



NATURAL

Natural

Object Handler

Version 5.1.1 for UNIX and OpenVMS



This document applies to Natural Version 5.1.1 for UNIX and OpenVMS and to all subsequent releases. Specifications contained herein are subject to change and these changes will be reported in subsequent release notes or new editions.

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Natural Object Handler - Overview

The Object Handler is designed to process Natural and non-Natural objects for distribution in Natural environments. This is done by unloading the objects in the source environment into work files and loading them from work files into the target environment.

This documentation covers the following topics:

●	General Information	Invoking the Object Handler, specifying work files and using standard PF keys.
●	Functions	Processing objects: unload, load, scan, restart load, view and administration.
●	Object Specification	Specifying objects to be processed.
●	Settings	Specifying option and parameter settings for the unload, load or scan function.
●	Workplans	Creating standard procedures to execute Object Handler functions.
●	Name, Date and Time Specification	Specifying names, dates, times and ranges.
●	Work Files	Work files used by the Object Handler.
●	Commands	Direct commands and syntactical items to execute functions and workplans of the type PROCEDURE.
●	Tools	Displaying status information and setting trace and report options.
●	SYSOBJH Profile	Setting a profile to define individual defaults and standard procedures.

General Information

The Natural Object Handler consists of the utility SYSOBJH which is located in the library SYSOBJH, and the direct command interface.

To process Natural and non-Natural objects, the Object handler unloads objects in the source environment into work files and loads them from work files into the target environment.

Depending on the source and target environment, you can transfer data of binary or text format. Binary format may be used for Natural sources and cataloged objects, error messages, Adabas FDTs and non-Natural objects. Text format applies to Natural source objects, command processor sources, error messages and Adabas FDTs. Between mainframe and Open Systems platforms (UNIX, OpenVMS or Windows), you can only transfer text data. Between identical platforms, you can transfer binary data. Between different Open Systems platforms, you can transfer binary data by using portable work files of internal format.

The format of the work file to be transferred depends on the mode set for transferring binary or text data. For further details on the transfer modes provided by the Object Handler see Work File Format in the section Work Files.

Below is information on:

- Invoking the Natural Object Handler
 - Batch or Direct Command Calls
 - Natural Security
 - Standard PF Keys
-

Invoking the Natural Object Handler

There are two ways of invoking the Object Handler for interactive usage:

To invoke the Object Handler online from any Natural library

- Enter the system command SYSOBJH.
The Natural Object Handler main screen is displayed.

The Object Handler main screen offers the following functions:

- Unload
- Load
- Scan
- View
- Administration

To select a menu item

- Enter any character in the input field next to the option that corresponds to the function desired.
Or press the PF key that corresponds to the function desired.
Or, in the command line, enter a corresponding Object Handler command (see Commands).

See the section Functions for a description of the functions provided, the Advanced-User mode and the wizards.

- Enter the system command SYSOBJH followed by a direct command (see also Batch or Direct Command Calls below and the section Commands).
After execution of a direct command, you can enter either another direct command or a period (.) to exit the

Object Handler.

Batch or Direct Command Calls

Several commands can be issued to SYSOBJH. The last command in the command sequence must be a period (.), STOP, END, QUIT or FIN, where FIN ends the Natural session.

Batch Mode

The commands to the Object Handler are read from standard input. If a command string exceeds 248 bytes, enter an input delimiter (session parameter ID) after any keyword or keyword value. The command strings between each input delimiter must not exceed 248 bytes. You can enter a maximum of 20 command strings.

Example (assuming ID is set to ‡,Ÿ):

```
UNLOAD * LIB EXAMPLE, WHERE, WORK $HOME\TEST.SAG
STOP
```

Online Mode

The command to the Object Handler in the Natural command line can consist of up to 20 command parts.

Example:

```
SYSOBJH UNLOAD * LIB EXAMPLE WHERE TRANSFER WORK $HOME/TEST.DAT
```

Natural Security

If Natural Security is installed, the Object Handler checks the SYSOBJH utility profile in Natural Security to find out whether the requested function is allowed.

Should a Natural Security error occur during the load function, the following applies:

- If the option Write Report is set, the error is written into the report file and loading continues.
- If the option Write Report is not set, an error message is issued and the load function is terminated.

Standard PF Keys

The following PF keys are available on all full-screen maps:

PF Key	Explanation
PF1	Invokes the Help function for the field at which the cursor is positioned.
PF3	Exits the current and returns to the previous screen.
PF7	Applies to the wizard screens only. Goes back one screen/step.
PF8	Applies to the wizard screens only. Goes to the next screen/step.
PF10	Invokes the Commands menu to select commands for navigation purpose and to specify special settings. See also Commands for CUIs in the section Commands.
PF12	Cancels the current function.
PF20	Lists all active programs of the Object Handler (for support purposes).

Functions - Overview

This section describes the main functions provided by the Natural Object Handler. To guide you through the steps required to execute the unload, load and scan functions, you may take advantage of the Object Handler wizards. The wizards are activated by default. If you prefer the unload, load or scan mode for the experienced user instead, on the Object Handler main screen, mark the field next to Advanced User.

To automate function processing, for the unload, load or scan function, the Object Handler provides the option to create standard procedures to define recurring settings and object specifications. See the section Workplans for further information.

This section covers the following topics:

- Wizards
- Advanced User
- Restart Load
(section: Settings)
- View
- Find
(section: Commands for CUIs)
- Administration
- Change Workplan Library
(section: Administration)
- System File Selection
- Library Selection
- Workplan Selection
(see List in the section Administration)
- System Error Message Selection
- Object Selection

Object Handler Wizard

The Object Handler provides a wizard which determines the processing sequence to

- Unload data from the Natural system environment into Natural work files.
- Load data from work files into the Natural system environment.
- Scan the contents of Natural work files.

To activate the wizard

- Uncheck the Advanced User field on the Object Handler main screen, if necessary (the default is unchecked).

The wizards provide the keys PF8 and PF7 to navigate between the screens (steps). Use PF12 to cancel the processing sequence.

The steps below describe the processing sequence performed with the unload, load or scan wizard:

- Step 1 - Start the Procedure
 - Step 2 - Unload/Load/Scan Object into/from Work Files
 - Step 3 - Set Parameters
 - Step 4 - Select Objects
 - Step 5 - Execute Processing
 - Step 6 - Continue Processing
-

Step 1 - Start the Procedure

To start the unload, load or scan procedure

1. From the Object Handler main screen, choose Unload, Load or Scan by entering any single character next to the function desired or using the corresponding PF key.
The Unload/Load/Scan Wizard main screen appears providing the following options:
 1. Unload/Load/Scan Objects into/from Natural Work File(s)
 2. Start Object Handler Command Procedure
2. Choose any option:
 - If you choose "Unload/Load/Scan Objects into/from Natural Work File(s)", proceed with Step 2 below.
 - If you choose "Start Object Handler Command PROCEDURE", proceed as follows:
 1. On the Unload/Load/Scan Wizard screen, choose Start Object Handler Command PROCEDURE. The PROCEDURE screen appears.
 2. In the Name field, enter the name of a workplan of the type PROCEDURE using either option:
 - Type in the name of a workplan of the type PROCEDURE (see also Workplans) that should be used for the transaction.
 - Choose Select Workplan or press PF5 to display a list of available workplans of the type PROCEDURE.
In the line next to the workplan you want to select, enter the command **S** or **SE**.
Press ENTER to execute the command and fill the Name field in the PROCEDURE screen.
 3. Select List Workplan or press PF4 if you want to display the workplan specified.

See also List Workplan in the section Administration.

3. Proceed with Step 5 and Step 6 below.

Step 2 - Unload/Load/Scan Objects into/from Work Files

To unload, load or scan objects into/from Natural work files

- On the Unload/Load/Scan Wizard screen, choose "Unload/Load/Scan Objects into/from Natural Work File(s)".
- Press ENTER or choose PF8/Next to continue.
The Options screen of the wizard appears providing the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Transfer Format		<p>Only valid if Use Default Options (this is the default) has been selected.</p> <p>If selected, the data to be processed is written in Transfer format to/from the work file. See also Work File Format in the section Work Files.</p> <p>Unload function: The data to be unloaded are written in Transfer format to the work file. Note that if you want to change the setting of this field for a subsequent unload, you need to return to the Object Handler main screen or enter the command GO UNLOAD END (see Commands for CUIs) and restart the unload function.</p> <p>Load and scan functions: The data to be loaded or scanned are expected to be in Transfer format.</p>
Portable Work File		<p>Only valid:</p> <ul style="list-style-type: none"> ● If Use Default Options (this is the default) has been selected. ● If Transfer Format has not been selected. <p>If Portable Work File has been selected, the work file is written or read in portable format. See also Work File Type in the section Define Work File in the Natural Statements documentation.</p>
Work File		<p>Only valid if Use Default Options (this is the default) has been selected.</p> <p>The name of the work file to be used for the function.</p> <p>See the section Work Files.</p>
Use Default Options		Default options are used by default. See SYSOBJH Profile and Set Additional Options in the section Settings, for the options available.
Set Additional Options	PF4	<p>Only valid if Use Default Options has been selected.</p> <p>Invokes the Options screen of the wizard to modify the default settings and enter additional options for the processing sequence. See Set Additional Options in the section Settings.</p>
Use OPTION Workplan		If selected, a workplan of the type OPTION is used (see Workplans).
Name		<p>Only valid if Use OPTION Workplan has been selected.</p> <p>The name of a workplan of the type OPTION to be used.</p>
List OPTION Workplan	PF6	<p>Only valid if Use OPTION Workplan has been selected.</p> <p>Displays the contents of the workplan specified in the field Name.</p>
Select OPTION Workplan	PF5	<p>Only valid if Use OPTION Workplan has been selected.</p> <p>Displays a selection list of available workplans of the type OPTION (see also List Workplan in the section Administration).</p>

- Select any of the options provided and (if necessary) complete the fields to be used for the processing sequence.
- Press ENTER or PF8/Next to continue.
The Parameters screen of the wizard appears.

Step 3 - Set Parameters

▶ To set parameters for the processing procedure

- From the Parameters screen, select any of the following options listed below and (if necessary) complete the fields to be used for the processing sequence:

Field	PF Key	Explanation
Do not Use Parameters		If selected (default), no parameters are used.
Use Global Parameters		If selected, global parameters are used. See Set Global Parameters in the section Settings.
Set Global Parameters	PF4	Only valid if Use Global Parameters has been selected. If selected, the Parameters screen is invoked. See Set Global Parameters (Settings) and Parameter-Setting (Direct and PROCEDURE Workplan Syntax, Commands) for a description of the keywords and the valid values.
Use PARAMETER Workplan		If selected, a workplan of the type PARAMETER is used (see Workplans).
Name		Only valid if Use PARAMETER Workplan has been selected. The name of a workplan of the type PARAMETER to be used.
List PARAMETER Workplan	PF6	Only valid if Use PARAMETER Workplan has been selected. If selected, displays the contents of the workplan specified in Name.
Select PARAMETER Workplan	PF5	Only valid if the field Use PARAMETER Workplan field has been selected. If selected, a selection list of available workplans of the type PARAMETER is displayed (see List Workplan in the section Administration).

- Press ENTER or PF8/Next to continue.
The "Select Unload/Load/Scan Type" screen appears.

Step 4 - Select Objects

▶ To select the type of object you want to process

- On the Select Unload/Load/Scan Type screen, use any of the three options below. Note that the first options only applies to the load and scan functions. For the keywords and the valid values that apply to each object type, see the relevant explanation in the section Object Specification.
 - Select All Objects to process all objects from the work file.
 - Select a particular type of object:
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - Natural-related Objects
 - External Files
 - FDTs

Press ENTER or PF8/Next to continue.

Depending on the type of object selected, a screen appears to specify selection criteria for the objects to be processed.

Specify the objects and choose Details (if available) for further object specification, if required. For information on Details, see the relevant explanation in the section Object Specification.

3. Choose "Use SELECTION or LIST workplan" to use a workplan of the type SELECTION or LIST. See also Workplans.
 - Press ENTER or PF8/Next to continue.
The SELECTION or LIST screen appears.
 - In the Name field, enter the name of a workplan of the type SELECTION or LIST using either option:
 - Type in the name of a workplan.
 - Or, choose Select Workplan or press PF5/SelWP to display a list of available workplans.
In the line next to the workplan you want to select, enter the command **S** or **SE**. Press ENTER to execute the command and fill the Name field in the SELECTION or LIST screen. See also List Workplan in the section Administration.
 - Choose List Workplan or press PF4/Li-WP if you want to display the contents of the workplan entered in the Name field.
- Press ENTER or PF8/Next to continue.
The wizard displays the processing command generated from the input data.
You may save the command displayed as a workplan of the type PROCEDURE (see also Workplans), by entering the command SAVE or by pressing PF5/Save.

Step 5 - Execute Processing

▶ To execute the processing procedure

- On the command execution screen, press ENTER or PF8/Next to confirm the settings and to process the objects specified.
If required, choose PF7/Back and modify the processing settings before you confirm the command execution.
The Object Handler performs the function and displays a confirmation message.
- Press PF3/Exit or PF12/Canc to terminate data processing and leave the function.
A report screen is displayed listing the objects processed.
- Press PF3/Exit or PF12/Canc again to leave the report screen.
A window appears asking whether or not you want to continue processing data.
- Choose No and press ENTER.
Or press PF12 to terminate the function.
The Object Handler main screen appears.

Step 6 - Continue Processing

▶ To continue processing

- On the report screen, press PF3/Exit or choose PF8/Next.
A window appears asking whether or not you want to proceed with the next processing step.
- Choose Yes.
A screen appears providing the option to reuse or change previous settings.

Advanced User

This section describes how to invoke the Advanced-user mode and how to perform the unload, load and scan functions.

- Activating Advanced User
 - Processing Objects
-

Activating Advanced User

▶ To activate the Advanced-User mode

- Check the Advanced User field on the Object Handler main screen (the default is unchecked). Or, in the SYSOBJH profile, set Advanced-Mode to **Y** (Yes). See also SYSOBJH Profile.

Processing Objects

▶ To process objects in Advanced-User mode

1. On the Object Handler main screen, check the Advanced User field and select Unload, Load or Scan.
2. Press ENTER to continue.
The Settings window appears providing the sections Options and Parameters.
3. Set the options and parameters as described in the section Settings.
4. Press ENTER to continue.
The Select Unload/Load/Scan Type screen appears.
5. Select the objects you want to process: see also the section Object Specification.
6. Choose Details to specify additional selection criteria: see the relevant sections in Object Specification.
7. Enter the name of the work file. See the section Work Files.
8. Press ENTER to continue.
 - If the parameter "Display-Cmd-in-Advanced-Mode" is set to N (No) in the SYSOBJH profile (this is the default), or if no such profile exists, the command generated from the input data is executed immediately after you have specified the selection data. See SYSOBJH profile.
The Display Unload/Load/Scan Report screen appears listing the objects processed if the parameter Write Report was selected (this is the default). See also Work File Options in the section Settings.
 - If the parameter "Display-Cmd-in-Advanced-Mode" is set to Y (Yes) in the SYSOBJH profile (see the relevant section), a screen appears displaying the command generated from the input data.
You may save the command displayed as a workplan of the type PROCEDURE (see also Workplans), by entering the command SAVE or by pressing PF5/Save.
Press ENTER to confirm the command execution or press PF3/Exit to modify the processing settings before confirming the command execution.
The Display Unload/Load/Scan Report screen appears listing the objects processed if the parameter Write Report was selected (this is the default). See also Work File Options in the section Settings.

View

This function is used to display the objects currently located in your Natural system environment.

For information on the columns and fields that appear in the screens generated by the View function, refer to the section Object Specification.

To invoke the View function

- From the Object Handler main screen, choose View.
Or, from any other Object Handler screen, enter the direct command GO VIEW (see also Commands for CUIs).
The Select View Type screen appears listing the types of objects available for selection:
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - FDTs

Below is information on how to view the object types.

Natural Library Objects

To view Natural programming objects and user-defined error messages

1. From the Select View Type screen, select Natural Library Objects.
2. Press ENTER.
The View System Files screen appears listing all available system files. The following PF keys are provided:

PF6	Moves to the top of the list.
PF7	Returns to the previous page.
PF8	Goes to the next page.
PF9	Moves to the bottom of the list.

3. In the Cmd column, enter any single character next to the system file you want to select (default is FUSER/FNAT): see also System File Selection.
4. Press ENTER.
The View Libraries screen appears listing all available libraries.
5. In the Cmd column, next to the library you want to select, enter the line command SE or LI: see also Library Selection.
6. Press ENTER.
The View Library Objects screen appears listing all available objects.
7. In the Cmd column, next to the object(s) you want to select, enter LI: see also Object Selection.
8. Press ENTER.
The object(s) selected is displayed on the screen.

Natural System Error Messages

▶ To view Natural system error messages

- From the Select View Type screen, select Natural System Error Messages.
- Press ENTER.
The Object Handler generates a list of all system error messages available in Natural and displays them on the screen.

See also: Natural System Error Message Selection.

Natural Command Processor Sources

▶ To view Natural command processor sources located in an Adabas file

1. From the Select View Type screen, select Natural Command Processor Sources.
2. Press ENTER.
The View Natural Command Processors screen appears.
3. Enter the database ID (DBID), the number of the Adabas file (FNR), the Adabas password and cipher code of the Adabas file where the Natural command processor libraries are located. As default value, the current setting of LFILE 190 is used (for details, see the Natural SYSNCP Utility documentation).
4. Press ENTER.
The View Libraries screen appears listing all libraries where Natural command processor sources are located.
5. In the Cmd column, next to the library you want to select, enter the line command SE or LI: see also Library Selection.
6. Press ENTER.
The View Command Processor Sources screen appears listing all command processor sources available.

FDTs

▶ To view the Field Description Tables (FDTs) available in an Adabas database

- From the Select View Type screen, select FDTs.
- Press ENTER.
The View FDTs screen appears.
- Enter the database ID (DBID) of the Adabas database where you want the FDTs to be displayed, and the range of file numbers (FNRs).
- Press ENTER.
The "View FDTs for DBID" screen appears listing all FDTs available in this database.

The View FDTs for DBID screen provides the following columns and PF keys:

Column	PF Key	Explanation
Cmd		No input possible.
DBID		DBID for the listed FDTs.
FNR		Range of file numbers (FNR) for the listed FDTs. The default is 1 - 255.
	PF6	Moves to the top of the list.
	PF7	Returns to the previous page.
	PF8	Goes to the next page.
	PF9	Moves to the bottom of the list.

Administration

The administration function is used to maintain Object Handler workplans.

For information on workplans and the syntax that applies, refer to the sections Workplans and Commands.

Note:

You can set the default library for workplans in the SYSOBJH profile using the option Workplan-Library (see SYSOBJH Profile).

The Administration screen provides the following options:

- List the available Workplans in the Workplan Library
 - Create a new Workplan
 - Change the Workplan Library
-

List the available Workplans in the Workplan Library

This function is used to list all Natural objects of the type Text available in the workplan library and to select all workplans available.

Below is an example of how to invoke and execute the function:

 **To list workplans**

- On the Administration screen, select "List the available Workplans in the Workplan Library" and press ENTER, or press the corresponding PF key.
The List Workplans screen appears listing all workplans available.
If the Natural object of the type Text is a workplan, the type of workplan and the first 50 bytes of the workplan description are listed. Press PF5 to display additional information.
- Select a workplan. See also Columns and Commands in the section Workplans.

Create a new Workplan

This function invokes the "Create a new Workplan" screen where you can specify the type of the new workplan and choose the option Free Format Editing (see also the direct commands SET FREE ON and SET FREE OFF in Commands for CUIs).

With Free Format Editing set to OFF (not activated), for workplans of the types OPTION, PARAMETER and SELECTION, screens with input fields are provided.

If the option Free Format Editing set to ON, or if you create a workplan of another type, you will get a map with an edit area. Enter the contents of the workplan; see the syntax as described in the section Commands.

Change the Workplan Library

This function is used to change the workplan library. All workplans must be stored in a workplan library as otherwise data processing cannot be controlled by workplans, such as the function Select OPTION Workplan.

The "Change Workplan Library" screen provides the following fields:

Library	The name of the workplan library. Default is the library WORKPLAN.
Select Library	Displays a list of the workplan libraries available: see also Library Selection.
PF4/SeLib	
DBID/FNR	Specifies the database ID (DBID) and file number (FNR) where the workplan library resides. If no values are specified, the FUSER or FNAT system file is used.

System File Selection

The system file selection function generates a selection screen with the system files available in your Natural environment.

Below is an example of how to invoke and execute the function using the Advanced-User mode (see the relevant section):

 **To list and select system files**

1. On the "Unload Natural Library Objects screen", choose Select DBID/FNR and press ENTER, or press PF5/DBIDs.
The Select System File window appears listing the files and their location (path), the database ID (DBID) and the file number (FNR).
2. Select the system file you want to view by entering any single character next to the file desired in the input field of the Sel column.
If you select FNAT/FUSER as system file, you can view all libraries from the system files currently used for FNAT and FUSER.

Library Selection

This function is used to select and list the Natural libraries available in the system file and specified by the database ID (DBID) and the file number (FNR).

Below is an example of how to invoke and execute the function using the Advanced-User mode (see the relevant section):

To list and select libraries

- On the "Unload Natural Library Objects" screen, choose Select Library and press ENTER, or press PF4/SeLib.
The Select Library window appears listing the available libraries and the corresponding DBIDs and FNRs.
- Select a library or specify a range (see the table below).
- Press ENTER

If Natural command processor sources (which are located in Adabas files) are processed, the libraries are searched on the Adabas file specified by DBID and FNR. If no values are specified for DBID and FNR, the current setting of LFILE 190 is used.

The Select Library screen provides the following columns:

Select	Select a library by entering any single character in the input field next to the library desired.
Library	Lists all Natural libraries available and provides the option to enter a range of libraries in the input fields of the first row: see also (*) Name.
DBID/FNR	DBID and FNR of the Natural system file where the libraries are located. If no values (or 0) are specified, the FUSER or FNAT system file is used. For Natural command processor sources, the current setting of LFILE 190 is used. These fields cannot be changed if: using the View function (see the relevant section), selecting a library for the load or scan function, defining Natural Library Objects Exceptions (see the relevant section in Object Specification).

* The cross-reference in the table above regarding the name, date and time parameters refer to the section Name, Date and Time Specification.

System Error Message Selection

This function is used to select and list the Natural system error messages.

Below is an example of how to invoke and execute the function using the Advanced-User mode (see the relevant section):

To use the function

- On the "Unload Natural System Error Messages" screen, in the Error Number fields enter a range of numbers or leave the default to select all messages; then, select Select System Error Messages.
- Press ENTER.
The List System Error Messages screen appears listing the range of error messages selected.
- If you want to unload one or more objects, select a system error message or specify a range: see Columns and Commands below.
- Press ENTER.
The object(s) has been added to the list of unload items.
- Press PF2/Unloa to execute the unload (see also Columns and Commands below).

Columns and Commands

The "List System Error Messages" screen provides the following columns and commands:

Column	PF Key	Explanation
Cmd		<p>The following line commands can be entered in the input field next to the object desired:</p> <p>L or LI Lists the error message.</p> <p>S, SE, U or UL Unload only. Selects the error message for subsequent unloading.</p> <p>DE Deletes the error message.</p> <p>DL Deletes the long text of the error message only.</p>
Number		<p>Lists all Natural system error messages available and provides the option to enter a range of error messages in the input fields of the first row. Valid ranges are:</p> <p><i>value</i>* All items whose names begin with value.</p> <p><i>value</i>> All items whose names are greater than or equal to value. Example: 10></p> <p><i>value</i>< All items whose names are less than or equal to value. Example: 100<</p>
S/L-Kind		<p>Kind of error message text:</p> <p>S Short text of error message.</p> <p>L Long text.</p> <p>A All short and/or long texts.</p>
Language		<p>Language code(s) of the error messages to be selected: Up to 8 valid Natural language codes. Asterisk (*) selects all language codes.</p>
	PF2	<p>Unload only.</p> <p>Starts unloading the object(s) selected for processing.</p> <p>As an alternative, in the command line, enter either of the following direct commands:</p> <p>UNLOAD</p> <p>UNLD</p>
	PF6	Moves to the top of the list.
	PF7	Returns to the previous page.
	PF8	Goes to the next page.
	PF9	Moves to bottom of the list.
	PF11	<p>Selects all objects of the range(s) specified.</p> <p>As an alternative, in the command line, enter the following direct command: <u>SELECT ALL</u>.</p>

Object Selection

This function is used to list and select the Natural objects or Natural command processor sources available in the library specified.

Below is an example of how to invoke and execute the function using the Advanced-User mode (see the relevant section):

To use the function

- On the "Unload Natural Library Objects" screen, in the field Library, enter the name of a library and choose Select Objects.
- Press ENTER.
The List Library Objects screen appears listing the objects available.
- If you want to unload one or more objects, select the object or specify a range: see Columns and Commands below.
- Press ENTER.
The object has been added to the list of unload items.
- Press PF2/Unloa to execute the unload (see also Columns and Commands below).

Columns and Commands

The List Library Objects screen provides the following columns and commands:

Column	PF Key	Explanation
Cmd		The following line commands can be entered in the input field next to the object desired: L or LI Lists the object (not possible for Natural command processor sources). S, SE, U or UL Unload only. Selects the object for subsequent unloading. DE Delete the object.
Name		Lists all Natural library objects available and provides the option to enter a range of library objects in the input fields of the first row: see also (*) Name.
Type		Up to 11 valid Natural object types (for example, P for program) or asterisk (*) to list all objects.
S/C		SC-Kind of the Natural programming objects listed: * All saved and/or cataloged objects. This is the default. S Source objects only. C Cataloged objects only. S/C Both source and cataloged objects if both exist. W Both source and cataloged objects if both exist with identical date and time.

Column	PF Key	Explanation
M		Programming mode of the objects: * Any mode, structured and/or report. S Structured mode only. R Report mode only.
Version		Natural version under which the objects were saved and/or cataloged (range specification not possible).
User ID		The ID of the user who saved or cataloged the object. Specify a single user ID or a range: see also (*) Name.
Date		A date or a range: see (*) Date.
Time		A time or a range: (*) Time.
	PF2	Unload only. Starts unloading the object(s) selected for processing. As an alternative, in the command line, enter either of the following direct commands: UNLOAD UNLD
	PF6	Moves to the top of the list.
	PF7	Returns to the previous page.
	PF8	Goes to the next page.
	PF9	Moves to the bottom of the list.
	PF11	Unload only. Selects all objects of the range(s) specified. As an alternative, in the command line, enter the following direct command: <u>SELECT ALL</u> .

* The cross-reference in the table above regarding the name, date and time parameters refer to the section Name, Date and Time Specification.

Object Specification

The Object Handler provides the screen Select Unload/Load/Scan Type where you can specify the objects you want to process.

To activate the options provided with the object specification screens described below, mark the corresponding input field with any single character.

Note:

The notation "see (*)" in the tables in this section regarding the name, date and time parameters refers to the section Name, Date and Time Specification.

Below is information on:

- All Objects
(load and scan only)
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - Natural-related Objects
 - External Files
 - FDTs
 - Use SELECTION or LIST Workplan
-

All Objects

This function is used to select for processing all objects available in the work file. From the Load All Objects screen, you can invoke the Settings screen where you can specify option and parameter settings. See the section Settings. For a description of keywords and valid values, see Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

Natural Library Objects

This function is used to select Natural library objects for processing. Natural library objects are programming objects and user-defined error messages.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural Library Objects" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
DBID/FNR		Unload only. The database ID (DBID) and file number (FNR) of the system file where the Natural libraries to be unloaded reside. If no values (or 0) are specified, the FUSER or FNAT system file is used.
Select DBID/FNR	PF5	Unload only. Displays a selection list of the available system files.
Library	PF6	The name of a library or a range: see (*) Name.
Select Library	PF4	Displays a selection list of the available libraries. See also the section Library Selection.
Select Objects		Unload only. If no library range is specified, a selection list of the available Natural objects is displayed (see also the section Object Selection).
Object Name		The name of a Natural object or a range: see (*) Name. Only evaluated if the parameter Natural Programming Objects is selected in the "Natural Library Objects, Details" screen, which is the default. See also Natural Library Objects Details.
Error Number		The range of user-defined error messages delimited by the first and the last message number. Only evaluated if the parameter Error Messages is selected in the "Natural Library Objects, Details" screen, which is the default. See also Natural Library Objects Details.
Details		Invokes the "Natural Library Objects, Details" screen so that you can enter more detailed object specifications. See Natural Library Objects Details.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings: see the section Settings.
Work File	PF11	The name of the work file to be used for the function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name. See also the section Work Files.

Below is information on:

- Natural Library Objects Details
- Natural Library Objects Properties
- Natural Library Objects Exceptions
- Natural Library Objects Exceptions Properties

Natural Library Objects Details

This function is used to specify further selection criteria for the processing of Natural library objects.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural Library Objects, Details" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Library		The name of a library or a range: see (*) Name.
Select Library	PF4	Displays a selection list of the available libraries. See also the section Library Selection.
DBID/FNR	PF5	See DBID/FNR in Natural Library Objects above.
Object Types: Natural Programming Objects		Natural programming objects including DDMs.
Object Types: Error Messages		User-defined Natural error messages.
Object Name		See Object Name in Natural Library Objects above.
S/C-Kind		<p>Kinds of Natural programming objects:</p> <p>S Source objects only.</p> <p>C Cataloged objects only.</p> <p>A All saved and/or cataloged objects. This is the default.</p> <p>*</p> <p>W All stowed objects: source and cataloged objects with identical date and time.</p> <p>B Both source and cataloged objects if both exist.</p> <p>Note: W (stowed) and B (both) are valid for the unload function only. Though W and B can also be entered for the load or scan function, they are treated like A (all objects).</p>
Natural Types		<p>Types of Natural programming objects:</p> <p>Up to 15 valid external Natural object types, such as P for program and V for DDMs.</p> <p>An asterisk (*) selects all types of Natural programming objects (this is the default).</p>
Select Natural Types	PF6	Invokes a selection window where you can specify the type of Natural programming object.
Add/Change Properties for Selection	PF7	Invokes an extra screen where you can specify additional properties of Natural programming objects: see Natural Library Objects Properties.
Error Messages: Error Number		See Error Number in Natural Library Objects above.
Language Codes		<p>Language code(s) of the error messages:</p> <p>Up to 8 valid Natural language codes.</p> <p>An asterisk (*) selects all Natural language codes.</p>

Field	PF Key	Explanation
S/L-Kind		Kind of error message text: S Short text of error message. L Long text. A All short and/or long texts. B Short and long text if both exist.
Add/Change Exception Criteria for Selection	PF8	Invokes an extra screen where you can specify exceptions to the selection of Natural programming objects: see Natural Library Objects Exceptions.

Natural Library Objects Properties

This function is used to specify additional properties for the Natural library objects selected for processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Library Objects, Properties" window provides the following fields:

Field	Explanation
User ID	The ID of the user who saved or cataloged a Natural programming object. Specify a single user ID or a range: see (*) Name.
Mode	Type of programming mode of the Natural programming objects: R Report mode only. S Structured mode only. A Any mode, structured and/or report. This is the default.
Natural Version	Natural version of the Natural programming objects. Valid version format: <i>V</i> <i>R</i> <i>S</i> <i>M</i> where <i>V</i> is the 1-digit version, <i>R</i> the 1-digit release, and <i>S</i> <i>M</i> the 2-digit system maintenance level. Ranges are allowed: see (*) Name.
DDM DBID	The database ID (DBID) of the Data Definition Modules (DDMs). Valid entries are: 1 to 65535 or 0 (all DBIDs)
DDM FNR	The file number (FNR) of the DDMs: Valid entries are: 1 to 65535 or 0 (all FNRs).
Object Date: Select all Objects (no date check)	Performs no check for the object date.

Field	Explanation
Object Date: Select Objects modified between/and	All objects whose save or catalog date and/or time is within the range specified in the fields by entering a precise start date and/or time and/or an end date and/or time. Special dates allowed are: TODAY, YESTERDAY, MONTH, YEAR. See also: (*) Date. The time must be specified in the format <i>HH:II:SS</i> (<i>HH</i> = hours, <i>II</i> = minutes, <i>SS</i> = seconds).
Object Date: Select Objects modified on	All objects whose save or catalog date and/or time fits the date/time specified in the fields by entering a precise date and/or time. Special dates allowed are: TODAY and YESTERDAY. See also: (*) Date. Valid time format: <i>HH:II:SS</i> (<i>HH</i> = hours, <i>II</i> = minutes, <i>SS</i> = seconds).
Object Size: Select all Objects (no Size check)	Performs no check for the object size.
Object Size: Select Objects with Size between/and	All objects whose size is within the range specified in the fields by entering a start size and/or an end size.
Object Size: Select Objects with Size	All objects whose size fits the size value specified in the field.

Natural Library Objects Exceptions

This function is used to specify exceptions to the selection of Natural library objects.

All objects that match the selection criteria defined in Natural Library Objects, Natural Library Objects Details and Natural Library Objects Properties are checked against the specifications made in the "Unload/Load/Scan Library Objects, Exceptions" screen. Objects that match **all** specifications defined as exceptions, are exempted from processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Library Objects, Exceptions" screen is basically identical with the "Unload/Load/Scan Natural Library Objects, Details" screen. See the relevant section for an explanation of the fields, commands and alternative PF keys listed below. The field "Add/Change Properties for Selection" is used to specify additional properties of Natural programming objects exceptions: see Natural Library Objects Exceptions Properties.

Field	PF Key
Library	PF4
Select Library	
Object Types: Natural Programming Objects	
Object Types: Error Messages	
Object Name	
S/C-Kind	
Natural Types	
Select Natural Types	PF6
Add/Change Properties for Selection	PF7
Error Number	
Language Codes	
S/L-Kind	

Natural Library Objects Exceptions Properties

This function is used to specify exceptions to additional properties of the Natural library objects selected.

The "Unload/Load/Scan Library Objects, Exceptions" screen provides the following fields, commands and alternative PF keys.

Field	Explanation
User ID	See User ID in Natural Library Objects Properties.
Programming Mode	See Programming Mode in Natural Library Objects Properties.
Natural Version	See Natural Version in Natural Library Objects Properties.
DDM DBID	See DDM DBID in Natural Library Objects Properties.
DDM FNR	See DDM FNR in Natural Library Objects Properties.
Object Date: Ignore Object Date	Performs no check for the object date.
Object Date: Exclude Objects modified between/and	Exempts from processing all objects whose save or catalog date and/or time is within the range specified in the fields by entering a precise start date and/or time and/or an end date and/or time. Special dates allowed are: TODAY, YESTERDAY, MONTH, YEAR. See also: (*) Date. The time must be specified in the format <i>HH:II:SS</i> (<i>HH</i> = hours, <i>II</i> = minutes, <i>SS</i> = seconds).
Object Date: Exclude Objects modified on	Exempts from processing all objects whose save or catalog date and/or time fits the date/time specified in the fields by entering a precise date and/or time. Special dates allowed are: TODAY and YESTERDAY. See also: (*) Date. Valid time format: <i>HH:II:SS</i> (<i>HH</i> = hours, <i>II</i> = minutes, <i>SS</i> = seconds).
Object Size: Ignore Object Size	Performs no check for the object size.
Object Size: Exclude Objects with Size between/and	Exempts from processing all objects whose size is within the range specified in the fields by entering a start size and/or an end size.
Object Size: Exclude Objects with Size	Exempts from processing all objects whose size fits the size value specified in the field.

Natural System Error Messages

This function is used to select Natural system error messages in the current FNAT file in the work file for processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural System Error Messages" screen provides the following fields, commands and alternative PF keys.

Field	PF Key	Explanation
Error Number		The range of Natural system error messages delimited by the first and the last message number.
Details	PF6	Invokes the "Unload/Load/Scan Natural Library Objects, Details" screen where you can enter more detailed object specifications: see Natural System Error Messages Details.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings. See the section Settings.
Work File	PF11	The name of the work file to be used for the function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Below is information on:

- Natural System Error Messages Details
- Natural System Error Messages Exceptions

Natural System Error Messages Details

This function is used to specify further selection criteria for the processing of Natural system error messages.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan System Error Messages, Details" screen provides the following fields and commands:

Field	PF Key	Explanation
Error Number		See Error Number in Natural System Error Messages above.
Language Codes		See Language Codes in Natural Library Objects Details.
S/L-Kind		See S/L-Kind in Natural Library Objects Details.
Add/Change Exception Criteria for Selection	PF8	Invokes an extra screen where you can specify exceptions to the selection of Natural system error messages: see Natural System Error Messages Exceptions.

Natural System Error Messages Exceptions

This function is used to specify exceptions to the selection of Natural system error messages.

All Natural system error messages that match the selection criteria defined in Natural System Error Messages and Natural System Error Messages Details are checked against the specifications made in the "Unload/Load/Scan System Error Messages, Exceptions" screen. Error messages that match **all** specifications defined as exceptions, are exempted from processing.

For an explanation of the fields provided in the exceptions screen, see Natural System Error Messages Details above.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

Natural Command Processor Sources

This function is used to select for processing Natural command processor sources (which are located in Adabas files).

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural Command Processors" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Library		The name of a Natural command processor library or a range: see (*) Name.
DBID/FNR		Unload only. The database ID (DBID) and the number of the Adabas (FNR) file where the Natural command processor sources reside. If no values are specified, the current setting of LFILE 190 is used. For details, see the Natural SYSNCP Utility documentation.
Password/Cipher		Unload only. The Adabas password and cipher code of the Adabas file where the Natural command processor sources reside.
Select Library	PF4	Invokes a selection list of the available Natural command processor libraries. See also Library Selection.
Select Objects		Unload only. If no library range has been specified and this field is selected, a selection list of the available Natural command processor sources is displayed (see also Object Selection).
Object Name		The name of a Natural command processor source or a range: see (*) Name.
Exceptions	PF8	Invokes an extra screen where you can specify exceptions to the selection of Natural command processor sources: see Natural Command Processor Sources Exceptions.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings. See the section Settings.
Work File	PF11	The name of the work file to be used for this function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Natural Command Processor Sources Exceptions

This function is used to specify exceptions to the selection of Natural command processor sources.

All objects which match the selection criteria defined in Natural Command Processor Sources are checked against the specifications made in the "Unload/Load/Scan Natural Command Processors, Exceptions" screen. Command Processor Sources that match **all** specifications defined as exceptions, are exempted from processing.

For an explanation of the fields provided in the exceptions window, see Natural Command Processor Sources above.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

Natural-related Objects

Only applies when processing data in internal format, that is, if Transfer Format has **not** been selected. See also Work File Format in the section Work Files.

This function is used to specify further selection criteria for the processing of Natural-related objects. Natural-related objects are objects that exist in a Natural environment but do not reside in Natural libraries and Adabas files.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural-related Objects" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Natural Path		The name of the path where the Natural-related object resides. Load and scan: The name of the path or asterisk (*) to select all paths. Valid values are: NATDIR, NATVERS, NATBIN, NATERR, NATSAG, PARM_PATH, PROFILE_PATH, TEXT_PATH, TMP_PATH.
Select Natural Path	PF4	Invokes a selection list of the available Natural paths.
Object Name	PF5	The name of a Natural-related object. Load and scan: A single name or a range: see (*) Name. If the name exceeds the available space, press PF5/Objct and enter a longer name.
Details	PF6	Invokes the "Natural-related Objects, Details" screen where you can enter further object specifications: see Natural-related Objects Details.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings. See the section Settings.
Work File	PF11	The name of the work file to be used for this function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Below is information on:

- Natural-related Objects Details
- Natural-related Objects Exceptions

Natural-related Objects Details

This function is used to specify further selection criteria for the processing of Natural-related objects.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural-related Objects, Details" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Natural Path		See Natural Path in Natural-related Objects above.
Select Natural Path	PF4	Invokes a selection list of the available Natural paths.
Object Name	PF5	See Object Name in Natural-related Objects above.
Object Date: Select all Objects (no date check)		Performs no check for the object date.
Object Date: Select Objects modified between/and		See Object Date in Natural Library Objects Properties.
Object Date: Select Objects modified on		See Object Date in Natural Library Objects Properties.
Object Size: Select all Objects (no size check)		Performs no check for the object size.
Object Size: Select Objects with Size between/and		All objects whose size is within the range specified in the fields by entering a start size and/or an end size.
Object Size: Select Objects with Size		All objects whose size fits the size value specified in the field.
Add/change Exception Criteria for Selection	PF8	Invokes an extra screen where you can specify exceptions to the selection of Natural-related objects: see Natural-related Objects Exceptions.

Natural-related Objects Exceptions

This function is used to specify exceptions to the selection of Natural-related objects.

All Natural-related objects that match the selection criteria defined in Natural-related Objects and Natural-related Objects Details are checked against the specifications made in the "Unload/Load/Scan Natural-related Objects, Exceptions" screen. Objects that match **all** specifications defined as exceptions, are exempted from processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan Natural-related Objects, Exceptions" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Natural Path	PF4	See Natural Path in Natural-related Objects above.
Select Natural Path		Invokes a selection list of the available Natural paths.
Object Name	PF5	See Object Name in Natural-related Objects above.
Object Date: Ignore Object Date		Performs no check for the object date.
Object Date: Exclude Objects modified between/and		See Object Date in Natural Library Objects Properties Exceptions above.
Object Date: Exclude Objects modified on		See Object Date in Natural Library Objects Properties Exceptions above.
Object Size: Ignore Object Size		Performs no check for the object size.
Object Size: Exclude Objects with Size between/and		Exempts from processing all objects whose size is within the range specified in the fields by entering a start size and/or an end size.
Object Size: Exclude Objects with Size		Exempts from processing all objects whose size fits the size value specified in the field.

External Objects

Only applies when processing data in internal format, that is, if Transfer Format has **not** been selected. See also Work File Format in the section Work Files.

This function is used to select external objects. External object are objects that reside outside Natural and Adabas environments.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan External Objects" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
External Path	PF4	The name of the path where the external object resides. Load and scan: The name of the path or asterisk (*) to select all paths. If the name exceeds the available space, press PF4/Path and enter a longer name.
Object Name	PF5	The name of an external object. Load and scan: A single name or a range: see (*) Name. If the name exceeds the available space, press PF5/Objct and enter a longer name.
Details	PF6	Invokes the "Unload/Load/Scan External Objects, Details" screen where you can enter further object specifications: see External Objects Details.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameters setting. See the section Settings.
Work File	PF11	The name of the work file to be used for this function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Below is information on:

- External Objects Details
- External Objects Exceptions

External Objects Details

This function is used to specify further selection criteria for the processing of external objects.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan External Objects, Details" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
External Path	PF4	See External Path in External Objects above.
Object Name	PF5	See Object Name in External Objects above.
Object Date: Select all Objects (no date check)		Performs no check for the object date.
Object Date: Select Objects modified between/and		See Object Date in Natural Library Objects Properties.
Object Date: Select Objects modified on		See Object Date in Natural Library Objects Properties.
Object Size: Select all Objects (no size check)		Performs no check for the object size.
Object Size: Select Objects with Size between/and		See Object Size in Natural Library Objects Properties.
Object Size: Select Objects with Size		All objects whose size fits the size value specified in the field.
Add/change Exception Criteria for Selection	PF8	Invokes an extra screen where you can specify exceptions to the selection of external objects: see External objects Exceptions.

External Objects Exceptions

This function is used to specify exceptions to the selection of external objects.

All external objects that match the selection criteria defined in External Objects and External Objects Details are checked against the specifications made in the "Unload/Load/Scan External Objects, Exceptions" screen. Objects that match **all** specifications defined as exceptions, are exempted from processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan External Objects, Exceptions" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
External Path	PF4	See External Path in External Objects above.
Object Name	PF5	See Object Name in External Objects above.
Object Date: Ignore Object Date		Performs no check for the object date.
Object Date: Exclude Objects modified between/and		See Object Date in Natural Library Objects Properties Exceptions.
Object Date: Exclude Objects modified on		See Object Date in Natural Library Objects Properties Exceptions.
Object Size: Ignore Object Size		Performs no check for the object size.
Object Size: Exclude Objects with Size between/and		Exempts from processing all objects whose size is within the range specified in the fields by entering a start size and/or an end size.
Object Size: Exclude Objects with Size		Exempts from processing all objects whose size fits the size value specified in the field.

FDTs

This function is used to select Adabas FDTs (Field Description Tables) for processing.

For a description of keywords and valid values, see also Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.

The "Unload/Load/Scan FDTs" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
DBID		The database ID (DBID) of the FDT(s) to be processed. Load and scan: A DBID or 0 for all DBIDs.
FNR		The file number (FNR) of the FDT(s) to be processed. Load and scan: A FNR or 0 for all FDTs.
Password/Cipher		Unload and load only. The Adabas password and the cipher code for the Adabas file of the FDT to be processed.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings. See the section Settings.
Work File	PF11	The name of the work file to be used for this function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Use SELECTION or LIST Workplan

This function is used to define a workplan of the type SELECTION or LIST which specifies selection criteria for the objects to be processed. See also the section Workplans.

The "Unload/Load/Scan SELECTION or LIST" screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Name	PF4	The name of the workplan to be processed.
List Workplan		Displays the contents of the workplan specified in the Name field.
Select Workplan	PF5	Displays a list of available workplans. See also List Workplan in the section Administration.
Settings	PF7	Invokes the Unload/Load/Scan Settings screen where you can specify option and parameter settings. See the section Settings.
Work File	PF11	The name of the work file to be used for this function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name.

Settings

With the Settings function, you can specify option settings for the unload, load or scan function and parameter settings for the unload or load function.

*The cross-references in the tables below regarding the name, date and time parameters refer to the section Name, Date and Time Specification.

To invoke the Settings screen

- From any of the unload, load or scan screens, enter the internal command SETTINGS (see also Commands for CUIs).
Or, activate the Advanced-User mode, choose a function and press ENTER to start the processing procedure.
Or, in the Advanced User screens, press PF5/Setti.

Unless selected by default, to activate the options provided with the Settings screen described below, mark the corresponding input field with any single character.

This section covers the following topics:

- Settings Screen Fields
- Set Additional Options
- Set Global Parameters

Settings Screen Fields

The Settings screen provides the following fields, commands and alternative PF keys:

Field	PF Key	Explanation
Transfer Format		<p>Only valid if Use Default Options (this is the default) has been selected.</p> <p>If selected, the data to be processed is written in Transfer format to/from the work file. See also Work File Format in the section Work Files.</p> <p>Unload function: The data to be unloaded are written in Transfer format to the work file. Note that if you want to change the setting of this field for a subsequent unload, you need to return to the Object Handler main screen or enter the command GO UNLOAD END (see Commands for CUIs) and restart the unload function.</p> <p>Load and scan functions: The data to be loaded or scanned are expected to be in Transfer format.</p>
Portable Work File		<p>Only valid:</p> <ul style="list-style-type: none"> ● If Use Default Options (this is the default) has been selected. ● If Transfer Format has not been selected. <p>If Portable Work File has been selected, the work file is written or read in portable format. See also Work File Type in the section Define Work File in the Natural Statements documentation.</p>

Field	PF Key	Explanation
Work File	PF11	Only valid if Use Default Options (this is the default) has been selected. The name of the work file to be used for the function. If the name exceeds the available space, press PF11/WorkF and enter a longer work file name. See also the section Work Files.
Use Default Options		Default options are used by default: see SYSOBJH Profile and Set Additional Options below.
Set Additional Options	PF4	Only valid if Use Default Options has been selected. Invokes the Options screen where you can modify the default settings and enter additional options for the processing sequence. See also Set Additional Options below.
Use OPTION Workplan		A workplan of the type OPTION is used. See also Workplans.
Name (next to Use OPTION Workplan)		Only valid if Use OPTION Workplan has been selected. The name of a workplan of the type OPTION to be used.
List OPTION Workplan	PF6	Only valid if Use OPTION Workplan has been selected. Displays the contents of the workplan specified in the field Name next to Use OPTION Workplan.
Select OPTION Workplan	PF5	Only valid if Use OPTION Workplan has been selected. Displays a selection list of the available workplans of the type OPTION (see also List Workplan in the section Administration).
Do not use Parameters		No parameters are used by default.
Use global Parameters		Global parameters are used. See Set Global Parameters below.
Set Global Parameters	PF7	Only valid if Use Global Parameters has been selected. Invokes the global parameters screen. See Set Global Parameters and Parameter-Setting (Direct and PROCEDURE Workplan Syntax, Commands) for a description of the keywords and the valid values.
Use PARAMETER Workplan		A workplan of the type PARAMETER is used. See also Workplans.
Name (next to Use PARAMETER Workplan)		Only valid if Use PARAMETER Workplan has been selected. The name of a workplan of the type PARAMETER to be used.
List PARAMETER Workplan	PF9	Only valid if Use PARAMETER Workplan has been selected. Displays the contents of the workplan specified in the field Name next to Use PARAMETER Workplan.

Field	PF Key	Explanation
Select PARAMETER Workplan		Only valid if Use PARAMETER Workplan has been selected. Displays a selection list of the available workplans of the type PARAMETER. See also List Workplan in the section Administration.

Set Additional Options

The sections contained in the Options screen are listed below. Note that not all of the sections may appear on the screen, because they depend on the function used, the settings defined and the products installed.

- Work File Options
- XREF Options
- Transfer Options
- Replace Options
- Number to Process
- FDIC Setting
- FSEC Setting

For a description of the keywords and the valid values, see also Option-Setting in the section Direct and PROCEDURE Workplan Syntax, Commands.

Work File Options

The following data can be entered in the fields of the section Work File Options:

Field	Explanation
Work File	The work file used for the unload, load or scan function. See also the section Work Files.
Write Report	Writes a report of the objects processed to Work File 4. To display the report, enter the internal command SHOW REPORT FILE (see also the section Commands for CUIs).
Start New Report	Only valid if Write Report has been selected. Deletes the contents of Work File 4 before a new report is written. Otherwise, a new report is appended to the existing one.
Report File	Only valid if Write Report has been selected. The name of the report file. If the work file name exceeds the available space, press PF4/WorkF or PF1 (Help) for this field and enter a longer name.
Write Restart Information	Applies to the load function only. With this option you can resume load functions that terminated abnormally. The selection criteria, the option, the parameter settings and the objects already processed are written as restart information to Work File 6 (see Restart File below). If the load function terminates before the work file has been processed completely, with the restart function you can continue from the point of termination. To invoke the restart function, enter the internal command GO RESTART (see also the section Commands for CUIs).
Restart File	Only applies to the load function and if Write Restart Information has been selected. The name of the work file to be used for the restart data: Work File 6 (default) or the <i>file-name</i> specified. If the name exceeds the available space, press PF5/RepoF or PF1 (Help) for this field and enter a longer work file name.

XREF Options

The XREF Options are only available when unloading or loading processing data in internal format, that is, if the field Transfer Format has **not** been selected. To process XREF data, Predict must be installed.

The available XREF options depend on the function selected:

Field	Explanation	Function
Yes (unload/load XREF data)	Unloads cataloged objects and their cross-reference data, if any. Loads cataloged objects and their cross-reference data if cross references exist on the work file.	Unload Load
No (ignore XREF data)	No XREF data are processed.	Unload Load
Force	Loads cataloged objects and their cross-reference data only if cross-references exist on the workfile and if Predict entries exist for the objects in the FDIC system file.	Load
Doc	Loads cataloged objects only if Predict entries exist for the objects in the FDIC system file.	Load
Special	Loads cataloged objects and their cross-reference data (if any).	Load

Transfer Options

The Transfer Options are only available when processing data in Transfer format, that is, if the field Transfer Format has been selected.

The Transfer Options depend on the function selected:

Option	Explanation	Function
Substitute Line References	Only applies if source-code line numbers are used for statement references. If line numbers are used as references in the source code, the line numbers of referenced lines and the line number references are replaced with labels. The sources are not modified in the database.	Unload
Include Line Numbers	By default, line numbers in Natural objects are not transferred. If you choose this option, line numbers in Natural will be transferred.	Unload
Incorporate Free Rules	If Predict is installed, Predict rules associated with the map are incorporated into the map source.	Unload
Use Conversion Table	Unload: Converts data into EBCDIC format using the internal Natural conversion table (System Table) or a conversion table defined by the user (User Table). Load: Converts data into ASCII format using the internal Natural conversion table (System Table) or a conversion table defined by the user (User Table). Note that this only applies if the data in the work file are in EBCDIC format or if a conversion program is specified (see User Table).	Unload Load
System Table	Only valid if Use Conversion Table has been selected. Unload: Converts data into EBCDIC format using the internal Natural conversion table. Load: Converts data into ASCII format using the internal Natural conversion table.	Unload Load
User Table	Only valid if Use Conversion Table has been selected. If the name of a conversion program has been entered in the field, data is converted into EBCDIC format using the conversion program defined. To specify an individual conversion program, the program must be located in the library SYSOBJH or one of its steplib. See the example OTNCONAE in the library SYSOBJH. If no conversion program is specified, by default, the corresponding conversion table in the Natural file NATCONV.INI is used for the unload ([ISO8859_1->EBCDIC]) and the load ([EBCDIC->ISO8859_1]) function.	Unload Load
Translate to Upper Case	Any source code to be loaded is translated to upper case.	Load

Replace Options

The Replace Options below only apply to the load function:

Do not replace	Does not replace any objects. This is the default.
Replace all	Replaces all objects.
Replace obsolete	Replaces objects with a date older than the date of the object in the load file.
Replace except newer	Replaces all objects except those with a date newer than the date of the object in the load file.

Number to Process

Applies to the load and scan functions only.

In the field "Number to Process", enter a numeric value with a maximum of 5 digits.

If a value greater than 0 is specified, the load or scan function stops after the specified number of object was processed from the work file.

Note:

If a cataloged Natural object is processed directly after the source object of the same name, they are counted as one object.

FDIC Setting

Only applies if Predict is installed.

With the FDIC Setting option, you specify the Predict file (FDIC) used to process XREF data:

DBID	The DBID of the FDIC file to be used.
FNR	The FNR of the FDIC file to be used.
Password	Optional. The Adabas password for the Adabas file of the FDIC file to be used.
Cipher	Optional. The cipher code for the Adabas file of the FDIC file to be used.

FSEC Setting

Only applies if Natural Security is installed.

With the FSEC Setting option, you specify the Natural Security data file (FSEC) used for security checks:

DBID	The DBID of the FSEC file to be used.
FNR	The FNR of the FSEC file to be used.
Password	Optional. The Adabas password for the Adabas file of the FSEC file to be used.
Cipher	Optional. The cipher code for the Adabas file of the FSEC file to be used.

Set Global Parameters

Not applicable to the scan function.

The global parameters are used to change object parameters during the load or unload function, and to change the target environment during the load function.

If they are specified during the unload function, the parameter settings affect the objects before they are written to the work file. If they are specified during the load function, the parameter settings affect the objects before they are written to the target environment.

The parameters consist of the Check Value and the New Value, except for "Error Number Difference" and "System Files for Load". If no Check Value is specified, the New Value applies to all objects which have this attribute. For example: Natural system error messages have no library name. Therefore, the value in the field New Value is ignored.

For valid values, see also Parameter-Setting in the section Direct and PROCEDURE Workplan Syntax, Commands.

The following data can be specified for the load and the unload functions:

Field	Explanation
Object name	Check Value: A single object name or a range: see (*) Name. New Value: A single object name or a range: see (*) Name. See also Rules for New Values below.
Library	Check Value: A single library name or a range: see (*) Name. New Value: A single library name or a range: see (*) Name. See also Rules for New Values below.
Date	Check Value: A single date or a range: see (*) Date and (*) Time. New Value: A single date or a range: see (*) Date and (*) Time. See also Rules for New Values below.
Time	Check Value: A time. New Value: A time.
User ID	Check Value: A single user ID or a range: see (*) Name. New Value: A single user ID or a range: see (*) Name. See also Rules for New Values below.

Field	Explanation
Lang. Codes	<p>Check Value: Up to 8 language codes.</p> <p>New Value: Up to 8 language codes.</p> <p>If more than 1 language code is specified, the Check Value must contain the same number of language codes.</p> <p>In this case, the language code in Check Value is replaced by the language code in the corresponding New Value.</p>
Error Number Difference	<p>A 4-digit positive or negative numerical value.</p> <p>It can only be specified if start and end values are entered as selection criteria (Error Number From/To). Otherwise, it is not possible to check if the result is valid (valid range: 1 to 9999).</p>
FDT DBID/FNR	<p>Check Value: A valid DBID and/or FNR.</p> <p>New Value: A valid DBID and/or FNR.</p>
Ext. Path	<p>Check Value: The name of the path for external objects or a range: see (*) Name.</p> <p>New Value: The name of the path for external objects: see (*) Name.</p> <p>See also Rules for New Values below.</p>

The following data can be specified for the load function only:

Field	Explanation
Load FNAT DBID/FNR	<p>Database ID (DBID) and file number (FNR) of the target FNAT system file.</p> <p>This system file is used for all library objects whose library name starts with SYS, but not SYSTEM.</p>
Load FUSER DBID/FNR	<p>DBID and FNR of the target FUSER system file.</p> <p>This system file is used for all library objects whose library name does not start with SYS, and for the library SYSTEM.</p>
Load NCP DBID/FNR Password Cipher	<p>Specifies the target DBID and FNR of the Adabas file to which the Natural command processor sources are to be loaded. Additionally, you can specify the Adabas password and cipher code.</p>

Rules for New Values

The following applies to the New Value for Object Name, Library, User ID, Ext. Path and Date:

If the New Value contains a range with an asterisk (*), such as ABC*, the number of characters before the asterisk (*) determines the number of characters to be replaced in Check Value. This is also valid if Check Value is shorter than the range specified in New Value (see Example 2 below).

Examples:

1. Object name is ABCDEFG and New Value is set to ZYX* the resulting object name is ZYXDEFG.
2. Object name is AB and New Value is set to ZYX* the resulting object name is ZYX.
3. Object date is 2000-03-26 and New Value is set to 2001* the resulting object date is 2001-03-26.

Workplans

Workplans are used to define individual standard procedures to further automate the load and unload process. Workplans are Natural objects of the type Text. They are, by default, stored in the library WORKPLAN located in the current FUSER system file.

With the Administration function (see the relevant section) or Object Handler direct commands (see Direct and PROCEDURE Workplan Commands), you can create and select workplans or change the default library for workplans.

To change the default library, you may also use the SYSOBJH profile by setting the option Workplan-Library (see SYSOBJH Profile).

The types of workplans are explained below. The commands that apply to each workplan and the clauses used are explained in Direct and PROCEDURE Workplan Syntax (see the section Commands):

Workplan	Contents
SELECTION	Select-Clause
LIST	Object List
PARAMETER	Parameter-Setting
PROCEDURE	Object Handler procedure
TEXT	Commentary text

Below is information on:

- Types of Workplans
- Referencing Workplans
- Workplan Examples
- Columns and Commands

Types of Workplans

A workplan consists of a header and the corresponding information. In addition, comments and comment lines (identified by "/*") can be inserted. The header identifies the type of workplan and may contain a comment line with the short description of the workplan.

There are six types of workplans which are explained below: PROCEDURE, SELECTION, LIST, PARAMETER, OPTION and TEXT.

Header	Contents
TYPE PROCEDURE	A sequence of fully-specified commands separated by semicolons (;). The Object Handler can be started in batch mode to perform the PROCEDURE. It may contain any combination of Object Handler commands available for PROCEDURE. See also Direct and Procedure Workplan Commands (section Commands).
TYPE SELECTION	A selection criterion for objects. It can be used in Object Handler workplan commands as described in Select-Clause in the section Direct and PROCEDURE Workplan Syntax, Commands.
TYPE LIST	A list of objects. It can be used in used in Object Handler workplan commands as described in Object List in the section Direct and PROCEDURE Workplan Syntax, Commands.
TYPE PARAMETER	LOAD or UNLOAD parameters, for example, old and new name. It can be used in Object Handler workplan commands as described in Parameter-Setting in the section Direct and PROCEDURE Workplan Syntax, Commands.
TYPE OPTION	LOAD or UNLOAD options, for example, report settings. It can be used in Object Handler workplan commands as described in Option-Setting in the section Direct and PROCEDURE Workplan Syntax, Commands.
TYPE TEXT	Any commentary text that can be used for documentation.

Referencing Workplans

Whenever an Object Handler workplan is referenced, the following syntax applies:

```

(workplan-name
  [LIBRARY library-name]
  [DBID dbid [FNR fnr] ] [NAME vsam-name]
  [CIPHER cipher]
  [ { PASSWORD
      PSW } password ]
)

```

Description of the keywords and the valid values for the single items:

Keyword	Values	Default Value
<i>workplan-name</i>	A valid Natural object name.	No default
LIBRARY	A valid Natural library name where the workplan is located.	WORKPLAN
DBID	A valid DBID.	0 (current FNAT/FUSER)
FNR	A valid FNR.	0 (current FNAT/FUSER)
NAME	Only applies to objects on mainframes. A valid VSAM name.	blank (current FNAT/FUSER)
CIPHER	Only applies to objects on mainframes. An 8-digit cipher code.	blank (current FNAT/FUSER)
PASSWORD	Only applies to objects on mainframes. An 8-character Adabas password.	blank (current FNAT/FUSER)

Workplan Examples

The following table contains examples for the contents of work files.

For details, see the corresponding topics in the section Commands:

- Direct and PROCEDURE Workplan Commands,
- Select-Clause, Direct and PROCEDURE Workplan Syntax,
- Parameter-Setting, Direct and PROCEDURE Workplan Syntax,
- Option-Setting, Direct and PROCEDURE Workplan Syntax.

Type	Example	Explanation
PROCEDURE	FINDLIB * LIB TEST	Check for existence of library TEST.
PROCEDURE	UNLOAD A* LIB TEST	Unload from library TEST into Work File 1 all Natural programming objects starting with A, and all user-defined error messages; write the report into Work File 4.
SELECTION	* LIB TEST	Process all objects from library TEST.
TEXT	A text member may contain any text, comment, etc.	Text members are used for documentation purpose or comments.

Columns and Commands

The List Workplans screen of the Administration function (see the relevant section) provides the following columns and commands:

Column	PF Key	Explanation
Cmd		<p>The following line commands can be entered in the input field next to the workplan desired:</p> <p>C Only applies to workplans of the types PROCEDURE, SELECTION, PARAMETER and OPTION.</p> <p>CH Checks the syntax.</p> <p>DE Deletes the workplan.</p> <p>ED Edits the workplan.</p> <p>EX Executes the workplan. Only applies to workplans of the type PROCEDURE.</p> <p>L Lists the workplan.</p> <p>LI</p> <p>S Selects the workplan.</p> <p>SE</p>
Name		Lists all Natural objects of the type Text and provides the option to enter a range of object names in the input fields of the first row: see also (*) Name.
Type		<p>The type(s) of the workplans. Valid entries are:</p> <p>PROCEDURE or P</p> <p>SELECTION or S</p> <p>LIST or L</p> <p>PARAMETER or A</p> <p>OPTION or O</p> <p>TEXT or T</p> <p>or any combination of the short types, for example, SL.</p>
Description		Description range of the workplans listed: see (*) Name.
User ID		<p>Only displayed with PF5.</p> <p>The ID of the user who created the workplan. Specify a single user ID or a range: see also (*) Name.</p>
Date		<p>Only displayed with PF5.</p> <p>A date or a range: see (*) Date.</p>
Time		<p>Only displayed with PF5.</p> <p>A time or a range: (*) Time.</p>
	PF4	Switches from the additional information (PF5) to the standard display.
	PF5	Displays additional information: user ID, date and time (see the relevant explanation above).

Column	PF Key	Explanation
	PF6	Moves to the top of the list.
	PF7	Returns to the previous page.
	PF8	Goes to the next page.
	PF9	Moves to the bottom of the list.

* The cross-reference in the table above regarding the name, date and time parameters refer to the section Name, Date and Time Specification.

Name, Date and Time Specification

You can use a name, a date, a time or a range of names, dates and times to select Natural library objects, system messages, command processor sources, FDTs and Natural-related objects.

Below is information on the specification options provided for:

- Name
- Date
- Time

Name

You can specify a name or a range of names.

In the list of options below, *value* is any combination of one or more characters:

	Input	Selected Items
	<i>value</i>	A single item.
	*	All items.
	>	
	?	All items with any single character for each question mark (?) entered.
Leading Characters	<i>value</i> *	All items whose names begin with <i>value</i> . Example: AB* Selected: AB, AB1, ABC, ABEZ Not selected: AA1, ACB
Wildcard	<i>value</i> ?	All items whose names begin with <i>value</i> and end with any single character for each question mark (?) entered. Example: ABC? Selected: ABCA, ABCZ Not selected: AXC, ABCAA
	<i>value</i> ? <i>value</i> ?	Asterisks (*) and question marks (?) can be combined in any order.
	<i>value</i> * <i>value</i> ?	Example: A?C*Z Selected: ABCZ, AXCBBBZ, ANCZ Not selected: ABDEZ, AXCBBBZA
	* <i>value</i> ? <i>value</i> *	
Start Value	<i>value</i> >	All items whose names are greater than or equal to <i>value</i> . Example: AB> Selected: AB, AB1, BBB, ZZZZZZ Not selected: AA1, AAB
End Value	<i>value</i> <	All items whose names are less than or equal to <i>value</i> . Example: AX< Selected: AB, AWW, AX Not selected: AXA, AY

Note:

The parameter specification option New Value only allows leading characters (asterisk (*) notation). See Rules for New Values in Set Global Parameters (Settings).

Date

All date values within the Object Handler are specified in international date format.

You can specify a date, a range of dates, a special date or a range of special dates. A date must be specified in the format *YYYY-MM-DD* (*YYYY* = year, *MM* = month, *DD* = day).

In the list of options below, *value* is any combination of one or more numbers:

	Input Value	Specification
Date	YYYY-MM-DD	Precise date. Example: 2001-02-15
Leading characters	value*	All items whose dates begin with <i>value</i> . Example: 2001* Selected: 2001-01-01, 2001-12-31 Not selected: 2000-12-31, 2002-01-01
Start value	value>	All items whose dates are greater than <i>value</i> . Example: 2001-05> Selected: 2001-05-01, 2001-12-31, 2002-01-01, 2002-12-31 Not selected: 2001-04-31, 2000-12-31 Special dates can be used as <i>value</i> .
End value	value<	All items whose dates are less than <i>value</i> . Example: 2001-02< Selected: 2000-05-01, 2000-12-31, 2001-01-01, 2001-01-31 Not selected: 2001-02-01, 2001-05-18 Special dates can be used as <i>value</i> .
Special Dates		
<u>TODAY</u> (+/- <i>nnnn</i>)		The date of the current day. The day can be followed by +<i>nnnn</i> or -<i>nnnn</i> where <i>nnnn</i> is the maximum of 4 numeric digits. The resulting date is computed as the date of the current day plus or minus <i>nnnn</i> days. Example: current date is 2001-03-01 TODAY +5 results in 2001-03-06
<u>YESTERDAY</u>		The date of the day before the current day.
<u>MONTH</u>		The date range of the current month. FMDATE: Starts with the first day of the current month. TODATE: Ends with the last day of the current month. If the values of FMDATE and TODATE are identical, the selection is restricted to one day.
<u>YEAR</u>		The date range of the current year. FMDATE: Starts with the first day of the current year. TODATE: Ends with the last day of the current year. If the values of FMDATE and TODATE are identical, the selection is restricted to one year.

Note:

The parameter specification option New Value only allows leading characters (asterisk (*) notation). See Rules for New Values in Set Global Parameters (Settings).

Time

You can specify a time or a range of time. The time must be specified in the format *HH:II:SS* (*HH* = hours, *II* = minutes, *SS* = seconds).

In the list of options below, *value* is any combination of one or more numbers:

	Input Value	Selection
Time	<i>HH:II:SS</i>	Precise Time. Example: 14:15:16
Leading characters	<i>value</i> *	All items for the time frame indicated by the <i>value</i> before the asterisk are selected. Example: 13:* Selected: 13:00:00, 13:10:53, 13:59:59 Not selected: 12:59:59, 14:00:00

Work Files

This section describes work files and valid formats that apply to the unload, load and scan functions of the Object Handler.

See also Work File Options in the section Settings.

Note:

Whenever you enter a work file name that exceeds the available space, press PF11 or PF1 (Help) for this field to enter a longer work file name.

Below is information on:

- Work File Assignment
- Work File Format

Work File Assignment

File	Explanation
Work File 1	Used for the unload, load and scan functions. Contains the data unloaded.
Work File 3	Internal report file.
Work File 4	Report file. Used when the option Write Report is set.
Work File 5	Target file for the FDTs loaded.
Work File 6	Applies to the load function only. Restart information file. Used when the option Write Restart Information (see the section Settings) is set.
Work File 7	Internal work file.
Work File 9	Internal work file.
Work File 10	Trace work file. Used when the trace mode is set. See SET TRACE WORK in the section Commands for CUIs.

Work File Format

There are two file formats for unloading objects in the source environment into work files and for loading them from work files into the target environment: an internal format and the Transfer Format. To transfer binary data, the work files must be of internal format. To transfer text data, the work files must be of Transfer Format.

Below is information on:

- Internal Format
- Transfer Format

Internal Format

This format enables you to transfer Natural sources and cataloged objects, error messages, command processors, Adabas FDTs and non-Natural objects from one environment to another. To achieve this, the Object Handler uses the internal format, an internal record layout for the work files.

With the internal format activated, Natural objects are read from the source environment and written to a Natural work file using the Unload function of the Object Handler. This work file can be transported to another environment with standard file transfer services. In the target environment, the objects can then be read from the work file and loaded into the local file or database system with the Load function of the Object Handler.

To transfer objects between identical platforms, use work files of internal format. Use portable work files of internal format if you want to transport objects between different Open Systems platforms (UNIX, OpenVMS or Windows), for example, from a little-endian machine to a big-endian machine. See also Portable Work File in the sections Settings, Portable Natural Generated Programs (Natural Programming Guide) and DEFINE WORK FILE (Natural Statements documentation).

The Object Handler uses internal format by default. Using the internal format (Transfer Format unchecked), Work File 1 must be of binary format. To achieve this, omit the file extension or use the file extension ".sag".

Note:

Work files created by the utility NATUNLD must be processed with the internal format. Work files created by the Object Handler in internal format can be processed with the utility NATLOAD. However, this only applies to objects which can be transferred with NATUNLD or NATLOAD: Natural programming objects, DDMs and Natural error messages. Other objects are ignored. The work files must be created on a server of the same platform where NATUNLD or NATLOAD is applied. See also NATUNLD/NATLOAD Utilities.

Transfer Format

See also Transfer Format in the section Settings.

This format allows you to transfer the sources of Natural objects, Natural command processors, error messages and Adabas FDTs from one hardware platform to another. To achieve this, the Object Handler uses the Transfer Format, a general record layout for work files containing load or unload data. The Transfer Format is independent of any hardware platforms.

With the option Transfer Format set, the Unload function of the Object Handler reads Natural objects from a hardware platform and then restructures them.

Formatted records are written to a Natural work file which can be transported to another platform with standard file transfer services. On the target platform, the Load function of the Object Handler then reads the objects from the work file and loads them into the local file or database system. The objects read from the work file are restructured according to the structure of the new hardware platform.

Use work files of Transfer Format to transfer Natural objects between mainframe and Open System platforms (UNIX, OpenVMS or Windows).

If Transfer Format is specified (option Transfer Format set), Work File 1 must be of text (ASCII) format. To achieve this, a file extension must be used, but not the file extension ".sag".

Note:

Use Transfer Format to process work files created by the utility SYTRANS (see the relevant section). Work files created by the Object Handler in Transfer Format can be processed with the utility SYSTRANS on all platforms.

Commands - Overview

The Natural Object Handler provides commands to directly execute the unload, load and scan functions, maintain workplans, define special settings and navigate between the screens.

This section provides information on the available commands and command syntax:

- Direct and PROCEDURE Workplan Commands
- Direct and PROCEDURE Workplan Syntax
- Object Handler Commands for CUIs

Direct and PROCEDURE Workplan Commands

Below are the Object Handler commands provided to maintain workplans of the type PROCEDURE. See Direct and PROCEDURE Workplan Syntax for an explanation of the Natural Object Handler clauses mentioned below.

DIRECT

The DIRECT clause may contain any of the commands used with the NATLOAD, NATUNLD and SYSTRANS utilities. If you specify more than one direct command, enter a semicolon (;) between the commands to separate them from one another.

EXECUTE (*procedure-workplan*)

Executes a workplan of the type PROCEDURE.

UNLOAD *select-clause* [*parameter-setting*] [*option-setting*]

Unloads the objects defined in the Select-Clause with the parameters defined in Parameter-Setting with the options defined in Option-Setting.

LOAD *select-clause* [*parameter-setting*] [*option-setting*]

Loads the objects defined in the Select-Clause with the parameters defined in Parameter-Setting with the options defined in Option-Setting.

LOADALL [*parameter-setting*] [*option-setting*]

Loads all objects from the work file with the parameters defined in Parameter-Setting with the options defined in Option-Setting.

SCAN *select-clause* [*option-setting*]

Scans the work file for the objects defined in the Select-Clause with the parameters defined in Parameter-Setting with the options defined in Option-Setting.

SCANALL [*option-setting*]

Scans the work file for all objects with the parameters defined in Parameter-Setting with the options defined in Option-Setting.

DELETE *select-clause* [*option-setting*]

Deletes the objects defined in the Select-Clause with the options defined in Option-Setting.

Restrictions:

Delete FDT is not possible.

FIND *select-clause* [*option-setting*]

Finds the objects defined in the Select-Clause and writes them into Work File 3 or into the file name specified. In addition, a report of the objects found can be written into Work File 4 or another report file specified.

FINDLIB *select-clause* [*option-setting*]

Finds the libraries for Natural objects or Natural command processor sources defined in the Select-Clause and writes them into Work File 3 or to the file name specified. In addition, a report of the objects found can be written into Work File 4 or another report file specified.

RESTART [*file-name*]

Continues an interrupted load function. This is only possible if information was written into a restart file during the aborted load. Restart load information may be written to Work File 6 (*file-name*). See also RESTART under OPTION-Clause in Option-Setting (Direct and PROCEDURE Workplan Syntax, Commands).

Direct and PROCEDURE Workplan Syntax

In the diagrams which describe the syntax of Natural Object Handler clauses, several symbols are used. These symbols are explained in the section System Command Syntax in the Natural Command Reference documentation.

Depending on the type of workplan (see the relevant section in Workplans), the following clauses apply:

The SELECTION workplan contains the Select-Clause,
LIST contains Object List,
PARAMETER contains Parameter-Setting and
PROCEDURE contains an Object Handler procedure.
The TEXT workplan only contains commentary text.

Note:

The notation "see (*)" in the tables in this section regarding the name, date and time parameters refers to the section Name, Date and Time Specification.

This section covers the following topics:

- Select-Clause
- Object List
- Parameter-Setting
- Option-Setting

Select-Clause

The Select-Clause consists of one of the following:

- SELECTION Workplan
- Natural Object Selection
- Natural-related Object Selection
- Natural System Error Selection
- Natural Command Processor Selection
- External Object Selection
- FDT Selection

Natural DDM Selection:

For selecting Natural DDMs, the same syntax applies as described for Natural Object Selection.

SELECTION Workplan

A workplan of the type SELECTION contains the selection of one of the following: Natural objects, Natural-related objects, Natural system error messages, Natural command processors, external objects, FDTs or an object list, as described in the relevant section. An object list can be used for the FIND and UNLOAD commands only.

Natural Object Selection

Command Syntax

object-name

LIBRARY *library-name*

[DBID *dbid* FNR *fnr* [NAME *vsam-name*] [CIPHER *cipher*] [{ PASSWORD PSW } *password*]]

[OBJTYPE *resource-type*]

[NATTYPE *object-type*]

[SCKIND *object-kind*]

[MODE *object-mode*]

[FMNUM *error-number-from*]

[TONUM *error-number-to*]

[SLKIND *message-type*]

[LANGUAGE *languages*]

[DDMDBID *dsm-dbid*] [DDMFNR *dsm-fnr*]

[NATVERS *natural-version*]

[{ DATE *date* }]

[{ [FMDATE *date-from*] [TODATE *date-to*] }]

[{ [SIZE *size*] }]

[{ [FMSIZE *size-from*] [TOSIZE *size-to*] }]

[USERID *user-id*]

[TID *terminal-id*]

[EXCEPT- Clause]

EXCEPT-Clause

```

EXCEPT
(object-name
  [LIBRARY library-name ]
  [OBJTYPE resource-type ]
  [SCKIND object-kind ]
  [NATTYPE object-type ]
  [MODE object-mode ]
  [SLKIND message-type ]
  [FMNUM error-number-from ] [TONUM error-number-to ]
  [DDMDBID dsm-dbid ] [DDMFNR dsm-fnr ]
  [NATVERS natural-version ]
  [ { DATE date
    [ FMDATE date-from ] [ TODATE date-to ] } ]
  [ { SIZE size
    [ FMSIZE size-from ] [ TOSIZE size-to ] } ]
  [USERID user-id ]
  [TID terminal-id ]
)
    
```

Note:

For the command FINDLIB only the following items are processed: LIBRARY, DBID, FNR, NAME, CIPHER and PASSWORD/PSW.

Keyword Explanation - Natural Object Selection

Below is a description of the keywords and the valid values for the objects to be processed:

Keyword	Values	Default Value
<i>object-name</i>	A valid Natural object name or a range of names. If <i>object-name</i> contains blank characters, it must be enclosed in quotation marks (" "). (* See also Name.	none
<u>LIBRARY</u>	A valid Natural library name or a range of names. If OBJTYPE= D (see below), the library name is ignored. (* See also Name.	none
DBID	Not valid for DDMs on mainframes (OBJTYPE D - see below). A valid DBID.	0 (current FNAT/FUSER)

Keyword	Values	Default Value
FNR	Not valid for DDMs on mainframes (OBJTYPE D - see below). A valid FNR.	0 (current FNAT/FUSER)
NAME	Only applies to objects on mainframes. Not valid for DDMs on mainframes (OBJTYPE D - see below). A valid VSAM name.	blank (current FNAT/FUSER)
CIPHER	Only applies to objects on mainframes. Not valid for DDMs on mainframes (OBJTYPE D - see below). The 8-digit cipher code of the Adabas file where the objects are located.	blank (current FNAT/FUSER)
PASSWORD	Only applies to objects on mainframes.	blank (current FNAT/FUSER)
PSW	An 8-character Adabas password.	
<u>OBJTYPE</u>	Types of objects are: <ul style="list-style-type: none"> N Natural programming objects E Natural error messages D DDMs (objects on mainframes only) * Asterisk (all) or any valid combination.	*
<u>NATTYPE</u>	Up to 15 valid Natural object types, such as P for program and V for DDMs. Asterisk (*) = all	*
<u>SCKIND</u>	Not applicable if OBJTYPE=D (see above). Kind of Natural programming objects: <ul style="list-style-type: none"> S Source objects. If used in the EXCEPT clause: objects that exist in source form only. C Cataloged objects. If used in the EXCEPT clause: objects that exist in cataloged form only. A All saved and cataloged objects. W Source and cataloged objects if both have the same date and time (stowed). B Source and cataloged objects if both exist. Note: W (stowed) and B (both) are valid for the UNLOAD and FIND commands only. For LOAD and SCAN, W and B are valid entries, but they are treated like A (all objects). If data are processed in Transfer format, only S (source objects) and A applies.	A

Keyword	Values	Default Value
MODE	Not applicable if OBJTYPE=D (see above). The type of programming mode of the Natural programming objects: R All objects in report mode. S All objects in structured mode. A Any.	A
FMNUM	The start number of the Natural error messages. Valid range: 1 to 9999.	1
TONUM	The end number of the Natural error messages. Valid range: 1 to 9999. The value must be greater than or equal to the value of FMNUM, if specified.	9999 or value of FMNUM
<u>SL</u> KIND	The type of Natural error message texts: S Short text. Cannot be applied to the DELETE command (see Direct and PROCEDURE Workplan Commands). L Long text. A Short and long text, or the one that exists. B Short and long text, but only if both exist.	A
<u>LANGUAGE</u>	Up to 8 valid language codes of Natural error messages. Asterisk (*) = all language codes.	*
DDMDBID	Valid DBID (1 to 65535) of the DDM. 0 = all DBIDs.	0 (no check)
DDMFNR	Valid FNR (1 to 65535) of the DDM. 0 = all FNRs.	0 (no check)
NATVERS	The Natural version of the Natural programming objects. Valid version format: <i>V</i> <i>R</i> <i>S</i> <i>M</i> where <i>V</i> is the 1-digit version, <i>R</i> the 1-digit release, and <i>S</i> <i>M</i> the 2-digit system maintenance level. Ranges are allowed: see (*) Name.	blank (no check)
DATE	The save or catalog date of the Natural programming objects. You can add a time by inserting a blank between date and time. For the format and ranges allowed, see (*) Date and (*) Time. Special terms allowed are <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)
FMDATE	Start value: the date on or after which the Natural programming objects were cataloged or saved. The format is identical to DATE. See (*) Date. Special terms allowed are <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)

Keyword	Values	Default Value
TODATE	End value: the date on or before which all Natural programming objects were cataloged or saved. The format is identical to DATE. See (*) Date. Special terms allowed are <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check) or high value (if FMDATE specified)
SIZE	The size of the Natural programming objects. Maximum: 7-digit number.	0 (no check)
FMSIZE	The start value for the size of the Natural programming objects. Maximum: 7-digit number.	0 (no check)
TOSIZE	The end value for the size of the Natural programming objects. Maximum: 7-digit number.	0 (no check) or high value (if FMSIZE specified)
<u>USERID</u>	The ID of the user who saved or cataloged the Natural programming objects: 8-character Natural user ID or a range of IDs. See also (*) Name.	blank (no check)
TID	Not applicable if OBJTYPE=D (see above). Terminal ID of the terminal where the Natural programming objects were saved or cataloged: 8-digit Natural terminal ID as provided by the system variable *INIT-ID or a range of IDs. See also (*) Name.	blank (no check)
<u>EXCEPT</u>	All objects which match the selection criteria entered before EXCEPT are checked against all parameters contained within the parentheses following the keyword <u>EXCEPT</u> . If they match all these parameters too, they are not processed.	not applicable

Note:

- Parameters that are irrelevant for OBJTYPE are ignored. For example: DATE, SIZE and USERID have no meaning for Natural error messages.
- DBID, FNR, NAME, CIPHER and PASSWORD/PSW are ignored by the LOAD and SCAN commands. These parameters must be specified in the Parameter-Setting clause as described for LOADFNAT... and LOADFUSER... in Keyword Explanation - Parameter-Setting.

Natural-related Object Selection

This selection is used to select Natural-related objects, Natural system error messages and Natural command processors.

Command Syntax

```

object-name NATPATH natural-path-name

    [ {
        SIZE size
        [FMSIZE size-from ] [TOSIZE size-to ]
    } ]

    [ {
        DATE date
        [FMDATE date-from ] [TODATE date-to ]
    } ]

    [
    EXCEPT
    (object-name NATPATH natural-path-name

        [ {
            SIZE size
            [FMSIZE size-from ] [TOSIZE size-to ]
        } ]

        [ {
            DATE date
            [FMDATE date-from ] [TODATE date-to ]
        } ]

    )
    ]

```

Keyword Explanation - Natural-related Object Selection

Below is a description of the keywords and the valid values for the objects to be processed:

Keyword	Values	Default Value
<i>object-name</i>	The name of the Natural-related object. If <i>object-name</i> contains blank characters, it must be enclosed in quotation marks (" "). See also (*) Name.	none
NATPATH	NATDIR NATGUI_BMP TMP_PATH NATBIN PROFILE_PATH PARM_PATH NATERR	none
DATE	The save or catalog date of the Natural-related objects. You can add a time by inserting a blank between date and time. For the format and ranges allowed, see (*) Date and (*) Time. Special terms allowed are: <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)
FMDATE	Start value: the date on or after which the Natural-related objects were cataloged or saved. The format is identical to DATE. See (*) Date. Special terms allowed are: <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)
TODATE	End value: the date on or before which the Natural-related objects were cataloged or saved. The format is identical to DATE. See (*) Date. Special terms allowed are: <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check) or high value (if FMDATE specified)
SIZE	The size of the Natural-related objects. Maximum: 10-digit number.	0 (no check)
FMSIZE	The start value for the size of the Natural-related objects. Maximum: 10-digit number.	0 (no check)
TOSIZE	The end value for the size of the Natural-related objects. Maximum: 10-digit number.	0 (no check) or high value (if FMSIZE specified)
<u>EXCEPT</u>	See EXCEPT under Natural Object Selection.	

Note:

The NATPATH clause in the EXCEPT part is evaluated by the LOAD or SCAN command only.

Natural System Errors Selection

This selection is used to select Natural system error messages.

Syntax

ERROR NATERROR	
[DBID <i>dbid</i> FNR <i>fnr</i> [NAME <i>vsam-name</i>] [CIPHER <i>cipher</i>] [{ PASSWORD PSW } <i>password</i>]]
	[FMNUM <i>error-number-from</i>] [TONUM <i>error-number-to</i>] [SLKIND <i>message-type</i>] [LANGUAGE <i>languages</i>]
[EXCEPT (
	[FMNUM <i>error-number-from</i>] [TONUM <i>error-number-to</i>] [SLKIND <i>message-type</i>] [LANGUAGE <i>languages</i>]
))

Keyword Explanation - Natural System Errors Selection

Below is a description of the keywords and the valid values for the system error messages to be processed:

Keyword	Values	Default Value
DBID	Only applies to objects on mainframes. A valid DBID.	0 (current FNAT/FUSER)
FNR	Only applies to objects on mainframes. A valid FNR.	0 (current NAT/FUSER)
NAME	Only applies to objects on mainframes. A valid VSAM name.	blank (current FNAT/FUSER)
CIPHER	Only applies to objects on mainframes. The 8-digit cipher code of the Adabas file where the Natural error messages are located.	blank (current FNAT/FUSER)
PASSWORD PSW	Only applies to objects on mainframes. An 8-character Adabas password.	blank (current FNAT/FUSER)
FMNUM	The start number of the Natural error messages. Valid range: 1 to 9999.	1
TONUM	The end number of the Natural error messages. Valid range: 1 to 9999. The value must be greater than or equal to the value of FMNUM if specified.	9999 or value of FMNUM (if specified)
SLKIND	See SLKIND under Natural Object Selection. A = short and/or long Natural error message texts.	A
LANGUAGE	Up to 8 valid language codes of Natural error messages. Asterisk (*) = all language codes.	*
EXCEPT	See EXCEPT under Natural Object Selection.	

Note:

DBID, FNR, NAME, CIPHER and PASSWORD/PSW are ignored by the LOAD and SCAN commands. These parameters must be specified in the Parameter-Setting clause as described for LOADFNAT... in Keyword Explanation - Parameter-Setting.

Natural Command Processors Selection

This selection is used to select Natural command processors.

Syntax

```

object-name PROCESSOR ncp-library-name
[
  DBID      ncp-dbid FNR ncp-fnr
             [ NAME ncp-vsam-name ] [ CIPHER ncp-cipher ]
             [ { PASSWORD
                 PSW
               } ncp-password ]
]
[
  EXCEPT (
    object-name
    [ LIBRARY ncp-library-name ]
  )
]

```

Note:

For the command FINDLIB only the following items are processed: PROCESSOR, DBID, FNR, NAME, CIPHER and {PASSWORD/PSW}.

Keyword Explanation - Natural Command Processors Selection

Below is a description of the keywords and the valid values for the command processors to be processed:

Keyword	Values	Default Value
<i>object-name</i>	The name of a valid Natural command processor or a range of names. See also (*) Name.	none
PROCESSOR	A valid Natural library name or a range of names. See also (*) Name.	none
DBID	A valid DBID of the Adabas file where the command processors are located.	Value of Lfile 190
FNR	A valid FNR of the Adabas file where the command processors are located.	Value of Lfile 190
NAME	Only applies to objects on mainframes. A valid VSAM name.	blank
CIPHER	The 8-digit cipher code of the Adabas file where the command processors are located.	blank
PASSWORD	The 8-character Adabas password of the Adabas file where the command processors are located.	blank
PSW		
EXCEPT	See EXCEPT under Natural Object Specification.	

Note:

DBID, FNR, NAME, CIPHER and PASSWORD/PSW are ignored by the LOAD and SCAN commands. These parameters must be specified in the Parameter-Setting clause as described for LOADNCP... in Keyword Explanation - Parameter-Setting.

External Object Selection

This selection is used to select external objects.

Syntax

<i>object-name</i> PATH <i>external-path-name</i>	
[{	SIZE size [FMSIZE size-from] [TOSIZE size-to]
[{	DATE date [FMDATE date-from] [TODATE date-to]
[EXCEPT (
	<i>object-name</i> [PATH <i>external-path-name</i>]
	[{
	SIZE size [FMSIZE size-from] [TOSIZE size-to]
	[{
	DATE date [FMDATE date-from] [TODATE date-to]
)
)

Keyword Explanation - External Object Selection

Below is a description of the keywords and the valid values for the external objects to be processed:

Keyword	Values	Default Value
<i>object-name</i>	The name of the external object. If <i>object-name</i> contains blank characters, it must be enclosed in quotation marks (" "). See also Name in the section Name, Date and Time Specification.	none
PATH	The name of the path where the external object is located.	none
DATE	Save or catalog date of the external objects. You can add a time by inserting a blank between date and time. For the format and ranges allowed, see (*) Date and (*) Time. Special terms allowed are <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)
FMDATE	Start value: the date from which the external objects are to be processed. The format is identical to DATE. See (*) Date. Special terms allowed are <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check)
TODATE	End value: the date until which the external objects are to be processed. The format is identical to DATE. See (*) Date. Special terms allowed are <u>YEAR</u> , <u>MONTH</u> , <u>YESTERDAY</u> and <u>TODAY</u> . See (*) Special Dates.	blank (no check) or high value (if FMDATE specified)
SIZE	The size of the external objects. Maximum: 10-digit number.	0 (no check)
FMSIZE	The start value for the size of the external objects. Maximum: 10-digit number.	0 (no check)
TOSIZE	The end value for the size of the external objects. Maximum: 10-digit number.	0 (no check) or high value (if FMSIZE specified)
<u>EXCEPT</u>	See EXCEPT under Natural Object Selection.	

Note:

The NATPATH clause in the EXCEPT part is only evaluated by the LOAD and SCAN commands.

FDT Selection

This selection is used to select Adabas FDTs.

Syntax

FDT		
DBID	<i>dbid</i>	
{	FNR <i>fnr</i> [CIPHER <i>cipher</i>]	[{ PASSWORD PSW } <i>password</i>]
	FMFNR <i>fnr-start</i> TOFNR <i>fnr-end</i>	
}		

Keyword Explanation - FDT Selection

Below is a description of the keywords and the valid values for the FDTs to be processed:

Keyword	Values	Default Value
DBID	DBID of the FDT.	none
FNR	FNR of the FDT.	none
CIPHER	The 8-digit cipher code of the FDT.	none
PASSWORD	The 8-character Adabas password of the FDT.	none
PSW		
FMFNR	Applies to the FIND and UNLOAD commands only. The start FNR for the FDT to be processed.	none
TOFNR	Applies to the FIND and UNLOAD commands only. The end FNR for the FDT to be processed.	none

Object List

An object list consists of object specifications which are to be processed by the Object Handler.

The following syntax is valid for the object list:

```

TYPE LIST
[ object-type-and-location ( object-name-description ...) ] ...

```

Note:

Each item (except for the ones enclosed in parentheses) must start on a new line and end on the same line.

Below is information on:

- Syntax of Object-type-and-location
- Syntax of Object-name-description

Syntax of Object-type-and-location

Natural Objects

```

LIBRARY library-name
[
  DBID dbid FNR fnr [NAME vsam-name ] [CIPHER cipher ] [ { PASSWORD
  PSW } password ] ]
[OBJTYPE resource-type ]

```

Natural System Error Messages

```

ERROR NATERROR
[
  DBID dbid FNR fnr [NAME vsam-name ] [CIPHER cipher ] [ { PASSWORD
  PSW } password ] ]

```

Natural Command Processor Sources

```

PROCESSOR npc-library-name
[
  DBID dbid FNR fnr [NAME vsam-name ] [CIPHER cipher ] [ { PASSWORD
  PSW } password ] ]

```

Natural-related Objects

NATPATH *natural-path-name*

External Objects

PATH *external-path-name*

FDTs

FDT

Note:

No ranges are allowed for *library-name* and *ncp-library-name*.

Syntax of Object-name-description

Natural Objects

$$\left\{ \begin{array}{l} \textit{object-name} \text{ [SCKIND } \textit{object-kind} \text{]} \\ \textit{error-number} \text{ [SLKIND } \textit{message-type} \text{] [LANGUAGE } \textit{languages} \text{]} \\ \text{FMNUM } \textit{error-number-from} \text{ TONUM } \textit{error-number-to} \text{ [SLKIND } \textit{message-type} \text{] [LANGUAGE } \textit{languages} \text{]} \end{array} \right\}$$

Natural System Error Messages

$$\left\{ \begin{array}{l} \textit{error-number} \text{ [SLKIND } \textit{message-type} \text{] [LANGUAGE } \textit{languages} \text{]} \\ \text{FMNUM } \textit{error-number-from} \text{ TONUM } \textit{error-number-to} \text{ [SLKIND } \textit{message-type} \text{] [LANGUAGE } \textit{languages} \text{]} \end{array} \right\}$$

Natural Command Processor Sources

object-name

Natural-related Objects

related-object-name

External Objects

external-object-name

FDTs

[**DBID** *dbid* **FNR** *fnr* [**CIPHER** *cipher*] [{ **PASSWORD**
PSW } *password*]]

Example:

```
TYPE LIST
LIBRARY LIB-1 OBJTYPE N      /* process Natural objects from library 'LIB-1'
( A* SCKIND S                /* all sources whose names start with 'A'
B1                            /* source and/or cataloged of object 'B1'
CDE> SCKIND C )             /* all cataloged whose names are greater/equal 'CDE'
/*                            /* Comment line
LIBRARY LIB-2                /* process Natural objects from library 'LIB-2'
/*                            /* including error messages and shared resources
( *                           /* source and/or cataloged of all objects
/*                            /* including shared resources
FMNUM 1 TONUM 100           /* error messages from 1 to 100
)
```

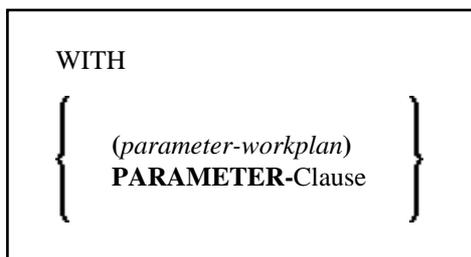
Parameter-Setting

The Parameter-Setting clause is used to change attributes for the LOAD and UNLOAD commands for the objects to be processed and to define target destinations for the LOAD (for example, FNAT).

Below is information on:

- Parameter-Setting Syntax
-

Parameter-Setting Syntax



PARAMETER-Clause

[[NAME *old-name*] NEWNAME *new-name*]

[[LIBRARY *old-library-name*] NEWLIBRARY *new-library-name*]

[LOADFNATDBID *fnat-dbid* LOADFNATFNR *fnat-fnr* [LOADFNATNAME *vsam-name*]

[LOADFNATCIPHER *fnat-cipher*]

[{ LOADFNATPASSWORD
LOADFNATPSW } *fnat-password*]]

[LOADFUSERDBID *fuser-dbid* LOADFUSERFNR *fuser-fnr*]

[LOADFUSERNAME *fuser-vsam-name*] [LOADFUSERCIPHER *fuser-cipher*]

[{ LOADFUSERPASSWORD
LOADFUSERPSW } *fuser-password*]]

[LOADNCPDBID *ncp-file-dbid* LOADNCPFNR *ncp-file-fnr*]

[LOADNCPNAME *ncp-file-vsam-name*] [LOADNCPCIPHER *ncp-file-cipher*]

[{ LOADNCPPASSWORD
LOADNCPPSW } *ncp-file-password*]]

[[FDTDBID *old-fdt-dbid* FDTFNR *old-fdt-fnr*] NEWFDTDBID *new-fdt-dbid* NEWFDTFNR *new-fdt-fnr*]

[ERRNUMDIFF *modification-of-error-message-range*]

[[LANGUAGE *old-language*] NEWLANGUAGE *new-language*]

[[DATE *old-date*] NEWDATE *new-date*]

[[USERID *old-userid*] NEWUSERID *new-userid*]

[[TID *old-terminal-id*] NEWTID *new-terminal-id*]

[[PATH *old-external-path-name*] NEWPATH *new-external-path-name*]

Keyword Explanation - Parameter-Setting

Keyword	Values	Restricted to Command
NAME	The name to be checked if NEWNAME is specified.	
<u>NEWNAME</u>	New object name.	
<u>LIBRARY</u>	The name to be checked if NEWLIBRARY is specified.	
<u>NEWLIBRARY</u>	New library name.	
LOADFNATDBID	DBID for the FNAT libraries.	LOAD

Keyword	Values	Restricted to Command
LOADFNATFNR	FNR for the FNAT libraries.	LOAD
LOADFNATNAME	Only applies to objects on mainframes. FNAT VSAM file name.	LOAD
LOADFNATCIPHER	Only applies to objects on mainframes. FNAT cipher code.	LOAD
LOADFNATPASSWORD	Only applies to objects on mainframes. FNAT Adabas password.	LOAD
LOADFUSERDBID	DBID for the FUSER libraries.	LOAD
LOADFUSERFNR	FNR for the FUSER libraries.	LOAD
LOADFUSERNAME	Only applies to objects on mainframes. A valid FUSER VSAM file name.	LOAD
LOADFUSERCIPHER	Only applies to objects on mainframes. FUSER cipher code.	LOAD
LOADFUSERPASSWORD	Only applies to objects on mainframes. FUSER Adabas password.	LOAD
LOADNCPDBID	DBID of the Adabas file for Natural command processors.	LOAD
LOADNCPFNR	FNR of the Adabas file for Natural command processors.	LOAD
LOADNCPNAME	Only applies to objects on mainframes. VSAM name of the Adabas file for Natural command processors.	LOAD
LOADNCPCIPHER	Only applies to objects on mainframes. Cipher code of the Adabas file for Natural command processors.	LOAD
LOADNCPPASSWORD	Only applies to objects on mainframes. Adabas password for the Adabas file for Natural Command Processors.	LOAD
FDTDBID	DBID of the FDT to be checked if NEWFDTDBID is specified.	
NEWFDTDBID	New DBID for the FDT.	
FDTFNR	DBID of the FDT to be checked if NEWFDTFNR is specified.	
NEWFDTFNR	New FDT for the FNR.	
ERRNUMDIFF	The number (positive or negative) which is to be added to the Natural error messages during the UNLOAD or LOAD command. ERRNUMDIFF can only be specified if FMNUM and TONUM (see the section Select-Clause) have been specified as selection criteria. Otherwise, it is not possible to check for valid results.	
<u>LANGUAGE</u>	Up to 8 valid language codes of Natural error messages to be checked if NEWLANGUAGE (see below) is specified. If <i>language</i> contains more than one language code, <i>new-language</i> must contain the same numbers of language codes. Each <i>language</i> language code is replaced by the language code in the corresponding position of <i>new-language</i> . If <i>language</i> is not specified, <i>new-language</i> must not contain more than one language code.	

Keyword	Values	Restricted to Command
<u>NEWLANGUAGE</u>	Up to 8 valid language codes for new Natural error messages. See also LANGUAGE above.	
DATE	The object date. You can add a time by inserting a blank between date and time. For the format and ranges allowed, see (*) Date and (*) Time.	
NEWDATE	New object date. NEWDATE can be a date followed by a time value. You can add a time by inserting a blank between date and time. See also (*) Date and (*) Time.	
<u>USERID</u>	User ID to be checked if NEWUSERID is specified.	
<u>NEWUSERID</u>	New user ID.	
TID	Only applies to objects on mainframes. Terminal ID to be checked if NEWTID is specified.	
NEWTID	Only applies to objects on mainframes. New terminal ID.	
PATH	The path name to be checked if NEWPATH is specified.	
NEWPATH	New path name.	

Note:

- Parameters not applicable to the selection criterion processed are ignored.
- LOADFNAT, LOADFUSER... and LOADNCP... are used for the LOAD command only, and ignored otherwise.
- LOADFNAT... is used for libraries starting with SYS (except SYSTEM).
- LOADFUSER... is used for libraries not starting with SYS (but including SYSTEM).
- LOADNCP... is used for Natural command processors.

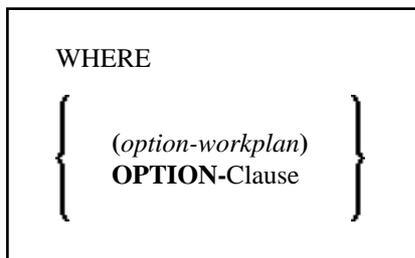
Option-Setting

The Option-Setting clause is used to change the default values of the Object Handler command options.

Below is information on:

- Option-Setting Syntax
 - Keyword Explanation
-

Option-Setting Syntax



OPTION-Clause

$$\left[\text{REPLACE} \left\{ \begin{array}{l} \text{ALL} \\ \text{OBSOLETE} \\ \text{EXCEPT} \end{array} \right\} \right]$$

$$\left[\left\{ \begin{array}{l} \text{NOREPORT} \\ \text{NEWREPORT [file-name]} \\ \text{REPORT [file-name]} \end{array} \right\} \right]$$

$$\left[\left\{ \begin{array}{l} \text{NORESTART} \\ \text{RESTART [file-name]} \end{array} \right\} \right]$$

[NUMBERPROCESS *number*]

$$\left[\left[\begin{array}{l} \text{TRANSFER} \left[\begin{array}{l} \text{CONVERSION-TABLE} \\ \text{[SUBSTITUTE]} \\ \text{[INCLUDE-LINE-NUMBERS]} \\ \text{[UPPERCASE-TRANSLATION]} \\ \text{[INCORPORATE-FREE-RULES]} \end{array} \right] \left\{ \begin{array}{l} \text{SYSTEM-TABLE} \\ \text{USER-TABLE [conversion-table]} \end{array} \right\} \right] \right] \right]$$

$$\left[\left[\text{XREF} \left\{ \begin{array}{l} \text{ON} \\ \text{OFF} \\ \text{DOC} \\ \text{FORCE} \\ \text{SPECIAL} \end{array} \right\} \right] \right]$$

[FDIC (*dbid,fnr,password,cipher*)]
 [FSEC (*dbid,fnr,password,cipher*)]

$$\left[\left\{ \left\{ \begin{array}{l} \text{NEWWORKFILE} \\ \text{WORKFILE} \end{array} \right\} \text{file-name} \left[\left\{ \begin{array}{l} \text{WORKFILETYPE} \\ \text{WETYPE} \end{array} \right\} \left\{ \begin{array}{l} \text{DEFAULT} \\ \text{PORTABLE} \end{array} \right\} \right] \right\} \right]$$

Keyword Explanation - Option-Setting

Option	Explanation	Restricted to Command
<u>REPLACE</u>	Replaces existing objects according to the option specified: ALL All objects (default). OBSOLETE All objects with a date older than the date of the object in the load file. EXCEPT All objects except those with a date newer than the date of the object in the load file.	LOAD LOADALL
<u>NOREPORT</u>	Report file setting. No data is recorded in a report file. This is the default setting for the FIND and FINDLIB commands.	
<u>NEWREPORT</u>	Report file setting. Report data is recorded and written into Work File 4 or <i>file-name</i> . An existing file will be overwritten.	
<u>REPORT</u>	Report file setting. Report data is recorded and written into Work File 4 or <i>file-name</i> . This is the default setting for the UNLOAD, LOAD, LOADALL, SCAN, SCANALL and DELETE commands.	
<u>NORESTART</u>	No restart information is written into a file.	LOAD
<u>RESTART</u>	Restart information is written into Work File 6 or <i>file-name</i> .	LOAD
<u>TRANSFER</u>	Set Transfer mode. The data is read and written in Transfer format.	UNLOAD LOAD SCAN
<u>NUMBERPROCESS</u>	Number of objects to be processed. The LOAD or SCAN command stops execution after the number specified.	LOAD SCAN

Option	Explanation	Restricted to Command
<u>CONVERSION-TABLE</u>	<p>Data conversion during processing in Transfer format. There are two conversion tables:</p> <p><u>SYSTEM-TABLE</u> Internal Natural conversion table.</p> <p><u>USER-TABLE</u> A user-defined conversion is used if <i>conversion-program</i> has been specified. This program must be located in the library SYSOBJH or one of its steplibs; see the examples OTNCONAE and OTNCONEA in the library SYSOBJH.</p> <p>If no <i>conversion-program</i> is specified, the corresponding conversion table is used in NATCONV .INI ([ISO8859_1->EBCDIC] or [EBCDIC->ISO8859_1]).</p>	UNLOAD LOAD SCAN
<u>SUBSTITUTE</u>	<p>Replaces line references by labels during the unload in Transfer format.</p> <p>This option only applies if your source-code line numbers are used for statement references. If so, the line numbers of referenced lines and the line number references are replaced by labels. The sources are not modified in the database.</p>	UNLOAD
<u>INCLUDE-LINE-NUMBERS</u>	<p>Transfers line numbers during the unload in Transfer format. By default, line numbers in Natural objects are not unloaded.</p>	UNLOAD
<u>UPPERCASE-TRANSLATION</u>	<p>Translates any source code into upper case during the load in Transfer format.</p> <p>By default, source code in Natural objects is not translated.</p>	LOAD
<u>INCORPORATE-FREE-RULES</u>	<p>Incorporates source text of Predict free rules associated with a map into a map source during the unload in Transfer format if Predict is installed.</p>	UNLOAD

Option	Explanation	Restricted to Command
XREF	<p>Only applies if Predict is installed.</p> <p>Load or unload XREF data of cataloged Natural objects:</p> <p>ON UNLOAD: Unloads cataloged objects and their cross-reference data, if any. LOAD: Loads cataloged objects and their cross-reference data if cross references exist on the work file.</p> <p>OFF No XREF data is processed. (Default)</p> <p>DOC LOAD only. Loads cataloged objects only if Predict entries exist for the objects in the FDIC system file.</p> <p>FORCE LOAD only. Loads cataloged objects and their cross-reference data only if cross-references exist on the workfile and if Predict entries exist for the objects in the FDIC system file.</p> <p>SPECIAL LOAD only. Loads cataloged objects and their cross-reference data (if any).</p>	UNLOAD LOAD
FDIC	FDIC specification to process XREF data or Predict rules.	UNLOAD LOAD DELETE
FSEC	Specification of the Natural Security system file to be used for the command.	
<u>NEWWORKFILE</u> <u>WORKFILE</u>	<p>Work file specification.</p> <p>The UNLOAD or LOAD data is transferred into/from Natural Work File 1.</p> <p>If <u>NEWWORKFILE</u> is specified, the data overwrites the contents of the existing work file or fills a new work file from the top. Otherwise, the data is appended.</p>	UNLOAD LOAD SCAN FIND FINDLIB

Option	Explanation	Restricted to Command
WORKFILETYPE <u>WFTYPE</u>	<p>The type of the Natural Work File 1 when data is read and written in internal format:</p> <p> DEFAULT Default binary work file.</p> <p> PORTABLE Portable work file.</p> <p>(See also Work File Type in the section Define Work File in the Natural Statements documentation.)</p> <p>If WORKFILETYPE has not been specified, the current type is used.</p>	

Object Handler Commands for CUIs

The Object Handler commands provided in CUI (character user interface) environments are mainly provided for navigation purpose and special settings, such as specifying trace files.

The commands are entered in the command line. To execute a Natural system command, enter two slashes (//) before the command. Note that any Natural system command terminates the Object Handler.

The internal commands are listed below. An underlined portion of a keyword represents an acceptable abbreviation, Sub denotes subcommand.

Command	Sub 1	Sub 2	Explanation
<u>C</u> HANGE	<u>W</u> ORKPLAN	<u>L</u> IBRARY	Go to the Change Workplan Library screen.
<u>C</u> LEAR			Reset the current contents of the input fields in the map to the default values.
CMD COMMAND			Invoke the Commands screen.
BYE			Leave the Object Handler.
EXIT			
QUIT			
.			
FIN			Leave the Object Handler and end the Natural session.
<u>G</u> O	<u>H</u> OME		Go to the Object Handler main screen.
<u>G</u> O	<u>U</u> NLOAD		Go to the unload screen.
<u>G</u> O	<u>U</u> NLOAD	<u>E</u> ND	End the current unload function.
		<u>E</u> RROR	Go to the Unload Natural System Error Messages screen.
		<u>E</u> XTERNAL	Go to the Unload External Objects screen.
		<u>F</u> DT	Go to the Unload FDTs screen.
		<u>L</u> IBRARY	Go to the Unload Natural Library Objects screen.
		<u>N</u> CP	Go to the Unload Natural Command Processors screen.
		<u>R</u> ELATED	Go to the Unload Natural-related Objects screen.
		<u>S</u> ELECTION <u>L</u> IST	Go to the Unload SELECTION or LIST workplan screen.
<u>G</u> O	<u>L</u> OAD		Go to the load screen.

Command	Sub 1	Sub 2	Explanation
<u>GO</u>	<u>LOAD</u>	ALL	Go to the Load all Objects screen.
		END	End the current load function.
		<u>ERROR</u>	Go to the Load Natural System Error Messages screen.
		<u>EXTERNAL</u>	Go to the Load External Objects screen.
		<u>FDT</u>	Go to the Load FDTs screen.
		<u>LIBRARY</u>	Go to the Load Natural Library Objects screen.
		<u>NCP</u>	Go to the Load Natural Command Processors screen.
		<u>RELATED</u>	Go to the Load Natural-related Objects screen.
		<u>SELECTION LIST</u>	Go to the Load SELECTION or LIST workplan screen.
<u>GO</u>	<u>RESTART</u>		Start the Restart Options screen.
<u>GO</u>	<u>SCAN</u>		Go to the scan screen.
<u>GO</u>	<u>SCAN</u>	ALL	Go to the Scan all Objects screen.
		END	End the current scan function.
		<u>ERROR</u>	Go to the Scan Natural System Error Messages screen.
		<u>EXTERNAL</u>	Go to the Scan External Objects screen.
		<u>FDT</u>	Go to the Scan FDTs screen.
		<u>LIBRARY</u>	Go to the Scan Natural Library Objects screen.
		<u>NCP</u>	Go to the Scan Natural Command Processors screen.
		<u>RELATED</u>	Go to the Scan Natural-related Objects screen.
		<u>SELECTION LIST</u>	Go to the Scan SELECTION or LIST workplan screen.
<u>GO</u>	<u>ADMIN</u>		Go to the Administration screen.
<u>GO</u>	<u>ADMIN</u>	<u>CHANGE</u>	Go to the "Change the Workplan Library" administration function.
		<u>CREATE</u>	Go to the "Create a new Workplan" administration function.
		<u>LIST</u>	Go to the List Workplans administration function.
<u>GO</u>	<u>VIEW</u>		Go to the View menu.
<u>GO</u>	<u>VIEW</u>	<u>ERROR</u>	Go to the View Natural System Error Messages screen.
		<u>FDT</u>	Go to the View FDTs screen.
		<u>LIBRARY</u>	Go to the View Natural Library Objects screen.
		<u>NCP</u>	Go to the View Natural Command Processors screen.
<u>GO</u>	<u>FIND</u>		Go to the Find screen.
<u>GO</u>	<u>FIND</u>	<u>ERROR</u>	Go to the Find Natural System Error Messages screen.
		<u>LIBRARY</u>	Go to the Find Natural Library Objects screen.
		<u>NCP</u>	Go to the Find Natural Command Processors screen.

Command	Sub 1	Sub 2	Explanation
<u>H</u> ELP			Invoke the Object Handler Help function.
INIT			Re-initialize the Object Handler utility.
READ	<u>P</u> ROFILE		Read the data from the SYSOBJH profile.
SET	<u>E</u> XECUTIONMSG	ON	Activate the window that displays the processing status.
		OFF	Deactivate the window that displays the processing status.
	FREE	ON	Activate free format editing.
		OFF	Deactivate free format editing.
	TRACE	ON	Activate the trace mode (trace output to screen).
		OFF	Deactivate the trace mode.
		<u>W</u> ORKFILE	Activate the trace mode (trace output to Work File 10).
	TRACEFILE		Specify the name of the trace file (Work File 10).
SETTINGS			Display or change the unload, load or scan settings.
<u>S</u> HOW <u>D</u> ISPLAY	<u>L</u> AST	<u>M</u> ESSAGE	Display the last interface return code and message issued by the processing interface of the Object Handler.
		<u>R</u> ESULT	Display the last result issued by the processing interface of the Object Handler.
	<u>P</u> ROFILE		Display the text object PROFILES (if available).
	<u>R</u> EPORT		Display the report created last.
	<u>S</u> TATISTICS		Display statistics information about the objects processed.
	<u>S</u> TATUS		Display the current Object Handler status (contents of global variables).
	TRACE	FILE	Display the contents of the trace file (Work File 10).

Tools

The Natural Object Handler provides special features to display status information and reports and check or modify trace settings.

Below is information on:

- Status
 - Last Result
 - Traces
 - Reports
-

Status

Displays the Object Handler functions currently used, the user environment, the workplan library and the setting of the trace option described below. To display the status, enter the command `SHOW STATUS`. See also the section `Commands for CUIs`.

Last Result

Displays the last internal command issued by the processing interface of the Object Handler and possible return codes and messages. To display the last result, enter the command `SHOW LAST RESULT`. See also the section `Commands for CUIs`.

Traces

Activates or deactivates the trace function. Traces record internal Object Handler program flows to provide control information for error diagnoses.

The trace option is set to `OFF` by default. To change the setting, see the command `SET TRACE` as described in `Commands for CUIs`.

Reports

Lists the objects loaded, unloaded or scanned, and records errors that may interrupt processing. See also `Work File Options` in the section `Settings`.

The report option is set to `ON` by default and is displayed after the unload, load or scan function has been executed. To display the contents of the latest report file, enter the command `SHOW REPORT` as described in the section `Commands for CUIs`.

SYSOBJH Profile

You can define an individual profile for your Object Handler utility. For this purpose, Natural provides the text object PROFILE in the library SYSOBJH. In PROFILES, you can enter general or user-specific profiles with corresponding defaults (see the listing below). These defaults are then displayed when you enter the relevant function screens.

 **To activate the values defined in PROFILE**

1. Save the text object PROFILE under the name PROFILES in the library SYSOBJH.
2. Invoke the Object Handler to activate PROFILES.

Text Object PROFILE
