

# Providing Natural Applications

This document describes how to provide a Natural application for loading into another environment. The term "Natural Application" used in this document concerns the conventional type of application and does not refer to the new application concept introduced with Natural Single Point of Development (SPoD).



Please note that the utility SYSPAUL is going to be withdrawn soon. Its functionality will be included in the Natural utility SYSOBJH.

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## SYSPAUL Utility

The Natural utility SYSPAUL allows you to define application descriptions, to unload and package (for example, on diskette) entire Natural applications, and to load and scan individual application files. Applications are unloaded/packaged in exactly the same directory structure they are to represent when loaded into a target environment. In addition to Natural objects, non-Natural objects can also be part of such an application.

The SYSPAUL utility is used to:

- unload Natural stowed objects, cataloged objects, saved objects, DDMs and error messages from your current Natural environment into a Natural application file;
- unload non-Natural objects as, for example, bitmaps or help files from a specified library or directory into a target Natural environment;
- create delete instructions for the deletion of Natural stowed objects, cataloged objects, saved objects, DDMs and error messages from a target Natural environment;
- unload Natural application files (including delete instructions) into a specified directory;
- package unloaded Natural application files, for example, on diskette;
- load unloaded and packaged Natural application files into a target environment;
- scan application files to be loaded without actually loading them.

### Note:

Any functionality of the SYSPAUL utility can be restricted by using the user exit PAUL-E1S provided in the library SYSPAUL; for further details, refer to the information provided in the PAUL-E1S source.

## Invoking SYSPAUL

You invoke the SYSPAUL utility by entering Natural direct commands in either of the following ways:

- enter the command SYSPAUL,
- enter the command LOGON SYSPAUL first and then the command MENU.

When you invoke SYSPAUL, the "Providing Applications" dialog box appears offering you the following functions:

- Define Application Description
- Unload Application
- Package Application
- Load Application File
- Scan Application File

All functions can be chosen either from the "Function" menu located in the menu bar or from the "Function" group frame via option buttons.

In addition to the OK button, the "Providing Applications" dialog box contains the following buttons:

- "Exit" button to exit the SYSPAUL utility;
- "Help" button, which can be used as an alternative to the "Help" option of the menu bar to invoke a help text.

## Define Application Description

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When you choose the "Define Application Description" function, the "Define Application Description [*description-name*]" dialog box appears.

The menu bar of this dialog box provides the following menus:

Menu	Explanation
<b>Description</b>	Is used to maintain application descriptions for the unloading and packaging of Natural applications.
<b>Application Files</b>	Is used to define application files for the Natural objects to be unloaded and/or packaged.
<b>Instructions</b>	Is used to specify the Natural and/or non-Natural objects to be unloaded and/or packaged.
<b>Options</b>	Is used to specify where a newly created application file or unload instruction line is to be added to the existing list of application files or unload instruction lines.
<b>Help</b>	Invokes a help text that corresponds to the one invoked by choosing the "Help" button.

## Description

When you select "Description", a menu containing the following functions is displayed:

Function	Explanation
<b>New</b>	Indicates that a new application description is to be created; the "Define Application Description" dialog box becomes empty, except the: <ul style="list-style-type: none"> <li>- "Application Files Directory" text box, which by default contains the path name of the Natural TMP directory;</li> <li>- "Application Name" text box, which is "untitled";</li> <li>- "Application Files" list box, which contains a default application file.</li> </ul>
<b>Open</b>	Displays an existing application description, which has to be selected in a dialog box that appears when you choose this function.
<b>Save</b>	Saves an application description on disk after you have created and/or modified it.
<b>Save as</b>	Saves an application description under a different name, which has to be specified in a dialog box that appears when you choose this function.
<b>Delete</b>	Deletes an existing application description, which has to be selected in a dialog box that appears when you choose this function.
<b>List</b>	Invokes the List Application Description [ <i>description-name</i> ] dialog box that lists an application description.
<b>Print</b>	Prints an application description, see below.
<b>Import</b>	Imports an application description, the name of which has to be specified in a dialog box that appears when you choose this function, see below.
<b>Set</b>	Invokes the Application Load Settings [ <i>description-name</i> ] dialog box in which you can specify several settings that are to apply when loading the corresponding application.
<b>Unload</b>	Generates an application according to the specified description. The application is unloaded to the directory specified in the "Application Files Directory" text box. It consists of all Natural application files (that is, unload instructions for Natural objects) and non-Natural objects specified for unloading during the current application packaging session. When you choose this function, the "Unload Application" dialog box is displayed, in which you can specify several unload options; see below.
<b>Pack</b>	Packs the contents of the unload directory on diskette, automatically using the directory structure that the application is to represent in the target environment and a format that can be used by the Natural setup facility. When you choose this function, the "Package Application" dialog box is displayed, in which you can specify several options for packaging; see below.
<b>Exit</b>	Exits the SYSPAUL utility.

### List Application Description

In the "List Application Description [*description-name*]" dialog box, you can specify whether you want to save the listed application description in a format suitable for the "Import" function. If so, choose the "Save" button; choose the "Cancel" button to leave the application description listing without saving it.

### Print Application Description

In the "Print Application Description [*description-name*]" dialog box, you can specify how many copies (default is 1) of the selected application description you want to be printed. In addition, you can modify your printer specifications by choosing the "Setup" button, which takes you to a printer setup dialog specific to the operating system.

## Import Application Description

In the "Import Application Description" dialog box, you can specify or select the application description you want to import. The specified or selected application description must have been saved in a suitable format by using the "List" function.

## Application Load Settings

In the "Application Load Settings [*description-name*]" dialog box, you can specify:

- Several items for the setup screen of the load procedure.
- The name of the parameter module list provided with the application.  
The list of parameter modules to be specified must have been created with the Natural\_Configuration Utility.
- The full path name of the SETUP.EXE file and the full path name of the SETUP.EXE help file. The SETUP.EXE is used to load Natural applications to a Natural environment. You will find the SETUP.EXE file at the following path:  
%NATDIR%/NATVERS%/Natural/applinst.
- The required disk space for your system files in the target environment (recommended).
- The DBID and type of the database(s) to be used by the application.  
The specified values will be valid for the global configuration file of the target environment.

## Application Files

When you select "Application Files", a menu containing the following functions is displayed:

Function	Explanation
<b>Add</b>	Use this function to add a new application file, the name of which has to be specified in a dialog box that appears when you choose this function. Depending on the setting of the "Options" menu, the new application file is inserted after (default) or before the application file previously selected in the "Application Files" list box.
<b>Modify</b>	Use this function to modify the name of the application file selected in the "Application Files" list box ; an appropriate dialog box appears.
<b>Delete</b>	Use this function to delete the application file selected in the "Application Files" list box with all contained unload instructions.
<b>Import</b>	Use this function to import an application file; an appropriate dialog box appears.

For further information, see Adding and Modifying Application Files.

## Import Application Files

When you choose the "Import" function from the "Application Files" menu, the "Import Application File" dialog box is displayed, in which you specify the name of the application file to be imported and the name of the description in which this application file is contained.

You can select the description name in a further dialog box, which is invoked by choosing the "Select" button.

You can select the application file name from a selection list of all application files contained in the specified description.

Depending on the setting of the "Options" menu, the imported application file is inserted after (default) or before the application file previously selected in the "Application Files" list box. The corresponding unload instructions are placed in the list box of the "Unload Instructions" group frame.

## Instructions

When you select "Instructions", a menu containing the following functions is displayed:

Function	Explanation
<b>Add</b>	Use this function (or choose the "Add" button) to add a new line of unload instructions. An appropriate dialog box appears when you choose this function. Depending on the setting of the "Options" menu, the new line of instructions is added after (default) or before the instruction line previously selected in the list box of the "Unload" Instructions group frame.
<b>Modify</b>	Use this function (or choose the "Modify" button) to modify the line of unload instructions selected in the list box of the "Unload Instructions" group frame; an appropriate dialog box appears.
<b>Delete</b>	Use this function (or choose the "Delete" button) to delete the line of unload instructions selected in the list box of the "Unload Instructions" group frame.

For further information, see Adding and Modifying Unload Instructions for Natural Objects.

## Options

When you select "Options", a menu containing the following options is displayed:

Option	Explanation
<b>Insert Before</b>	Indicates that a newly created application file or line of unload instructions is to be added before the application file or instruction line previously selected in the "Application Files" or "Unload Instructions" list box.
<b>Insert After</b>	Indicates that a newly created application file or line of unload instructions is to be added after the application file or instruction line previously selected in the "Application Files" or "Unload Instructions" list box; this is the default setting.

## Further Components of the Define Application Description Window

In addition to the menu bar, the "Define Application Description" dialog box contains several boxes and command buttons.

### Boxes

The boxes contained in the "Define Application Description" dialog box are:

- The "Application Name" text box, which is used to specify the name of the application to be unloaded.
- The "Application Files Directory" text box, which is used to specify the directory into which the specified Natural application files are to be unloaded.
- The "Application Files" list box that lists all application files currently defined for unloading. If no application file has been defined so far, a default application file is provided.
- The "Non-Natural Objects" check box, which is used to specify that existing unload instructions for non-Natural objects are to be displayed in the "Unload Instructions" group frame (see below).
- The "Unload Instructions [*application-file-name*]" group frame that consists of a list box, which lists all unload instructions currently contained in the application file selected in the "Application Files" list box, and three command buttons.

If the "Non-Natural Objects" check box is selected (see above), the "Unload Instructions [Non-Natural Objects]" group frame is displayed instead, which consists of a list box that lists all unload instructions currently available for non-Natural objects.

## Buttons

In addition to the OK, "Cancel" and "Help" buttons, the "Define Application Description" dialog box contains the following command buttons:

- The "Add" button, which can be used as an alternative to the "Add" function of the Instructions menu to add a new line of instructions to the list box of the "Unload Instructions" group frame.
- The "Modify" button, which can be used as an alternative to the "Modify" function of the Instructions menu to modify the instruction line selected in the list box of the "Unload Instructions" group frame.
- The "Delete" button, which can be used as an alternative to the "Delete" function of the Instructions menu to delete the instruction line selected in the list box of the "Unload Instructions" group frame.

## Adding and Modifying Application Files

If you select an existing application file in the "Application Files" list box and choose the "Add" function of the "Application Files" menu, the "Add Application File" dialog box is displayed, in which you can specify a name for the application file to be added. Depending on the setting of the "Options" menu, the application file is then added either before or after the previously selected one.

If you select an existing application file in the "Application Files" list box and choose the "Modify" function of the "Application Files" menu, the "Modify Application File" dialog box is displayed, in which you can modify the application file name.

In both dialog boxes, you can also specify a user comment.

To modify the contents (that is, the unload instructions) of the application file selected in the "Application Files" list box, use the functions of the "Instructions" menu and/or the corresponding command buttons.

## Adding and Modifying Unload Instructions for Natural Objects

This section only applies if the "Non-Natural Objects" check box is not selected.

If you select an existing instruction line in the list box of the "Unload Instructions" group frame and then choose either the "Add" function of the "Instructions" menu or the "Add" button, the "Add Instructions" dialog box is displayed.

The "Add Instructions" dialog box provides a menu, from which you can choose the following Natural object types for unloading or deletion:

### Menu - Objects

- Unload Programming Objects
- Unload DDMs
- Unload Error Message Texts
- Delete Programming Objects
- Delete DDMs
- Delete Error Message Texts

With each object type, an appropriate "Add Instruction" dialog box appears when chosen. This dialog box is empty, so that you can specify the necessary items for adding a new instruction line. Depending on the setting of the "Options" menu, the instruction line is then added either after or before the previously selected one.

If you select an existing instruction line in the list box of the "Unload Instructions" group frame and then choose either the "Modify" function of the "Instructions" menu or the "Modify" button, the corresponding "Modify Instruction" dialog box is displayed. This dialog box displays the individual items of the selected instruction line for modification.

## Unload Programming Objects

If you choose "Unload Programming Objects" as the type of objects to be unloaded, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can unload the following programming objects:
	<b>Any</b> Any source-only, cataloged-only and stowed objects.
	<b>Cataloged</b> Any object which exists as a <i>cataloged</i> object.
	<b>Source</b> Any object which exists as a <i>source</i> object.
	<b>Both</b> Only those objects which exist in <i>both</i> source and cataloged form.
<b>From Library</b>	The name of the library from which the specified programming object(s) are to be unloaded. A list of existing libraries can be displayed for selection.
<b>Object Name</b>	The name of the object to be unloaded. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*), wildcard notation (?), and/or the special characters "<" and ">". If you specify an asterisk only (default), all objects contained in the specified "From Library" are selected. Choose the "Select Objects" button to display the selected object range and select objects from that range.
<b>Object Type</b>	The type(s) of object(s) to be unloaded. All object types with the specified "Object Name" are selected by default (*). Choose the "Select Types" button if you want to select specific object types only.
<b>To Library</b>	The name of the library into which the unloaded objects are to be loaded. If no library is specified, the name of the library specified as "From Library" is used.
<b>Xref</b>	Depending on your specification, you can unload the Xref data or not:
	<b>Yes</b> If a cataloged object has cross-reference data, these are unloaded with the object.
	<b>No</b> The cross-reference data will not be unloaded.
<b>Comment</b>	An area, in which you can enter text, for example, a comment.

Natural programming objects are unloaded from the FNAT or FUSER system files. Objects in libraries whose names begin with "SYS" (except the library SYSTEM) are, by default, unloaded from the FNAT file; any other objects are unloaded from the FUSER file, unless a DBID and FNR is specified for a library in Natural Security.

## Unload DDMs

If you choose "Unload DDMs" as the type of objects to be unloaded, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can unload the following DDMs:
	<b>Any</b> Any source-only, cataloged-only and stowed DDM.
	<b>Cataloged</b> Any DDM which exists as a <i>cataloged</i> DDM.
	<b>Source</b> Any DDM which exists as a <i>source</i> DDM.
	<b>Both</b> Only those DDMs which exist in <i>both</i> source and cataloged form.
<b>From Library</b>	The name of the library from which the specified DDM(s) are to be unloaded. A list of existing libraries can be displayed for selection.
<b>DDM Name</b>	The name of the DDM to be unloaded. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*), wildcard notation (?), and/or the special characters "<" and ">". If you specify an asterisk only (default), all DDMs contained in the specified "From Library" are selected. Choose the "Select Objects" button to display the selected DDM range and select DDMs from that range,.
<b>DDM DBID</b>	The database ID (DBID) of the DDM to be unloaded. If you specify a DBID, only DDMs with this DBID are unloaded. The DBID must be a number from 0 to 65535 (except 255).
<b>DDM FNR</b>	The file number (FNR) of the DDM to be unloaded. If you specify a FNR (file number), only DDMs with this FNR are unloaded. The FNR must be a number from 0 to 5000.
<b>To Library</b>	The name of the library into which the unloaded DDMs are to be loaded. If no library is specified, the name of the library specified as "From Library" is used.
<b>Comment</b>	An area in which you can enter text, for example, a comment.

## Unload Error Message Texts

If you choose "Unload Error Message Texts" as the type of objects to be unloaded, a dialog box is displayed, in which you can specify the following items:

<b>Message Type</b>	The type of error messages to be unloaded: <b>User</b> User-defined error messages <b>System</b> Natural error messages
<b>From Library</b>	The name of the library from which the specified messages are to be unloaded (only to be used with user messages). A list of existing libraries can be displayed for selection.
<b>Message Number</b>	The range of error message numbers to be unloaded.
<b>Language Code</b>	The language code of the error messages to be unloaded; for valid codes, see the description of the "*LANGUAGE" system variable in the Natural Reference documentation.
<b>To Library</b>	The name of the library into which the unloaded messages are to be loaded (only to be used with user messages). If no library is specified, the name of the library specified as "From Library" is used.
<b>Comment</b>	An area in which you can enter text, for example, a comment.

**Note:**

For Natural error messages, you need not specify a library, because they are always unloaded from either the FNAT system file or the error messages subdirectory.

## Delete Programming Objects

If you choose "Delete Programming Objects" as the type of object to be deleted, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can delete the following programming objects:
	<b>Any</b> - Any source-only, cataloged-only and stowed objects.
	<b>Cataloged</b> - Any object which exists as a <i>cataloged</i> object.
	<b>Source</b> - Any object which exists as a <i>source</i> object.
	<b>Both</b> - Only those objects which exist in <i>both</i> source and cataloged form.
<b>From Library</b>	The name of the library from which the specified programming object(s) are to be deleted. A list of existing libraries can be displayed for selection.
<b>Object Name</b>	The name of the object to be deleted. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*), wildcard notation (?), and/or the special characters "<" and ">". If you specify an asterisk only (default), all objects contained in the specified "From Library" are selected. Choose the "Select Objects" button to display the selected object range and select objects from that range.
<b>Object Type</b>	The type(s) of object(s) to be deleted. All object types with the specified "Object Name" are selected by default (*). Choose the "Select Types" button if you want to select specific object types only.
<b>Comment</b>	An area in which you can enter text, for example, a comment.

Natural programming objects are deleted from the FNAT or FUSER system files. Objects in libraries whose names begin with "SYS" (except the library SYSTEM) are, by default, deleted from the FNAT file; any other objects are deleted from the FUSER file, unless a DBID and FNR is specified for a library in Natural Security.

## Delete DDMs

If you choose "Delete DDMs" as the type of object to be deleted, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can delete the following DDMs:
	<b>Any</b> - Any source-only, cataloged-only and stowed DDM.
	<b>Cataloged</b> - Any DDM which exists as a <i>cataloged</i> DDM.
	<b>Source</b> - Any DDM which exists as a <i>source</i> DDM.
	<b>Both</b> - Only those DDMs which exist in <i>both</i> source and cataloged form.
<b>From Library</b>	The name of the library from which the specified DDM(s) are to be deleted. A list of existing libraries can be displayed for selection.
<b>DDM Name</b>	The name of the DDM to be deleted. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*), wildcard notation (?), and/or the special characters "<" and ">". If you specify an asterisk only (default), all DDMs contained in the specified "From Library" are selected. Choose the "Select Objects" button to display the selected DDM range and select DDMs from that range.
<b>Comment</b>	An area, in which you can enter text, for example, a comment.

## Delete Error Message Texts

If you choose "Delete Error Message Texts" as the type of object to be deleted, a dialog box is displayed, in which you can specify the following items:

<b>Message Type</b>	The type of error messages to be deleted: <b>User</b> - User-defined error messages <b>System</b> - Natural error messages
<b>From Library</b>	The name of the library from which the messages are to be deleted (only to be used with user messages). A list of existing libraries can be displayed for selection.
<b>Message Number</b>	The range of error message numbers to be deleted.
<b>Language Code</b>	The language code of the error messages to be deleted; for valid codes, see the description of the "*LANGUAGE" system variable in the Natural Reference documentation.
<b>Comment</b>	An area in which you can enter text.

### Note:

For Natural error messages, you need not specify a library, because they are always deleted from the FNAT system file or the error messages subdirectory.

## Selecting Objects

If you choose the "Select Objects" button when unloading or deleting Natural programming objects or DDMs, a corresponding "Select Objects:" dialog box is displayed, in which you can:

- Select objects from the displayed selection list by marking them and choosing the "Select" button.
- Remove objects from the list of objects selected from the displayed selection list either by marking them and choosing the "Remove" button, or by choosing the "Remove all" button.

When you choose OK, you return to the corresponding "Unload" or "Delete" dialog box, in which all other unload or delete items (except "To Library") are now disabled.

## Adding and Modifying Unload Instructions for Non-Natural Objects

This section only applies if you select the "Non-Natural Objects" check box; for "Natural Objects" see the corresponding section.

If you select an existing instruction line in the list box of the "Unload Instructions" group frame and then choose either the "Add" function of the "Instructions" menu or the "Add" button, the "Add Instruction: Unload Objects from Directory" dialog box is displayed.

If you select an existing instruction line in the list box of the "Unload Instructions" group frame and then choose either the "Modify" function of the "Instructions" menu or the "Modify" button, the corresponding "Modify Instruction: Unload objects from Directory" dialog box is displayed. This dialog box displays the individual items of the selected instruction line for modification.

### Unload Objects from Directory

You select "Unload Objects from Directory" if you want to unload non-Natural objects contained in an operating system directory; a dialog box is displayed, in which you can specify the following items:

<b>From Directory</b>	The name of the directory or Natural subdirectory from which the specified object is to be unloaded.
<b>Object Name</b>	The name of the object to be unloaded.
<b>To Directory</b>	The name of the Natural subdirectory in the target environment to which the specified objects are to be loaded. The path can contain environment variables. Example: %TEMP%/xy.
<b>Comment</b>	An area in which you can enter text, for example, a comment.

## Selecting Objects

If you choose the "Select Objects" button when unloading non-Natural objects, a corresponding "Select Object from Directory" dialog box is displayed, in which you can:

- Select objects from the displayed selection list by marking them and choosing the OK button.

When you choose OK, you return to the corresponding "Unload Objects" or "Delete Objects" dialog box.

## **Unloading Natural Applications**

If you want to generate and unload an application, choose the "Unload" function of the "Description" menu is displayed.

Since this function corresponds to the "Unload Application" function that can be chosen from within the "Providing Applications" dialog box, refer to the description of this function for further information.

## **Packaging Natural Applications**

If you want to package an application, choose the "Pack" function of the "Description" menu is displayed.

Since this function corresponds to the "Package Application" function that can be chosen from within the "Providing Applications" dialog box, refer to the description of this function for further information.

## Unload Application

When you choose the "Unload Application" function, the "Open Application Description" dialog box appears, in which you specify the name of the description for your application to be unloaded.

When you specify a name and choose OK, the "Unload Application [*description-name*]" dialog box is displayed.

**Note:**

The "Unload Application" dialog box also appears when you choose the "Unload" function from the "Description" menu of the "Define Application Description" dialog box.

### The Unload Application Dialog Box

Before you start to unload the application by choosing the "Unload" button, you can specify:

- several unload options in the General Unload Options group frame;
- whether and where an unload report is to be created in the Report group frame.

The application is unloaded to the directory specified in the "Application Files Directory" text box. It consists of all Natural application files (that is, unload instructions for Natural objects) and non-Natural objects as specified in the corresponding application description.

### General Unload Options

In the "Unload Application" dialog box you can specify the following general unload options:

Option	Specifies
<b>User Action</b>	Whether a user action to be performed if a report is generated. If also the option "Screen" is selected, the display of the report stops each time a user action is required; if "Screen" is not selected, no user response is required.
<b>Ignore Warning</b>	Whether processing is to be continued if an object contained in the application description could not be found.
<b>Restart</b>	Whether processing is to be resumed if it has been terminated abnormally.
<b>Work File Name (Restart)</b>	The name of the work file that is to contain the restart information required in the case of a restart.

## Report

In addition to the general unload options, you can specify the following "Report" options:

<b>Option</b>	<b>Specifies</b>
<b>Screen</b>	Whether the report is to be output on the screen. If also the option "User Action" is selected, the display of the report stops each time a user action is required; if "User Action" is not selected, the next status message is displayed without waiting for a user response.
<b>Work File</b>	Whether the report is to be written to a work file.
<b>Work File Name (Report)</b>	The name of the work file that is to contain the report if the "Work File" option has been selected.

## Package Application

When you choose the "Package Application" function, the "Open Application Description" dialog box appears, in which you specify the name of the description for your application to be packaged.

When you specify a name and choose OK, the "Package Application [*description-name*]" dialog box is displayed.

**Note:**

The "Package Application" dialog box also appears when you choose the "Pack" function from the "Description" menu of the "Define Application Description" dialog box.

## Package Application Dialog Box

Before you start to package the application by choosing the "Pack" button, you can specify:

- Several packaging options in the General Packaging Options group frame.
- Whether and where a packaging report is to be created in the Report group frame.

The application is packaged in the directory specified in the "Target Directory" text box. It consists of all unloaded Natural application files and non-Natural objects as specified in the corresponding application description.

In addition to the path name, the size of the target directory (for example, a diskette) can be specified in the "Directory Size" text box.

Choosing the "Proposal" button invokes the Packaging Proposal [*description-name*] dialog box.

## Packaging Proposal

The "Packaging Proposal [*description-name*]" dialog box provides you with a proposal of how to distribute the various application files to be packaged on, for example, several diskettes.

Only application files with message "File is ok" should be used for packaging. Multiple application files can be grouped.

Entries in the "Group" and "Disk" columns of the provided proposal can be modified, and modified proposals can be sorted and checked for feasibility. An automatic check is performed when you choose OK.

## Packaging of SETUP.EXE Files

SYSPAUL puts the following files on the first disk:

- The APPLINFO.TXT file, which is a control file for SETUP.EXE. This file contains all information necessary to load a Natural application with SETUP.EXE. This includes the appearance of the startup screen, options, and information about the files to be loaded, and custom information.
- The SETUP.EXE
- Online help for the SETUP.EXE
- The startup bitmap to be displayed in the background.
- The list of the Natural parameter modules which are to take on the same values as the settings in the customer environment. When SETUP.EXE is run, the system file settings of this parameter module are modified to the settings which exist in the user environment; other parameters are left unchanged.

## General Packaging Options

In the "Pack Application" dialog box you can specify the following general packaging options:

Option	Specifies
<b>User Action</b>	Whether a user action to be performed if a report is generated. If also the option "Screen" is selected, the display of the report stops each time a user action is required; if "Screen" is not selected, no user response is required.
<b>Ignore Warning</b>	Whether processing is to be continued if an object contained in the application description could not be found.
<b>Check Files</b>	Whether the files are to be checked beforehand.
<b>Keep Files</b>	Whether the files are to be kept in the application files directory after processing or if they are to be deleted.

## Report Creation

In addition to the general packaging options, you can specify the following "Report" options:

Option	Specifies
<b>Screen</b>	Whether the report is to be output on the screen. If also the option "User Action" is selected, the display of the report stops each time a user action is required; if "User Action" is not selected, the next status message is displayed without waiting for a user response.
<b>Work File</b>	Whether the report is to be written to a work file.
<b>Work File Name (Report)</b>	The name of the work file that is to contain the report if the "Work File" option has been selected.

## Load Application File

If you want to load an application file, choose the "Load Application File" function in the "Providing Applications" dialog box. The "Load Application File" dialog box is displayed.

The application file to be specified in the "Application File" text box can be selected in a further dialog box, which is invoked by choosing the "Select" button.

Before you start to load the specified application file by choosing the "Load" button, you can specify:

- Several load options in the General Load Options group frame.
- Whether and where a load report is to be created in the Report group frame.

### General Load Options

In the "Load Application File" dialog box you can specify the following general load options:

Option	Specifies
<b>User Action</b>	Whether a user action to be performed if a report is generated. If also the option "Screen" is selected, the display of the report stops each time a user action is required; if "Screen" is not selected, no user response is required.
<b>Ignore Warning</b>	Whether processing is to be continued if an object to be loaded could not be found.
<b>Replace</b>	Whether a source in the target environment with the same name as the one you are loading is to be replaced.
<b>Select Objects</b>	Whether you want to load selected parts of the application file only; if so, you have to specify a selection via the "Select Objects" button.
<b>Restart</b>	Whether processing is to be resumed if it has been terminated abnormally.
<b>Work File Name (Restart)</b>	The name of the work file that is to contain the restart information required in the case of a restart.

## Report

In addition to the general load options, you can specify the following report options:

Option	Specifies
<b>Screen</b>	Whether the report is to be output on the screen. If also the option "User Action" is selected (see General Load Options), the display of the report stops each time a user action is required; if "User Action" is not selected, the next status message is displayed without waiting for a user response.
<b>Work File</b>	Whether the report is to be written to a work file.
<b>Work File Name (Report)</b>	The name of the work file that is to contain the report if the "Work File" option has been selected.

## Specify a Selection

If you select the load option "Select Objects" and choose the "Select Objects" button, the "Specify Selection" dialog box is displayed.

The "Specify Selection" dialog box provides a menu, from which you can choose the following Natural object types for loading into or deletion from your target environment:

- Load Programming Objects
- Load DDMs
- Load Error Message Texts

With each object type, an appropriate "Load Selection" dialog box appears when chosen. This dialog box is empty, so that you can specify the various items necessary for your selection.

If you check the "Delete allowed" entry in the "Options" box, the delete instructions in the load file are performed. If you uncheck "Delete allowed", the delete instructions are ignored.

## Load Programming Objects

If you choose "Load Programming Objects" as the type of objects to be loaded, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can load the following programming objects:
	<b>Any</b> - Any source-only, cataloged-only and stowed objects.
	<b>Cataloged</b> - Any object which exists as a <i>cataloged</i> object.
	<b>Source</b> - Any object which exists as a <i>source</i> object.
<b>Library</b>	The name of the library to be loaded. A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>Object Name</b>	The name of the object to be loaded. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*). If you specify a value followed by an asterisk, all objects whose name begins with this value are loaded. If you specify an asterisk only (default), all objects contained in the specified library are loaded.
<b>Object Type</b>	The type(s) of object(s) to be loaded. All object types with the specified object name are selected by default (*). Choose the "Select Types" button if you want to select specific object types only.
<b>Xref</b>	Depending on your specification, the following XREF restriction applies:
	<b>No</b> - Only the cataloged objects will be loaded, not the cross-reference data.
	<b>Yes</b> - Cataloged objects are only loaded if cross-reference data for the object are present on the load file.
	<b>Force</b> - Cataloged objects are only loaded if cross-reference data for the object are present on the load file. Additionally, the object must be defined in PREDICT.
	<b>Any</b> - Cross-reference data for the object are loaded if they are present on the load file.

Natural programming objects are loaded into the FNAT or FUSER system files. Objects in libraries whose names begin with "SYS" (except the library SYSTEM) are, by default, loaded into the FNAT file; any other objects are loaded into the FUSER file, unless a DBID and FNR is specified for a library in Natural Security.

## Load DDMs

If you choose "Load DDMs" as the type of objects to be loaded, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can load the following DDMs: <b>Any</b> - Any source-only, cataloged-only and stowed DDM. <b>Cataloged</b> - Any DDM which exists as a <i>cataloged</i> DDM. <b>Source</b> - Any DDM which exists as a <i>source</i> DDM.
<b>Library</b>	The name of the library to be loaded. A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>DDM Name</b>	The name of the DDM to be loaded. You can specify either a specific name or a range. You can specify a range by using asterisk notation (*). If you specify a value followed by an asterisk, all DDMs whose name begins with this value are loaded. If you specify an asterisk only (default), all DDMs contained in the specified library are loaded.
<b>DDM DBID</b>	The database ID (DBID) of the DDM to be loaded. If you specify a DBID, only DDMs with this DBID are loaded. The DBID must be a number from 0 to 65535 (except 255).
<b>DDM FNR</b>	The file number (FNR) of the DDM to be loaded. If you specify a FNR (file number), only DDMs with this FNR are loaded. The FNR must be a number from 0 to 5000.

## Load Error Message Texts

If you choose "Load Error Message Texts" as the type of objects to be loaded, a dialog box is displayed, in which you can specify the following items:

<b>Message Type</b>	The type of error messages to be loaded: <b>User</b> - User-defined error messages <b>System</b> - Natural error messages
<b>Library</b>	The name of the library to be loaded (only to be used with user messages). A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>Message Number</b>	The range of error message numbers to be loaded.
<b>Language Code</b>	The language code of the error messages to be loaded; for valid codes, see the description of the "*LANGUAGE" system variable in the Natural Reference documentation.

### Note:

For Natural error messages, you need not specify a library, because they are always loaded into either the FNAT system file or the error messages subdirectory.

## Scan Application File

If you want to scan an application file without actually loading it, choose the "Scan Application File" function in the "Providing Applications" dialog box. The "Scan Application File" dialog box is displayed.

The application file to be specified in the "Application File" text box can be selected in a further dialog box, which is invoked by choosing the "Select" button.

Before you start to scan the specified application file by choosing the "Scan" button, you can specify:

- Several scan options in the General Scan Options group frame.
- Whether and where a scan report is to be created in the Report group frame.

### General Scan Options

In the "Scan Application File" dialog box you can specify the following general scan options:

Option	Explanation
<b>User Action</b>	Specifies whether a user action to be performed if a report is generated. If also the option "Screen" is selected (see General Load Options), the display of the report stops each time a user action is required; if "Screen" is not selected, no user response is required.
<b>Continue Processing</b>	Specifies whether processing is to be continued if an object to be scanned could not be found.
<b>Select Objects</b>	Specifies whether you want to scan selected parts of the application file only; if so, you have to specify a selection via the "Select Objects" button.
<b>Restart</b>	Specifies whether processing is to be resumed if it has been terminated abnormally.
<b>Work File Name (Restart)</b>	Specifies the name of the work file that is to contain the restart information required in the case of a restart.

### Report

In addition to the general scan options, you can specify the following report options:

Option	Explanation
<b>Screen</b>	Specifies whether the report is to be output on the screen. If also the option "User Action" is selected (see General Load Options), the display of the report stops each time a user action is required; if "User Action" is not selected, the next status message is displayed without waiting for a user response.
<b>Work File</b>	Specifies whether the report is to be written to a work file.
<b>Work File Name (Report)</b>	Specifies the name of the work file that is to contain the report if the "Work File" option has been selected.

## Specify a Selection

If you select the scan option "Select Objects" and choose the "Select Objects" button, the "Specify Selection" dialog box is displayed.

The "Specify Selection" dialog box provides a menu, from which you can choose the following Natural object types for scanning:

### Scan Selection - Objects

- Load Programming Objects
- Load DDMs
- Load Error Message Texts

With each object type, an appropriate "Scan Selection" dialog box appears when chosen. This dialog box is empty, so that you can specify the various items necessary for your selection.

If you uncheck "Delete allowed", the delete instructions are ignored.

## Load Programming Objects

If you choose "Load Programming Objects" as the type of objects to be scanned, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can scan the following programming objects:
	<b>Any</b> - Any source-only, cataloged-only and stowed objects.
	<b>Cataloged</b> - Any object which exists as a <i>cataloged</i> object.
	<b>Source</b> - Any object which exists as a <i>source</i> object.
<b>Library</b>	The name of the library to be scanned. A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>Object Name</b>	The name of the object to be scanned. The name can be either a specific name or a range. You can specify a range by using asterisk notation (*). If you specify a value followed by an asterisk, all objects whose name begins with this value are scanned. If you specify an asterisk only (default), all objects contained in the specified library are scanned.
<b>Object Type</b>	The type(s) of object(s) to be scanned. All object types with the specified object name are selected by default (*). Choose the "Select Types" button if you want to select specific object types only.
<b>Xref</b>	Depending on your specification, the following XREF restriction applies:
	<b>No</b> - Only the cataloged objects will be scanned, not the cross-reference data.
	<b>Yes</b> - Cataloged objects are only scanned if cross-reference data for the object are present on the load file.
	<b>Force</b> - Cataloged objects are only scanned if cross-reference data for the object are present on the load file. Additionally, the object must be defined in PREDICT.
	<b>Any</b> - Cross-reference data for the object are scanned if they are present on the load file.

Natural programming objects are scanned on the FNAT or FUSER system files. Objects in libraries whose names begin with "SYS" (except the library SYSTEM) are, by default, scanned on the FNAT file; any other objects are scanned on the FUSER file, unless a DBID and FNR is specified for a library in Natural Security.

### Load DDMs

If you choose "Load DDMs" as the type of objects to be scanned, a dialog box is displayed, in which you can specify the following items:

<b>Object Form</b>	Depending on your specification, you can scan the following DDMs:  <b>Any</b> - Any source-only, cataloged-only and stowed DDM.  <b>Cataloged</b> - Any DDM which exists as a <i>cataloged</i> DDM.  <b>Source</b> - Any DDM which exists as a <i>source</i> DDM.
<b>Library</b>	The name of the library to be scanned. A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>DDM Name</b>	The name of the DDM to be scanned. You can specify either a specific name or a range. You can specify a range by using asterisk notation (*). If you specify a value followed by an asterisk, all DDMs whose name begins with this value are scanned. If you specify an asterisk only (default), all DDMs contained in the specified library are scanned.
<b>DDM DBID</b>	The database ID (DBID) of the DDM to be scanned. If you specify a DBID, only DDMs with this DBID are scanned. The DBID must be a number from 0 to 65535 (except 255).
<b>DDM FNR</b>	The file number (FNR) of the DDM to be scanned. If you specify a FNR (file number), only DDMs with this FNR are scanned. The FNR must be a number from 0 to 5000.

### Load Error Message Texts

If you choose "Load Error Message Texts" as the type of objects to be scanned, a dialog box is displayed, in which you can specify the following items:

<b>Message Type</b>	The type of error messages to be scanned: <b>User</b> - User-defined error messages <b>System</b> - Natural error messages
<b>Library</b>	The name of the library to be scanned (only to be used with user messages). A list of available libraries can be displayed for selection. You can only specify a library that has been specified as target library with the "Unload" function.
<b>Message Number</b>	The range of error message numbers to be scanned.
<b>Language Code</b>	The language code of the error messages to be scanned; for valid codes, see the description of the "*LANGUAGE" system variable in the Natural Reference documentation.

**Note:**

For Natural error messages, you need not specify a library, because they are always scanned on either the FNAT system file or the error messages subdirectory.