

Application Programming Interfaces

This section describes the application programming interfaces (APIs) available with Natural Security. It covers the following topics:

- Overview of Subprograms
- Subprogram NSC---L
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- Subprogram NSC---P
- Subprogram NSCADM
- Subprogram NSCCHCK
- Subprogram NSCDA
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- Subprogram NSCMA
- Subprogram NSCOB
- Subprogram NSCUS
- Subprogram NSCUT
- Subprogram NSCXLO

- Subprogram NSCXR
 - Subprogram NSCXRIER
 - Subprogram NSCXRUSE
 - Subprogram SECNOTE
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Overview of Subprograms

Natural Security provides a number of application programming interfaces (APIs), that is, subprograms which may be used to access Natural Security maintenance and retrieval functions from outside the Natural Security library SYSSEC.

Use of the subprograms is controlled by the general option "Free Access to Functions via APIs" (which is described in the section *Administrator Services*).

On the Main Menu, you enter code "A" for "Administrator Services". The Administrator Services Menu will be displayed.

Note:

Access to Administrator Services may be restricted (as explained in the section *Administrator Services*).

On the Administrator Services Menu 2, you select "Application Programming Interfaces". A list of the interface subprograms along with examples and explanatory online texts will be displayed.

The following subprograms are available:

Subprograms for Access Verification:

Subprogram	Function
NSC---L	Check if logon to a library is allowed, and which modules in a library are available to a user.
NSCCHCK	Check if access to external object is allowed.
NSCDEF	Check if object is defined to Natural Security.

Subprograms for User Authentication:

Subprogram	Function
NSC---P	Check if password is valid.
NSC---P	Check if password is valid, and change password.
NSC---SP	Check if password is valid - in RPC server environments.

Subprograms for Administrator Services:

Subprogram	Function
NSCADM	Display General Options; process (ETID-related) logon records; remove/re-establish maintenance/retrieval sections for individual object types; display users in whose security profiles a value differs from a preset value.
NSCXLO	Display maintenance log records.

Subprograms for Object Maintenance:

Subprogram	Function
NSCFI	Maintenance functions for files.
NSCLI	Maintenance functions for libraries.
NSCMA	Maintenance functions for mailboxes.
NSCOB	Maintenance functions for external objects.
NSCUS	Maintenance functions for users.
NSCUT	Maintenance functions for utilities.

Subprograms for Retrieval:

Subprogram	Function
NSCDA	Display library security profile.
NSCDA-C	Display command restrictions of library security profile.
NSCDA-P	Display security options, security limits and session parameters of library security profile.
NSCDA-S	Display statement restrictions of library security profile.
NSCDAU	Display special link security profile.
NSCDAUC	Display command restrictions of special link security profile.
NSCDAUP	Display security options, security limits and session parameters of special link security profile.
NSCDAUS	Display statement restrictions of special link security profile.
NSCDU	Display user security profile.
NSCX	Cross-reference functions.
NSCXRIER	Display individual logon error records.
NSCXRUSE	Display users with logon error counters and unused user IDs.
SECNOTE	Display security notes of user, library or special link security profile.
NSCFI, NSCLI, NSCMA, NSCOB, NSCUS, NSCUT	The display functions (function code "DI" - Display security profile) of these subprograms are considered to be retrieval functions.

Each subprogram that is to be used must be copied into the library in which it is to be executed, or into one of the steplibs concatenated to that library.

Note:

The subprograms (with the exception of SECNOTE) cannot be invoked from any of the logon-related user exits described in the section *User Exits*.

Subprogram NSC---L

The subprogram NSC---L is used to:

- check whether a specific user is allowed to log on to a specific library;
- ascertain which modules in a library are available to a user.

NSC---L is invoked as follows:

```
CALLNAT 'NSC---L' PAPPLID PUSERID PRC PPARM1 PNSC-MESSAGE
```

Example programs PGM---L and PGM---LM of how to invoke subprogram NSC---L, as well as explanatory texts TXT---L and TXT---LM, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGM---L(M) and TXT---L(M).

Subprogram NSC---P

The subprogram NSC---P is used to check if the password supplied together with a user ID is valid.

Note:

To perform this function in a Natural RPC server environment, it is recommended that NSC---SP (see below) be used instead.

NSC---P is invoked as follows:

```
CALLNAT 'NSC---P' PUSERID PPASSWORD PUSER_NAME PRC PNSC-MESSAGE
```

An example program PGM---P of how to invoke subprogram NSC---P, as well as an explanatory text TXT---P, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGM---P and TXT---P.

Note:

For the execution of this subprogram, the general option "Maximum Number of Logon Attempts" applies, that is, each invalid password will be considered an unsuccessful logon attempt.

Subprogram NSC---SP

The subprogram NSC---SP is only to be used in Natural RPC server environments. On the whole, it corresponds to NSC---P (described above).

It is used to check if the password supplied together with a user ID is valid.

NSC---SP is invoked as follows:

```
CALLNAT 'NSC---SP' PUSERID PPASSWORD PLIBRARYID PUSERNAME
          PPARAM1 PRC PNSC-MESSAGE
```

An example program PGM---SP of how to invoke subprogram NSC---SP, as well as an explanatory text TXT---SP, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGM---SP and TXT---SP.

Note:

For the execution of this subprogram, the general option "Maximum Number of Logon Attempts" applies, that is, each invalid password will be considered an unsuccessful logon attempt. In addition, Natural Security will react as if the Lock User Option were set to "X", that is, it will "remember" unsuccessful logon attempts across sessions. Unlike the Lock User Option, however, the locking of user IDs will not include the user ID as contained in the Natural system variable *INIT-USER. When the maximum number of logon attempts is exceeded, the Natural RPC server session will *not* be terminated.

Subprogram NSC----P

The subprogram NSC----P is used to check if the password supplied together with a user ID is valid; in addition, it is used to change the password.

NSC----P is invoked as follows:

```
CALLNAT 'NSC----P' PUSERID PPASSWORD(*) PUSER_NAME PPARAM PRC PNSC-MESSAGE
```

An example program PGM----P of how to invoke subprogram NSC----P, as well as an explanatory text TXT----P, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGM----P and TXT----P.

Note:

For the execution of this subprogram, the general option "Maximum Number of Logon Attempts" applies, that is, each invalid password will be considered an unsuccessful logon attempt.

Subprogram NSCADM

The subprogram NSCADM is used to:

- display the settings of General Options in Administrator Services;
- process logon records, which is particular relevant for ETID-related logon records;
- remove/re-establish Natural Security maintenance/retrieval sections for: base/compound application profiles and RPC server profiles.
- compare a preset value (as set in the Library and User Preset Values) with the the corresponding actual value in user profiles to obtain a list of all user profiles in which the value differs from the preset value.

NSCADM is invoked as follows:

```
CALLNAT 'NSCADM' NSCADM-PARM PNSC-MESSAGE
```

Example programs PGMADM mn of how to invoke subprogram NSCADM, as well as explanatory texts TXTADM mn , are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMADM mn and TXTADM mn .

Subprogram NSCCHCK

The subprogram NSCCHCK is used to check whether a specific user is allowed to access a specific external object.

NSCCHCK is invoked as follows:

```
CALLNAT 'NSCCHCK' PCLASSID PUSERID POBJID PACCESS-TYPE PRC PPARAM1 PNSC-MESSAGE
```

An example program PGMCHCK of how to invoke subprogram NSCCHCK, as well as an explanatory text TXTCHCK, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMCHCK and TXTCHCK.

Subprogram NSCDA

The subprogram NSCDA is used to display the security profile of a library.

NSCDA is invoked as follows:

```
CALLNAT 'NSCDA' #PAPPLID #PPARM #PRC #PTYPE
          #PPARM1 #PPARM2 #PPARM3 #PTEXT(*) PNSC-MESSAGE
```

An example program PGMDA of how to invoke subprogram NSCDA, as well as an explanatory text TXTDA, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDA and TXTDA.

Subprogram NSCDA-C

The subprogram NSCDA-C is used to display the Command Restrictions part of a library security profile.

NSCDA-C is invoked as follows:

```
CALLNAT 'NSCDA-C' #PAPPLID #PRC #PTYPE #PPARM1 PNSC-MESSAGE
```

An example program PGMDA-C of how to invoke subprogram NSCDA-C, as well as an explanatory text TXTDA-C, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDA-C and TXTDA-C.

Subprogram NSCDA-P

The subprogram NSCDA-P is used to display the Security Options, Security Limits and Session Parameters parts of a library security profile.

NSCDA-P is invoked as follows:

```
CALLNAT 'NSCDA-P' #PAPPLID #PRC #PTYPE #PPARM1 #POPRBS(*) PNSC-MESSAGE
```

An example program PGMDA-P of how to invoke subprogram NSCDA-P, as well as an explanatory text TXTDA-P, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDA-P and TXTDA-P.

Subprogram NSCDA-S

The subprogram NSCDA-S is used to display the Statement Restrictions part of a library security profile.

NSCDA-S is invoked as follows:

```
CALLNAT 'NSCDA-S' #PAPPLID #PRC #PTYPE #PPARM1 PNSC-MESSAGE
```

An example program PGMDA-S of how to invoke subprogram NSCDA-S, as well as an explanatory text TXTDA-S, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDA-S and TXTDA-S.

Subprogram NSCDAU

The subprogram NSCDAU is used to display the security profile of a special link.

NSCDAU is invoked as follows:

```
CALLNAT 'NSCDAU' #PAPPLID #PUSERID #PRC  
          #PPARM1 #PPARM2 #PPARM3 #PTEXT(*) PNSC-MESSAGE
```

An example program PGMDAU of how to invoke subprogram NSCDAU, as well as an explanatory text TXTDAU, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDAU and TXTDAU.

Subprogram NSCDAUC

The subprogram NSCDAUC is used to display the Command Restrictions part of a special link security profile.

NSCDAUC is invoked as follows:

```
CALLNAT 'NSCDAUC' #PAPPLID #PUSERID #PRC #PPARM1 PNSC-MESSAGE
```

An example program PGMDAUC of how to invoke subprogram NSCDAUC, as well as an explanatory text TXTDAUC, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDAUC and TXTDAUC.

Subprogram NSCDAUP

The subprogram NSCDAUP is used to display the Security Options, Security Limits and Session Parameters parts of a special link security profile.

NSCDAUP is invoked as follows:

```
CALLNAT 'NSCDAUP' #PAPPLID #PUSERID #PRC #PPARM1 #POPRBS(*) PNSC-MESSAGE
```


An example program PGMDAUP of how to invoke subprogram NSCDAUP, as well as an explanatory text TXTDAUP, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDAUP and TXTDAUP.

Subprogram NSCDAUS

The subprogram NSCDAUS is used to display the Statement Restrictions part of a special link security profile.

NSCDAUS is invoked as follows:

```
CALLNAT 'NSCDAUS' #PAPPLID #PUSERID #PRC #PPARM1 PNSC-MESSAGE
```

An example program PGMDAUS of how to invoke subprogram NSCDAUS, as well as an explanatory text TXTDAUS, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDAUS and TXTDAUS.

Subprogram NSCDEF

The subprogram NSCDEF is used to check whether a specific object is defined under Natural Security, i.e. whether a security profile for the object exists.

NSCDEF is invoked as follows:

```
CALLNAT 'NSCDEF' POBJID POBJTYPE PRC PNSC-MESSAGE
```

An example program PGMDEF of how to invoke subprogram NSCDEF, as well as an explanatory text TXTDEF, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDEF and TXTDEF.

Subprogram NSCDU

The subprogram NSCDU is used to display a user security profile.

NSCDU is invoked as follows:

```
CALLNAT 'NSCDU' #PUSERID #PPARM #PRC #PPARM1 #PPARM2 #PPARM3
          #PTEXT(*) PNSC-MESSAGE
```

An example program PGMDU of how to invoke subprogram NSCDU, as well as an explanatory text TXTDU, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMDU and TXTDU.

Subprogram NSCFI

This subprogram is only available on mainframe computers, and it can only be applied to file security profiles. For DDM security profiles, you use the subprogram NSCLI (see below).

The subprogram NSCFI is used to perform maintenance/retrieval functions for file security profiles from outside of the library SYSSEC.

NSCFI is invoked as follows:

```
CALLNAT 'NSCFI' PFUNCTION PFILEID PFILEID2 PRC PPFKEY(*)
          PPARAM PPARAM1 PPARAM2 PTEXT(*) PNSC-MESSAGE
```

Example programs *PGMFI_{nnn}* of how to invoke subprogram NSCFI, as well as explanatory texts *TXTFI_{nnn}*, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of *PGMFI_{nnn}* and *TXTFI_{nnn}*.

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Function
AD	Add file
CL	Cancel link between library and file
CO	Copy file
DE	Delete file
DI	Display file
MO	Modify file (including all components of its security profile)
RE	Establish read-link between library and file
UP	Establish update-link between library and file

Subprogram NSCLI

The subprogram NSCLI is used to perform maintenance/retrieval functions for library security profiles from outside of library SYSSEC.

NSCLI is invoked as follows:

```
CALLNAT 'NSCLI' PFUNCTION PLIBID PLIBID2 PLIBTYPE PRC PPFKEY(*)
          PPARAM PPARAM1 PPARAM2 PTEXT(*) PPARAM3 PPARAM4
          PPARAM5 PPARAM6 POPRB(*) PNSC-MESSAGE
```

Example programs *PGMLI_{nnn}* of how to invoke subprogram NSCLI, as well as explanatory texts *TXTLI_{nnn}*, are provided in source form in the library SYSSEC. Example programs *PGMDDM_{nn}* of how to invoke NSCLI with function code "MD", as well as explanatory texts *TXTDDM_{nn}*, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMLInnn, TXTLIInnn, PGMDDMnn and TXTDDMnn.

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Function
AD	Add library
CL	Cancel link between user and library
CO	Copy library
DE	Delete library
DI	Display library
DL	Display special link between user and library
DM	Display allowed/disallowed modules
ET	Get library ID via ETID
LK	Link user to library
MD	Maintain DDM profile; see also below (this function is not available on mainframes)
MM	Modify allowed/disallowed modules
MO	Modify library (including all components of its security profile)
SL	Establish special link between user and library
TL	Temporarily lock link between user and library
UC	Update all "modified" command processors in the library

If PFUNCTION is filled with function code "MD", the PSUBFUNC part of the parameter PPARM has to be filled with the code for the desired subfunction. The following subfunctions are available:

Code	Subfunction
AD	Add DDM profile
CL	Cancel link between library and DDM profile
CO	Copy DDM profile
DE	Delete DDM profile
DI	Display DDM profile
MO	Modify DDM profile
RE	Establish read-link between library and DDM profile
UP	Establish update-link between library and DDM profile

Subprogram NSCMA

The subprogram NSCMA is used to perform maintenance/retrieval functions for mailbox security profiles from outside of the library SYSSEC.

NSCMA is invoked as follows:

```
CALLNAT 'NSCMA' PFUNCTION POBJID POBJID2 PRC PPFKEY(*)
          PPARAM PPARAM1 PPARAM2 PTEXT1(*) PTEXT2(*) PNSC-MESSAGE
```

Example programs `PGMMAnnn` showing how to invoke subprogram NSCMA, as well as explanatory texts `TXTMAnn`, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of `PGMMAnnn` and `TXTMAnn`.

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Function
AD	Add mailbox
CO	Copy mailbox
DE	Delete mailbox
DI	Display mailbox
MO	Modify mailbox (including all components of its security profile)
RE	Rename mailbox

Subprogram NSCOB

The subprogram NSCOB is used to perform maintenance/retrieval functions for external object security profiles from outside of library SYSSEC.

NSCOB is invoked as follows:

```
CALLNAT 'NSCOB' PFUNCTION PCLASSID POBJID POBJID2 PRC PPFKEY(*)
          PPARAM PPARAM1 PPARAM2 PTEXT(*) PNSC-MESSAGE
```

Example programs `PGMOBnnn` of how to invoke subprogram NSCOB, as well as explanatory texts `TXTOBnnn`, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of `PGMOBnnn` and `TXTOBnnn`.

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Function
AD	Add external object
CL	Cancel link between user and external object
CO	Copy external object
DE	Delete external object
DI	Display external object
DL	Display link between user and external object
LK	Link user to external object
MO	Modify external object (including all components of its security profile)

Subprogram NSCUS

The subprogram NSCUS is used to perform maintenance/retrieval functions for user security profiles from outside of library SYSSEC.

Note:

NSCUS cannot be used for private libraries which may be attached to user security profiles; for maintenance/retrieval of private libraries, you use subprogram NSCLI.

NSCUS is invoked as follows:

```
CALLNAT 'NSCUS' PFUNCTION PUSERID PUSERID2 PRC PPFKEY(*)
          PPARM PPARM1 PPARM2 PTEXT(*) PPARM3 PPARM4 PNSC-MESSAGE
```

Example programs PGMUS nnn of how to invoke subprogram NSCUS, as well as explanatory texts TXTUS nnn , are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMUS nnn and TXTUS nnn .

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Function
AD	Add user
AM	Multiple add user
CO	Copy user
DE	Delete user
DI	Display user
EG	Edit group members
ET	Get user ID via ETID
MO	Modify user (including all components of his/her security profile)

Note:

The user maintenance function "Copy User's Links" is not available via NSCUS.

For function code "EG", the following subfunctions are available:

Code	Subfunction
AD	Add users to a group
DE	Delete users from a group
LI	List group members

Subprogram NSCUT

The subprogram NSCUT is used to perform maintenance/retrieval functions for utility security profiles from outside of library SYSSEC.

NSCUT is invoked as follows:

```
CALLNAT 'NSCUT' PFUNCTION PUTILITY PUSER PLIBRARY PRC PPFKEY(*)
          PPARAM PPARAM1 PPARAM2 PTEXT(*) PNSC-MESSAGE
```

Example programs PGMUT nnn of how to invoke subprogram NSCUT, as well as explanatory texts TXTUT nnn , are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMUT nnn and TXTUT nnn .

The first parameter (PFUNCTION) has to be filled with the function code for the desired function. The following functions are available:

Code	Subfunction
AD	Add utility
DE	Delete utility
DI	Display utility
MO	Modify utility (including all components of its security profile)

Please note that the components of the security profiles are different for each utility; see also the sources of PGMUT nnn .

Subprogram NSCXLO

The subprogram NSCXLO is used to read maintenance log records, which are created by Natural Security if the general option "Logging of Maintenance Functions" is active.

NSCXLO is invoked as follows:

```
CALLNAT 'NSCXLO' PFUNCTION PSELECT-TYPE PSTART-OBJ-ID
          PFROMTIMESTAMP PTOTIMESTAMP PRC PPARAM PPARAM1(*) PNSC-MESSAGE
```

Example programs PGMXLOnn of how to invoke subprogram NSCXLO, as well as explanatory texts TXTXLOnn, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMXLOnn and TXTXLOnn.

Subprogram NSCXR

The subprogram NSCXR is used to perform cross-reference functions for security profiles from outside of library SYSSEC.

NSCXR is invoked as follows:

```
CALLNAT 'NSCXR' POBJ-TYPE POBJ-ID PLINK-ID PRC SUB-TYPE
          PPARAM PPARAM2(*) PNSC-MESSAGE
```

Example programs PGMXRnnn of how to invoke subprogram NSCXR, as well as explanatory texts TXTXRnnn, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMXRnnn and TXTXRnnn.

The first parameter (POBJ-TYPE) has to be filled with the code for the type of object for which a function is to be performed:

Code	Object Type
US	User
LI	Library
DD	DDM (this object type is not available on mainframes)
FI	File (this object type is only available on mainframes)
MA	Mailbox
LE	Logon error record
LR	Logon record
ST	Steplib
UT	Utility
CP	Command processor
PE	Predict external object (this object type is only available if Predict is installed)
PF	Predict function (this object type is only available if Predict is installed)
PL	Predict 3GL library (this object type is only available if Predict is installed)
PO	Predict documentation object (this object type is only available if Predict is installed)
SF	System file

For the individual object types listed above, the following functions can be performed by filling the parameter SUB-TYPE with one of the following function codes:

Function Available for Every Object Type:

Code	Function
TR	Translates the 2-character object-type code into the corresponding object type.

Functions Available for a User (US):

Code	Function
*	List all users.
A	List all users of type ADMINISTRATOR.
P	List all users of type PERSON.
M	List all users of type MEMBER.
T	List all users of type TERMINAL.
G	List all users of type GROUP.
B	List all users of type BATCH.
GR	List all groups the user belongs to.
GP	List all privileged groups the user belongs to.
GM	List all users contained in the group.
BU	List all users in whose security profiles the batch user ID is specified.
NI	Retrieve the user ID belonging to a specified user name.
LA	List all libraries available to the user.
LL	List all libraries to which the user is linked.
LD	List all libraries to which the user is linked directly.
LG	List all libraries to which the user is linked by means of a group.
LP	List all libraries to which the user is linked by means of a privileged group.
OW	List all security profiles owned by the user.
DD	List all DDMs available to the user (this function is not available on mainframes).
DL	List all DDMs available to the user by means of a special link (this function is not available on mainframes).
FI	List all files to which the user's private library is linked (this function is only available on mainframes).
UT	List all utility profiles which apply to the user.

Functions Available for a Library (LI):

Code	Function
*	List all libraries and users' private libraries.
L	List all libraries.
U	List all users' private libraries.
NI	Retrieve the library ID belonging to a specified library name.
DD	List all DDMs to which the library is linked (this function is not available on mainframes).
LD	List all DDMs to which the library is linked by means of a special link (this function is not available on mainframes).
FI	List all files to which the library is linked (this function is only available on mainframes).
NO	List allowed/disallowed modules.
SM	Retrieve information on users' access rights to a single module in the library.
US	List all users linked to the library.
UT	List all utility profiles which apply to the library.
CP	List all command processors for the library that have a specific status.

Functions Available for a DDM (DD):

Code	Function
*	List all defined DDMs (that is, for which security profiles exist).
UN	List all undefined DDMs (that is, for which no security profiles exist).
DD	List all defined and undefined DDMs.
P	List all DDMs with external status PUBLIC.
A	List all DDMs with external status ACCESS.
U	List all DDMs with external status PRIVATE.
ND	List all DDM security profiles for which no corresponding DDMs exist.
LI	List all libraries which are linked to the DDM.
US	List all users which are linked to the DDM.
SL	List all DDM definitions in special link security profiles.
X	List all DDM definitions in library and special link security profiles.

Functions Available for a File (FI):

Code	Function
PU	List files of type PUBLIC.
AC	List files of type ACCESS.
UP	List files of type PRIVATE.
DD	List files with existing DDM.
ND	List files with no DDM.
UN	List undefined files.
LI	List libraries to which the specified file is linked.
US	List users whose private libraries are linked to the specified file.

Functions Available for a Mailbox (MA):

Code	Function
LI	List all libraries to which the mailbox is assigned.
US	List all users to which the mailbox is assigned.

Functions Available for Logon Error Records (LE):

Code	Function
P	List logon error records, in order of TP user IDs.
T	List logon error records, in order of terminal IDs.

Functions Available for Logon Records (LR):

Code	Function
L	List logon records, in order of library IDs.
U	List logon records, in order of user IDs.
LX	List logon records to undefined libraries (in order of library IDs).
UX	List logon records of undefined users (in order of user IDs).

Functions Available for Steplibs (ST):

Code	Function
*	List all steplibs.
LK	List protected steplibs.
NN	List public steplibs.
SL	List special linked steplibs.

Functions Available for Utilities (UT):

Code	Function
LI	List all library-specific utility profiles defined for the utility.
US	List all user-specific utility profiles defined for the utility.
UT	List all utility profiles defined for the utility.
<i>blank</i>	List all utility profiles defined for all utilities.

Functions Available for Command Processors (CP):

For a command processor, NSCXR will list all libraries and users for the command processor (without any SUB-TYPE specification being required).

Functions Available for Predict Objects (PE, PF, PL, PO):

For each of the four Predict object types, NSCXR will list all objects of that type (without any SUB-TYPE specification being required).

Functions Available for System Files (SF):

Code	Function
FN	List all libraries of the current FNAT system file which are not defined in Natural Security.
FU	List all libraries of the current FUSER system file which are not defined in Natural Security.

Function Available for External Objects:

Code	Function
LU	List all users who are linked to the external object.

Subprogram NSCXRIER

The subprogram NSCXRIER is used to display individual logon error records (similar to the Logon/Countersign Errors function "Display individual error entries").

NSCXRIER is invoked as follows:

```
CALLNAT 'NSCXRIER' NSCXRIER-PARM PNSC-MESSAGE
```

An example program PGMXRIER of how to invoke subprogram NSCXRIER, as well as an explanatory text TXTXRIER, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMXRIER and TXTXRIER.

Subprogram NSCXRUSE

The subprogram NSCXRUSE is used in conjunction with the Lock User Option set to "X" to obtain a list of users whose logon error counters are greater than "0".

It is also used in conjunction with the general option "Record Each User's Logon Daily". When this option is active, NSCXRUSE can be used to display the IDs of users who have not logged on to Natural since a specified date.

NSCXRUSE is invoked as follows:

```
CALLNAT 'NSCXRUSE' POBJ-TYPE POBJ-ID PRC PSUBTYPE PPARAM PPARAM2(*) PNSC-MESSAGE
```

An example program PGMXRUSE of how to invoke subprogram NSCXRUSE, as well as an explanatory text TXTXRUSE, are provided in source form in the library SYSSEC.

The individual CALLNAT parameters are explained in the source codes of PGMXRUSE and TXTXRUSE.

See also the subprogram NSC---SP.

Subprogram SECNOTE

The subprogram SECNOTE is used to display the Security Notes part of a security profile. It can be applied to a user, group, library or special link security profile.

The object module of SECNOTE is stored in the library SYSTEM. The source code of SECNOTE is not available.

SECNOTE has to be invoked with the following parameters:

Parameter	Explanation
#TYPE (A1)	<p>With this parameter, you specify the type of object whose Security Notes are to be read. Valid values for #TYPE are:</p> <p>U User. The current content of the Natural system variable *USER determines which user's Security Notes will be read.</p> <p>L Library. The current content of the Natural system variable *APPLIC-ID determines which library's Security Notes will be read.</p> <p>G Group. The current content of the Natural system variable *GROUP determines which user's/group's Security Notes will be read.</p> <p>S Special Link. The current contents of the Natural system variables *GROUP and *APPLIC-ID determine which special link's Security Notes will be read.</p>
#NOTES (A60/8)	On return from SECNOTE, this parameter contains the Security Notes.
#RC (N4)	<p>This parameter contains the return code from SECNOTE. Possible return codes are:</p> <p>0 Security Notes have been read.</p> <p>860 #TYPE contains invalid code.</p> <p>806 Library does not exist (is not defined to Natural Security).</p> <p>861 User has no special link to library.</p> <p>873 User does not exist (is not defined to Natural Security).</p>

The above-mentioned system variables are described in the *Natural System Variables* documentation.