

Network Simulation Tool for Project 25: Inter-RF Subsystem Interface (ISSI) Server Installation Guide for Linux

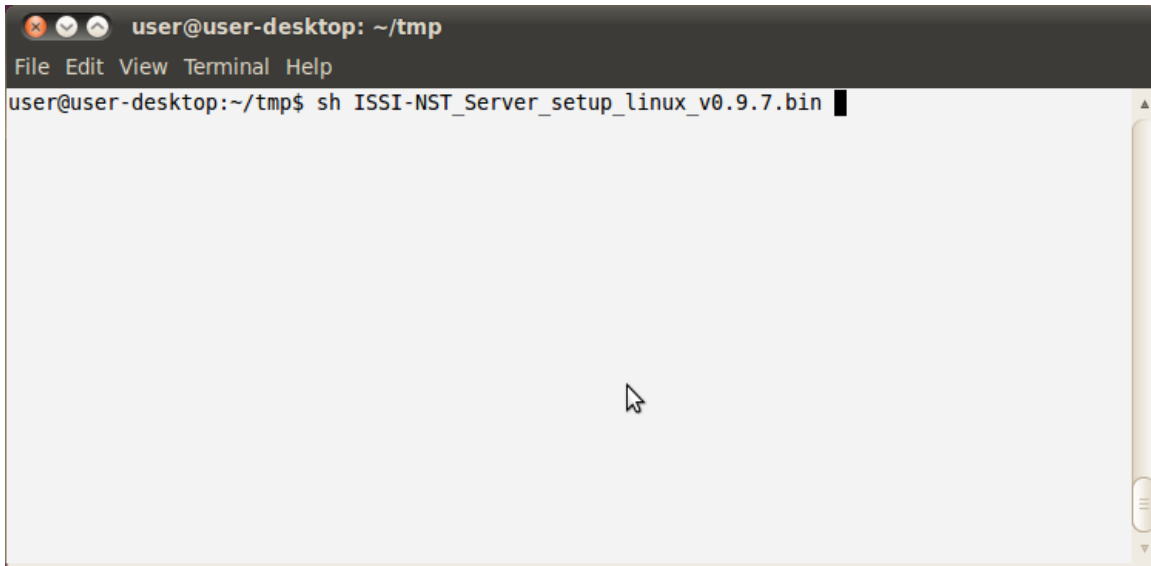
September 30, 2011
GUI version 1.0.0

Linux Server

The installation of the ISSI-NST server tool in Linux^{1 2} comprises the copy of the required files and the installation of a compatible Java^{TM 3} Runtime Environment if none is found.

First of all, obtain the server installation package available at http://www.nist.gov/itl/antd/emntg/ps_p25_tool.cfm. This package will install the ISSI-NST server, the server configuration tool, and the server documentation.

Open a terminal and run the package with '`sh ISSI-NST_Server_setup_linux.bin`', as shown below. **Note: Replace version 0.9.7 with current version being installed.**



Note: You do not need to have administration privileges to perform the installation. However, you will need to have write permission in the target installation directory. You will need administration privileges to run the server if you intend to use ports lower than 1024.

Follow the instructions. The installer will present you the license and perform checks on the following requirements:

- GNU C Compiler (gcc), version 4 or higher
- C++ support for gcc (c++), version matching that of gcc

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² Disclaimer: Any mention of commercial products is for information only; it does not imply recommendation or endorsement by the NIST.

³ Java is a registered trademark of Sun Microsystems, Inc. or its subsidiaries in the United States and other countries.

- Binutils, version matching that of gcc
- tar archiving program
- bash compatible shell
- GNU data compressor (gzip)
- GNU make utility
- Autotools (autoconf and automake), version matching that of make
- tail command
- Xt development libraries (libXt-dev or libXt-devel)
- SUN's Java JRE 1.6.02 or higher (1.6.21 provided with the installation package).
The use of other JRE's is not recommended due to compatibility issues.

```

user@user-desktop: ~/tmp
File Edit View Terminal Help
Welcome to the ISSI Network Simulation Tool - Linux Server Setup Wizard

This software was developed at the National Institute of Standards and Technology
by employees of the Federal Government in the course of their official duties.
Pursuant to title 17 Section 105 of the United States Code this software is not
subject to copyright protection and is in the public domain. NIST assumes no
responsibility whatsoever for its use by other parties, and makes no guarantees,
expressed or implied, about its quality, reliability, or any other characteristic.

Do you accept the terms of the License Agreement? (yes / no) █

```

```

user@user-desktop: ~/Downloads/tonto/ISSI-NST_linux_server_files
File Edit View Terminal Help
STEP 1 of 5: Verify system requirements
=====

gcc..... OK
g++..... OK
ld..... OK
tar..... OK
gunzip.... OK
make..... OK
automake... OK
tail..... OK
bash..... OK

ERROR: Could not find the Xt development libraries. Please, verify that you have
these libraries installed in your system, in a directory used by gcc. You may f
ind more information in the installation log file (/home/user/ISSI-NST_Server_In
stall_log_201008150621.log).
user@user-desktop:~/Downloads$

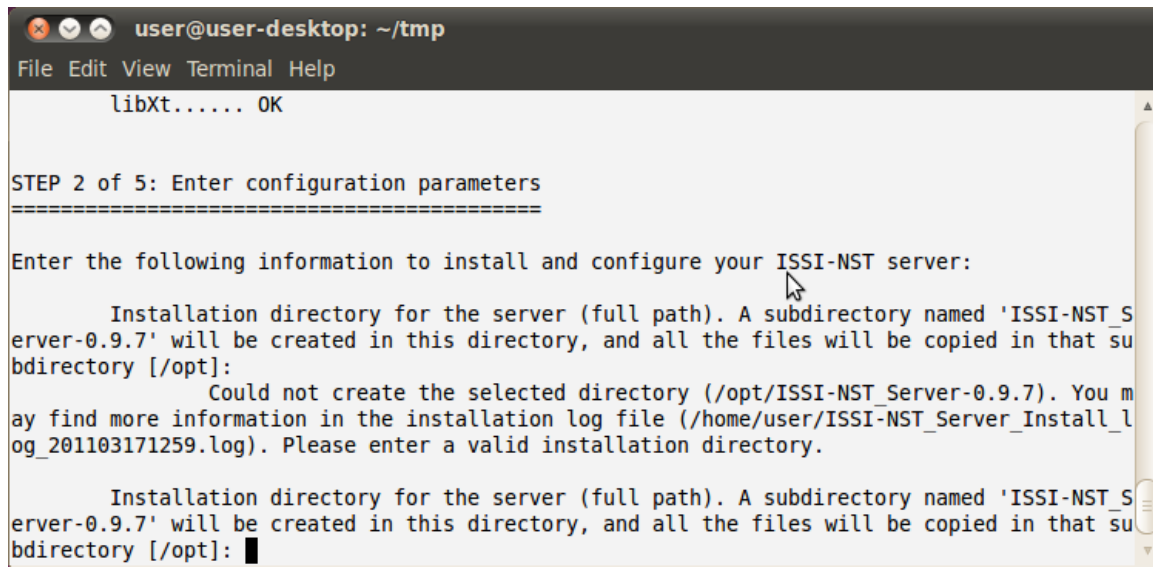
```

If an error is found, extended information can be found in the installation log file (the path to that file is provided in the error message).

Once the requisites have been verified, the user is asked for several configuration parameters. For each parameter, the default value is enclosed within brackets. Entering an empty answer (e.g., pressing the ENTER key) will use the default value provided. The configuration parameters requested are the following:

- **Installation directory:** The directory in which the software will be installed. The user running the installation must have write permissions in this directory.

If the target directory does not exist, the user must have the required permissions to create it. Otherwise the installation will show an error message and request a new path:



```
user@user-desktop: ~/tmp
File Edit View Terminal Help
libXt..... OK

STEP 2 of 5: Enter configuration parameters
=====

Enter the following information to install and configure your ISSI-NST server:

    Installation directory for the server (full path). A subdirectory named 'ISSI-NST_S
    erver-0.9.7' will be created in this directory, and all the files will be copied in that su
    bdirectory [/opt]:

    Could not create the selected directory (/opt/ISSI-NST_Server-0.9.7). You m
    ay find more information in the installation log file (/home/user/ISSI-NST_Server_Install_l
    og_201103171259.log). Please enter a valid installation directory.

    Installation directory for the server (full path). A subdirectory named 'ISSI-NST_S
    erver-0.9.7' will be created in this directory, and all the files will be copied in that su
    bdirectory [/opt]:
```

If the target directory exists, the installation script will ask for confirmation to overwriting that directory (**WARNING:** Selecting 'yes' will delete all the contents of the target directory).

- **TCP port for the simulation server:** The TCP port in which this server will listen for the client requests.

NOTE: Remember that you will need administrative privileges to start the application if you choose a port lower than 1024.

- **Listening IP address for the simulation server:** Network address in which the server will listen for client requests.

- **TCP port for the administration server:** The TCP port in which this server will listen for configuration updates.

NOTE: Remember that you will need administrative privileges to start the application if you choose a port lower than 1024.

- **Listening IP address for the administration server:** Network address in which the server will listen for configuration updates.

```
user@user-desktop: ~/tmp
File Edit View Terminal Help

Installation directory for the server (full path): A subdirectory named 'ISSI-NST_S
server-0.9.7' will be created in this directory, and all the files will be copied in that su
bdirectory [/opt]: /home/user/tmp/

The selected directory (/home/user/tmp//ISSI-NST Server-0.9.7) already exists. Do you wish to overwrite it? (WARNING! This will delete all the contents in the directory!) (yes/no) [no]: yes

TCP Port of the simulation server [8000]:

Listening IP address of the simulation server (empty string for all available addresses) []:

TCP Port of the administration server [8080]:

Listening IP address of the administration server (empty string for all available addresses) []: █
```

When all the configuration parameters have been introduced, the installation program will proceed to install the simulation model and its required libraries:

```
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File Edit View Terminal Help

Listening IP address of the simulation server (empty string for all available addresses) []:

TCP Port of the administration server [8080]: █

Listening IP address of the administration server (empty string for all available addresses) []:

STEP 3 of 5: Compile and install ns and its libraries
=====
Installing ns (this is a lengthy operation and may take a while)...
Installing TCL (1/5) ...Done
Installing TK (2/5) ...Done
Installing OTCL (3/5) ...Done
Installing TCLCL (4/5) ...Done
Installing NS (5/5) ...█
```

Finally, the installation software will validate the Java Runtime Environment in the system and if needed, install a compatible JRE in the server's installation directory:

```
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Installing ns (this is a lengthy operation and may take a while)...
Installing TCL (1/5) ...Done
Installing TK (2/5) ...Done
Installing OTCL (3/5) ...Done
Installing TCLCL (4/5) ...Done
Installing NS (5/5) ...Done

STEP 4 of 5: Install the ISSI-NST server
=====

Validating the JRE...
This installation process will now install a SUN JRE in the installation di
rectory, but you still need to ensure that this JRE is used when the ISSI-NST server is sta
rted (This may require modifications in the system configuration).
Press ENTER to continue.
```

When the installation is over, the installer will present with a summary of the installation, along with the commands to start the server, launch the server configuration GUI, and the path to the installation log file:

```
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File Edit View Terminal Help

STEP 5 of 5: Installation summary and starting instructions
=====

The installation finished succesfully

To start the server run "cd /home/user/tmp//ISSI-NST_Server-0.9.7; /home/user/tmp//ISSI-NST
_Server-0.9.7/jre1.6.0_24/bin/java -jar NS2-Viz2_Server.jar"
To start the server configuration GUI run "cd /home/user/tmp//ISSI-NST_Server-0.9.7; /home/
user/tmp//ISSI-NST_Server-0.9.7/jre1.6.0_24/bin/java -cp NS2-Viz2_Server.jar gov.nist.antd.
hsntg.server.admin.AdminGui"

You can find the installation log in the file /home/user/ISSI-NST_Server_Install_log_201103
171259.log

user@user-desktop:~/tmp$
```

The basic configuration provided with the installation program creates a default user for the simulations (**user:** user01; **password:** user01) and another one for the configuration GUI (**user:** admin; **password:** admin). This configuration can be changed using the configuration GUI (refer to the documentation for further information).