



NATURAL

Natural
Object Handler
Version 5.1.1 for Windows



This document applies to Natural Version 5.1.1 for Windows 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 and specifying work files.
 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, setting trace and report options, and transferring work files.

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
-

Invoking the Natural Object Handler

To invoke the Object Handler

- On the Natural main window, in the command line, enter the system command SYSOBJH. Or, from the Tools menu, choose Development Tools and Object Handler. The Natural Object Handler welcome window is displayed.

The Object Handler welcome window offers the following functions:

- Unload
- Load
- Administration

Choose the function desired either by choosing the corresponding command button or by selecting the corresponding function from the Actions menu. Activate the Advanced User check box if you do not want to use the Object Handler wizard for function processing. See the section Functions for further details.

In addition to the functions above, the Actions menu provides the following:

- View
- Restart Load
- Change Workplan Library

(These functions are described in the section Functions.)

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 C:\TEMP\TEST.SAG
STOP
```

Online Mode

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

Example:

```
SYSOBJH UNLOAD * LIB EXAMPLE WHERE WORK C:\TEMP\TEST.SAG
STOP
```

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 occurs 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.

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, scan and administration 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, in the Object Handler welcome window, tick the check box 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.

Attention:

You cannot unload, load or scan Natural-related or external objects in remote environments located on mainframe platforms. Natural DDMs can **only** be unloaded, loaded or scanned in remote environments located on mainframe platforms.

This section covers the following topics:

- Wizards
- Advanced User
- Restart Load
- View
- Find
- Administration
- Change Workplan Library
(section: Administration)

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.
- Perform administration functions.

Navigation and Command Execution

To navigate between the processing windows of the wizard, use the buttons Next and Back: click Next to confirm settings and continue processing, click Back to modify settings made in a previous step. Click the button Cancel whenever you want to stop the processing sequence and return to the Object Handler welcome window.

Before finally executing a function, the wizard displays the command or command procedure generated for the relevant function and the settings and object specifications made. You may again choose Back to return to a previous window and modify the setting, or confirm and execute the command with Next.

After you have executed the command or command procedure for the unload, load or scan function, you may continue processing and reuse the settings previously made or click Cancel to terminate the function.

Invoking the Wizard

To activate the wizard

- In the Object Handler welcome window, uncheck the Advanced User box if necessary (the default is unchecked).
Or, from the Options menu, uncheck Advanced User.

This section describes the processing sequence performed with the

- Unload Wizard
- Load Wizard
(to include scan)

For a description of the Administration wizard, see the section Administration.

Unload Wizard

This section describes how to use the unload wizard.

To start the unload wizard

- In the Object Handler welcome window, uncheck the Advanced User box (if necessary) and click Unload. Or, from the Actions menu, choose Unload. The Unload (wizard) main window appears providing the following options:
 - Unload Objects into Natural Work File
 - Start Object Handler Command Procedure

Choose either of the two options above and proceed as described below.

Unload Objects into Natural Work Files

With the wizard function Unload Objects into Natural Work File(s), you are guided through the sequence of windows below where you can specify the settings and the type of object for the unload performed:

- Set Options
- Set Parameters
- Select Objects

Set Options

In the options window of the unload wizard, specify any of the following options and, if necessary, complete the fields to be used for function processing:

Field	Explanation
Transfer Format	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected. See below.</p> <p>If selected, the data to be processed is written in Transfer format to the work file. Unload data are written in Transfer format to the work file. See also Work File Format in the section Work Files.</p>
Portable Work File	<p>Not applicable to remote environments.</p> <p>Only valid:</p> <ul style="list-style-type: none"> ● If Use Default Options (this is the default) or Use Additional Options has been selected (see below). ● 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>
(Server) Unload File	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected. See below.</p> <p>The name of the work file to be used for the function. See also the section Work Files. On mainframes, Work File 1 is used as the unload file.</p>
Select	<p>Not applicable to Server Unload Files.</p> <p>Invokes the browse function to select a work file from a directory.</p>
Use Default Options	<p>Default options are used by default. See also Set Additional Options in the section Settings, for the options available.</p>
Use Additional Options	<p>Used in connection with Set (see below).</p>
Set	<p>Only activated if Use Additional Options has been selected.</p> <p>Invokes the Unload Options window where you can modify the default settings and enter additional options for the processing sequence. See also Set Additional Options in the section Settings.</p>
Use OPTION Workplan	<p>If selected, a workplan of the type OPTION (see the section Workplans) is used.</p> <p>In the input field, enter the name of a workplan of the type OPTION, or choose a name from the drop-down list box.</p>
List	<p>Only valid if Use OPTION Workplan (see above) has been selected and the name of a valid workplan of the type OPTION was entered.</p> <p>Displays the contents of the workplan specified.</p>

Set Parameters

From the parameters window of the unload wizard, select any of the options provided and, if necessary, complete the fields to be used for function processing:

Field	Explanation
Do not use Parameters	If selected (default), no parameters are used.
Use Global Parameters	If selected, global parameters are used. See also Set Global Parameters in the section Settings.
Set	Only activated if Use Global Parameters has been selected. If selected, the global parameters window is invoked. See Set Global Parameters in the section 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 also the section Workplans). In the input field, enter the name of a workplan of the type PARAMETER, or choose a name from the drop-down list box.
List	Only valid if Use PARAMETER Workplan (see above) has been selected and the name of a valid workplan of the type PARAMETER was entered. Displays the contents of the workplan specified.

Select Objects

Note:

You cannot unload Natural-related or external objects in remote environments located on mainframe platforms. Natural DDMs can **only** be unloaded in remote environments located on mainframe platforms.

From the object types selection window, choose either of the two options below to specify the type of object you want to process:

1. Select the type of object:
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - Natural-related Objects
 - External Files
 - FDTs
 - Natural DDMs

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

Specify the objects and choose Details (if available for the type of object selected) for more detailed specifications, if required.

For the keywords and the valid values that apply to each object type, see the relevant explanation in the section Object Specification.

2. Select "Use SELECTION or LIST" if you want to use a workplan of the type SELECTION or LIST which predefines object selection criteria: see the section Workplans for more information.

In the SELECTION or LIST window, enter the name of a workplan of the type SELECTION or LIST using either option:

- Type in the name of a workplan.
Or, from the drop-down list box, choose a name from the list of workplans available.

Click List if you want to list the contents of the workplan specified.

Start Object Handler Command Procedure

Choose the function Start Object Handler Command Procedure if you want to execute a standard procedure (workplan) of the type PROCEDURE with predefined settings and object specifications for the unload function to be performed. See also the section Workplans for further information.

To start and execute an Object Handler command procedure

1. From the Unload (wizard) main window, choose Start Object Handler Command Procedure.
The procedure window appears.
2. In the field Procedure Name, enter the name of a workplan of the type PROCEDURE (see also Workplans) using either option:
 - Type in the name of a workplan.
Or, from the drop-down list box, choose a name from the list of workplans available.
 - Choose List if you want to display the contents of the workplan specified.
3. Confirm the contents of the PROCEDURE workplan and execute the transaction.

Load Wizard

This section describes how to apply the load or scan wizard.

To start the load wizard

- In the Object Handler welcome window, uncheck the Advanced User box (if necessary) and click Load. Or, from the Actions menu, choose Load.

The Load (wizard) main window appears providing the following options:

- Load Objects into Natural Work File(s)
- Scan Objects in Natural Work File(s)
- Start Object Handler Command Procedure
- Load a SYSPAUL Application
(local environments only)

Choose any of the options above and proceed as described below.

Load/Scan Objects from/in Work Files

With the wizard function Load Objects into Natural Work File(s) or Scan Objects in Natural Work File(s), you are routed through the sequence of windows below where you can specify the settings and the type of object for the load performed:

- Set Options
- Set Parameters
(load only)
- Select Objects

Set Options

In the options window of the load/scan wizard, specify any of the following options and, if necessary, complete the fields to be used for function processing:

Field	Explanation
Transfer Format	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected. See below.</p> <p>If selected, the data to be processed is written in Transfer format from the work file. Load/scan data are expected to be in Transfer format. See also Work File Format in the section Work Files.</p>
Portable Work File	<p>Not applicable to remote environments.</p> <p>Only valid:</p> <ul style="list-style-type: none"> • If Use Default Options (this is the default) or Use Additional Options has been selected (see below). • 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>
(Server) Load/Scan File	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected. See below.</p> <p>The name of the work file to be used for the function. See also the section Work Files. On mainframes, Work File 1 is used as the load/scan file.</p>
Select	<p>Not applicable to Server Load/Scan Files.</p> <p>Invokes the browse function to select a work file from a directory.</p>
Use Default Options	<p>Default options are used by default. See Set Additional Options in the section Settings, for the options available.</p>
Use Additional Options	<p>Used in connection with Set (see below).</p>
Set	<p>Only activated if Use Additional Options has been selected.</p> <p>Invokes the Load/Scan Options window where you can modify the default settings and enter additional options for the processing sequence. See also Set Additional Options in the section Settings.</p>
Use OPTION Workplan	<p>If selected, a workplan of the type OPTION (see the section Workplans) is used.</p> <p>In the input field, enter the name of a workplan of the type OPTION, or choose a name from the drop-down list box.</p>
List	<p>Only valid if Use OPTION Workplan (see above) has been selected and the name of a valid workplan of the type OPTION was entered.</p> <p>Displays the contents of the workplan specified.</p>

Set Parameters

Applies to the load function only.

From the parameters window of the load wizard, select any of the options provided and, if necessary, complete the fields to be used for function processing:

Field	Explanation
Do not use Parameters	If selected (default), no parameters are used.
Use Global Parameters	If selected, global parameters are used. See also Set Global Parameters in the section Settings.
Set	Only activated if Use Global Parameters has been selected. If selected, the global parameters window is invoked. See Set Global Parameters in the section 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 also the section Workplans). In the input field, enter the name of a workplan of the type PARAMETER, or choose a name from the drop-down list box.
List	Only valid if Use PARAMETER Workplan (see above) has been selected and the name of a valid workplan of the type PARAMETER was entered. Displays the contents of the workplan specified.

Select Objects

Note:

You cannot load or scan Natural-related or external objects in remote environments located on mainframe platforms. Natural DDMs can **only** be loaded or scanned on mainframe platforms.

In the object types selection window, choose any of the three options below to specify the type of object you want to process:

1. Select "Load/Scan all Objects from the Work File" if you want to process **all** objects from the work file.
2. Select "Load/Scan selected Objects from the Work File" to process a particular type of object:
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - Natural-related Objects
 - External Files
 - FDTs
 - Natural DDMs
(remote environments only)

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

Specify the objects and choose Details (if available for the type of object selected) for more detailed specifications, if required.

For the keywords and the valid values that apply to each object type, see the relevant explanation in the section Object Specification.

3. Select "Use SELECTION or LIST" if you want to use a workplan of the type SELECTION or LIST which predefines object selection criteria: see the section Workplans for more information.

In the SELECTION or LIST window, enter the name of a workplan of the type SELECTION or LIST using either option:

Type in the name of a workplan.

Or, from the drop-down list box, choose a name from the list of workplans available.

Click List if you want to list the contents of the workplan specified.

Start Object Handler Command Procedure

Choose the function Start Object Handler Command Procedure if you want to execute a standard procedure (workplan) of the type PROCEDURE with predefined settings and object specifications. See also the section Workplans for further information.

To start and execute an Object Handler command procedure

1. From the wizard main window, choose Start Object Handler Command Procedure.
The procedure window appears.
2. In the field Procedure Name, enter the name of a workplan of the type PROCEDURE (see also Workplans) using either option:
 - Type in the name of a workplan.
Or, from the drop-down list box, choose a name from the list of workplans available.
 - Choose List if you want to display the contents of the workplan specified.
3. Confirm the contents of the PROCEDURE workplan and execute the transaction.

Load a SYSPAUL Application

Note that SYSPAUL Applications can only be loaded in local environments.

To load a SYSPAUL Application

1. In the SYSPAUL Application window, choose Select to select the name of the file "applinfo.txt" of the SYSPAUL Application to be loaded. It is located in the first directory of the SYSPAUL Application (see also "Packaging of SETUP.EXE Files" in Package Application in the SYSPAUL documentation).
The name of the SYSPAUL Application is displayed in the field Name.
2. The Object Handler loads the SYSPAUL Application and displays the result.
The report file "sysload.log" is located in the temporary directory of Natural.

Advanced User

The Object Handler provides a function processing sequence for the advanced user. The following functions are available if the Advanced-User mode is activated:

- Unload
- Load/Scan
- Administration
- View
- Find

Advanced User Administration, View and Find are described in the relevant sections. The section below tells you how to activate the Advanced User and provides a description of the unload or load/scan processing sequence performed in Advanced-User mode.

- Activating Advanced User
 - Advanced User Unload
 - Advanced User Load/Scan
-

Activating Advanced User

To activate the Advanced-User mode

- In the Object Handler welcome window, check the Advanced User box (the default is unchecked). Or, from the Options menu, select Advanced User.

Advanced User Unload

Note:

You cannot unload Natural-related and external objects in remote environments located on mainframe platforms. Natural DDMs can **only** be unloaded in remote environments located on mainframe platforms.

To unload objects in Advanced-User mode

1. In the Object Handler welcome window, click Unload.
Or, from the Actions menu, choose Unload.
The Settings window appears providing the sections Options and Parameters.
2. Set the options and parameters as described in the section Settings.
3. Click OK to continue.
A window appears displaying the types of objects currently available in your Natural system environment.
4. Select one or more types of objects.
5. From the Objects menu, choose Unload.
A window appears where you can specify the objects to be processed. If available for the type of object selected, choose the Details button for further object specifications: see also the relevant sections in Object Specification. Choose Settings, if you want to again modify options and parameters.
If you selected more than one type of object, the object specification windows will be displayed in a sequence, one after the other.
6. From the Objects menu, choose Unload.
The Settings window appears again providing the final chance to modify options and parameters.
7. Click Unload.
A message appears confirming the execution of the unload.

Advanced User Load/Scan

You cannot load or scan Natural-related and external objects in remote environments located on mainframe platforms. Natural DDMs can **only** be loaded or scanned in remote environments located on mainframe platforms.

In addition, you cannot apply the scan function at the same time you are executing an unload function. If you end the current unload to perform a scan, the unload file will be closed. A subsequent unload then writes the data into a new work file. So, if you do not change the work file name, the existing file will be overwritten.

Below is information on how to execute the load and scan functions in Advanced-User mode.

To load objects in Advanced-User mode

1. In the Object Handler welcome window, click Load.
Or, from the Actions menu, choose Load .
The Settings window appears providing the sections Options and Parameters.
2. Set the options and parameters as described in the section Settings.
3. Click OK to continue.
A window appears displaying the types of objects currently available in your Natural system environment.
4. Select one or more types of objects.
5. From the Objects menu, choose Load.
A window appears where you can specify the objects to be processed. If available for the type of object selected, choose the Details button for further object specifications: see also the relevant sections in Object Specification. Choose Settings, if you want to again modify options and parameters.
If you selected more than one type of object, the object specification windows will be displayed in a sequence, one after the other.
6. Click Load.
A message appears confirming the load.

To scan objects in work files in Advanced-User mode

- Perform Steps 1 to 3 above.
- From the Actions menu, select "Scan Work File for" and choose one type of object or all types of objects:
 - If you selected one type of object, the relevant object specification window appears as described under Step 5 above.
 - If you selected all objects for the scan, a window appears providing the final chance to modify options and parameters.
- Click Scan.
A window appears displaying a table with a list of all objects that meet the selection criteria specified and are contained in the work file.

Restart Load

Only applies to the load function and if Write Restart Information has been selected.

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 the restart file specified in the load options. If the load function terminates before the work file has been processed completely, you can continue with the restart function from the point of termination.

In local environments, the restart file is located in the local file system. Work File 6 is used for write and read restart data (see also Work File Options in Set Additional Options, Settings).

In remote environments, restart load data is written into a Natural object of the type Text (text member) located on the workplan library. By default, this text member is a temporary object. We recommend that you specify a permanent text member for restart data as described below.

Note:

To display the name of the text member containing the restart data, from the Tools menu, choose Show Status.

Related topics:

Restart under OPTION-Clause (Option-Setting, Direct and PROCEDURE Workplan Syntax, Commands).
Change Workplan Library in the section Administration.

Below is information on:

- Invoking Restart Load
 - Invoking Restart and Specifying Records
(remote environments only)
-

Invoking Restart Load

To invoke the Restart Load function

- In the Object Handler welcome window, from the Actions menu, choose Restart Load.
The Restart Load dialog window appears.
- In local environments, in the field Restart File, enter the name of the restart file.
Or, click Select and choose a file from a directory.
In remote environments, in the field Restart file, enter the name of the text member containing the restart data.
Or, from the drop-down list box, choose a file.

Specifying Permanent Members

Applies to remote environments only.

To specify a permanent restart text member

- From the Actions menu, choose Change Workplan Library.
The Workplan Library window appears.
- Check the box "Use permanent text member for restart data" and enter the name desired in the corresponding input field.

Restart Load

Specifying Permanent Members

- Click OK to confirm your settings.

View

This function is used to display objects currently located in your Natural system environment. From the view function you can invoke the find function (see the relevant section) to specify further selection criteria for the search.

You can view all objects available on the relevant platform:

In a local environment:

- Natural Library Objects
- Natural System Error Messages
- Natural Command Processor Sources
- Natural-related Objects
- External Files
- FDTs

In a remote environment, in a mainframe system:

- Natural Library Objects
- Natural System Error Messages
- Natural Command Processor Sources
- Natural DDMs
- FDTs

For information on the table columns and cells that appear in the windows generated by the view function, refer to the section Object Specification.

Below is information on:

- Invoking View
 - Terminating View
 - Navigating
 - Saving Object Selections
 - Deleting Objects
-

Invoking View

To invoke the view function

- In Advanced-User mode, from the Actions menu, choose View.
The View window appears listing the types of objects available for selection.

Terminating View

To leave the view function

- From the Object menu, choose Close.
Or click the standard Windows close button.

Navigating

To navigate between the windows of the view function and to select objects

- In the initial View window, from the Objects menu, choose Next or Back
Or double-click the type(s) of object(s) you want to select.

For remote environments:

To view objects from different system files, double-click the field User-defined System File, enter the Adabas DBID, FNR, Password and Cipher and choose OK.

Saving Object Selections

To save a list of selected objects as workplan of the type LIST

- From any of the object selection tables generated by the view function, select the objects desired.
- From the Object menu, choose "Save Into".
The "Save into List" box appears.
- In the field Workplan Name, enter the name of new workplan of the type LIST, and fill in the field Workplan Description.
Or, from the drop-down list box, choose a workplan from a list of available workplans.
- Click OK to add the objects specified to the workplan.

Deleting Objects

To delete objects

1. From any of the object selection tables generated by the view function, choose the object(s) you want to delete.
2. From the Object menu, choose Delete.
A confirmation box appears.
3. Choose Yes to execute the deletion.

Find

Only applies if the Advanced-User mode is activated.

This function is used to locate objects in your Natural environment. In addition to the view function (see the relevant section), the find provides options to specify further criteria for the object selection.

For information on the table columns and cells that appear in the boxes generated by the find function, refer to the section Object Specification.

To invoke the find function

- In the View window, or any unload, load or scan window (Advanced-User mode only), from the Actions menu, select Find and the type(s) of object(s) provided for selection:
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - FDTs
 - DDMs
(remote environments only)
 - SELECTION or LIST
- Choose a type of object.
Depending on the type selected, a box appears asking for input of selection criteria.
- Enter the data required and choose Find.
If the object(s) specifications match the items available in your environment, a window appears listing the corresponding hits.
- From any of the object selection tables generated by the find command, you have the following choices as described in the section View:
 - Deleting Objects
 - Saving Object Selections
- If the load or unload function of the Object Handler has been activated, you can load or unload objects selected by choosing Load or Unload from the Objects menu. See Advanced User Unload or Advanced User Load/Scan in the section Advanced User for further information.

To terminate the find function

- From the Object menu, choose Close.
Or click the standard Windows close button.

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.

The Object Handler provides the option to use an administration wizard which determines the processing sequence, or to use the administration function for advanced users.

Attention:

The administration wizard offers a restricted set of administration functions that does not provide the option to create, modify, delete, export or import workplans. To get the full set of administration functions, activate the Advanced-User mode.

Below is information on:

- Administration Wizard
 - Advanced User Administration
 - Change Workplan Library
-

Administration Wizard

The wizard provides the Next and Back buttons to navigate between the windows (steps). Use the Cancel button to cancel the processing sequence.

To invoke the administration wizard

- Uncheck the Advanced User box on the Object Handler welcome window if necessary (the default is unchecked) and choose the Administration... command button.

The Administration window appears providing the following options described below:

- List and check Workplan
- Start Object Handler Command Procedure
- Change Workplan Library

The steps below describe the processing sequence performed depending on the option chosen.

List and check Workplan

This function is used to list all workplans available in the workplan library.

To list and check workplans

1. In the initial Administration window, choose List and Check Workplan.
A window appears providing the fields Workplan Name and Workplan Type.
2. Enter the name of a workplan.
Or, from the drop-down list box, choose a name from the list of workplans available.
3. Choose Next.
A window appears displaying the contents of the workplan specified.
4. Choose Next.
The Object Handler checks the syntax and displays the result.
Note that this step does not apply to workplans of the types TEXT and LIST.
5. Choose Next.
The initial Administration window appears.

Start Object Handler Command Procedure

1. In the initial Administration window, choose Start Object Handler Command Procedure.
A window appears providing the field Procedure Name.
2. Enter the name of a workplan of the type PROCEDURE.
Or, from the drop-down list box, choose a name from the list of workplans available.
3. Choose Next.
A window appears displaying the contents of the workplan specified.
4. Choose Next.
The Object Handler executes the command procedure and displays the result.
5. Choose Next.
The initial Administration window appears.

Advanced User Administration

To invoke the administration function in Advanced-User mode

- In the Object Handler welcome window, tick the Advanced User check box and choose the "Administration..." command button.
The Administration window appears providing a table of the workplans available in your workplan library (see also Change Workplan Library below).
The following columns are provided:

Name	The name of the workplan.
Type	Type of workplan: see Types of Workplans in the section Workplans.
Description	Description of the workplan.
User	ID of the user who last modified the workplan.
Date	The date and time of the last modification.

If the workplan library does not contain any workplan, the table is empty.

To terminate the administration function in Advanced-User mode

- From the Object menu, choose Close.
Or click the standard Windows close button.

Below is information on:

- Advanced User Administration Table

Advanced User Administration Table

Below is a list of options provided in the workplan table, along with explanations and instructions on how to apply them:

Sort Table	Double-click the column by which you want to sort the table or, from the Edit menu, select "Sort table by" and the column name.
Create Workplan	<p>From the Object menu, choose New Workplan and select the type of workplan. Depending on the editing option chosen by checking or unchecking the Free Format Editing from the Options menu, the following applies:</p> <p>If checked, or if you create a workplan type other than OPTION, PARAMETER or SELECTION, you will get a window with an edit area. Enter the contents of the workplan.</p> <p>If unchecked, dialog boxes with input fields are provided for workplans of the types OPTION, PARAMETER and SELECTION.</p> <p>For information on the syntax used, see the section Commands.</p>
Modify Workplan	<p>Double-click the workplan desired or, from the Object menu, choose Open Workplan and enter the name of a workplan or select a workplan from the drop-down list box. In the window provided, you can edit the workplan.</p> <p>For information on the syntax used, see the section Commands.</p>
Delete Workplan	From the Object menu, choose Delete or, right-click the workplan desired and choose Delete.
Check Syntax	<p>Select a workplan and, from the Object menu, choose Check.</p> <p>Note that the Check option does not apply to workplans of the type TEXT or LIST.</p>
Execute Workplan	<p>Applies to workplans of the type PROCEDURE only.</p> <p>Select one or more workplans and, from the Object menu, choose Execute.</p>
Import/Export File	To import or export a workplan from/to the file system, from the Object menu, choose Import or Export.

Change 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.

Below is information on:

- Local Environments
- Remote Environments

Local Environments

To change the workplan library in a local environment

1. From the Actions menu, choose Change the Workplan Library.
Or, using the Administration Wizard, from the initial Administration window, choose Change the Workplan Library.
A window appears providing the following fields:

Library	The name of the workplan library. Default is the library WORKPLAN. From the drop-down list box, choose the name of an available workplan library.
DBID	Specifies the database ID (DBID) where the workplan library resides. If no values are specified, the FUSER or FNAT system file is used.
FNR	Specifies the file number (FNR) where the workplan library resides. If no values are specified, the FUSER or FNAT system file is used.

2. Enter the data required and choose Next.
The initial Administration window appears.

Remote Environments

In addition to the fields listed above, in remote environments, the function Change Workplan Library also provides the option to specify permanent files for reports, traces and restarts of load functions (see also the sections Tools and Restart Load).

In remote environments, report, trace and restart data are written into Natural objects (members) of the type Text in the workplan library. The Object Handler assigns them temporary names and automatically deletes them after two days. Using Change Workplan Library and the fields "Use permanent...", data can be stored in permanent text members that are kept until overwritten by new data or intentionally deleted by the user.

To change the workplan library in a remote environment and define permanent record files

1. In the initial Administration window, choose Change the Workplan Library.
A window appears providing the following fields:

Library	See Library above.
DBID	See DBID above.
FNR	See FNR above.
Password	The Adabas password of the Adabas file where the workplan library resides.
Cipher	The Adabas cipher code of the Adabas file where the workplan library resides.
Work File Text Member	To specify a text member to store report, restart or trace data, check the relevant "Use permanent..." box and enter the name of a Natural object of the type Text in the corresponding input field: Report Data: See also Reports in the section Tools. Restart Data: See also the section Restart Load. Trace Data: See also Traces in the section Tools.

2. Enter the data required and confirm your changes by clicking OK or pressing ENTER.

Object Specification

For the unload, load and scan functions, the Object Handler provides object specification windows where you can define the objects to be processed and specify selection criteria.

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 on the Work File
(load and scan only)
 - Natural Library Objects
 - Natural System Error Messages
 - Natural Command Processor Sources
 - Natural-related Objects
 - External Files
 - FDTs
 - Natural DDMs
 - Use SELECTION or LIST
-

All Objects

Applies to the load and scan functions only.

This function is used to select for processing all objects available in the work file. 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, user-defined error messages and shared resources.

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

The object specification window provides the following fields:

Field	Explanation
Library	The name of a library or a range: see (*) Name. To choose a name from a selection list of the libraries available, open the drop-down list box.
DBID	Unload only. The database ID (DBID) of the system file where the Natural libraries to be unloaded reside.
FNR	Unload only. The file number (FNR) of the system file where the Natural libraries to be unloaded reside. If no values (or 0) are specified for DBID and FNR, the FUSER or FNAT system file is used.
Password	Unload only, if executed in remote environments located on mainframe platforms. The Adabas password of the system file where the Natural libraries to be unloaded reside.
Cipher	Unload only, if executed in remote environments located on mainframe platforms. The Adabas cipher code of the system file where the Natural libraries to be unloaded reside.
Name	The name of a Natural object or shared resource or a range: see (*) Name. The default is asterisk (*) which selects all objects available. Only evaluated if the parameters Natural Programming Objects and/or Shared Resources are selected in the details window, which is the default. See also Natural Library Objects Details.
Message from/to	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 the details window, which is the default. See also Natural Library Objects Details.
Details	Invokes an additional window where you can enter more detailed object specifications. See Natural Library Objects Details.

- 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 details window for Natural library objects provides the following fields:

Field	Explanation
Library	The name of a library or a range: see (*) Name. The default is asterisk (*) which selects all libraries available. To choose a name from a selection list of the libraries available, open the drop-down list box.
DBID	See DBID in Natural Library Objects above.
FNR	See FNR in Natural Library Objects above.

Field	Explanation
Password	See Password in Natural Library Objects above.
Cipher	See Cipher in Natural Library Objects above.
Natural Programming Objects	Natural programming objects. DDMs: In remote environments located in mainframe systems, DDMs are stored in the FDIC system file and they are not considered Natural library objects. In other system environments, DDMs are considered Natural programming objects which are located in Natural libraries.
Error Messages	User-defined Natural error messages.
Shared Resources	Any non-Natural file that is used in a Natural environment and is maintained in the Natural library system. Note that shared resources are not defined in remote environments located in mainframe systems.
Name	See Name in Natural Library Objects above.
S/C-Kind	Kinds of Natural programming objects: Src Source objects only. Gp Generated (cataloged) programs only. Any All saved and/or generated (cataloged) programs. This is the default. Stowed All stowed objects: source and cataloged objects with identical date and time. Both Both source and cataloged objects if both exist. Note: Stowed and Both are valid for the unload function only.
Natural Object Types	Types of Natural programming objects.
Select All	Selects all types of Natural programming objects (this is the default).
Deselect All	Deselect all types of Natural programming objects.
Natural Error Messages: from/to	See Message from/to in Natural Library Objects above.
Natural Error Messages: Language Codes	Language code(s) of the error messages: Up to 8 valid Natural language codes. An asterisk (*) selects all Natural language codes.

Field	Explanation								
Natural Error Messages:	Kind of error message text:								
S/L-Kind	<table border="0"> <tr> <td>Short</td> <td>Short text of error message.</td> </tr> <tr> <td>Long</td> <td>Long text.</td> </tr> <tr> <td>Any</td> <td>All short and/or long texts. This is the default.</td> </tr> <tr> <td>Both</td> <td>Short and long text if both exist.</td> </tr> </table>	Short	Short text of error message.	Long	Long text.	Any	All short and/or long texts. This is the default.	Both	Short and long text if both exist.
Short	Short text of error message.								
Long	Long text.								
Any	All short and/or long texts. This is the default.								
Both	Short and long text if both exist.								
Properties	Invokes an extra window where you can specify additional properties of Natural programming objects: see Natural Library Objects Properties below.								
Exceptions	Invokes an extra window where you can specify exceptions to the selection of Natural programming objects: see Natural Library Objects Exceptions below.								

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 properties window for Natural library objects provides the following sections and fields:

Section/Field	Explanation						
User ID	The ID of the user who saved the object last. Specify a single user ID or a range: see (*) Name.						
Natural Version	Natural version of the Natural programming objects. Valid version format: <i>VRSM</i> where <i>V</i> is the 1-digit version, <i>R</i> the 1-digit release, and <i>SM</i> the 2-digit system maintenance level. Ranges are allowed: see (*) Name.						
Mode	Type of programming mode of the Natural programming objects: <table border="0"> <tr> <td>Structured</td> <td>Structured mode only.</td> </tr> <tr> <td>Report</td> <td>Report mode only.</td> </tr> <tr> <td>Any</td> <td>Any mode, structured and/or report. This is the default.</td> </tr> </table>	Structured	Structured mode only.	Report	Report mode only.	Any	Any mode, structured and/or report. This is the default.
Structured	Structured mode only.						
Report	Report mode only.						
Any	Any mode, structured and/or report. This is the default.						
DDM DBID	Not valid in remote environments located on mainframe platforms. The database ID (DBID) of the Data Definition Modules (DDMs). Valid entries are: 1 to 65535 or 0 (all DBIDs)						
DDM FNR	Not valid in remote environments located on mainframe platforms. The file number (FNR) of the DDMs: Valid entries are: 1 to 65535 or 0 (all FNRs).						
Date:	Performs no check for the object date.						
Select all Objects							

Section/Field	Explanation
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).
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).
Size:Size: Select all Objects	Performs no check for the object size.
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.
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 exceptions window. 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 exceptions window for Natural library objects is basically identical with the details window. For an explanation of the fields and commands listed below see the relevant section. The Properties button is used to specify additional properties of Natural programming objects exceptions: see Natural Library Objects Exceptions Properties below.

Section/Field
Location: Library
Object Types: Natural Programming Objects Error Messages Shared Resources
Natural Programming Objects and Shared Resources: Name
Natural Programming Objects: S/C-Kind Natural Object Types
Natural Error Messages: from/to Language Codes S/L-Kind
Extras: Properties

Natural Library Objects Exceptions Properties

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

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

The exceptions properties window for Natural library objects provides the following fields:

Field	Explanation
User ID	See User ID in Natural Library Objects Properties.
Natural Version	See Natural Version in Natural Library Objects Properties.
Mode	See Programming Mode 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 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 for processing.

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

The specification window for system error messages provides the following fields:

Field	Explanation
Number from/to	The range of Natural system error messages delimited by the first and the last message number.
DBID	Unload only, if executed in remote environments located on mainframe platforms. The database ID (DBID) of the system file where the Natural system error messages to be unloaded reside.
FNR	Unload only, if executed in remote environments located on mainframe platforms. The file number (FNR) of the system file where the Natural system error messages to be unloaded reside. If no values for DBID and FNR (or 0) are specified, the FNAT system file is used.
Password	Unload only, if executed in remote environments located on mainframe platforms. The Adabas password of the system file where the Natural system error messages to be unloaded reside.
Cipher	Unload only, if executed in remote environments located on mainframe platforms. The Adabas cipher code of the system file where the Natural system error messages to be unloaded reside.
Details	Invokes the details window where you can enter more detailed object specifications: see Natural System Error Messages Details below.

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 details window for Natural system error messages provides the following fields:

Field	Explanation
Number from/to	See Number from/to in Natural System Error Messages above.
DBID	See DBID in Natural System Error Messages above.
FNR	See FNR in Natural System Error Messages above.
Password	See Password in Natural System Error Messages above.
Cipher	See Cipher in Natural System Error Messages above.
S/L-Kind	See S/L-Kind in Natural Library Objects Details.
Language Codes	See Language Codes in Natural Library Objects Details.
Exceptions	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 exceptions window. Error messages that match **all** specifications defined as exceptions, are exempted from processing.

For an explanation of the fields, 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 specification window for command processor sources provides the following fields:

Field	Explanation
Library	The name of a Natural command processor library or a range: see (*) Name.
DBID	Unload only. The database ID (DBID) where the Natural command processor sources reside. For details, see the Natural SYSNCP Utility documentation.
FNR	Unload only. 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	Unload only. The Adabas password of the Adabas file where the Natural command processor sources reside.
Cipher	Unload only. The Adabas cipher code of the Adabas file where the Natural command processor sources reside.
Details	Invokes the details window where you can enter more detailed object specifications: see Natural Command Processor Sources Details below.

Below is information on:

- Natural Command Processor Sources Details
- Natural Command Processor Sources Exceptions

Natural Command Processor Sources Details

This function is used to specify further selection criteria for the processing of Natural command processor sources.

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

The details window for Natural command processor sources provides the following fields:

Field	Explanation
Library	The name of a Natural command processor library or a range: see (*) Name.
DBID	See DBID in Natural Command Processor above.
FNR	See FNR in Natural Command Processor above.
Password	See Password in Natural Command Processor above.
Cipher	See Cipher in Natural Command Processor above.
Name	The name of a Natural command processor source or a range: see (*) Name.
Exceptions	Invokes the exceptions window where you can specify exceptions to the selection of Natural command processors: see Natural Command Processor Sources Exceptions below.

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 and Natural Command Processor Sources Details are checked against the specifications made in the exceptions window. Command Processor Sources 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 exceptions window for Natural Command Processor Sources provides the following fields.

Field	Explanation
Library	The name of a Natural command processor source or a range: see (*) Name.
Name	The name of a Natural command processor source or a range: see (*) Name.

Natural-related Objects

Not applicable to remote environments located on mainframe platforms.

Process Natural-related objects in internal format, that is, do **not** check the box Transfer Format. 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 selection window for Natural-related objects provides the following fields:

Field	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.
Object Name	The name of a Natural-related object. Load and scan: A single name or a range: see (*) Name.
Select	Invokes the browse function to select an object from a directory.
Details	Invokes the details window where you can enter further object specifications: see Natural-related Objects Details.

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 details window for Natural-related objects provides the following fields:

Field	Explanation
Natural Path	See Natural Path in Natural-related Objects above.
Object Name	See Object Name in Natural-related Objects above.
Select	Invokes the browse function to select an object from a directory.
Date: Select all Objects	Performs no check for the object date.
Date: Select Objects modified between/and	See Object Date in Natural Library Objects Properties.
Date: Select Objects modified on	See Object Date in Natural Library Objects Properties.
Size: Select all Objects	Performs no check for the object size.
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.
Size: Select Objects with Size	All objects whose size fits the size value specified in the field.
Exceptions	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 exceptions window for Natural-related objects. 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 exceptions window for Natural-related objects provides the following fields:

Field	Explanation
Natural Path	See Natural Path in Natural-related Objects above.
Object Name	See Object Name in Natural-related Objects above.
Select	Invokes the browse function to select an object from a directory.
Date: Ignore Date	Performs no check for the object date.
Date: Exclude Objects modified between/and	See Object Date in Natural Library Objects Properties Exceptions above.
Date: Exclude Objects modified on	See Object Date in Natural Library Objects Properties Exceptions above.
Size: Ignore Size	Performs no check for the object size.
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.
Size: Exclude Objects with Size	Exempts from processing all objects whose size fits the size value specified in the field.

External Objects

Not applicable to remote environments located on mainframe platforms.

Process external objects in internal format, that is, do **not** check the box Transfer Format. 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 specification window for external objects provides the following fields:

Field	Explanation
External Path	The name of the path where the external object resides. Load and scan: The name of the path or asterisk (*) to select all paths.
Object Name	The name of an external object. Load and scan: A single name or a range: see (*) Name.
Select	Invokes the browse function to select an object from a directory.
Details	Invokes the details window where you can enter further object specifications: see External Objects Details.

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 details window for external objects provides the following fields:

Field	Explanation
External Path	See External Path in External Objects above.
Object Name	See Object Name in External Objects above.
Select	Invokes the browse function to select an object from a directory.
Date: Select all Objects	Performs no check for the object date.
Date: Select Objects modified between/and	See Object Date in Natural Library Objects Properties.
Date: Select Objects modified on	See Object Date in Natural Library Objects Properties.
Size: Select all Objects	Performs no check for the object size.
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.
Size: Select Objects with Size	All objects whose size fits the size value specified in the field.
Exceptions	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 exceptions window. 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 exceptions window for external objects provides the following fields:

Field	Explanation
External Path	See External Path in External Objects above.
Object Name	See Object Name in External Objects above.
Select	Invokes the browse function to select an object from a directory.
Date: Ignore Date	Performs no check for the object date.
Date: Exclude Objects modified between/ and	See Object Date in Natural Library Objects Properties Exceptions.
Date: Exclude Objects modified on	See Object Date in Natural Library Objects Properties Exceptions.
Size: Ignore Size	Performs no check for the object size.
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.
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 selection window for FDTs provides the following fields:

Field	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	The Adabas password for the Adabas file of the FDT to be processed.
Cipher	The Adabas cipher code for the Adabas file of the FDT to be processed.

Natural DDMs

Only applicable to remote environments located on mainframe platforms.

This function is used to select Natural Data Definition Modules (DDMs) for processing.

On mainframe platforms, DDMs are stored in the FDIC system file. The DDMs to be processed by the Object Handler reside in the default FDIC file. If you want to define a different FDIC file, use the Option-Setting clause as described in the section Direct and PROCEDURE Workplan Syntax, Commands.

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

The selection window for DDMs provides the following fields:

Field	Explanation
Name	The name of a DDM or a range: see (*) Name.
Details	Invokes an additional window where you can enter further object specifications: see Natural DDMs Details.
Display FDIC	This field is available in Advanced-User mode only. Displays the current FDIC setting.
Set FDIC	This field is available with the Load/Unload wizard only. Provides a window, where the current FDIC setting can be modified.

Below is information on:

- Natural DDMs Details
- Natural DDMs Exceptions

Natural DDMs Details

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

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

The details window for Natural DDMs provides the following fields:

Field	Explanation
Name	The name of the DDM or a range: see (*) Name.
DDM DBID	See DDM DBID in Natural Library Objects Properties.
DDM FNR	See DDM FNR in Natural Library Objects Properties.
Date: Select all Objects	Performs no check for the object date.
Date: Select Objects modified between/and	See Object Date in Natural Library Objects Properties.
Date: Select Objects modified on	See Object Date in Natural Library Objects Properties.
Size: Select all Objects	Performs no check for the object size.
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.
Size: Select Objects with Size	All objects whose size fits the size value specified in the field.
Exceptions	Invokes an extra screen where you can specify exceptions to the selection of Natural-related objects: see Natural-related Objects Exceptions.

Natural DDM Exceptions

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

All objects that match the selection criteria defined in Natural DDMs and Natural DDMs Details are checked against the specifications made in the exceptions window. DDMs 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 exceptions window for Natural DDMs provides the following fields:

Field	Explanation
Name	The name of a DDM or a range: see (*) Name.
User ID	See User ID 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.
Date: Ignore Date	Performs no check for the object date.
Date: Exclude Objects modified between/and	See Object Date in Natural Library Objects Properties Exceptions.
Date: Exclude Objects modified on	See Object Date in Natural Library Objects Properties Exceptions.
Size: Ignore Size	Performs no check for the object size.
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.
Size: Exclude Objects with Size	Exempts from processing all objects whose size fits the size value specified in the field.

Use SELECTION or LIST

With this function you can use a defined workplan of the type SELECTION or LIST which specifies selection criteria for the objects to be processed. See also the section Workplans.

The object specification window provides the Name field to enter the name of the workplan to be processed. To choose a name from a selection list of the workplans available, open the drop-down list box.

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 window in Advanced-User mode

- From the Object Handler welcome window, start the unload or load function.
Or, during the unload or load function, from the Options menu choose Settings.
Or, during the unload or load function, from an object specification window click Settings.

This section covers the following topics:

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

Settings Window Fields

The Settings window provides the following fields:

Field	Explanation
Transfer Format	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected. See below.</p> <p>Unload: The data to be unloaded are written in Transfer format to the work file.</p> <p>Load and scan: The data to be loaded or scanned are expected to be in Transfer format.</p>
Portable Work File	<p>Not applicable to remote environments.</p> <p>Only valid:</p> <ul style="list-style-type: none"> ● If Use Default Options (this is the default) or Use Additional Options has been selected (see below). ● 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>
(Server) Unload/Load/Scan File	<p>Only valid if Use Default Options (this is the default) or Use Additional Options has been selected (see below).</p> <p>The name of the work file to be used for the function. See also the section Work Files. Work File 1 is used as the unload, load or scan file.</p>
Select	<p>Not applicable to Server Unload/Load/Scan Files.</p> <p>Invokes the browse function to select a work file from a directory.</p>

Field	Explanation
Use Default Options	Default options are used by default: see also Use Additional Options below. See also Set Additional Options below.
Use Additional Options	Used in connection with Set (see below).
Set	Only activated if Use Additional Options has been selected Invokes the Unload/Load/Scan Options window 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. In the input field, enter the name of a workplan of the type OPTION, or choose a name from the drop-down list box.
List (OPTION Workplan)	Only activated if Use OPTION Workplan (see above) has been selected and the name of a valid workplan of the type OPTION was entered. Displays the contents of the workplan specified.
Do not use Parameters	No parameters are used by default.
Use global Parameters	Used in connection with Set (see below). Global parameters are used. See also Set Global Parameters below.
Set (global Parameters)	Only activated if Use Global Parameters has been selected. Invokes the Unload/Load Parameters window. See Set Global Parameters below for a description of the keywords and the valid values.
Use PARAMETER Workplan	A workplan of the type PARAMETER is used. See also Workplans. In the input field, enter the name of a workplan of the type PARAMETER, or choose a name from the drop-down list box.
List (PARAMETER Workplan)	Only valid if Use PARAMETER Workplan (see above) has been selected and the name of a valid workplan of the type PARAMETER was entered. Displays the contents of the workplan specified.

Set Additional Options

The sections contained in the Unload/Load/Scan Options window 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
- 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
Unload/Load/Scan File	The work file to be used for the unload, load or scan function. See also the section Work Files. Click Select to choose a name from a directory.
Write Report	Writes a report of the objects processed. In remote environments, the report data are written to a Natural text member located in the workplan library.
Start New Report	Only valid if Write Report has been selected. Deletes the contents of the report before a new report is written.
Report File	Only valid in local environments and if Write Report has been selected. The name of a report file. Click Select to choose a name from a directory.
Write Restart Information	Applies to the load function only. With this option you can resume load functions that terminated abnormally. In local environments, 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). In remote environments, this restart information is written to a Natural text member located in the workplan library. If the load function terminates before the work file has been processed completely, you can continue from the point of termination using the restart function. See also Restart Load in the section Function.
Restart File	Only applies to the load function in local environments 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. Click Select to choose a name from a directory. See also Restart Load in the section Function.

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 (On)	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
Ignore (Off)	No XREF data are processed.	Unload Load
Doc	Loads cataloged objects only if Predict entries exist for the objects in the FDIC system file.	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
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 Transfer Format box has been checked.

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-defined 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:

Replace all	Replaces all objects.
Do not replace	Does not replace any objects. This is the default.
Replace obsolete Files	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 Value and the New Value, except for "Error Number Difference" and target system file specifications. If no 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
Name	<p>Value: A single object name or a range: see (*) Name.</p> <p>New Value: A single object name or a range: see (*) Name.</p> <p>See also Rules for New Values below.</p>
Library	<p>Value: A single library name or a range: see (*) Name.</p> <p>New Value: A single library name or a range: see (*) Name.</p> <p>See also Rules for New Values below.</p>
Date	<p>Value: A single date or a range: see (*) Date and (*) Time.</p> <p>New Value: A single date or a range: see (*) Date and (*) Time.</p> <p>See also Rules for New Values below.</p>
User ID	<p>Value: A single user ID or a range: see (*) Name.</p> <p>New Value: A single user ID or a range: see (*) Name.</p> <p>See also Rules for New Values below.</p>
Language Codes	<p>Value: up to 8 language codes.</p> <p>New Value: Up to 8 language codes. If more than 1 language code is specified, the Value must contain the same number of language codes. In this case, the language code in 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. It can only be specified if start and end values are entered as selection criteria (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>Value: A valid DBID and/or FNR.</p> <p>New Value: A valid DBID and/or FNR.</p>
External Path	<p>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 Password Cipher	Database ID (DBID) and file number (FNR) of the target FNAT system file. This system file is used for all library objects whose library name starts with SYS, but not SYSTEM. In remote environments, you can also specify the Adabas password and cipher code.
Load FUSER DBID/FNR Password Cipher	DBID and FNR of the target FUSER system file. This system file is used for all library objects whose library name does not start with SYS, and for the library SYSTEM. In remote environments, you can also specify the Adabas password and cipher code.
Load NCP DBID/FNR Password Cipher	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.

Rules for New Values

The following applies to the New Value for Object Name, Library, User ID, External 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 Value. This is also valid if 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.

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

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	Local environments: Unload from library TEST into Work File 1 all Natural programming objects and shared resources starting with A, and all user-defined error messages; write the report into Work File 4. Remote environments located on mainframe platforms: Unload from library TEST into Work File 1 on the server system all Natural programming objects starting with A, and all user-defined error messages; write the report into the corresponding text member of the workplan library.
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.

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.

The objects to be processed and their corresponding work files are located in the same environment. That is, Object Handler functions invoked in a local environment will only process objects from this local environment, with a work file located in the current local file system. Object Handler functions invoked in a remote environment will only process objects from the same remote environment, and the work file used for the load or unload function is located in the same remote environment.

See also Work File Options in the section Settings, the section Work Files in the Natural User's Guide for Windows, the section DEFINE WORK FILES in the Natural Statements documentation and the profile parameter WORK in the Natural Parameter Reference documentation.

Below is information on:

- Work File Assignment
- Work File Format

Work File Assignment

- Local Environments
- Remote Environments

Local Environments

Below is a list of the work files used by the Object Handler in local environments.

File	Explanation
Work File 1	Used for the unload, load and scan functions. Contains the data unloaded.
Work File 3	Internal report file. Contains scan and find results.
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 Restart Load, Functions) 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 also Traces in the section Tools.
Work Files 11 to 15	Internal work files.

Remote Environments

Below is a list of the work files used in remote environments.

File	Location	Explanation
Work File 1	Local system.	Used to transfer work files from the local environment to the server and vice versa. See also Transfer Work File in the section Tools.
Work File 1	Server system.	Used for the unload, load and scan functions. Contains the data processed. This work file must be defined on the server environment.
Work File 3	Local system.	Internal work file.
Work File 9	Local system.	Internal work file.
Work Files 11 to 15	Local system.	Internal work files.

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 SYSPAUL must be processed with the internal format.
- For remote environments:
Work files created by the utility NATUNLD on the server, must be processed with the internal format.
Work files created by the Object Handler in internal format on the server, can be processed with the utilities

NATUNLD and NATLOAD.

However, this only applies to objects which can be transferred by 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/NATLOAD is applied.

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).

Local Environments:

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

Remote Environments:

Work File 1 must be defined in the server environment. If Transfer format is specified, Work File 1 contains data of text (ASCII) format. If Transfer Format is **not** specified, Work File 1 contains data of internal format.

SYSTRANS:

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 and maintain workplans.

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

- Direct and PROCEDURE Workplan Commands
- Direct and PROCEDURE Workplan Syntax

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) and Restart Load.

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** *dmm-dbid*] [**DDMFNR** *dmm-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 <i>date</i> [FMDATE <i>date-from</i>] [TODATE <i>date-to</i>]	}]
---	---	--	---	---

[{	SIZE <i>size</i> [FMSIZE <i>size-from</i>] [TOSIZE <i>size-to</i>]	}]
---	---	--	---	---

[**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 R Shared resources 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	*

Keyword	Values	Default Value
<u>S</u> CKIND	<p>Not applicable if OBJTYPE=D (see above).</p> <p>Kind of Natural programming objects:</p> <p>S Source objects. If used in the EXCEPT clause: objects that exist in source form only.</p> <p>C Cataloged objects. If used in the EXCEPT clause: objects that exist in cataloged form only.</p> <p>A All saved and cataloged objects.</p> <p>W Source and cataloged objects if both have the same date and time (stowed).</p> <p>B Source and cataloged objects if both exist.</p> <p>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.</p>	A
MODE	<p>Not applicable if OBJTYPE=D (see above).</p> <p>The type of programming mode of the Natural programming objects:</p> <p>R All objects in report mode.</p> <p>S All objects in structured mode.</p> <p>A Any.</p>	A
FMNUM	<p>The start number of the Natural error messages. Valid range: 1 to 9999.</p>	1
TONUM	<p>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.</p>	9999 or value of FMNUM
<u>S</u> LKIND	<p>The type of Natural error message texts:</p> <p>S Short text. Cannot be applied to the DELETE command (see Direct and PROCEDURE Workplan Commands).</p> <p>L Long text.</p> <p>A Short and long text, or the one that exists.</p> <p>B Short and long text, but only if both exist.</p>	A

Keyword	Values	Default Value
<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>VRSM</i> where <i>V</i> is the 1-digit version, <i>R</i> the 1-digit release, and <i>SM</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, and the date of the shared resources. 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, and the date of the shared resources. 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 all Natural programming objects were cataloged or saved, and the date of the shared resources. 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 and the shared resources. Maximum: 7-digit number.	0 (no check)
FMSIZE	The start value for the size of the Natural programming objects and the shared resources. Maximum: 7-digit number.	0 (no check)
TOSIZE	The end value for the size of the Natural programming objects and the shared resources. 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)

Keyword	Values	Default Value
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.
- If an object for shared resources contains blank characters, it must be enclosed in quotation marks (" ").

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>] 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>])]	[{ PASSWORD PSW } <i>password</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)
<u>SL</u> KIND	See SLKIND under Natural Object Selection. A = short and/or long Natural error message texts.	A
<u>L</u> ANGUAGE	Up to 8 valid language codes of Natural error messages. Asterisk (*) = all language codes.	*
<u>E</u> XCEPT	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

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

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

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.	

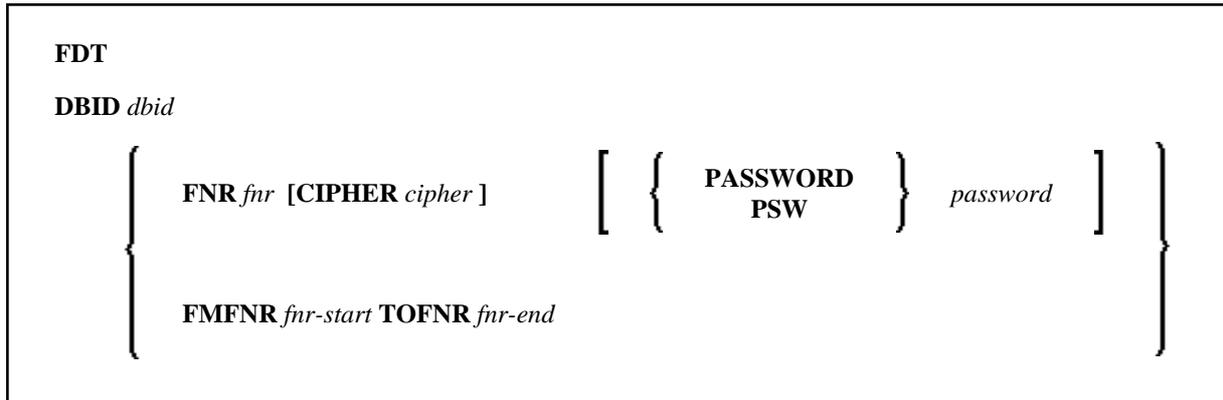
Note:

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



[

FMFNR *fmr-start* **TOFNR** *fmr-end*

]

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 ncp-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
)
```

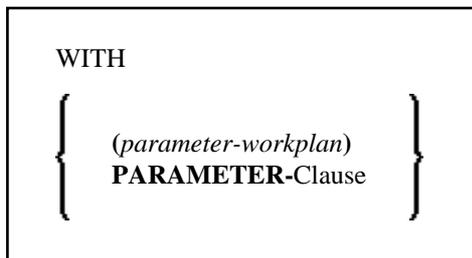
Parameter-Setting

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.

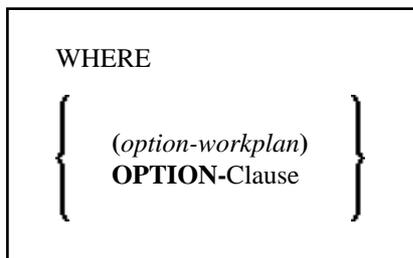
Option-Setting

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

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 steplib; 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>	

Tools

The Natural Object Handler provides special features in the Tools menu to display status information and reports, check and modify trace settings and transfer work files to and from remote environments.

Below is information on:

- Status
 - Last Result
 - Traces
 - Reports
 - Transfer Work File
-

Status

Displays the Object Handler functions currently used, the user environment, the workplan library and the current usage of Work Files 1 to 15.

Last Result

Displays the last internal command issued by the processing interface of the Object Handler and possible return codes and messages.

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, use the Trace Setting option of the Tools menu. In remote environments, you may maintain permanent tracing files by choosing Change Workplan Library from the Actions menu (see the relevant section in Administration).

Reports

Lists the objects unloaded, loaded 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 (see also Work File Options in the section Settings). To display the contents of the latest report file, from the Tools menu choose Show Report File.

Transfer Work File

Transfers the contents of work files from local environments to servers and vice versa.

The work files must be of corresponding types. See also Work File Format in the section Work Files.