

GestióIP IPAM

v3.2

IP address management software

Installation Guide

v0.10

www.gestioip.net

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1 Introduction

GestióIP comes with a script based installation assistant which guides through the installation process and helps to resolve GestióIP's dependencies.

The installation consists of two parts. The script based part to install the required Perl modules and to configure the Apache web server and a web-based part to create and configure the Mysql database.

If there are Perl modules missing, Setup will offer the option to install them automatically with the Linux distribution specific packet managers (yum, zypper, apt-get). But not all Perl modules are as packages for all distributions available. Setup offers the possibility to automatically download (from CPAN) and install the missing modules. That requires “wget” and “make” to be installed during the installation.

VLAN discovery and parts of host discovery are based on the Perl module SNMP::Info. This requires that Netdisco's MIB files are installed on the system. Setup offers the option to automatically download and install required MIB files.

2 Requirements

SO: Linux, Unix-like. Setup supports the following actual Linux distributions: Debian, Ubuntu, Fedora, Redhat, CentOS, SuSE

Software: Apache2 with mod_perl, Mysql 4.x or 5.x (recommended: 5.x), Perl, some Perl modules, SNMP standard MIBs

Hardware (min): DualCore CPU 2GHz, RAM: 2GB (recommended: 4GB)

3 System preparation

GestióIP requires an Apache Web Server and a local or remote MySQL database, as well as some SNMP MIBs. To install the required packages on the GestióIP server you can use the following commands.

3.1 Debian/Ubuntu

```
$ sudo apt-get install make mysql-server mysql-client apache2 apache2-  
utils libapache2-mod-perl2 apache2-mpm-prefork snmp snmp-mibs-downloader  
wget
```

The packet `snmp-mibs-downloader` is a “non-free” component. If `apt-get` does not find the package you need to activate the “non-free” repository in `/etc/apt/sources.list`. Add “contrib non-free” behind the main of every line:

```
deb http://http.debian.net/debian/ wheezy main contrib non-free
```

and execute “`sudo apt-get update`” to take the changes effect.

After installing the packages with `apt-get` install the required MIBs with the following command:

```
$ sudo download-mibs
```

Discovery via SNMP requires the SNMP MIBs are loaded. Comment out the line

```
“mibs :” in /etc/snmp/snmp.conf:
```

```
#mibs :
```

Note: `make` is only required for the setup of GestióIP and can be uninstalled after finishing the installation of GestióIP (`sudo apt-get remove make`)

3.2 Suse

Suse <= 12

```
$ sudo zypper install apache2 apache2-mod_perl apache2_utils mysql mysql-client make snmp-mibs net-snmp perl-SNMP wget
```

Suse >=13

```
$ sudo zypper install apache2 apache2-mod_perl apache2_utils mariadb mariadb-client mariadb-errormessages make snmp-mibs net-snmp perl-SNMP
```

(Suse13 comes with MariaDB which is full compatible with GestióIP – you don't need to care about this)

Note: `make` is only required for the setup of GestióIP and can be uninstalled after finishing the installation of GestióIP (`sudo zypper remove make`)

3.3 Fedora/Redhat/Centos

RHEL7 and CentOS7:

Install EPEL release (Extra Packages for Enterprise Linux) first (one line):

```
$ su -c 'rpm -Uvh
http://download.fedoraproject.org/pub/epel/7/x86_64/e/epel-release-7-
8.noarch.rpm'
```

```
$ sudo yum install httpd mod_perl mariadb mariadb-server make gcc net-
snmp net-snmp-utils wget
```

If you have SE_LINUX enabled also install checkpolicy and policycoreutils-python:

```
$ sudo yum install checkpolicy policycoreutils-python
```

Fedora, RHEL <7, CentOS <7

```
$ sudo yum install httpd mod_perl mysql mysql-server make net-snmp net-
snmp-utils wget
```

If you have SE_LINUX enabled also install checkpolicy and policycoreutils-python:

```
$ sudo yum install checkpolicy policycoreutils-python
```

Note: make and gcc are only required during the setup of GestióIP and can be uninstalled after finishing the installation of GestióIP (sudo yum remove make)

Additional notes for Redhat

The required package gd-devel is part of the optional channel. If the optional channel is disabled, you need to activate it before starting the installation.

Check if the optional channel is activated:

```
$ sudo yum repolist all
repo id          repo name          status
rhel-6-server    Red Hat Enterprise Linux 6Server - enabled
rhel-6-server-beta Red Hat Enterprise Linux 6Server Be enabled
rhel-6-server-optional-rpms Red Hat Enterprise Linux 6Server Op disabled
rhel-6-server-supplementary Red Hat Enterprise Linux 6Server Su disabled
```

```
$ sudo subscription-manager repos --enable=rhel-6-server-optional-rpms
```

```
$ sudo yum install -y yum-utils
```

```
$ sudo yum-config-manager --enable rhel-6-server-optional-rpms
```

Note: If the installation failed because it was not possible to install GD::Graph::pie automatically,

there will appear the following message:

```
Checking for GD::Graph::pie PERL module...
```

```
*** ERROR ***: PERL module GD::Graph::pie is not installed!
```

In this case, install the required perl modules manually. See http://www.gestioip.net/docu/CentOS59_gd_graph_pie.txt for further information.

3.4 Misc:

After a new installation of the MySQL (MariaDB) database you might need to set the root password for database.

Use the following command to set up a root password:

```
$ mysqladmin -u root password "newpass"
```

4 Installation

The installation of GestióIP consists in a script based installation assistant to install the software and a web based part to configure the Mysql database.

4.1 Script based installation

Download GestióIP

* Download GestióIP 3.2 IPAM from www.gestioip.net

Install GestióIP

* Open a shell and untar file `gestioip_3.2.tar.gz`:

```
$ tar vzxvf gestioip_3.2.tar.gz
```

* Change to the new directory `gestioip_3.2`

```
$ cd gestioip_3.2
```

* Execute the script based installation assistant like root

```
$ sudo ./setup_gestioip.sh
```

You can stop the script at any point of time by typing CTRL C and execute it later again.

Setup will write a log file called `setup.log` which is stored in the same folder as the script itself and contains all details of the installation.

Setup will propose a couple of parameters e.g. (“Where is Apache daemon binary?”). If you do not have special requirements you can confirm all default parameters by typing ENTER.

```
[user@host gestioip_3.1]$ sudo ./setup_gestioip.sh
```

```
This script will install GestioIP 3.2 on this computer
```

```
Do you wish to continue [y]/n?
```

```
Starting installation
```

```
Starting GestioIP setup from folder /home/user/sources/gestioip_3.2
```

```
Storing log in file /home/user/sources/gestioip_3.2/setup.log
```

```
+-----+
| Checking for Apache web server daemon... |
```

```
+-----+
Where is Apache daemon binary [/usr/sbin/httpd]?
```

OK, using Apache daemon /usr/sbin/httpd

```
+-----+
| Checking for Apache main configuration file... |
+-----+
Loading environment variables from /etc/apache2/envvars
```

AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message

AH00558: apache2: Could not reliably determine the server's fully qualified domain name, using 127.0.1.1. Set the 'ServerName' directive globally to suppress this message

This messages have only information character and can be ignored

Where is Apache main configuration file [/etc/httpd/conf/httpd.conf]?

OK, using Apache main configuration file /etc/httpd/conf/httpd.conf

```
+-----+
| Checking for Apache user account... |
+-----+
```

Which user account is running Apache web server [apache]?

OK, Apache is running under user account apache

```
+-----+
| Checking for Apache group... |
+-----+
```

Which user group is running Apache web server [apache]?

OK, Apache is running under users group apache

```
+-----+
| Checking for Apache Include configuration directory... |
+-----+
```

Where is Apache Include configuration directory [/etc/httpd/conf.d/]?

OK, using Apache Include configuration directory /etc/httpd/conf.d

```
+-----+
| Checking for PERL Interpreter... |
+-----+
```

Where is PERL Intrepreter binary [/usr/bin/perl]?

OK, using PERL Intrepreter /usr/bin/perl

```
+-----+
| Checking for Apache mod_perl version... |
+-----+
```

Checking for Apache mod_perl

Apache mod_perl available - Good!

```
+-----+
| Checking for required Perl Modules... |
+-----+
```

Do you plan to import networks or hosts from spreadsheets [y]/n?

Checking for DBI PERL module...
Found that PERL module DBI is available.

Checking for DBD-mysql PERL module...
Found that PERL module DBD-mysql is available.

Checking for Net::IP PERL module...
*** ERROR ***: PERL module Net::IP is not installed!

Checking for Net::Ping::External PERL module...
Found that PERL module Net::Ping::External is available.

Checking for Parallel::ForkManager PERL module...
Found that PERL module Parallel::ForkManager is available.

Checking for SNMP PERL module...
Found that PERL module SNMP is available.

Checking for SNMP::Info PERL module...
*** ERROR ***: PERL module SNMP::Info is not installed!

Checking for Mail::Mailer PERL module...
Found that PERL module Mail::Mailer is available.

Checking for Time::HiRes PERL module...
Found that PERL module Time::HiRes is available.

Checking for Date::Calc PERL module...
Found that PERL module Date::Calc is available.

Checking for Date::Manip PERL module...
Found that PERL module Date::Manip is available.

Checking for Net::DNS PERL module...
Found that PERL module Net::DNS is available.

Checking for Spreadsheet::ParseExcel PERL module...
*** ERROR ***: PERL module Spreadsheet::ParseExcel is not installed!

Checking for OLE::Storage_Lite PERL module...
Found that PERL module OLE::Storage_Lite is available.

Checking for GD::Graph::pie PERL module...
*** ERROR ***: PERL module GD::Graph::pie is not installed!

Typically there are not all required Perl modules installed on the server. Setup is able to install all

missing Perl modules. If there are packets for the required Perl module available, setup will install this packets with the Linux distribution specific packet manager (yum, apt-get, zypper). Perl modules which are not available as package will be downloaded from CPAN (www.cpan.org) and automatically be installed.

There are required Perl Modules missing

Setup can install the missing Modules

Do you wish that Setup installs the missing Perl Modules now [y]/n?

```
Executing sudo yum install perl-Net-IP perl-DBI perl-DBD-mysql perl-DateManip
net-snmp-perl perl-Date-Calc perl-TimeDate perl-MailTools perl-Net-DNS perl-
Time-HiRes perl-GDGraph
```

```
Loaded plugins: fastestmirror, refresh-packagekit
Existing lock /var/run/yum.pid: another copy is running as pid 2156.
Another app is currently holding the yum lock; waiting for it to exit...
```

```
The other application is: PackageKit
Memory : 25 M RSS ( 39 MB VSZ)
Started: Wed Oct 5 14:26:25 2011 - 00:06 ago
State : Sleeping, pid: 2156
```

```
Loading mirror speeds from cached hostfile
```

- * base: ftp.udl.es
- * extras: ftp.udl.es
- * updates: ftp.udl.es

```
Setting up Install Process
```

```
Package perl-DBI-1.609-4.el6.i686 already installed and latest version
Package perl-DBD-MySQL-4.013-3.el6.i686 already installed and latest version
Package perl-Date-Manip-5.54-4.el6.noarch already installed and latest version
Package 1:net-snmp-perl-5.5-27.el6_0.1.i686 already installed and latest version
Package perl-Date-Calc-6.3-2.el6.noarch already installed and latest version
Package 1:perl-TimeDate-1.16-11.1.el6.noarch already installed and latest
version
Package perl-MailTools-2.04-4.el6.noarch already installed and latest version
Package 4:perl-Time-HiRes-1.9721-115.el6.i686 already installed and latest
version
```

```
Resolving Dependencies
```

```
--> Running transaction check
---> Package perl-GDGraph.noarch 1:1.44-7.el6 set to be updated
---> Package perl-Net-DNS.i686 0:0.65-2.el6 set to be updated
---> Package perl-Net-IP.noarch 0:1.25-13.el6 set to be updated
--> Finished Dependency Resolution
```

Dependencies Resolved

```
=====
=====
```

Package	Arch	Size
Version	Repository	
=====		
=====		

Installing:

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perl-GDGraph	noarch	
1:1.44-7.el6	base	127 k
perl-Net-DNS	i686	
0.65-2.el6	base	232 k
perl-Net-IP	noarch	
1.25-13.el6	base	32 k

Transaction Summary

```
=====
Install      3 Package(s)
Upgrade      0 Package(s)
=====
```

Total download size: 392 k

Installed size: 892 k

Is this ok [y/N]: y

Downloading Packages:

```
(1/3): perl-GDGraph-1.44-7.el6.noarch.rpm
| 127 kB    00:00
(2/3): perl-Net-DNS-0.65-2.el6.i686.rpm
| 232 kB    00:02
(3/3): perl-Net-IP-1.25-13.el6.noarch.rpm
| 32 kB     00:00
-----
```

Total

113 kB/s | 392 kB 00:03

Running rpm_check_debug

Running Transaction Test

Transaction Test Succeeded

Running Transaction

```
Installing      : 1:perl-GDGraph-1.44-7.el6.noarch
1/3
Installing      : perl-Net-IP-1.25-13.el6.noarch
2/3
Installing      : perl-Net-DNS-0.65-2.el6.i686
3/3
```

Installed:

```
perl-GDGraph.noarch 1:1.44-7.el6                perl-Net-DNS.i686 0:0.65-
2.el6                perl-Net-IP.noarch 0:1.25-13.el6
```

Complete!

In this example Spreadsheet-ParseExcel and SNMP::Info are missing and not as package available. Setup will download them from CPAN and install them automatically.

NOTE:

If you forgot to install “make” stop the script with CTRL C now, install “make” and run the script again. After the installation, “make” is not longer required by GestióIP and should be uninstalled.

Where is MAKE binary [/usr/bin/make]?

OK, using MAKE /usr/bin/make

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```
### Installing Spreadsheet-ParseExcel
Downloading Spreadsheet-ParseExcel-0.58.tar.gz from CPAN... OK
Installation of Spreadsheet-ParseExcel-0.58.tar.gz SUCCESSFUL
```

```
### Installing SNMP-Info
Downloading SNMP-Info-2.01.tar.gz from CPAN... OK
Installation of SNMP-Info-2.01.tar.gz SUCCESSFUL
```

```
SNMP::Info needs the Netdisco MIBs to be installed
Setup can download MIB files (11MB) and install it under
/usr/share/gestioip/mibs
```

If Netdisco MIBs are already installed on this server type "no" and specify path to MIBs via frontend Web (manage->GestioIP) after finishing the installation

Do you wish that Setup installs required MIBs now [y]/n?

```
Downloading Netdisco MIBs (this may take several minutes)... OK
Installation of Netdisco MIBs SUCCESSFUL
```

```
+-----+
| Checking for required Perl Modules...          |
+-----+
```

```
Checking for DBI PERL Module...
Found that PERL module DBI is available.
```

```
Checking for DBD-mysql PERL module...
Found that PERL module DBD-mysql is available.
```

```
Checking for Net::IP PERL module...
Found that PERL module Net::IP is available.
```

```
Checking for Net::Ping::External PERL module...
Found that PERL module Net::Ping::External is available.
```

```
Checking for Parallel::ForkManager PERL module...
Found that PERL module Parallel::ForkManager is available.
```

```
Checking for SNMP PERL module...
Found that PERL module SNMP is available.
```

```
Checking for SNMP::Info PERL module...
Found that PERL module SNMP::Info is available.
```

```
Checking for Mail::Mailer PERL module...
Found that PERL module Mail::Mailer is available.
```

```
Checking for Time::HiRes PERL module...
Found that PERL module Time::HiRes is available.
```

```
Checking for Date::Calc PERL module...
Found that PERL module Date::Calc is available.
```

```
Checking for Date::Manip PERL module...
Found that PERL module Date::Manip is available.
```

Checking for Net::DNS PERL module...
Found that PERL module Net::DNS is available.

Checking for Spreadsheet::ParseExcel PERL module...
Found that PERL module Spreadsheet::ParseExcel is available.

Checking for OLE::Storage_Lite PERL module...
Found that PERL module OLE::Storage_Lite is available.

Checking for GD::Graph::pie PERL module...
Found that PERL module GD::Graph::pie is available.

Found all required Perl Modules for GestioIP - Good!

For the case that the Setup was *not* able to install all required modules, install the missing modules manually and execute the Setup again. If you think that this is an error of the Setup please report this to contact@gestioip.net.

```
+-----+  
| Configuration of Apache Web Server... |  
+-----+
```

Which is the Apache DocumentRoot directory [/var/www/html]?
OK, using Apache DocumentRoot /var/www/html

Where is htpasswd [/usr/bin/htpasswd]?
OK, using htpasswd /usr/bin/htpasswd

Setup will ask now for the user which should be created for the HTTP Standard Authentication. You can change the authentication method after finishing the installation by editing GestióIP's Apache configuration file `gestioip.conf`. Sample configuration files for authentication against a MS AD, LDAP and KERBEROS are available from GestióIP's documentation page http://www.gestioip.net/documentation_gestioip_en.html

The `rw`-user (default: `gipadmin`) has access to all features of GestióIP.

Which should be the read-write (`rw`) user [`gipadmin`]?
OK, using `rw` user `gipadmin`

The Setup script does not create the user automatically. You need to open a second shell and create the user for HTTP Standard Authentication manually by executing the command “`htpasswd`” (see below).

```
+++++
Now open a new shell and execute the following
command LIKE ROOT to create the GestioIP apache user:
+++++
```

```
sudo /usr/bin/htpasswd -c /etc/httpd/users-gestioip gipadmin
```

After this press ENTER

```
rw user (gipadmin) successfully created
```

GestioIP comes with a couple of scripts e.g. for the automatic database initialization or the automatic update of networks and hosts. If the directory structure for this scripts should not be installed under the default path /usr/share/gestioip/ you can specify an alternative path in the following step.

Under which directory should GestioIP's script files be installed [/usr/share/gestioip]?

OK using script base directory /usr/share/gestioip

Only for Fedora/Redhat/CentOS: GestioIP require updates in the default SELinux configuration. E.g. SELinux default configuration does not allow that the Apache HTTP server opens connections to a database. This function is required to run GestioIP. If you want to know how the policies exactly will be updated, download and consult the type enforcement file for your distribution:
Fedora/Redhat: http://www.gestioip.net/docu/gestioip_fedora_redhat.te
Centos: http://www.gestioip.net/docu/gestioip_centos5.te

Note for Fedora/Redhat/CentOS Linux:

Some functions of GestioIP require an update of SELinux policy
Setup can update SELinux policy automatically
Do you wish that Setup updates SELinux policy now [y]/n?

```
Downloading Type Enforcement File from www.gestioip.net...OK
Executing "check_module"...OK
Executing "semodule_package"...OK
Executing "semodule"...OK
```

Note: the execution of the command "semodule" takes some time

Update of SELinux policy SUCCESSFUL

Updating permissions of GestioIP's cgi-dir...SUCCESSFUL

```
Installation of GestioIP successfully finished!  
Please, review /etc/httpd/conf.d/gestioip.conf  
to ensure all is good and  
  
    RESTART Apache daemon!  
  
Then, point your browser to  
  
http://server/gestioip/install  
  
to configure the database server.  
Access with user "gipadmin" and the  
the password which you created before
```

Restart the Apache webserver (e.g. Ubuntu: `/etc/init.d/apache restart`) and access to the web-based database configuration by pointing your browser to `http://server/gestioip/install`.

4.2 Web based database configuration

Open a browser and access to “http://server/gestioip/install”. Replace “server” with the IP address or the DNS name of the server with the GestióIP installation. Access with the rw-user and the password which you created during the setup with the command “htpasswd” (default rw-user: gipadmin):

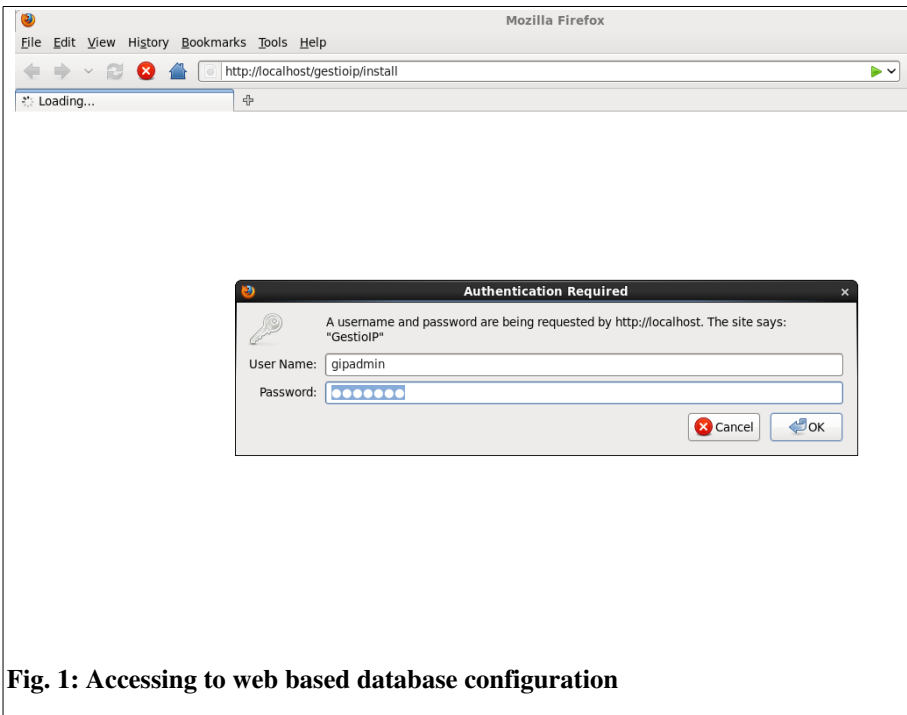


Fig. 1: Accessing to web based database configuration

After confirming the credentials by clicking “OK”, GestióIP's installation “Welcome” site will be displayed. Click “next” to proceed with database configuration.



Fig. 2: Installation “Welcome” site

Introduce the database configuration parameters and click “send”.

Note that if you running GestióIP and it's Mysql database on the same host, introduce “127.0.0.1” for both, “Web server address” and “Mysql server address”.

The screenshot shows the 'Database creation' step of the GestióIP installation. The form contains the following fields and their values:

- Web server address: 127.0.0.1
- Mysql server address: 127.0.0.1
- Mysql port: 3306
- Mysql super user: root
- Mysql super user password: [masked]
- SID: gestioip
- Mysql user: gestioip
- Mysql user password: [masked]
- retype Mysql user password: [masked]

A 'send' button is located at the bottom left of the form area.

Fig. 3: Database parameter configuration

Next page shows if the database was successfully created. Click “next page” to proceed.

The screenshot shows the confirmation screen after the database creation. The messages displayed are:

- connecting to the database...OK
- creating the new database gestioip...OK
- GRANT ALL ON gestioip.* to gestioip@127.0.0.1 IDENTIFIED BY ***** ...OK
- creating tables in the new database...OK

Below the messages, the text reads: "The Mysql database was successfully created". At the bottom, there is a "next page" button.

Fig. 4: Database creation confirmation screen

Configure Sites and Categories. If your IT-Infrastructur is distributed over various locations introduce the locations into the text box “Sites”. This can be e.g. various campuses, data centers or buildings. You need to introduce at least one site. The network categories are thought to classify the networks. GestióIP proposes here some categories like prod for the production environment, pre for pre-production or dev for networks of the development environment. Modify the network categories to adapt them to your requirements. Host category are intended to classify hosts. Add as many

additional host categories as you need.

Note: You can change all this values later easily via frontend web.

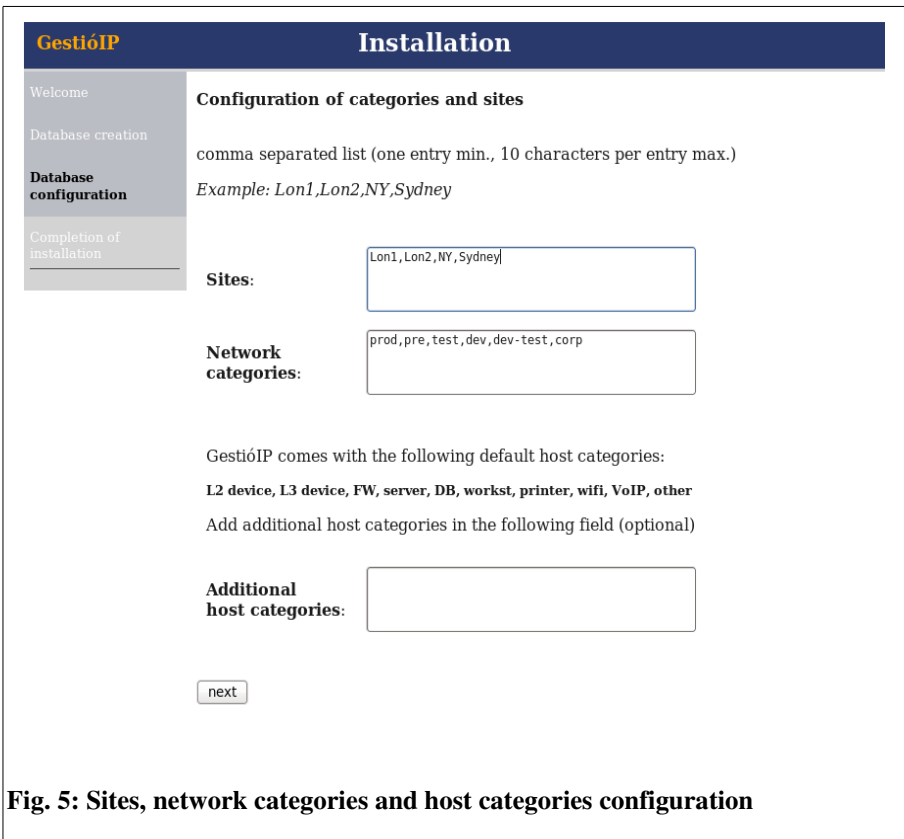


Fig. 5: Sites, network categories and host categories configuration

Next page shows if the sites and categories where successfully created. Click “next page” to proceed.

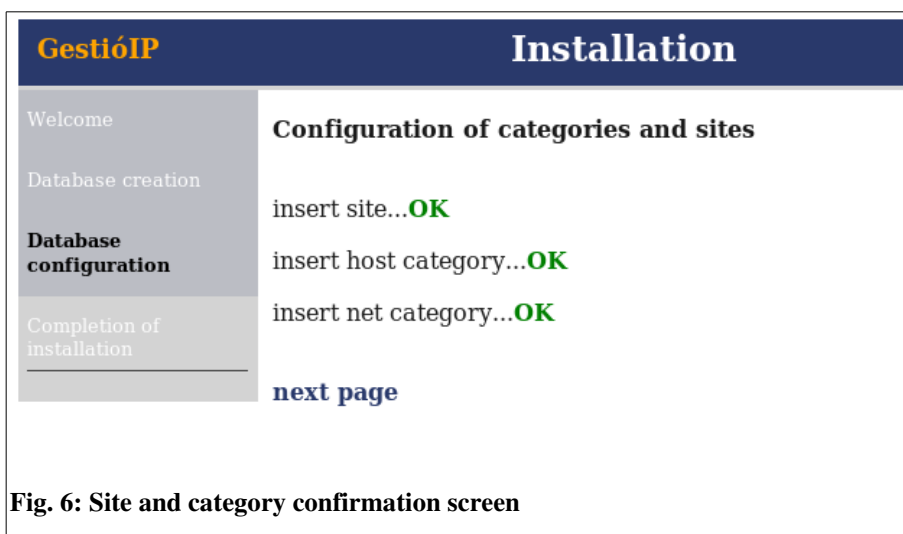


Fig. 6: Site and category confirmation screen

The following page informs if the installation has completed successfully.

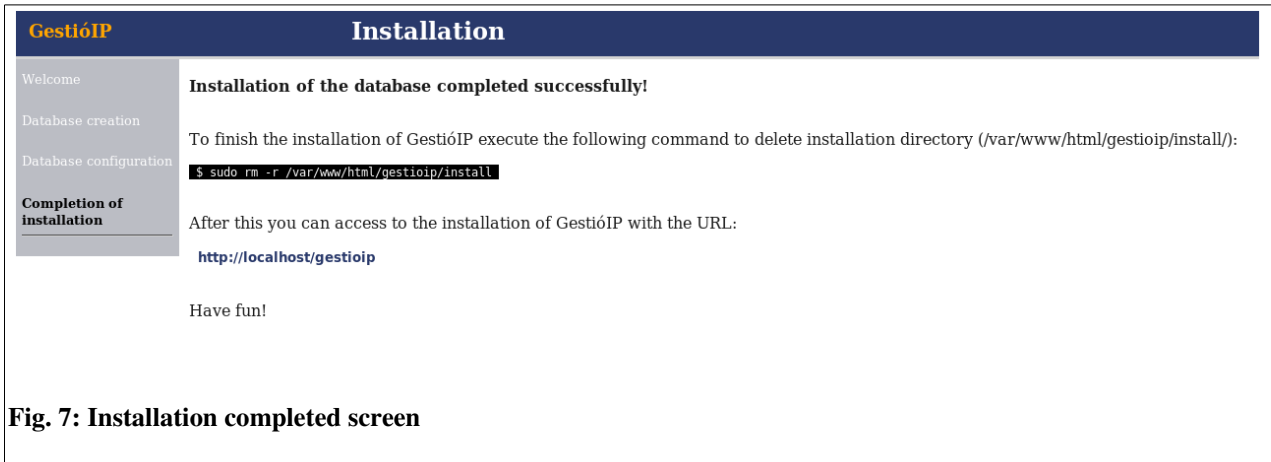


Fig. 7: Installation completed screen

Delete the directory “install” ([DocumentRoot]/gestioip/install) manually and access to GestióIP by clicking the link <http://servername/gestioip>.

When you access first time to GestióIP, a site will be displayed, with gives some hints how to initialize the database with organizations networks, hosts and VLANs.

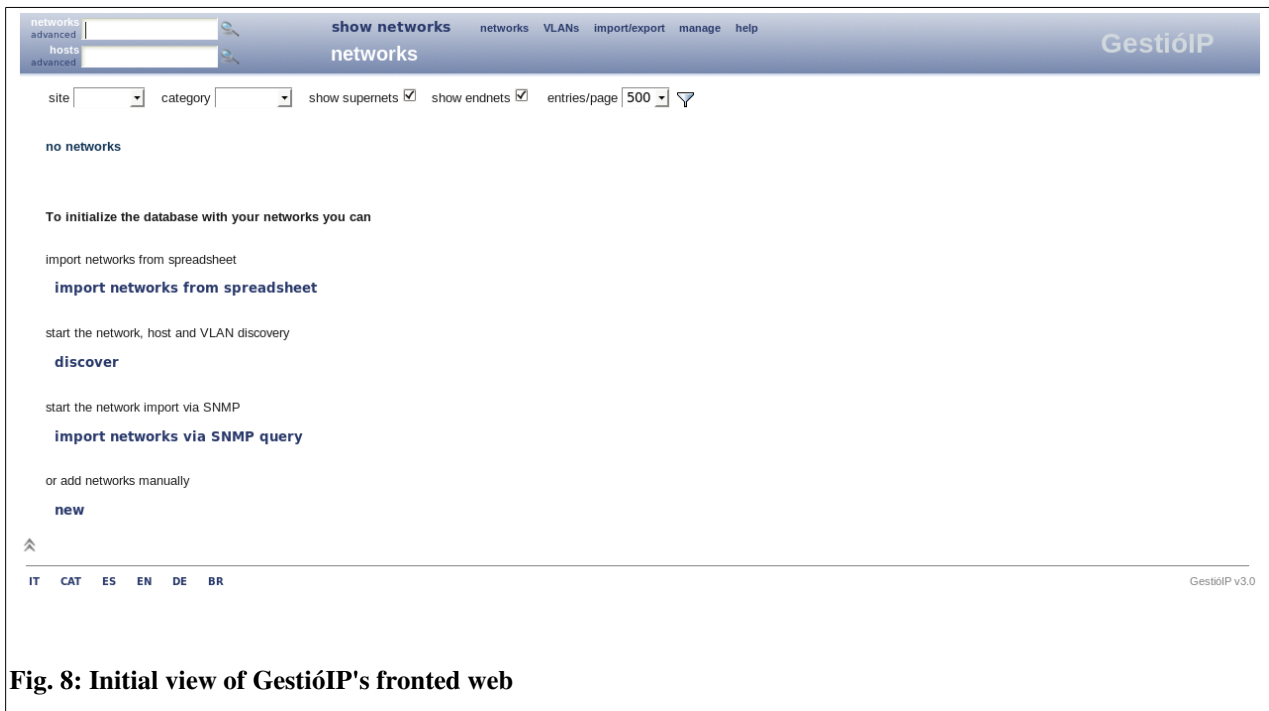


Fig. 8: Initial view of GestióIP's fronted web

5 Additional information

GestióIP

GestióIP consists in Perl CGI scripts, which will be per default installed under Apaches [DocumentRoot]/gestioip as well as some actualization and discovery scripts which will be per default installed under /usr/share/gestioip.

Apache web server

GestióIP's Apache configuration file (gestioip.conf) will be stored in the Include directory of the Apache Webserver (e.g. Ubuntu: /etc/apache/conf.d). The Apache users file (users-gestioip) will be stored in Apache configuration directory (e.g. Ubuntu: /etc/apache). Setup will only create this two files. It will not touch any other Apache configuration files.

Mysql database

GestióIP supports local as well as remote Mysql databases.