

Configuring the Natural Development Server

This document describes how to configure a Natural Development Server for SMARTS on VSE/ESA.

The following topics are covered:

- Configuration Requirements
 - Configuration File
 - Configuration Parameters
 - Server Datasets
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Configuration Requirements

The Natural Development Server requires following SMARTS SYSPRM parameters:

Parameter	Definition	
RESIDENTPAGE	The following members must be defined in the SMARTS resident area: NATRDEVS, NATSOCK, NATMONI, Natural front end (NCFNUC) and Natural nucleus (if you run using a split nucleus).	
SERVER	The following SERVER definitions are required for the Natural Development Server:	
	SERVER=(OPERATOR, TLINOPER, TLSPOPER)	The Operator Communications Server.
	SERVER=(POSIX, PAENKERN)	The POSIX Server.
	SERVER=(NATBPS31, NCFBPS31, 1, 2048, 2, 512, 4, 1024)	The Natural local buffer pool. The module NCFBPS31 is delivered with Natural Version 3.1 for Mainframes.
CDI_DRIVER	CDI_DRIVER=('TCPIP', PAACSOCK, MINQ=10, MAXQ=20)	The SMARTS TCPIP Socket Driver for Connectivity Systems TCP/IP stack on VSE. MINQ/MAXQ defines the number of TcpIP listener tasks.
THSIZEABOVE	THSIZEABOVE=1024	The storage above 16 MB that is available for each Natural Development Server subtask. This size must be large enough to keep the Natural tread, heap and stack of the Natural Development Server subtasks. If the Natural Development Server initialization fails with "NCF0003 Unable to allocate Natural thread", this parameter must be increased.
ADASVC	ADASVC=nnn	The Adabas SVC number of your Adabas installation.

You can set the SMARTS SYSPRM parameters in the member RJANPARM.P in the SMARTS library, or you create a new SYSPARM member (e.g. in the Natural Development Server library). You have to concatenate this member with the RJANPARM.P definition in your SMARTS startup job.

SYSPRM Example for the Natural Development Server:

```
* ----- ADABAS PARMs -----
ADACALLS=20 CALLS BEFORE ROLL
ADASVC=47 ADABAS SVC NUMBER
* ----- BUFFERPOOL PARMs -----
BUFFERPOOL=(064,030,20,ANY)
BUFFERPOOL=(128,064,64,ANY)
BUFFERPOOL=(256,010,10,ANY)
BUFFERPOOL=(512,032,10,ANY)
BUFFERPOOL=(1K,032,32,ANY)
BUFFERPOOL=(6K,005,02,ANY)
BUFFERPOOL=(8K,016,16,ANY)
* ----- ROLLING PARMs -----
ROLL-BUFFERPOOL=(048K,04,04,DS) ESA DATA SPACE
ROLL-BUFFERPOOL=(064K,04,04,DS) ESA DATA SPACE
ROLL-BUFFERPOOL=(128K,04,04,DS) ESA DATA SPACE
ROLL-BUFFERPOOL=(256K,04,04,DS) ESA DATA SPACE
ROLL-BUFFERPOOL=(800K,02,02,DS) ESA DATA SPACE
*
* ----- NDV Server to launch at startup -----
* STARTUPPGM='NATRDEVS NDVS1
*

*
TASK-GROUP=(DEFAULT,6)
THREAD-GROUP=(DEFAULT,(DEFAULT,252,06,15,28,N))
*
THSIZEABOVE=1024
*
SERVER=(NATBPS31,NCFBPS31,1,2048,2,512,4,1024)
*
CDI_DRIVER=( 'TCPIP , PAACSOCK , MINQ=10 , MAXQ=20 ' )
*
RESIDENTPAGE=NATRDEVS
RESIDENTPAGE=NDVNCF31
RESIDENTPAGE=NATNUC31
RESIDENTPAGE=NATSOCK
RESIDENTPAGE=NATMONI
```

Configuration File

A configuration file is allocated to the DD-name <serverid>C (e.g. NDVS1C) or STGCONFIG alternatively.

The configuration file is a text file located on a dataset or or on a librarian member under VSE. It contains the server configuration parameters in form of a *keyword=value* syntax.

Configuration Parameters

The following configuration parameters are available:

DBG_CODEPAGE | FRONTEND_PARAMETER | INITIAL_USERID | FRONTEND_NAME | TRACE_LEVEL |
SESSION_PARAMETER | DEFAULT_PROFILE | HOST_NAME | PORT_NUMBER

DBG_CODEPAGE

This optional configuration parameter specifies which translation table is used by the remote debugger. By default, the remote debugger uses the code page IBM-1047 contrary to NDV which uses TABA1/2.

Possible values:

USER	Use the Natural translation tables TABA1/2.
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Default Value none

Example `DBG_CODEPAGE=USER`

FRONTEND_PARAMETER

This optional configuration parameter contains additional Natural front-end parameters as specified in the Startup Parameter Area.

You can define multiple parameters. Each parameter specification is a pair of 8-character strings, the first containing the parameter keyword and the second the parameter value.

For further information, see the *Natural Operations for Mainframe documentation*, Natural in Batch Mode.

Default Value none

Example `FRONTEND_PARAMETER="MSGCLASSX"`

The setting in the example specifies that the default output class for CMPPRINT is "X".

INITIAL_USERID

At server initialization, the Natural Development Server creates a temporary Natural session to obtain the properties of the installed Natural environment.

This configuration parameter specifies the user ID to be used for this Natural session.

The specified value must not exceed 8 characters, otherwise it is truncated.

Default Value STARGATE

Example `INITIAL_USERID=NDVINITU`

FRONTEND_NAME

This configuration parameter specifies the name of the Natural front-end to be used to start a Natural session. The front-end resides on a PDS member.

Default Value none

Example `FRONTEND_NAME=NAT315SV`

TRACE_LEVEL

See Trace Level details in the section Natural Development Server on Mainframe.

Default Value 0

Example TRACE_LEVEL=0x00000011

The setting in the example switches on Bits 31 and 27.

DEFAULT_PROFILE

This optional configuration parameter defines a default profile.

Specifying a parameter string in the Map Environment window of Natural Studio overwrites this default profile.

Default Value none

Example DEFAULT_PROFILE=RDEVS,10,930

The setting in the example defines that, if no parameters are defined in the Map Environment window, the session is started with the parameter PROFILE=(RDEVS10,930).

SESSION_PARAMETER

This optional configuration parameter defines session parameters that precede the parameter string either specified in the Map Environment window or defined by default by the configuration parameter DEFAULT_PROFILE.

Default Value none

Example SESSION_PARAMETER=FNAT=(10,930)

The setting in the example defines that every session on this Natural Development Server is started with the session parameter FNAT=(10,930) appended to the user-specified parameters or the definitions in DEFAULT_PROFILE.

HOST_NAME

This optional configuration parameter is necessary only if the server host supports multiple TCP/IP stacks.

If HOST_NAME is specified, the server listens on the particular stack specified by HOST_NAME, otherwise the server listens on all stacks.

Default Value none

Example HOST_NAME=node1

or

HOST_NAME=157.189.160.55

PORT_NUMBER

This configuration parameter defines the TCP/IP port number under which the server can be connected.

Default Value none

Example PORT_NUMBER=3140

Configuration File Example:

```
# This is a comment
SESSION_PARAMETER=profile=(stgqa,10,930) fuser=(10,32)
DEFAULT_PROFILE=DEFPROF
THREAD_NUMBER=2
THREAD_SIZE=700
FRONTEND_NAME=NATOS31L      # and another comment
PORT_NUMBER=4711
```

Server Datasets

The Natural Development Server requires the following datasets:

STGCONFIG	Defines the server configuration file.
STGTRACE	The server trace output.
STGSTDO	The stdo dataset.
STGSTDE	The stde error output.

Alternately, you can qualify each dataset name by the server ID. This is necessary if you would like to start different Natural Development Servers under a single SMARTS address space.

NDVS1C	Defines the server configuration file for the server NDVS1.
NDVS1T	The server trace output for the server NDVS1.
NDVS1O	The stdo dataset for the server NDVS1.
NDVS1E	The stde error output for the server NDVS1.