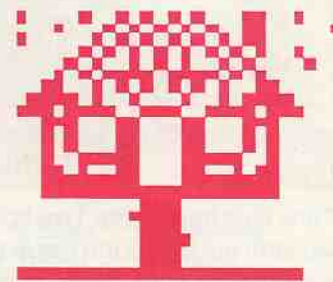


TREETIPS

A Publication of Treehouse Software Inc.



Issue: 5

Sewickley, Pennsylvania

July 1989

Alert: N₂O Released!

On July 1, 1989, Treehouse Software Inc. officially released **N₂O**, a Change Management System for controlling the migration of NATURAL programs between Test, Production, and other libraries. **N₂O** features include:

- on-line menu-driven execution
- electronic authorization of program migration
- automatic archiving / on-line recovery
- audit trails
- secured access to **N₂O**

Several sites have been testing **N₂O** for about 90 days. The general reaction is that **N₂O** is **freeing significant resources** from the task of Change Management within the NATURAL environment. No longer do organizations have to implement costly, labor-intensive procedures to:

- migrate the programs for each application,
- remember what programs are current,
- track who moved or changed them,
- document when the moves occurred, and
- determine whether the individual who made the moves had the **proper authority** to do so.

The NATURAL 2 "programs" which **N₂O** migrates imply any of the following in source or object format; programs, subprograms, subroutines, copycode, help routines, maps, helpmaps, globals, data areas, local data areas, and parameter data areas.

Most sites using NATURAL 2 have both Test and Production libraries. Multiple libraries, multiple Test and Production databases, Q/A and Training databases, and multiple NATURAL System Files all contribute to the problem of controlling program migration. At many sites, the migration process can occupy most of a DBA's time, keeping the DBA from efficiently performing other duties.

Using **N₂O**, when changes and enhancements are made to the current NATURAL applications, **efficient, controlled migration** of the programs takes place before the new system is placed into Production.

Specific rules defining the directions and destinations in which migration can occur, by whom, and what authorization is required are **enforced by N₂O** in a centralized way. An **audit trail** is generated for later reference,

reducing the amount of paperwork a DBA is forced to do. This audit trail can be accessed to determine the change history for an application or program, adding to the **integrity and security** of NATURAL application systems.

N₂O includes an **Archive function**, which allows NATURAL programs to be archived, and permits the Archive Catalog to be viewed to see how many versions of an application or program exist. **Archived versions are immediately viewable on-line**, and can be migrated from the Archive library to a current library.

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Treehouse Chicago Day

"Treehouse Chicago Day" was held on June 15, 1989, at the Rosemont O'Hare Expo Center in Chicago. There were over 115 people in attendance, and a good time was had by all. Our special thanks to Charles Wyszomirski, John DeNatale, and Debbie Carlsen for helping us put the day together.

Randy Ebeling of the University of Texas at Austin was our guest speaker. Randy presented information on ADABAS 5, HPE, NATURAL 2, NATURAL Optimizer, NATURAL application development, and other ADABAS and NATURAL topics. Attendees from throughout the

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Editor's Sproutings

by Michael Salsbury

Time flies here in the Treehouse. It seems like just last week we sent out the fourth issue of TREETIPS, and here it's past time for the fifth! Several new and exciting developments have taken place. We've also added new members to our staff and expanded our European marketing effort. Now that the dust has settled we can concentrate on the newsletter.

ANOTHER NEW EDITOR?

The job of TREETIPS Editor has again changed hands. This time, hopefully, it will be the last. Having worked on TREETIPS since December 1987, I know the high level of quality that you've come to expect from us. I will try to see that these high standards are maintained in all future issues.

EASY MONEY!

Several individuals have provided technical articles for our TREETIPS publication. They did outstanding jobs in providing you with information that hopefully has helped to make your jobs easier. We had hoped that from the initial decision to publish TREETIPS that we could count on you, our readers, customers, friends, and affiliates, to provide a high quality level of technical articles. The influx of articles has slowed. Many who promised articles did not have the time to write them. The interest and desire to write them was there. The time was not.

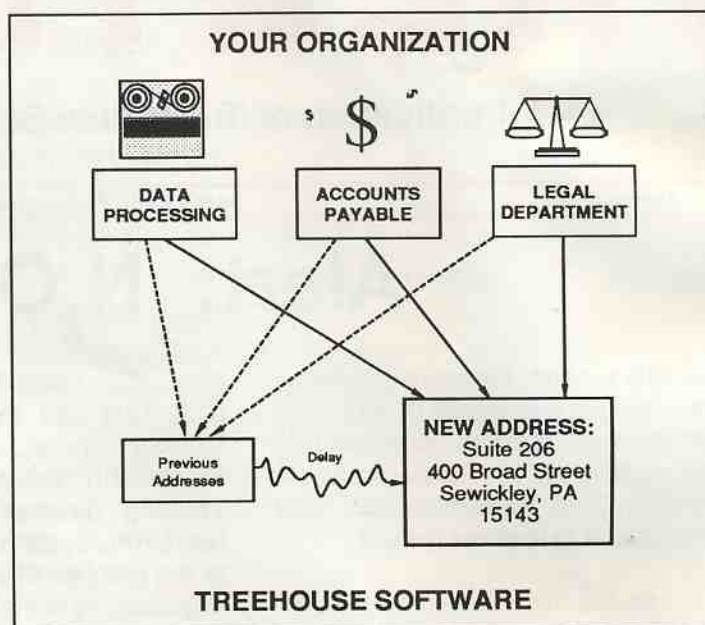
We here at the Treehouse thought that an added incentive might help. We are willing to pay \$100 for articles that we publish. However, we do not want to violate any of your organization's policies, so please get your employer's permission before sending an article. The byline could name you and your organization, or be anonymous if you prefer.

The subject matter of the article can include experiences with ADABAS, NATURAL, any SAG products, TRIM, AUDITRE, N₂O, any Treehouse products, other DBMSs (i.e. DB2, Oracle, etc.), conversions, performance, education, software evaluations, etc. Many of you probably have articles already in the form of documentation you've had to do for your job. There are probably potential articles sitting on your bookshelf just waiting to be shared with the rest of the world. Send them to us even in rough form. We'll be glad to edit them for TREETIPS. Of course, you would have the opportunity to review them before publication. Let us hear from you.

PLEASE GIVE US A HAND

We recently moved to a new office. As a result of the move, some of our customers have lost contact with us. Some of our mail is being sent to addresses we haven't used for years. In some cases, this is causing our customers to experience delays or problems with technical support and other

communications. You can avoid any such problems for your organization by making sure that all departments and personnel who deal with Treehouse Software are informed of the correct address, shown below.



Please make sure that all of the appropriate departments and personnel in your organization are aware of the correct address of Treehouse Software to avoid any potential communications problems. Thank you!



Current Breezes

by George

There have been lots of interesting things happening in the Treehouse during the past several months. The most important is that the energies spent on the N₂O product have come to fruition. **Tim Hornung** has done a super job on the design and development of N₂O, our name for a "NATURAL 2 Organizer". See the headline article, or ask us for a product overview and demo diskette. You will see why one of our customers said, "N₂O is the **best version 1.0 release** of any product that I have seen," meaning that version 1.0 of anything is usually avoided. But N₂O is well-designed, efficient, easy to use, and it works! We're excited because it fills a tremendous void, benefits many people, and the payback is fast.

Several staff members are occupied with **TRIM**. Yes, we are still working on it. In fact - feverishly. The big improvement comes with **V5.1** (see the TRIM Developments article in this issue) **Dwight Beadle** and others are spending their days and nights making this TRIM version something like **30-40% better** than previous versions! There is that much additional functionality. And, we can't see the day when TRIM development stops. **There's much more to do.** We suggest

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And the Survey Says...

Many of you may recall that Treehouse Software conducted a marketing survey last year. The surveys were sent to all known SAG users, not just our own customers. Respondents filled in a four-page questionnaire and sent it to Treehouse, and received a free copy of our ADABAS Performance Guide in return. We want to provide you with an in-depth look at what you had to say to us.

One of the most obvious things we discovered was that we weren't clear enough in explaining what we wanted in terms of responses. For example, in some questions where there was a box marked "in use" and one marked "planned" (meaning that the respondent's organization was using the indicated product, and/or planned to start using it in the future) some responded with a check mark, some with a number, and in some cases with checks and dashes. Some took a red pen, circled an item, and wrote "I want this capability, now!". In any event, our interpretation of the results has been subjective to our understanding of the respondents' meanings. A statistician would probably say that this completely or partially invalidates the results.

Our first question, which asked how many IBM and compatible mainframes and DEC VAX CPUs were in use at the various user sites, as well as any planned increase or decrease, gave us the following information. Of the 314 respondents, virtually all had at least one IBM mainframe in use. Further, 17% had both IBM and VAX CPUs in use at their facilities. A total of 501 IBM and compatible CPUs were in use, along with 224 VAX CPUs. These figures are planned to increase to 544 for IBM and 317 for VAX, respectively, which shows that VAX growth is currently a little faster than IBM growth.

Our next question was about the operating systems in use at user sites. It was interesting to note that 57% of the MVS user sites are planning a switch from MVS to MVS/XA, and 40% of the DOS sites from DOS/VSE to DOS/VSE/SP. (The following numbers may add up to more than 100% because multiple operating systems are in use at some sites.)

| Operating System | % Sites Using | % Planning to Add |
|------------------|---------------|-------------------|
| MVS/XA | 47 | 16 |
| VM | 38 | 4 |
| MVS | 28 | 1 |
| DOS/VSE | 16 | 0 |
| DOS/VSE/SP | 15 | 6 |
| VMS | 11 | 3 |

(Note: The "Planning to Add" column means that the product is not currently in use but addition is planned.)

The next question about the teleprocessing system(s) gave us the following information:

| Teleprocessing System | % Sites Using | % Planning to Add |
|-----------------------|---------------|-------------------|
| CICS | 89 | 2 |
| TSO | 63 | 2 |
| CMS | 29 | 3 |
| COM-LETE | 18 | 3 |
| COM-POSE | 4 | 8 |
| No Response | 1% | |

The question about ADABAS/NATURAL related software resulted in the following:

| Product | % Using Now | % Planning To Add |
|------------------------|-------------|-------------------|
| ADABAS 4 Production | 98 | 0 |
| PREDICT | 92 | 4 |
| NATURAL 1.2 Production | 90 | 1 |
| NATURAL Security | 66 | 8 |
| NATURAL 2 Test | 63 | 23 |
| DIRECT CALLS | 52 | 2 |
| ADAMINT | 45 | 0 |
| SUPERNATURAL | 33 | 12 |

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TSI Acquires Autoloader

Those of you who read the November 1988 TREETIPS may remember the description of a product named "Autoloader" from Targhee Technology. The article appeared in our Consultants' Corner in that issue. Since November, Treehouse Software acquired the rights to the Autoloader product.

Autoloader, which is designed to unload and reload ADABAS files which have gone into multiple extents, will be re-released by Treehouse Software. We plan to make its user interface more "TRIM-like" in terms of ease of use and free-form parameter coding. Furthermore, we will be upgrading it for ADABAS 5.

Autoloader will be included free with all future releases of TRIM. Autoloader will also be sold "unbundled" to non-TRIM users. Current TRIM customers will receive Autoloader as soon as it is ready for release, within future TRIM versions.



Real Rich, I Scream

By Rich

With our expanded product line, Treehouse can now consider sending our technical representatives to your site for installing, demonstrations, presentations, discussions, or assisting you in other ways.

TRIM has always been simple to install and use. But as it's functionality increases, early TRIM users **do not always keep up with the improvements**. An hour or two would increase their productivity in using TRIM to improve the performance of ADABAS and NATURAL applications. Newer TRIM users and trial sites are **often overwhelmed with the capabilities of TRIM**, and tend to concentrate on what's easiest to monitor. That means heavy Real-time Monitor usage and lots of Nucleus Session Statistics. Other greatly useful tools and features sometimes go unnoticed. A presentation or demo would help. In one of our recent visits, TRIM started paying for itself within the first hour. We believe this site will purchase TRIM, and be a good user of it.

Similarly, AUDITRE, N₂O, Autoloader, and SECURITRE can be put to better use, faster, if we can help you. Our payback is knowing we have a **satisfied, proficient user**, very likely to tell others about us. Call me if you would like one of our technical people to visit.

MAINFRAME

We recently purchased our own mainframe. See the article about it in this issue of TREETIPS. It slowed us down for awhile. But now we have enough of our software on it, along with appropriate tools, so that we are beginning to see increased productivity within the staff.

PERFORMANCE GUIDE

Within a few months, supplemental sections to our ADABAS Performance Guide will be available. ADABAS 5 and NATURAL 2 will be covered, along with other products that get intimately involved in the performance issue.

TRIP TO GERMANY

Recently, George, Tim, and I went to Germany to visit our extremely hospitable friends at MaK Data System. George went early to get things set up for demos to MaK and affiliates, along with preparing for a mini-conference for our users and potential customers. He was invited to go on a cruise ship to Oslo, Norway, with MaK and some 40 other PC-software

customers or potential customers. It was to be 20 hours each way, all first class accommodations. He felt he couldn't go. He had work to do. But, they **forced** him (he says) to go. It's **tough** being a president.

Meanwhile, the mini-conference was a great success. MaK personnel, led by Mr. Eggert Gotthard, presented TRIM. A user gave the AUDITRE talk, and Tim handled N₂O. It is interesting to see, in a land so different from ours, the **striking similarities in data processing** needs, problems, questions, and solutions. N₂O, our newest product, was very well received. Certain countries' requirements for certain industries, such as banking, include maintaining backup copies of each and every version of all production programs, for many years. They need N₂O, and they want an N₂O-like capability for non-NATURAL programs also. Hmmm.

PROBLEMS?

Are there any problems running TRIM with ADABAS 5 or any other new or old SAG system? Answer: **None that we are aware of**. And there haven't been any problems since we released TRIM v5.0.0 last October. Of course, we've experienced an occasional bug in our software, but these are fixed quickly and present no real problem.

Those using NATURAL 2 in a CICS environment to call ADABAS 4 know that this is normally done via CICS LINK. However, Software AG has just released a source change which allows the use of BALR instead of CICS LINK. This will result in significant performance improvements, and is highly recommended by Treehouse Software. The only requirement is a vanilla ADALNC. As you know, TRIM makes no modifications to ADALNC, so we have no problems with this situation.

If you have heard any rumors, such as TRIM does not work with a certain ADABAS version, NATURAL version, Review, HPE, etc., or TRIM does not produce certain information such as NATURAL 2 program name, etc. please be assured that these statements are often without factual basis. Consider the source. Ask the source to call TSI to get the story straight. Or call TSI, give us the party's name and phone number and we'll discuss it with them.



TSI Gets a Mainframe!

Treehouse Software recently acquired its own IBM ES/9370 Model 30 for software development purposes. This system supports IBM System 370 products.

Development of TRIM and AUDITRE and some new products are now taking place on this new machine under VM/CMS. It is our hope that this machine will enable us to provide faster, more efficient service to our customers. Also, where the situation warrants it, a customer will be able to send us a 1600 bpi format tape with any "problem" data on it so that our staff can examine their particular problem first-hand. This should improve not only the speed, but the quality of our technical support as well.

Once our remote capability is established, we plan to make it possible for customers to call our computer to receive the latest information (and zaps) about Treehouse Software's products, as well as submitting questions about these products on-line. In addition, we will be providing remote support, DBA assistance, and performance monitoring to several companies.

To assist in our development efforts on the 9370, we recently hired Charles (Chuck) Kroupa. Chuck has established standards and procedures for logons, security, library, naming and coding conventions, etc. which may sound boring until you consider that it entailed writing some interesting programs and execs. For example, we now have:

- A program which takes ULDMAIN-generated NATURAL source code in INPL format, and loads it into our system, ready for editing with VM/CMS.
- A program which places our CMS edited NATURAL source code onto tape for direct INPL at an ADABAS test site, which may run MVS.
- An exec which makes an IEBUPDTE stream of our source assembly code for transporting to an ADABAS test site.
- A program which accepts IEBCOPY-generated PDSs from an ADABAS test site, for loading into our VM/CMS environment.
- A program to convert IBM VM/CMS assembled object modules to DOS/VSE, VSE/SP, and Seimens.

Our goal is to be able to produce our entire line of products for all operating systems right here at home. We may have to go

elsewhere for certain development and testing related to specific outside software, but the finalization and tape making can be done in Sewickley. Our job will be easier, the tape handling will be simplified, all five operating systems will be released at the same time - without delay, and the affiliate and user community will be supported more quickly and smoothly.

We're receptive to sharing our 9370 experience with others. If you have or plan to acquire such a system, we can help with hardware acquisition decisions and options, system generation, IBM's utility software, and our utility software. Call Chuck Kroupa at our Sewickley office for more information.



TRIM Has Worldwide Appeal

Our foreign affiliates often surprise us. One such surprise occurred recently when our European affiliate, MaK Data System, published information about TRIM in a worldwide industrial trade journal. The response was overwhelming.

According to MaK Data System, requests for TRIM information came from all over the globe, including such unusual and exotic countries as Iran, Iraq, India, Uganda, Yugoslavia, Sri Lanka, Turkey, Nigeria, Pakistan, Ghana, China, Syria, Indonesia, Kenya, Poland, Thailand, Bangladesh, Jordan, Egypt, Libya, and Hungary.

The information MaK Data System published clearly stated that TRIM worked on IBM and compatible mainframes running ADABAS and NATURAL. We didn't know that some of these countries were even aware of ADABAS and NATURAL, so we were amazed that they were interested in an ADABAS performance monitor.



A Problem With Security By Value

As you are probably aware, ADABAS offers a few security options. Not only can users be restricted from accessing particular files, but access to fields within those files can be limited based on the values in certain fields. What you may not know is that the implementation of the "Security by Value" (SBV) option can negatively impact the performance of NATURAL programs which access those files.

For example, assume that the file ALL-SALES exists for a large national manufacturer. This file contains records relating to sales made by salespeople in the company's four regional offices in the Northeast, Southeast, Northwest, and Southwest. Each record consists of PRODUCT-NUMBER, SALESPERSON, REGION, and QUANTITY. This information is used for marketing purposes to determine total sales by product and sales by region and salesperson. However, since the company wants to encourage competition within its sales force, Security by Value is implemented on both the SALESPERSON and REGION fields. This way salespeople with access to the system cannot view others' sales, and regional managers cannot see other regions' sales figures.

Suppose that the ALL-SALES file is over a million records long and contains the following records:

| PROD-NBR | S-PERSON | REGION | QUANTITY |
|----------|----------|--------|----------|
| ===== | ===== | ===== | ===== |
| 102345 | 191 | NE | 1000 |
| 102345 | 302 | NE | 2153 |
| 102345 | 115 | NE | 3840 |
| | | . | |
| | | . | |
| | | . | |
| 102345 | 199 | NW | 802 |
| 102345 | 410 | NW | 12574 |
| 102345 | 209 | NW | 32567 |
| | | . | |
| | | . | |
| | | . | |
| 802997 | 410 | NW | 115 |
| 354237 | 332 | SE | 1000 |
| 354240 | 332 | SE | 502 |
| 354240 | 112 | SE | 687 |
| | | . | |
| | | . | |
| | | . | |
| 102345 | 615 | SW | 10000 |
| 102345 | 302 | SW | 9763 |
| 157916 | 100 | SW | 3020 |
| | | . | |
| | | . | |
| | | . | |
| 665723 | 615 | SW | 3465 |

Now, suppose that the Northwest regional sales manager codes a NATURAL program to read the file and compile sales figures to compare against the region's sales goals. The program uses READ LOGICAL, as shown below:

```
READ ALL-SALES BY REGION
  STARTING FROM 'NW'
  ENDING AT 'NW'
```

What will happen when the above program is compiled and executed on the ALL-SALES file? First, NATURAL will issue the request to ADABAS to read the ALL-SALES file, starting with the first record in the file with a REGION of "NW". In this case, that is the record:

```
102345  199      NW      802
```

The program is coded to also specify the ending REGION is "NW". Unfortunately, NATURAL cannot tell ADABAS the ending value is "NW". NATURAL must therefore get the data back from ADABAS and check the REGION to see if it is "NW". ADABAS will return the above record to NATURAL, since the value of the REGION field (NW) is not restricted to the manager of the Northwest region. When it reaches the end of the Northwest region's records, will it stop?

The answer is NO. Because of ADABAS's Security by Value option, ADABAS will continue reading each record in the ALL-SALES file until it reaches the end. Notice that there are no more Northwest region records in the ALL-SALES file after this one:

```
802997  410      NW      115
```

Even though this is the case, ADABAS will continue reading the rest of the file, trying to return more "NW" records to the NATURAL program. Since there are none, this is potentially causing many thousands of unnecessary physical I/Os to the database. The performance of the program (and the system) will suffer even though the programmer appears to be using the most efficient means possible to extract records.

One of our customers developed a query program similar in function to the one above on a Test database file containing only a few hundred records. When executed, the program response time was good because it was only reading a small number of extra records before it reached the end of the file. However, when the program was installed on the Production database, which contained hundreds of thousands of records, there was a noticeable delay before the program ceased execution. The customer could not figure out why the program was running so slowly. A call to the Southeast office found they were only slightly concerned, the Southwest said things were running fine (SW records are at the logical end of

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Alert: N₂O Released!

(Continued from Page 1)

Further, N₂O **enhances NATURAL's own built-in security** by not allowing any migration to take place without the appropriate **electronic authorization**. It will therefore be more difficult for anyone accessing the database to make incorrect or inappropriate changes to the application software.

Many ADABAS installations currently rely on the NATURAL 2 SYSMAN utility to accomplish their NATURAL Change Management activity. **There are many drawbacks to using SYSMAN** as the basis of a NATURAL Change Management System:

AUDIT TRAIL - SYSMAN does not provide an audit trail of any kind. This is a severe limitation in using SYSMAN as the hub of a Change Management System.

USER FRIENDLINESS - SYSMAN requires the user to be familiar with the actual DBIDs and File Numbers of the NATURAL System Files. In a multiple database environment, the opportunity for error is always present. This, coupled with the lack of an audit trail, is a potentially disastrous combination.

POTENTIAL FOR ERROR - SYSMAN has no memory. If today an individual selects 100 programs in a library to move from Test to Production, and tomorrow the same movement must take place, then all 100 programs will have to be selected again.

SECURITY WITHOUT NSS - Without NATURAL SECURITY SYSTEM (NSS), access to SYSMAN is an all or nothing proposition. If an individual can logon to SYSMAN, then all programs within the utility are available to this individual to be manipulated. There are plenty of opportunities for honest error, or intentional sabotage.

SECURITY WITH NSS - With NSS installed, access to SYSMAN is restricted, but the ability to adequately control NATURAL program migration is limited. The principle in NSS is that an individual that has permission to use SYSMAN for a given library may do so without regard to the direction of the migration. Or in other words, the movement can be from Test to Production, as well as Production to Test. This drawback can present major integrity problems within the NATURAL System File.

N₂O **corrects all of these deficiencies**. The baseline functions of the N₂O Change Management System are:

THE USER INTERFACE

The N₂O interface is a series of on-line programs and screens designed to make the setup and operation of the product as **easy and trouble-free as possible**. It consists of several

types of menu-driven screens, makes use of PF-Key definitions, supports the use of **direct commands**, has an on-line **HELP facility**, and has an error trapping and reporting mechanism. The Direct Command Line can be used by the experienced N₂O user to navigate directly between menus in the system, eliminating the need for selections on intermediate Command-Level screens.

THE ENVIRONMENT SUBSYSTEM

The Environment Subsystem of N₂O is the administrative or organizational part. It is here that the DBA, system administrator, etc., define not only their site's NATURAL environment, but also place **access and movement restrictions** on libraries within this environment.

The DBA provides:

- Node (CPU or ADABAS SVC) Definitions
- Archive guidelines
- NATURAL Definitions (each FUSER and FDIC System File)
- InstallParms (default values during program migration)
- Migration Profiles (rules for program migration)
- Event Names (logical labels to differentiate individual migrations - names such as PAYROLL1, BENEFITS, TEST3, etc.)

All migrations, i.e. code movements, in the N₂O system are keyed to an Event name and an Event Sequence number. Sequence numbers are internally assigned during the migration process. Approval and Function Profiles assigned to users determine which portions of the Migration Subsystem they are permitted to access.

An Approval Profile is a list of up to 40 FROM NATURAL / FROM LIBRARY and TO NATURAL / TO LIBRARY combinations that are allowable for a particular user or group of users. Function Profiles consist of lists of N₂O functions that individual users or groups of users may invoke. A User Definition specifies which migration events and N₂O functions a particular user may invoke.

THE MIGRATION SUBSYSTEM

While the Environment Subsystem is intended for use primarily by the DBA and other systems administration staff members, the Migration Subsystem is designed to be used principally by programmers, managers, and support personnel. The Migration Subsystem **relieves the DBA** and systems administration staff from the day-to-day tasks associated with program Change Management.

The Migration Subsystem is the **heart** of the N₂O Change Management System. It is here that migration requests (lists of programs to be moved) are created and processed. (Processing migration requests includes authorization as well as program movement within the N₂O system.)

(Continued on Page 8)

Alert: N₂O Released

(Continued from Page 7)

Programmers build migration requests from lists of programs (source and/or object) and specify these to be moved from one NATURAL/library to another.

N₂O knows that different programmers developing different applications will be creating lists of programs to be moved. N₂O intelligently supplies a list of all programs in the appropriate library. For example, in the PAYR library there may be 127 programs. **N₂O is prepared** for the Add or Replace to be done on the target library. **N₂O remembers** from one day to the next that, for example, "PAYROLL1" means move a specific 113 of these 127 programs. The programmer may add, change, or delete program names in the list. If no authorization is required, **the move can take place immediately**. Otherwise, proper approval by authorized individuals is required for program movement to occur.

AUDIT REPORTING

The Reporting Subsystem allows access to the three N₂O system files: the Catalog File, the Event File, and the Archive File.

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Current Breezes

(Continued from Page 2)

you get on the TRIM bandwagon now. Maybe someday we'll sell off the rights to this product and the price will skyrocket. Just kidding - this is not **our** "goal".

Work also continues on AUDITRE. **AUDITRE** v1.1.0 has two modules: AUDITRE4 and AUDITRE5. You guessed it - these must be for ADABAS 4 and 5. This means, contrary to what you may have heard, that AUDITRE can certainly process the ADABAS 5 Protection Log. Now that this product is rock solid, it's time for some big improvements. We're considering these:

- **Selection by values of fields** in the compressed images;
- A **pre-processor** for specifying auditing of "views", which get looked up in PREDICT and translated to AUDITRE parameters for appropriate files and fields;
- A **post-processor** which changes the flat-file output from an AUDITRE run into a user-defined report format;
- An **on-line capability** of querying an "image-file", an

ADABAS file (not the Protection Log) which contains update information about important user-defined files, records, and fields, along with who updated them, and when.

- A more automatic way to **recover NATURAL programs** from the Protection Log.

We have been watching our AUDITRE users' techniques for selecting, decompressing, and outputting in flat-file form, old deleted NATURAL programs (this is what happens when you save a program - the old one is gone). Then they add the program back into a NATURAL System File - usually using a COBOL program.

We know how we want to automate the process, directly in AUDITRE. You'll tell AUDITRE to process the Protection Log from a specific DBID, looking for the appropriate FUSER file, library, and program (field LJ). You'll also tell AUDITRE how many previous versions of a particular program you want, or how far back in time you want to go, and AUDITRE will retrieve the records (fields LJ, LK1-nn) from the Protection Log, form them into what the original decompressed data would have looked like, and write them back to your NATURAL System File. Which file? The **N₂O Archive File**. Why not? N₂O really has the handle on what to do with multiple old versions of NATURAL programs. From the Archive File, you can migrate it back into Test or wherever - under N₂O supervision, of course.

This leads into another topic: the **integration of our products**. AUDITRE is recovering programs into N₂O. TRIM is monitoring NATURAL program usage, including N₂O. AUDITRE is reporting on updates of N₂O's Catalog File. And TRIM is displaying on-line efficiency and violation statistics from **SECURITRE**. What's that, "SECURITRE"? Treehouse is doing something with security and calling it SECURITRE? Yep! And, it's closer than you think. Another void filled. We had to do something in our spare time.

Seriously, you'll see an article about SECURITRE in the next TREETIPS issue, and a product announcement will come out before then. You know how it goes, we don't like to announce a product until it's ready, or very close. But, we are prepared to say that if you are a non-DOS ADABAS shop, concerned about security, and have (or will acquire) RACF, ACF2, or TOP-SECRET, then you will definitely want SECURITRE. We're considering working with about five large ADABAS users in our Beta testing of SECURITRE, soon. If you are interested in assisting us while **solving your security problems**, call Rich Jacobson now. Of course, you'll get a break on the price for your help.



And the Survey Says...

(Continued from Page 3)

| | | |
|----------------------|----|----|
| NATURAL VSAM | 25 | 9 |
| NATURAL 2 Production | 17 | 57 |
| ADASQL | 12 | 14 |
| VNAT/VNATB | 9 | 1 |
| ADAPREP | 9 | 0 |
| ADABAS 5 Test | 5 | 56 |
| ADABAS 5 Production | 1 | 50 |
| No Response | 1% | |

From our DBMS software question, we learned:

| DBMS | % Using | % Planning |
|----------------|---------|------------|
| ADABAS IBM | 97 | 1 |
| IMS | 11 | 1 |
| DB2 | 5 | 8 |
| ADABAS VAX/VMS | 5 | 5 |
| DEC VAX RDB | 1 | 1 |
| No Response | 1% | |

(Note: TREETIPS is sent only to ADABAS sites.)

And when we asked about Performance/Auditing software, the responses were:

| Product | % Using | % Planning |
|-------------------|---------|------------|
| TRIM | 34 | 5 |
| DEBUG APAS | 28 | 2 |
| DEBUG INSIGHT | 25 | 3 |
| DEBUG PLEU | 13 | 2 |
| DEBUG SPACEMAN | 8 | 7 |
| REVIEW | 8 | 6 |
| AUDITRE | 1 | 3 |
| None of the Above | 23% | |

(Note: AUDITRE was not released until after the majority of the Marketing Surveys were returned. As of this date, TSI has sold 50 AUDITREs.)

We also asked about the quality of Technical Support. We learned that we must be doing something right because those who have had experience with Treehouse Software's technical support told us what they thought:

| | |
|---------------|------|
| Excellent | 31 % |
| Above Average | 53 |
| Average | 14 |
| Below Average | 2 |
| Poor | 0 |

Other companies' technical support got:

| | |
|---------------|-----|
| Excellent | 8 % |
| Above Average | 43 |
| Average | 45 |
| Below Average | 3 |
| Poor | 0 |

In terms of Treehouse Software's Sales/Marketing Support, we got:

| | |
|---------------|------|
| Excellent | 16 % |
| Above Average | 41 |
| Average | 41 |
| Below Average | 2 |
| Poor | 0 |

While others got:

| | |
|---------------|-----|
| Excellent | 7 % |
| Above Average | 28 |
| Average | 50 |
| Below Average | 13 |
| Poor | 2 |

TSI's education services got the following ratings:

| | |
|---------------|------|
| Excellent | 21 % |
| Above Average | 58 |
| Average | 21 |
| Below Average | 0 |
| Poor | 0 |

While others' education got:

| | |
|---------------|-----|
| Excellent | 5 % |
| Above Average | 39 |
| Average | 49 |
| Below Average | 5 |
| Poor | 1 |

And NATURAL ELITE received the following ratings:

| | |
|---------------|-----|
| Excellent | 5 % |
| Above Average | 39 |
| Average | 49 |
| Below Average | 5 |
| Poor | 2 |

And when it comes to our consulting and programming services, you rated us:

| | |
|---------------|------|
| Excellent | 18 % |
| Above Average | 55 |
| Average | 27 |
| Below Average | 0 |
| Poor | 0 |

(Continued on Page 11)

TRIM Developments

First of all, TRIM version numbering has been adjusted to be in sync with ADABAS versions:

- TRIM v4.x will run with ADABAS 4
- TRIM v5.x will run with ADABAS 5

TRIM v4.0.0 and v5.0.1 are available. They represent modifications to TRIM v3.2.1 and v5.0.0, respectively, with many subtle improvements. Major additions to TRIM will occur in v4.1 and v5.1 and beyond.

With newer versions of TRIM, the TRMINST method of installing the Real-time Monitor will give way to **INPL** for NATURAL 2, **IEBCOPY** replaces IEHMOVE, and the Real-time Monitor programs are compiled with NATURAL 1.2 and **NATURAL 2**.

A QUANTUM LEAP

With ADABAS 5, TRIM 5.1 will make available at least the following information for each detail command as appropriate.

JOBNAME
STEPNAME
PROGRAM
RACF USERID
JES NUMBER
JES ACCOUNTING INFORMATION

CICS TRANID
CICS OPID
CICS USERID (RACF USERID) (CICS 1.7 Required)
CICS TASKID
CICS PROGRAM

COMPLETE TID
COMPLETE PGM

NATURAL USER
NATURAL APPLICATION
NATURAL PROGRAM

FACILITY ISSUING COMMAND
(BATCH, CICS, COMPLETE, CMS)

It follows that TRIM can then detail log this information, and/or do minute, hour, session, and PRESUM statistics by these new data fields.

With TRIM 5.1 the following information will be viewable on-line and in Nucleus Session Statistics on a summary basis:

- **Total duration** of all commands (including XMS time)
- **Average duration** of all commands

- **Average difference** between true duration and reported ADABAS duration

TRIM 5.1 will report on-line and at shutdown, the high water mark, as well as the date and time of the high water mark, for the following ADABAS queues and buffers:

| | |
|------|------------------------------|
| NU | User Queue |
| NC | Command Queue |
| NH | Hold Queue |
| LFP | Internal Format Buffer Pool |
| LI | Table of Search Results |
| LQ | Table of Sequential Commands |
| LWP | ADABAS Work Pool |
| LBP | ADABAS Buffer Pool |
| LCP | ADABAS Security Pool |
| LNP | ADABAS NET-WORK Pool |
| NABS | Attached Buffers |

Extended Presum

TRIM 5.1 will allow the outputting of "Extended" Presum records. These records will be derived based on user specifications at each site, with a maximum key size of 16 bytes. This would allow the user to maintain Presum data by combination of NATAPPL & NATPROG, or JOB & JES#, for example. The key to each record can be built from a maximum of five (5) fields or portions of fields. The record-type byte will be assigned by the user. For example the record-type for JOB & JES# may be 'V', or any other character not yet used. TRIM will recognize the extended Presum record to be 8 bytes longer than the existing Presum records. The DBID will also be in each Presum record, in a byte previously unused.

User Customization of Tables

The users will be able to **customize the size of the tables** kept by the TRIM User-Exit-4, thus allowing full control over region requirements.

Further, the users will be allowed to select exactly (within limits) what information is being maintained by TRIM, including information built from multiple locations. This customization may be altered hourly, or on-line from the Real-time Monitor. For example a user may chose:

| <u>Minute</u> | <u>Hourly</u> |
|---------------|---------------|
| JOB | RSP |
| NATPROG | JOB/CMD |
| USERID | FNR |

(Continued on Page 14)

And the Survey Says...

(Continued from Page 9)

And others:

| | |
|---------------|-----|
| Excellent | 5 % |
| Above Average | 24 |
| Average | 61 |
| Below Average | 7 |
| Poor | 3 |

We place great value on your future product and service interest, since this is what we will use to help us decide which of these we will concentrate on in the months and years ahead. Using a value of 3 to indicate high interest, 2 for medium interest, and 1 for low interest, here is the average level of interest for the products and services we asked about:

(Note: The percentages in parentheses after each "Average Interest Level" figure are the percentage of the total 314 respondents who answered the question.)

| Product/Service | Average Interest Level (1=Low, 3=High) | |
|---|---|-------|
| NATURAL 2 Education | 2.5 | (82%) |
| NATURAL 1.2 to 2 Conversion | 2.5 | (76%) |
| ADABAS 5 Education | 2.4 | (86%) |
| ADABAS/NATURAL Performance Monitor - IBM | 2.3 | (79%) |
| NATURAL Program/Module Mgmt. | 2.2 | (71%) |
| ADABAS/NATURAL Application Gen. | 2.0 | (69%) |
| NATURAL User Friendly Editor | 1.9 | (64%) |
| ADABAS Generalized Auditing | 1.8 | (61%) |
| Consulting on Performance Analysis | 1.8 | (56%) |
| ADAMINT upgrade for ADABAS 5 | 1.8 | (48%) |
| ADABAS File Extract, Merge, Report Writer | 1.7 | (62%) |
| ADAMINT to ADASQL Conversion | 1.6 | (48%) |
| Conversion Services | 1.5 | (46%) |
| Applications Development Consulting | 1.4 | (46%) |
| Consulting on DBA Relief | 1.4 | (45%) |
| ADABAS to DB2 Conversion | 1.4 | (44%) |
| Personnel Placement | 1.3 | (39%) |
| ADABAS/NATURAL Performance Monitor - DEC | 1.3 | (31%) |

What we see is a great deal of interest in NATURAL 1.2 to NATURAL 2 Conversion, NATURAL Program/Module Management, ADABAS 5 and NATURAL 2 Education, and IBM-based ADABAS Performance Monitors. We were also very surprised by further analysis of the ADAMINT users' responses. While non-ADAMINT users understandably rate "low" their interest in ADAMINT upgrades, nearly all ADAMINT users either want to see an upgrade of the

ADAMINT product for ADABAS 5, or an ADAMINT to ADASQL conversion. As it stands, it seems that the majority of ADAMINT users had a medium to high level of interest in having ADAMINT upgraded for ADABAS V5. This is a relatively high interest in the continuation of a product which has been "dormant" for 10 years. We are wondering if, for the maintenance fees users have paid on ADAMINT for the past 10 years (more recently lumped in with ADABAS maintenance), SAG will be upgrading ADAMINT to work well with ADABAS V5. Also, nearly all ADAMINT users expressed a less than medium interest level in an ADAMINT to ADASQL conversion product. Apparently nearly all ADAMINT users are interested in "protecting their investment" in the ADAMINT-style approach - either by having current ADAMINT applications work with V5 or by having them converted to the newest approach - ADASQL.

We hope that our survey accurately reflects the "real world" of the ADABAS community and that you have found the results as interesting as we have. Please feel free to write if you have any questions or comments about the survey or its results.

Performance Guides (limit - one free per site, additional copies are \$50) are still available. For those sites that have not received one and would like to, you can still return a completed survey to us and we will be glad to send you a Guide. If you are in need of a survey form, please call and we will send one to you.



TSI at UCSB BIG Conference

Treehouse Software sent two representatives to the 1989 SAG/University BIG Conference at the University of California at Santa Barbara.

Tim Hornung and Ruth Rainey collected some California sun, while distributing TSI brochures, literature, and demo diskettes from our display booth. Tim presented papers on "Change Management for NATURAL Programs" and "Development of a Standardized ADABAS Auditing Facility".

TSI was again pleased to provide technical and financial support for this interesting and well-run conference. We look forward to next year's conference at Penn State, home of the Nittany Lions. For those of you travelling through Pittsburgh on your way to Penn State, you are certainly welcome to stop at the Treehouse. We're only 10 minutes from the airport.



A User's Approach to DB2 Monitor Evaluation

One of our customers is a DB2 user, as well as an ADABAS user. This customer recently determined that they needed a DB2 performance monitor and began an evaluation process consisting of four steps.

The first step in the customer's evaluation process was to answer the question "What should a DB2 monitor do?" They decided that their goal was to obtain a monitor to properly maintain the DB2 environment to achieve the best performance. They also felt that it was important to be able to use the monitor to help application programmers debug their code.

The second step was to determine what DB2 monitors were available in the marketplace and to gather information on the products. This led them to evaluate these five DB2 monitors:

- DB2PM (v ???) from IBM
- DB2 Manager (v 1) from Boole and Babbage, Inc.
- Insight/DB2 (v1.0) from DataBase Utility Group, Inc. (DBUG) and/or Goal Systems International, Inc. (According to an announcement in the June 1989 issue of Mainframe Journal, Goal Systems International, Inc., of Columbus, Ohio, is expected to complete its acquisition of the principal software products of DataBase Utility Group. These were identified as Insight/DB2 and Insight/ADABAS.)
- Omegamon for DB2 (v100) from Candle Corp.
- DB2 Activity Monitor (v1.0) from BMC Software

Treehouse Software has not determined if the above are the only performance monitors available for DB2. Different or better programs may exist. TSI also cannot be sure that this customer evaluated the most recent version of each of these products. The opinions expressed in this article are those of the customer and may not be the same as those of Treehouse Software, its employees, or affiliates. Before your organization purchases a DB2 monitor, it should perform its own evaluation and determine what is best for its needs.

The third step in the evaluation process was to examine each of these products, based upon the available information and desired functionality. This led to some interesting information.

DB2PM

The customer wanted to perform on-line monitoring of the database. Because of this, evaluation of the DB2PM product ended very quickly, since DB2PM is batch only and does not provide on-line monitoring capability.

DB2 Manager

Based upon a brief unsuccessful test of the product and after

evaluation of the documentation, DB2 Manager was determined to not meet the needs of the customer and further evaluation of this product was not performed.

Insight/DB2

According to the customer, the points in favor of Insight/DB2 were:

- the on-line portion is very stable and somewhat flexible,
- the batch facility (Insight Report Writer) is very flexible and fairly easy to use,
- the ability to change and create monitoring criteria adds flexibility,
- it has collection analysis ability, which would allow the customer to watch trends developing throughout the day, and
- it allows batch reporting from SMF data.

However,

- Insight executes in TSO, so it is dependent upon the availability of TSO,
- to monitor multiple DB2 subsystems, another address space is required, and
- Insight does not offer the ability to issue DB2 (or any other) commands.

Since the initial examination of Insight/DB2, a new version was released (v2). The customer plans to arrange a trial of the new version and commence a re-evaluation.

Omegamon for DB2

The points in Omegamon's favor, according to our customer, are:

- it has its own VTAM address, and is not dependent upon other software (such as TSO, CICS, etc.),
- it offers quick exception analysis and problem determination, as well as giving possible reasons for the problem and alternatives to help resolve the problem,
- it gives the ability to issue DB2, MVS, and CICS console commands, and
- it has the ability to monitor multiple DB2 subsystems.

But, Omegamon does not have:

- batch reporting capability, and
- collection analysis capability.

The customer adds that the system seems designed for quick on-line problem determination. They were unclear as to

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Affiliate News

Searching for, negotiating with, and receiving sales and support through our foreign affiliates has been an interesting and rewarding experience for TSI. Over the years, we've seen the problems that have occurred between other U.S. companies and their foreign affiliates. Sometimes the affiliate is ineffective and has to be dropped. Sometimes the affiliate receives little support from the U.S. company and terminates the relationship. The experience may leave both organizations with a bad taste in their mouths.

We very **carefully choose our affiliates**, and are very pleased with their accomplishments. Unfortunately, we lost our English affiliate, 4GL, due to a change in corporate direction and ownership. However, we've recently been in contact with another small, dynamic British firm like Treehouse Software.

Our four affiliates currently are shown below. This does not mean we market in only four countries. The Brazilian affiliate, for example, covers all of South America.

We are also **prepared for the European Common Market** to open in 1992. Our European marketing is performed

through one affiliate, **MaK Data System** of West Germany. MaK Data System provides a **centralized marketing and support base for all of Europe**, with representatives in several areas, including West Germany, Scandinavia, Austria, Switzerland, France, Benelux, and Italy. MaK Data System is currently negotiating with a new representative in England and another in Spain. Local representation is more effective because of the different languages and customs in each country. Please contact MaK Data System for information if you are in one of these areas.

Two other areas not covered by an affiliate are Australia and southeast Asia, and we are negotiating with companies there. And, of course, TSI itself handles the United States, Canada, and all other countries not being served by an affiliate. This gives us **local representation for over 90%** of the ADABAS sites, worldwide.



| SERVING SOUTH AMERICA: | SERVING EUROPE: |
|--|--|
| <p>MSS DO BRASIL LTDA. Edificio Oscar Niemeyer 15 andar CEP 70.300 - Brasilia DF Brasil</p> <p>Phone: 011-55-61-225-1158 Telex: 613754 MSBC BR Fax: 011-55-61-224-5559</p> | <p>MaK DATA SYSTEM Dept. AI 3 P.O. Box 9009 2300 Kiel 17 West Germany</p> <p>Phone: 431-381-2218 Telex: 17-431105 MAKD Fax: 011-49-431-381-3021</p> |
| SERVING THE FAR EAST: | SERVING AFRICA: |
| <p>NISSHO IWAI CORP. High Tech Business Dept. 4-5, Akasaka, 2-Chome Minato-Ku, Tokyo 107 Japan</p> <p>Phone: (03) 588-4662 or 4596 Telex: J22233 NICTK A/B Fax: 03-588-4883</p> | <p>SYNTACTICA P.O. Box 4470 Randburg 2125 Johannesburg, South Africa</p> <p>Phone: 011-27-11-880-4976 Fax: 011-27-11-880-4908</p> |

TRIM Developments

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Session

NATAPPL
OPID/TRANID
PROGRAM
JOB

Presum

CICS USERID
JOB/JES#
PROGRAM
NATAPPL/NATPROG

TRMUEX4S (small) previously had somewhat less functionality than the regular or large sized User-Exit-4s. This is no longer true. In fact, with the table customizations in the user's hands, there is no longer a need for Treehouse to generate small/large versions. The user can effectively create a single TRMUEX4 as small or as large as desired.

ADALOG type report in Batch

For batch jobs, TRIM v5.2 will be able to produce a hardcopy report of all commands processed by this JOB. This report will be automatically produced if the user supplies a TRIMLOG DDCARD. TRIM will interpret the NATURAL calls in a readable format for the user. The following is an example of such a report:

| NAT | PROG | LINE | CMD | FUNCTION | FNR | ISN | QTY | RSP |
|----------|------|------|--------------|----------|-----|-----|-----|-----|
| TSTPGM01 | | L3 | LOAD | PROG | 8 | 0 | 0 | 0 |
| ... | | | | | | | | |
| TSTPGM01 | 0050 | L9 | HISTOGRAM | | 123 | 104 | 3 | 0 |
| TSTPGM01 | 1380 | L3 | READ LOGICAL | | 123 | 37 | 0 | 0 |
| ... | | | | | | | | |
| ... | | | | | | | | |

THE LINE

ADABAS 5 can be configured to run with its large buffer pool "above the 16 meg line". TRIM looks into the buffer pool occasionally, so we had to make some adjustments to our code. But, we were able to quickly and easily handle the 16 meg line, so **TRIM is keeping right up with ADABAS.**

STCKy issue

We noticed the STCK time on the CLOG to occasionally be erroneous. The time should always be equal or greater than on the previous log record. Sometimes in ADABAS 5, the current log has a less time than the previously completed command! Even though this STCK field had always been defined as a "Time-in", it really was a "Time-out", so that all CLOG records would be in ascending STCK sequence. Not so with ADABAS 5. Our testing shows that this STCK time is sometimes off by 5-10 minutes, not just a second or two. This is a potentially serious bug. We fixed TRIM to deal with it, but we're sure other systems and monitors will get snagged by this. Also, ADABAS may get itself in trouble in log switching where it keeps track of which dual area is the oldest.

WILL THE REAL USERID PLEASE STEP FORWARD?

The new ADALOG routine in ADABAS 5 places some incorrect information in the JOB and USERID fields. TRIM 5's User-Exit-4 overlays these fields with correct values. Other systems and monitors may be adversely affected.

We will print the "real User-Id" on certain screens and hard-copy statistics. ADABAS now keeps users all separated by identifying them with sequentially assigned 4-byte binary numbers. Unfortunately, this number doesn't directly identify the user for you or us. The real, or old-style, User-Id, where COM-LETE is a TID, CICS is readable characters, batch is a STCK time, etc. is in the User Queue. We'll get to it, and display it where you need to see it.

THIS DATABASE IS BIG ENOUGH FOR BOTH OF US

We ran into REVIEW 3.1. Actually, it ran over us. We made a few adjustments, and now **co-exist nicely with REVIEW.** You may run both monitors if you desire.

AT ADAEND

ADABAS final "Nucleus Session Statistics" look very similar to TRIM's Nucleus Session Statistics, except that **TRIM goes into so much more depth.**

ADABAS and TRIM 5 do not agree on the **number of users** during a session. There is also a discrepancy concerning the number of OP commands, and the high-water mark for the UQ. In all cases, TRIM is higher. We believe that ADABAS does not count all OP commands, and also does not count all users. Perhaps ADABAS ignores UTILITY users.

ADABAS and TRIM 5 disagree about the **high water marks** for buffer pool percentages. ADABAS truncates when calculating the percentage, and TRIM does not.

TRIM 5 shows the **number of internal commands** that ADABAS generated. ADABAS does not.

TRIM 5 does and ADABAS does not **account for all commands** in the distribution of commands by type.

The distribution of **commands by FNR** does not agree in TRIM 5 and ADABAS. If the user selects the ZEROFNR option within TRIM 5, the counts should then agree.

WHEN FAST IS REALLY SLOW AND VICE-VERSA

We have had many requests over the years to do something to "**slow down batch**". We have had complaints about batch's impact on ADABAS response time for on-line applications. Often these complaints really come down to "if batch jobs were not allowed to ram hundreds of thousands of

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Alert: N₂O Released!

(Continued from Page 8)

The **N₂O Catalog File** contains a history or **Audit Trail** of the migration of all of the NATURAL programs managed by the N₂O system. Audit trail information is accessible so that the **change history for an application** or program can be determined. Reports detail what changes have occurred within the application along with appropriate authorization information.

The **Event File** contains information about every migration request created and processed by the N₂O Change Management System. The Event Detail reporting functions allow the user to **build complex keys** which may be used to search the N₂O Event File.

The **Archive File** contains a DBA-specified number of old versions of each replaced program.

FUTURES

N₂O futures include:

- An **XREF data interface** to display related programs at migration time, allowing them to be selected for migration.
- Support for **additional migration types**, including SUPER/NATURAL and NATURAL/SPREADSHEET.
- A **"compile" option** to recatalog programs after they have been migrated to a destination library. This option will not only "STOW" the programs but will record this in the N₂O CATALOG.
- A **"check-out" feature** to prevent updates to a Production library from multiple Test libraries. This feature will provide a **verifiable audit trail**, that the actual source code "checked-out" from production is the same source code that is ultimately migrated back to production.
- A **"move or copy" option** for program migration. (Currently only "copy" is supported.)
- Implementation of the **Toolbox Subsystem**, which will contain useful ADABAS/NATURAL utilities.

BENEFITS

N₂O has obvious benefits to an entire organization:

DBA - Removes the burden of being involved in the day to day operation of NATURAL program migration.

SECURITY and AUDIT Department - Provides positive control over NATURAL program migration with a verifiable audit trail.

QUALITY ASSURANCE - Allows the QA staff to have an approval phase within the migration process.

MANAGEMENT - Provides an automated system that frees up valuable personnel time, and speeds up the migration process.

APPLICATION PROGRAMMERS/ANALYSTS - Simplifies the migration process, and introduces a 'paperless' procedure to initiate NATURAL program migration.

OPERATING ENVIRONMENTS

N₂O is installable and executable on **any mainframe that supports NATURAL 2.**

N₂O requires **no zaps** to any operating system, teleprocessing system, or to ADABAS, NATURAL or their associated software.

Source code to the N₂O MAIN MENU and the invocation program "N2O" are provided for **site customization**. N₂O also allows for **multiple user exits** to the migration process. The user exits are implemented as NATURAL subprograms and are invoked via a CALLNAT. They can be used for many things, such as **enforcing naming or programming standards** or **interfacing N₂O with an E-Mail system**.

HOW TO GET N₂O

Most NATURAL installations received an N₂O product overview in April. **Demo diskettes** were sent more recently. If you'd like one, please call.

The list price of N₂O is very attractively priced for all operating systems. **The payback period is typically only a few months.** For pricing, trial, or site visit information please call Richard Jacobson at (412) 741-1677.



A Problem With SBV

(Continued from Page 6)

the file), while the Northeast said response time was terrible (NE records are at the logical beginning of the file). You can see why this would happen, going through the file by REGION.

TRIM TO THE RESCUE

TRIM was used to report on the activity against the production file this program was reading. TRIM reported that thousands of physical I/Os were being issued against this file on the last READ, the one getting response code 3. The customer's staff spent a great deal of time and effort trying to determine the problem. Eventually they realized that Security by Value indirectly caused the problem. It had been set for the file when the file was initially built. Once the Security by Value option was removed, the query program no longer caused thousands of unnecessary I/Os and ran much faster.

Removing the Security by Value option is one way of solving this performance problem. Can RACF, ADABAS file level security, NATURAL Security, and/or TRIM User-Exit-1's security features be of any help? Not really, not for field-level security. So, what can be done when the Security by Value feature is needed and cannot be removed? In this case, one solution is to structure the READ logic in the NATURAL program to "work around" this problem. One way of doing this in our example program above is to write the code with FIND commands:

```
FIND IN ALL-SALES WITH REGION = 'NW'
```

In the example above, ADABAS will FIND all records with a "NW" region, and return them one at a time to NATURAL for processing. NATURAL will stop the process "naturally". However, the FIND command is less efficient than READ. This presents the programmer with a choice to make when using Security by Value. Should the application use the more efficient READs, or should it use FINDs and eliminate the unintentional I/Os? The answer to this depends on the volume of records the program will return. For example, if the program is going to process, and maybe return 90% of the records in the file every time it is run, then READ is still the best choice. On the other hand, if the program will only return a few of the millions of records in a file, the FIND command is usually the better choice.

Another way around the problem may be to code a FIND NUMBER followed by a READ LOGICAL loop which is controlled by the number found in the FIND NUMBER. This will work only when the criteria and SBV rules "match", i.e., whatever "NW" records there are, all of them are allowed to be returned to the calling program.

The initial response time measurements for this case showed that total transaction time was 400 times as long, compared to when Security by Value was removed completely. This overhead was due to the extra physical I/Os being done by ADABAS. Once the application was switched to FIND logic, it ran 30% slower than the logical read, but then the Security by Value overhead added only another 15-20%.

If you have discovered other nuisances (or performance problems) like this one related to ADABAS, NATURAL, or other products please contact Treehouse Software so that we may share this information with others. Include your solution, if any, and tell us what led to your discovery of the problem.



User's Approach to DB2 Monitors

(Continued from Page 12)

whether this was a positive or negative feature of the software.

DB2 Activity Monitor

The customer was very impressed with this product. Their evaluation of the product, based on the documentation, revealed these features:

- it can execute in CICS, TSO, or its own VTAM session,
- it allows viewing of multiple DB2 subsystems,
- it gives the ability to issue DB2 console commands,
- it can be customized,
- it has data collection ability,

- it summarizes the major components of DB2 (i.e., buffer pool, EDM pool, etc.) for tuning parms, and
- all DB2 execution parms (DSNZPARMs) can be viewed on-line.

To Be Continued...

The customer is still evaluating DB2 monitoring products. As of this printing, they have not taken the fourth step, making their purchase decision. However, Treehouse Software is still in contact with this customer and hopes to share the results of the evaluation with you in the next issue of TREETIPS. As always, if you have anything to add about DB2 monitoring, performance monitor evaluation criteria, or other DB2-related information, let us know.



TRIM Developments

(Continued from Page 14)

calls through to ADABAS (especially during prime time) then ADABAS could get around to processing on-line transactions more quickly".

We have decided to **solve this problem directly within TRIM**. We already have this working very effectively at a pilot site, but it is in a relatively primitive state, currently. We plan to spruce it up to recognize that it should or should not be slowing down batch processing. If there are no on-line transactions coming through to ADABAS (a common occurrence at night), then TRIM will not slow down the batch calls. If, on the other hand, TRIM recognizes significant on-line activity, then TRIM can cause a pause in the batch action which would allow other things to happen in the system, including ADABAS' recognition of the on-line transactions for processing. This feature will be available in a future TRIM version.

While we have not yet considered unbundling TRIM's separate facilities, non-TRIM users who may be interested in this feature should call us to ask about the possibility of acquiring it as a separate product.

HISTORICALLY SPEAKING

TRIM v5.1+ will offer a historical facility. This will allow for ADABAS-based PRESUM-generated data, with ample Query and Report capability. More on this in the next issue.



Chicago Treehouse Day

(Continued from Page 1)

Midwest expressed appreciation to Randy for his well-prepared, in-depth, and candid analysis.

Richard Jacobson, Vice President of TSI, planned the event, introduced Randy, and briefly introduced TSI and our consulting and education services.

George Szakach, President of TSI, quickly introduced TRIM and AUDITRE to the audience (mostly non-TRIM users), and covered some interesting planned enhancements.

Tim Hornung, developer of N₂O, impressed the audience with the design and thoroughness of the new TSI NATURAL Program Change Management System, N₂O.

Ruth Rainey, our Technical Support Specialist, and Jim DiDio, TSI's new Performance Specialist, lent a hand in answering users' questions and running demos of the three products.

Lunch and morning and afternoon refreshments were provided by Treehouse Software.

The day was a rousing success. We plan to do it again, in 4 or 5 other US/Canada locations. If you are interested in helping to organize a Treehouse Day in your area, please contact Richard Jacobson.



Solve One Of Life's Most Annoying Problems

When consulting at customer sites, we often run into SAS, a product of SAS Institute Inc. of Cary, North Carolina. SAS can be used for a variety of things. One very annoying problem can be addressed by a simple SAS program of **one line!**

As you are probably aware, tape management systems cannot tell you what is on a tape made at another shop (such

as a distribution tape from Software AG). Also, many shops do not allow most users to access DITTO to read tape labels. So what can be done when JCL to load datasets from a tape causes a S813-04 abend? Use SAS. A report such as shown below gives you what you need to know to enter the correct dataset name, and more.

Not bad for a single line of SAS code. We suggest you: (A) Obtain SAS from SAS Institute, and (B) call Treehouse Software. We'll help you set this up. We'll probably want to talk to you about an N₂O trial, too.



SAS

12:17 WEDNESDAY, JUNE 7, 1989 1

TAPE LIST FOR DDNAME - VV

OWNER - IBM DOSVSE

CONTENTS OF TAPE VOLUME - N2OS02

| FILE | NUMBER | DSNAME | RECFM | LRECL | BLKSIZE | BLOCK | EST. | CREATED | EXPIRES | CREATED BY | JOB NAME | STEPNAME | TRTCH | DEN | PSWD | UHL | UTL |
|------|--------|------------------|-------|-------|---------|-------|-------|---------|---------|----------------|----------|----------|-------|-----|------|-----|-----|
| | 1 | N2O.V100.INPL | VB | 4624 | 4628 | 2531 | 737.8 | 07JUN89 | 0000098 | TSI00723/STEP1 | | | | 3 | NO | 0 | 0 |
| | 2 | N2O.V100.DDES | VB | 4624 | 4628 | 223 | 66.1 | 07JUN89 | 0000098 | TSI00723/STEP2 | | | | 3 | NO | 0 | 0 |
| | 3 | N2O.V100.ERRORS | VB | 4624 | 4638 | 3 | 2.1 | 07JUN89 | 0000098 | TSI00723/STEP3 | | | | 3 | NO | 0 | 0 |
| | 4 | N2O.V100.ADMIN | VB | 9996 | 10000 | 1 | 1.8 | 07JUN89 | 0000098 | TSI00723/STEP4 | | | | 3 | NO | 0 | 0 |
| | 5 | N2O.V100.ARCHIVE | VB | 9996 | 10000 | 1 | 1.8 | 07JUN89 | 0000098 | TSI00723/STEP5 | | | | 3 | NO | 0 | 0 |
| | 6 | N2O.V100.CATALOG | VB | 9996 | 10000 | 1 | 1.8 | 07JUN89 | 0000098 | TSI00723/STEP6 | | | | 3 | NO | 0 | 0 |
| | 7 | N2O.V100.EVENT | VB | 9996 | 10000 | 1 | 1.8 | 07JUN89 | 0000098 | TSI00723/STEP7 | | | | 3 | NO | 0 | 0 |

813.2

Sewickley in the News

Who makes the BEST pilsner beer in America? According to a vote taken at the 1986 Great American Beer Festival in Denver, it's Penn Pilsner, made by the Pennsylvania Brewing Company. Likewise, the Pittsburgh Post-Gazette and Pittsburgh magazine voted it the best beer in Pittsburgh. Those of us who are beer drinkers find that such high praise is no surprise. What may come as a surprise is the story of this small brewery.

The Pennsylvania Brewing Company was founded in 1986 by a Sewickley resident, Thomas V. Pastorius. Mr. Pastorius is a descendant of the oldest German family in Pennsylvania. Pastorius, and his wife Mary Beth, lived in Germany for twelve years and wanted to bring the life style back with them. And they have.

Pastorius searched throughout the Pittsburgh area for an unoccupied brewery in which he could re-create a traditional German beer garden. He found a 19th century brewery with a fair weather view of Pittsburgh's Golden Triangle at the base of Troy Hill, a little slice of Deutschland one mile from downtown. After restoring the structure, Pastorius had brewing equipment manufactured in Germany to his own specifications.

Every step has been taken to ensure that the Pennsylvania Brewing Company's products are authentic German beers. The hops and yeast used to brew Penn Pilsner are imported from Germany. The company even hired Alexander Deml, the 1988 Bavarian State Brewing Champion, a graduate of the world's foremost brewing institute, the Technical University of Munich at Weihenstephan.

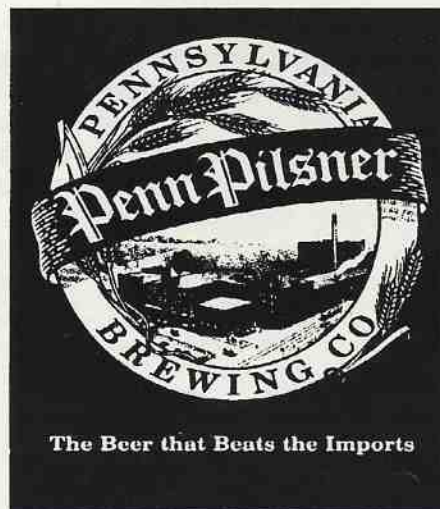
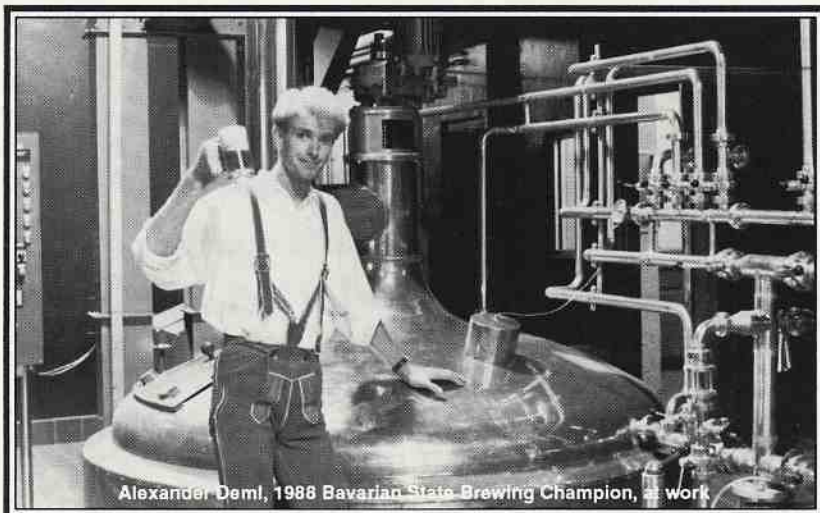
His attention to detail has paid off. Penn Pilsner meets Germany's stringent beer purity law, the Reinheitsgebot. To meet this law, the beer must contain only four ingredients: barley malt, hops, water, and yeast. American beers may contain preservatives, additives and other ingredients not

permitted in Germany, such as rice or corn. Because of this, Penn Pilsner is one of only four beers eligible for import INTO Germany.

A recent change in Pennsylvania liquor laws worked in Pastorius' favor by making it legal for the company to open a restaurant attached to the brewery. Guests at this restaurant can sample Penn Pilsner in an authentic German beer garden, and actually see the shiny copper brewing equipment through a glass wall in the restaurant. Having the restaurant and brewery together helps Pastorius see that his product reaches customers in the best possible state, right down to the glass it's poured into (which, Mr. Pastorius tells us, must not contain the slightest soap residue or it will kill the head). In a recent Pittsburgh Press article, Pastorius says "God willing and the LCB cooperates", this restaurant will be open soon.

Even if you don't like beer, you should consider visiting this interesting, picturesque site when traveling through the Pittsburgh area. It's like going to Germany, without having to get a passport.

By the time you read this, we hope Tom and Mary Beth will have had the "Tree-people" over for a little private tasting party.



Where Are They Now?

In the mid-1970s, John Maguire, president of Software AG, was looking for good teleprocessing knowledgeable people. He found **Ken Rardin** and his associates in Florida. John hired Ken and the others, made Ken a vice-president, and **COM-LETE** was born. Ken eventually became the CEO of Software AG, and is most responsible for the company going public in the early 1980s.

Ken left Software AG and spent over two years involved in venture capital interests. For the past two+ years, Ken has been the **president and CEO of GMD Inc. of Atlanta**. Ken says, "We sell software and services related to computer integrated manufacturing. This involves financial, order entry, purchasing, and manufacturing packages. There is even some shop floor (CAD) software involvement."

IBM has over 5,000 "Business Partners" selling IBM software solutions. (This is an arrangement that TSI is discussing now with IBM.) Ken believes GMD is **the leading IBM Business Partner** responsible for more dollar revenue for IBM last year than any other Business Partner.

GMD is now involved with a U.K. company in the development and distribution of some major application software, which is in the \$85K - 100K price range.

Ken and his wife **Eileen** reside in the Atlanta area. Ken is bubbling with joy over their eighteen month old son, **Tyler**. Ken will be taking his daughter **Amy**, and a friend, to England for Amy's birthday. Ken keeps in touch with his old friends and said he'd like to hear from all of you.

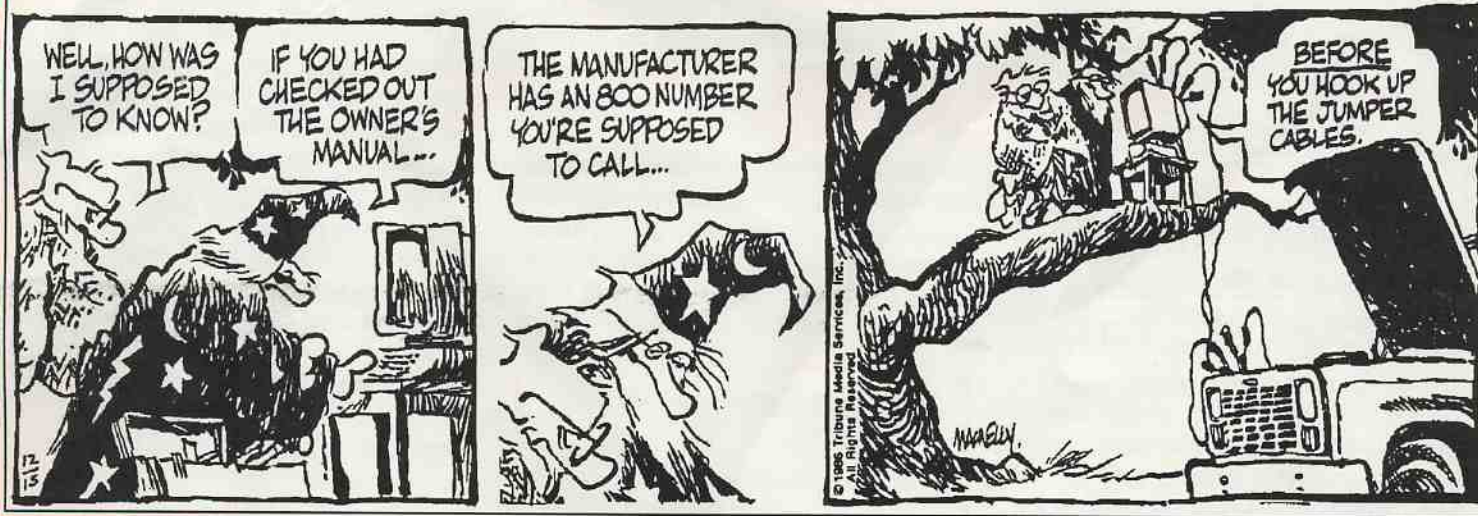
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SHOE

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AUDITRE - an ADABAS auditing tool

N₂O a NATURAL application Change Management System

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