

# Installing NATURAL CGI

SMARTS supports the Natural runtime system as documented in the Natural manuals in the section for Com-plete.

Follow the steps for installing Natural under this environment as required.

The Natural installation should be complete and working in the environments where the HTTP server is to run before attempting to support the Natural CGI processing.

The SMARTS HTTP server requires either Com-plete version 6.1 (or above) or Natural version 3.2 (or above) to support the Natural CGI processing. The Natural Web Interface is supported by Natural version 3.1 and above.

**Note:**

For a Natural version 2.2 installation under Com-plete, ensure that the HTPvrs.SRCE precedes any Natural datasets in the SYSLIB concatenation in all assembly jobs.

This chapter covers the following topics:

- Natural 2.2 Support
- Natural Tasks
- Relationship to the HTTP Server Configuration
- Invoking a Natural CGI Program
- Installation Verification
- Additional Notes
- Using the Natural Web Interface

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## Natural 2.2 Support

This product has been tested and fully supports Natural 2.2.8 and Natural 2.3.1. Contact Software AG if you need support for earlier, supported versions of Natural version 2.2.

## Natural Tasks

A number of additional tasks are required to ensure that the Natural CGI processing operates successfully. Note that the HNANSHEL program delivered with the product is a Natural program itself and an integral part of the Natural CGI processing logic.

Follow the next steps carefully:

1. Ensure that the HTPvrs Natural library has been INPLed as part of the installation process.

- Copy the HHANSHEL object from the HTPvrs Natural library to the SYSTEM library on FUSER to ensure that this module is always available to the HTTP server.

See step 4 as an alternative to this step when Natural Security is installed.

- Copy the Natural subprograms USR0050N, USR0330N, and USR1025N from the SYSEXT Natural library to the SYSTEM library on FUSER.
- As an alternative to step 2 when Natural Security is installed, make SYSEXT a STEPLIB in the Natural environment.

## Relationship to the HTTP Server Configuration

The following parameters specified in the HTTP server configuration are directly associated with the use of Natural CGI:

Parameter	Description
HTTPUSER	The default user ID for a user who is able to issue a Natural CGI request. The user ID is passed on to Natural and must therefore be defined, for example, if Natural Security is installed Note: Applies only when running under Com-plete.
LOGON	If the HTTP server is running with security, Natural is passed either the default user ID as specified by HTTPUSER or the user ID for which the user provided a valid user ID and password. Once again, there may be Natural Security or other implications. Note: Applies only when running under Com-plete.
NATLIB	Name of the Natural library where the HTTP server tells Natural to look for a Natural program specified on an HTTP request when no Natural library is specified.
NATPARAM	Where appropriate or necessary, Natural parameters may be specified here to override parameters generated in the Natural parameters in the nucleus. The 'STACK' parameter is ignored if specified in this string.
NATTHR	In the SMARTS server environment, the name of the thread-resident portion of Natural generated during the Natural installation process.

Software AG recommends that you leave the following Natural parameters in the HTTP configuration parameters by default:

IMSG=NO	Prevents Natural from trying to write the 'terminal' if there are certain start-up errors. If not specified, Natural tries to write the message and the NATCGI request ABENDs.
OUTDEST=CONSOLE	Causes Natural to write messages to the console again, where it would otherwise try to send messages to the 'terminal'.

## Invoking a Natural CGI Program

A Natural CGI program is invoked using the standard browser URL

`http://ip-addr:port/natcgi/program`

-where 'program' is the Natural program you want to run, which exists in the Natural library specified in the NATLIB configuration parameter.

If you want to provide a Natural library name, use the URL

`http://ip-addr:port/natcgi/library/program`

-where 'library' is the Natural library where 'program' resides.

**Note:**

All programs to be run using Natural CGI must be cataloged; that is, they must be in object format.

## Installation Verification

To test the installation:

1. Invoke a program that does nothing.

Such a program is provided in the HTPvrs Natural INPL file delivered with SMARTS as HNANWTOP.

2. Stow the program HNANWTOP in your NATCGI library.
3. Try to invoke it from a web browser using the URL

`http://ip-addr:port/natcgi/hnanwtop`

You will receive no output at your browser; however, the message in the program should be written to the operator console.

4. If this is successful, test the sample Natural CGI program:
  - Ensure that the HNANSAMP program is stowed or cataloged in the default CGI library specified by the NATLIB configuration parameter.
  - Invoke the URL

`http://ip-addr:port/htpvrs/srcce/hnannatt.htm`

When you enter your name, the HNANSAMP program should be invoked and echo your name back to the browser.

## Additional Notes

The following should also be taken into consideration when installing Natural CGI:

1. The Natural start-up program in all environments must be linked with AMODE=31.
2. There must be no start-up errors from Natural as this will force Natural to try to write to the terminal or CMPRINT about the errors, which in turn can cause unpredictable results. This will also cause the Natural CGI request to fail.

3. If Natural CGI processing cannot be activated for Natural version 2.2, the most likely cause is that the modified NTCOMP macro on the HTPvrs.SRCE dataset has not been used during the compilation of the thread-resident part during the Natural installation process.

## Using the Natural Web Interface

### Required Tasks

To ensure successful operation of the Natural Web Interface:

1. Ensure that the Natural CGI processing is installed and working correctly; and
2. INPL the modules supplied in the HTPvrs.UPDW update dataset onto the existing SYSWEB library.

The programs NWWAPS and W3APSENV are an integral part of the Natural Web Interface processing.

### Invoking a Natural Web Interface Program

To invoke a Natural Web Interface program, use the standard browser URL

`http://ip-addr:port/natcgi/sysweb/nwwaps/library/subprogram`

-where

<b>library</b>	<b>is the Natural library where 'subprogram' resides</b>
subprogram	is the Natural subprogram you want to run

#### Note:

All programs to be run using the Natural Web Interface must be cataloged; that is, they must be in object format.

### Installation Verification

To test the installation, use the demo application supplied with the INPL update:

1. Catalog all the D5\* programs in the SYSWEB library using a valid EMPLOYEES DDM.

The demo includes pictures, which are supplied on the HTPvrs.GIFS dataset.

2. To make the pictures accessible, set up an environment variable 'PICTURES' in the CONFIG file for the Com-plete or SMARTS server under which the HTTP server is running.

For example:

```
PICTURES=/HTPvrs/GIFS
```

3. If required, add the UDB parameter to the Natural start-up parameters in the HTTP server configuration module.

4. Invoke the demo from a web browser using the URL

`http://ip-addr:port/natcgi/sysweb/nwwaps/sysweb/d5menu`

## **Additional Notes**

For additional information about the Natural Web Interface, refer to the Natural 3.1 documentation.