

General Information

- Components of Natural
- Invoking Natural
- Terminating Natural
- Natural Main Menu
 - Programming Modes
 - Overview of Functions
- Help on Error Messages
- Natural Editors - Overview
- Asterisk Notation

Components of Natural

Natural provides a complete environment for application development, offering all the functions you need to create and maintain an application:

- the Natural programming language;
- editors to create and maintain programs, maps, data areas and the other types of programming objects that make up a Natural application;
- a utility for maintaining Natural objects;
- a utility to create and maintain error messages to be issued by an application;
- several other utilities for various purposes which you will find helpful when developing an application with Natural.

Invoking Natural

The way you invoke Natural depends on how the system has been configured at your site. For most installations, you invoke Natural as follows:

- **Under OpenVMS:** Enter the command "NAT51" at your DCL prompt.
- **Under UNIX:** Enter the command "natural" at the UNIX system prompt:
\$ **natural**

Natural dynamic parameters may be specified with the "NAT51" or "natural" command. For information on dynamic parameters, see *Installing and Setting Up Natural on UNIX* or *Installing and Setting Up Natural on OpenVMS*.

If Natural Security is installed, access to some libraries and some functions may be restricted. Ask your Natural Security administrator for details.

Terminating Natural

A Natural session can be terminated by any of the following:

- selecting "Fin" on the Main Menu and pressing ENTER,
- entering the system command FIN in the "Direct Commands" window,
- executing a Natural program which contains a TERMINATE statement.

Natural Main Menu

When you invoke Natural, the Natural Main Menu is displayed:

```

2001-10-25                NATURAL                Library: SYSTEM
12:19:21                  V 5.1.1 Software AG 2001  Mode  : REPORT
User: SAG                  Work Area : empty
.....
•Library      Direct      Services      OS      Fin      •
.....

Select Library

```

The header portion of the Main Menu contains the following information.

The top left-hand corner displays:

- the current *date* and *time*;
- the current *user ID*. By default, this is your OpenVMS or UNIX user ID.

The top right-hand corner displays:

- the name of the current library. For more information on libraries, see the section SYSMAIN.
- the current programming mode (reporting mode or structured mode). See the section Programming Modes below for further information.
- the name of the programming object currently in the editor *work area*. This work area is where Natural places a programming object which is to be edited; "empty" indicates that there is no object in the work area.

Programming Modes

Natural supports two programming modes:

- *Structured mode* is intended for complex applications with a clear and well-defined program structure.
- *Reporting mode* is useful only for the creation of ad hoc reports and small programs which do not involve complex data and/or programming constructs. This mode is not recommended for structured applications or for those applications which could eventually require structuring.

All explanations and examples in this documentation use structured mode. For more information on the differences between reporting and structured mode, see the appendix of the Natural Programming Guide.

The default is reporting mode. To change the mode, select the function "Direct"; a window will appear. In this window, you enter the command "GLOBALS SM=ON" for structured mode, or "GLOBALS SM=OFF" for reporting mode.

Overview of Functions

The following table provides an overview of the functions available from the Main Menu:

Function	Purpose
Library	Log on to another library or create a new library.
Direct	Issue system commands.
Services	Create DDMs or maintain libraries and the objects they contain.
OS	Start an OpenVMS, UNIX or other command process.
Fin	Terminate the Natural session.

The individual functions are described below.

Library

The function "Library" is used to create a new Natural library or to log on to an existing Natural library.

See the section SYSMAIN for details.

Direct

This function is used to execute a Natural system command or a Natural program.

Natural system commands are used to, for example:

- find, access, manipulate, check, and compile objects in a Natural library;
- start, end, and display information about a Natural session;
- access Natural utilities.

If you select this function, a window is displayed in which you enter the name of the system command or program you wish to be executed (provided the program is in your current library, the steplib or the library SYSTEM).

You can also enter a system command in response to a "MORE" prompt. In this case, the program that is being executed will be stopped and the system command will be executed.

Note:

Do not confuse Natural system commands, which are used to perform session functions, with Natural statements, which are the components of Natural programs.

The section System Commands contains a detailed description of each system command. The following tables provide an overview of commonly used system commands.

System Commands to Create and Modify Source Code

System Command	Purpose
EDIT	Edit the source form of an object.
CLEAR	Clear the contents of the work area of the current editor. The source code currently in the work area is not saved.
CHECK	Check the source code of an object for syntax errors. Syntax checking is also performed as part of the RUN and STOW commands.

System Commands to Store and Delete Objects

System Command	Purpose
SAVE	Save the <i>source form</i> of the Natural object currently in the work area of the editor and store it. Syntax is not checked. A saved program can be RUN, but not EXECUTED (see below).
STOW	Save the <i>source form</i> of an object, compile the object and store the resulting <i>object module</i> as well as the source. The object is syntax checked during the compilation process.
SCRATCH	Delete the <i>source and object form</i> of an object. A list of all objects stored in the current library will be displayed; on the list you may then mark the object(s) to be deleted.

System Commands to Execute Programs

System Command	Purpose
RUN	Compile and execute a source program, but not a program stored in object form.
EXECUTE	Execute a program that has been compiled and stored in object form.

Services

If you select the function "Services", the following screen is displayed:

```

2001-10-25          NATURAL          Library: SYSTEM
12:22:09           V 5.1.1. Software AG 2001      Mode  : REPORT
User: SAG                                     Work Area : empty
.....
·Library          Direct          Services          OS          Fin          ·
.....
                                .....
                                ·D DDM Services          ·
                                ·S SYSMAIN              ·
                                .....
    
```

You can select one of the following functions:

Function	Purpose
DDM Services	Data Definition Modules (DDMs) can be created/edited, and various other DDM maintenance functions can be performed. These functions are described in the section DDM Services.
SYSMAIN	Various library-related functions can be performed. These functions are described in the section SYSMAIN.

OS Prompt

Under OpenVMS

Under OpenVMS, the OS prompt function is used to create an OpenVMS subprocess.

If you select this function, the DCL prompt for the subprocess appears. You can then enter an OpenVMS system command or program name.

To return to the current Natural session, enter the command "logout" at the DCL prompt.

Note:

If you should not be able to create a subprocess, this is due to the NATPARM option "Start SHELL on OS from Natural" being set to "N"; in this case, contact your Natural administrator.

Under UNIX

Under UNIX, the OS prompt function is used to start another UNIX command process.

If you select this function, the UNIX system screen appears. You can then enter any UNIX system command or program name.

To return to the current Natural session, enter the command "exit" at the operating-system prompt.

Note:

If you should not be able to start another UNIX command process, this is due to the NATPARM option "Start SHELL on OS from Natural" being set to "N"; in this case, contact your Natural administrator.

Fin

The "Fin" function is used to terminate the Natural session.

Help on Error Messages

To get more information on an error message displayed by Natural, issue the following system command:

HELP *nnnn*

where *nnnn* is the number of the error message.

An extended message text will be displayed, which provides more detailed information about the error. For more information see system command HELP.

Natural Editors - Overview

Natural provides four editors: the *program editor*, the *data area editor*, the *map editor* and the *DDM editor*. The editors are invoked with the system command EDIT. The editor invoked depends on the type of object you specify. If you specify an object by name, the appropriate editor is automatically invoked.

Editor	Creates and Maintains
Program Editor	Natural programs, classes (NaturalX), subroutines, subprograms, help routines, copycode, and text.
Data Area Editor	Global data areas, local data areas and parameter data areas. This editor has a columnar format that is designed for defining the data and object data areas (NaturalX) used in Natural programs or routines.
Map Editor	Maps (screen layouts) referenced in a program's INPUT or WRITE statement. This editor allows direct manipulation of the fields used in an input or output map; moreover, processing rules can be attached to fields in the map.
DDM Editor	DDMs (data definition modules).

The section Tutorial - Getting Started with Natural illustrates the use of the editors. Detailed descriptions of all four editors are provided in the corresponding sections later in this documentation.

When you switch from one editor to another, all changes will be lost unless previously saved. The editing area is overwritten by the new object to be edited.

Asterisk Notation

Many Natural functions display lists of objects. Usually these lists contain all objects available (for example, all objects of a given type, all objects in a given library, etc.). If you do not wish all objects to be listed, but only a certain range of objects, you may specify that range by using *asterisk notation*.

By specifying a parameter value followed by an asterisk (*) you will get a list of only those objects whose names (or IDs or whatever the parameter is) begin with that value. This option to enter a value followed by an asterisk is referred to as *asterisk notation*.

Example 1:

If you enter the system command SCRATCH without any parameters:

SCRATCH

you will get a list of all objects in the current library. You can mark those which are to be deleted.

Example 2:

If you enter the system command SCRATCH as follows:

SCRATCH BOC*

you will get a list of only those objects in the current library whose names begin with "BOC".