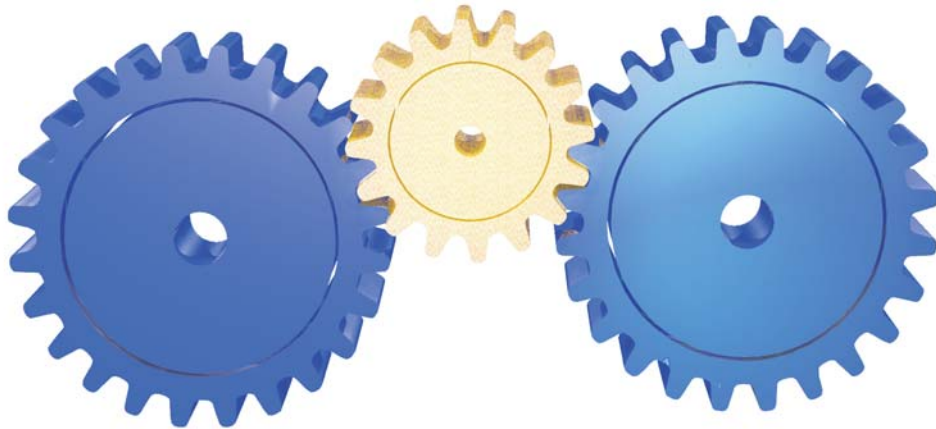


Product Information

E/NAT



CA-Endevor NATURAL
PREDICT

Interface for
Endevor and NATURAL/PREDICT
Version 2.2

Linking two worlds together

Configuration management and state-of-the-art application development technologies are two major prerequisites for effective information processing.

E/NAT, the interface between Endevor on the one hand and NATURAL and PREDICT on the other, allows you to protect your software investments under a consistent user interface with a single tool.

E/NAT consumes only few system resources due to the controlled execution of each NATURAL task which needs to be terminated only in exceptional cases and permanently waits for actions to be performed (compare illustration 1).

E/NAT can optionally be run in foreground and/or batch mode. Foreground actions deliver a single return code per element which is then directly displayed on the Endevor panel.

The logical connection

The logical connection is established through transformation tables which can easily be maintained by means of online functions. These tables are:

- Endeavor-Type -- E/NAT-Type
- Endeavor-Environment, -Stage and -System -- E/NAT-Path (FUSER, FDIC, NAT-Library)

Completely integrated solution

E/NAT is completely integrated with Endevor. The corresponding Endevor panels have been enhanced to allow direct selection of all NATURAL / PREDICT elements. Special menu branches for E/NAT functions are not required. Users directly decide on each action panel whether they want to act for example on a NATURAL program or on any other element.

Of course, E/NAT also supports package processing. It is possible to reset defective NATURAL programs during production if required. During backout E/NAT will also delete all affected programs from the NATURAL buffer pool.

More than just an interface

E/NAT was developed with the following targets in mind:

- completely Endeavor-compliant behaviour
- no change of tool for administering and using the system
- high performance
- usage of the active PREDICT references; either manually through specific selection or automatically through inclusion of all dependent NATURAL and PREDICT objects during selection of each NATURAL or PREDICT element
- availability of user exits for customer-specific processing
- support for all NATURAL and PREDICT objects required for application development
- automatic compliance with NATURAL conventions and requirements based on the type of object

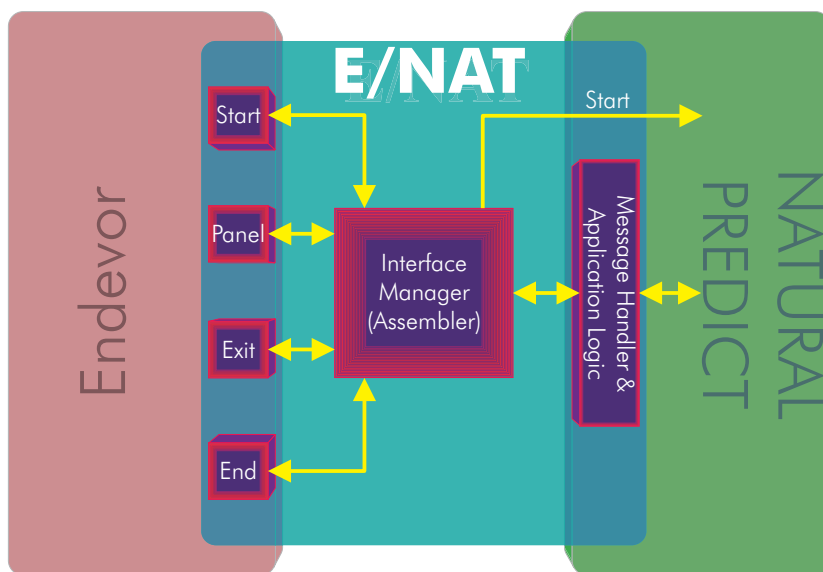


Illustration 1: The physical connection

High security and optimum performance

Unlike most other interfaces between configuration management tools and NATURAL/PREDICT, E/NAT provides high security due to its complete integration with the Endeavor processors. The information residing in Endeavor is always synchronized and correct. It is not necessary to check job logs element by element for problematic return codes. Instead, it is sufficient to monitor a single return code for the entire object transfer: the return code of Endeavor.

E/NAT can transfer any number of NATURAL objects even between different NATURAL system files with a single active NATURAL copy. Compared to other tools, this provides dramatic performance advantages since the need to start and end NATURAL several times is eliminated.

All NATURAL syntax errors occurring during generation are reliably identified and returned to Endeavor. NATURAL elements are recatalogued during the Endeavor generate process through the processor. This allows you to identify inconsistencies immediately, thus preventing errors from occurring during the execution of the software elements. This also ensures that the active PREDICT references are automatically maintained.

Simple administration

In order to operate E/NAT only those tables are populated that define the NATURAL environment on the one hand and represent the installation-dependent connection between the Endeavor definitions and the NATURAL and PREDICT idiosyncrasies on the other hand. This means simple administration in two respects.

Apart from these targets, other functions have been integrated which provide specific advantages for NATURAL users:

- ❑ E/NAT exits can also be used for Endeavor elements that are not supported by E/NAT itself (3GL programs, documents etc.)
- ❑ It is possible to change between NATURAL environments with different FUSER or FDIC settings across DB boundaries - with optimum performance.
- ❑ Change of environment between different ADABAS-SVCs is also supported.

Easy usage

In order to simplify the transfer of NATURAL and PREDICT elements into Endeavor, a new concept has been introduced: the PATH. The definition of paths eliminates the need to know the correct settings for FUSER, FDIC and NATURAL Library when using the ADD, UPDATE and RETRIEVE functions. Only the path must be specified. In practice it is of great value to the user to be able to uniquely designate the source or target by entering "DEV" or "TEST", for example.

Seamless support

All relevant Endeavor functions (including package backout), all NATURAL types and the PREDICT object types (files with all fields and verifications) necessary for creating applications as well as eight more documentation object types are supported.

E/NAT supports PREDICT object names of up to 32 characters.

Comprehensive integration

As far as NATURAL is concerned, E/NAT works with high-performance and high-security algorithms. For the administration of PREDICT objects utilities developed by Software AG are used in order to ensure upward compatibility. Deletion of PREDICT objects (DELETE INPUT SOURCE and DELETE action) will be possible as soon as adequate PREDICT APIs are available.

More features

E/NAT supports the execution of any NATURAL commands within processors.

The Generate Action parameters allow to decide which action shall be executed when generating NATURAL objects. You may decide if a CAT, STOW or a CAT & COPY occurs. The CAT & COPY option ensures that the time stamp of a NATURAL source in Endeavor and within NATURAL is the same.

```

----- ADD/UPDATE ELEMENTS -----
OPTION ==>

blank - Member list   A, U - Add, Update an element   L - Set Library type

TO ENDEAVOR:
ENVIRONMENT ==> TEST
SYSTEM ==> FINANCE
SUBSYSTEM ==> ACCT
ELEMENT ==>
TYPE ==> NAT*
STAGE: 1

COMMENT ==>

FROM NATURAL LIBRARY:
LIBRARY ==> YX00037
MEMBER ==>
PATH ==> DEV          THRU MEMBER ==>

ACTION OPTIONS:
CCID ==>
GENERATE ELEMENT ==> N (Y/N)
DELETE INPUT SOURCE ==> N (Y/N)
NEW VERSION ==>
OVERRIDE SIGNOUT ==> N (Y/N)
PROCESSOR GROUP ==>
UPDATE IF PRESENT ==> N (Y/N)
INCLUDE PREDICT XREF ==> N (F/N)

LIST OPTIONS:
DISPLAY LIST ==> Y (Y/N)
  
```

Illustration 2: Endeavor ADD-Panel with E/NAT

```

----- E/NAT Interface Version 2.2.1 -----
COMMAND ==> SELMEM

FROM Path: DEV      Library: YX00037  Member: *      Fmt:
TO  Environment: TEST  Stage: 1      System: FINANCE  Subsys: ACCT

M MEMBER          ELEMENT      TYPE      COMMENT
A
AZNL2             NATPGM
AZNP2             NATDAT
CMKEY             NATPGM
CMMASH            NATPGM
CMMMSG            NATPGM
CMTCP             NATPGM
CMUB              NATPGM
CMUB2             NATPGM
CMULT             NATPGM
CMX               NATPGM
CMXG              NATDAT
CMZUL             NATPGM
A ENTTEST        NATPGM

Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
Check Help      End  Menu      -    +    <<  >>
  
```

Illustration 3: Selection of NATURAL objects with the ADD function

The New Dimension

For those users who prefer to perform Endeavor actions against NATURAL or PREDICT elements from within their TP monitor, the E/NAT TP Interface (TPI) is available. This feature is intended to be used by the application programmers. Within the NATURAL development environment it is possible to execute Endeavor actions like ADD, UPDATE or RETRIEVE. This results in full control within the NATURAL environment including the feature that all Endeavor execution reports are automatically returned to the TPI user. The E/NAT TPI user will be automatically notified in case of a failed action. E/NAT TPI is an application integrated into the NATURAL environment with the well-known NATURAL look-and-feel.

E/NAT TPI is an integral part of the E/NAT base product.

Single Point of Control

One tool for all your source code: E/NAT and Endeavor. This solution enables you to

- + have one single tool for 3GL, 4GL and documentation
- + ease administration
- + backout NATURAL, COBOL, PL/I and/or Assembler routines with a keystroke
- + reduce training costs
- + increase system stability by avoiding manual reading of job-logs.

System requirements

The E/NAT interface requires the following software components:

- MVS Version 4.2.2 or higher OR z/OS Version 1.1 or higher
- Endeavor Version 3.9 or higher
- ADABAS Version 5.2 or higher
- NATURAL Version 3.1 or higher (with TSO interface)
- NATURAL Security Version 3.1 or higher)*
- PREDICT Version 3.4 or higher)**

Notes:

)* If the system programs of the E/NAT interface are installed in the SYSTEM library, it is not necessary to have NATURAL Security.

)** PREDICT is needed to edit DDMs (via files). If you decide not to edit DDMs, the E/NAT interface can be used without PREDICT.

Further information

For further information on E/NAT please contact:

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or your local CA office.

```

14:18:20      *** E/NAT TP Interface Version 2.2.1 ***      05-04-07
User: AG      - Main Menu -                               Library: FINACT

Code  Function
E      Submit CA-Endeavor actions
N      Modify E/NAT parameter settings (ADMIN ONLY!)
V      View result(s) of previous action(s)
J      Modify E/NAT TPI Job skeleton
.      End
Code .. _

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
Help      End      Menu      <<      >>
    
```

Illustration 4: E/NAT TPI Main Menu

```

14:18:22      *** E/NAT TP Interface Version 2.2.1 ***      05-04-07
User: AG      - CA-Endeavor ADD/UPDATE -                 Library: FINACT

TO
Environment . DEV
Stage ..... 1
System ..... FINANCE
Subsystem ... ACCT
Element .....
Type ..... NAT*

Options
Display selection list ..... Y (Y/N)
Generate (CAT/STOW) element . Y (Y/N)
Delete the input source ..... Y (Y/N)
Override signout ..... N (Y/N)
Update the element if present N (Y/N)
Include dependent members ... N (Y/N)

FROM
PATH ..... DEV
Library ..... FINACT
Member .....* *
thru

Comment ..... Demo TPI 221
CCID ..... EN221TPIIDM
New version .....
Processor group .....

Command ==>
Enter-PF1---PF2---PF3---PF4---PF5---PF6---PF7---PF8---PF9---PF10---PF11---PF12---
Submt Help      End      Menu      <<      >>
    
```

Illustration 5: E/NAT TPI ADD function