TREETIPS

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SECURITRE

Users have commented to Treehouse Software for many years that having separate security systems for ADABAS, NATURAL, and application programs is confusing, inefficient, and often ineffective. **"Why," they asked, "doesn't TSI do something to integrate and improve the security of the ADABAS / NATURAL environment?"** We always strive to meet the needs of our customers, so our development staff held many long discussions about what solutions might be possible.

One thing we were adamant about was that we were not going to reinvent the "security" wheel. By creating our own ADABAS "RACF", we would simply be creating a different problem. ADABAS security would have become centralized, but security staff would have had to be trained to use our product, as well as RACF. Security would still not be fully integrated throughout the entire system since our product would be separate from RACF. We didn't immediately see the solution. We had to answer some tough questions:

- Could we handle **ADABAS database and file level security** in a way that is transparent to programmers and end users?
- Could our solution be implemented in ADABAS User–Exit–1, instead of link routines, so that it **could not be bypassed**?
- Could we make our User–Exit–1 code **flexible and fast**, so that it could meet the needs of our customers and **not visibly affect system performance**?
- Could we make it possible for the same code to support the three major system security facilities (**RACF**, **ACF2**, and **TOP–SECRET**)?
- Could we handle **application level security**, such as security by field, by value, etc.?
- Could we provide ADABAS **Utility security**?
- Could we put all the various levels of **security under one roof** (the system security facility)?
- Would we be able to **replace ADABAS security**, NATURAL Security, TRIM security, security logic embedded in applications, and other home-grown ADABAS/NATURAL security?
- Could our solution for application level security be **easy for programmers** to implement, and return simple "yes or no" answers when authorization requests are made?
- Could we **show performance statistics on-line** that would allow us to know how our code was performing and make adjustments to it so that performance is at the highest level?

After careful thought and discussion, the answer to all of these questions was a resounding **"YES!"** Suddenly, the little light bulbs above our heads went on and we knew what we had to do. The result was **SECURITRE** (pronounced "secure-it-tree").

For more information about SECURITRE, see the article on page 8 of this issue.

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Editor's Sproutings

by Michael Salsbury

Five months have passed since the last issue of TREETIPS was printed. Needless to say, quite a **lot** has been going on here in the Treehouse.

EASY MONEY!

In the last issue we asked you to submit **articles** for **TREETIPS**. The response was, well, not quite as good as we'd hoped. I'd like to encourage you to contribute articles to TREETIPS. As we told you last time, it's an **easy** way to pick up a quick **$100**. The fact is, you may already have written an article and don't know it. Documentation you've done for your job or for a regional user group, or notes you've made to yourself about ways to get more out of Software AG products or get around potential problems may be **exactly what we're looking for**.

Some of you may be wondering what we'll accept as an article. The subject matter can include **experiences** with Software AG or Treehouse products, other DBMSs (such as DB2 and Oracle), conversions, performance, auditing, tutorials, software evaluations, etc. It can range in complexity from a beginning NATURAL 2 article to a technical discussion of file design.

What is important to Treehouse is that our readers find information in **TREETIPS** that they can use to do their jobs more efficiently and effectively. We find that the **best** information often comes from **active** DP professionals, like **you**.

As far as **how** the article is delivered to us, we can accept handwritten, typewritten, tape recorded, faxed, or **machine readable** formats. Our desktop publishing configuration enables us to use **any** of the following microcomputer file formats:

Apple II:	AppleWorks 2.0 or earlier, or ASCII text.
Macintosh:	Microsoft Word 4.0 or earlier, Microsoft Write, Microsoft Works, MacWrite, Text format, or RTF Interchange Format.
IBM PC:	Wordstar 2000, Wordstar, Microsoft Word, Multimate, DCA/RFT, DCA/FFT, DW2/3 (TXT), or ASCII text.

If you do send your article on diskette, please enclose a **hardcopy** of the article, in case something happens to your diskette en-route to us.

We realize that most DP professionals don't have a lot of spare time to spend **revising** and **proofreading** an article. Because of this, we don't expect your article to be perfect. It doesn't even have to be **complete**! If you can send a rough outline with the relevant information (such as examples of NATURAL code, ADABAS parm settings, etc.) we'll take a stab at writing the article for you. When we're finished, we'll give **you** the chance to review it to see that the article we've written is the article you intended for us to write.

We also realize that some of you may wish to remain **anonymous**. When your article appears in TREETIPS we will (at your option) remove **your** name and/or **organization's** name from it. And, the money can be contributed to your favorite charity if you prefer.

By the way, if you're reading a **borrowed** copy of TREETIPS, call, write, or fax your name and address to us. There is **no charge** for a subscription to TREETIPS. While you're at it, you might ask for information about our products, consulting, and education.

We'd really like to know what **you** think of TREETIPS. Drop us a line and let us know how we're doing. Are there any particular **questions** about Software AG or Treehouse Software products that you would like us to **answer**? Have a **problem** you can't seem to **solve**? Write to **TREETIPS** at the address appearing on the back cover of this issue. We'll do our **best** to answer your questions, address your concerns, and solve your problems in TREETIPS.

Current Breezes

by George

It was a pleasure seeing so many friends at our hospitality suite at the Anaheim conference. About **250 people** stopped by to see us again this year.

We heard many good words about our products and services. We realize a suite is not the best environment for those of you who came to learn about our offerings. However, there is no other way we can present them without conflicting with SAG's policy of non-competition, unless we schedule a session on Friday, or in another hotel. Either option would be inconvenient for both you and us. We apologize for not being able to tell you the room number any sooner, but the suite numbers are not assigned until the day of use.

N_2O

For those of you who missed us (or were there but couldn't hear), our N_2O product was highlighted. This rapidly improving product has been out in the world for six months. NATURAL program migration or "Change Management" is far from an exact science, so everybody has a slightly different view of what N_2O should do. Therefore, Change/Enhancement requests are numerous, and implementation of these requests is ongoing.

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Current Breezes

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BATCH MIGRATION

N_2O has been upgraded to provide **"Batch Migration"**. This was something nearly everyone wanted, so we moved it to the top of the priority list. **"Target Compilation"** was placed in the previous version, but was quite restricted. We're removing the restrictions and this feature should also be available by the time you receive this newsletter. The **Reporting Subsystem** is also improved in ease of use and performance. Many more changes make for a mature product. There are still many more changes and enhancements to be implemented. We are **user-driven**, so **keep those ideas coming**.

We have spoken about N_2O at **several regional and local** SAG user group meetings. While some regional meetings are strongly controlled by SAG, others have spoken up and demanded to hear about program Change Management. SAG has been given every opportunity to respond with their NATURAL Change Management software. We have been very well received at these meetings, and would like to present our product at more meetings. Let us know if we can come to your local or regional meeting to present N_2O.

THE COMPETITION

Being fair to the competition, we understand SAG will introduce a competitive product, **PREDICT Application Control**, or **PACS**. We have heard conflicting information at user group meetings, and we have seen scattered literature on it. It is reported to provide strict controls, ensure integrity, provide recovery, "integrate" NATURAL Security, etc. PACS sounds like a system everyone should have had long ago. Unfortunately, it is not yet available. While SAG has been telling everyone for many months that PACS is better than N_2O, it remains "vaporware". We do not doubt that SAG can produce what they advertise, but we suggest trying N_2O now. It may be just what you need. And, the manual is indexed.

As for pricing for PACS, we heard last March that it will be **free**. It will be a minor addition to the next version of NATURAL. Then, it was to be free with the next version of PREDICT, which required the next version of NATURAL. Then, it was $3,000, then $5,000, then "one third the price of N_2O". At the Boston regional meeting, it was $750, and the next week in Washington it was $5,000. In Boston, it **required NATURAL Security**, and in D.C., it didn't. Two weeks later at the Anaheim conference, it was **$15,000** - and this was **for the first module only!** We wonder how many more "modules" will be necessary, when they will be available, and at what price. Not more than one week later, the price was again being quoted as **"$750 on up"**. Who gets charged **$750** and who gets the **"up"**? SAG is telling most people that they had **preferred to give PACS away for free**, but that Treehouse Software has brought this up as a legal problem and therefore, they would have to charge something for it. Well, we do not think it would cause any more of a legal problem to give PACS away than it has caused to give REVIEW away. This is the way of keeping small start-ups from gaining a foothold. Give away your ancillary products so that the "competitor" can't sell his. Anyway, that's why we're here, to provide those ancillary products at a fair price. If this results in sales for us, good. If it means you now get a fair price from SAG, good. What do you think the price for PACS would be if Treehouse had not released N_2O? When do you think the PACS product would be available if not for the push from N_2O?

N_2O PAYMENT PLAN

By the way, the price for N_2O is $20,000 and it does not require NATURAL Security. Several users explained to us that they do not want NATURAL Security and therefore would not buy PACS if NATURAL Security was a requirement for it. We have a new plan for your purchase of N_2O. Why not buy it on the **"monthly payment plan"**? In this way, you can use it right now. When PACS is available, and you try it, you can make an informed decision. If you like PACS over N_2O, just stop using N_2O and return it to us. You must sign up for this offer by the end of **January**. This should cost you very little if you prefer PACS, and PACS is released in February as has been stated. Then, demand your "promotion pricing" from SAG, at $750. On the other hand, if you prefer, you can pay a fair price for quality, visible software, which you can put into production immediately-- **N_2O**.

SAG AFFILIATES SELLING N_2O?

One noteworthy item about N_2O is that we are opening it up for **distribution via SAG affiliates** in the countries where we currently have no affiliates. This newsletter will reach all those affiliates around the world. No less than nine such affiliates have asked us in the past if they could market Treehouse products in their areas. But, we explained that it might not be in our best interests to market through SAG's affiliates. However, SAG has, for years, been marketing our other competitor's products in other countries. That is, if they cannot sell REVIEW, they sell DBUG products, in one country under the name "CHECKER". Maybe not a bad marketing idea, but a little bit unfair, unless SAG's affiliates may also market our products. So, this newsletter serves as an invitation to SAG affiliates: you may talk to us or our affiliates about a joint effort toward selling N_2O.

SECURITRE

One of the products highlighted at our conference hospitality suite was SECURITRE. It is now released, and is the feature article in this TREETIPS issue. Again, SAG has a better idea: wait for ADABAS version 6! Since that sounds "far away", they have also been saying that various ADABAS version 5.x's will have all the security needs handled. Through RACF, ACF2, and TOP-SECRET? Sure, whatever you need. Well, we think we have a better idea, and it is here

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Writing User Data to the Protection Log

by Ana C. Arguelles, Planning Research Corporation

In August, we called Treehouse Software to ask for help on how to find the User-ID in the Protection Log. They told us where to look, and we mentioned that we use the ADABAS C5 command to write user information to the Protection Log. They asked us if we could tell you about it.

Our main application development under NATURAL is required to keep track of some of the update transactions made to various ADABAS files. This is done by using the C5 command to write user data to the Protection Log. Information such as the User-ID, transaction type, file name, date, and program name is written to the Protection Log. This data is read using the ADABAS Audit Trail utility and then processed through a SAS program for the final report. The report is generated after the MPM is brought down and before backups are taken.

NATURAL does not provide a statement equivalent to the C5 command. In order to write the user data to the Protection Log, a PL/1 program was coded using the MINTC5 ADAMINT macro. The MINTC5 macro generates code to write user data to the ADABAS Protection Log.

Since ADAMINT will no longer be supported by Software AG, it is probably better to use ADASQL's WRITE TO LOG statement instead. The following examples illustrate how this concept can be implemented from within applications:

NATURAL PROGRAM

```
0600    SUBTRACT 1 FROM +MPF-GLOBAL-TYPE-CODE
0610  RESET #AUDIT-MSG(A250) #SMS-RETURN-CODE
0620  REDEFINE #AUDIT-MSG(#AUDITMPF(A9)
0621     #MSG(A9) #APS-USER(A8) #TXT1(A4)
0622     #DEVICE(A8) #SPACE1(A1) #FUNCT(A8)
0623     #SPACE2(A1) #FILE-NAME(A12)
0624     #SPACE3(A1) #USER-ID(A8) #SPACE4(A1)
0625     #DATE(A8) #SPACE5(A1) #TIME(A10)
0650     #TXT2(A6) #PROGRM-ID(A8))
0660  MOVE 'AUDITMPF' TO #AUDITMPF
0670  MOVE ' AT ' TO #TXT1
0680  MOVE ' FROM ' TO #TXT2
0690  MOVE ' ' TO #SPACE1 #SPACE2 #SPACE3
0695     #SPACE4 #SPACE5
0700  MOVE *INIT-USER TO #APS-USER
0710  MOVE *INIT-ID TO #DEVICE
0720  MOVE *DATN TO #DATE
0730  MOVE *TIME TO #TIME
0740  MOVE *PROGRAM TO #PROGRM-ID
0750  MOVE 'FAP' TO #FILE-NAME
0760  MOVE 'IM061020' TO #MSG
0770  MOVE +MPF-GLOBAL-TYPE-NAME TO #USER-ID
        .
        .
        .
6330  UPDATE USING SAME RECORD
6340  END OF TRANSACTION
6350    MOVE 'IM061011' TO #MSG-NBR
6360    MOVE +MPF-GLOBAL-TYPE-NAME TO
6365         #USER-NBR
6370    MOVE ' FUNCTION PRIVILEGES HAVE BEEN
6375           ADDED' TO #MSG-TEXT
6380    MOVE #CONF-MSG
6390      TO +MPF-GLOBAL-ERROR-MSG
6400  MOVE 'ADDED' TO #FUNCT
6410  CALL 'AP061092' #AUDIT-MSG
6411       #SMS-RETURN-CODE /* CALL PL1
6420  MOVE 4 TO +MPF-GLOBAL-FUNC-CODE
6430  RETURN
        .
        .
        .
```

ADAMINT

```
         PRINT NOGEN
         AMPARMS CSNAME=PDV003,ADABAS=411,TEST=YES
         USERVIEW 99
EXOPN1   SIGNON CALLADA=NO
EX1C5    MINTC5 USERDAT=250
EXCLS1   SIGNOFF CALLADA=NO
         GENERATE
         END
```

PL/1 PROGRAM

```
AUDITRL: PROCEDURE (P_TEXT, P_RETURN_CODE) OPTIONS (MAIN)
  REORDER;
  DECLARE SOURCE_LEVEL CHARACTER(40) STATIC
          INITIAL('AP061092 V01.M12 86/02/13 14:29
                   PDVJAW  ');
/*                 MODULE   VER/MOD   DATE    TIME
                   USER NAME                          */
%SKIP;

DCL (P_TEXT, P_RETURN_CODE) FIXED BIN(31);
DCL (TEXT_POINTER, RETURN_CODE_POINTER) POINTER;
DCL (ADDR) BUILTIN;
DCL TEXT        CHAR(250) BASED(TEXT_POINTER);
DCL RETURN_CODE PICTURE '9999' BASED(RETURN_CODE_POINTER);
TEXT_POINTER = ADDR(P_TEXT);
RETURN_CODE_POINTER = ADDR(P_RETURN_CODE);
DCL ADAMINT_RT_CODE  BIT(16) INIT('0000000000000000');
DCL (EX1C5) EXTERNAL ENTRY OPTIONS (ASM,INTER);

CALL EX1C5 (TEXT,ADAMINT_RT_CODE);
RETURN_CODE = ADAMINT_RT_CODE;

END AUDITRL;
```

SAS PROGRAM

```
OPTIONS NOSOURCE;
TITLE "SMS AUDIT TRAIL";
DATA;
INFILE DDPLOGS;
FORMAT DATE WEEKDATE17. TIME TIME10.1;
INPUT @01 CMD $CHAR2. @ ;
IF CMD = 'C5';
INPUT @07 MPF       $CHAR8.
      @16 MSGID     $CHAR8.
      @25 USERID    $CHAR8.
      @37 TERMID    $CHAR8.
      @46 ACTION    $CHAR8.
      @55 FILE      $CHAR12.
      @68 ACCOUNT   $CHAR8.
      @77 DATE      YYMMDD8.
      @86 TIME      TIME10.1
      @102 PGM      $CHAR8.;
LABEL MPF = '*' ACCOUNT = '*'
      PGM = 'PROGRAM'
      ACCOUNT = 'RECORD*KEY';
PROC SORT: BY DATE TIME;
PROC PRINT UNIFORM LABEL SPLIT = '*';
     BY DATE;
VAR TIME MPF MSGID USERID TERMID ACTION FILE ACCOUNT PGM;
```

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Writing User Data to the PLOG

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SAS REPORT

SMS AUDIT TRAIL 1:58 THURSDAY, AUGUST 3, 1989

DATE=TUE, AUG 1, 1989

CBS	TIME		MSGID	USERID	TERMID	ACTION	FILE	RECORD KEY	PROGRAM
1	7:19:41.6	AUDITMPF	IM061020	J930CXL	H26107	MODIFIED	USER PROFILE	J930RGD	AP061090
2	8:07:39.3	AUDITMPF	IM061020	J871MJH	A26TAF00	ADDED	USER PROFILE	D253JWP	AP061090
3	8:08:46.3	AUDITMPF	IM061020	J871MJH	A26TAF00	ADDED	USER PROFILE	D256JAT	AP061090
4	8:09:58.3	AUDITMPF	IM061020	J871MJH	A26TAF00	ADDED	USER PROFILE	D258DXS	AP061090
5	8:11:03.3	AUDITMPF	IM061020	J871MJH	A26TAF00	ADDED	USER PROFILE	D125KEW	AP061090
6	8:12:33.6	AUDITMPF	IM061020	J871MJH	A26TAF00	ADDED	USER PROFILE	D245PTB	AP061090
7	11:47:42.5	AUDITMPF	IM061020	J930GMW	H26110	MODIFIED	USER PROFILE	D325JBM	AP061090
8	15:00:20.1	AUDITMPF	IM061020	J930ATK	H26105	MODIFIED	USER PROFILE	J930PPB	AP061090

ABOUT THE AUTHOR: Ana Arguelles is a Systems Application Specialist. Her work at PRC includes database application development and DBA related activites.

SAG Conference in Anaheim

This article presents a broad overview of the conference, along with an interpretation of Software AG's directions.

OPEN ISA BECOMES REALITY

Last year at this time, Software AG announced its "**Open ISA**" (Open Integrated System Architecture) plan, but at that time it was little more than a buzzword. Now it is clear that it defines their market strategy, and we can see how it translates into product development strategy. The principle behind Open ISA is that the various Software AG product groups (database, communications, and application development) should be **implementable on any common hardware platform**, and each one implementable independent of the others. In practice this means that **NATURAL**, and packages written in it, **can be sold independently of ADABAS**, and run on a wide range of operating systems, and that Software AG's communications products (e.g., NET-PASS) can span between diverse platforms, and allow distribution of applications across platforms, transparently.

NATURAL GROWTH

NATURAL will support a wide range of DBMSs, and at the level of application code it should be transparent what hardware, operating system, and DBMS it is operating on. COBOL code, in theory at least, is sufficiently standard that it is usable in any environment, but at a minimum, must be recompiled for each environment, to generate machine code appropriate to that environment. Because NATURAL object code is still interpretable code, not machine code, (or to use the jargon of the day, it is an Executable Specification Language) the object application code is transportable, and the NATURAL nucleus, on a given machine, executes appropriate machine instructions. Similarly, but worse, for communications management by an application: COBOL must include, in the source code, calls specific to CICS, COM-PLETE, or whatever TP monitor is in use, and the application is not transportable without rewriting those calls. With NATURAL, this is beneath the application level, and the **same object code can be executed in different environments**, resulting in different communications appropriate to the environment.

A FEW HIGHLIGHTS

There were a number of presentations, demonstrations, and select meetings on ADABAS **Text Retrieval System** (TRS) and NATURAL **Document Manager.**

Software AG also presented a demo of NATURAL **Statistical Link**, which is a menu-driven system within the Super-NATURAL family, for submitting SAS. The idea of making SAS capabilities accessible from within NATURAL was intriguing, but it turns out to only work under TSO (as well as the fact that it is an enhancement to Super-NATURAL), so at least at this time it will not have very wide appeal.

There were also demos and discussions of **OS/2** implementations of NATURAL and ADABAS, which have just been announced. These are still a long way from release of a working product, but we should all be aware of Software AG's directions in workstation support.

One of the products Software AG demonstrated, NATURAL **Reports Manager** (NRM), will serve a real need at many sites. It has not yet been announced; the demonstration used a pre-alpha version with some features not yet in place, but the rest appearing fairly clean and well-planned. NRM is a print spool manager which can control routing, bundling,

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and archival of production output. It is written in NATURAL and uses NATURAL Process. It would fill the need for a way to view reports on-line before selectively printing, retain and permanently archive JCL and system messages from certain jobs, etc., and it can do so in a way compatible with most sites' existing operations. The analyst community needs to see it and evaluate how it will fit into the production control picture.

THE ADABAS PRODUCT FAMILY

One can see the **increased emphasis on NATURAL**. In the past, ADABAS was Software AG's principal product. It no longer is; NATURAL is. Software AG's Open ISA principle is largely a strategy for selling NATURAL, and products dependent on NATURAL, to installations which do not have ADABAS. Open ISA is a means of broadening the NATURAL market. **What will become of ADABAS?** A few directions:

ADABAS' **performance edge** over other DBMSs is a key to keeping existing users satisfied. Software AG will stay in front in the performance competition, mainly by exploiting XA and ESA architecture, and other improvements at the operating system level. But the performance edge does not sell new ADABAS licenses.

Functionality, rather than performance, is the key to new sales. Here the perception is that relational DBMSs in general, and DB2 in particular, do offer the functionalities which corporations require for their strategic databases. Given the executive bias to buy "blue", **DB2 sales have increased rapidly**. ADABAS sales are flat. (There are now approximately 5,000 DB2 licenses in the U.S. ADABAS licenses have peaked at 2,000 - 3,000.)

In ADABAS 6.1, due for release in late 1990, Software AG will offer **full SQL functionality**--including the ability to embed SQL statements in a NATURAL program--an absurdity to a shop committed to ADABAS, but reasonable to a shop more committed to NATURAL than to a particular DBMS. The DBMS being used will be transparent to the application. (This would be like disguising a Mercedes as a Buick, but retaining the edge in both performance and maintenance.)

The market is especially high in mid-size shops--those which depend on package software for their day-to-day business operations, while wanting a DBMS for their own strategic systems. There is a **lack of dependable, maintainable packageware to run on ADABAS**. There is the expectation that DB2 packages will be available very soon, so **DB2 is a safe investment** for these shops.

ADABAS Entire, ADABAS TRS, and ADABAS Geographic Services are a number of add-on packages offering functions which could not be delivered with a strictly relational DBMS. Software AG will probably sell new ADABAS licenses only where these functionalities are a lever.

ADABAS **Entire**, especially, is the functional focus for the future. Software AG is working very hard, now, to make the case for Entity/Relationship database architecture, and to be the first into that market. We hear a lot of hype about how E/R has a sound theoretical basis (at least as good as relational) and will be the next generation of DBMS. This is the long-term strategy to once again sell ADABAS as the only database which can do the job.

Software AG is pushing its market on other hardware platforms--**DEC, Wang, UNIX**--but the market is not in smaller shops which just run these platforms, but in large, distributed organizations where portability has functional benefits.

There was limited interest in functionalities not appropriate to on-line processing and 4GL usage. READ DESCENDING might be the last "new search" for some time to come. There was practically no interest in special functions only usable through Direct Calls--apparently users assume that performance improvements should be achieved in the DBMS and Operating System, not be application code fine-tuning.

There was little discussion of hyperdescriptors, and little push to use them in application design. They may be used more in Software AG's own end-product development, where they provide leverage for a more efficient solution via ADABAS. Their use is at least in partial conflict with the Open ISA approach, because ADABAS usage would no longer be transparent.

THE NATURAL PRODUCT FAMILY

NATURAL is now the star product of Software AG, and their strategy is to give it more functionality, in more contexts, than any other application language; to make it the universal mainframe 4GL. As its market spreads, it will in turn open new markets for other products, particularly ADABAS. If you are executing NATURAL, and if NATURAL makes it transparent what the database is, then there is no risk in running ADABAS. Here are some angles on that theme:

There was little talk of ADABAS SQL, which in past years has been touted as the COBOL access method to replace ADAMINT. There is no user demand for tools to do new ADABAS development in COBOL. NATURAL has come of age, and will be the tool for new development. Shops may or may not convert their old COBOL to NATURAL, but they won't write new COBOL. The Open ISA principle requires that ADABAS be accessible through other languages, and that it be independent of NATURAL, but no one would take that seriously.

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SAG Conference in Anaheim

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The NATURAL language is being enhanced to **support SQL**, entity-relationship concepts, text retrieval functions, etc. There are already language extensions to support NATURAL Graphics, CON-NECT, NATURAL Connection, etc. Most of these extensions may come with **NATURAL 3.1**, late in 1990. The NATURAL language is being extended where ADABAS is not. Extensions are being made to allow NATURAL to cover new classes of applications, not so much to improve coding or processing in areas already covered, where the market perception is that NATURAL is already an excellent product. In other words, as NATURAL relates to traditional applications, we should not expect change in the near future.

SQL will be embedded in NATURAL, as noted earlier, even for the purpose of searching ADABAS. The goal is obviously to **make NATURAL fully portable across databases**, either using traditional NATURAL syntax or in an SQL mode. With both NATURAL and ADABAS, Software AG will meet or exceed any ANSI standard, even one in which they don't believe.

Another goal in the above is to create opportunities for themselves and other vendors in the package software market. NATURAL applications software will be executable, hence sellable, in any environment. When that software has penetrated the market, they'll be able to sell new databases again.

NATURAL **Process** is not being pushed as a tool for direct use by customers. Instead, it is primarily a building block for Software AG-written derivatives such as Operations, Console, and Reports Manager. Software AG's intent is to make the NATURAL environment an industry standard. Some shops have used COM-PLETE as their processing environment for many years, but in much of the data processing world, especially shops operating on CICS, programmers must log off one environment and onto another to get to different resources. In that situation, just having packages (such as NATURAL Operations) able to look at resources not easily accessible before will be a breakthrough, even without those shops embedding their own NATURAL Process calls in application programs.

Software AG's application packages, in general, are looking much more sophisticated, well-designed, and friendlier than they have in years past. Those which have been demonstrated, such as NATURAL Document Manager and NATURAL Reports Manger, appeared to be easy to navigate, with a lot of functionality. The understanding is that this is typical of new application languages. Their quality level is high enough that it will not make sense for shops to write their own utility applications anymore for functions where they do not already have an application in place.

DISTRIBUTED AND COOPERATIVE PROCESSING

A recurring theme in Software AG's presentations was the desire to spread processing and data storage away from a single central location, and the ability of their communications product line to support such distribution transparently. Once users become more aware of the potential we will see more applications written for distributed processing.

These observations were provided by an individual who has several years of experience with ADABAS and NATURAL and has attended many SAG conferences. The views expressed in this article are not necessarily those of Treehouse Software, its employees, or affiliates.

Current Breezes

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now. If you need ADABAS data properly controlled now, SECURITRE is it.

If your corporate auditors are concerned about loss of corporate assets through fraud, theft, or other security violations in 1990, then you had better think about getting SECURITRE. Otherwise, when ADABAS 6 comes, you may not need a DBMS, whether it secures the data or not.

SECURITRE is **released** and has been **sold** to several sites. It does secure ADABAS utilities. It does run in ACF2, TOP-SECRET, and RACF environments. It is **easy to install**, parameter-driven for **user-tailoring**, and **efficient**. It is also available for marketing through our affiliates. We would enjoy speaking about SECURITRE at your local or regional meetings.

TRIM, AUDITRE, and AUTOLOADER

At the same time, we have been busy maintaining and enhancing TRIM, AUDITRE, and AUTOLOADER. TRIM tapes and updated manuals for versions 4.0.0 and 5.0.1 have recently been released, along with AUDITRE version 1.1.0.

TRIM is obviously the most complicated of these products to maintain and enhance. TRIM V4.0.0 runs with **ADABAS 4** on all known SM levels, and TRIM V5.0.1 runs with **ADABAS 5** on all known SM levels. Both TRIM versions have two sets of NATURAL modules, one for **NATURAL 1.2** and one for **NATURAL 2**. These modules operate on all known SM levels of NATURAL 1.2 and 2. This really means there are four versions of the Real-time Monitor code which must be maintained. These versions are also built for five different operating systems. This means there are really 4 x 5 = 20 versions of TRIM. This is further compounded in TRIM 5, with the advent of the "User-Exit-B" to the ADABAS 5 link routines. There must be one of these User-Exits for each TP system.

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Introducing: SECURITRE

WHAT IS SECURITRE?

SECURITRE is an interface to RACF, ACF2, TOP-SECRET, or any other system security facility (SSF) which accepts System Authorization Facility (SAF) protocol. SECURITRE provides **centralized security administration** by allowing all ADABAS/NATURAL access rules to be stored alongside non-ADABAS/NATURAL access rules on the system security facility.

WHAT WILL SECURITRE DO FOR ME?

SECURITRE's greatest benefit is that it allows sites to merge the ADABAS/NATURAL security function into the standard system security facility (RACF, ACF2, or TOP–SECRET). This means that **security rules are maintained in one place** for ADABAS/NATURAL and non–ADABAS/non-NATURAL applications and data.

DOES SECURITRE USE PASSWORDS?

ADABAS security uses passwords to control access to files, fields, and values of fields. This means that any individual who obtains or guesses the right passwords can access and update any information desired. **SECURITRE eliminates this problem** by replacing mere password security with **User-Id based security** through the system security facility. The use of User-Ids rather than passwords makes SECURITRE's control **more precise and effective** than that of ADABAS. As a result, applications and files will be more secure from unauthorized access and tampering. ADABAS password security can be completely eliminated.

WILL SECURITRE COMPLICATE ADABAS SECURITY?

Because ADABAS security requires its passwords to be coded directly into many application programs, a change in a password often necessitates changes in application software. With SECURITRE in place, **changes in access rules are easily implemented**. In order to keep certain users from accessing a certain file, the site would not have to change the file's ADABAS password and the dozens of programs which access that file, but simply change or remove the users' access to the file. Thus, SECURITRE introduces more **easily maintained security** than before.

As the Security Administrator at a state government site recently told us, **"While the security in ADABAS might work, and might be effective in preventing security violations, it is a pain to administer both passwords to ADABAS and User-Id information to ACF2"**. We agreed.

HOW DOES SECURITRE CONTROL ACCESS TO ADABAS FILES?

With SECURITRE in place, any user wishing to access ADABAS data may do so through any method desired (Direct Calls, NATURAL programs, etc.). If SECURITRE allows the user to access the desired ADABAS data, the application will function as always. If the user does not have the authority to access the desired data, **an error message will be logged** with the system security facility and a "bad response code" will be issued by ADABAS to the user.

If NATURAL is used, SECURITRE can be used to determine if the user has the authority to use NATURAL as well as if the user has the authority to use a particular NATURAL application. You can see that **SECURITRE has the potential to replace NATURAL Security (NSS)**.

Non-NATURAL access to ADABAS is also controlled. If the system security facility allows access to the application, any calls made by the application to ADABAS will be passed to SECURITRE prior to execution by ADABAS. SECURITRE will determine if this access is allowed for this user and will allow ADABAS to process the call if access is authorized. Otherwise the violation is logged with the system security facility and a bad response code issued to the user.

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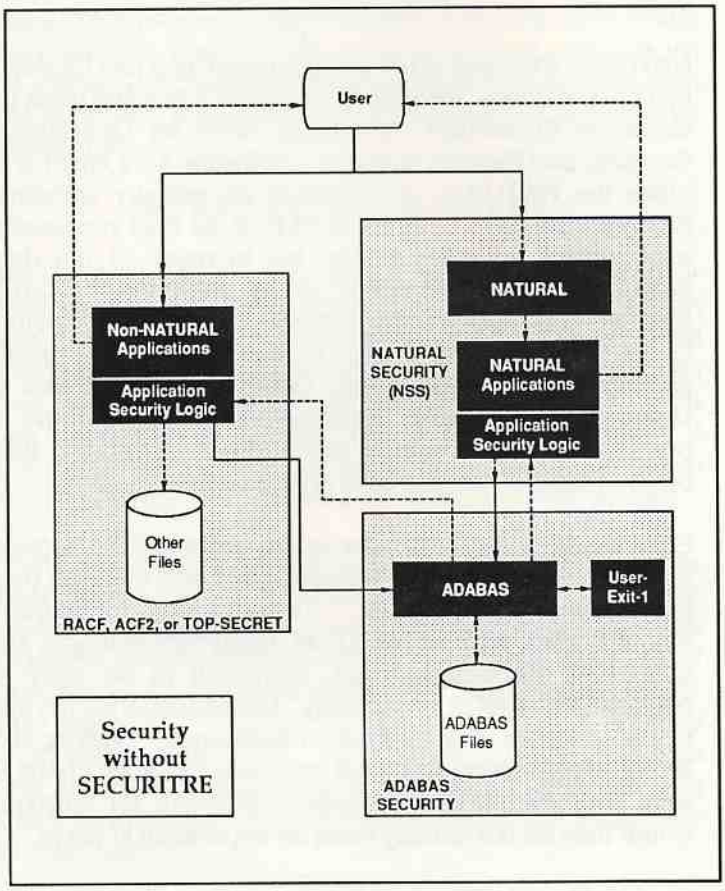

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HOW DOES SECURITRE DO IT?

SECURITRE's "brain" is it's **User–Exit–1 to ADABAS**. The User-Exit-1 acts as a "Router" between ADABAS/NATURAL and the system security facility. All ADABAS calls are "routed" to the system security facility for authorization, **regardless of their source**. If the call is not authorized, what will be done with the call depends on the protection mode selected for the file or database in question.

By using User–Exit–1 as the primary control rather than the various ADABAS Link Routines, SECURITRE ensures that the **security controls cannot be bypassed**.

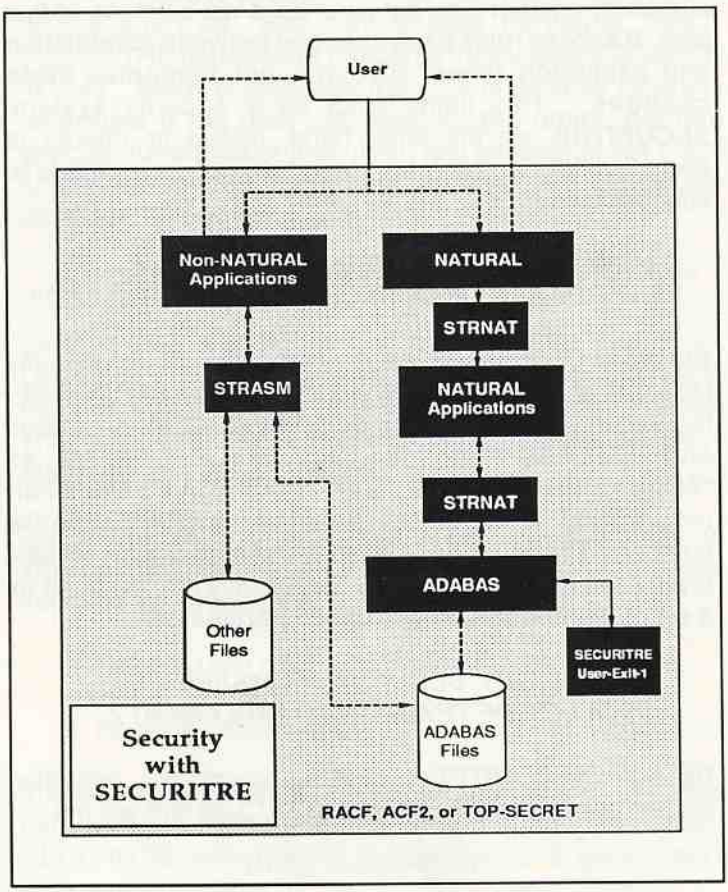
WHAT LEVELS OF PROTECTION ARE AVAILABLE?

SECURITRE provides **three levels of protection**, or modes, which may be specified by database or file:

- **DORMANT** mode allows the call to be processed, regardless of the user or access desired. This mode is useful for verifying the correct installation of SECURITRE, but can also be used to create "public" files with no security, if desired.

- **WARN** mode also allows the call to be processed, but will log any access violations with the system security facility. This mode is **useful during implementation** of SECURITRE because it allows applications to run unimpeded, while logging error messages with the system security facility. The logged violations enable security staff to update the security facility's access rules to accommodate the appropriate users.

- **FAIL** mode provides **the most protection** against unauthorized access. Any call which has not been authorized by the system security facility will not be allowed to process. Further, a "bad response code" will be issued to the offending user and the violation will be logged with the system security facility.



These levels of protection provide increased flexibility and allow for gradual implementation of SECURITRE. Another user told us, "This MODE technique will allow me to phase applications and their files into the security system."

WHAT KINDS OF APPLICATION CONTROLS ARE PROVIDED WITH SECURITRE?

In many application programming systems, there is a need to provide various levels of security, including:

- Data protection on the field level
- Control over the execution of particular programs in an application
- Control over the ability to logon to certain application libraries
- Control over the access of data by field value
- Transaction level security

Typically, these types of checks are built into the application systems. Sometimes they are "hard coded", and sometimes they are based on access rules in "security tables" or security files. In the latter case, this leads to two unpleasant problems:

- Different areas of the company keeping security rules on separate ADABAS (or other) files, causing file proliferation and maintenance problems

- All areas of the company keeping security rules together on one file, with arguments arising over who should maintain the security rules in the file

SECURITRE's solution is simple. Let the system security facility keep all the security rules. SECURITRE supplies the necessary "router" subprograms, STRNAT and STRASM.

WHAT IS STRNAT?

STRNAT is a NATURAL 2 subprogram which can be invoked via a CALLNAT from any NATURAL 2 application program. STRNAT is easy to use. Consider the following example,

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which uses STRNAT to validate department-level security in a Payroll file:

```
READ PAYROLL-DATA BY DEPTMENT
AT BREAK OF DEPTMENT
  COMPRESS 'PAYROLL.STRDATA.DEPT' DEPTMENT
     INTO SECURITY-ENTITY LEAVING NO SPACE
*
*  A SAMPLE OF THE RULE WHICH MAY DEVELOP
*  FROM THE ABOVE COMPRESS STATEMENT IS:
*        PAYROLL.STRDATA.DEPT1234
*  STRNAT WILL VALIDATE THIS RULE THROUGH
*  THE SYSTEM SECURITY FACILITY.  THERE IS
*  NO NEED TO IDENTIFY THE USER.  SECURITRE
*  WILL DO THIS AUTOMATICALLY.
*
  CALLNAT 'STRNAT' SECURITY-ENTITY
                   ACCESS-ALLOWED
*
*  'SECURITY-ENTITY' IS THE RULE TO BE
*  VALIDATED BY STRNAT.  'ACCESS-ALLOWED'
*  IS A LOGICAL FLAG WHICH TELLS THE
*  CALLER IF THE ACCESS HAS BEEN PERMITTED
*  OR REJECTED.
*
  IF ACCESS-ALLOWED
     IGNORE
  ELSE
     MOVE TRUE TO EOF
     ESCAPE BOTTOM IMMEDIATE
  END-IF
END-BREAK
END-READ
```

The validation will tell whether or not the user can look at records in the PAYROLL file for Department 1234.

STRNAT can also be used at logon time to determine if the user may run the application. It can also be used to determine if the user has been authorized to access specific ADABAS files, record-types, fields, and values of fields, according to the rules placed in the system security facility. The application passes the rule to be validated to STRNAT, which routes this rule to the system security facility. STRNAT relays the result back to the application program, which then allows or disallows access to the data or halts the execution of the program.

WHAT IS STRASM?

Security problems are compounded for sites with both ADABAS/NATURAL applications and non–ADABAS / non–NATURAL applications in operation on the same computer system. These sites do not have an effective centralized security system. This increases the potential for **security breaches and fraud**. SECURITRE reduces this potential through STRASM.

STRASM, is an assembler module which may be "called" by non-NATURAL application programs to perform the same functions as STRNAT.

STRNAT and STRASM make it possible to implement almost any security rule imaginable. For instance, it would be possible to limit access to a payroll file to a certain group of users in such a way that information could only be viewed one day per month during normal business hours and only if that information pertains to individuals in a certain department. This makes SECURITRE **a more complete and effective package than NATURAL Security** in many respects.

HOW ELSE DOES SECURITRE COMPARE TO NATURAL SECURITY?

SECURITRE has further advantages over NATURAL Security (NSS). Under NSS, access to NATURAL itself, NATURAL applications, and certain commands can be restricted. However, **if requests bypass NSS** (i.e., Direct Calls), **data access will not be inhibited.** With SECURITRE in place, all calls, regardless of their source, must be authorized before they can be executed.

Furthermore, **NSS is a "compile time option"**. That is, when compiling the program, NSS decides whether or not to allow access to files. Execution may occur on another system or another day, but no checks will be made at that time. **If access rules have changed between compilation and execution times, NSS will not recognize these changes**. This limits NSS as a security system. **SECURITRE**, on the other hand, makes its checks at execution time, and **quickly recognizes changes made to access rules.**

HOW WILL THE SYSTEM SECURITY FACILITY VIEW ADABAS ONCE SECURITRE IS INSTALLED?

Standard OS datasets are defined to the system security facility as accessible (or not) by User-Id. With SECURITRE, the Security Administrator may define ADABAS databases and files as "pseudo OS datasets", such as "ADABAS.PROD.LEASES" or "T4X7.ADA.P3.Dddd.Ffff" (where "ddd" is the database number and "fff" is the file number). The definition of these "datasets", or SAF entities, is provided to SECURITRE by the Security Administrator as a set of **flexible macro-generated parameters.**

WILL SECURITRE REQUIRE A LOT OF TRAINING TO IMPLEMENT?

Because SECURITRE operates through the operating system security facility, the use of SECURITRE will not

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require extensive training of security personnel since the security processing rules are maintained along with all other RACF rules.

Changes in processing rules and security requirements will not require changes to SECURITRE or most applications, just changes to the system security facility's access rule "database". This makes implementation and maintenance of SECURITRE's control a relatively "painless" process.

HOW WILL SECURITRE AFFECT PERFORMANCE?

SECURITRE will have **minimal impact on system response time**. The "checks" made by SECURITRE are calls to the system security facility, but these calls are only made when necessary. SECURITRE "remembers" which User-Ids may access/update each database and file by maintaining a binary searched table of users/files/accesses.

Table size is determined by the Security Administrator and can be as large or small as desired. **Data concurrency** with the system security facility is ensured by regular flushes of the table and "forced" flushes by the Security Administrator.

WHAT ABOUT UTILITIES?

It does no good to secure database calls without addressing issues such as "who can unload particular files?" SECURITRE handles this through a "replacement ADARUN module", which checks with the system security facility to **determine if the user can execute the utility, perform specific functions** of that utility, and whether or not these functions may be performed **against the particular database and/or file.**

HOW WILL I KNOW WHAT SECURITRE IS DOING?

SECURITRE will include an **on-line interface** to its User–Exit–1. This interface will make SECURITRE easier to use and more effective at meeting each installation's needs. The on-line interface permits **examination of performance statistics** for the SECURITRE tables.

SECURITRE's on-line interface also allows **display of violation data** by Session, File, and/or User-Id. The on-line interface also makes it possible for security staff to:

- Purge a User's entry from the SECURITRE table
- Purge the entire table

These functions make it possible for security staff to ensure data concurrency between the system security facility and SECURITRE with respect to changes to a given user's authorization.

HOW DO TSI'S OTHER PRODUCTS FIT INTO THE PICTURE?

Treehouse Software has also integrated SECURITRE into its other products. For example, **TRIM** will soon display SECURITRE information on-line, including SECURITRE performance statistics, file violation statistics, User-Ids as violators, etc., for users authorized to view such information.

SECURITRE will be used to control access to the TRIM Real–time Monitor. Certain users will be allowed to view everything, while others can be restricted to viewing only certain databases, using only certain screen displays, etc.

SECURITRE can also control access to, and usage of, N_2O, TSI's Change Management system for NATURAL.

IN WHAT ENVIRONMENTS DOES SECURITRE FUNCTION ?

SECURITRE has been released for OS/VS1 and MVS (including XA) operating systems. **Installation requires less than one hour** and a few cylinders of disk space. DOS support will come later. SECURITRE will issue all GETMAIN requests above the 16m line if ADABAS is running above the line (i.e., ADARUN has been relinked AMODE=31).

WHAT'S THE BOTTOM LINE?

SECURITRE's functions can benefit all levels of the organization, and provide several advantages. These include **centralization** of the security function, **uniformity** of access control techniques, **cost reduction**, **savings in development time**, **improved control** of ADABAS and NATURAL, **flexibility** and selectivity of control, and increased **efficiency**.

As is our policy, we give competitors a fair shake. We have heard claims that Software AG is doing its own security product for ADABAS. According to the latest information available to us, SAG will include their security product with ADABAS 6. The user community will have to decide if it wants to wait. The first version of SECURITRE (for ADABAS 4 and 5) was made available before the start of 1990.

HOW CAN I GET SECURITRE?

SECURITRE is available under a 30–day free trial agreement. SECURITRE is **attractively priced**. Annual maintenance is free the first year and available at 15% of the then current price beginning in the second year. **Discounts** are available to current TSI customers. Multiple site discounts are also available. Contact Treehouse Software or an affiliate for more information about SECURITRE.

A User's Approach to DB2 Monitor Evaluation

In our last issue, we presented an article about how one of our customers began an evaluation of **DB2 performance monitors**, along with some of the customer's observations. The customer evaluated five DB2 monitors:

- DB2PM from IBM
- DB2 Manager (v1) from Boole and Babbage, Inc.
- Insight/DB2 (v1.0) from DataBase Utility Group, Inc. (DBUG) and/or Goal Systems International, Inc.
- Omegamon for DB2 (v100) from Candle Corp.
- DB2 Activity Monitor (v1.0) from BMC Software

At the end of the previous article, we told you that the customer was still evaluating DB2 monitoring products and that we would share the results of their evaluation with you. So here they are...

After careful evaluation of several DB2 monitor products, the **DB2 Activity Monitor from BMC Software** is the recommended choice for use at the customer's site.

The BMC product was the only product that offered all of the features that were required of a monitor product by the customer:

1. Ability to execute as a stand-alone VTAM session. (This was the biggest factor against Insight/DB2.)
2. Ability to monitor multiple DB2 subsystems.
3. Security features to permit controlled access by application area personnel.
4. Batch reporting from SMF data. Several canned reports are available now, and a full report writer has been announced with availability in January 1990.
5. Minimal or no hooks into the operating system (The Boole & Babbage product forced this requirement.)
6. Ability to issue DB2 and other console commands.
7. Ease of use.
8. Availability of pertinent DB2 data and problem area isolation. (i.e., number and type of connections, I/O by pageset, thread activity, lock contentions, etc.)

And, according to the customer, there were some other factors that influenced their decision to go with the product:

1. The BMC product is $9,800 less than the only other product (Insight/DB2) to offer most of the features mentioned earlier.
2. BMC Software is an IBM Business Partner for DB2. This should ensure that their product will stay current with the changes that DB2 will experience over the next several years.
3. The BMC product has internal security to customize each user's available "options". Insight is also good in this respect because of its "nice" menus (i.e., one for D.A.s, one for Security persons, etc.)
4. The customer's staff thought that the BMC product was the easiest to install.

The customer is not ready to purchase a monitor at this time and will be required to re-evaluate DB2 monitors in 6 months to a year. At that time **they will be looking hard at Omegamon**. Omegamon, the customer felt, was great with on-line problem determination and a "help-assist" feature (i.e., what the problem could be, how to possibly resolve it, etc.). The customer also said that there had been rumors that Omegamon was going to have reporting capabilities in the future.

We hope that you have found this information useful. If you have anything to add about DB2 monitoring, performance monitor evaluation criteria, or other DB2-related information, please drop us a line and tell us about it.

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 its affiliates. Before your organization purchases a DB2 monitor, it should perform its own evaluation and determine what is best for its needs.

A TRIM Time-Saver

If you catalog the following NATURAL program as TRIM and place the object module in Library "SYSTEM" (both FNAT and FUSER), access to TRIM will be only one step away.

```
0010 ************************************
0020 * TYPE TRIM AT THE NEXT PROMPT FROM
0030 * ANY LIBRARY TO RUN TRIM
0040 ************************************
0050 *
0060 STACK TOP COMMAND 'LOGON TRIM5N21'
0070 STACK COMMAND 'MENU'
0080 STOP
0090 END
```

If you have placed TRIM in a library other than "TRIM5N21", change the library to the correct value for your installation.

Consultants' Corner: VSAM Easy

Treehouse Software has instituted this Consultants' Corner to give our friends and associates a chance to share their services and products.

Publication of this information in this section does not indicate support or an endorsement by Treehouse Software.

WHEN IS A PROBLEM NOT A PROBLEM?

As much as we dislike experiencing them, **"problems" are often our best mentors**. Put yourself in the shoes of Andrew Dorn, for example. You've devoted most of your available programmers and months of your own time managing the development of a customized sales management system for your client. In the initial design phases, you calculated that the system would need to support a large number of users accessing and updating data. A DBMS with its large system overhead would have been too cumbersome, so you selected **VSAM** as the best database for your project. But your programmers needed the flexibility of a fourth generation language, in this case, Natural, to speed the development time tables. So you arm your programmers with an interface tool provided by Software AG known as **NATURAL/VSAM**, and think all is well.

TREASURED MOMENTS

Instead, you get to experience one of those "treasured" moments when, for a brief moment, you see your professional life pass before your very eyes. In the final stages of your project development, you ask your staff to prepare volume testing of your program in batch. Programs that you had projected to run in eight hours (over night) were testing out at **60-80 hours**. What would you do with this "opportunity"?

Andrew Dorn, Consulting Manager at **AM & G of Chicago** was faced with just such a dilemma earlier this year when consulting for a major liquor distributor. His team took three steps to solve the problem:

1. They modified the index buffers of the program to reduce overhead.
2. They researched and found a utility program to optimize his code for efficiency.
3. He called Software AG and asked for advice, His marketing representative recommended VSAM/ Easy from M B Solutions (a competitive product to NATURAL/VSAM) to streamline the I/Os used in the program.

The result: the **program run time was reduced** from 60-80 hours to the required eight hours.

"We found VSAM/Easy significantly helped us whenever we had to make random calls to the database."

What was the lesson here? Mr. Dorn effectively solved his dilemma by using his own knowledge and that of his key vendors as a resource for available tools. But in addition to solving his original problem, one of his "solution" tools proved to be **invaluable in the performance of the system** on-line as well. "We found VSAM/Easy **significantly helped** us whenever we had to make random calls to the database. NATURAL/VSAM used two to three I/Os to get one record. VSAM/Easy used one, and often none if the index was in the buffer already," commented Dorn. His original problem actually created a solution that added a larger **benefit to the entire system**. The sales management system is now complete, accessing data quickly and easily from VSAM with programs augmented by VSAM/Easy.

"We evaluated VSAM/Easy in November and December. It paid for itself by February."

Similarly, **Norbert Warnes** at **Arcata Graphics** in Depew, New York, was confronted with a problem of rather significant proportions last year. Arcata Graphics company is among this country's largest book and magazine printers. Printing costs are heavily dependent on the costs of paper, which Arcata inventories for its major customers. Warnes was one of the individuals involved with tracking the inventory with an ADABAS system written in SAG's NATURAL language. To do so, however, Warnes had to maintain **concurrent databases** one to two times daily. Norbert's "problem" became apparent when the volume of updating on the VSAM database became so great that the mirrored ADABAS data was out of date within minutes of the update. The inventory reports generated from this mirrored data were not providing accurate data, which in turn created a substantial liability for the company in fulfilling its printing contracts.

"We needed a **reliable, inexpensive tool** to access VSAM files as well as ADABAS. And we wanted something that would facilitate the conversion of VSAM to ADABAS or some other relational database management system. We evaluated VSAM/Easy in November and December. It paid for itself by February." Instead of having to maintain two separate databases, Warnes was able to begin consolidation of all the data into one, and have the best of both worlds with VSAM/Easy. Warnes valued an additional benefit of VSAM/Easy; its ability to work in both **batch or on-line** CICS, Cobol or Assembler.

In both situations, VSAM/Easy was selected to solve a particular problem: reducing the I/O overhead of an application written with Natural/VSAM, and streamlining access to both VSAM and ADABAS data. And in both situations, VSAM/Easy provided added benefit to the applications beyond the original solution. When asked if they would recommend the product to others, they both had something to say. "We didn't even look at any other products. When a company recommends you

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Affiliate Profiles

With affiliates located in South America, Europe, Asia, and Africa, Treehouse Software's products and services are well represented in the international marketplace. In this issue we would like to introduce our newest affiliate, in England. In providing the following profile, we want to convey to past, present, and future clients that OCS is fully qualified to represent our organization and support our clients.

OCS Software Limited was formed in late 1984 to provide consultancy services and products to companies using IBM mainframes. The staff of OCS consists of **experienced data processing professionals**, used to working with firm budgets, tight deadlines, and rigorous quality control.

ADABAS/NATURAL consulting services are a large part of the OCS offerings. OCS provides Application Development/Technical Consultancy, Education and Coaching, and Software Products.

In the **Application Development/Technical Consultancy** area, OCS provides on-site development of client applications by OCS project teams, skilled consultants to complement client project teams in such areas as Quality Assurance and Design, and Logical and Physical Database Design. All OCS consultants have wide experience in developing applications using structured development methods and techniques.

In the **Education** area, the practical experience gained by OCS consultants has been harnessed and directed toward the presentation of workshops in Computing Concepts, NATURAL 2.1 Programming, ADABAS Design, NATURAL 1.2 to NATURAL 2.1 Conversion, and Systems Design for ADABAS/NATURAL environments. On the "**Coaching**" end, OCS has developed a unique method of education which combines both consultancy and training. Coaching is available for NATURAL Programming Techniques, ADABAS Design, Data Analysis, and Technical Design.

OCS also provides **software products**. Some of the products offered by OCS are products which were developed for a client, but offered as OCS products under agreement with the client to offset development costs. In addition to these, OCS provides Treehouse Software's products, **TRIM, AUDITRE, N_2O, AUTOLOADER, and SECURITRE.**

OCS does not limit its scope to Software AG related products. OCS also offers Project Management and System Development consulting. OCS will act as Managing Contractor for client projects, providing project management resources to client project teams. OCS will also help clients to establish System Development Methods and Techniques, select and install third party solutions, audit client systems, and provide education and coaching in Structured Systems Development.

OCS is Treehouse Software's representative to the United Kingdom and Eire. **We look forward to a lasting relationship.** For more information about OCS, its software products, and services, contact them at:

OCS SOFTWARE LIMITED
Kinetic Centre
Theobald Street
Borehamwood
Hertfordshire
WD6 4BR
ENGLAND

Phone: 01-207-5434
Fax: 01-207-6717

Consultants' Corner: VSAM Easy

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buy its own competitor's product, that's a pretty significant endorsement," said Andrew Dorn of VSAM/Easy. "I'd definitely recommend it." Norbert Warnes commented, "VSAM/Easy gave us the opportunity to implement a systematic transition to ADABAS. It was easy to implement. It's been very reliable, and it's fast to boot. It was half the price of the competitor's product, that, for me, didn't provide the functionality that VSAM/Easy did. **I'd definitely recommend it** to other shops in our type of situation."

"It was easy to implement. It's been very reliable, and it's fast to boot."

VSAM/Easy has been **installed in over 100 sites** world wide, and is provided by **M B Solutions, Inc.** in Denver, Colorado. VSAM/Easy and the company's other utility products, **JCL/Cross-Reference and PDS/Manager** can be obtained by calling or writing the company offices at 56 Steele Street, Denver, Colorado 80206, (303) 321-2205.

Current Breezes

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We have noticed that there are occasional slight changes to the few mechanisms within ADABAS and NATURAL with which we interface. The best example is the NATURAL program name, which in NATURAL 1.2 was always placed in the Reserved Field of the ADABAS Control Block. NATURAL 2 stopped doing this, because it's oriented toward ADABAS 5, and ADABAS 5 really uses the Reserved Field. Therefore, we have had to find other ways to get the NATURAL program name. This is totally solved, and rather easily, in TRIM 5 through the use of the User Buffer, which is filled with the NATURAL program name, NATURAL application and User-ID, and lots of other good information. We do not insist that our customer base switch over to NATURAL 2 and ADABAS 5, but instead, we will continue to support older versions. However, we anxiously await the day when everyone is switched over to these newer and better ADABAS and NATURAL versions.

With this lengthy explanation, I hope to show that we are still concentrating on TRIM, AUDITRE, and AUTOLOADER improvements while we keep right on top of changes in the ADABAS and NATURAL world. If you are hearing that "TRIM does not work with MVS/XA, or TRIM no longer works with ADABAS 5.1.5, or TRIM will not be allowed to run anymore with NATURAL 2.1.5", please contact us.

DB2

Several users have been asking us what we will be doing with DB2. The answer is that we hope to be doing **conversion assistance**. This may take the form of consulting, programming, standards, procedures, or other assistance. Conversion tools and products may be involved. With help from IBM, and in conjunction with a large user-oriented consulting firm, we expect shortly to embark on this journey. We expect to learn about DB2 from an internal perspective so we can better invent system software products for DB2. We will also learn how to design and develop DB2 applications.

We see many ADABAS sites interested in converting to DB2. This does not mean that ADABAS will soon disappear. In fact, for performance reasons, it may be necessary to keep ADABAS around for much longer than some of the sites plan. Conversion over to DB2 seems to be stretching out over a longer period of time at most companies. Keeping two DBMSs maintained, the time involved and increased DBA staffing, converting and testing parallel applications on two DBMSs is very costly. We are here to help. We have at our disposal 300 consultants through our associated consulting company with country-wide representation. Many of our associates are experienced with DB2. If you need one DB2 person or if you need a staff of 15 people with the expertise to get your files and applications converted to DB2, Treehouse Software is the company to contact. Please call or drop us a note.

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ADABAS, NATURAL, COM-PLETE, PREDICT, NATURAL OPTIMIZER, NATURAL PROCESS, NATURAL OPERATIONS, NATURAL SPREADSHEET, NATURAL GRAPHICS, NATURAL ELITE, NATURAL WORKBENCH, NATURAL STATISTICAL LINK, NATURAL REPORTS MANAGER, NATURAL CONSOLE, SUPERNATURAL, ADAMINT, REVIEW, ON-LINE SERVICES, REPORTS MANAGER, TEXT RETRIEVAL SYSTEM, ENTIRE, GEOGRAPHIC SERVICES, CONSTRUCT, PC ADABAS/NATURAL, PREDICT CASE, ADASQL, NET-WORK, HPE, CON-NECT, NET-PASS, are all products of Software AG (SAG).

Treehouse Software Products and Services Include:

TRIM® - ADABAS/NATURAL performance monitor
AUDITRE - ADABAS auditing tool
N_2O - NATURAL application Change Management System
SECURITRE - Centralized Security Administration package for ADABAS/NATURAL
AUTOLOADER - ADABAS file automatic unload/reload/dump utility
Consulting on ADABAS, NATURAL, and associated topics
Classes:

- Introduction to NATURAL 2
- NATURAL 2 Workshops (Basic, Intermediate, and Advanced)
- NATURAL (End User)
- PREDICT
- COM-PLETE
- Introduction to ADABAS 5
- ADABAS Concepts and Facilities
- ADABAS Direct Calls
- Advanced ADABAS Topics (File Design, DBA Skills, Internals, Performance and Tuning)
- Customized Classes

For information call (412) 741-1677, fax (412) 741-7245, or write to:

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

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

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