file automatic unload/reload/dump utility
- LumeNAT** - NATURAL monitoring tool, coming soon from Treehouse

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