

Natural in Batch under OS/390

This document contains special considerations that refer to Natural in batch under the operating system OS/390.

The following topics are covered:

- NATOS - Natural OS/390 Batch Interface
- NTOS Macro - Natural for OS/390 Generation Parameters
- Natural Datasets Used under an OS/390 Batch Session

For considerations that refer to Natural in batch generally, see also:

- Datasets Required for Batch Mode Operation
- Natural Datasets
- Adabas Datasets
- Sort Datasets
- Subtasking Session Support for Batch Environments

NATOS - Natural OS/390 Batch Interface

The Natural OS/390 batch interface (NATOS) consists of a number of service routines interfacing with the OS/390 operating system.

NATOS is supplied as a source module and can be customized to meet your requirements; see also Installing Natural under OS/390 (described in the Natural Installation Guide for Mainframes), where you can set the generation parameters). You can either assemble and link it to the Natural nucleus or you can run it separately, connecting with a shared nucleus.

NATOS is fully reentrant and can run above the 16 MB line. Multiple sessions can be started in parallel within one batch region; see Subtasking Session Support for Batch Environments.

NTOS Macro - Generation Parameters for Natural under OS/390

The NTOS macro contains several generation parameters to change Natural for OS/390's internal defaults.

These parameters are: ABEXIT | FACOM | LBPNAME | LE370 | SUBPOOL | USERID

ABEXIT - Abend Processing within Natural

This parameter specifies the mode of abend processing within Natural.

ABEXIT=ESTAE	Natural intercepts all abends and issues the appropriate error messages. This is the default setting.
ABEXIT=SPIE	Only program checks (S0Cx abends) are intercepted as they used to be with Natural Version 2.1.
ABEXIT=NONE	Natural does not intercept any abends or program checks at all.

FACOM - Use of FACOM Operating System

This parameter specifies whether the FACOM operating system is to be used.

FACOM=NO	FACOM is not used. This is the default setting.
FACOM=YES	FACOM is to be used.

LBPNAME - Name of Shared Local Buffer Pool Environment

This parameter controls the sharing of the local buffer pools. It defines the name of the shared buffer pool environment and is used to locate and synchronize the local buffer pools.

LBPNAME=<i>name</i>	<i>name</i> can be 1-8 characters long.
LBPNAME=	The default value is none, that is, the local buffer pools are not shared.

When running multiple Natural sessions under OS/390 in a batch or TSO environment concurrently, for example, using a Natural RPC, each session allocates storage for separate local buffer pools. Except for the Natural OS/390 batch server, the local buffer pools are not shared, that is, if the different sessions use the same Natural objects, these have to be loaded once for each session. The buffer pool specified by *name* will be shared by the different Natural sessions.

LE370 - Use of IBM Language Environment

This parameter specifies whether Natural is to run in the IBM Language Environment.

LE370=YES	You can call external subprograms according to the LE/370 calling conventions.
LE370=NO	You can only call main programs of the Language Environment. This is the default setting.
LE370=POSIX	You can call external subprograms according to the LE/370 calling conventions with POSIX semantics, i.e. LE/370 is initialized with runtime option POSIX(ON).

SUBPOOL - Storage Subpool for GETMAIN Requests

This parameter defines the storage subpool for GETMAIN requests.

SUBPOOL=<i>nnn</i>	Possible value for <i>nnn</i> : 0 to 127. Default value: 0
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USERID - Content System Variable *INIT-USER

This parameter specifies the content of the system variable *INIT-USER.

USERID=YES	The variable is set to either the user ID from the security access control block (ACEE) if a security package (as RACF or ACF2) is involved or the user parameter from the job card.
USERID=NO	The user ID is the job name. This is the default setting.

Natural Datasets Used under an OS/390 Batch Session

The following optional sequential datasets are used during a Natural under OS/390 batch session:

DD Name	RECFM/LRECL	Purpose
CMHCOPY	FBA/133	Hardcopy output if no HCDEST has been specified (default).
CMOBJIN	FB/80	Input for Natural INPUT statements.
COMPLOG	FBA/133	Output profile parameter.
CMPRINT	FBA/133	Primary report output (mandatory).
CMPRMIN	FB/80	Input profile parameter.
CMPR T_{nn}		Additional reports.
CMSYNIN	FB/80	Primary input.
CMTRACE	FBA/133	Trace output.
CMWKF nn		Natural work files.
NATRJE	FB/80	Submit job output.
STEPLIB		Load library for external modules.

These datasets are described below.

CMHCOPY - Optional Report Output for Hardcopy

Hardcopy output destination. This dataset's name can be changed with the HCDEST profile parameter and with terminal command %H.

DCB information for CMHCOPY is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=PM, DDNAME=CMHCOPY, RECFM=FBA, DSORG=PS,
        LRECL=133, BLKSIZE=1330
```

CMOBJIN - Input for Natural INPUT Statements

DCB information for CMOBJIN is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=GM, DDNAME=CMOBJIN, EODAD=EOF, DSORG=PS,
        RECFM=FB
```

COMPLOG - Optional Report Output for Dynamic Parameters

If the profile parameter PLOG is set to ON, all dynamic profile parameters are written to this dataset during session initialization. If COMPLOG is not defined, CMPRINT is used instead.

DCB information for COMPLOG is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=PM, DDNAME=CMPL0G, RECFM=FBA, DSORG=PS,
        LRECL=133, BLKSIZE=1330
```

CMPRINT - Primary Report Output

If not defined in JCL, CMPRINT will be allowed dynamically as //CMPRINT DD SYSOUT=*. DCB information for CMPRINT is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=PM, DDNAME=CMPRINT, RECFM=FBA, DSORG=PS,
        LRECL=133, BLKSIZE=1330
```

CMPRMIN - Dynamic Parameter Dataset

DCB information for CMPRMIN is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=GM, DDNAME=CMSYNIN, EODAD=EOF, DSORG=PS,
        RECFM=FB
```

CMPRMIN is a sequential dataset with DCB information: RECFM=F or RECFM=FB and LRECL=72 (or more); only the first 72 positions of each CMPRMIN record are significant.

CMPR T_{nn} - Additional Reports

DCB information is optional. If omitted, it is supplied with the PRINT profile parameter, subparameters RECFM, LRECL and BLKSIZE; refer to the parameter PRINT or the macro NTPRINT (in the Natural Reference documentation).

CMSYNIN - Primary Input

DCB information for CMSYNIN is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=GM, DDNAME=CMSYNIN, EODAD=EOF, DSORG=PS,
        RECFM=FB
```

CMTRACE - Optional Report Output for Natural Tracing

If the profile parameter ETRACE is set to ON, all trace output is written to this dataset during the session. If not defined in JCL, CMTRACE will be allocated dynamically as //CMTRACE DD SYSOUT=*.

DCB information for CMTRACE is contained in NATOS, the Natural driver for OS/390. It is as follows:

```
DCB      MACRF=PM, DDNAME=CMTRACE, RECFM=FBA, DSORG=PS,
        LRECL=133, BLKSIZE=1330
```

CMWK F_{nn} - Natural Work Files

DCB information is optional for output files. If omitted, it is supplied in the WORK profile parameter, subparameters RECFM, LRECL and BLKSIZE; refer to the parameter WORK and the macro NETWORK.

If not supplied, RECFM is set to VB. BLKSIZE is set to the WORKBLK profile parameter setting or (if this is not enough) to the maximum of the value required by the Natural program plus 4. LRECL is set to the value of BLKSIZE minus 4. This is the simplest way to ensure proper reuse of work files by a series of Natural programs that run in the same job step. If any DCB information is supplied, either explicitly or implicitly (through reuse of a predefined dataset or specification or a partitioned dataset member), the following rules apply:

- Record format undefined, variable or omitted (default is VB): LRECL and BLKSIZE are increased if insufficient and supplied if omitted;
- Record format fixed: the LRECL default is the necessary minimum if it is omitted, but is not altered if it is supplied. If it is insufficient, the program terminates with an error message. BLKSIZE is rounded down if it is not an exact multiple of LRECL.

Full DCB information is always required for input files. If Natural programs first write and later read a work file, DCB information is normally taken from the dataset label and, therefore, need not be supplied explicitly on the DD/FILE statement.

NATRJE - Dataset for Natural Job Submitting Utility

This dataset is used for the Natural job submitting utility. If it is not defined, it will be allocated dynamically as //NATRJE DD SYSOUT=(A,INTRDR) when the first job is submitted.

STEPLIB - Default Library Name for Loading External Modules

This is the default library name for loading external modules, for example the shared nucleus, the Adabas link routine (ADALNK), the session back-end program and any external subprograms not linked to the Natural parameter module.

The load library name can be overwritten by the profile parameter LIBNAM - Name of Load Library. In this case, the correct library name (instead of STEPLIB) must be specified in the job control.