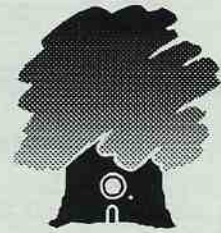


TREETIPS



Issue #14 - January 1993

TENTH ANNIVERSARY ISSUE

A Publication of TREEHOUSE SOFTWARE

adDB2: An End to ADABAS Superiority?

Over the past five years, we have come into contact with a steadily increasing number of sites planning to make the **switch from ADABAS to DB2**. We have traditionally been of the opinion that ADABAS is *technically superior* to DB2, especially in terms of performance and resource utilization. Recent versions of DB2 appear to be narrowing the performance gap, and it is clear that a wide variety of tools and utilities exist for DB2. **Perhaps the days of ADABAS superiority are over.**

The Migration Process

Sites wishing to migrate from ADABAS to DB2 face numerous hurdles:

- Building or acquiring the expertise necessary to develop DB2 applications, and to do database administration under DB2
- Determination of the most efficient design of the new DB2 tables
- Conversion of data from ADABAS files to DB2 tables
- Modification of programs to access DB2 databases rather than ADABAS databases
- Protecting the investment in NATURAL by purchasing the NATURAL for DB2 product (which, by the way,

is not compatible with NATURAL for ADABAS), among other things

- Cost of maintaining ADABAS until the migration is complete (which often takes years)

The **cost of migration is often very high**. Data processing personnel must learn as much as they can about DB2 before the migration can take place. Without the proper DB2 knowledge, they run the risk that the DB2 based applications will perform poorly compared to the ADABAS versions.

What sites need is a migration **service**. This service will include a set of tools which perform the following functions:

- **Analyze** the usage of ADABAS data over time, and use this data to determine the optimal design for DB2 databases to contain this data,

- **Convert** the existing ADABAS data into DB2 data of the appropriate structure which can be read and written using native SQL without special considerations, and
- **Emulate** ADABAS so that applications will access the new DB2 databases without modification.

These tools have been developed by **Advanced Relational Technology (ART)** of Germany, and released as a service involving software and consulting. This service is known as **adDB2**.

Data Analysis Tools

Without any analysis, a "blind unload/reload" from ADABAS files to DB2 tables, even in those rare cases when it is possible to do this, will usually yield poor performance and high DASD space requirements.

Without the appropriate data analysis tools, a **site may spend months analyzing applications** and reporting systems to predict how their ADABAS data is *probably* being used. In some cases, this approach could yield good results, but often **the end result will be a poorly designed DB2 database**. Few, if any, benefits will be gained from the migration, and **the cost will be relatively high** due to the resulting poor design.

Table of Contents

adDB2	1
Editor's Sproutings	2
Page verließ Software AG	3
N/O Developments	5
TSI Acquires a new ReSource	8
PROFILER for NATURAL	9
SECURITRE News	11
New Additions to the Treehouse	11
Affiliate Profile: Blenheim	14

(continued on page7)

Editor's Sproutings

By Michael Salsbury

Starting Year #11

It's a new year, and the start of the **eleventh** for Treehouse. I have been here for just over five years, and have seen a lot changes. The product line has expanded, and the quality of all of the products keeps increasing. The members of the current Treehouse staff are among the most hard-working, skilled, professional, and fun people I know. Even TREETIPS is getting better, thanks to good material from the readers and the staff here.

The 1991-1992 edition of the *Pennsylvania Technology Directory* has Treehouse Software, Inc. as **#19** in the list of "**Fast 50 Companies by Employment Growth**". That's **19th out of 201** high tech companies in the state. We will probably make the list again this year, and next year we expect we may be in the top 3!

NATURAL 2 Conference

Several TSI representatives attended the recent NATURAL 2 Conference in Boston.

Jim Lumpp, the **N2O** Product Manager, attended the session entitled "Meeting NATURAL's Unique Change Management and Control Needs". Due to a scheduling conflict, the moderator was unable to attend, so Jim volunteered to speak generically on change management. Jim reported that the attendees were quite pleased with the exchange of information.

Jim also served as a panelist for the Change Control and Management session, moderated by **Larry Godec** of Dr. Pepper. Larry and the panelists answered questions about change management, and received input from the audience. It was an outstanding exchange of ideas, and the audience appeared to be excited about the alternative methods of change management. Our congratulations and thanks to Larry for moderating such an informative and well-received session.

Island Caucus '92

Over 270 individuals, representing 71 higher education institutions, attended the "Island CAUCUS '92", hosted by **Brown University**. By all accounts, the event was a great success. Presentations covered client/server technology, security, UNIX, object-oriented computing, rightsizing, text processing, and career pathing.

The social aspect of the CAUCUS was highlighted by a Masquerade Ball at the Bellcourt Castle. The castle is full of original artworks, and antique furniture and

rugs. Guided tours provided a complete history of the castle. During the tours and the sit-down dinner, the CAUCUS attendees were joined (unexpectedly) by a troupe of actors who proceeded to act out a "High Moon Production" of the mystery "Murder with a Twist". All of the attendees became part of the action, and eventually had to solve the mystery of who committed the murders. This was great fun!

Our hats off to all of the Brown University staff who made the CAUCUS a resounding success.

TSI looks forward to the next CAUCUS gathering in October 1993, to be hosted by the **University of Arkansas** in Fayetteville, Arkansas.

Fairware Scores a 4.42

Fairware, our French affiliate, recently mailed a survey to all of their customers asking for an evaluation of Fairware, Treehouse, our products and services. The average score was an excellent **4.42 out of a possible 5** - pretty impressive!

Customers evaluated product reliability, assistance with installation, callback time, understanding of problems, response clearness, response reliability, technical information supplied, regularity of telephone follow-up, etc. Thanks go to the support and development staff of Treehouse and to Fairware for their continued excellent work.

Off-Hand Remark

One of our staff members recently spoke with a DBA in the medical insurance industry. They are beta testing ADABAS on UNIX. They like it, but their management seems to think they need a relational product, and they think ADABAS is not relational. This person's

(continued on page 12)

TREETIPS

Editing, Writing, and Design
Michael Salsbury

Layout, Production, and Distribution
Nick Viola
Terri Hammerschmitt
Rose Baloga

Back issues available upon request.
Documentation Sets for all products also available.

Circulation: 8,300

Peter Pagé verließ Software AG

By Dieter W. Storr, President of Software AG Users' Group Germany

This report was provided by **Dieter W. Storr**, President of the Software AG User Group in Germany. With our assistance, Mr. Storr then translated it to English, as shown below.

Peter Pagé verließ SAG

Stenogramm von Dieter W. Storr Vorstandssprecher der SAG Benutzergruppe Deutschland

Bei einer am 30. November 1992 stattgefundenen Erweiterten Vorstandssitzung der SAG Benutzergruppe Deutschland unterrichtete **Herr Peter Schnell** die Benutzergruppe über das Ausscheiden von **Herrn Peter Pagé**.

Nach der Entscheidung von Herrn Peter Pagé, aus dem Vorstand der SAG zum 19. November 1992 auszuscheiden, wurden zuerst die SAG-Mitarbeiter, danach die SAG-Kunden und zum Schluß die Presse von diesem Schritt unterrichtet. Nach außen hin hat primär Herr Pagé die SAG in der Öffentlichkeit vertreten. Das Ausscheiden von Herrn Pagé sei eine "normale Sache, auch wenn sie sich spektakulär anhört". Es sei zwar ein Verlust für die SAG, die Arbeit wurde aber seit Jahren durch ein gut funktionierendes Management erledigt und so wird es auch in Zukunft sein. Es wird sich lediglich die personelle Darstellung der Software AG ändern. Statt eines Ansprechpartners auf höchster Ebene werde es künftig mehrere Ansprechpartner auf der Ebene unter dem Vorstand geben.

Die Produktpalette wird grundsätzlich nicht geändert. Es wird jedoch überprüft, ob die Entwicklung einzelner kleinerer Projekte mit noch nicht freigegebener Software eingestellt wird. Sicher ist es aber, daß es für eine bessere Produkt-Überschaubarkeit eine Produkt-Bündelung mit neuen Preisen geben wird.

Zu den internen Auseinandersetzungen nahm Herr Schnell keine Stellung, bestätigte nur, daß es sich um grundlegende unterschiedliche Ansichten in der Führung des Managements und nicht im Produktbereich gehandelt hat.

Einschätzung der Lage

Herr Pagé war zusammen mit dem Gründer Peter Schnell seit 19 Jahren Vorstandsmitglied der Software AG und wurde weitgehendst als Motor in der Firma angesehen.

Vielleicht war es aus Sicht von Herrn Peter Schnell, dem Gründer der Firma im Jahr 1969 und Entwickler

des ersten Softwareprodukts ADABAS, ein Fehler, daß er sich auf Entwicklungs- und Technologiefragen konzentrierte und die Haupt-Management-Aufgaben Herrn Peter Pagé überließ, der das andere Hauptprodukt NATURAL der Firma entwickelte. Wie auch immer, Herr Peter Pagé gait als Vordenker im Unternehmen, war größtenteils für die Führung des Geschäfts verantwortlich und seine Schwungkraft und seine technologische Sachkenntnis haben dazu beigetragen, daß die Software AG zur weltweit größten Softwarefirma außerhalb der Vereinigten Staaten wurde.

Dieser Erfolg war sicher auch dank der großen Anzahl von fähigen, kompetenten und erfolgreichen Managern, Entwicklern und anderen Beschäftigten möglich, die fest hinter den Produkten und dem Unternehmen stehen und sich der Firma gegenüber verpflichtet fühlen.

Wenn von Loyalität zur SAG und Produktüberzeugung gesprochen wird, müssen auch die Benutzer und ihre Bedeutung erwähnt werden. Sie sind es nämlich, die sich in verschiedenen nationalen Benutzergruppen zusammengeschlossen haben und sowohl innerhalb Deutschlands als auch international sehr gut zusammenarbeiten. So gibt es allein in der deutschen Organisation (SAG Benutzergruppe Deutschland) zur Zeit 25 Arbeitskreise, die sich zwar manchmal sehr kritisch mit den Produkten der SAG auseinandersetzen, von dem Erfolg und der Qualität der Produkte aber überzeugt sind und ständig mit SAG-Entwicklern über einen konstruktiven Dialog gemeinsam an den Produkterweiterungen und -verbesserungen beteiligt sind. So stand auch nicht zufällig die erfolgreich durchgeführte Benutzergruppen-Tagung im April 1992 in Karlsruhe unter dem Motto: "Gemeinsam zu Lösungen".

English Translation of Mr. Storr's Article

After **Peter Pagé** decided to leave the board of SAG on November 19, 1992, the employees were the first to be informed. Then, SAG customers were told, and finally the press was notified. Peter Pagé had primarily been Software AG's "public representative". The departure of Peter Pagé has been described as "a normal case, even though it sounds spectacular". It is undoubtedly a loss for SAG, but the management has always been good in the past. This will continue to be the case. Only the person representing Software AG will change. Instead of one high-level contact, there will be several at the board level.

(continued on next page)

Peter Pagé verließ SAG

(continued from previous page)

There will be no major changes in the product line. However, Software AG will re-evaluate a few smaller software projects before they are released. Some may not be released, and others may be bundled and offered at a new price to enhance the product line.

Mr. Schnell declined to comment on the internal changes, but confirmed that basically different views existed in corporate leadership, but not in the product environment.

Mr. Pagé was with SAG for 19 years and was a member of the board. He was widely viewed as the most powerful executive (the motor) in the company.

Perhaps it was an error by Peter Schnell, who founded the company in 1969 and developed ADABAS, to concentrate on development and technology issues, leaving control of the major management tasks to Peter Pagé, who developed the company's other major product, NATURAL. However, Peter Pagé was acknowledged as the thinker in the company, and was mainly responsible for running the business. His drive and technical expertise were instrumental in making Software AG the world's largest software company outside the United States.

Certainly, this success would not have been possible without a large number of capable, competent, and successful managers, developers and other employees who like the products and are dedicated to the company.

If you speak about loyalty to SAG and its products, you must mention the users and their importance. They link together in different national users' groups and work very well together in Germany and internationally. Currently, the German organization (SAGGROUP Germany) has 25 Special Interest Groups, and sometimes have to come to grips over serious issues concerning the products. They are convinced of the success and the quality of the products and work together with SAG developers via a constructive dialog to expand and enhance the products. It was not an accident that the successful Users' Conference in Karlsruhe in April 1992 had the motto "Together to Solutions".

TSI Reaction to Pagé's Departure

Treehouse personnel and many customers were stunned to hear of Peter Pagé's sudden departure from SAG. In our previous newsletter, we reported the departure of John Maguire, founder, past President and Chairman of the Board of SAG North America.

Now, SAG has experienced what we believe is another major loss.

We asked for no official statement from SAGNA, SAG Darmstadt, or Mr. Pagé. Pagé's departure received broad coverage in the *Washington Post*, and in German, English, and we are sure many other news publications.

Peter Schnell founded SAG in 1969. Peter Pagé joined SAG in 1973 and departed in 1992. Yet, Pagé is sometimes credited with being "one of the founders", and credited with sometimes 19 years and sometimes 23 years at SAG.

George Szakach, President of TSI, offers his opinion on Pagé and his departure.

"When you think of SAG, its history, its people, three individuals stand out - **Peter Schnell**, **Peter Pagé**, and **John Maguire**. Without any one of those three, the company would have never achieved its current size and stature. It would not have started without Schnell and his technical genius. It would have stayed hidden as a German company for a long time, without Maguire and his wizardry for running an international marketing organization. He was (and is) great with people. I don't know of anybody who worked for John who didn't like him.

Pagé was sort of a mix of Schnell and Maguire. He was technically sound, somewhat intimidating to many good technicians around him, and had a very broad knowledge. He was generally good with people - an excellent speaker and very humorous.

Everybody knows Pagé developed NATURAL, which became more important to the company than ADABAS, and he was spearheading SAG's more recent drive into multiple platform support, networking, etc.

Most importantly, Pagé was the catalyst (or motor as Dieter says). Pagé made things happen - maybe too many things. While Schnell was developing the ultimate engine, and Maguire was selling it, Pagé brought SAG to the forefront. Schnell was key in the '70's, Maguire from the mid '70's to mid '80's, and Pagé in the '80's. Will somebody be stepping to the forefront in the '90's?

SAG's reports to all the press and others on this issue downplay the loss and attempt to diffuse the situation. But the articles in the *Washington Post* and *Computerworld* along with other publications highlight the matter. There is this hushed-up question, 'Did Pagé get fired or did he quit?' I submit, it doesn't matter. He's gone. SAG will survive, and do very well."

TREEHOUSE
SOFTWARE

N₂O Developments

The N₂O team continues to improve this popular product, as directed by our customers and trial sites. Recently, the N₂O team released N₂O Version 3.1.0, which included:

- Checkout/Checkin Improvements
- New N₂O Utilities
- 3GL Support
- Static SQL Support for DB2
- N₂O User-Exits

Checkout/Checkin Improvements

Checkout/Checkin modes (i.e., NONE, WARN, and FAIL) have been replaced by a **Checkout Level** (0-15). The level determines the number of users who can check out a program concurrently. Level "0" corresponds to "NONE". Level "1" corresponds to "FAIL" mode. Levels 2-15 correspond to "WARN" mode.

For example, assume that the Checkout Level is set to 2. While one developer is adding an enhancement to a program, a second developer can check the program out to another environment for emergency maintenance. A third developer, however, would not be able to check out the program.

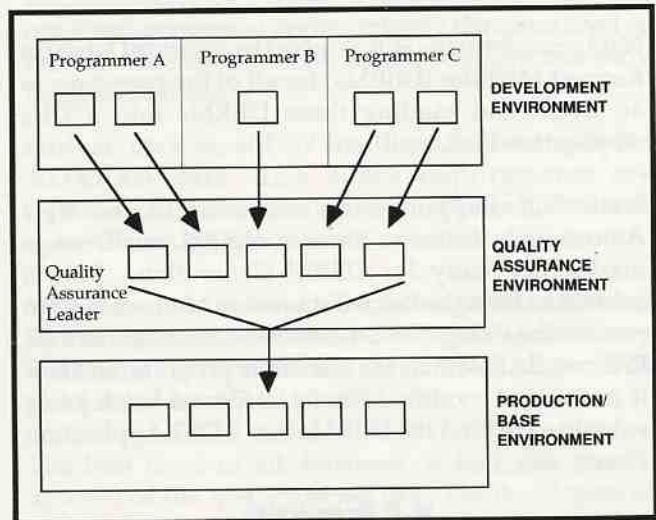
Concurrent development of a program must now occur in separate environments. This prevents the accidental overwriting of a program under concurrent development by subsequent checkouts (and the resulting migration of the code) to the same environment.

During concurrent development, and until all versions of a program are checked in, checkout users are warned that programs had been checked out by other developers and that bug fixes or enhancements coded by those developers may need to be assimilated into their version of the program.

New N₂O Utilities

A new **Transfer by Event** Utility has been added. This utility allows a developer to transfer the checkout of all programs associated with an Event to another individual. This utility is useful in sites with formal quality assurance procedures. An application may consist of several programs, which have been developed by one or more programmers. Once debugging has finished, the programmers migrate the programs to the Quality Assurance Environment and

transfer checkout of the programs to the Quality Assurance Leader. The Quality Assurance Leader tests the programs and migrates all of them to the Production/Base Environment at one time, checking them back in. The following figure illustrates this situation:



The **Transfer by Event** Utility also relieves programmers from having to select all of the appropriate programs manually from a list of all programs they currently have checked out. It also relieves the Quality Assurance Leader from asking each individual programmer to check the programs back into Production. With the checkout status transferred from the programmers, the Quality Assurance Leader may check these programs in directly.

Another new utility named **N2OKILL** has been added. N2OKILL allows users to remove programs from an environment when the programs are no longer required. N2OKILL will optionally archive the program, scratch it, and provide an audit trail of this activity.

3GL Support

The batch migration of 3GL members between **MVS Partitioned Data Sets (PDSs)** is available in N2O Version 3.1.0. **PANVALET** Libraries and **Librarian** Master Files are also supported. The user specifies the types of objects to be migrated through N₂O's on-line request system. For each object type, the user selects

(continued on next page)

N₂O Developments

(continued from previous page)

members to be migrated. N₂O submits a batch job to migrate the members from the source to the target environment.

Checkout, Autocompile, and Archiving are all available with 3GL migrations.

Static SQL Support for DB2

N₂O provides static SQL Support by creating Database Request Modules (DBRMs) for all of the programs in an Event and binding these DBRMs into a DB2 Application Plan.

Static SQL Support is an extension of the N₂O Autocompile feature. Once compiled, an Event is marked as ready for DBRM Generation. JCL is submitted from the Batch Submission Menu of N₂O to execute the Create DBRM command, execute the DB2 Precompile, assemble the assembler program, and link it into a load module. Finally, a second batch job is submitted to bind the DBRMs into a DB2 Application Plan.

N₂O User-Exits

A number of improvements have been made to the N₂O User-Exits. Existing User-Exits have been renamed and renumbered in a more logical manner, and new user-exits have been added. The new N₂O User-Exits are:

- **Checkout Utility Exit** - Can be used to verify naming standards for newly-created programs, or to check that the program does not currently exist in Production.
- **User Defined Subsystem Menu Exit** - Provides the ability to call a user-defined subsystem from the N₂O main menu.
- **On-line Autocompile Exit** - Allows the user to return to the N₂O Main Menu (if on the NATURAL local to the N₂O installation) or to exit NATURAL when Autocompile has completed.
- **DB2 DBRM Skeleton Exit** - Can be used to determine the appropriate skeleton JCL to be used for a specified Environment.
- **DB2 DBRM Generation Exit** - Can be used to reject any program which is to be executed in dynamic mode.

- **Bind DB2 Plan Exit** - Can be used to determine the appropriate skeleton JCL to be used for a specified environment, to associate the DBRM with a Plan and a DB2 Subsystem, or to run in-house programs to check the timestamps of DBRMs.
- **3GL Autocompile Exit** - Can be used to determine the appropriate skeleton JCL to compile a particular 3GL member.

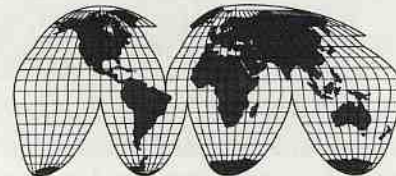
These user-exits are fully documented in the N₂O Reference Manual, and, where appropriate, sample user-exits are provided with the product.

Note that all N₂O user-exits are provided in order to enable sites to tailor N₂O to their specific change management needs. At most N₂O user sites, N₂O operates without these user-exits installed.

Enhancement Continues

The next N₂O release, Version 3.2.0, is currently planned and under development. If you would like to talk to someone on the 6-person N₂O development team (or request an N₂O trial) give us a call today!

**TREEHOUSE
SOFTWARE**



Current Releases

Product	Version
AUDITRE	1.2.0
AUTOLOADER	1.2.0
DynaDoc	3.3.1
N₂O	3.1.0
PROFILER	1.3.0
ReSource	1.2.1
SECURITRE	2.2.1
TRIM	5.1.1/5.2.1

This list shows the versions of our products that you should be running at your site. If you are not running these versions please give us a call at Treehouse today.

**TREEHOUSE
SOFTWARE**

adDB2...

(continued from page 1)

The **adDB2** data analysis tools examine current ADABAS databases and files to determine their structure and evaluate the stored data. In particular, they **analyze ADABAS command usage** over a period of time to **determine how, and how often, this data is accessed**.

For example, certain fields may be accessed more often than others, and some fields or field groups may always be used in combination with others or may be accessed in only certain ways. Using this information, the **adDB2** tools will recommend an appropriate structure for the DB2 databases and generate the best **static SQL** statements to access and update the data. This recommendation will be **intelligent and objective**, based upon the site's use of its data. Because this process is automated, it is faster and more efficient than a manual re-design effort. Of course, **adDB2** will also generate **dynamic SQL** if necessary to execute an ADABAS command.

Data Conversion Tools

adDB2 includes tools for converting ADABAS file data into DB2 table data. These **conversion tools** take into account the data designs developed in the Data Analysis step, and convert ADABAS data appropriately. This **ensures data integrity** and ensures that data may be accessed very efficiently.

The "Data Bridge"

Application programs intended to access ADABAS will not communicate directly with DB2 without modification. That is, unless a site has **adDB2**. In fact, with **adDB2**, the site can **run ADABAS applications against DB2 databases without program modifications or even relinking**, and without ADABAS JCL and parameter changes in most cases!

The **adDB2** package includes an ADABAS to DB2 "**Data Bridge**", which **intercepts ADABAS calls**, determines which DB2 data is being requested, and **calls DB2** via the static SQL previously generated to retrieve or modify that data. The data is then returned to the application by the Data Bridge.

The **adDB2** Data Bridge is designed to allow sites to **complete the migration process smoothly**. The existing ADABAS applications will run under DB2 without modification. This means **NATURAL**, **COBOL Direct Calls**, **ADASQL**, **ADAMINT**, **Batch**, **TSO**, **CICS**, **COMPLETE**, etc.

The Good News

Because **adDB2** **analyzes actual data usage** by the site, it creates DB2 databases which are built for **minimum size and maximum speed**. The data used by the site's applications can frequently be **retrieved more efficiently under DB2 than it could under ADABAS!**

Preliminary limited (batch) testing of the **adDB2** package has revealed that two out of three **programs actually run FASTER** (wall clock time) under **adDB2** with DB2 than they did under ADABAS. The remaining one-third perform at approximately the same level as before. Extensive on-line timing tests are currently being performed.

Further, because **adDB2** **intelligently redesigns the ADABAS data**, disk space requirements are minimized. The new databases tend to consume more space than ADABAS, but not more than necessary.

With these facts in mind, **sites no longer need to delay switching to DB2 nor fear the changeover**. Sites may have little or no need for the **NATURAL** for DB2 product, or for ADABAS itself, after the migration.

The best news of all, however, is that **you can be assured of the quality of adDB2**. The developers of **adDB2** include two of the most knowledgeable database professionals in Germany. One is an ADABAS expert, the other is a DB2 expert.

Treehouse Software has obtained the rights to provide the **adDB2** software and consulting solution. ART believes that Treehouse Software is an excellent choice to bring **adDB2** to market. They know we have a strong presence in the ADABAS community, and we have an excellent reputation for service.

The quality of the team (ART/TSI) means that customers experience excellent performance, ease of use, quality documentation, qualified consulting, and responsive technical and marketing support.

When You're Ready to Switch

We plan to begin our first migration project early this year. At that time, the developers of **adDB2** will travel, with us, to our "pilot sites" and demonstrate the migration process. We are ready to discuss **adDB2** with a handful of potential pilot sites in North America. **Call us** for more information.

TREEHOUSE
SOFTWARE

TSI Acquires a New ReSource

As announced at the recent NATURAL 2 Conference in Boston, Treehouse Software acquired the U.S. marketing rights for NATURAL ReSource, a product of Dynamic Business Resources Pty. Ltd. of Australia.

ReSource is very popular in Australia. ReSource is installed at NATURAL sites in Australia, Singapore, the Philippines, the United States, Canada, Spain, and Germany.

What is NATURAL ReSource?

NATURAL ReSource offers:

- **Conversion** of NATURAL Report Mode code to NATURAL 2.1 or 2.2 Structured Mode code, and
- **Recovery** of lost NATURAL source code from existing object code

These capabilities are provided in two products: NATURAL ReSource Conversion and NATURAL ReSource Source Code Recovery.

Customer Comments

NATURAL ReSource customers have spoken out about this useful new product:

"I was responsible for a conversion from NATURAL 1.2 to NATURAL 2. I was in a position to use one of several different automated tools to assist in this conversion effort. After considerable study of these tools and the options of manual conversion or no conversion, I prepared comprehensive evaluation documents and presented these to an ad hoc technical review committee. The committee selected ReSource."

The support from TSI was considered no less adequate than other vendors. This was impressive, considering that the product is produced in Australia. Answers to our problems were often received by 9:00 a.m. the next business day. The support may be considered better in some respects, with the advent of a fax machine, which allowed any problems to be resolved in Australia while we, here in the States, sleep. This, due to the 15-hour time lag, meant that any problems we discovered at 5:00 p.m. had already had an entire day's work done on them by the time we returned to work the next morning.

Highly desirable were the already available re-engineering features for creation of external maps from INPUT statements and DECIDE ONs from multiple nested IFs.

Of key importance in the decision process was the clarity and maintainability of the end-product code. The committee believed the converted output would be much easier to maintain."

- John Pulwers

Consultant with a large organization in the Washington, D.C., area

"[Our] trial supported the claim that NATURAL ReSource can convert ... programs in around 10% of the time it would take to do the same job manually."

- Ivan Scott

Australian Bureau of Statistics

"...we saw Report Mode as an unnecessary overhead and something we wanted to phase out as soon as possible - NATURAL ReSource will enable us to do this cost effectively."

- John Youngson

Manager of Information Systems for the Western Australian Fisheries Department

"We believe that lower maintenance costs will be the main benefit to be gained from converting our existing Report Mode applications to Structured Mode. This will more than outweigh our investment in automated conversion."

- Geoff Coggins

*Assistant Facilities Management Director
Australian Bureau of Statistics*

NATURAL ReSource Conversion

Structured Mode is Software AG's strategic direction for NATURAL. Structured mode programs are more standardized and easy to maintain, offering significant savings over Report Mode systems.

Manual conversion of large systems can be cost-prohibitive, and may negate the advantages derived from conversion to Structured Mode.

Mass conversion using NATURAL ReSource Conversion typically saves 90 to 95% of the time and expense required to manually perform the same task. NATURAL ReSource also supports a "one at a time" conversion process.

Benefits of NATURAL ReSource Conversion

NATURAL ReSource Conversion benefits a NATURAL site in many ways, including:

- Code becomes easier to modify and debug
- Code becomes easier to document

(continued on page 14)



PROFILER for NATURAL



PROFILER for NATURAL, announced in the last issue of *TREETIPS*, is a powerful tool for monitoring the execution of a set of NATURAL programs. It produces statistics which show:

- How often each program is executed
- How much CPU time each program consumes
- How much elapsed ADABAS time is consumed by each program
- For each statement within a program:
 - How often the statement is executed
 - How much CPU time is consumed
 - How much elapsed ADABAS time is consumed

These statistics can be used to perform quality assurance testing, performance analysis, and application debugging.

PROFILER's easy-to-use on-line interface makes it possible to quickly define a monitoring session. Once the session is defined, it may be activated at any time. Active sessions will monitor specified programs or groups of programs until deactivated.

Program Execution Comment Summary

With **PROFILER**, it is possible to document quality assurance activity. Simply activate a **PROFILER** session before testing begins, perform the necessary testing, and deactivate the session. Consult **PROFILER** reports, and you will know instantly if an application has been tested to the desired level.

PROFILER allows the user to view execution statistics for the programs monitored during the session:

92-01-09 11:02:10 *** PROFILER for NATURAL *** USER24
Session : 03 - TESTPROF NATLIB1 Page 1

Statement Execution Count Summary Report

Sort Order : STA

Library	Program	Run Cnt	Executbl State	Executbl State Exec	% Executbl State Exec	Total Stmt Executions	State Exec Graph
NATLIB1	PROG001	3	54	45	83.3	88	***
NATLIB3	PROG005	1	76	52	68.4	88	***
NATLIB4	PROG008	2	23	15	65.2	68	***
NATLIB2	PROG012	2	114	50	43.9	2555	***
NATLIB3	PROG003	4	98	33	33.7	109	***
NATLIB1	PROG090	1	23	5	21.7	47	**
NATLIB3	PROG110	0	118	0	0.0	0	

Total Statements Executed (at least once) : 200 Obj Reported : 7
Total Executable Statements : 498 Obj Executed : 6 (8%)
Percentage of Executable Stats Executed : 40.28

Enter--PF1--PF2--PF3--PF4--PF5--PF6--PF7--PF8--PF9--PF10--PF11--PF12
Help Exit Stat CPU RDR Stop

On this screen, **PROFILER** shows that the program "PROG110" in the library "NATLIB3" was not executed. **PROFILER** also shows that only about 40% of the total executable code in the listed programs was actually executed. If the site quality assurance policies require that 80% or more of the code be executed, more testing should be done.

In addition to statistics about the execution of program statements, **PROFILER** can provide information about resource usage by the programs. This information can help the site tune the performance of the programs, or evaluate the performance implication of proposed changes to the programs (e.g., external vs. internal subroutines).

Elapsed ADABAS Time

Pressing PF11 from the previous screen allows the user to view the elapsed time spent in ADABAS by each program:

92-01-09 11:10:12 *** PROFILER for NATURAL *** USER24
Session : 03 - TESTPROF NATLIB1 Page 1

ADABAS Elapsed Time Summary Report

Sort Order : RDR

Library	Program	Run Cnt	ADABAS Elapsed Time (sec)	% RDR	RDR Graph
NATLIB3	PROG003	4	113.09	37.11	***
NATLIB1	PROG001	3	63.74	20.92	**
NATLIB1	PROG090	1	48.22	15.82	**
NATLIB3	PROG055	1	44.55	14.82	*
NATLIB4	PROG008	2	23.99	7.87	*
NATLIB2	PROG012	2	11.12	3.65	*
NATLIB3	PROG110	0	0.00	0.00	

Total Number of Objects Reported : 7
Total Number of Objects Executed : 6 (86%)

PF1--PF2--PF3--PF4--PF5--PF6--PF7--PF8--PF9--PF10--PF11--PF12
Help Exit Stat CPU RDR Stop

This screen shows that the program "PROG003" in the library "NATLIB3" spends the most time in ADABAS - over 37% of the total elapsed time spent in ADABAS by all 7 programs.

CPU Time Usage

PROFILER also tracks the CPU usage by each program, and each statement within a program. By pressing PF10, the user may view the amount of CPU time consumed by the programs:

92-01-09 11:11:35 *** PROFILER for NATURAL *** USER24
Session : 03 - TESTPROF NATLIB1 Page 1

CPU Time Summary Report

Sort Order : CPU

Library	Program	Run Cnt	CPU Time (sec)	% CPU	CPU Graph
NATLIB3	PROG003	4	42.18	28.13	***
	PROG001	3	35.41	23.61	**
	PROG008	2	23.55	15.70	**
	PROG090	1	21.93	14.62	*
	PROG055	1	16.46	10.98	*
	PROG012	2	10.43	6.96	*
	PROG110	0	0.00	0.00	

Number of Objects Reported : 7
Number of Objects Executed : 6 (86%)

PF1--PF2--PF3--PF4--PF5--PF6--PF7--PF8--PF9--PF10--PF11--PF12
Help Exit Stat CPU RDR Stop

This screen shows that the program which spent the most time in ADABAS (PROG003) also consumes the most CPU time. If the site is looking for a way to improve the performance of this group of programs, it might wish to begin by examining PROG003.

(continued on next page)

PROFILER for NATURAL

(continued from previous page)

Program Statistics

By selecting the Program Listing capability within **PROFILER**, the user may view specific statistics about a program:

```
92-01-09          *** PROFILER for NATURAL ***          USER24
11:10:12          Program Listing                       NATLIB1
Session : 03 - TESTPROF                                Page : 1

Statistics for program : PROG003

Library with source program listing      : NATLIB1
Program run count                        : 4
ADABAS elapsed time, milliseconds (asec) : 113.09
CPU time, milliseconds (asec)           : 42.18
Total executable statements              : 98
Executable statements executed           : 35
Percentage of executable statements executed : 35.70
Total statement executions                : 109

Enter--PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12
Help      Exit      -      +      Stop
```

Program Listings, and More

PROFILER can list the source code for a program, along with statistics showing the number of times each statement in the program was executed, the total CPU time consumed by each statement, and the average CPU time used by the statement. For statements which involve database access, the elapsed time spent in ADABAS is also listed. The following screen shows some of the source code for the program PROG003:

```
92-01-09          *** PROFILER for NATURAL ***          USER24
11:10:12          Program Listing                       NATLIB1
Session : 03 - TESTPROF                                Page : 1

Source listing for program : PROG003

Stat  Total      Avg
Count CPU (asec) CPU (asec) N/E Stat
-----
2      0.066      0.033
10     0.050      0.005
2      0.002      0.001
10     1.210      0.121
<< ADABAS 2.510 0.251 >>
10     0.330      0.033
10     0.000      0.000
*
0020 ** PROGRAM : PROG003
0030 REPEAT UNTIL *END
0040 IF *PF-KEY = 'PF3'
0050 MOVE TRUE TO *END
0060 END-IF
0070 FIND (1) PERSONNEL WITH EMP-ID
0080 EQ *EMP-ID
0090 PERFORM *CHECK-FOR-UPDATES
0100 IF *SOMETHING-CHANGED
0110 PERFORM *UPDATE-RECORD
0120 END-IF

Enter--PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12
Help      Exit      -      +      Stop
```

As seen here, line 0070 required an average of 0.121 milliseconds of CPU to execute. This line also accessed ADABAS, spending an average of 0.251 milliseconds of elapsed time for each access. Thus, **PROFILER** enables the user to focus on the program statements which are causing performance problems.

Untested Code Segments

The "*" in the "N/E" column next to line 0110 in the Program Listing screen denotes that this statement was Not Executed during testing. From that, we might deduce that the test data or procedures used during the session never caused the value of #SOMETHING-CHANGED to be set to TRUE. This could mean that a deficiency exists in the procedures or in the test data.

Improve Performance

By identifying inefficient NATURAL statements, expensive ADABAS calls, and inappropriate use of NATURAL program structures, **PROFILER** helps reduce CPU requirements, lower ADABAS processing levels, and improve end user response times.

Raise Application Quality Levels

By ensuring that applications are fully tested before being placed into Production, an organization can raise overall application quality levels and reduce potential application downtime. This should have a positive effect on end user and DP staff productivity.

Avoid Expensive Upgrades

By helping to identify and quantify the costs of running critical programs, **PROFILER** can help sites improve the performance of these programs, avoiding costly hardware or software upgrades.

For those sites preparing to downsize, **PROFILER** can help squeeze out the highest performance from NATURAL programs, so that their performance on smaller CPUs is the best possible.

Cost Savings

PROFILER offers many areas for cost savings:

- **Reduced application downtime**, resulting in savings related to:
 - End user overtime hours
 - DP staff hours solving problems
 - Potential lost business
- **Better application performance**, resulting in savings related to:
 - Greater end user productivity
 - Reduced or delayed need to upgrade mainframe hardware
- **Easier application debugging**, resulting in:
 - Lower testing needs
 - Higher programmer productivity
 - Lower maintenance costs

A single Production system outage of three hours can cost thousands of dollars in DBA time investigating the problem, programmer time fixing the problem, end user time recovering from the outage, and lost business due to a critical system becoming unavailable. With this thought in mind, **PROFILER** will pay for itself over and over, simply by reducing the number of system outages.

For more information about **PROFILER**, contact Treehouse Software today.

TREEHOUSE
SOFTWARE

SECURITRE News

Version 2.2.1 Released

The SECURITRE team has just released SECURITRE Version 2.2.1. This version includes all of the features announced in the last issue of TREETIPS for Version 2.2.0, including:

- Field-level security
- NATURAL Security System (NSS) Conversion Facility
- Improved tracing capabilities and flexibility
- Parameter updates on-line via the Real-time Monitor

In addition to these capabilities, version 2.2.1 includes two useful new SECURITRE features.

8-Steplib Support for NATURAL 2.2

SECURITRE for NATURAL now allows NATURAL 2.2 sites to have the 8-steplib capability familiar to NSS users. This 8-steplib feature allows the site to specify,

for each NATURAL library, a list of up to 8 alternate libraries for NATURAL to examine when it is searching for a program to execute.

NATURAL Utility Security

SECURITRE for NATURAL now incorporates security for the various NATURAL utilities, including SYSMAN, SYSDBA, and SYSERR. This new feature gives the site better control over its NATURAL environment.

More Features in the Works

The SECURITRE team continues to enhance this comprehensive product, to enable it to better serve the needs of our customers. To arrange for a presentation - by technicians, or to arrange a trial of SECURITRE, call Treehouse Software today!

TREEHOUSE
SOFTWARE

New Additions to the Treehouse

Joyce Maguire

Joyce joined TSI from the City of San Antonio, where she was a Senior Systems Programmer and DBA.

Joyce has over 10 years of experience with Software AG products, and with Treehouse Software products.

Joyce is the project leader for **PROFILER** for NATURAL (see the PROFILER article in this issue of TREETIPS). Joyce also assists in our sales and marketing efforts in the **Southwestern** United States.

Dennis Gandy

Dennis joins us from Keane Inc. in Atlanta.

From 1981 to 1991, Dennis worked for Software AG, primarily as a salesperson. At SAG, Dennis received many sales awards. He was the **#1 Producing Account Representative** for two years.

With TSI, Dennis will primarily be a salesperson, concentrating on the **Southeastern** United States and the **Midwest**.

Karen Hirst

Karen joins us from Ciscorp, a Pittsburgh-based consulting company. Karen has worked locally as an ADABAS/NATURAL programmer/analyst. At TSI, Karen will be involved in the development of **N2O** and **PROFILER** for NATURAL.

Welcome aboard, Joyce, Dennis, and Karen!

TREEHOUSE
SOFTWARE



Editor's Sproutings

(continued from page 2)

management asked "What is this Treehouse company you are talking about?", and was told "I have never worked with a better vendor, or with nicer people." We are glad to hear it!

NSS Conversion Facility Applauded

On a recent site visit, the new **SECURITRE NSS Conversion Facility** received praise. The Security Administrator at that site was thrilled with the amount of work accomplished by the conversion facility. They are committed to the User-Id-based, single rule base security offered by **SECURITRE**, and they felt that this utility would greatly reduce the total conversion time required.

DynaDoc

We recently sent 135 copies of the new **DynaDoc** documentation set to interested parties. This set includes a nicely bound sample "Test Application". The consensus is that the new documentation set is the **best yet produced at Treehouse Software**. Call if you would like a set delivered to your doorstep.

PROFILER Makes News

Did you see the **PROFILER** for **NATURAL** announcement in a recent issue of *Computerworld*? That's just one of the places you'll be hearing about this exciting (and inexpensive) product. Another is a flyer we recently mailed you. You'll recognize it immediately - it's in a black envelope!

Announced in *TREETIPS* issue #13, **PROFILER** for **NATURAL** is a quality assurance and performance tuning tool for **NATURAL**. Another article about **PROFILER** appears in this issue of *TREETIPS*.

New Affiliates

FYT became our Brazilian affiliate this past summer. The contact information is:

FYT COMPUTER SOFTWARE

Mr. J.C. Freitas
Av. Paulista, 1499 Cj 1701
01311 Sao Paulo - SP
BRASIL
Phone: 55-11-288-1094
Fax: 55-11-288-0927

Blenheim Software Ltd. of England recently became an affiliate for **DynaMacs** and **PROFILER**. You can read more about them in this issue.

System Networks (Asia) Limited (SNL) recently became our affiliate serving Hong Kong, Taiwan, Malaysia, Thailand, Indonesia, Singapore, and the Philippines. The contact information is:

System Networks (Asia) Limited

Ms. Maria Aurora S. Santos
Managing Director
Suite 1408 Prince's Building
10 Chater Road, Central
HONG KONG
Phone: (852) 523-6949
Fax: (852) 845-9175

In addition, we are very close to having an affiliate in **Spain**. We also expect to acquire a "sub-affiliate" in **Belgium**. We'll tell you more about these when the details are finalized.

Consultants' Symposium at Treehouse

On Thursday, April 22, 1993, and Friday, April 23, 1993, Treehouse Software will hold its first "**Consultants' Symposium**", which will run from noon Thursday through 3PM Friday.

The Consultants' Symposium will feature learning sessions about TSI products, and how these products can help consultants improve the efficiency and quality of their work. Consultants receive free lodging from Treehouse Software for Thursday night, as well as meals on Thursday and Friday.

Consultants can also sign for the opportunity to take certain TSI products with them into customer sites. They may use the products to help them perform their consulting for up to 30 days at no cost to them or their customer. If their customer chooses to purchase the TSI products at the end of the 30 day period, TSI will pay the consultant a finder's fee for assisting with the sale (or donate the fee to the consultant's favorite charity).

We have received tentative agreement from **Franco Harris** to join us for a couple of hours of fun the first day. You probably remember this former Pittsburgh Steeler from the Steeler Dynasty of the '70's.

As you can see from the information in *TREETIPS* about new product offerings, we will need quite a few additional employees and consultants shortly.

Formal invitations will be mailed to all known **ADABAS/NATURAL** consultants. Of course, you can guarantee your attendance by calling us. Space is limited to 30 consultants, so be sure to respond as soon as possible! We must have your confirmation by **February 28, 1993**.

(continued on next page)

Editor's Sproutings

(continued from previous page)

SAG/Maguire

We received an interesting letter denouncing our article in *TREETIPS* issue #13. It said:

"Despite my personal pleas to Michael Salsbury, Editor of TREETIPS, to ensure both the accuracy and appropriate tone of his comments in several previous editions in 'Editor Sproutings,' the comment on page 5 of the October 1992 TREETIPS concerning John Maguire illustrates total disregard to my recommendations. You don't know the facts; you don't know who initiated the litigation; and, you don't even know the issues. But, as usual, you feel free to take a 'shot' at Software AG. Uncalled for and none of your business, anymore than we at Software AG would comment on Treehouse's customer relations or litigation."

The letter was signed by a Software AG employee, and indicates it was sent to a number of SAG employees and "Area Vice Presidents". George Szakach offers the following insight:

"The letter mentions Michael Salsbury, but I'll take the blame, or credit, for the SAG/Maguire report. We've heard about the letter and its contents from several SAG employees, customers, and other contacts around the world. Word travels fast. We are unsure of SAG's intentions, but this appears to be another in a long list of attempts by certain individuals within SAG to tarnish TSI's image. We do not believe SAG will successfully accomplish this. If you have any strong feelings about our article or our handling of it, positive or negative, please drop me a note."

For now, I'll just set the record straight. A few articles about the Maguire/SAG issue had already appeared in the *Washington Post* (circulation 1.2 million) and *Computerworld* (circulation 629,000).

I asked, in writing, for SAG's official response by a certain date, at 5PM so that we could afford SAG the courtesy of explaining the Maguire departure in our newsletter. At 4:55PM of that day, I received a call from the SAG representative who treated the matter flippantly, at first. I asked for a more "quotable" answer, and was then given the official SAG quote, exactly as shown in *TREETIPS* issue #13. Furthermore, I asked for it to be repeated so I was sure to record it correctly, and to be sure it was what SAG wanted us to state.

We did not announce litigation. SAG did, and so did the *Washington Post* a month before.

We have every right to produce a newsletter and every right to express our opinion. SAG believes that the departure of John Maguire is none of our business. We believe it is our business as a company doing work related to SAG and their products. It's even more our business as a SAG customer and because of the complementary products and services we offer to benefit SAG and their customers. We believe it's your business, too. Our newsletter is for the purpose of informing each other about our organizations, announcing products, services, events, and decisions which have positive or negative effects on all of us.

The newspapers think it's news. So do we. Let us know what you think."

adDB2

We hope all those organizations that in the past few years have expressed their commitment to go in the direction of DB2 will call us to discuss the *adDB2* potential.

Many of you have pointed to ADABAS technical superiority over DB2 as one reason why management's goal of "immediate switch over" was not practical. Paying for another version of NATURAL (NATURAL/DB2) also held up the show. Let the show now go on, with *adDB2*.

Some people may think our *adDB2* offering sends out "mixed signals", i.e., "You have always been a strong proponent of SAG's base products, and your offerings reinforce that. What statement are you making with *adDB2*?"

Our answer is "We have been, and still are, strong proponents of SAG's base products. But people change, times change, and often it's not the product but the vendor behind the product that organizations are investing in. So, sometimes they switch hardware, software, and switch vendors. Deciding not to fight the tide, SAG actually encouraged the switch over to DB2 by producing NATURAL for DB2.

So, we won't fight what we can't control. We will continue to enhance and fully support all our ADABAS/NATURAL related products, and work to migrate certain of these products to other platforms. We may also create, buy, or joint venture on new ADABAS/NATURAL related products. But, we will also broaden our focus - to DB2, and more - in time - when appropriate."

TREEHOUSE
SOFTWARE

Affiliate Profile: Blenheim

In just three short years, in the midst of the United Kingdom's deepest recession, **Blenheim Software Ltd.** forged a respected and vigorous software marketing organization. Blenheim owes its name to **Blenheim Palace**, the birthplace of **Winston Churchill**.

Blenheim's corporate goal is to continue providing unequalled service and support for internationally developed IBM systems software. Database and teleprocessing software is Blenheim's specialty, and they have a unique niche in Software AG's marketplace. Today, Blenheim's products are **in use by almost half** of the active UK MVS/ADABAS community.

Murray Turner and **Eric Stannard** are Blenheim's founders. Eric visited TSI in early December, and spent an intense week learning about TSI, our staff, and our products. Eric admitted that he was impressed with what he saw, and we were all very pleased to have made his acquaintance.

Eric and Murray initially teamed up at their last company, selling against products like **TRIM**. Today, Eric and Murray's Blenheim represents three international software companies from Australia, Germany, and the USA. They offer over 30 products from simple, yet effective, ADABAS batch utilities to sophisticated TSO/CICS systems software.

Treehouse is especially pleased to announce that effective January 1993, Blenheim is supporting and promoting **DynaMacs** and **PROFILER** in the UK and the Republic of Ireland. Blenheim's market research has revealed exciting possibilities for Treehouse Software's newest products.

In a world economic downturn, Blenheim sees additional portfolio enhancement as a perfect way to expand, while assuring Treehouse of rapid promotion of our new products by a professional and dedicated service organization. TSI and Blenheim are confident that this will be a very positive relationship for both parties. The contact information is:

BLENHEIM SOFTWARE LTD.

Mr. Eric Stannard
18 Blenheim Road
Slough SL3 7NJ
England

Phone: 0753-571770

Fax: 0753-516535

TREEHOUSE
SOFTWARE

TSI Acquires a New ReSource

(continued from page 8)

- Coding standards are automatically enforced
- Maintenance costs are typically reduced between 20% and 40% versus Report Mode
- Training costs are reduced an estimated \$2,000 per new trainee
- Dependence on Report Mode code is reduced or eliminated
- Conversion errors are reduced

NATURAL ReSource Source Code Recovery

NATURAL ReSource Source Code Recovery automatically generates **NATURAL 2 Structured Mode** code from object code. As a result, it can be a valuable recovery tool for source code which was accidentally deleted or lost.

Re-Engineering Capabilities

NATURAL ReSource also includes some software re-engineering capabilities, which can improve the quality of the **NATURAL** code generated by **NATURAL ReSource**. These re-engineering features are expected to be enhanced, kept up-to-date with advances in **NATURAL** features, and become part of a separately priced **NATURAL ReSource** product to be available in the future.

For More Information

We have **glossies**, **Product Overviews**, **Reference Manuals**, and **Demo Diskettes** available. Contact TSI today.

TREEHOUSE
SOFTWARE

Treehouse Data Processing Glossary

Thanks to the readers' positive response to previous editions of this feature of *TREETIPS*, we have provided this next installment:

ADAICK: IBM's attitude toward ADABAS, or an application programmer's reaction to search buffer syntax. (*Rebecca Davenport, San Diego, California*)

Bind: Something that is done prior to gagging. (*Rebecca Davenport*)

Core Storage: A receptacle for the center section of apples. (*Modern Data Magazine, per Keith Newsom, State of Washington*)

DBMS: A corrupted database, as in "Your DBMS? RDBMS, too!"

Keyboard: What you become if you perform data entry all day long.

Report: The process by which you bring a boat into dock again.

Serial: Food placed in a bowl full of milk and eaten for breakfast.

Standalone: What a DBA does after rushing the implementation of a new maintenance/upgrade tape. (*Allen Lamb, Alton Ocshner Hospital*)

UNIX: An abbreviation, as in "Are UNIX child, or Steve's?"

WYSIWYG: A toupee that makes funny noises. (*Roger Cole, University of Delaware*)

If you have some additions to this glossary, don't forget to send them in. You'll receive a free Treehouse coffee mug and brighten the day of thousands of other *TREETIPS* readers.

TREEHOUSE
SOFTWARE

Treehouse Software Affiliate List

Area Served	Affiliate	Phone Number
Australia	Computer Consultants Australia	61-3-416-3377
Brazil	FYT	55-11-288-1094
Far East	System Networks (Asia) Limited	852-845-9175
France	Fairware	331-39-65-0688
Germany	MaK DATA SYSTEM	49-431-3995-134
South Africa	Information Technology Services	27-11-886-7690
United Kingdom & Eire	OCS Software Limited	44-81-207-5434
United Kingdom & Eire	Blenheim Software Ltd.	44-75-357-1770
Venezuela & Caribbean	Mega Soft Computación C.A.	58-2-483-53-70

ADABAS, ADAMINT, ADASQL, COM-LETE, NATURAL, and NATURAL Security System (NSS) are all products of Software AG. DB2, MVS, DOS, TSO, and CICS are products of IBM. PANVALET and LIBRARIAN are products of Computer Associates. adDB2 is a product of Advanced Relational Technology. The '55 Packard belongs to Nick. Any other product names mentioned are trademarks of their respective holders. The mention of any product name in *TREETIPS* should not be considered to represent support or endorsement by Treehouse Software Inc., its employees, or affiliates.

Treehouse Software products and services include:

adDB2 - ADABAS to DB2 migration service

PROFILER - NATURAL program execution analyzer

ReSource - NATURAL source code conversion and recovery

DynaDoc - NATURAL application documentator

N₂O - NATURAL application change management system

N₂O/3GL - 3GL support within N₂O

SÉCURITRE - Centralized security administration for ADABAS/NATURAL

TRIM® - ADABAS/NATURAL performance monitor

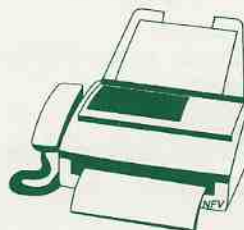
AUDITRE - ADABAS auditing tool

AUTOLOADER - ADABAS file automatic unload/reload/dump utility

Consulting and Customized on-site classes designed to meet your unique needs.



Phone:
(412) 741-1677



Fax:
(412) 741-7245



Treehouse Software, Inc.
400 Broad St., Suite 206
Sewickley, PA 15143

FIRST-CLASS MAIL
U.S. POSTAGE
PAID
Sewickley, PA 15143
Permit No. 89