

Natural Development Server Frequently Asked Questions

This document contains frequently asked questions concerning the Natural Development Server (NDV) under SMARTS on VSE/ESA.

The following topics are covered:

- Natural Development Server starts and terminates immediately
- Which dataset should I analyze to get error information?
- Trace output shows "Cannot load Natural front-end "
- Trace output shows "Transport initialization failed" "EDC8115I address already in use"
- Trace output shows "Error at: Template runtime connect"
- Definitions required in Natural Security
- I do not get a NAT0954 even if I specify DU=OFF
- Map Environment fails with a NAT3048
- Map Environment fails with Stub RC nn
- Special characters are not translated correctly
- How do I find out which hexadecimal value must be specified for TABA1/TABA2?
- The modifications of TABA1/TABA2 do not apply to sources listed in the remote debugger?
- Accessing work files
- I have problems when accessing DB2
- Are there any Natural profile parameter settings required for NDV?
- Sporadically I get a NAT7660 with socket code 0
- NAT9915 GETMAIN for thread storage failed

Natural Development Server starts and terminates immediately

At server initialization, the Natural Development Server

- allocates central control blocks,
- opens the datasets STGTRACE, STGSTDO, STGSTDE, STGCONFIG,
- obtains the configuration file,
- loads the Natural front-end,
- initializes the first Natural session and
- launches the TCP/IP listener task

If one of these steps fails, the server cannot continue and terminates immediately.

Analyze the trace output (STGTRACE) or the error output (STGSTDE) to find out the problem.

Which dataset should I analyze to get error information?

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| STGSTTE | <p>Contains only error output. Each record consists of 2-4 lines depending on whether it is a Natural error, a system error or an NDV stub error.</p> <p>Natural Error</p> <ol style="list-style-type: none"> 1. DayOfMonth Time TaskId UserId 2. TaskId NDV Error: error classification 3. Natural FrontEnd error or NATURAL runtime error 4. Natural error text <p>System Error</p> <ol style="list-style-type: none"> 1. DayOfMonth Time TaskId UserId 2. TaskId NDV Error: error classification 3. TaskId Sys Error: System error text <p>NDV stub error</p> <ol style="list-style-type: none"> 1. DayOfMonth Time TaskId UserId 2. TaskId NDV Error: error classification |
| STGTRACE | <p>Contains NDV trace information and error information. Each trace record contains</p> <p>DayOfMonth Time TaskId Trace information text</p> <p>The string PrintError in the Trace information text prefixes errors.</p> |
| STGSTO | Content of the configuration file allocated to STGCONFIG. |
| SYSOUT | Messages from LE runtime system. |

Trace output shows "Cannot load Natural front-end "

The Natural front-end specified by the NDV configuration parameter FRONTEND_NAME was not found in the load library concatenation.

Trace output shows "Transport initialization failed" "EDC8115I address already in use"

The TCP/IP port number specified by the NDV configuration parameter PORT_NUMBER is already in use by another process.

Trace output shows "Error at: Template runtime connect"

When a Natural Development Server initializes, it starts a Natural session using the session parameter defined by the NDV configuration parameter SESSION_PARAMETER. The profile definition of the NDV configuration parameter DEFAULT_PROFILE is appended.

If the initialization of the template session fails, the server terminates immediately. The original error can be found below the message "Error at:Template runtime connect".

Typical error situations could be:

- No Natural buffer pool defined
- Natural system file not accessible
- Profile parameter ITERM=ON
- NDV initial user ID not defined

Definitions required in Natural Security

- Each client must be defined in Natural Security if the Transition Period Logon flag in NSC is set to NO. Otherwise, your Map Environment fails with a NAT0873.
- You must define an NDV initial user ID (default ID is STARGATE) unless you run with profile parameter AUTO=OFF.
- Each user must have either a default library or a private library. Otherwise your Map Environment fails with a

NAT1699.

- You must not specify a startup program that executes an I/O statement or stacks a LOGON, LOGOFF or RETURN command, because the program is executed whenever you change the focus to that library within the tree view.
- If you add a new user, you must specify a password for this user. Otherwise, the Map Environment fails with a NAT0838.

I do not get a NAT0954 even if I specify DU=OFF

The IBM Language Environment (LE) runtime option TRAP must be set to TRAP(ON,NOSPIE).

Map Environment fails with a NAT3048

Specify session parameter ETID=' '. If you have Natural Security, clear the ETID definition for that user.

Map Environment fails with Stub RC nn

Stub return codes are raised by the NDV front-end stub if it detects a logical processing error when dispatching the NDV request. The NDV trace output contains detailed information about the reason for the error.

The following stub return codes are possible:

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| 1 | Error during session reconnect (for future use). |
| 2 | <p>Cannot create new session directory entry or subtask. If Natural Studio executes a Map Environment, the Natural Development Server allocates an entry in its session directory and creates a new subtask. If one of these actions fails, the Stub RC 2 is raised.</p> <p>Reason:</p> <ul style="list-style-type: none"> ● Region size (virtual storage below 16 MB) for the Natural Development Server is too small, ● Number of subtasks exceeds the limit specified by the OS/390 Unix System Services parameter MAXTHREADS. <p>Action: Increase region size or MAXTHREADS, or distribute the clients to several Natural Development Server. To save memory below 16 MB, you can also specify the ANY option of the LE parameter STACK (refer to Useful_LE_runtime options).</p> <p>The number of active tasks can be displayed using the OS/390 system command D OMVS ,PID=<i>process-id</i> (where <i>process-id</i> is the process id of the Natural Development Server).</p> <p>The value of MAXTHREADS can be displayed with D OMVS ,OPTIONS.</p> |
| 3 | <p>Cannot initialize new session. This error occurs if a storage allocation for internal NDV control buffers fails due to a lack of virtual memory above 16 MB.</p> <p>Reason: Virtual memory above 16 MB too small.</p> <p>Action: Increase the virtual memory above 16 MB, decrease the number of physical storage threads, configure NDV to use the Natural roll server, or distribute the clients to several Natural Development Servers.</p> |

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| 4 | <p>Session execution failed. Internal error. The Natural Studio uses an invalid session identifier to process a request.</p> <p>Reason:</p> <ul style="list-style-type: none"> ● On Map Environment, the session ID already exists. ● The Natural session with specified ID is not initialized. <p>Action: Locate the defective session ID in the server trace file and cancel it using the monitor, or restart your Natural Studio.</p> |
| 5 | <p>I/O execution not allowed. In some situations, a Natural I/O is prohibited at the Natural Development Server.</p> <p>Reason:</p> <ul style="list-style-type: none"> ● I/O execution during LOGON request, ● I/O execution during execution of a transaction processor. <p>Action: Locate the I/O buffer in the server trace file to find out which I/O should be processed. Check for any startup program specified for the library you want to logon.</p> |
| 6 | Not applicable. |
| 7 | <p>Error during I/O execution. The Natural Development Server cannot finish a terminal I/O.</p> <p>Reason:</p> <ul style="list-style-type: none"> ● Virtual memory above 16 MB too small, ● I/O reply buffer send by Natural Studio is invalid. <p>Action: Increase the virtual memory above 16 MB. If the I/O reply buffer is invalid, contact Software AG support.</p> |
| 8 | Protocol element missing. Internal error, contact Software AG support. |
| 9 | <p>NDV not installed on Natural systemfile. Natural Development Server cannot execute the Natural module TRPRO located on library SYSLIB.</p> <p>Reason: The NDV modules are not loaded on the FNAT.</p> <p>Action: INPL the NDV modules.</p> |
| 10 | <p>LOGON command required. If you execute a program on the Natural Development Server that executes a LOGOFF (or a RETURN when no SETUP record is available), the logon library is undefined. In an online environment the Natural Security logon screen is displayed in this situation. Under NDV, the Natural session rejects all requests except a LOGON command. This applies only if Natural Security is installed. You can execute a LOGON command either by using the command line or by clicking on any library in your tree view.</p> |

Special characters are not translated correctly

The ASCII-EBCDIC translation for NDV uses the Natural translate tables TABA1/TABA2. These tables can be maintained at customer site. The translate tables can be modified as follows:

1. Modify source member NTTABA1/NTTABA2 on the Natural distribution library. Reassemble NATCONFIG and relink the Natural nucleus.
2. Specify the Natural session parameter TABA1/TABA2.

How do I find out which hexadecimal value must be specified for TABA1/TABA2?

Run the following program on your Natural for Windows locally.

```
#A(A1) = '{'  
WRITE A(EM=H)  
END
```

Output is **7B**.

Run the program on a mainframe (edit the program with the Natural mainframe editor).

Output is **75**, assuming that you use a German EBCDIC table. If you use a US EBCDIC table, the output will be C0.

Start your Natural Development Server session with TABA1=(75,7B) and TABA2=(7B,75).

The modifications of TABA1/TABA2 do not apply to sources listed in the remote debugger?

Specify the NDV configuration parameter `DBG_CODEPAGE=USER`.

Accessing work files

This topic is discussed in the Natural Operations for Mainframes documentation. Refer to Natural as a Server under OS/390, Print and Work File Handling with External Datasets in a Server Environment.

I have problems when accessing DB2

Ensure that your Natural Development Server is started with the configuration parameter `KEEP_TCB=YES`.

Are there any Natural profile parameter settings required for NDV?

The following Natural profile parameter values are required for NDV:

- `ETID=OFF` is required to allow multiple Natural sessions for each client.
- `DBCLOSE=ON` is required to remove database resources immediately after session termination rather than to keep them until they are removed due to a timeout.
- `ITERM=OFF` is required to continue with the Natural Development Server initialization even if session initialization errors occur.
- `AUTO=ON/OFF` has a different behavior under Natural Single Point of Development. In an online Natural environment, this parameter controls whether you are prompted for your user ID and password or if your user ID is treated to be a trusted user ID from the TP environment. With Natural Single Point of Development, you must always specify your user ID and password in the Map Environment dialog.

Sporadically I get a NAT7660 with socket code

The reason for that error is a queue overflow for incoming TCP/IP requests that results in an IPN214W error in the TCP/IP SYSLST output. The SMARTS SYSPARM parameter

`CDI_DRIVER=('TCP/IP', PAACSOCK, MINQ=nn, MAXQ=nn)` defines the minimum and/or maximum number of requests that can be queued by TCP/IP.

Increase the value of `MINQ` and ensure that `MAXQ` is greater than or equal to `MINQ`.

NAT9915 GETMAIN for thread storage failed

The Natural Front-End cannot allocate the Natural thread. Increase the SMARTS SYSPARM parameter THSIZEABOVE. The NDV configuration parameter THREAD_SIZE is obsolete under VSE.