

SNiFF+™/SNiFF+™ PRO

4.0.1

GETTING STARTED



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Overview

Overview

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1.1 Introduction

Thank you for choosing SNiFF+!

This guide describes how to install SNiFF+, as well as license management configuration. It also provides simple step-by-step instructions for importing your own code or the sample code into SNiFF+. We suggest that you then go through the SNiFF+ Beginner's Guides which provide an introduction to the key features of SNiFF+ and their use in application development.

1.2 Two Conventions

The terminology below is used throughout this guide and in all SNiFF+ documentation.

- **SNiFF_DIR4**

This refers to your SNiFF+ installation directory.

- “Choose the MenuCommand from the MenuName” is presented as:

Choose **MenuName > MenuCommand**.

1.3 SNiFF+ Documentation

Please refer to the SNiFF+ Release Notes for important, late-breaking information on the current release.

If you choose to install the SNiFF+ documentation files, the documentation set will be available online and as .pdf files.

Please refer to [The SNiFF+ Documentation Set—Guidelines — page 52](#) for a few guidelines as to what you can expect to find where in the documentation.

1.4 Contact Information

Feedback

Your feedback is always very welcome.

Please send feedback to one of our support e-mail addresses.

- **Europe**

support-ec@windriver.com

- **USA**

support@windriver.com

Licenses

- To obtain an Evaluation license, please contact your local Windriver sales office or send an email to:

inquiries@windriver.com

- To obtain a Product License, please contact your local Windriver sales office or send an email to:

license@windriver.com

1.5 Useful Links

- A number of useful links (Knowledge Base, FAQs, User's Mailing List ...) are available under:

<http://www.windriver.com/sniff>

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System Requirements

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2.1 Supported Platforms

Windows

- Windows NT (Intel)
- Windows 2000 (Intel)

Not Supported: Windows 3.1, Windows 95/98 and Windows ME

Unix

- Solaris 2.5 or later (SPARC)
- Linux 2.x glibc 2.1
- HP-UX 10.20 or later
- IBM AIX 4.2 or later (PowerPC)

2.2 Minimum System Requirements

The system requirements were obtained from tests conducted on a Windows NT host and on a Unix host—Solaris workstation.

2.2.1 Required Disk Space

Figure 2-1 Disk Space

Installed SNiFF+	Diskpace - Windows	Diskpace - Unix
Complete installation	~ 67 MB	~ 100 MB
.pdf files	~ 7 MB	~ 6 MB
Example sources for tutorials	~ 2 MB	~ 2,5 MB
Installation for each additional platform		~ 60 MB

2.2.2 Memory Required

Memory required for a Project with approx. 85 KLOC:

Figure 2-2 **Memory**

State	Memory - Windows	Memory - Unix
SNiFF+ empty process	~ 10 MB	~ 20 MB
After loading project Symbols	~ 18 MB	~ 27 MB
After one cross reference (Referenced By query)	~ 22 MB	~ 28 MB

When using the SNiFF+ C/C++ parser to parse large projects, we recommend a minimum memory size of 256 MB.

2.2.3 Diskspace for Files Generated by SNiFF+

The diskspace required for files generated by SNiFF+ depends on the number of symbols in your source code but is usually not larger than the diskspace required for the sources.

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Preparation

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- Before You Start — page 10
- Locate the Installation Key — page 11
- Select a Location for Installation — page 11

3.1 Package Contents

- *CD-ROM* — the CD contains both software and documentation:
 - Software: the CD contains SNIFF+ for all platforms and targets.
 - Documentation, including manuals, release notes and application papers, in formats suitable for both browsing online and printing.
- *Hardcopy manuals* — manuals for the selected language are shipped with each package.

3.2 Before You Start

Be sure that you are installing SNIFF+ on a supported host that meets minimum system requirements. See [System Requirements — page 5](#) for a complete list of supported host systems and their minimum configuration requirements.

The SNIFF+ online help system requires a web browser installed on the host system, either Netscape Communicator version 4.x or higher (Unix hosts) or Internet Explorer 4.x or higher (Windows hosts).

If you plan to install SNIFF+ on a system with an existing installation of SNIFF+ (for example, a Beta version) you must first uninstall the existing installation. See the *SNIFF+ Release Notes* for step-by-step instructions.

3.3 Locate the Installation Key

The `SNIFF_LITE` and `SNIFF_LITE_PRO` licenses are delivered with `SNIFF+`. These licenses allow you to work with the `SNIFF+` example code only. So you don't need a license key to get `SNIFF+` up and running.

However to work with your own code, you need either an Evaluation license - this license is not locked to a specific machine and is valid for a restricted period of time (see [Obtaining an Evaluation License — page 32](#)), or a Product license (see [Obtaining a Product License — page 33](#)).

If you've already obtained an Evaluation or Product license key, you can either enter this string in the License dialog that appears during installation, or append this string to `SNIFF_DIR4\license.dat` in the `SNIFF+` root directory, or add it to an existing `FLEXlm` product license file.

Note

Uncomment any existing `FEATURE` lines for `SNIFF_LITE` and `SNIFF_LITE_PRO`.

3.4 Select a Location for Installation

On Unix systems we suggest that the administrator (super-user) install `SNIFF+` in a central location, e.g., `/usr/local/sniff`.

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Installing SNIFF+ (Windows)

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4.1 Introduction

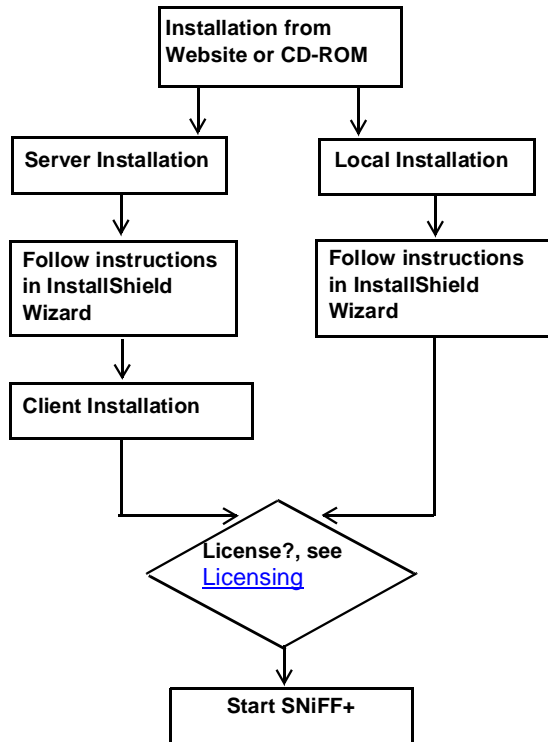
This chapter provides step-by-step instructions to be read as you install SNiFF+ for Windows.

Before running the illustration program, be sure to exit from any other software and stop all virus scan software.

4.2 Scenario

Installing SNiFF+ involves the steps shown in the [Install SNiFF+ for Windows](#) flowchart. Each of these steps will be discussed in detail later.

Figure 4-1 Install SNiFF+ for Windows



4.3 Installation from Website or CD-ROM

The installation of SNIFF+ for Windows assumes familiarity with the Windows NT/2000 operating system and is based on the Microsoft Installation Service.

You can download SNIFF+ from the Wind River website, <http://www.windriver.com/sniff/download> or install SNIFF+ from our CD-ROM.

Now follow the steps in either [Server Installation — page 15](#) or in [Local Installation — page 16](#).

4.4 Server Installation

We suggest that your System Administrator install SNIFF+ on the Server machine.

1. From the **Start** menu, choose **Run...**
2. In the Run dialog that appears, use the **Browse...** button to navigate to your executable:

```
setup.exe
```

3. In the **Open** field, add `/a` after `setup.exe`, the entry in the **Open** field should now be

```
setup.exe /a
```

The InstallShield Wizard appears.

4. In the InstallShield Wizard, enter the Server location where you want to install SNIFF+ and follow the steps in the InstallShield Wizard, see [Installation Steps — page 17](#).

Once this is over, the SNIFF+ files are copied over to the Server location specified above. Please note that no environment variables are set and no registry entries are added. This will be done for each client installation, see below.

4.4.1 Client Installation

- Navigate to the Root directory of the network installation and double-click on the `.msi` file. This will install SNiFF+ and set the necessary environment variables and registry entries on your client machine. These environment variables will then access the SNiFF+ installation which is physically located on the Server machine.

4.5 Local Installation

1. Insert the SNiFF+ CD-ROM in the drive. The `setup.exe` program starts automatically (depending on your configuration).

If the executable does not start automatically:

In your Windows Explorer, navigate to the CD-ROM drive and double-click on `setup.exe`.

`setup.exe` installs the selected SNiFF+ for Windows packages and copies all required files to the installation root directory. It can also set up a program group for SNiFF+ and set all necessary registry entries.

Important

To uninstall packages, use the Add/Remove Programs option in the Control Panel.

Note

The SNiFF+ installation is based on the Microsoft Installation Service.

If this service is not installed on your computer, SNiFF+ will install it for you. A reboot will be necessary.

2. Follow the steps in the InstallShield Wizard that appears, see [Installation Steps — page 17](#).

4.6 Installation Steps

4.6.1 Step 1: Welcome

To continue, click **Next**.

4.6.2 Step 2: License Agreement

Read the license agreement. If you agree with its conditions, click **I accept the terms in the license agreement** and **Next** to proceed with installation.

4.6.3 Step 3: Customer Information

Enter the primary user name, your organization name, and select whether you are installing SNIFF+ for a single User or for multiple Users. To continue, click **Next**.

4.6.4 Step 4: Specify the Installation Directory

Click **Next** to install to the default directory, or click **Change...** to install to a different directory and then click **Next**.

4.6.5 Step 5: License Key

If you have an Evaluation or Product license key, you can enter it here or you can later append this string to `SNIFF_DIR4\license.dat` in the SNIFF+ root directory, or add it to an existing FLEXIm product license file.

For more information, see [Licensing — page 31](#).

4.6.6 Step 6: Tornado SNIFF+ Integration

If you're interested in the Tornado SNIFF+ integration, read the setup notice and click **Next**.

4.6.7 Step 7: Setup Type

Choose the setup type that best suits your needs and click **Next**.

4.6.8 Step 8: Ready to Install the Program

Click **Install** to begin the installation.

When SETUP has finished installing SNiFF+, a dialog confirms installation.

Click **Finish** to close the InstallShield Wizard.

Congratulations! You have installed SNiFF+.

4.6.9 Additional Information

Temporary Files

Please note that temporary files are stored in the system temp directory.

Registry Entries

Only the absolutely necessary changes (e.g., program manager group) are stored in the registry.

User Profiles

User profiles are stored in the directory

```
SNIFF_DIR4\config\Profiles\<user_name>\
```

4.7 License SNiFF+ for Windows

You don't need a license for working with SNiFF+ demo projects.

If you want to evaluate SNiFF+ for your own projects and haven't already entered a license key in the InstallShield Wizard, you need to append your license key to `SNIFF_DIR4\license.dat` in the SNiFF+ root directory, or add it to an existing FLEXlm product license file.

If you do not have a license key, see [Licensing — page 31](#).

4.8 Start SNIFF+ for Windows

To start SNIFF+ immediately thereafter, you have two options:

- Start SNIFF+ from the associated program group.
- or
- At the command prompt, enter

```
sniffstart.cmd
```

In both cases, a batch file is started which runs `sniff.exe`.

Local Installation

Apart from running `sniff.exe`, SNIFF+ automatically sets the necessary environment variables for the current SNIFF+ session only:

`SNIFF_DIR4` - Defines the SNIFF+ for Windows installation directory
`PATH` - Includes the SNIFF+ for Windows executables directory in your `PATH`

4.9 Download Additional GNU Tools

The GNU tools that you need to work with SNIFF+ are delivered as part of the SNIFF+ package.

You can download additional GNU tools which you may need from the GNU web site:

<http://www.gnu.org>

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Installing SNIFF+ (Unix)

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5.1 Introduction

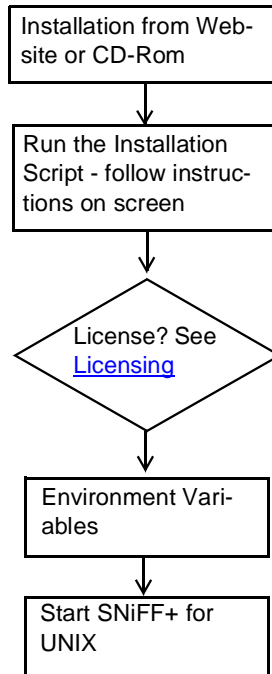
This chapter provides step-by-step instructions to be read as you install SNiFF+ for Unix.

Before running the installation program, be sure to exit from any other software and stop all virus scan software.

5.2 Scenario

Installing SNiFF+ involves the steps shown in the [Install SNiFF+ for Unix](#) flowchart. Each of these steps will be discussed in detail later.

Figure 5-1 Install SNiFF+ for Unix



5.3 Installation from Website or CD-Rom

The installation of SNIFF+ for Unix assumes familiarity with one or more of the supported platforms (Solaris, Linux, AIX and HP-UX).

You can

- download SNIFF+ from the Wind River website, <http://www.windriver.com/sniff/download>. You can then go ahead and run the installation script, see [Run the Installation Script — page 25](#) or
- install SNIFF+ from our CD-ROM, see [Installation from CD-ROM — page 23](#).

5.4 Installation from CD-ROM

You must have the appropriate user privileges for mounting the CD-ROM, creating a SNIFF+ root directory and for copying the files from the media. If you plan to use SNIFF+ in a team environment we recommend that you install SNIFF+ as the user who will later be the administrator for SNIFF+.

Note

If you are installing the GNU binaries, these must be installed in `/usr/local`. Root privileges are required for installing the binaries!

To load the SNIFF+ packages from CD-ROM, follow the steps below and refer to the following sections for instructions specific to your platform.

5.4.1 Insert CD-ROM and Mount the CD-ROM Drive

Please follow the platform-specific commands below. All steps refer to the directory `/cdrom` as the mount point.

Solaris 2.5 or Later

Enter the following to create the mount point and mount the CD-ROM drive:

```
mkdir /cdrom
mount -r -f hsfs /dev/dsk/c0t6d0s0 /cdrom
```

Linux 2.x glibc 2.1

Enter the following to create the mount point and mount the CD-ROM drive:

```
mkdir /cdrom
mount -r /dev/cdrom /cdrom
```

HP-UX 10.20 or Later

Enter the following to create the mount point and mount the CD-ROM drive:

```
/bin/mkdir /cdrom
/etc/mount -r /dev/dsk/c1d0s2 /cdrom
```

In the above example, the CD-ROM device has the device address 2. If the CD-ROM has not been successfully mounted after the execution of the above instructions, ask your system administrator to mount the CD-ROM drive using `sam`.

IBM AIX 4.2 or Later

Select available CD-ROM drives on your system:

```
/etc/lscdev -C -c cdrom -H
```

The first field of the resulting output string is the device name of the CD-ROM drive in `/dev`, e.g., `/dev/cd0`

Create the mount point for the CD-ROM drive:

```
/bin/mkdir /cdrom
```

Mount the CD-ROM drive:

```
/etc/mount -vcdarfs -r /dev/cd0 /cdrom
```

If the CD-ROM has not been successfully mounted after the execution of the above instructions, ask your system administrator to mount the CD-ROM drive using `smit`.

Install SNIFF+ from a CD-ROM Drive on Windows

Copy the following files and the platform specific subdirectory from the CD-ROM drive to a temporary directory on the platform where you intend to install SNIFF+:

```
Install_kit
Sniff.tgz
Doc.tgz
Example.tgz
```

Note

If you don't want to copy the entire platform specific subdirectory, you should at least copy the compulsory `Sniffbin.tgz`, `Gzcat` and `Tar` files and other optional files that you may need from this subdirectory.

Now run the installation script, see [Run the Installation Script — page 25](#).

5.5 Run the Installation Script

■ Website

If you've downloaded SNIFF+ from the Wind River website, change to the directory in which you downloaded the files.

For all platforms, enter:

```
csh ./install.kit
```

and follow the instructions on screen, see [Installation Steps — page 26](#).

- CD-ROM

Change to the directory where you have mounted the CD-ROM, e.g.:

```
cd /cdrom
```

Or change to the temporary directory in which you copied the files from the CD-ROM, see [Install SNiFF+ from a CD-ROM Drive on Windows — page 25](#).

For all platforms, enter:

```
csh ./install.kit
```

and follow the instructions on screen, see [Installation Steps — page 26](#).

5.6 Installation Steps

5.6.1 Step 1: License Agreement

You must accept the license agreement to continue.

5.6.2 Step 2: Binaries to Install

During installation, you can select the individual binaries (SNiFF+, GNU, FlexLM, Integrations) to be installed on your system.

The GNU packages for all platforms MUST reside in the directory `/usr/local`. Installation of the GNU packages requires write permission for the resident directory.

Note

In order for RCS to work properly, GNU diff must be installed. GNU diff is supplied with the RCS package on the SNiFF+ CD-ROM. If you have already installed RCS, please verify that diff is available.

To download GNU tools other than those delivered with SNiFF+, refer to: <http://www.gnu.org/software>

5.6.3 Step 3: Host Platform(s)

SNIFF+ can be installed in a single directory for multiple platforms (Solaris, Linux, AIX and HP-UX) by installing the binaries for the required platforms in one step. All platform-specific files are placed into platform specific subdirectories that are automatically created by the installation script. When starting SNIFF+ from this directory, the host platform is detected automatically and the appropriate executables are started.

5.6.4 Step 4: Installation Platform

Select the platform where the installation process is running.

5.6.5 Step 5: Installation Directory

The installation procedure prompts you for the full path name of the SNIFF+ root directory and creates it if necessary. You require write permission for this directory.

5.6.6 Step 6: SNIFF+ Packages to Install

During installation, you can select the individual SNIFF+ packages (Binaries for selected target platform(s), example sources and documentation) to be installed on your system. You will then see a summary of the packages you've chosen to install as well as the size of each package. Confirm this to continue. SNIFF+ will then install all chosen packages.

5.6.7 Step 7: License Key

If you have an Evaluation or Product license key, you can enter it here or you can later append this string to `SNIFF_DIR4\license.dat` in the SNIFF+ root directory, or add it to an existing FLEXlm product license file.

For more information, see [Licensing — page 31](#).

5.6.8 Step 8: Installation Verification

After the packages have been installed, the installation procedure asks you whether it should check to see if the installation was successful.

The script determines whether all necessary files have been installed and checks the access rights.

We suggest you let the installation procedure verify that the installation was successful.

If you need to install other packages, go ahead and do so now by following the instructions on screen.

5.7 License SNiFF+ for UNIX

You don't need a license for working with SNiFF+ demo projects.

If you want to evaluate SNiFF+ for your own projects and haven't already entered a license key during the installation procedure, you need to append your license key to `SNiFF_DIR4/license.dat` in the SNiFF+ root directory, or add it to an existing FLEXlm product license file.

If you do not have a license key, see [Licensing — page 31](#).

5.8 Environment Variables

The following environment variables need to be set.

SNiFF_DIR4 (Unix Only)

This environment variable must point to the root of your sniff installation directory and is referred to as `$SNiFF_DIR4`.

PATH (Unix Only)

Set your PATH environment variable to:

```
set path = SNIFF_DIR4/bin $path (for csh)
PATH=SNIFF_DIR4/bin:$PATH;
export PATH (for sh or ksh)
```

If you have installed the GNU products, your path must contain `/usr/local/bin`.

LM_LICENSE_FILE (Optional)

The `$LM_LICENSE_FILE` variable needs to be set only if the `license.dat` file is not in its default location in the SNIFF+ root directory or if you want to use an already existing FLEXlm product license file.

```
setenv LM_LICENSE_FILE
<any_location>/license.dat (for csh)
LM_LICENSE_FILE=<any_location>/license.dat;
export LM_LICENSE_FILE (for sh or ksh)
```

SNIFF+ can also be configured to use a specific license file by a command line option.

As is true for any other X Windows application, the `$DISPLAY` variable must be set to point to the X server where you would like the SNIFF+ windows to appear.

5.9 Start SNIFF+ for UNIX

Once the environment has been set, you can start SNIFF+ by entering:

```
sniff &
```


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Licensing

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- FLEXlm License Manager — page 36
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6.1 Licensing—Overview

The `SNIFF_LITE` and `SNIFF_LITE_PRO` licenses are delivered with SNiFF+. These licenses allow you to work with the SNiFF+ sample code only. You can switch to the `SNIFF_LITE_PRO` license to build and debug SNiFF+ sample code.

To work with your own code, you can request:

- an Evaluation license - this license is not locked to a specific machine and is valid for a restricted period of time, see [Obtaining an Evaluation License — page 32](#).
- a Product license, see [Obtaining a Product License — page 33](#).

6.1.1 Obtaining an Evaluation License

You can ask for an evaluation license without having to supply any details about your configuration.

1. You can obtain an evaluation license string from the local Wind River sales office or by sending an email to:

inquiries@windriver.com

After requesting the license, you will receive the license string by either e-mail or fax.

2. You can either enter this string in the License dialog that appears during installation, or append this string to `SNIFF_DIR4\license.dat` in the SNiFF+ root directory, or add it to an existing FLEXlm product license file.

6.1.2 Obtaining a Product License

1. After the purchase, complete the license request form `license_key_request.txt` in your `SNiFF_DIR4/docs` directory and email it to:

license@windriver.com

to receive your permanent product keys.

Maintenance customers: to upgrade your SNIFF+ 3.x license keys, complete the license upgrade form `license_upgrade_request.txt` in your `SNiFF_DIR4/docs` directory and email it to:

license@windriver.com

In these forms, you will need to specify the host id of the machine that is going to be your license server (see [Determining the host id — page 33](#)).

After requesting the license, you will receive the license string by either e-mail or fax.

2. You can either enter this string in the License dialog that appears during installation, or append this string to `SNiFF_DIR4\license.dat` in the SNIFF+ root directory, or add it to an existing FLEXIm product license file.

Determining the host id

On Windows

You can obtain the host id for your machine by entering the following command at the command prompt:

```
SNiFF_DIR4\bin\Lmutil lmhostid
```

Note

`SNiFF_DIR4` refers to your SNIFF+ installation directory.

The `Lmutil` program determines the host id on Windows computers by selecting the ethernet card id.

Caution: If you get the message "The FLEXIm host ID of this machine is 00000000" or "ffffff," install IPX/SPX protocol.

If your computer does not have an Ethernet card installed, please, contact Wind River Support.

United States:

support@windriver.com

Europe:

support-ec@windriver.com

On Unix

You can obtain the host id of the machine that is going to be your license server by doing the following:

1. On the machine that is going to be your license server, start SNiFF+.
2. From the menu, choose **Help > Feedback...**
3. In the dialog that appears, click the **Sniff Info...** button.
4. In the Sniff Info dialog that appears, scroll down to - FlexLM Hostid and send this entire section containing the hostid to

license@windriver.com

6.2 Evaluation License

The evaluation license is not locked to a specific machine and is valid until its expiration date.

In the example below, a backslash at the end of a line, followed by an indented line, indicates line-continuation.

Evaluation license file example

```
FEATURE SNIFF_EVAL wrsd 4.0 31-dec-2000 uncounted A303CFAECE79 \  
  HOSTID=DEMO ck=168  
FEATURE SNIFF_EVAL_PRO wrsd 4.0 31-dec-2000 uncounted 5E468CC1C97B \  
  HOSTID=DEMO ck=138
```

Note: If you are already using FLEXlm for other products you can still use the SNiFF+ evaluation string if you keep it in a separate file from your existing product license and modify the environment variable LM_LICENSE_FILE for FLEXlm accordingly.

E.g., copy the SNiFF+ evaluation string into `license.dat` and set LM_LICENSE_FILE to the following:

```
LM_LICENSE_FILE=
```

```
<path_to_existing_license>;SNIFF_DIR4/license.dat
```

Caution: Do NOT start the license server when working with an evaluation license only.

Note

Uncomment any existing FEATURE lines for SNIFF_LITE and SNIFF_LITE_PRO.

6.3 Product License

SNiFF+ comes with the FLEXIm floating license server. The license server, which is node-locked, keeps track of the number of concurrent clients and makes sure that all licenses are current. Client licenses may float across the network. You need a license for every concurrent SNiFF+ user. This license comes in the form of an ASCII text string.

Product license file example

```
SERVER earth 809f1868 7590
VENDOR wrsd c:\sniff\bin\Wrsd.exe
FEATURE SNIFF wrsd 4.0 permanent 5 0CFDBC1DB488 ck=159
FEATURE SNIFF_PRO wrsd 4.0 permanent 5 FC88C7B8D9CB ck=180
FEATURE SNIFF_CPP wrsd 4.0 permanent 5 7F02E345DDBE ck=136
```

You may change only three fields in the `license.dat` file:

- The hostname in the SERVER line
- The TCP port number in the SERVER line
- The path of the `wrsd` executable in the VENDOR line:

IMPORTANT: Edit the VENDOR line by entering the full path to the used `wrsd` executable, e.g.

On Windows

```
VENDOR wrsd c:\sniff\bin\Wrsd.exe
```

On Unix

```
VENDOR wrsd c:\sniff\bin\
```

Note

Uncomment any existing FEATURE lines for SNIFF_LITE and SNIFF_LITE_PRO.

IMPORTANT: Do **not** change any other fields, otherwise the license will not be valid!

Furthermore, if you already use software licensed with FLEXlm, you will have to merge the various license files.

The resulting license file must consist of one SERVER line (or more for multi-server configurations), followed by any number of VENDOR lines, which in turn are followed by any number of FEATURE lines. Be careful not to mix VENDOR and FEATURE lines. Moreover, you should always use the latest version of Lmgrd supplied with the various products licensed with FLEXlm.

To find out what the version number of your Lmgrd is, enter the following command:

On Windows

```
SNIFF_DIR4\bin\Lmgrd.exe -v
```

On Unix

```
lmgrd -v
```

6.4 FLEXlm License Manager

You will need to determine where your license server runs, either locally or on a server in the network.

If your license server runs locally, you must first configure your license server and then start it. For details, see [Configuring the FLEXlm License Manager \(Windows Only\) — page 37](#).

If your license server runs on a server in the network, all you have to do is set your LM_LICENSE_FILE environment variable to point to it. For details, see [LM_LICENSE_FILE Environment Variable — page 39](#).

6.4.1 Configuring the FLEXlm License Manager (Windows Only)

To configure the FLEXlm License Manager

1. Copy the file

```
          SNIFF_DIR4\bin\Flexlm.cpl
```

to your system directory (if it is not already there). On Windows 2000 and on Windows NT, this is typically

```
          C:\winnt\system32
```

2. Verify that there are other files with the file extension `cpl` in the directory.
3. From the **Start** menu, select Control Panel and click on the FLEXlm icon and configure the license server. You can configure the license server to be automatically started whenever the server machine is booted. For more information please refer to the file:

```
          SNIFF_DIR4\docs\Readflex.wri
```

Note: When running the FLEXlm License Manager as a service, we recommend that you copy the following files from the `SNIFF_DIR4\bin` directory

```
          Flexlm.cpl
```

```
          Lmgrd.exe
```

```
          Lmutil.exe
```

```
          Wrsd.exe
```

to another location and run the license daemon from there. This makes removing or upgrading SNIFF+ for Windows much easier without affecting the license manager daemon setup.

6.4.2 Starting the License Server

You must start the license server before using SNIFF+ with a product license.

Caution

Do NOT start the license server when working with an evaluation license or a SNIFF_LITE/SNIFF_LITE PRO license.

On Windows

The license server is located in

```
SNIFF_DIR4\bin
```

You can do this in two ways. Either manually, by entering

```
lmgrd -app -c SNIFF_DIR4\license.dat
```

or automatically as follows:

In the FLEXlm Control Panel, select the Start Server at Power Up box. For more information, please refer to the previous section, [Configuring the FLEXlm License Manager \(Windows Only\) — page 37](#).

Note: This is possible for both Windows 2000 and Windows NT. However, on Windows NT also select the Use NT Services box.

Before using the automatic start-up service, try starting the license server manually in order to see any error messages. If there aren't any, it is safe to start the license server automatically.

On Unix

The license server is located in `SNIFF_DIR4/bin`. Any user can start the server, but we suggest that you start the license server automatically at boot-up.

In the following, a backslash at the end of a line, followed by an indented line, indicates line-continuation.

Command line syntax for the license server

```
SNIFF_DIR4/bin/lmgrd -c SNIFF_DIR4/license.dat > \  
    SNIFF_DIR4/license.log &
```

`license.log` specifies the log file where license transactions and error messages are written into. At each start-up of the license server, the file is overwritten. If the license server is not running, read the messages that appear on the terminal or are written into the log file.

Starting the license server at boot-up from the `rc.local` file

For BSD, append the following line to `/etc/rc.local`

(for UNIX-V, append it to the directory `/etc/rc3.d`):

```
SNIFF_DIR4/bin/lmgrd -c SNIFF_DIR4/license.dat > \  
    SNIFF_DIR4/license.log&
```

6.4.3 Checking the Active License Server

The `lmstat` program provides information about the status of the license server and the users that have active licenses.

For status information about the running server, enter the following at the command prompt:

On Windows

In the following, a backslash at the end of a line, followed by an indented line, indicates line-continuation.

```
SNIFF_DIR4\bin\Lmutil lmstat -a -c \  
    SNIFF_DIR4\license.dat
```

or select Status in the FLEXlm Control Panel.

On Unix

```
SNIFF_DIR4/bin/lmstat -a -c \  
    SNIFF_DIR4/license.dat
```

You can also get license server information from within SNIFF+ by choosing the **License...** command in the Project Browser's **Help(?)** menu.

6.4.4 LM_LICENSE_FILE Environment Variable

On Windows

The `%LM_LICENSE_FILE%` environment variable needs to be set only if the `license.dat` file is not in `SNIFF_DIR4` or the default location `C:\FLEXlm\.` In this case, set the `%LM_LICENSE_FILE%` to the full path and filename of the license file.

You can either temporarily change the environment variable at the command prompt by using the `set` command, or permanently set the environment variable in the System applet in the Windows Control Panel or if you know your port number, you can enter this together with the host-name, eg., `7500@earth`.

On Unix

The `$LM_LICENSE_FILE` environment variable needs to be set only if the `license.dat` file is not in `SNIFF_DIR4`. In this case, set the `$LM_LICENSE_FILE` to the full path and filename of the license file.

You can either temporarily change the environment variable at the command prompt or set it permanently in your shell initialization files eg., `cshrc`.

6.4.5 FLEXIm User Manuals

The FLEXIm online user documentation can be found at the following location:

<http://www.globetrotter.com/manual.htm>

Globetrotter Inc. in California, USA

7

Welcome to SNIFF+

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 - Step 3: Review File Types — page 47
 - Step 4: Create Project — page 48
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7.1 Introduction

This part of the guide is designed to show you how to get either your code or the C++ sample code into the SNiFF+ environment as quickly as possible. You will first start SNiFF+ and then either load your own code or the sample code into SNiFF+ by using the Project Creation Wizard.

7.2 Start SNiFF+

You can run SNiFF+ from a HP-UX, Solaris, AIX, Linux, or a Windows host. The following instructions start SNiFF+.

HP-UX, Solaris, AIX and Linux Host

- Make sure you have set the `SNiFF_DIR4` environment variable.
- At the command prompt, type

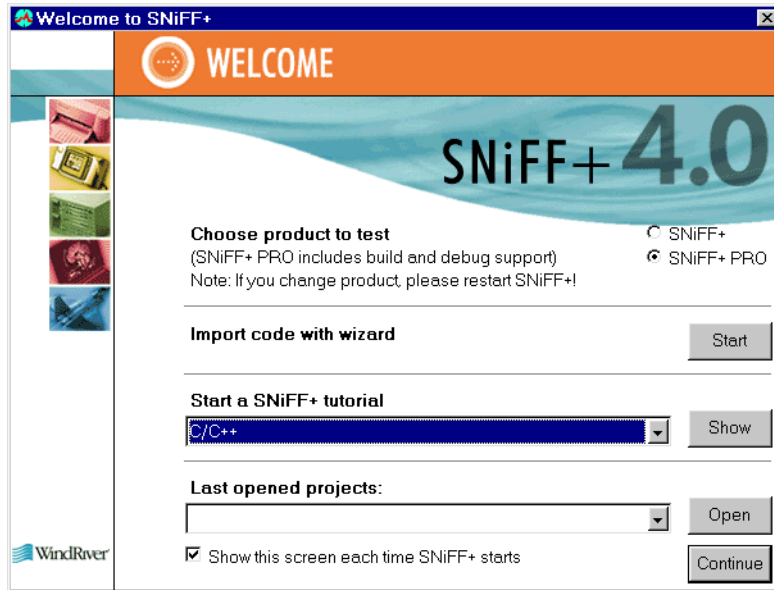
```
sniff &
```

Windows Host

- From the **Start** menu, choose **Programs > SNiFF+ 4.0.1 > Start SNiFF+ 4.0.1** for Windows.

7.3 Welcome to SNIFF+ Dialog

When you run SNIFF+ for the first time, the Welcome to SNIFF+ dialog appears. You can open it with **Help > Welcome to SNIFF+...**



This dialog allows you to

- quickly import source code into SNIFF+ by using the Project Creation Wizard.
- open the SNIFF+ C++/Java Beginner's Guides or the Tornado Integration Guide.
- open a Project from the list of last opened Projects (if any).
- open initial SNIFF+ screen by pressing **Continue**.

In this dialog, you can also choose the product you want to test, SNIFF+ or SNIFF+ PRO, the main difference is that SNIFF+ PRO includes build and debug support and you need an appropriate license for each product.

The SNIFF_LITE and SNIFF_LITE_PRO licenses are delivered with SNIFF+. These licenses allow you to work with the SNIFF+ sample code only, provided you do not change the structure of the Project once generated.

Let's get started by importing source code into SNIFF+!

7.4 Import Code with Wizard

You can either import your own source code into SNiFF+ (if you have an Evaluation or Product License), or the sample code provided in the SNiFF+ package. If you do not have an Evaluation or Product license, you will have to use our sample code.

Please be aware that if your software system is huge, you will be faced with a certain setup-time overhead while SNiFF+ parses everything and generates all the necessary information.

Although our sample code also demands some setup-time overhead, it should not be too painful, and it is big enough for getting to know SNiFF+'s capabilities.

Sample Code

References specifically to the sample code provided with SNiFF+ will appear in boxes like this one. So, if you use the sample code, look out for these boxes.

The C++ sample code, `filebrowser`, is based on the ET++ public domain class library. ET++ is an object-oriented application framework developed by the University of Zurich and the UBILAB of the Union Bank of Switzerland.

7.5 Import Source Code

- In the Welcome to SNiFF+ dialog, click the **Start** button.

The Project Creation Wizard appears. The Project Creation Wizard guides you through the process of importing code into SNiFF+. Once the Wizard knows the source code location, it uses file system information to create a SNiFF+ Project.

7.5.1 Step 1: In the Wizard's Opening Page

The first question you are asked is:

- “Do you want to use a version control tool for this Project?”

In this guide, we assume that you want to browse code, and not worry about anything else. For information on how to create and work with version controlled Projects, please refer to the SNIFF+ Beginner's Guides.

- Accept the default (**No**), and click **Next**.

7.5.2 Step 2: Where is the Source Code?

You need one common root directory that holds all the sources you want to browse.

Don't worry about any other (unrelated) directories that may also be below this root; you can later exclude any unrelated directories.

In the following, we will refer to this directory as *Source Root*.

- Use the **Browse...** button to navigate to the *Source Root* directory, open it, and click **Select**.

Sample Code

For the C++ sample, navigate to

`SNIFF_DIR4/examples/cpp/filebrowser/`

- Note that throughout the documentation we refer to your SNIFF+ installation directory as `SNIFF_DIR4`.
- Note also that we use forward slashes (/).
If you are working on **Windows**, you would of course use backslashes (\) in paths.

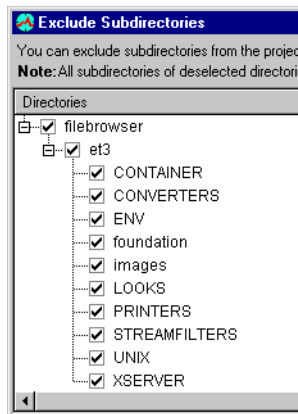
- Back in the Wizard, click the **Exclude...** button.

This opens a dialog showing you the Project structure that will be created.

If you do not want to include certain directories in the Project, click the checkboxes to clear them.

Tip: If you collapse a tree node and checkmark/clear the collapsed node, the setting applies to all subnodes under the collapsed node.

Sample Code



For the sample code, you need all directories/Projects, so leave them all checkmarked.

When you are satisfied with the tree, click **OK**.

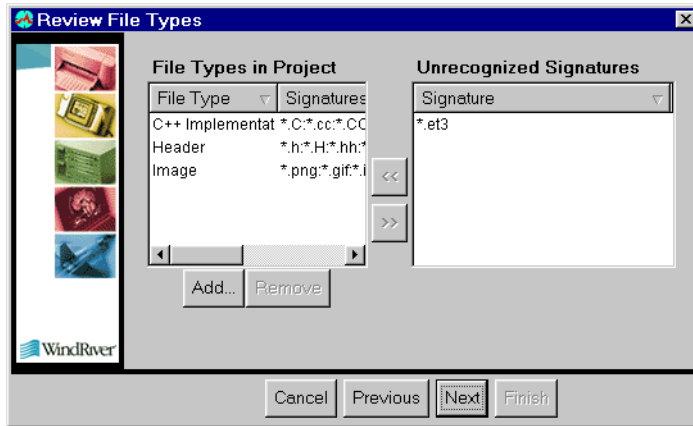
Note that, once the Project has been created, you can always rearrange, add, or remove Subprojects.

- When you're ready, click **Next**.

7.5.3 Step 3: Review File Types

The Wizard scans the location you specified, and displays two lists:

Figure 7-1 Wizard—Review File Types



These lists show File Types and file extensions that SNIFF+ has found and (not) recognized. By default, only those File Types that SNIFF+ “knows” are imported.

Sample Code

Accept the File Types that SNIFF+ knows/does not know, and click **Next**.

What is a “Recognized File Type”?

In the Wizard’s Review File Types page, the left list shows File Types that SNIFF+ matches with the default file extensions set in the Preferences, File Types node. That is, SNIFF+ knows what to do with them (which parser, compiler, etc. to use). By default, only those files that are found and recognized (left list) will be included in the Project.

Add, Remove, or Modify File Types

Any modifications you set in this dialog will apply only to the Project you are currently creating. That is, if, for example you add a signature (can be any character pattern, not just an extension) to a known File Type, only this Project will know about the new signature; future Projects will not recognize the new signature.

- You can use the **Add...** button to add, or create, File Types. However, we recommend that you leave these things for later.
- You can select a recognized File Type and click **Remove...** to exclude files of the selected Type from the Project, even though these exist in the directory tree you specified.
- Use the **>>** and **<<** buttons between the lists to add/remove *signatures* to/from known File Types.

A situation where you would add a signature to a known File Type would be where you have files containing, for example, normal ANSI C code, but with an “exotic” file name extension.

- To add such an “exotic” signature to a known File Type, select the signature in the right-hand list, and the appropriate File Type in the left list, then click the **<<** button.
- To remove a signature from a known File Type, select the File Type in the left-hand list, and click the **>>** button. A dialog will appear allowing you to select specific signatures to remove from this Type.
- When you are satisfied with the File Types to be included in your Project, click **Next**.

7.5.4 Step 4: Create Project

The final Wizard page suggests a name for the Root Project, and a location where Project information and other SNiFF+-generated files can be stored.

- If you are not happy with the suggested names or the location, go ahead and change them.
 - If you change the location, you need write permission for the new location.
- When you're ready, click **Finish**.

Cross-Reference Information

Before the Project opens, a dialog box asks you if cross-reference information should be generated.

Setting up cross-reference databases may take a while, depending on the size and nature of your code, as well as your hardware. If you do not generate cross-reference information immediately, you can do this later using the menu, **Project > Cross-Reference**. The information will also be automatically generated (updated) as soon as you issue a cross-reference query. In this tour you will be using the Cross-Referencer, so you might as well allow SNiFF+ to generate the necessary databases immediately.

- Click **Yes**.
- When all information has been generated, the Project is opened in the *Project Browser*.

7.6 What Next?

You are now all set to browse your code. We suggest that you go through the *SNiFF+ Beginner's Guides* where you can get to know the SNiFF+ browsing tools and navigation features. The *SNiFF+ Beginner's Guides* go on to describe how to use sample code in a hands-on tutorial for setting up, building, and debugging targets. You will also learn how to create a version controlled Project and apply basic version control commands. Finally, it also covers an outline of procedures for setting up a team work-organization.

For detailed information about using features of SNiFF+ such as Working Environments, Project Management, Build System and Configuration Management, see the *SNiFF+ User's Guide and Reference*.

For GUI and menu related information, see the *SNiFF+ GUI and Menu Reference*.

All SNiFF+ documentation is available online, under the **Help** menu.

The manuals are also provided in PDF format in your SNiFF+ installation directory, `docs` subdirectory.

A

Appendix

Overview

- The SNIFF+ Documentation Set—Guidelines — page 52
 - Beginner's Guides — page 52
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 - GUI and Menu Command Reference — page 53
 - Migration Guide — page 53
 - Tornado Integration Guide — page 53
 - Getting Started, Release Notes, Application Papers — page 54
- Feedback and Useful Links — page 54

A.1 The SNiFF+ Documentation Set—Guidelines

This manual is part of the SNiFF+ documentation set, and this chapter offers a few guidelines as to what you can expect to find where in the documentation.

Most SNiFF+ documentation is available online, under the **Help** menu.

If you have installed the documentation package, print-formatted PDFs are located in the `docs` subdirectory of your SNiFF+ installation.

A.1.1 Beginner's Guides

Two *Beginner's Guides*, one for *C/C++ Projects*, and the other for *Java Projects*, should help to get you going.

Examples, tips, and hands-on how-to descriptions introduce you to many aspects of using SNiFF+.

The Beginner's Guides are divided into four major sections.

- **Browsing Tour**
Create a Project to browse either your own source code, or sample code provided with SNiFF+. Get to know the SNiFF+ browsing tools and navigation features.
- **SNiFF+ PRO: Build and Debug Tutorial**
Use sample code in a hands-on tutorial for setting up, building, and debugging targets.
- **CMVC—Configuration Management and Version Control**
Create a version controlled Project and apply basic version control commands.
- **Working in Teams**
An outline of procedures for setting up a team work-organization.

A.1.2 User's Guide and Reference

The *User's Guide and Reference* provides more in-depth information than the *Beginner's Guides*. Topics covered include:

- Fundamental SNiFF+ concepts: Projects and Working Environments
- Working Environment and Project management
- How-to guides to procedures
- Technical descriptions of various subsystems (e.g. Build System)
- Version Control and Configuration Management

- Integrations of version control tools, editors, the Visaj GUI Builder, and other tools
- Regular expression usage in SNIFF+

A.1.3 GUI and Menu Command Reference

This is a reference to functionality of graphical user interface elements and menu commands. This is also accessed when you use the Context Help (<F1>).

A.1.4 Migration Guide

An aid for migrating from SNIFF+ 3.x to SNIFF+ 4.x.

This paper is not accessible from the **Help** menu. If you have installed the documentation package, `migration.pdf` will be located in the `docs` subdirectory of your SNIFF+ installation.

A.1.5 Tornado Integration Guide

Examples, tips, and hands-on how-to descriptions introduce you to many aspects of using the SNIFF+/SNIFF+ PRO Tornado Integration.

The Tornado Integration Guide is divided into five major sections.

- Installation
Install the SNIFF+/SNIFF+ PRO Tornado Integration.
- Integration of Tornado with SNIFF+ (Tornado centric)
Launch SNIFF+ and automatically generate SNIFF+ Projects. Use SNIFF+ as a "browsing plug-in" in Tornado.
- Integration of SNIFF+ PRO with Tornado (SNIFF+ centric)
Manage and build Tornado/VxWorks Downloadable Components in SNIFF+. Debug SNIFF+ built applications on a VxWorks Target using the SNIFF+ Debugger Adaptor (Tornado II only).
- CMVC—Configuration Management and Version Control
Version Control Tornado-generated Projects in SNIFF+.
- Working in Teams
An outline of procedures for setting up a team work-organization.

A.1.6 Getting Started, Release Notes, Application Papers

Getting Started guides you through installation on Unix/Windows

Release Notes include important, late-breaking information on the current release.

Application Papers provide additional information on topics not covered in the standard documentation.

A.2 Feedback and Useful Links

Feedback

Your feedback is always very welcome.

Please send feedback to one of our support e-mail addresses.

- **Europe**
support-ec@windriver.com
- **USA**
support@windriver.com

Useful Links

- A number of useful links (Knowledge Base, FAQs, User's Mailing List ...) are available under:
<http://www.windriver.com/sniff>

