

Natural under IMS TM - Configuration Macros

This chapter of the Natural IMS Interface documentation discusses the configuration macros of the Natural IMS Interface.

The following topics are covered:

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- NIMTRNTG Macro Parameters
- NIMLPCB Macro Parameters
- NIMMSGT Macro Parameters
- NIMPIXT Macro Parameters
- NIMBOOT Macro Parameters

NIMDRIV Macro Parameters

The macro NIMDRIV generates environment-dependent interfaces (drivers). The parameters which can be specified with the macro NIMDRIV are described below:

TYPE | LE370 | NIINAME | SUBPOOL | TRNCODE | THRELO

Parameter	Possible Values	Description	Default	Comment
TYPE	CONV	TYPE specifies the type of the driver to be generated. In case of CONV, a dialog-oriented conversational environment is generated.	None	None
	NONC	Dialog-oriented non-conversational environment is generated.		
	NTRD	Message-oriented (not terminal-driven) environment is generated.		
	BMP	Batch-oriented and transaction-oriented BMP environment is generated. You can also use this interface in the DLIBATCH environment.		
	SRVD	Server environment is generated.		
LE370	YES	LE370 specifies whether Natural under IMS initializes the IBM Language Environment. In case of YES, the IBM Language Environment is initialized and remains so until the Natural IMS front-end returns to the IMS program controller. LE-conforming 3GL programs are called according to the LE calling conventions. While the LE program has control, user written or language-specific condition handlers are honored.	NO	None
	AMODE24	The IBM Language Environment is initialized as in case of YES. In contrast to YES, the LE run-time options ALL31=(OFF) , STACK=(, , BELOW) are set to support AMODE(24) 3GL programs. This option allows you to execute Natural in the IBM Language Environment (for example, because of the use of the REQUEST DOCUMENT statement) even though you are using AMODE(24) 3GL programs and the system defaults of the LE run-time options do not allow the execution of AMODE(24) 3GL programs.		
	NO	The IBM Language Environment is not initialized. An IBM Language Environment is initialized and terminated for each LE program call.		
NIINAME	xxxxxxxx	Specifies the name of the Natural IMS interface module to be used by the current driver. Any valid module name up to 8 characters is possible..	NIIINTFM	None

Parameter	Possible Values	Description	Default	Comment
SUBPOOL	<i>n</i>	Specifies the z/OS subpool number for the STORAGE OBTAIN requests. Any valid z/OS task-related subpool number for a problem state program (0 - 127) can be used. Note: If you operate an earlier version of the Natural IMS TM interface in the same IMS TM dependent region, you should not use the subpool numbers 126 and 127.	125	
TRNCODE	YES	The optional TRNCODE parameter is honored. This applies to the <ul style="list-style-type: none"> ● TRNCODE parameter on the first card of the BPM CONTROL file, ● TRNCODE parameter of the NIMBOOT macro, ● TRNCODE startup parameter of the server environment. 	NO	
	NO	The TRNCODE parameter is ignored.		
THRELO	YES	Thread relocation is enabled, that is, the Natural thread may be allocated at a different virtual address after a terminal I/O.	YES	
	NO	Thread relocation is disabled and the Natural thread stays at the same virtual address. The size of the Natural thread is determined by the first Natural session that allocates the thread. As consequence: <ul style="list-style-type: none"> ● the Natural/IMS THSIZE parameter is ignored by all except for the first Natural session in an MPP, ● RELO=FORCE is disabled, ● the storage for the Natural thread remains allocated until the MPP is stopped. Note: This parameter should only be used by customers using Con-form.		

NIMPARM Macro Parameters

The macro NIMPARM generates parameter tables which are contained in the parameter module NIIPARM.

The parameters which can be specified with the NIMPARM macro are described below. The ENTRYNM parameter identifies the current parameter table.

The parameters are listed in alphabetical order below.

ACTACTV | ACTAHDR | ACTARID | ACTLOG | BMPABER | BROACTV | CMBSIZE | COLPSCR |
ENDMODN | ENTRYNM | ERRLHDR | HCBSIZE | HDENS DU | LINPSCR | MISIZE | MONACTV | MOSIZE |
MSACTV | MSCMPTB | MSCRKEY | MSDBD | MSMAX | MSRSKEY | NSBNAME | PRTDRIV | ROLLSRV |
ROLLFN | SPASIZE | SPATID | SUPNONC | TERMDB | TERMIPL | THBELOW | THSIZE | USERID

A

Parameter	Possible Values	Description	Default	Comment	
ACTACTV	YES	ACTACTV specifies whether the accounting function is activated. In case of YES, an accounting record is written with each terminal I/O.	NO	Used in dialog-oriented environments only.	
	NO	No accounting record is written.			
ACTAHDR	xxxxxxxx	Defines the header of the accounting records if written to the IMS log file. Any string up to 8 bytes is possible.	SAG\$\$\$\$\$	The parameter is only evaluated when the ACTLOG parameter is set to CMD. It is used for the accounting function only.	
ACTARID	<i>log code</i> or <i>SMF record type</i>	Specifies the accounting record ID if the accounting record is written using the LOG or SMF settings of the ACTLOG parameter.	None	Used for the accounting function only.	
		Log code (A0 - FF)			When the ACTLOG parameter (see below) is set to LOG.
		SMF record type (128 - 255)			When the ACTLOG parameter is set to SMF.
ACTLOG	CMD	ACTLOG specifies how accounting records are written. In case of CMD, accounting records are written to the IMS log file using the CMD call.	CMD	Used for the accounting function only.	
	LOG	Accounting records are written to the IMS log file using the LOG call.			
	SMF	Accounting records are written to SMF using the <i>Authorized Services Manager</i> .			

B - C

Parameter	Possible Values	Description	Default	Comment
BMPABER	YES	BMPABER specifies how a BMP run should be terminated if either a Natural runtime error or a Natural IMS interface non-recoverable error occurs. In case of YES, the BMP run is abended with user Abend Code U3521.	NO	None.
	NO	The BMP run is terminated normally with the Natural termination error as the condition code. If the BMP run is terminated with a non-recoverable Natural IMS error, condition code 1024 is set.		
BROACTV	YES	Specifies whether the broadcasting function is available or not.	NO	Used in dialog-oriented environments only.
	NO			
CMBSIZE	xxxxxx	Specifies the size of the command buffer in bytes. Any numeric value up to 16 MB is possible.	1024	The command buffer is used by the service APIs NIICMD and NIIGCMD, the service module CMCMMND and the Accounting function. The size of the command buffer must accommodate the maximum length of the IMS commands to be processed and the maximum length of the accounting record including the user extension.
COLPSCR	xx	Specifies the number of columns per screen. Any valid screen width (numeric) is possible.	80	None.

E - H

Parameter	Possible Values	Description	Default	Comment
ENDMODN	xxxxxxxx	Specifies the MOD name for formatting the screen which appears after a Natural session is terminated successfully. Any valid MOD name up to 8 characters is possible.	DFSMO2	Enables Natural to be included in a customer-specific menu. The value of the ENDMODN parameter can be overridden by the service API NIIEMOD and the service module CMEMOD. If a Natural session terminates with an error, DFSMO2 is always used to issue the appropriate Natural error message.
ENTRYNM	xxxxxxxx	Identifies the current parameter table. Any string up to 8 characters is possible.	ENV00000	None.
ERRLHDR	xxxxxxxx	Specifies the header of the IMS log records which are written when errors occur in the Natural IMS interface. Any string up to 8 characters is possible.	NIIERR\$\$	If you do not wish a message to be written to the IMS log in the case of a non-recoverable Natural IMS error, set the ERRLHDR parameter explicitly to null, that is, specify ERRLHDR= , . For further information, see <i>Recovery Handling</i> .
HCBSIZE	xxxxxx	Specifies the size in bytes of the hardcopy print buffer. Any numeric value up to 16 MB possible.	1024	Records which are sent to a printer destination using the Natural hardcopy function are buffered.
HDENSDU	YES	Specifies whether a snap dump provoked by a Natural IMS error should be written as a high-density dump to a 3800 printing subsystem or not.	NO	None.
	NO			

L - N

Parameter	Possible Values	Description	Default	Comment
LINPSCR	xx	Defines the number of lines per screen. Any valid screen size (numeric) is possible.	24	None.

Parameter	Possible Values	Description	Default	Comment
MISIZE	xxxxx	The size in bytes of the buffer which is to contain the input message. Any numeric value up to 16 MB is possible.	4096	This area must be as large as the largest input message to be received from IMS TM.
MONACTV	YES	MONACTV specifies whether the monitoring function is activated. In case of YES, the session status is written to the SIP server at each terminal I/O.	NO	Used in dialog-oriented environments only.
	NO	No session status is maintained.		
MOSIZE	xxxxx	The size in bytes of the buffer which is to contain the output message. Any numeric value up to 16 MB is possible.	4096	This area must be as large as the largest output message to be sent to IMS TM.
MSACTV	YES	Specifies whether the multi-session function is available or not.	NO	Used in dialog-oriented environments only.
	NO			
MSCMPTB	YES	Specifies whether sessions are switched in a mode compatible with Natural IMS Interface Version 2.2/Natural under IMS TM Advanced Interface Version 2.2 or not.	NO	Used for the multi-session function only.
	NO			
MSCRKEY	NONE	Specifies with which PF keys a new session can be started.	NONE	Used for the multi-session function only. If MSCMPTB=YES, MSCRKEY must be set to NONE.
	PF1 - PF24			
MSDBD	<i>DBD-name</i>	Specifies the name of the multi-session database. Any valid DBD name is possible.	None	Used for the multi-session function only.
MSMAX	2 - 9	Specifies the highest possible number of parallel Natural sessions per terminal.	9	Used for the multi-session function only.
MSRSKEY	NONE	Specifies the PF key with which an old session can be restarted.	NONE	Used for the multi-session function only. MSRSKEY must be set to NONE, if MSCMPTB=YES.
	PF1 - PF24			

Parameter	Possible Values	Description	Default	Comment
NSBNAME	PSBNAME	Set the NSB name to the PSB name used by IMS TM.	PSBNAME	Used by the Natural for DL/I interface.
	NIITRTAB	Set the NSB name to the PSB name that is assigned in the transaction code table NIITRTAB to the transaction code in use.		

P

Parameter	Possible Values	Description	Default	Comment
PRTDRIV	See tables of drivers below. Drivers for SCS Printers Drivers for Non-SCS Printers Drivers for JES API	Specifies the print driver to be used for reports which are directly written to an IMS TM printer.	SCS_S2	For further information, see <i>Support of the Natural WRITE(n) Statement</i>

Drivers for SCS Printers

Driver	Purpose
SCS_B1	Form feed at start and end of report, starts page on line 1.
SCS_B2	Form feed at start and end of report, starts page on line 2.
SCS_E1	Form feed at end of report, starts page on line 1.
SCS_E2	Form feed at end of report, starts page on line 2.
SCS_N1	No form feed at start or end of report, starts page on line 1.
SCS_N2	No form feed at start or end of report, starts page on line 2.
SCS_S1	Form feed at start report, starts page on line 1.
SCS_S2	Form feed at start of report, starts page on line 2.

Drivers for Non-SCS Printers

Driver	Purpose
NSCS_B1	Form feed at start and end of report, starts page on line 1.
NSCS_B2	Form feed at start and end of report, starts page on line 2.
NSCS_E1	Form feed at end of report, starts page on line 1.
NSCS_E2	Form feed at end of report, starts page on line 2.
NSCS_N1	No form feed at start or end of report, starts page on line 1.
NSCS_N2	No form feed at start or end of report, starts page on line 2.
NSCS_S1	Form feed at start report, starts page on line 1.
NSCS_S2	Form feed at start of report, starts page on line 2.

Drivers for JES API

Driver	Purpose		
JES	In this case, the following dataset processing options for JES are taken from the corresponding NTPRINT macro parameters or DEFINE PRINTER statement options:		
JES	NTPRINT	DEFINE PRINTER	
CLASS	CLASS	CLASS	
COPIES	COPIES	COPIES	
DEST	DEST	OUTPUT	
FORMS	FORMS	FORMS	
NAME	NAME	NAME	
OUTDISP	DISP	DISP	
PRTY	PRTY	PRTY	
<p>The generated JES API parameter string is:</p> <pre>IAFP=A0M,PRTO=..OUTDI(<i>disp</i>),DES(<i>dest</i>), CLA(<i>class</i>,COP(<i>copies</i>), FORMS(<i>forms</i>),NAME(<i>name</i>), PRTY(<i>prty</i>)</pre> <p>Note: Unspecified NTPRINT/DEFINE PRINTER parameters/options are ignored.</p>			
JES xxxxx	<p>In this case, the dataset processing options for JES are taken from the OUTPUT JCL statement with the name JESxxxxx.</p> <p>The generated JES API parameter string is:</p> <pre>IAFP=A0M,OUTN=JESxxxxx</pre> <p>The OUTPUT JCL statement may look like:</p> <pre>JESxxxxx OUTPUT OUTDISP=WRITE,DEST=<i>dest</i>, CLASS=A,COPIES=1,FORMS=<i>form</i>,...</pre> <p>Note: If the OUTPUT JCL statement is missing in the job stream, an error is reported.</p>		

Parameter	Possible Values	Description	Default	Comment
ROLLSRV	YES	ROLLSRV specifies the medium for saving a Natural thread between terminal output and input. If ROLLSRV=YES, the Natural roll server is used.	YES	Used in dialog-oriented environments only. See also <i>Roll File and Roll Server</i> in <i>Natural under IMS TM - Components</i> .
	NO	Roll files are used, see ROLLFN below.		
ROLLFN	1 - 5	Specifies the number of roll files to be used, if ROLLSRV=NO.	1	Used in dialog-oriented environments only.
SPASIZE	xxxxxx	Specifies the size in bytes of the buffer which is to contain the scratch-pad area. Any numeric value up to 16 MB is possible.	1024	In a non-conversational environment, this is also the size of the simulated SPA which is written to the SIP server.
SPATID	xxxx	Specifies the Natural subsystem ID for the <i>Authorized Services Manager</i> which is used to save the SPA for a non-conversational driver. Any string up to 4 characters is possible.		This value must be the same for all parameter tables and must be the same as the value specified for SPATID in the NIMPIXT macro.
SUPNONC	YES	Specifies whether switching from a terminal-oriented non-conversational environment to a conversational environment is possible.	NO	Used in the dialog-oriented conversational environment only.
	NO			

T - U

Parameter	Possible Values	Description	Default	Comment
TERMDB	YES	Specifies whether the Natural session has to be terminated if one of the DL/I databases specified in the PSB is not available.	NO	Used in dialog-oriented environments only. If you set TERMDB to NO and one of the databases is not available when it is accessed, the Natural transaction code is suspended by IMS TM.
	NO			
TERMIPL	YES	Specifies whether a Natural session is terminated with an error message when an IPL has taken place between the current transaction step and the start of the session.	NO	Used in dialog-oriented environments only.
	NO			
THBELOW	YES	Specifies where the Natural thread is allocated. In case of YES, the Natural thread is allocated below the 16 MB line.	YES	For batch message processing, the thread is always allocated below the 16 MB line.
	NO	The Natural thread is allocated above the 16 MB line.		
THSIZE		Specifies the size of the Natural thread. Any numeric value in multiples of eight greater than or equal to 100000 is possible.	300000	This is the area which contains all user session related Natural buffers.
USERID	YES	Specifies how the value of the system variable *INIT-USER is determined. In case of YES, the Natural user ID specified in *INIT-USER is either taken from the security access control block if a security package is active or from the USER parameter of the job card.	NO	Used by the BMP driver only.
	NO	The Natural user ID specified in *INIT-USER is taken from the job name.		

NIMTRNTG Macro Parameters

The macro NIMTRNTG generates an entry in the transaction code table NIITRTAB containing the specified transaction code with related parameters. For each Natural transaction code an entry has to be included in the transaction code table. For further information on NIITRTAB, see *Transaction Code Table NIITRTAB*.

The parameters which can be specified with the macro NIMTRNTG are listed in alphabetical order below:

ALTPCB | HCPCB | MSGPCB | MSPCB | NIIPENT | NRASRT | PSBNAME | TRANCODE | TYPE |
WRKPCBS

Parameter	Possible Values	Description	Default	Comment
ALTPCB	1 - 255	ALTPCB specifies which alternate TP PCB is used for the service modules CMQUEUE, CMQUEUEEX, NIIDQUMS and NIIDPURG.	1	The number of the alternate TP PCB specified with the NIMTRNTG macro can be overwritten by the service modules.
HCPCB	SYSPCB	HCPCB specifies which PCB is used for the hardcopy function. In case of SYSPCB, the first alternative TP PCB is used.	SYSPCB	None.
	WRKPCB	One of the additional alternative TP PCBs is used. This enables you to use an express TP PCB for the hardcopy function.		
MSGPCB	SYSPCB	MSGPCB specifies which PCB is used when printing error messages and standard output in the non-terminal-oriented environment and for the server driver. In case of SYSPCB, the first alternative TP PCB is used.	SYSPCB	Relevant for non-terminal-oriented environments and the server driver only.
	OWNPCB	The second alternative TP PCB is reserved and used. This enables you to use an express TP PCB for sending messages.		

Parameter	Possible Values	Description	Default	Comment
MSPCB	NO	MSPCB specifies the number of the multi-session database PCB. If NO is specified, the multi-session feature is not used.	NO	Relevant for the multi-session feature only.
	1 - 255	The PCB of the multi-session database.		
NIIPENT	xxxxxxxx	Specifies the name of the Natural IMS parameter table to be used for this entry in the transaction code table. Any non-blank character string up to 8 characters is possible.	ENV00000	None.
NRASTART	<i>offset value</i>	Defines the offset of the Natural Reserved Area (NRA) within the scratch-pad area. Any numeric value greater than 14 is possible.	16	The current length of the NRA is 157 bytes. The length of the NRA may change from version to version of the Natural IMS interface. If you want to save your own information in the SPA in order to pass it to a non-Natural transaction, it is recommended that you save your data in front of the NRA in order to be version compatible.

Parameter	Possible Values	Description	Default	Comment
PSBNAME	<i>PSB-name</i>	Specifies the PSB name corresponding to the current transaction code. Any valid PSB name is possible.	None	Used to identify the entry in the transaction code table for non-message-driven batch message processing and for the batch processing environment.
TRANCODE	<i>transaction-code-name</i>	Specifies the identifier of each entry within the transaction code table. Any valid transaction code name is possible.	None	Has no effect in both the non-message-driven BMP and the batch processing environment.
TYPE	CONV	TYPE specifies the type of the Natural transaction code. In case of CONV, the transaction code is for a conversational Natural session.	CONV	None.
	NONC	The transaction code is for a non-conversational Natural session.		
WRKPCBS	0	WRKPCBS specifies the number of alternative TP PCBs available for printing additional to the first TP PCB and, if appropriate, to the MSGPCB. In case of 0, no IMS printer is available.	0	See examples below.
	1 - 32	The number of alternate TP PCBs used for printing additional to the first TP PCB and, if appropriate, to the MSGPCB.		

Examples

Example 1:

You specified the following:

```
MSGPCB=SYSPCB
WRKPCBS=2
```

The PSB must contain 3 alternate TP PCBs.

Example 2:

You specified the following:

```
MSGPCB=OWNPCB
WRKPCBS=2
```

The PSB must contain 4 alternate TP PCBs. The second alternate TP PCB is reserved for the error messages and standard output of the non-terminal-oriented environment.

NIMLPCB Macro Parameters

The macro NIMLPCB can optionally follow a NIMTRNTG entry in the transaction code table.

The parameters which can be specified with the macro NIMLPCB are listed in alphabetical order below:

NAME | NUM

Parameter	Possible Values	Description	Default	Comment
NAME	xxxxxxxx	Specifies the logical name of the PCB. Any non-blank string up to 8 characters is possible.	None	None.
NUM	<i>PCB-positional-number</i>	Specifies the positional number of the PCB in the PSB. Any integer is possible.	None	If NUM is not specified, the positional number of the NIMLPCB macro is used.

NIMMSGT Macro Parameters

The macro NIMMSGT generates each entry in the message text module NIIMSGT which is part of the Natural IMS interface module. Each generated entry provides a message text for each possible Natural IMS error number.

The NIMMSGT macro is specified in one of the following two ways:

```
Nerror-number [*] NIMMSGT message-text
```

In this case, Natural under IMS TM will display the message text as defined. The message text may be up to 72 characters long.

```
Xerror-number [*] NIMMSGT message-text
```

In this case, Natural under IMS will append an error-specific reason code to the current message text. The message text may be up to 64 characters long.

If the error number is followed by an asterisk (*), a snap dump will be generated when an error occurs. You may adapt the message text to your own requirements. You may also add or delete the DUMP option of a specific error number. You must not modify the error number and the characters N or R that precede the error number.

NIMPIXT Macro Parameters

The NIMPIXT macro generates the *Physical Input Edit Routine*.

The parameters which can be specified with the macro NIMPIXT are listed in alphabetical order below:

PIXTE | SIPSE | SPATID | WTO | USER

Parameter	Possible Value	Description	Default	Comment
PIXTE	1 - 999	Specifies the start value for error numbers if errors are detected by the physical input edit routine.	400	This value is added to the return code set by the physical input edit routine. The result is the IMS TM error message number in the user message table DFSCMTU0.
SIPSE	1 - 999	Specifies the start value for error numbers if errors are detected by the <i>Authorized Services Manager</i> .	500	This value is added to the return code set by the <i>Authorized Services Manager</i> . The result is the IMS TM error message number in the user message table DFSCMTU0.
SPATID	xxxx	Specifies the Natural subsystem ID for the <i>Authorized Services Manager</i> which is used to save the SPA for the non-conversational driver. Any string up to 4 characters is possible.	None	The value of this parameter must be the same as the value specified for the SPATID parameter in the NIMPARM macro.
WTO	YES	Specifies whether a WTO message is issued if the <i>Authorized Services Manager</i> fails.	NO	None.
	NO			
USER	xxxxxxxx	Specifies whether a user-specific physical input edit routine is to be called if the NIMPIXT macro does not find the SPA.	NO	None.
	NO	If a user-specific input edit routine is to be called, specify the name of the routine.		

NIMBOOT Macro Parameters

The macro NIMBOOT generates the bootstrap module used by the message-oriented environment or the server call interface used by the server environment.

NIMBOOT includes the following parameters:

TYPE | DRIVERN | ENVTNAM | TRNCODE | DYNPARM | SERVERN

Parameter	Possible Values	Default	Comment
TYPE	SERVER	Empty	TYPE specifies the type of the interface module to be generated. With TYPE=SERVER, the server call interface NIIBOOTS is generated.
	Empty		If nothing is specified, the bootstrap module used by the message-oriented environment is generated.
DRIVERN	Any valid z/OS module name	None	This parameter specifies the name of the front-end module. If TYPE=SERVER is specified, the front-end module must have been generated for the server environment (NIMDRIV parameter TYPE=SRVD). If no TYPE is specified the front-end module must have been generated for the message-oriented environment (NIMDRIV parameter TYPE=NTRD).
ENVTNAM	Any valid z/OS module name	None	This parameter is only used by the bootstrap module for the message-oriented environment (TYPE is empty). This parameter specifies the name of the environment table. This parameter is optional. If it is not specified, the environment table is determined by the entry in the transaction code table which corresponds to the transaction code used.
TRNCODE			This parameter is only used by the bootstrap module for the message-oriented environment (TYPE is empty). This parameter specifies the name of the transaction code which is internally used by the Natural IMS interface. This parameter is optional and is only honored if TRNCODE=YES is coded in the NIMDRIV macro. If it is not specified or if TRNCODE=YES is not specified in the NIMDRIV macro, the transaction code returned by the IMS TM INQY call is used. The transaction code is used to determine the entry in the transaction code table NIITRTAB.
DYNPARM	Any character string of up to 80 characters.	None	This parameter is only used by the bootstrap module for the message-oriented environment (TYPE is empty). This parameter is used to define a valid string of up to 80 characters of Natural dynamic parameters.

Parameter	Possible Values	Default	Comment
SERVERN	Any valid z/OS module name	NIIBOOTS	<p>This parameter is only used by the server call interface (TYPE=SERVER).</p> <p>This parameter specifies the name of the server environment. It is only relevant if you want to use several Natural servers in the same region. In this case, you must generate multiple server call interfaces and specify a unique name with SERVERN for each each of them. See Special Functions, <i>Server Environment</i>.</p>