Installing Natural for Entire Screen Builder on UNIX Hosts

If the host system on which you run your Natural applications is a UNIX system, additional software for Entire Screen Builder has to be installed on the host. The Entire Screen Builder UNIX modules are shipped on the Natural UNIX CD.

In general, Entire Screen Builder uses the default system parameter values provided with the UNIX system.

This chapter covers the following topics:

- Prerequisites
- Setting Up the Entire Screen Builder Components
- Directories
- Configuration Files
- Working with the Entire Screen Builder UNIX Components

Prerequisites

Supported Operating Systems	The same platforms as supported by Natural UNIX.
Other Software Products	Natural Version 5.1.1.9 or above.
Linker	A linker (for example, ld or cc) and the command `make` must be available in the system.

Setting Up the Entire Screen Builder Components

Setting up Entire Screen Builder on UNIX consists of the following steps:

- Step 1: Stop the Entire Screen Builder Daemons
- Step 2: Establish the Environment
- Step 3: Install Natural and Entire Screen Builder with the Demo Application
- Step 4: Check the Environment Variables for Entire Screen Builder
- Step 5: Read the READ_NSW Files

Step 1: Stop the Entire Screen Builder Daemons

This step is only required for an upgrade installation. It is not required when you install Entire Screen Builder for the first time.

Stop the *nswsrvd* process using the following command:

```
nswsrvd.sh servicename stop
```

Repeat this command for each Entire Screen Builder service that has been started.

Step 2: Establish the Environment

Ensure that the environment definitions, as described in *setup.txt* in the root directory of the Natural CD, are correct and set.

Step 3: Install Natural and Entire Screen Builder with the Demo Application

Entire Screen Builder and the demo application are installed during the Natural installation.

Important:
The Natural installation provides an Entire Screen Builder option which must be activated. For more details, see your Natural installation documentation.

When you install Natural and Entire Screen Builder, the directory *$NATDIR/$NSWNODE* is created. The template files located in *$NATDIR/$NATVERS/nsw/node-name* are then copied to this new directory.

Once Natural and Entire Screen Builder with the demo application are installed, you must catalog the application SYSEXNSW by entering the following commands:

```
natural
logon SYSEXNSW
catall
```

Step 4: Check the Environment Variables for Entire Screen Builder

The Entire Screen Builder-specific settings are shown below:

Environment Variable	Description
NSWDIR	Home directory for the product.
NSWNODE	Name of the node on which Entire Screen Builder is installed.
NSWSERV	Name of the path to the *nswservice* file.
NSWTIMEOUT	Number of seconds waiting for an answer from the PC side.

Step 5: Read the READ_NSW Files

Access the directory *$NATDIR/$NATVERS* and read the *READ_NSW.1ST* and *READ_NSW.FIX* files for any version-specific installation considerations concerning the particular platform.

Add the services as described in the file *READ_NSW.1ST*.

Directories

The following directories are created when Natural is installed together with Entire Screen Builder on a UNIX system:

Directory	Description
$NATDIR	Top-level Natural directory.
$NATDIR/$NATVERS	Directory with all components for the current Natural version.
$NATDIR/$NATVERS/nsw	Directory with some Entire Screen Builder components for the current version.
$NATDIR/$NATVERS/INSTALL	Shell scripts and environment files to install the product.
$NATDIR/$NATVERS/nsw/bin	Entire Screen Builder executable files (*nswusr*, *nswsrvd*, *nswusr.tr* and *nswsrvd.tr*).
$NATDIR/$NATVERS/nsw/node-name	Contains the template files (*services.dat*, *nswservice*, etc.).
$NATDIR/$NATVERS/nsw/samples/userexit	Contains the files for building the sample user exit.
$NATDIR/$NATVERS/bin/build	Contains the library (*libnsw.a*) to link with Natural.
$NATDIR/$NATVERS/bin/build.tr	Contains the trace library (*libnsw.a*) to link a trace version with Natural.
$NATDIR/$NSWNODE	Contains the configuration files (*services.dat*, *nswservice*, etc.).

Note:
The above table lists only the most important directories and files.

Configuration Files

When the Entire Screen Builder installation has finished, the directory *$NATDIR/$NSWNODE* contains the following configuration files:

Configuration File	Description
nsw.sh	Shell script to start the Natural application.
nswservice	Contains the authorized users for every service.
nswsrvd.sh	Shell script to start and to stop the NSW daemon.
services.dat	Contains the configuration for the NSW daemon.

Working with the Entire Screen Builder UNIX Components

The Entire Screen Builder UNIX components are used to start the Natural applications linked with the Entire Screen Builder library.

The following topics are covered below:

- Starting a New Natural Application
- Starting and Stopping the Entire Screen Builder Daemon

Starting a New Natural Application

Any Natural application can be used with Entire Screen Builder.

To start a new Natural application with Entire Screen Builder, proceed as follows:

- Create a new parameter file using the Natural Parameter Utility (see the Natural documentation) and modify the STACK command as follows:

  ```
  logon library; startprogram; fin
  ```

Add the new service as follows:

1. Insert a new line in the file */etc/services*:

   ```
   servicename portnumber/tcp # Comment
   ```

2. Create a new shell script (similar to *nsw.sh*) to startup the Natural application:

   ```
   $NATDIR/$NATVERS/bin/natnsw parm=new-parameter-file etid=$$ >/dev/null 2>&1 &
   ```

3. Optional. If function keys and message lines are to be displayed in their native format (i.e. as normal text), set the environment variable NSW_PF_MSG_LINES_NATIVE_FORMAT to "YES". To do so, insert the following two lines before the natnsw line (see the previous step):

   ```
   NSW_PF_MSG_LINES_NATIVE_FORMAT="YES"
   export NSW_PF_MSG_LINES_NATIVE_FORMAT
   ```

   If NSW_PF_MSG_LINES_NATIVE_FORMAT is not set or if its value is not "YES", function keys and message lines are detected automatically (default). If they are to be treated in a special way, you have to define the basic rules Function Keys and Message Line in the same way as for a mainframe screen.

   This feature is available starting with Natural Version 4.1.2.21 and Natural Version 5.1.1.3.

4. Insert a new line in the file *$NATDIR/$NSWNODE/services.dat*:

   ```
   servicename user $NSWDIR/bin/nswusr security $NATDIR/$NSWNODE /shellscript
   ```

servicename	Services used as entered in the previous step. These service names are optional. You can use other names and more service names.
user	Owner of the processes that will be started (usually "sag").
nswusr	Entire Screen Builder application server.
security	Enter one of the following characters: A Security is enabled. *nswusr* checks whether user and password are correct and whether the password has expired. In addition, a warning message is shown when the password will expire in a few days. The user must be authorized in the *nswservice* file. C Security is enabled. User and password are checked by an external program. See *nsw_CheckUsernameAndPassword* in the *User Exits* documentation. D Security is disabled. User and password are not checked. U Security is enabled. *nswusr* checks whether user and password are correct and whether the password has expired. In addition, a warning message is shown when the password will expire in a few days.
shellscript	Name of your shell script for starting the Natural application. The provided *nsw.sh* is just a template that has to be modified to suit your specific needs.

5. Add the following entries to the authentication file *$NSWSERV*:

   ```
   servicename:user1, user2
   ```

   where *user1* and *user2* are authorized users. If several users are authorized, separate the users in the list with commas. These users must already be defined in the system.

   This service is now available for use with a PC. See *Using the Demo Application* for further information.

Starting and Stopping the Entire Screen Builder Daemon

The Entire Screen Builder daemons are responsible for accepting new sessions. These daemons can be started and stopped using the following command:

nswsrvd.sh *servicename* [start|stop]