EMBARC
Information Technology (P) Ltd.

Find'n'Secure™

Automatic Tracking & Security Software

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Embarc Information Technology (Pvt) Ltd.

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Use of Google API

Find'n'Secure software uses Google API. Use of Google API is governed by the Terms and Conditions as described in the Google Maps API signup page (http://www.google.com/apis/maps/signup.html)

Printed in India

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Introduction

GPS tracking system

The Global Positioning System (GPS) is a satellite-based navigation system made up of a network of 24 satellites placed into orbit by the U.S. Department of Defense. GPS was originally intended for military applications, but in the 1980s, the US government made the system available for civilian use free of cost. Initially the highest quality signal was reserved for military use, while the signal available for civilian use was intentionally degraded ("Selective Availability"). Selective Availability was ended in 2000, improving the precision of civilian GPS from about 100m to about 20m. GPS works in any weather conditions, anywhere in the world, 24 hours a day.

GPS satellites circle the earth twice daily and transmit signal information. GPS receivers use the information to calculate the user's location by the method of triangulation. Basically, the GPS receiver compares the time a signal was transmitted by a satellite with the time it was received. The time difference tells the GPS receiver how far away the satellite is. The receiver must lock on to the signal of at least three satellites to calculate a 2-D position, the latitudinal and longitudinal position, and track movement. Using four or more satellites, the receiver can determine the user's 3-D position, the latitude, longitude, and altitude. Once the position has been determined, the GPS unit can calculate other information such as speed, track, trip distance, bearing and more.

GPS Tracking Unit

A **GPS tracking** unit is a device that uses the Global Positioning System to determine the precise location of a vehicle, person, or any other asset to which it is attached and to record the position of the asset at regular intervals. The recorded location data can be stored within the tracking unit, or it may be transmitted to a central location data base, or internet-connected computer, using a cellular (GSM/CDMA), radio, or satellite modem embedded in the unit. This allows the asset's location to be displayed against a map backdrop either in real-time or when analyzing the track later, using customized software.

Common uses

Most common application of GPS tracking system is applied for tracking of moving objects, such as, vehicles. Vehicle tracking systems are commonly used by fleet operators for fleet management functions such as routing, dispatch, on-board information and security. Other applications include monitoring driving behavior, such as an employer of an employee, or a parent with a teen driver. Vehicle tracking systems are also popular in consumer vehicles as a theft prevention and retrieval device. Police can simply see the vehicle in real-time over the tracking system and locate the stolen vehicle.

Remote controlling of the vehicle through GPS tracking system is also possible. In such a case owner of the vehicle can give commands to the tracking unit for various operations like blocking the engine or cutting fuel supply to engine etc.

GPS personal tracking system is commonly used for tracking of persons, pets etc. You can keep track of your loved ones in real time using a completely accurate and totally reliable GPS software package via the internet so you know exactly where your kids, parents, pets, asset are at any given point in time.

Find'n'Secure®

Embarc Information Technology Pvt. Ltd., a leading provider of GPS tracking and security system from India, aims at offering innovative and cost effective tracking and security solutions comprising of hardware as well as software.

GPS tracking technology is best suited for fleet management. It is a unique way for companies and individuals to monitor and control their cars, jeeps, trucks and other vehicles to their precise details by sitting in the office. Find'n'Secure® GPS tracking system will enable you to monitor the movements of your employees, drivers, vehicles or any other asset accurately. With Find'n'Secure® vehicle tracking system in your company's fleet of vehicles, you will find a smart way of fleet management by tracking your vehicles.

Whether you own one truck or a fleet of thousands of vehicles, our highly skilled GPS fleet consultants will assist you in selecting the right type of vehicle tracking system that will give an edge to your company.

CHAPTER I

Linux Installation

Welcome to the Installation of Find'n'Secure® Version 2.0. We will take you through a simple installation process in this section along with some speed tweaking tips for your server.

Hardware Requirements

Minimum

a) Intel Pentium 4 (HT) - 2.0 GHz or higher
b) 80 GB HDD (SATA)
c) 2 GB DDR-2 RAM
d) 10/100/1000 Mbps LAN
e) DVD Drive (Reader or Writer)
f) Monitor (CRT/LCD)
g) Keyboard & Mouse

Recommended

a) Intel Xeon 3.0 GHz or higher
b) 160 GB HDD (SATA)
c) 4 GB DDR-2 RAM
d) 100/1000 Mbps LAN
e) DVD Drive (Reader or Writer)
f) Monitor (CRT/LCD)
g) Keyboard & Mouse

High-speed internet connection with static IP is required for communication with the server. We recommend minimum 1Mbps connection.

Linux Installation - OpenSUSE

Download latest version of OpenSUSE DVD for x86 (32 Bit Environment) from http://www.opensuse.org. At the time of printing of this manual OpenSUSE 11.1 is the latest edition available.

- Burn ISO file on a DVD Disc

- Insert it into the DVD drive of your server system
- Start your server and Boot from the DVD ROM (Please check your BIOS settings for enabling boot from DVD ROM if you face problems in booting from DVD ROM)

The following screen will come on the monitor of your server, select Installation from the options present and wait for YaST to open up.
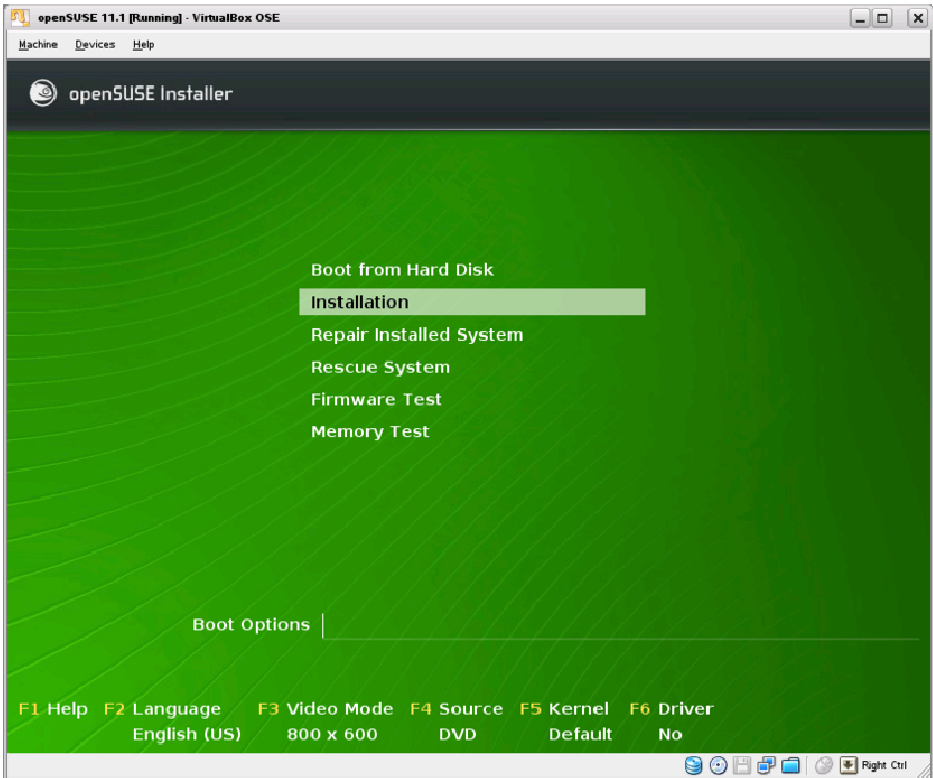
YaST will present you with the Welcome Screen and options to select Language and Keyboard layout as per your regional requirements. You may select any but English is preferable language to allow Find'n'Secure® Customer Team to connect to your server in case of problems arising in the server. Click on Next after selecting the Language and Keyboard layout. After clicking Next OpenSUSE will Probe your hardware and gather information about the system on which it is running, both the screens are shown below.

Find'n'Secure® Version 2.0 Instruction Manual
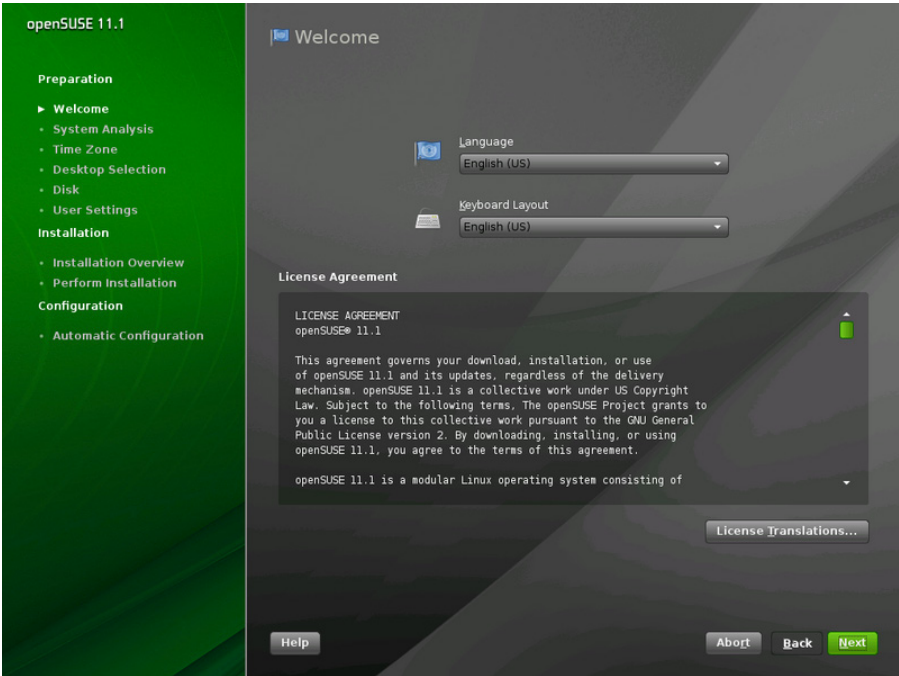
Installation Mode Screen is shown up after probing of the hardware is complete and here you have three options to select from:

a) **New Installation** — To perform a brand new installation
b) **Update** — If you already have old OpenSUSE Linux installed over the server, this option will update the older version to 11.1
c) **Repair Installed System** — In case you are having trouble in booting up the OpenSUSE system you can perform repair by making use of this option

During the new setup you must select "New Installation" option and click over **"Next"** as shown below :

Once you have clicked **Next** you will be presented with Desktop Selection Screen, shown below. You may install GNOME or KDE 4.1 or if you wish to use any other, you may select from the "Other" option. We would recommend you to proceed with KDE 4.1 which gives better control over Linux system and is more feature rich.

Now YaST will setup your hard drive settings. YaST automatically proposes hard drive partitioning and in case you wish to modify the partition you can click over "Edit Partition Setup…" or if you want to create your own partition you can click on "Create Partition Setup…"

MySQL is the most hard drive space utilizing component in Find'n'Secure. So we propose you to have maximum space in your "/var" mount point. This allocates enough room for MySQL server to keep data record of your tracking units and accounts created via web-interface. You may click on "Edit Partition Setup…", select partition and adjust their sizes as shown in the screenshot given below. Once you are done with the partition, click **"Accept"** and then **"Next"**.
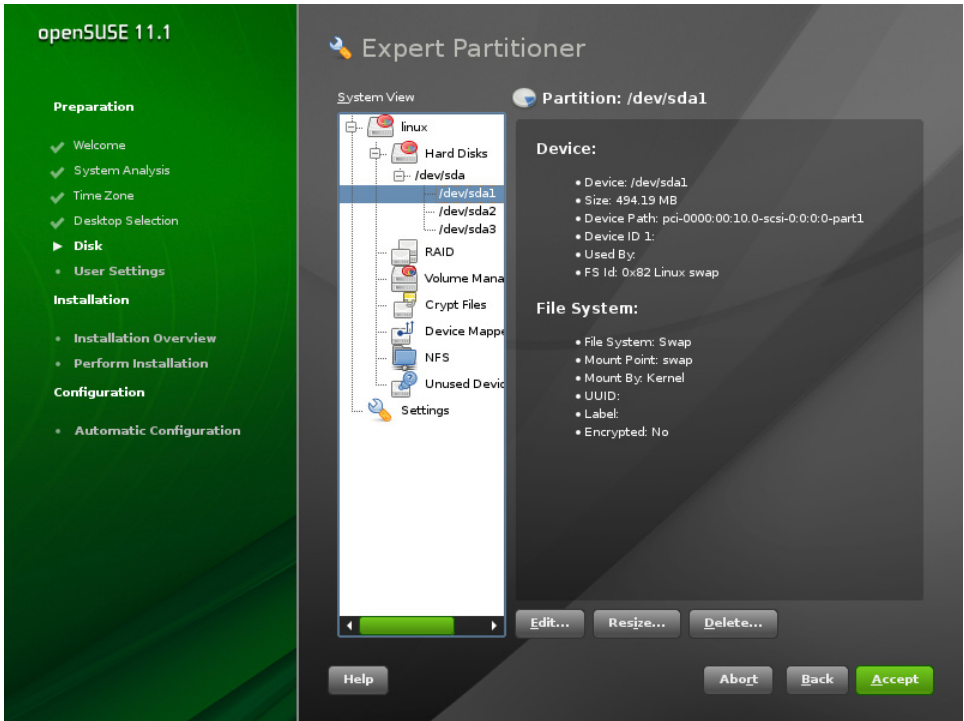
After completion of hard drive partition setup, you come to "**Create New User**" screen. You need to create a user account over here which will be used by you other than as a "**root**" user which, by default, is for system administrator. It is recommended to un-check the option "**Automatic Login**" to disable automatic login. If you wish to use different password for "**root**" account you should also un-check "**Use this password for system administrator**".
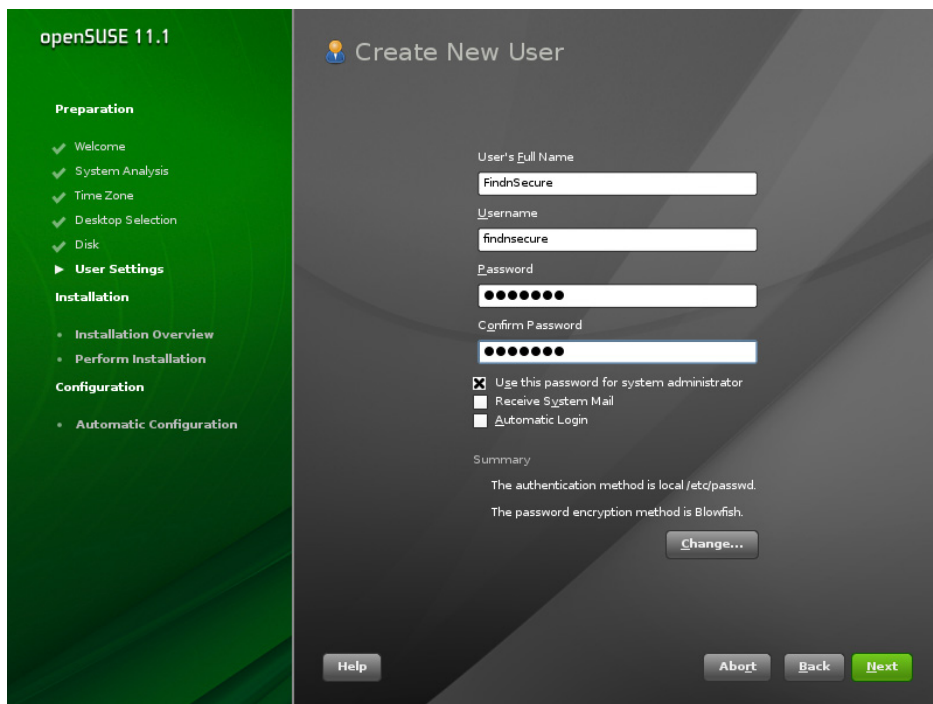
You are almost done. Now comes the last screen of the OpenSUSE setup. In this, you need to select the packages you want to install over OpenSUSE. Find'n'Secure® is based on LAMP server i.e. Linux, Apache, MySQL and PHP. We are now required to adjust the installation to get LAMP server installed, follow the steps given below:

- Click on Software
- Click on Details
- Scroll down to Server Function in left pane
- Check "**Web and LAMP Server**" option
- Click on Filter
- Select Search
- In Search textbox write down "**php**" and press Enter
- Right click in right pane
- Select "**All in This List -> Install**"
- Click "**Accept**"
- Click "**Next**"

This completes the requirements for installation. After clicking Next, OpenSUSE package installation will begin.
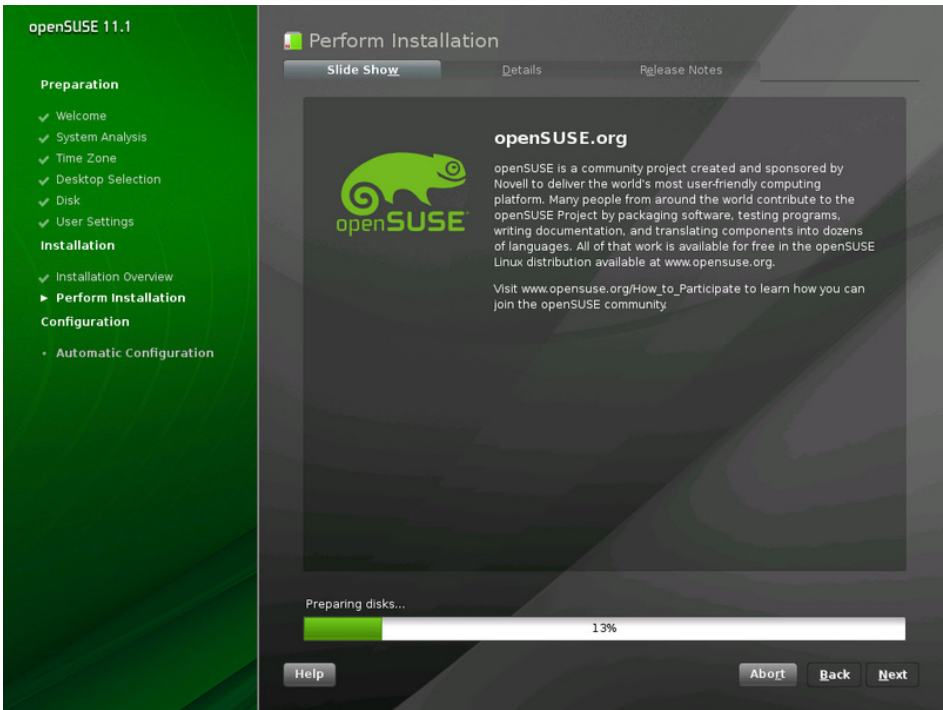
CHAPTER 2

Linux Configuration

In the previous chapter we have seen how to do a fresh installation over the server. In this section, will we learn how to configure Linux to maximize throughput. Once your system completes the boot cycle it will come to the login screen, enter username as 'root' and your system administrator password and proceed to login. If you have installed KDE as your Desktop Manager you will see the screen similar to the one shown below :
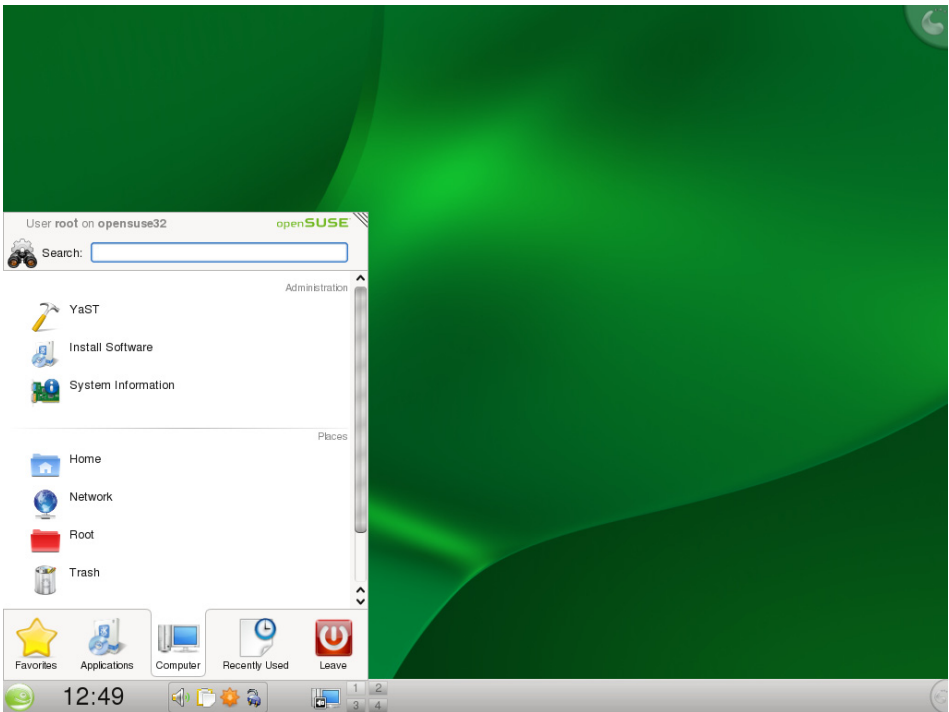
KDE Desktop is pretty intuitive and fairly simple to configure. We will now take you quickly through the steps of configuration. You may configure almost complete Linux from the YaST tool in OpenSUSE. As you see in the above screen shot, YaST took will appear after you click on the **"Computer"** Tab.

Firewall

By default, OpenSUSE turns Linux firewall on. Generally servers connect to the internet via Routers and mostly all the new routers have in-built firewall system which forces the firewall on the whole network. If you don't have any special configuration for your private network then you should disable Linux firewall and use router firewall. Whether you use Linux firewall or router firewall you will be required to enable inbound traffic from the following ports for successful communication:

Service Name	Port Number	Protocol
HTTP Server (Apache)	80	TCP
Tracking Port	21000	TCP,UDP
VNC (Remote Administration)	5901	TCP

In order to disable firewall or enable particular ports:

Click on Chameleon Icon $\Rightarrow$ Computer $\Rightarrow$ YaST $\Rightarrow$ Security and Users $\Rightarrow$ Firewall
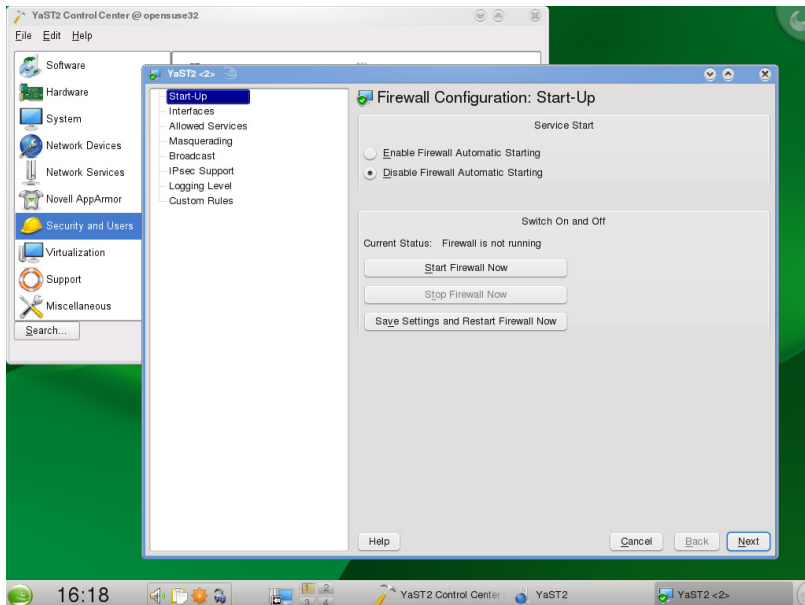
Disabling Firewall

Disabling involves two steps. First you must disable the boot-time Firewall startup. This you can do by selecting the option "Disable Firewall Automatic Starting". And secondly, you should stop the currently running firewall by clicking over "Stop Firewall Now" and finally click "Next".

Enabling Ports in Firewall (Linux)

To enable ports mentioned in the table given on the preceding page click on **"Allowed Services"** in the left pane and then select **"Advanced"** in the right pane. In the **TCP Ports** field you may enter the list of the ports you wish to enable in the firewall separated by spaces for e.g. **21000 5901 80. Follow** similar procedure for the **UDP Ports** field.
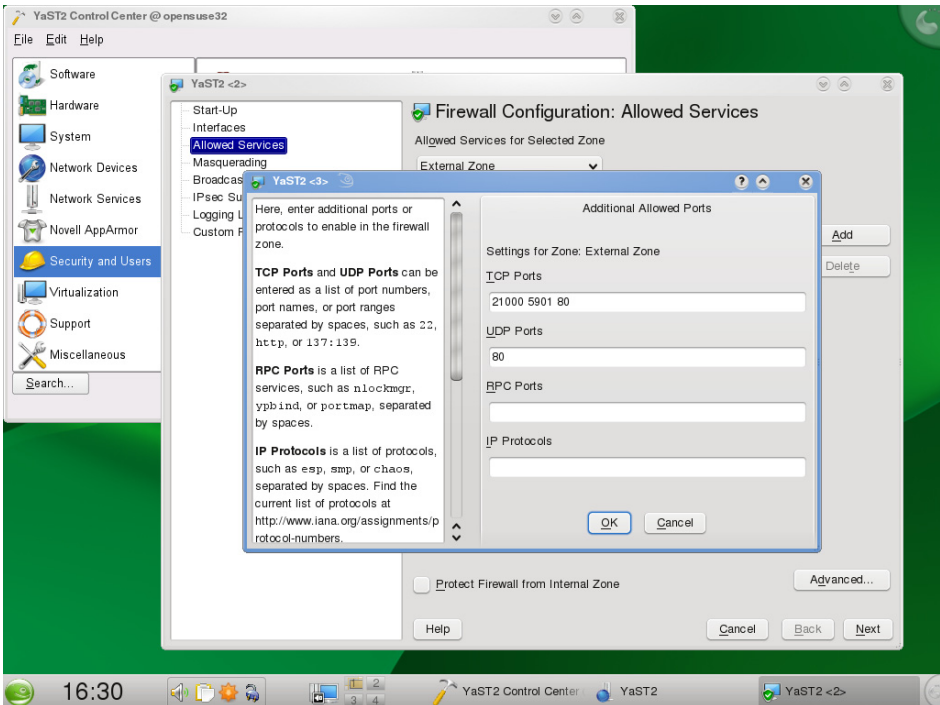
Network Adapter

Setting up communication with the internet is the most important aspect of the Server setup. In desktop or workstation environment, you may opt to use

dynamic IP address scheme allotted by your DHCP server but for servers there has to be a static IP address to which your router forwards the incoming requests. Setting up network adapter is an easy job if you have information about your network handy. To setup network adapter open up **"Network Settings"**

Click on Chameleon Icon ⇒ Computer ⇒ YaST ⇒ Network Devices ⇒ Network Settings
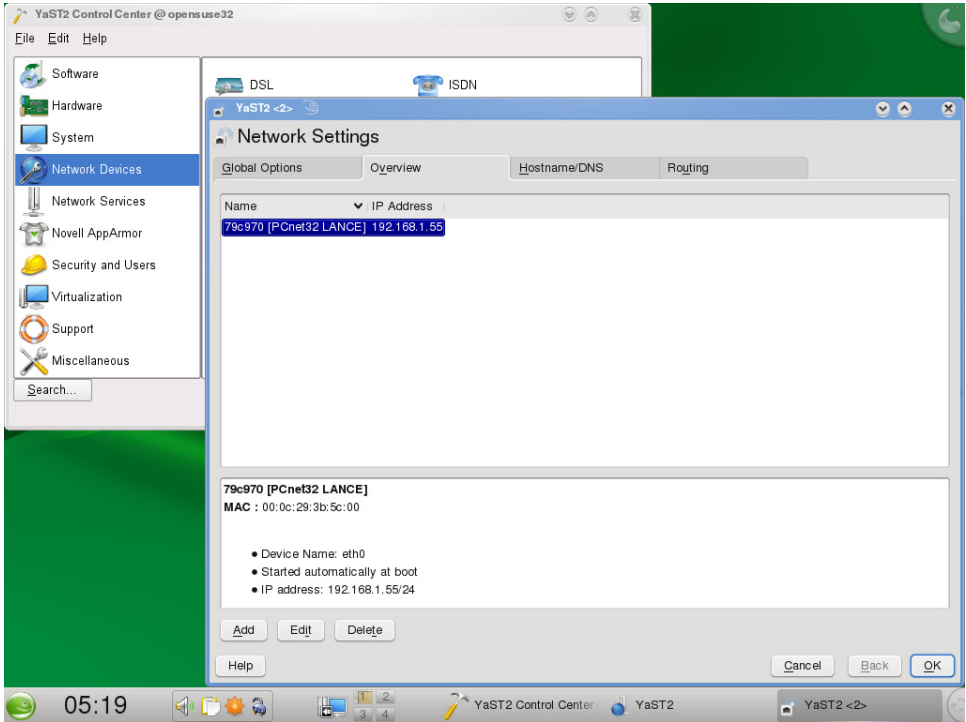
Following steps will help you configure network adapter for successful communication with internet:

- Click **"Overview"** tab
- Select your Network adapter card
- Click **"Edit"**
- Select **"Statically assigned IP Address"**
- Put the IP address/subnet mask and hostname
- Click **"Next"**
- Click **"Hostname/DNS"** tab

- Put your Name Servers (DNS) in the fields (mostly your router IP)
- Click **"Routing"** tab
- Put your default gateway address (mostly your router IP)
- Click **"OK"** to save and activate your network settings.

Note: If you are having trouble in finding out the Name servers address you can make use of OpenDNS service. For more information, please visit http://www.opendns.com.

Once you have completed the network interface settings, you may use Firefox web browser that comes pre-installed in OpenSUSE to visit any website and check internet connectivity.

Apache (HTTP)

We now proceed to HTTP Configuration. Apache is an open source web server, which is well known in the industry for its flexibility and performance. As of March 2009, 66% of the web servers on the internet were running Apache. Microsoft accounts for 18 % and 16% go to others. You can see more detailed review at:

http://news.netcraft.com/archives/web_server_survey.html

Now let us proceed with the configuration of Apache and make it operational. Follow the following steps :

Click on Chameleon Icon ⇒ Computer⇒ YaST⇒ Network Services⇒ HTTP Server

HTTP Server Wizard will open up with Network Device Selection. Here you can select the interfaces on which you want to enable HTTP Service. Please note that it is essential to enable HTTP Service on loop back address "127.0.0.1". Once you have made the selection, click **"Next"**.

Next screen displays the options to enable scripting over the server. You need to check **"Enable PHP5 Scripting"** and click **"Next"**.

Next screen shows you parameters of Default Host. On this page you need to REMOVE the following entries:

```
Alias       /icons/ "usr/share/apache2/icons"

Directory   "/usr/share/apache2/icons"…
```

After this screen, you will see Virtual Hosts configuration screen where you can simply click **"Next"** and then comes up the last screen **"Summary"**. On this screen click over **"Start Apache2 Server When Booting"** and click **"Finish"**. This completes the basic configuration of Apache server. Screenshot below shows up the last screen of configuration wizard for HTTP Server.
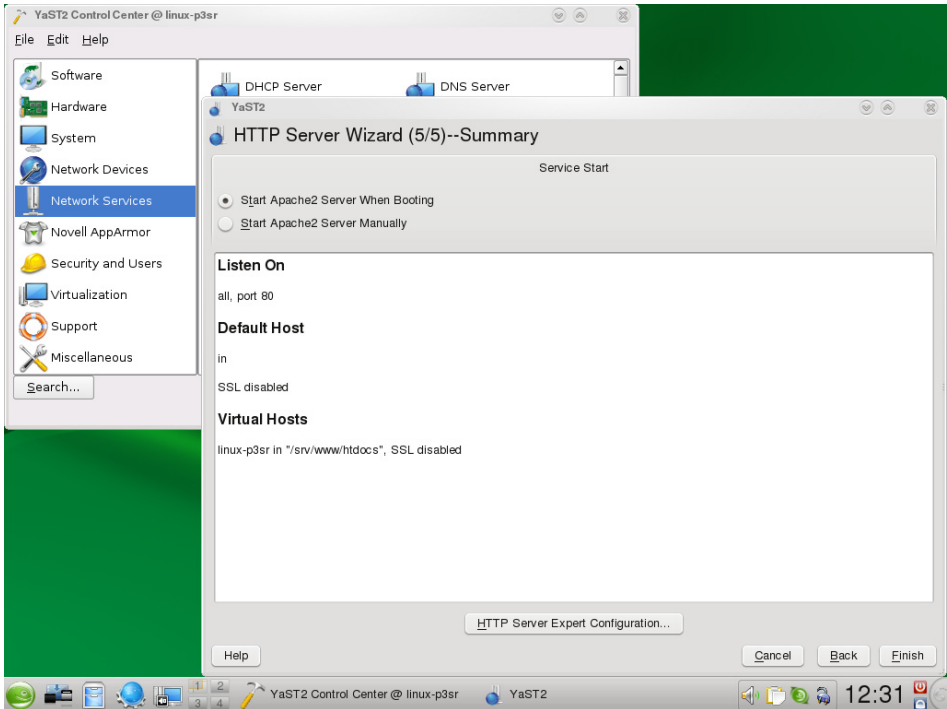
Now let us check the working of the Apache server. Open the Firefox browser and perform the following activities :

Click on Chameleon Icon $\Rightarrow$ Favorites $\Rightarrow$ Web Browser

In the address bar type http://127.0.0.1 and it will show up **"It Works!"**

MySQL

MySQL is a Relational Database Management System (RDBMS) and is one of the most important components. All the data arriving from all the tracking units is broken down, analyzed and stored in database as history component from where various types of reports and all previous visited locations and other

information is primarily acquired. Setting up MySQL is simple and involves only few steps. Let us now proceed to its setup.

Click on Chameleon Icon ⇒ Computer ⇒ YaST ⇒ System ⇒ System Services

Scroll down to MySQL service and click "Enable". Now MySQL service has started up but we need to do some more basic configuration. Open "Terminal" from Favorites and issue the following command:

```
mysqladmin -u root password <root password>

example: mysqladmin -u root password findnsecure
```

The above command will set the password for root access. To check that everything is running fine simply issue "**mysql -p**" in the terminal. It will ask you for root password which you issued in the command e.g., **findnsecure** in this case. After you press enter you will see the Welcome Screen of MySQL, just type "**exit**" on the prompt to return to terminal prompt.

MySQL Configuration File

As MySQL is the most important component of the system it is essential that it performs with ultimate efficiency and must be able to take up higher loads. By default MySQL is configured to run on the minimum configuration which makes it a low-end engine. So we need to adjust some parameters for performance. MySQL configuration file is present at location "/etc/my.cnf". The listing below is an optimized version of my.cnf file for a Server having 1-2 GB RAM. You may find some good examples at http://forge.mysql.com

MySQL Configuration file for Servers with 1-2 GB RAM (my.cnf)

```
#-------------------------------------------------------
#
# my.cnf file
#
#

# See:
#
```

```
#              http://dev.mysql.com/doc/refman/5.1/en/server-
options.html
# http://dev.mysql.com/doc/refman/5.1/en/option-files.html
#

# You can also dump all the variables set for mysqld with:
#
#    mysqld --verbose --help
#


#-----------------------------------------------------------
------
# Example MySQL config file for very large systems.
#
# This is for a large system with memory of 1G-2G where the
system runs mainly
# MySQL.
#
# You can copy this file to
# /etc/my.cnf to set global options,
# mysql-data-dir/my.cnf to set server-specific options (in
this
# installation this directory is /var/lib/mysql) or
# ~/.my.cnf to set user-specific options.
#

# In this file, you can use all long options that a program
supports.

# If you want to know which options a program supports, run
the program
# with the "--help" option.

# The following options will be passed to all MySQL clients
[client]
#password   = your_password
port        = 3306
socket          = /var/lib/mysql/mysql.sock

# Here follows entries for some specific programs

# The MySQL server
[mysqld]
port        = 3306
```

```
socket              = /var/lib/mysql/mysql.sock

skip-locking
key_buffer = 384M
max_allowed_packet = 1M
table_cache = 512
sort_buffer_size = 2M
read_buffer_size = 2M
read_rnd_buffer_size = 8M
myisam_sort_buffer_size = 64M
thread_cache_size = 8
query_cache_size = 32M

# Try number of CPU's*2 for thread_concurrency
thread_concurrency = 8

# Don't listen on a TCP/IP port at all. This can be a
security enhancement,
# if all processes that need to connect to mysqld run on
the same host.
# All interaction with mysqld must be made via Unix sockets
or named pipes.
# Note that using this option without enabling named pipes
on Windows
# (via the "enable-named-pipe" option) will render mysqld
useless!
#

#skip-networking

# Disable Federated by default
skip-federated

# Replication Master Server (default)
# binary logging is required for replication
log-bin=mysql-bin

# required unique id between 1 and 2^32 - 1
# defaults to 1 if master-host is not set
# but will not function as a master if omitted
server-id   = 1

# Replication Slave (comment out master section to use
this)
#
```

```
# To configure this host as a replication slave, you can
choose between
# two methods :
#
# 1) Use the CHANGE MASTER TO command (fully described in
our manual) -
#    the syntax is:
#
#               CHANGE    MASTER    TO    MASTER_HOST=<host>,
MASTER_PORT=<port>,
#    MASTER_USER=<user>, MASTER_PASSWORD=<password> ;
#
#    where you replace <host>, <user>, <password> by quoted
strings and
#    <port> by the master's port number (3306 by default).
#
#    Example:
#
#          CHANGE    MASTER    TO    MASTER_HOST='125.564.12.1',
MASTER_PORT=3306,
#    MASTER_USER='joe', MASTER_PASSWORD='secret';
#
# OR
#
# 2) Set the variables below. However, in case you choose
this method, then
#         start  replication  for  the  first  time  (even
unsuccessfully, for example
#     if you mistyped the password in master-password and
the slave fails to
#     connect), the slave will create a master.info file,
and any later
#     change in this file to the variables' values below
will be ignored and
#     overridden by the content of the master.info file,
unless you shutdown
#     the slave server, delete master.info and restart the
slaver server.
#     For that reason, you may want to leave the lines below
untouched
#      (commented) and instead use CHANGE MASTER TO (see
above)
#
# required unique id between 2 and 2^32 - 1
# (and different from the master)
# defaults to 2 if master-host is set
```

```
# but will not function as a slave if omitted
#server-id       = 2
#
# The replication master for this slave - required
#master-host     =   <hostname>
#
# The username the slave will use for authentication when
connecting
# to the master - required
#master-user     =   <username>
#
#  The  password  the  slave  will  authenticate  with  when
connecting to
# the master - required
#master-password =   <password>
#
# The port the master is listening on.
# optional - defaults to 3306
#master-port     =   <port>
#
# binary logging - not required for slaves, but recommended
#log-bin=mysql-bin
#
# binary logging format - mixed recommended
#binlog_format=mixed

# Point the following paths to different dedicated disks
#tmpdir          = /tmp/
#log-update      = /path-to-dedicated-directory/hostname

# Uncomment the following if you are using InnoDB tables
#innodb_data_home_dir = /var/lib/mysql/
#innodb_data_file_path                                     =
ibdata1:2000M;ibdata2:10M:autoextend
#innodb_log_group_home_dir = /var/lib/mysql/
# You can set .._buffer_pool_size up to 50 - 80 %
# of RAM but beware of setting memory usage too high
#innodb_buffer_pool_size = 384M
#innodb_additional_mem_pool_size = 20M
# Set .._log_file_size to 25 % of buffer pool size
#innodb_log_file_size = 100M
#innodb_log_buffer_size = 8M
#innodb_flush_log_at_trx_commit = 1
#innodb_lock_wait_timeout = 50
```

```
[mysqldump]
quick
max_allowed_packet = 16M

[mysql]
no-auto-rehash

# Remove the next comment character if you are not familiar
with SQL
#safe-updates

#-----------------------------------------------------------

[isamchk]
key_buffer = 256M
sort_buffer_size = 256M
read_buffer = 2M
write_buffer = 2M

#-----------------------------------------------------------

[myisamchk]
key_buffer = 256M
sort_buffer_size = 256M
read_buffer = 2M
write_buffer = 2M

#-----------------------------------------------------------

[mysqlhotcopy]
interactive-timeout

#-----------------------------------------------------------
```

Speed Tweak

'Tweak' compresses the content of your web server in real time, barring a few formats that will have no or nearly no benefit from it (*images and/or already compressed files like a zip*) or files that may even become corrupted when compressed further (*e.g. the .pdf format*). Basically at the cost of a little bit of CPU time, pages will become smaller with the following benefits:

- Faster loading pages
- Lower bandwidth costs

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For more information, just search for "**http compression**" keyword in any internet search engine.

mod_deflate

This module enables http compression over the Apache server. The following process helps in activating mod_deflate on Apache server over Linux :

1. Open your favorite console application (Xterm, Konsole, etc)

2. Execute "a2enmod deflate"

3. Now open **/etc/sysconfig/apache2** in your favorite text editor (Kwrite, Gedit, etc) and find the line (*probably line #14*)
    APACHE_CONF_INCLUDE_FILES=""

4. Replace the found line with
    APACHE_CONF_INCLUDE_FILES="/etc/apache2/httpd.conf.local"

    Save the file and close it

5. Now create a new file /etc/apache2/httpd.conf.local in your favorite text editor and insert the text below

```
SetOutputFilter DEFLATE

SetEnvIfNoCase Request_URI \.(?:gif|jpe?g|png)$ \

    no-gzip dont-vary

SetEnvIfNoCase Request_URI \

    \.(?:exe|t?gz|zip|bz2|sit|rar|7z|swf|pdf)$ \

    no-gzip dont-vary

BrowserMatch ^Mozilla/4 gzip-only-text/html

BrowserMatch ^Mozilla/4\.0[678] no-gzip
```

```
BrowserMatch \bMSIE !no-gzip !gzip-only-text/html
```

Save the file and close it.

6. /etc/init.d/apache2 restart

Restarts the server for the changes to take effect.

Confirming it works

Visit http://www.weboptimization.com and use their analyze tool to find out that everything is working fine.

If your site is using mod_deflate the test will show you the following message :

 # Congratulations. This site is using HTTP compression, otherwise called content encoding using gzip. The sizes reported here are for compressed content sent from the server to the client.

MySQL Updation

MySQL is one of the most essential components for proper server functionality and therefore its constant up-gradation and maintenance should be done. You may frequently visit http://www.mysql.com to find out the latest server updates and download the fixes and upgraded versions and install it over the server. Software is generally kept up-to-date and latest releases might require latest MySQL libraries to be installed over the server.

Zend Optimizer

Source code of the **findnsecure** software is encoded with the Zend encoder and therefore Zend optimizer is required to be loaded on the server so as to ensure the proper execution of the software. The following steps will help you in loading zend optimizer correctly over the server.

- Open the webpage
  http://www.zend.com/en/products/guard/downloads
- Select Zend Optimizer
- Select the package type as Linux x86 (32 bit) TAR GZ
- Download the file into /root
- Extract the file into /root/Zend
- Open the terminal window

- Navigate to the folder /root/Zend by executing "cd /root/Zend"
- Execute the following command "sh install.sh". Zend installation will begin after this and you will see the welcome screen as shown below. Press "**OK**" to continue and follow the under mentioned steps:
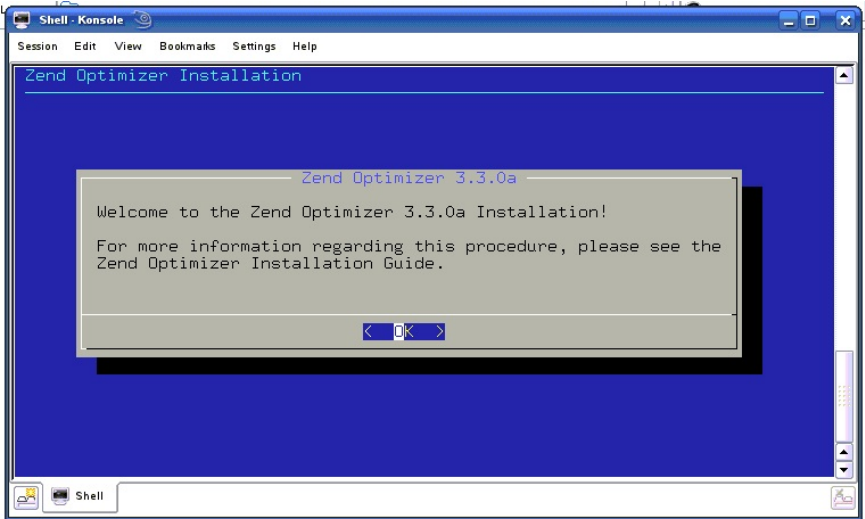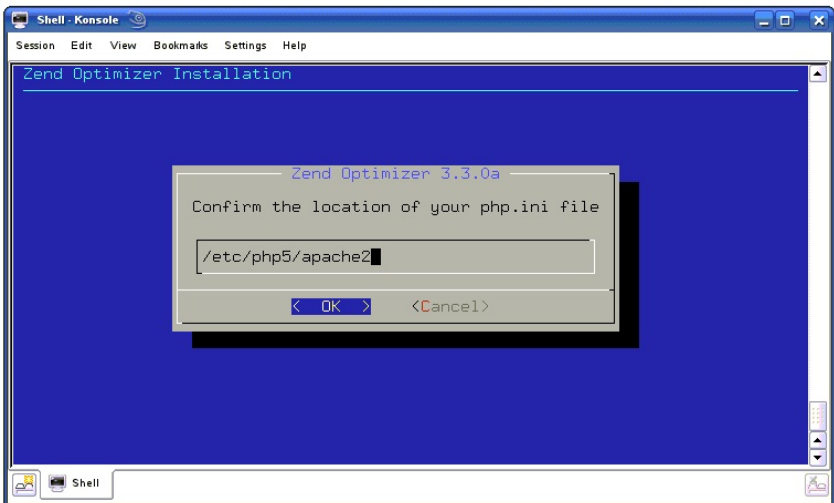

1. Read through the Zend Agreement and Accept it'
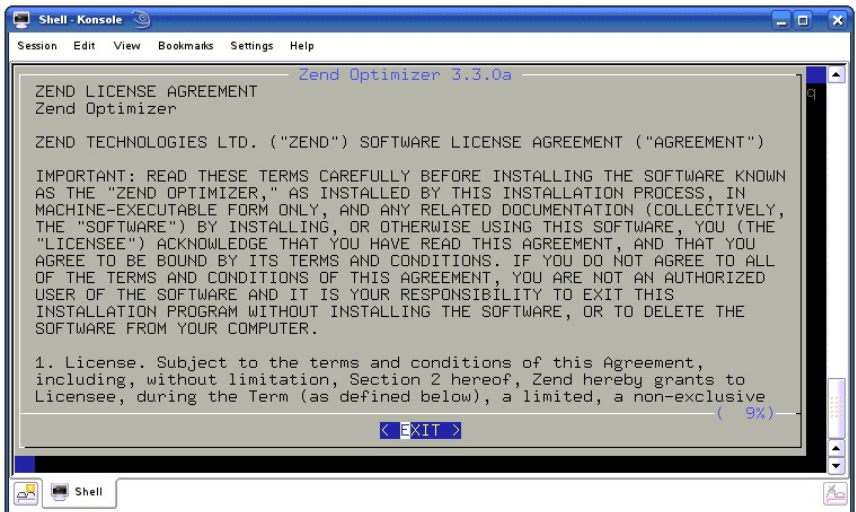
2. You may proceed with the default installation path, or, if you are an advanced user you can modify as per your requirements.
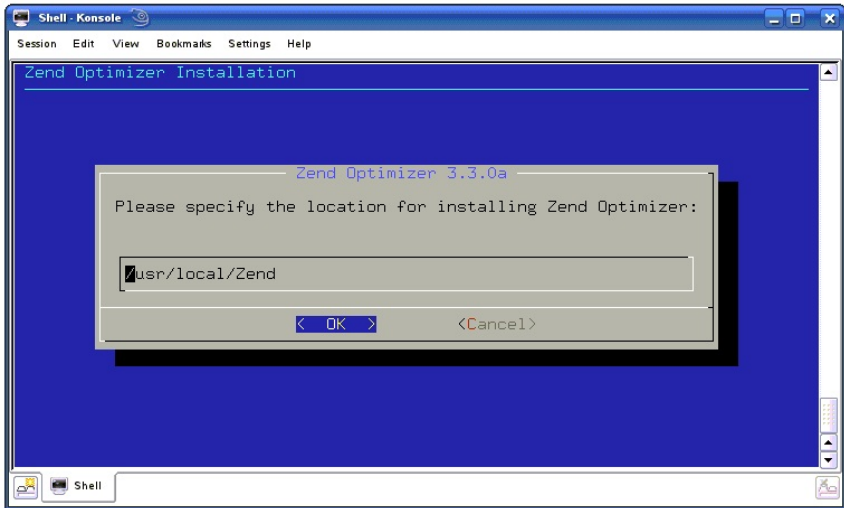
3. You need to provide the correct path for your php.ini file. On OpenSUSE this file is present in "/etc/php5/apache2"

4. Press **"Yes"** when installation prompts the message : **"Are you using Apache Web Server?"**

5. Use the provided default path for Apache control utility and press "**OK**"
6. Once installation is complete, it will ask you whether it should restart the Apache web server or not. You need to restart the Apache web server so press "**OK**"

You have now successfully installed Zend optimizer over your Linux server and your server is now completely ready for software installation. In the next chapter we take you through the steps of software installation.

CHAPTER 3

Software Installation

Since you have installed and configured Linux, we now take you through the steps required for software installation. It is pretty straight forward to install the software and prepare it for execution. The following steps will guide you to perform software installation —

1. Copy the provided software installation file in the folder "**/root/Installation**".
2. Extract the contents of the file in the folder using the following command "**unrar x Installation.rar**".
3. Open the terminal window and execute the following command :

    "**sh install.sh**"
4. Installation requires Find'n'Secure® Username and Password which is provided along with the package.
5. Enter your Find'n'Secure® Username
6. Enter your Find'n'Secure® Password
7. Enter the password for root user of your MySQL server
8. Installation will prompt you to remove the old database present in the system. If you input '**yes**' then all your previous data is removed from the database. Please note that you should take a backup of the old database if you are performing repair job.

Software installation is now complete. To check the software installation open up Firefox browser and put the following address in the address bar of the browser window – http://127.0.0.1
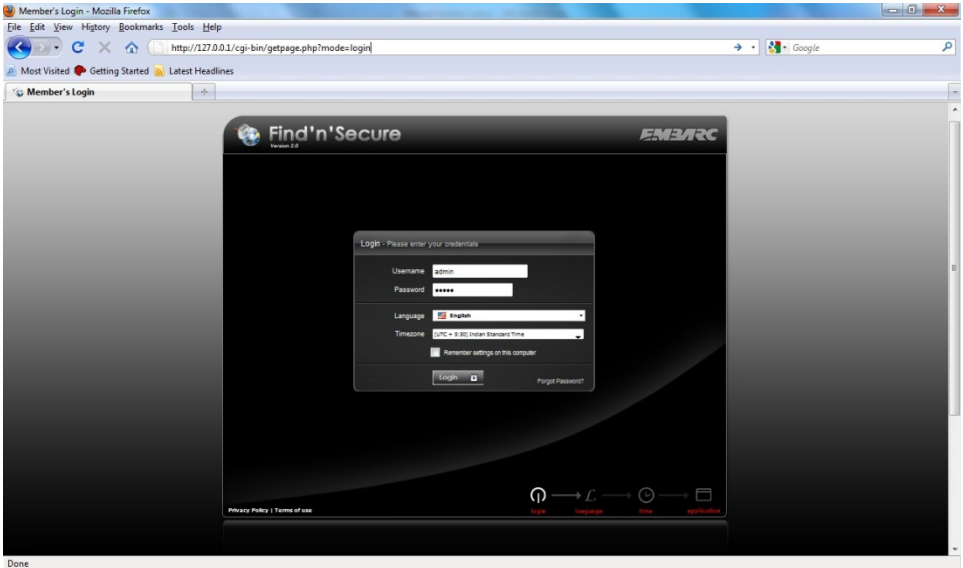
Before proceeding further, you must login to the software as an administrator for performing some essential steps required for running the software correctly. Default username for administrator login is "**admin**" and default password for the account is "**admin**". After the login, you will see the following screen.

Click on the **Settings** Tab in the left-side list and the following screen will appear :
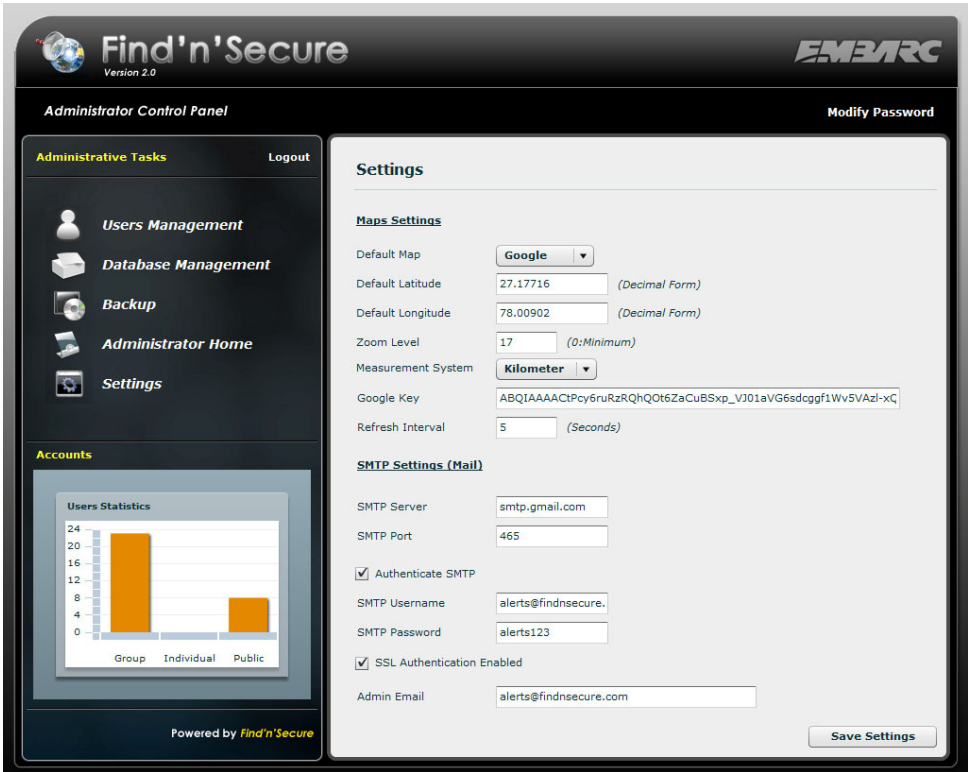
Map Settings

Find'n'Secure® Version 2.0 supports Google® Maps and Microsoft® Virtual Earth. You may set default parameters that are loaded up whenever a user logs in the software. The following table describes different options available :

Default Map	Default service i.e. Google® or Microsoft® to use when user logs in the software.
Default Latitude/Longitude	Default center location for map service, for example :
	Latitude : +47.600000 Longitude : -122.330000
	Whenever map is loaded on the browser window it

	will automatically set the display center to this Latitude/Longitude
Zoom level	Default Zoom level to which map service will be set is defined by this option
Measurement System	Default measurement system to be used in the software i.e. Kilometers or Miles
Google® Key	Google® Maps API key provided by Google® for your domain
Refresh Interval	Servers constantly get packets from the tracking units. This option controls how fast browsers shall fetch new locations from the server.

Your domain controller should create and forward a sub-domain to your server IP address, for example:

Domain Name   : www.findnsecure.com
IP Address   : 67.222.62.165

New sub-domain   **:** track.findnsecure.com
IP Address   : 122.160.144.32

Once your domain is set, you need a Google® Maps API key which may be generated from the following link :

http://code.google.com/apis/maps/signup.html

SMTP Settings

Simple Mail Transfer Protocol (SMTP) Server is used for sending emails from the software to users and administrator. If SMTP is not properly setup then you will not receive any mail alerts from the software. If you don't have a SMTP server, Find'n'Secure® version 2.0 allows you to use Gmail if the sending-load is not very high. If you are using the software for providing commercial service we recommend you to use a paid SMTP server or setup your own SMTP server, whichever you prefer.

SMTP Server	Server address for the SMTP server. For example :

	smtp.gmail.com (*Gmail SMTP server*).
SMTP Port	Port number on which the server SMTP service is being hosted. Default SMTP port is 25.
Authenticate SMTP	If SMTP server requires authentication then this option must be checked.
SMTP Username	Username to be used for logging into SMTP server.
SMTP Password	Password to be used for logging into SMTP Server.
SSL Authentication Enabled	Check this option if SMTP server requires Secure Sockets Layer (SSL) Authentication. It is more secure to use SSL Authenticated email system since the communication channel is encrypted.
Admin Email	Please put the administrator email address here on which all the important notifications from the software are required to be transferred.

Understanding Configuration File (config.sys)

Server administrators may need to fine tune the system or change certain parameters as per server hardware or network connectivity. In this section we will have a look at the config.sys file which allows you to perform these operations. Lines starting with # sign are comments and you should be very careful in editing config.sys file as even a small error might lead to complete service halt.

| Property	Value
UDPServerName	Hosting IP address of the UDP service. If you have multiple interfaces installed over the server than you might need to select the interface on which UDP service will be hosted. The default value of this property is 0.0.0.0 which means UDP service will be started on all the interfaces.
UDPServerPort	UDP port number on which service is to be hosted.
	By default 21000 is used by the software and this port is required to be forwarded by your router/firewall to this server. All the communication via tracking unit is performed through this port when UDP protocol is working in the tracking unit.

TCPServerName	This property allows you to start TCP server for communication with the tracking units. This is equivalent to the UDPServerName and has similar default value.
FilterIP	*For internal use of the software.*
FilterPort	*For internal use of the software.*
UDPSendIP	UDP sending server is started on this IP address for performing communication with the tracking units.
UDPSendPort	UDP sending server port number on which service is to be hosted.
UDPforTCP_OPSServerName	*For internal use of the software.*
UDPforTCP_OPSServerPort	*For internal use of the software.*
UDPPacketSize	*For internal use of the software.*
FilterPacketSize	*For internal use of the software.*
ServerReceiveBuffer	*For internal use of the software.*
ServerSendBuffer	*For internal use of the software.*
MinSendTime	*For internal use of the software.*
MailerCommand	Software has a daemon process which constantly keeps on checking for the new alerts/events happening on the server. These alerts/events are processed by a mailer script which is by default written in PHP 5.0. If you need to modify this behavior of the system you can insert your own script and place the right command here to process accordingly. By default, the value of the property is "php /srv/www/cgi-bin/mailer.php".
NumberOfTriggers	Number of triggers configured over the server to be received by UDP server. As described below under the properties Trigger[x]Name, Trigger[x]Event, Trigger[x]Offset, you can configure various triggers in the software to be executed when this command is received by UDP Server. It may be used along with any 3rd party software to allow the expansion of the communication protocol. We will demonstrate the process with

	the help of a small illustration after this table.
Trigger[x]Name	Represents the name of the Trigger which is to be sent to the UDP server to execute the trigger, for example – locate x represents number value from 1 – NumberOfTriggers
Trigger[x]Event	Represents the script execution path of the Trigger which is executed on receiving of the trigger.
Trigger[x]Offset = 0	Represents the offset of the command where server should search whenever a string is received by UDP server.
BanUser[x]	This property is used for banning one or more IP address, for example BanUser[1] = "67.23.44.51" BanUser[2] = "67.23.44.55" Will add two IP address to the ban list and server will drop all the packets received from these IP addresses.
DatabaseRefreshTimer	This property is used for setting up the performance for processing the data received by the server from the tracking unit. The value is in seconds.
GeofenceRefreshTimer	Time gap after which Geofence server checks for geofence related functions. This property is in seconds.
MailerRefreshTimer	Time gap after which mailer server fetches new alerts/events. This property is in seconds.
DBFServername	Database server name or IP address. This is the address of your MySQL server, if you are hosting the database server on the application server itself then the value of this property will be "localhost" otherwise you can set it appropriately. For example, if a server with local IP 192.168.1.10 is hosting MySQL service then we may use the following settings — DBFServername = "192.168.1.10"
DBFUsername	Username through which the connections to the

	database server is established. Generally we connect to the database by using **"root"** username
DBFDatabase	Database name to be used by findnsecure applications. MySQL can be used by multiple softwares running over your server and each software may have its own database. Similarly Find'n'Secure® version 2.0 has its own database by default it is named as "fnsv2". If you want to change the name of the Database file, you may modify accordingly.
DBFPassword	Password required for connecting to the database server related to the DBFUsername.
LicenseUsername	Find'n'Secure® license username provided by the company (i.e. Embarc Information Technology Pvt Ltd.)
LicensePassword	Find'n'Secure® license password provided by the company (i.e. Embarc Information Technology Pvt Ltd.)

Setting up triggers

Find'n'Secure® version 2.0 supports an important facility to perform operations in conjunction with 3rd Party software which are capable of passing URL with parameters (in GET request format) or directly connecting with the software backend and pass triggers using network. This provides exceptional facility of extending software capabilities with customized applications designed over the base platform of Find'n'Secure. The illustration below shows the communication channel and the flow of process.
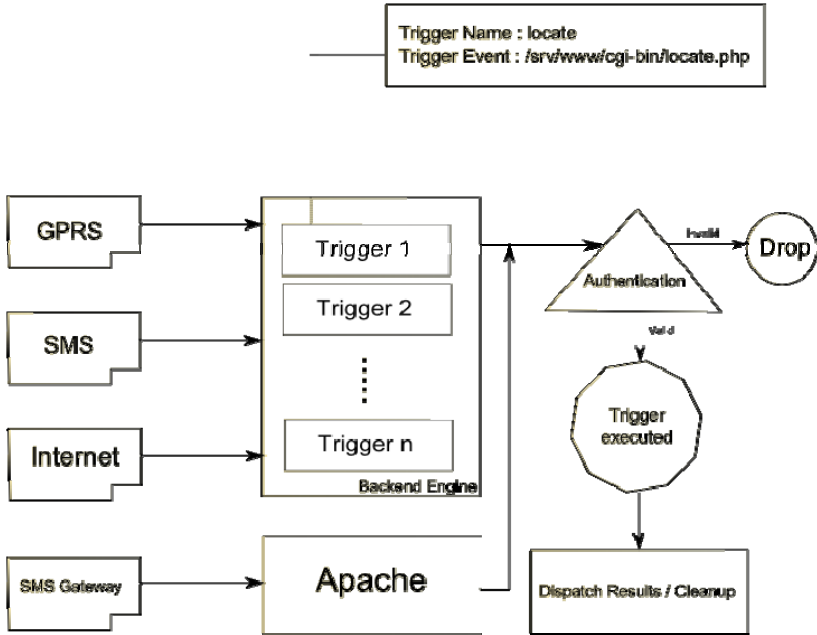
Find'n'Secure® config.sys file allows you to expand the triggers as mentioned in the previous topic. You can develop PHP scripts which may be placed in your own folder for execution. Let us show you a custom trigger example using Apache web server.

Create a new folder by name **customeevents** in **/srv/www/cgi-bin**

Create a new file by name **test.php** in **/srv/www/cgi-bin/customevents.** Source code for this test script is shown below.

```php
<?php

        /*

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URL sent to apache is in the following format:

http://track.findnsecure.com/cgi-
bin/customevents/test.php?tid=12345&pass=test
```

```
Parameters :

tid = Tracker ID

pass = Password of the user account associated
with the tracker ID


Objective:

This program takes in the tracker ID and prints
out the username. You can make use of Apache URL
calling to perform inquiry.

*/

     require_once("../mysql.php")

     function dberror($emsg)

     {

          print $emsg;

          die;

     }

     $db                                          =
mysql_connect("localhost","user","pass",1);

mysql_select_db("fnsv2")    or    dberror("database
error");

     $query = "SELECT * FROM trackers where
trackerid=\"".$_GET['tid']."\"";

     $result = mysql_query($query,$db);

     if ($result == false) dberror("query
error");

$row = mysql_fetch_assoc($result);
```

```
if ($row != false)

{

     if ($row['password'] == $_GET['pass'])

          print    "username    associated    is
".$row['username'];

}

mysql_free_result($result);

return 0;

?>
```

Final Steps

Restart the server once you have successfully installed the software.

Manual Startup

```
linux > cd /root/findnsecure

linux > sh start.sh
```

Automatic Startup

In case you want to enable the software services automatically after server starts up, please enable the findnsecure service from the System Services panel.

Click on Chameleon Icon ⇒ Computer ⇒ YaST ⇒ System ⇒ System Services
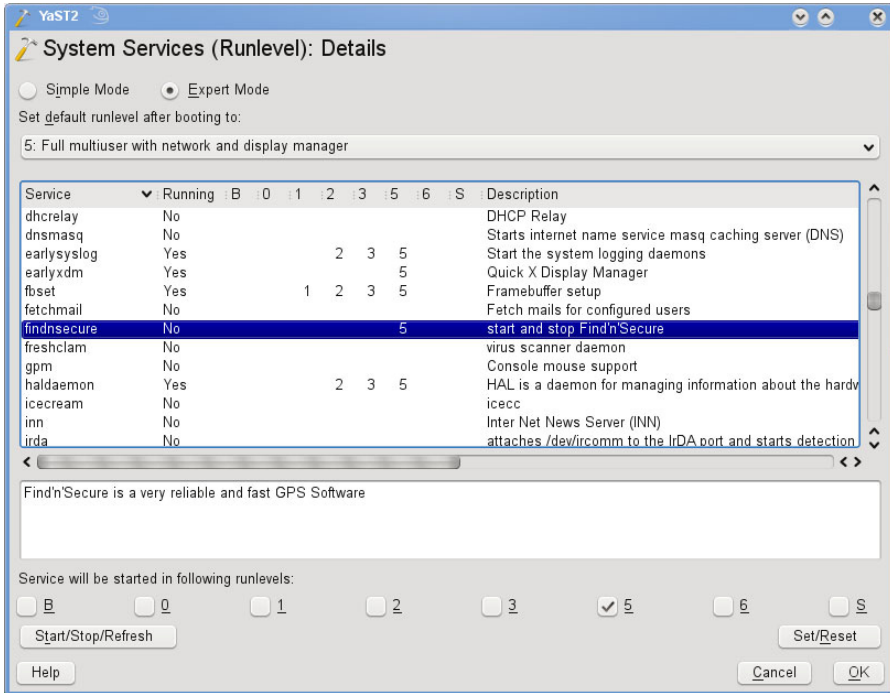
- Click on **"Set/Reset"**
- Click **"Enable the service"**
- Click **"OK"** and Save changes

Find'n'Secure® software will now automatically start whenever your server boots up.

Summary

We have covered all the topics required for setting up the server and this chapter completes the configuration and installation of your server. After following the steps explained in the preceding paragraphs, your server should be running and ready to add new user accounts and trackers to the software which we shall show you in the subsequent sections. In case you face any trouble with Linux you can use the following references to solve the issues:

- *Linux Administration Handbook (Pearson Education) by Nemeth, Snyder and Hein*
- *http://www.opensuse.org*
- *Email your queries to support@findnsecure.com*

- *Bible - Red Hat Linux (Wiley)*

CHAPTER 4

Administration

In this chapter we will take a walk-through of Find'n'Secure® from an administrator's point of view. We will start with the login and then proceed to all the detailed steps required for proper functioning of the software.

Newly installed software on the server is by default provided with an administrator account with the username '**admin**' and password '**admin**'. It is important for you to change the password of the admin account on first login; otherwise it may result in a security breach for your software.

In this Chapter as well as the Chapters that follow, we shall be making use of the domain '**track.findnsecure.com**', you should replace this domain with your own domain to perform the exact steps.

- Open web-browser and go to the URL http://track.findnsecure.com
- Put username as '**admin**' (without quotes)
- Put password as '**admin**' (without quotes)
- Select your preferred language
- Select your preferred time zone
- Click login

After performing the above steps you will see the homepage for the administrator panel which is shown in the screenshot below

Administrative control panel homepage comprises of four charts named as Database, Tracking Units, Backup History, and, Accounts. Apart from these charts it has menu items. Let us go through the chart items first and then we will explore all the menu options available on this screen.

Database Chart

Database chart shows complete information about the database present on your server. On the x-axis you will see the following headings –

- Records — Total number of records present in the database.
- Locations — Total count of only location records.
- Events — Total count of only events records.

Database chart is handy in analyzing the database load over the system and gives an overview of the database health to the administrator.

Tracking Units Chart

Tracking units chart shows the information about total number of units registered over the server and how many are working and how many units are in stopped state. On the x-axis you will see the following headings —

- **Total** — As the name suggests, if shows total number of units registered over the server.
- **Working** — Count of all the units from which data is being received in past 6 hours from now. These are termed as working units.
- **Stalled** — Count of all the units from which data is not being received in past 6 hours from now.

Backup History Chart

Whenever backup of the server is performed from the software, its log is created and shown in this chart. This is helpful in recalling when the last backup of the server was taken.

Accounts Chart

Accounts chart shows the cumulative break up of all the accounts present on the server system. On the x-axis it has the following headings —

- **Group** — Total number of group type accounts present on the server.
- **Individual** — Total number of individual accounts present on the server.
- **Public** — Total number of public accounts present on the server.

Administrative tasks

Under this section you will find complete set of utilities required for performing the administrative tasks such as, accounts creation, adding of trackers, assigning public ID's, performing backup etc. We will now move step by step to demonstrate how to create setup and perform various administrative activities.

Users Management

As the name suggests, this option allows you to create/modify/remove the user accounts from your server and help you in associating various types of tracking

units to the user accounts. We will now help you in setting up one demo account and associate one tracking unit with it. Click on '**Users Management**'

As you can see in the screenshot above, we have got four types of accounts viz.,

- **Group** — allows multiple trackers to be assigned to the group.
- **Individuals** — only one single tracker can be assigned to this type of account.
- **Public** — Map a tracker belonging to Group or Individual account for public access.
- **Customer Care** — Customer Care agents can be assigned this account for controlling all other accounts.

Each category has two types of accounts viz., 'Active Accounts' and 'Inactive Accounts'. Where the user of an account has logged in during last thirty days, such accounts are categorized as Active Accounts while all others fall under Inactive Accounts category.

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Create New User

The following steps will help you in the creation of a new Group/Individual account and adding a tracking unit to the account :

- Click on '**Create New User**'.

- Select Account Type as Group (for Multiple Tracking Units) or Individual (for Single Tracking Unit).

- Select Account Expiry date (login will be automatically disabled after this expiry date unless it is extended further).

- Assign unique username with which this account will be identified on the server system. In case username already exists on the server it will notify that the username already exists. In such a case, you are required to assign some other username.

- Assign password to access the account. The password should be a strong one i.e., which may not be easily imitated by an unauthorized person. It is preferable that the password should be a combination of alphabets and numerals. Names common in use should be avoided.

- Mention email address on which alerts generated by the software are to be delivered.

- Fill up the rest of the form for the new user which you are creating. All the fields marked in red color on this form are mandatory and others are optional.

- Once you are done click on "**Proceed to next step**".

Adding Tracking Unit

After you press "**Proceed to next step**" a new form opens up for adding tracking units to the profile. This form is shown in the screenshot given below. It is important to fill up this form with careful understanding otherwise your server will not be able to identify your tracking units and you will not see any reporting on the server. There are many debugging tools which may be used for troubleshooting in case you don't see data on your server; we will visit them at the end of this chapter to help you in resolving issues.

Find'n'Secure® Version 2.0 Instruction Manual
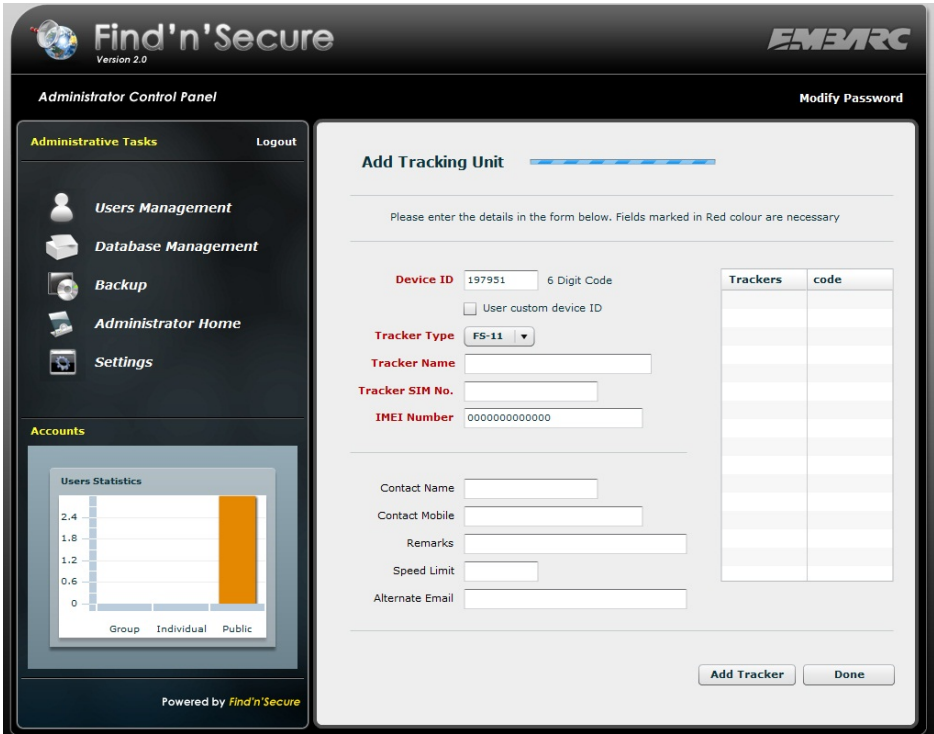
Field Name	Description
Device ID	Software uses Device ID or IMEI number to identify device and perform related tasks. Device ID is always a unique number on the server.
User custom device ID	In certain circumstances you might need to use a custom device ID, such as, adding an already configured unit.
Tracker Type	Different make/models of the tracking units are supported by the software. Select the correct type as per the tracker to be configured. You can get an updated list of the tracker supported by Find'n'Secure® from support@findnsecure.com.
Tracker Name	Name by which the tracking unit is represented when the

	user logs in the software.
IMEI Number	This field remains blank if the model you selected requires IMEI number. If the model selected doesn't require IMEI, this field is automatically filled by array of 0's.
Contact Name	Name of the person who is associated with / using this tracking unit.
Contact Mobile	Mobile number of the person who is associated with / using this tracking unit.
Remarks	Additional remarks field. Here, you may record any specific information related to the account / tracking unit.
Speed Limit	This parameter is relevant when you want the vehicle not to exceed a specific speed limit. If the driver breaches the speed limit so fixed by you, an alert will automatically be generated. **This field is used ONLY when hardware is not supporting over-speeding alert system.** Generally most of the tracking unit now support over-speed alert but models like FS-11 which doesn't have over-speed alert system, uses this parameter to identify over-speeding.
Alternate Email	Whenever any alert occurs over the tracking unit it is by default reported to the Group head but if you wish that the individual emails for specific trackers be also sent to some other person also, you may write in the email address here to which alerts must be sent.

Once you have filled up the form click on "**Add Tracker**" to add tracking unit to the software. After completing addition of the tracking units, click on

"**Done**" to complete the process of account creation. The message "**Profile has been successfully created**" will then be flashed on the computer screen.

Active / Inactive Users

Once you have successfully created the profile, the newly created user is automatically added to the Inactive users group. Any user who has performed the login during last 30 days is termed as an active user whereas a user who has not performed any login in last 30 days is termed as an inactive user.

Modify User

After creating a new user, we now move ahead to "modify user" function. The following operations are supported by the Modify User option for Group and Individual account types :

Operation	Account Scope	Location
Add New Tracking Units	Group/Individual	Modify User > Add Trackers
Remove Tracking Units	Group/Individual	Modify User > Modify Trackers > Remove Tracker
Update Tracking Units	Group/Individual	Modify User > Modify Tracker
Modify Public Mapping	Public	Modify User > Modify Public Mapping
Modify User Profile	Group/Individual/ Public/Customer Care	Modify User

Creating Public Account

Public Account is created just like the normal group or individual account but when you select public in account type, all the fields are ghosted except account expiry, username and password. After you click on "**Proceed to next step**" all the trackers are shown under their respective usernames. You can select the appropriate public mapping (i.e., linking any tracker to a specified user account) and press "**Select user mapping**", this will set the public

mapping to the respective tracker and when you login to this account it will show the selected tracker under public mode.

Once you have done with the public mapping click over "**Done**" to complete the creating of the public account.

Device ID and IMEI Number

In the previous section we have seen creation of basic accounts and adding tracking units. Adding a new tracker to the software depends on the type of the hardware you have purchased and basic requirements of that tracker. Some trackers are solely configured using the device ID such as FS-41 whereas some trackers are configured using their IMEI numbers such as belonging to the group FS-2x units. Each tracking unit is accompanied with an instruction manual which guides you how to setup the unit with the software. It is possible to make use of the hybrid collection of trackers with the software. It is very important to set the tracking unit properly in order to allow the software to recognize the hardware units correctly. In case you are unable to configure the

units or confused about the hardware, you can always get in touch with our customer support team which will guide you on specific hardware models.

Database Management

Administrators should make use of the database management system to perform operations over the software databases. We strongly discourage you from directly performing any operations on the database of the software as even the slightest error may render the whole system useless. When you click on the Database Management option, you see the following screen:

As shown is the screenshot above, you have trackers' list along with their usernames. You can select the trackers from the list and then perform various operations on the trackers like Browse, Clean Tables & Clean Database. You can see a warning note posted which says "this operation can cause irrecoverable data loss." It is always wise to take the backup of the database before performing any operations on the database. We will show you in the

next section as to how you can take the backup using the software and also by using the MySQL graphical user interface utility. Database management works over raw data which is stored in the database using the Greenwich Mean Time. Let us demonstrate this with the help of an example. As shown in the illustration below, all the tracking units send GPS data via GPRS/CDMA/Satellite to the base server which is your service hosting server/infrastructure. On your server, this data is stored in the raw GMT format i.e. no time zone information is recorded in this data. Whenever you fetch data from the software it automatically fixes the time as per your time zone requirements and displays the data to you.
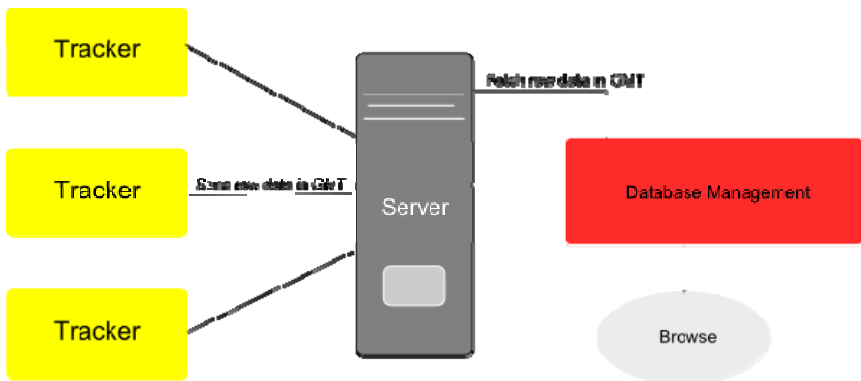
As shown in the illustration above if you need to fetch raw data for 5th June, you will get the data from 5th June 12:00:00 AM to 6th June 12:00 AM. Accordingly, 5th June is added with +5:30 Hours and shown as 5th June 5.30 AM

and time shift by +5.30 hours so at the end of the day i.e. 6th June 12:00 AM, time is again shifted by +5:30 and becomes 6th June 5:30 AM.

Backup

As the name of the utility suggests, it is used for taking the backup of your server system. It is very important for you to keep regular backup of your server system so that in case of any hardware failure or mishap you have the restore point to fall back upon. We have two options available in the software for backup :

1. Download backup file to this computer
2. Store backup file over the server

It is always advisable to download the file on your personal computer and move the file to any archiving facility like DVD, pen drive etc. Storing backup file over the server can be useful in the eventuality of your system developing some kind of a database corruption which needs to be restored immediately

from the stored backup file. You can see in the screenshot below, backup filenames are generated automatically using random digits and a log is maintained in the server. The format of the backup file is gzip compressed file which can be uncompressed by using **gunzip** command available on Linux systems.

Restore

We will now show you how to restore your file over the server in case of any mishap. Login to the Linux system as root, open the console and execute the following steps:

```
> gunzip [BACKUP FILENAME]
```

For example, as shown in the screenshot above filename is **backup_4dbd652e82e8b59ee38fbf8a.sql.gz**

```
> gunzip backup_4dbd652e82e8b59ee38fbf8a.sql.gz
```

This will produce the file **backup_4dbd652e82e8b59ee38fbf8a.sql**. By default the name of the database used by the software is fnsv2. You are required to clear this database before you can perform restore.

```
>mysql –p fnsv2

Password: *******

mysql>DROP DATABASE fnsv2;

mysql>CREATE DATABASE fnsv2;

mysql>exit

>mysql            –p            fnsv2            <
backup_4dbd652e82e8b59ee38fbf8a.sql
```

Modify Password

You can use this option to modify the password of administrator account. It is important to keep a strong password for your administrator account as the complete functioning of the software may be hampered if this is leaked out.

Settings

Please refer to Chapter 3 – Installation for options related to Settings.

CHAPTER 5

Advanced Tools for Administrators

In the previous Chapter we visited options available to administrators via software interface to perform administrative operations but sometimes it becomes important for administrators to make use of Linux tools for debugging software issues. We will go through the series of such tools in this Chapter starting with MySQL administrator Utility.

MySQL Administrator Utility

You can download and install MySQL administrator utility from the MySQL website, http://www.mysql.com and moving to the section Downloads > GUI Tools. Once you complete download and installation, you are required to perform following operations on the Linux server:

- Login as root user in the Linux system
- Open console
- Execute **mysql -p fnsv2**
- Enter your MySQL root user password
- Execute **mysql> GRANT ALL ON *.* TO 'user'@'192.168.1.10' IDENTIFIED BY 'password'**

    This command will allow user with username as **'user'** to login from host IP address 192.168.1.10 and the password provided is 'password'. You can modify this command as per your requirements. For more understanding please refer to MySQL manual.

    Please be aware of the firewall system on your network before making the connection to MySQL. Port number 3306 is default port for communication with MySQL and therefore your firewall should allow communication on this port.

Once you have performed the above steps your MySQL is ready to connect via any PC using MySQL administrator. Open the MySQL administrator utility on your computer and fill up the following fields :

- Server Host : IP address or hostname of the server on which MySQL is running
- Username : user
- Password : password
- Click on '**OK**'

Your MySQL administrator will be connected to the MySQL database engine. You can go through the wide range of documentation available for this utility to become friendly with this utility. Some of the tasks that you can do using this utility are :

- Backup — You can schedule backup projects
- Restore
- Database maintenance
- Server health monitoring
- Server logs
- Replication Status

tcpdump

The most common source of problems with the tracking units is the incorrect configuration of the tracking units for communication over GPRS. This utility can help you identify if the tracking units are communicating well with the server or not. Find'n'Secure® software opens up port number 21000 by default for communication over UDP and TCP/IP. Given below are some of the useful commands and their respective meanings.

```
>tcpdump port 21000
```

Capture all the packets coming in and going out of the server related to UDP and TCP/IP port number 21000

```
>tcpdump udp port 21000
```

Capture all the packets coming in and going out of the server related to only UDP Protocol port number 21000

```
>tcpdump tcp port 21000
```

Capture all the packets coming in and going out of the server related to only TCP/IP Protocol port number 21000

```
>tcpdump udp port 21000 and  host 192.168.1.10
```

Capture all the packets coming in and going out of the server related to only UDP Protocol port number 21000 with the host having IP address of 192.168.1.10

```
>tcpdump udp port 21000 and  dst host 192.168.1.10
```

Same as previous command with the only difference to capture packets having destination host as 192.168.1.10

```
>tcpdump udp port 21000 and  src host 192.168.1.10
```

Same as previous command with the only difference to capture packets having source host as 192.168.1.10

Wireshark

Wireshark is a kernel level network packet capture utility. You can see it as a GUI tool with capabilities of tcpdump utility, discussed in the previous section. Wireshark package is present in OpenSUSE distribution by default.

Click on Chameleon Icon $\Rightarrow$ Applications $\Rightarrow$ System $\Rightarrow$ Network $\Rightarrow$ Network Analyzer (Wireshark)

You can go through the huge collection of documents available on the net for learning basic features of wireshark and also get the documentation from their website http://www.wireshark.org
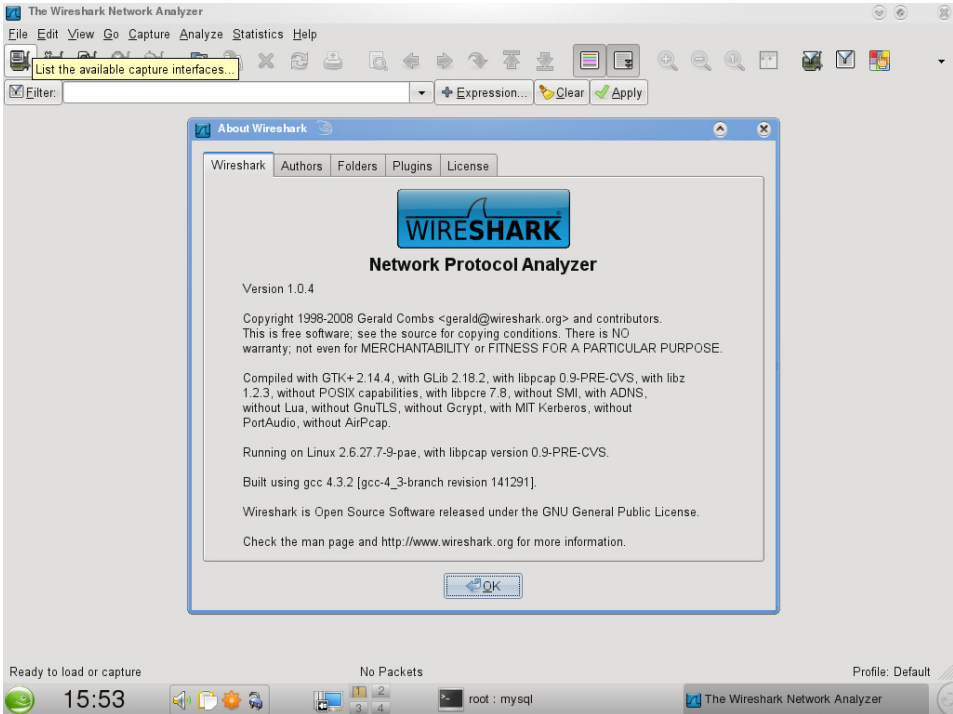
Capturing with tcpdump for viewing with Wireshark

There are occasions when you want to capture packets using **tcpdump** rather than **wireshark**, especially when you want to do a remote capture and do not want the network load associated with running Wireshark remotely (not to mention all the X traffic polluting your capture).

However, the default **tcpdump** parameters result in a capture file where each packet is truncated, because **tcpdump**, by default, only captures the first 68 bytes of each packet.

To ensure that you capture complete packets, use the following command:

```
tcpdump -i <interface> -s 1500 -w <some-file>
```

You will have to specify the correct **interface** and the name of a **file** to save into. In addition, you will have to terminate the capture with ^C when you believe you have captured enough packets.

Language Conversion Tool

Find'n'Secure® provides a helper tool for converting software into your local language. You need to have a username and password to log inside this tool which you can obtain by posting an email to support@findnsecure.com with subject lines as "**user-pass for language conversion tool**". You can visit http://www.findnsecure.com/language.html to access the language conversion tool. Write your username and password in the login box shown below and click over login button.

Please perform login before proceeding to editor

Username

Password

Login

After you login successfully inside the tool the screen shown below will come up. It is divided into four sections:

1. Key Panel
2. Current Text
3. New Text
4. Computer aided translation
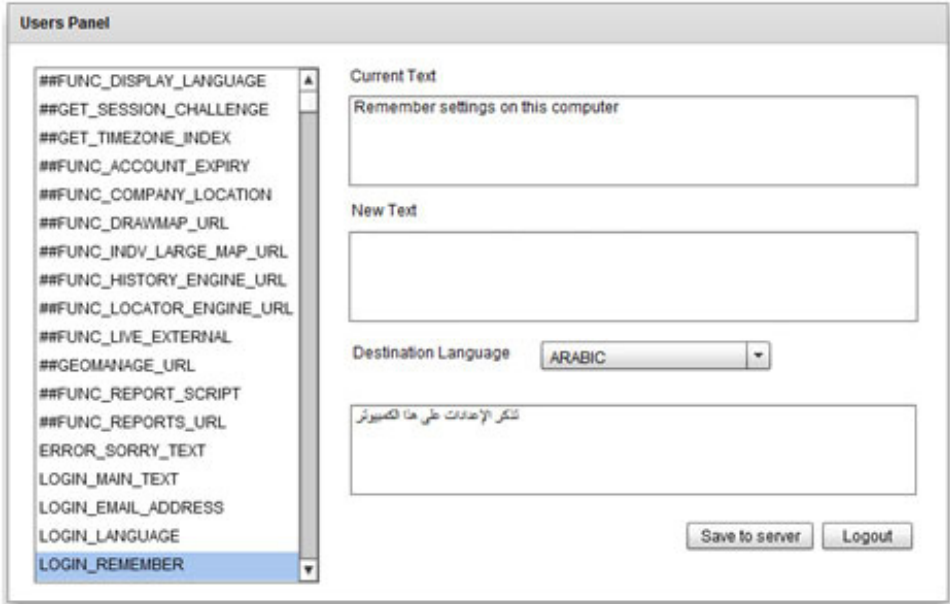
As you can see in the snapshot of the tool above, it is pretty simple job to select the keys and then write down the new text required for display on the software screen. Language tool is equipped with the automatic translation help in which text displayed in the Current Text box is automatically converted into the language selected in the Destination Language box and shown there-under to help you in the translation.

You can save the translation you have done by clicking over 'Save to server'. You can edit the language as per your convenience and save it to the server and re-login from the point you have last saved it. Once you complete the work you can press Logout. While performing edit operation you need to keep the following points in mind —

1. All the keys starting with # Sign are automatically disabled for editing as they should not be edited

2. All the keys starting with IMAGE_ contains the path for the language dependent images and therefore you should change the path as per your language for example if you are converting from English to French the path will be /srv/www/htdocs/images/english/xyz.png, convert it into /srv/www/htdocs/ images/french/xyz.png

3. Save to the server should be done once you have finished editing for the day or for the time being as this is a lengthy operation.

Once you have completed the process of language conversion you are required to drop an email to support@findnsecure.com with the subject line "Translation Complete - <Username>", for example you logged in the software with username "findnsecure" you need to send the email with the following subject line "Translation Complete – findnsecure". Once this email is received our servers will generate the corresponding files and inform the Find'n'Secure® technical team.

Setting up MySQL mirror

Server failures are unavoidable and can make you lose all your vital data related to tracking of the units and in such a scenario it is most crucial to make the service up and running as soon as possible. To keep your service running all the time with 99.99% uptime you need to setup the infrastructure that allows you to have redundancy in the data so that in the eventuality of your primary server going down you can switch to your secondary server. MySQL has an in-built ability to replicate the data on one or more storage servers. In this section we will show you how to create a mirror for your MySQL service. You need one additional server installed with the same version of the MySQL to avoid any problems, let us denote your primary server with name "MAIN" and your secondary server with name "MIRROR"

Settings for MAIN

1. Create User in MySQL

```
mysql> mysql —p

Enter your password

mysql> GRANT REPLICATION SLAVE ON *.* TO
'repl'@'%.mydomain.com' IDENTIFIED BY 'password';
```

2. Open my.cnf, navigate to section [mysqld] and add the following lines :

```
log-bin = mysql-bin
```

```
server-id = 12345
```

3. Issue the following commands in MySQL :

```
mysql> FLUSH TABLE WITH READ LOCK;

mysql> SHOW MASTER STATUS;

Record down 'File' and 'Position' and quit mysql
```

4. On the Linux shell prompt issue the following command :

```
Shell>   mysqldump   –all-databases   –master-data
>dbback.sql
```

5. Re-enter MySQL and issue following commands :

```
mysql> UNLOCK TABLES;
```

Once you have completed the above steps your primary server is ready to allow secondary server for fetching data.

Steps for MIRROR

1. Copy dbback.sql file created over the MAIN server and move it to MIRROR server. Thereafter, issue the following command to create a copy of the database on the MIRROR server:

```
Shell> mysql –p < dbback.sql
```

2. Open my.cnf, navigate to section [mysqld] and add the following lines :

```
server-id = 67890 //this ID should not match master
```

3.   Issue the following command in MySQL prompt :

```
mysql> CHANGE MASTER TO

MASTER_HOST = 'MASTER HOSTNAME OR IP ADDRESS'

MASTER_USER = 'USERNAME' //repl as created above

MASTER_PASSWORD = 'PASSWORD' //password as created
above

MASTER_LOG_FILE = 'LOG FILENAME' //as you recorded
above

MASTER_LOG_POS    =  'LOG  POSITION'; //as  you
recorded above

mysql> START SALVE;
```

All the steps required for slave setup are now complete and data replication should start as per the requirement. In case you face any sort of issue, you may checkout the log files situated at the locations /var/lib/mysql.

CHAPTER 6

Users Interface

Welcome to the Find'n'Secure® users interface. In this section, we will cover the basic and advanced operations of the software available to the users (group/individual/public/customer care). Software is compatible with the following browsers —

- Internet Explorer 8.0+
- Firefox® 2.5+
- Google® Chrome 2.0+
- Apple® Safari 3.0+

It is always a best choice to keep your browsers updated to the latest build as these are free to download and provide various new features and prior bug fix. Most of these browsers are compatible with old or new Windows, Macintosh or Linux platforms. In addition to the browser, you will require Adobe flash player 10.0+ plug-in installed over your favorite browser. You can download the latest plug-in from http://www.adobe.com

Once you have completed the above pre-requisites you can simply open your favorite browser and visit http://www.findnsecure.com and click over **'Members Login'**, this will take you to the main software portal where you are presented with the login page asking for your credentials and change your preferences like language and time zone.
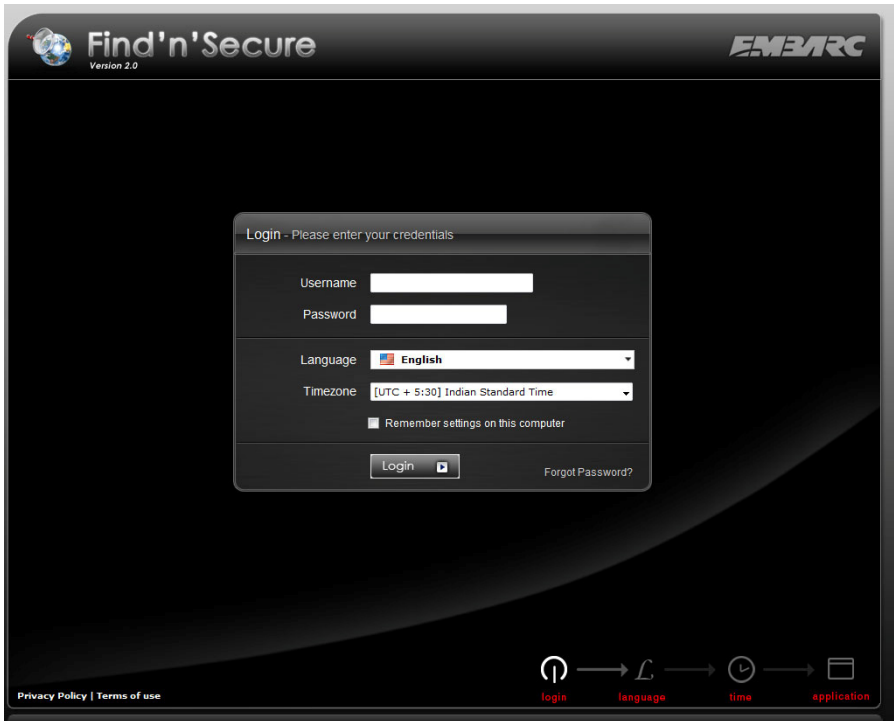
Service provider to whom you have subscribed assigns you specific username/password which you should use to login the software. In paragraphs that follow, we will explore the user interface available for group and individual users. Once you have successfully logged in the software you see a user-friendly interface which is broadly divided into following sections

- Menu Bar
  - ➢ Advanced Utilities
  - ➢ Google® Maps
  - ➢ Microsoft® Maps
  - ➢ Logout
- User profile
- Trackers list
- Tracking Map

User Profile

User profile displays your company name, address and logo registered with Find'n'Secure. It also displays the number of tracking units that are assigned to you. These are directly controlled by the administrator of the software and in case you wish to expand the fleet, you may contact the administrator and get the relevant hardware and expand your fleet. Account expiry shows the date until which your fleet will be supported and after that you need to renew your account with the service provider.

Trackers List

This section displays with the name of all the trackers which you have installed in various vehicles or name of people holding the personal trackers or for whatever reason you are using the trackers.

As you can see in the trackers list above, it is in a tabular format which divides each tracker into –

    a) Icon
    b) Tracker Name
    c) External Window Icon
    d) Status

Icon

Every tracking unit has its own set of icons to clearly distinguish various activities over the maps and give clear representation about the tracker status. In version 2.0 of Find'n'Secure® the following activities are supported

Movement	**When tracker is moving**
Idling	Mostly useful in vehicle tracking, shows up when engine is in start condition but not moving.

|	
Stopped	Tracker is stopped and no movement is registered
No Data	Tracking unit has not communicated with the server for more than 24 hours
Alerts	Tracking unit needs your attention, due to some event happening on site of the tracker

Along with the icon notification textual representation is also displayed on the tracker list for the people who are new to the software and have difficulty in understanding the icon representation.

In a real time scenario, you might wish to track more than one tracking unit and to enable this we have provided you with the facility of opening an external window simply by clicking over the window icon
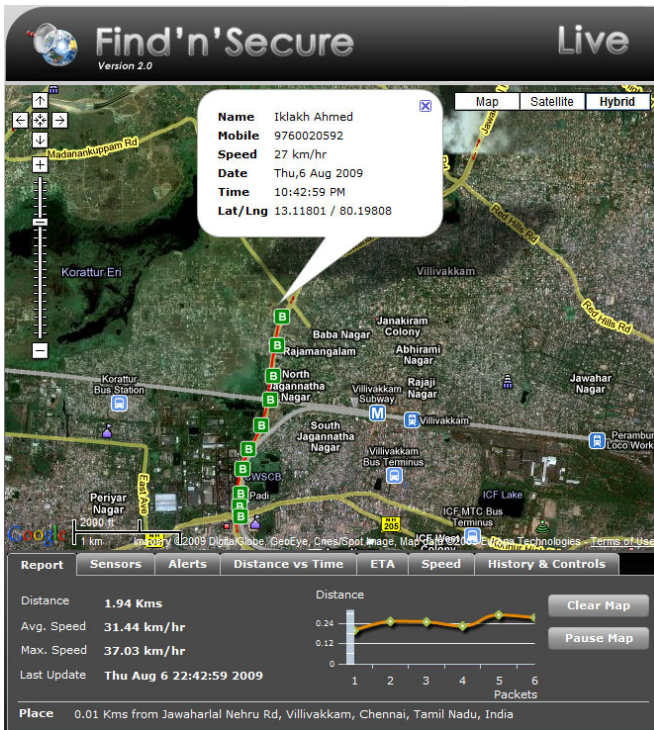
Tracking Map

Initially when you login the software, group mode is shown. In group mode all the trackers are shown on the map collectively and updated as they move and their status icons modify as per the current status. You may select the option of plotting your trackers over Google® maps or Microsoft virtual earth, whichever is your preference, the method of working remains the same. The screen shot below shows ten tracking units present over the map identified by the name A to J and different colors show different status of the units.
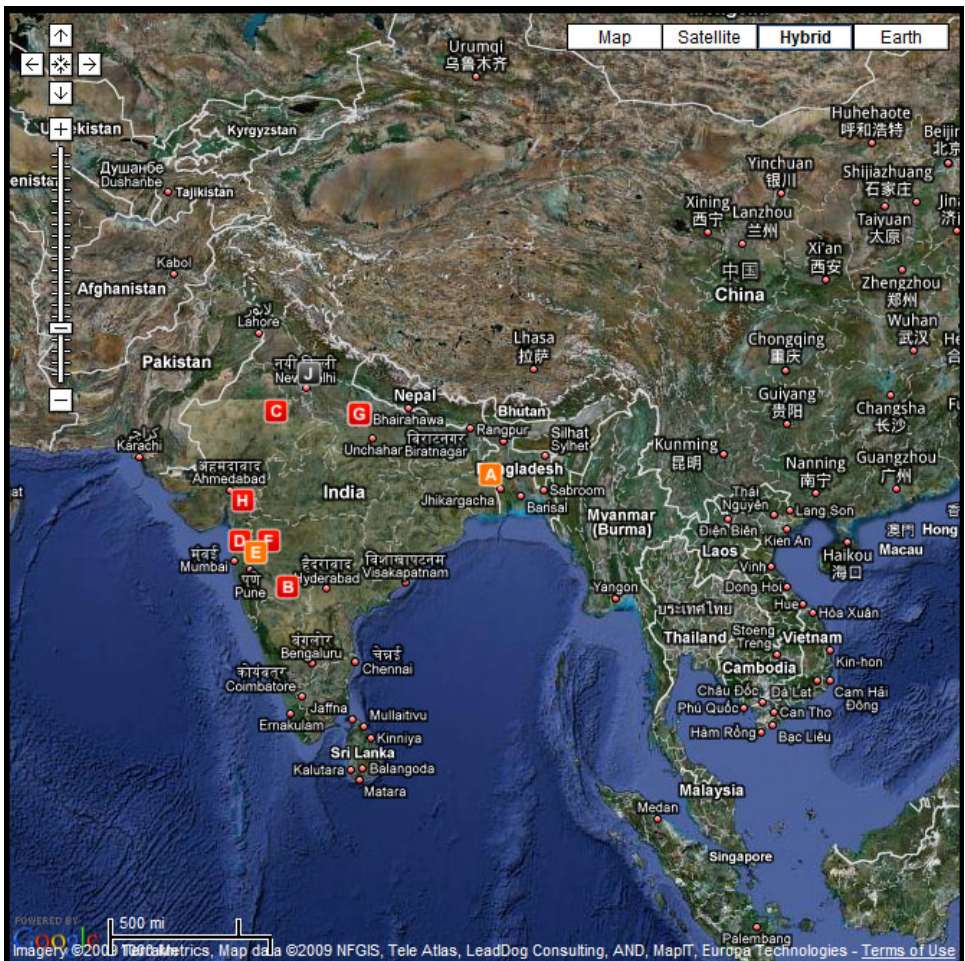

The screenshot above is a standard representation of Google® map. We will discuss some standard features of the maps here. For detailed learning you may visit http://maps.google.com

Bar on the left side of the map marked with + and – sign are used for setting up the zoom level and arrows above the bar are used for navigating map left, right, up or down. On the top-right side you can see four options available namely Map, Satellite, Hybrid and Earth.

Type	Description
Map	Only map of the region without any satellite images will be displayed. If your internet connection is slow speed one, it is recommended to select this mode as it requires less data to be transmitted to your computer
Satellite	Only satellite images
Hybrid	Satellite images with map overlaid upon it
Earth	Activated Google® earth inside the browser. You are required to have Google® Earth and geplugin installed in your computer. You may visit http://earth.google.com for more information about this.

You can zoom in the map towards the tracker by double clicking near the tracker icon on your map. Tracker icons on the map are clickable and upon clicking them you see various details of the tracker for quick accessibility and unique geo-coding mechanism.
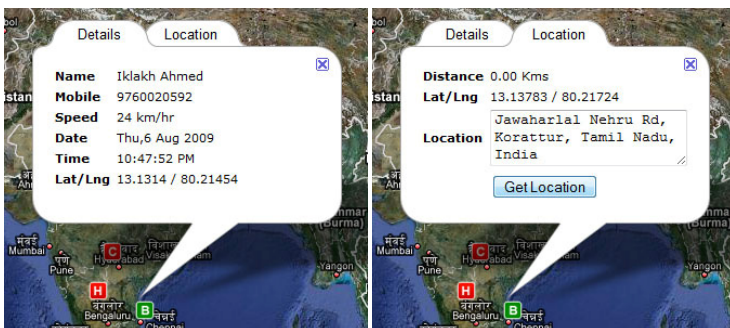
As you can see in the images above, there are two tabs namely Details and Location. Details show you the following properties: Driver name, Mobile number, Speed, Date, Time & Latitude/Longitude while Location shows you the Geocoder functionality in which upon clicking "**Get Location**",

latitude/longitude are automatically converted into human understandable textual representation like "2400 South 108th St.Milwaukee, WI 53227".

Menu Bar

Menu bar comprises of advanced utilities, Google® maps, Microsoft Virtual Earth and Logout options. Advanced utilities contain many useful tools that you can use for various purposes like Geo-fencing, Directory maintenance, Locator etc. Either Google® Maps or Microsoft Virtual Earth may be selected as your mapping engine and Logout take you out of the software.

Activating Individual Mode

Clicking over any of the trackers present in the trackers list activates individual mode. Individual mode is the complete analysis of the particular tracker in real-time. When you click on any of the tracker, the right pane of the browser window is loaded with the individual mode as shown below-

As you can see in the screenshot above, complete real-time analysis and control of the tracking unit is available through various tab windows. Tabs are divided into the following sections —

| Option	Description
Report	Detailed description of travelling.
Sensors	Details of various inputs like fuel sensor, temperature and camera images.
Alerts	History of the events occurred over the unit since the time of your login.
Distance vs Time	Graphical analysis of the distance versus time.
ETA	Expected time of arrival.
Speed	Graphical analysis of the speed.
History and Controls	Tools for viewing history and controlling the tracking unit.

Report Tab
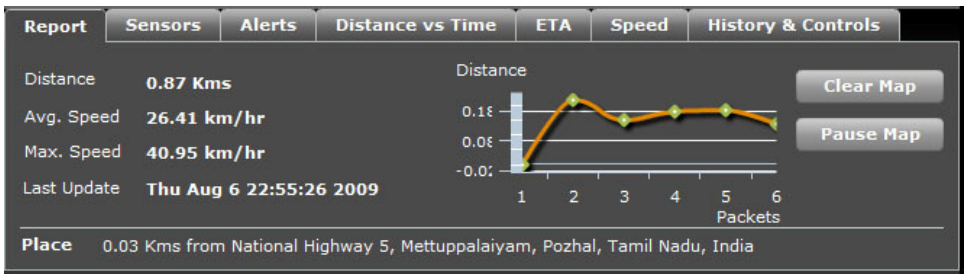
Option	Description
Distance	Distance travelled since the time you have activated individual mode.
Avg. Speed	Average speed of the tracking unit.

Max. Speed	Maximum speed achieved by the tracking unit.
Last Update	Date and time when the last location was sent by the tracker to the server.
Place	Description of the location of the unit at the time of last update.
Distance vs Time	Distance versus time graph shows the distance travelled between each reporting interval.
Clear Map	Removes all the icons and paths plotted over the map. When your window is opened for a long duration it can create lots of icons which becomes difficult to understand and also consumes resources on your computer. Therefore this option can help you make things clearer.
Pause Map	Sometimes you wish to pause plotting on the map in case you are doing some analysis of the tracking unit. This option lets you pause the tracking and allow you to conduct your analysis work and later when you resume all the points arrived during the pause interval are plotted over the map and live tracking is resumed.

Sensors Tab

This panel contains fuel, temperate and real time visual display from the vehicle. Fuel meter is an analog meter which constantly moves left and right as per readings from the tracking sensor. Temperature values supported by the software are from -40° centigrade to 80° centigrade. Images fetched live from the camera and shown next to the temperature component and keeps on changing depending upon the hardware settings. These features are available only in the specific models of the hardware.
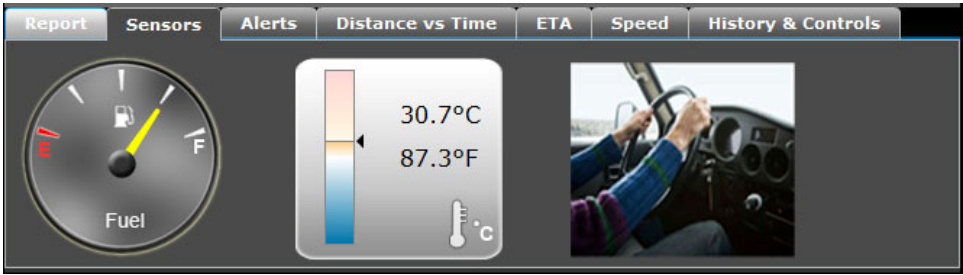
Alerts Tab

This shows all the events and alerts happening on the unit. Left side of the table shows date and time while right side displays the event occurring on the tracker.

Whenever any event occurs on the tracking unit, it is notified to the user by the following four methods :

1. Audible notification on the client computer.
2. Listing in the Alerts tab.
3. Email sent to the group head or an individual.

4. Tracker bar turns red for the particular tracker as shown in the image above.

Distance vs Time Graph

Real-time analysis of distance versus time is performed over the client-end and is plotted in the format of graph as shown below.

Expected Time of Arrival (ETA)

Through this unique utility the software computes expected time of arrival based upon different paths and current travelling parameters. For this, you have to click on the **"Mark Destination"** button and the map will appear. On the map, mark your destination. Thereafter, click on **"Compute ETA"**. For effective fleet management, we strongly recommend that you should activate route learning capability by clicking on "Start Route Learning" and after the vehicle etc. reaches destination, click it again to save it to the server.


Options	Description
Distance to be covered	Shows the left over distance along with the mode of operation for example, 0.7228 Kms DIRECT or 1.7 Kms ROUTE.

	DIRECT means software doesn't have any route present for the selected destination. ROUTE means software has prior learning of the route and computes distance based on that learning.
Estimated time required	Time required in reaching the destination.
Mark Destination	This button enables you mark the destination over the map for which you wish to know the ETA
Compute ETA	After selecting your destination you should click on this button to start the software for computation of estimated time of arrival.
Start Route Learning	If you wish your server to learn a route for this tracker, you should click on this button and once tracker has reached the destination click it again to stop route learning and save it to server.

Speed Graph

Analysis of the speed variation happening at various time intervals during journey is shown in a graphical representation. This is a very helpful graph to analyze the driving pattern of your driver and his braking habits.
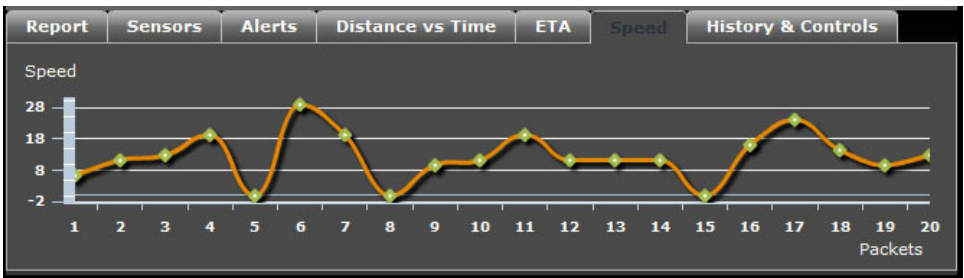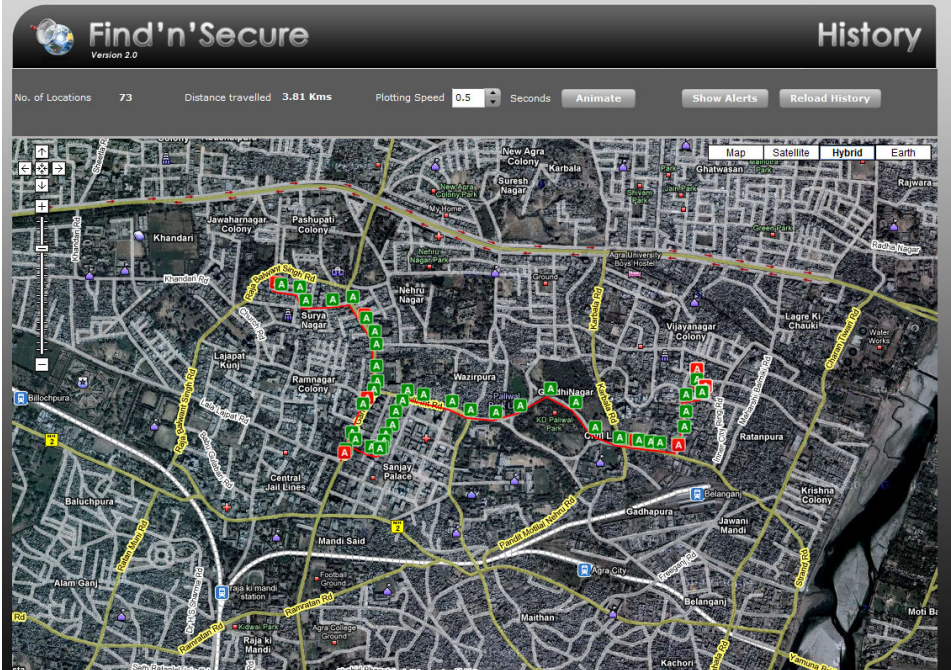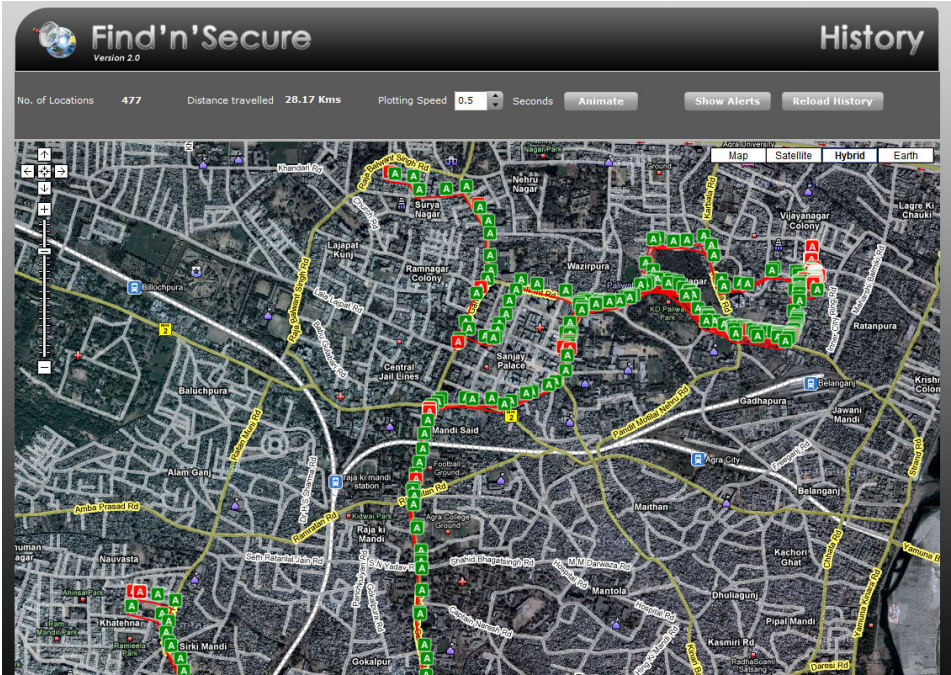
History

This panel gives you convenient options to view the history of your tracking unit and if your hardware supports output commands then you can control the unit from your desktop or laptop itself e.g., by blocking the engine, locking the door or blowing the horn to attract public attention in case of theft etc.

Quick combo-box templates allow you to see the history of the tracker quickly with the options of Today, Yesterday or Custom. Sometimes history of a particular tracker is quite complicated and understanding it may be a daunting task. In such cases, we provide a filter which enables you to make the selection of the time for which you wish to see the history. Let us show you an example of a complicated history and a simplified version of it. Check the screen shots below, in the first screen shot history is for the complete day whereas the second screen shot shows the history between 7.00 PM to 8.00 P M

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Thus you will find that in the complicated history (i.e., the first screen shot) the path of the vehicle is densely populated by icons which render the analysis hazy whereas in the simplified version (i.e., the second screen shot) path of the icons is clearly visible.

History module is equipped with various options to enable analysis of the tracking unit. These options are described in the table below.

Option	Description
No of Locations	Displays total number of locations recorded by the server during the specified period.
Distance Travelled	Total distance travelled by the tracker during the given period.
Plotting Speed	Animation of the tracking will help you understand how exactly the tracker moved. The speed with which animation should take place is decided by this option. Plotting speed is increased or decreased in steps of 0.5 seconds.
Animate	Clicking on the Animate button starts animation of the tracking unit on the map to show its precise movements.
Show Alerts	Clears up the tracker history on the map and plots down only the alerts that happened during the given period of history.
Reload History	Reloads the history module.

Controls

Vehicle tracking units may contain functions for controlling the vehicle. Some standard operations are like,

- Force Location Update
- Blow Vehicle Horn
- Stop Vehicle Horn
- Open Vehicle Doors
- Lock Vehicle Doors
- Block Vehicle Engine
- Unblock Vehicle Engine

All these operations can be controlled via web-interface if your tracking unit supports them. However, the operations listed above may change with different make / models of the tracking unit.

In order to send the command to the vehicle unit, you are required to select the control command from the drop down combo box, then select the channel of transmission i.e. GPRS or SMS and thereafter click Send.
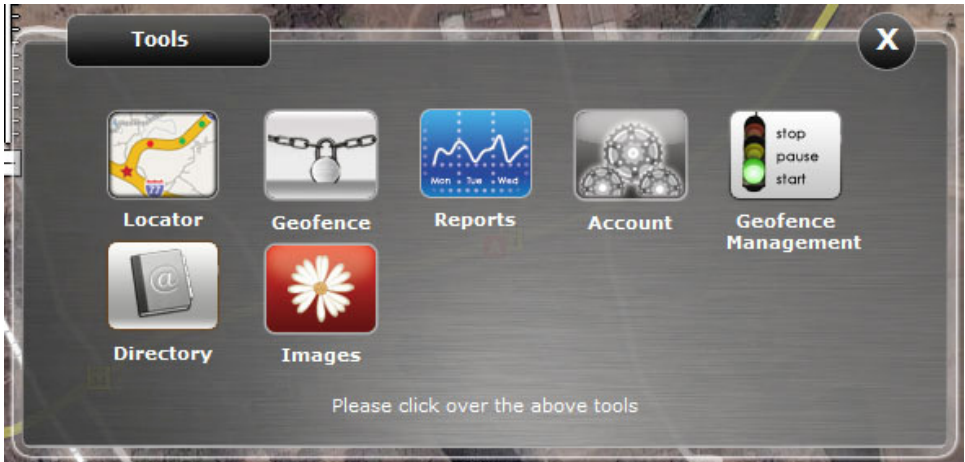
Advanced Utilities (Tools)

Find'n'Secure® software is equipped with advanced utilities which you may require for performing various types of functions like knowing when does your vehicle reach a particular place without having to be online and watching it. Find'n'Secure® comes with the following utilities

1. Locating nearest tracker (i.e., vehicle / person)
2. Geofencing drawing (Polygon and Circular)
3. Report generation
4. Account maintenance
5. Geofence management
6. Directory maintenance
7. Images/Icons uploading

You may access these tools by simply clicking over the Advanced Utilities button in the menu bar

After clicking the Advanced Utilities button, the toolbox as shown below will appear and you may click on the button for the utility which you wish to execute / see.

Locator – *Locating nearest tracker*

First tool that appears in the Advanced Utilities toolbox is the locator tool. This tool is primarily used for finding out the closest tracker (may be a vehicle) to the location of dispatch. Click over the icon **"Locator"** to open this tool and it is as simple as one-click on the map to your desired location of dispatch and you get the live module fetching location of the tracking units and updating their distance as per their movement towards or away from the dispatch location.

Some of the areas where this tool may prove useful are —

a) Taxi Management.
b) Directing police vehicles to the place of crime.
c) Sending out fire brigades to the place of fire incident.

In the screenshot below you can see there are ten vehicles placed all across India. Clicking anywhere on the map places a balloon icon over the map to mark the place of destination and updates distances of all the vehicles in the left side list in ascending order of distances.

This is a live module as the vehicles keep on changing their positions. Distances are updated automatically. Once you have identified which vehicle should be sent to the desired location you can click over the vehicle icon on the map and it shows you details of the particular tracker along with the name of the driver and his mobile phone number which makes it easy for you to give instructions

to the driver. Thus, fleet management becomes easy and simple beyond imagination.
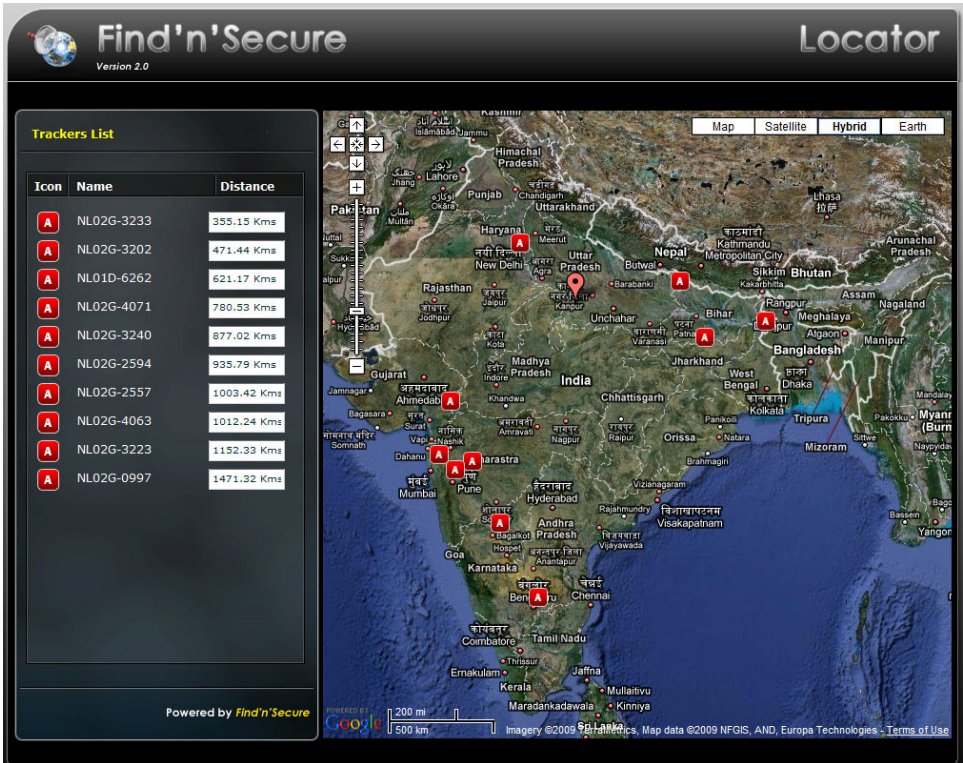
> **Location update frequency of the locator is 10 Seconds**

Skype browser integration for easy calling

Skype is one of the most popular VoIP solutions present around globe which also allows calling on the mobile phones with economy. You may install the Skype extension for your favorite browser such as Firefox or Internet Explorer and all the mobile numbers displayed in the tabs of our live module automatically convert into Skype recognized mobile calling numbers which you simply click to call or to send SMS.

Geofence

A Geofence is a virtual perimeter on a geographic area using location-based service, so that when the geofencing device enters or exits the defined area, a notification is generated. Geofencing is a critical element to telematics hardware and software. It allows users of the system to draw zones around places of work, customers' sites and secure areas.

Geofencing notifies you when an electronically tracked asset in motion, such as a person, boat or a vehicle equipped with a vehicle tracking device, crosses a virtual boundary. The notification may be sent to a cell phone, email, Personal Digital Assistant (PDA), or Find'n'Secure® tracking software. It includes complete information such as the time, date and location that the virtual boundary was crossed, allowing for an immediate investigation or response to the situation.

The geofence may be used to monitor whether a tracked asset stays within the defined boundaries. It may also warn of an asset's approach to a location, in the case of reverse geofencing.

Geofencing uses a Global Positioning System (GPS) vehicle tracking or other equipment like personal trackers with GPS technology to compare the asset position to predefined virtual boundaries. The geofence may be established as a simple shape, such as a rectangle surrounding your yard, or as large, polygonal, overlapping areas. It may also define "off-limits" destinations, like an address or geographic area. Geofencing is commonly used to manage mobile employees. A broad range of geofencing applications potentially lies ahead. The following lists just a few of the current geofencing uses:

- Manage a fleet of delivery drivers, service technicians, sales representatives, school buses, taxis, snowplows and town vehicles within a region.
- Limit fleet travel and sales regions to specific routes.
- Ensure up-to-the-minute safety of valuable, hazardous or dangerous cargo.

- Manage employees by exception rather than scrutinizing trusted employees.

- Provide advance warning of arrival at customer sites, docking bays, and ports in order to minimize loading and unloading delays.

- Prevent crossing of city, state, or regional borders or out of country cargo shipments.

- Provide warning that a child, family member or pet is leaving a yard, block, or city limits.

- Remotely disable vehicles if a boundary that has been crossed is restricted, unauthorized or unsafe.

- Alert victims of the approach of a known violent or sexual predator.

- Track domestic violence or sex offenders to enforce probation stipulations.

- Prevent vehicles from being stolen or used for unauthorized or illegal purposes.

- Prevent wildlife from infringing on livestock or crop raiding, such as in the case of Kenya's Save the Elephant group.

Find'n'Secure® software is equipped with state-of-art geofencing support to ensure maximum benefit.

Geofence – *Visual drawing tool*

Second icon in the advanced utilities is the geofence visual drawing tool, as shown in the screenshot below. It is somewhat similar to the locator tool in visual appearance i.e. left side is the toolbar helping you in drawing the geofence and right side is the map on which you can see and modify the geofence boundaries.
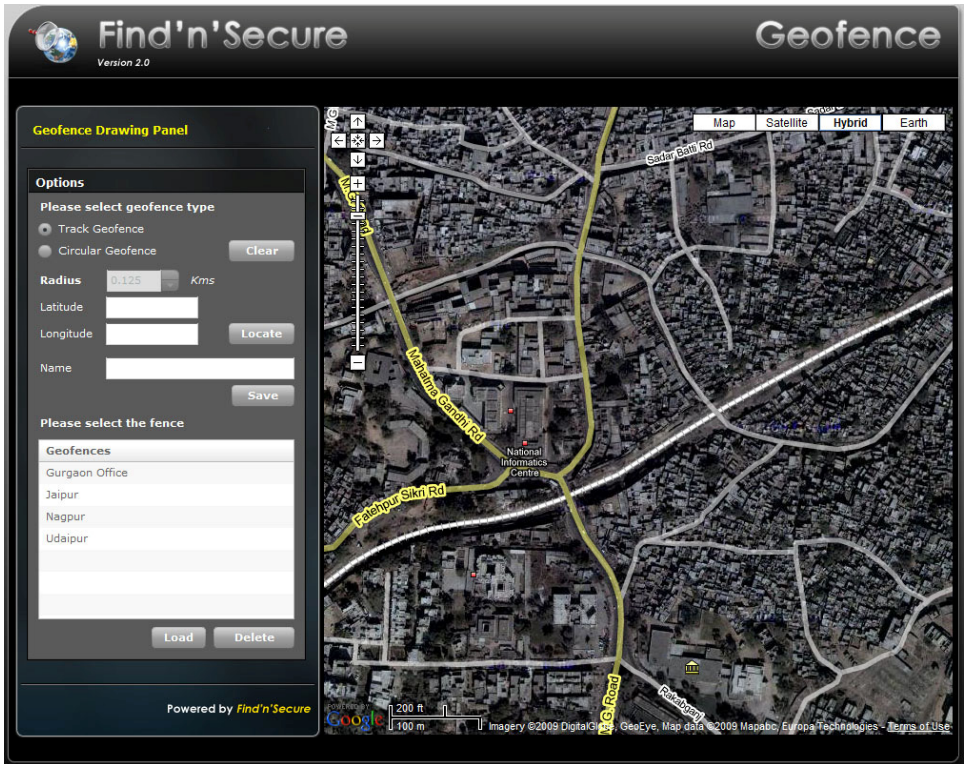
Find'n'Secure® version 2.0 supports two basic types of geofences

1. Track geofence — up to 128 points polygon can be created.
2. Circular geofence.

The following table describes the functions of various options present in the toolbar on the left side of the screen

| Options	Description
Track Geofence	Select polygon mode for drawing geofence on the map.
Circular Geofence	Select circular mode for drawing geofence on the map.
Clear	Track mode — Clears all the points on the map.
	Circular mode — Clear circular geofence on the map.
Radius	Set radius of the circular geofence.

|	
Latitude	Latitude for custom navigation of the map.
Longitude	Longitude for custom navigation of the map.
Locate	Navigate map to the desired Latitude/Longitude.
Name	Name that is assigned for drawn geofence.
Save	Save the geofence to the server.
Geofences	List of geofences you have already created and saved on the server.
Load	Select a fence from the list and click over this button to see the geofence on the map.
Delete	Erase the selected geofence from the server.

Map navigation

First step in drawing the geofence is to navigate to your desired location. This can be done simply by putting down the Latitude and Longitude for your location and click on the '**Locate**' button.

Drawing track geofence

Select '**Track Geofence**' in the options panel. Drawing track geofence is as simple as clicking on the map. Single click on the map places a new point over it. You may continue clicking over the map to create a fence in the clockwise or counter-clockwise direction as shown in the image below :
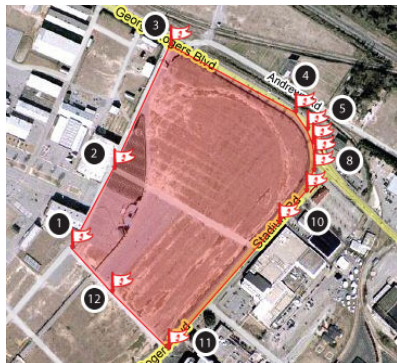
You may also adjust the geofence by clicking and holding the left mouse button over the flag icon and dragging as shown below in the image :
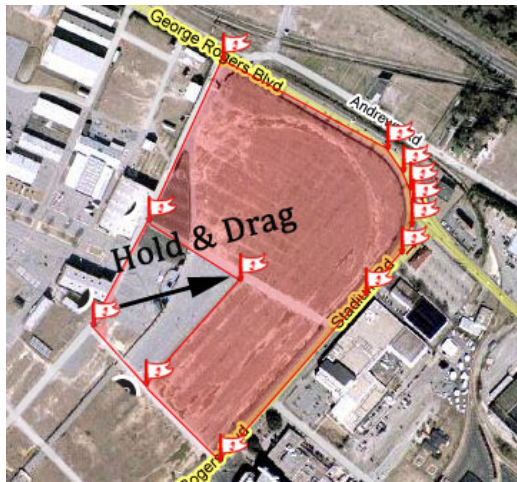
If for any reason you want to remove the point, simply click over the flag icon of the point to be removed, a popup window will appear as shown below. Click **"Remove"** in the popup window.
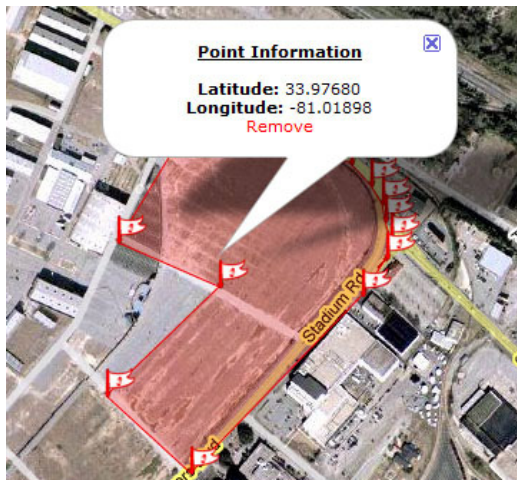
Once you have completed the drawing of the geofence, simply put down the name for your fence and click '**Save**' button.

Drawing circular geofence

Select '**Circular Geofence**' in the options panel and click over the map.

Dragging the flag icon, as in case of the track geofence, shifts the circular geofence around the map for fine tuning. In the options panel you may set the radius of the circular fence as per your requirements and the display is updated automatically to reflect the new geofence.

Once you have completed the drawing of the geofence, simply put down the name of your fence in the space meant for and click '**Save**' button.

Load Geofence

In order to have a look at the created geofence on the map, select the Geofence from the Geofences list and click over "**Load**" button. Alternatively, double clicking over the fence automatically loads the fence on the map and draws it down.

Delete Geofence

Select the Geofence from the Geofences list and click "Delete" button to remove the geofence from the server. Removing the geofence automatically deactivates the named fence over all the selected trackers.

Geofence Management

This utility allows you to activate and deactivate the geofences which you created using the Geofence drawing tool.

Activate Geofence

When you open the Geofence Management tool, by default you will see the "**Activate Fence**" option selected in the two tabs present as shown below in the screen shot.

Various Menu items of this utility are explained below :

Option	Description
Tracker Name	Contains the list of all the trackers active in your account.
Fence Name	Contains the list of all the geofences you have created using the Geofence tool.
Select Method	Dropdown combo-box has the following options : *Always* — Geofence is always on. *Period* — Geofence is activated only for the particular period you select, e.g., 20th June 2009, From 6.00 AM to 10.00 AM. *Everyday* — Geofence is automatically turned on everyday for the selected period for example every day from 10.00 PM to 6.00 AM.

Start Date	Starting date of the geofence.
Hour	24 hours clock hour from which geofence shall start.
Minutes	Minute in combination with Hour at which geofence shall start.
End Date	The date on which the geofence will stop.
Hour	24 hours clock hour at which geofence shall end.
Minutes	Minute in combination with Hour on which geofence shall come to a halt.
Activate Fence	Activates the fence on the selected tracker.

You can activate multiple fences on the multiple trackers by holding down the Ctrl key on your keyboard while selecting the trackers and the fences.

Deactivate Geofence

By default, periodic geofences are removed automatically from the server but for other geofences you need to remove them manually. For this, the functionality of deactivating the geofences is provided.

Click on the **"Deactivate Fence"** tab just next to the **"Activate Fence"** tab and you will see all the currently active fences on the server as shown in the screenshot below. You may select single or multiple geofences whichever you wish to deactivate and simply click over **"Deactivate Fence"** button to deactivate them.

Reports

Find'n'Secure® software is equipped with handy to use reports. Reporting is an essential tool when you need to do complete analysis of a tracker for a certain period of time. **Findnsecure** comes with the following pre-defined reports:

Report	Description
Geofence	Gives you detailed description of the entry and leaving of the tracker from the geofence along with the names of the points of entry and exit.

Trip Analysis	Detailed description of the movement and the stopover of the tracking units along with the names of the places of stopover.
Distance	Distances travelled by the trackers on day by day basis.
Overspeed	Points where over-speeding has happened.
Events	All the events that occur on the tracker, for example, activation of inputs and outputs is reflected in this report.
Current Fleet	Gives the complete report of fleet position along with their current status i.e. moving, stopped or idle and the current position.

The most unique feature of the Find'n'Secure® software is the raw data providing mechanism for the expansion of the reports. You can make use of this facility in the enterprise version for creating custom reports by utilizing MySQL database system. All the reports generated by the software are in pure HTML format which makes it possible to copy them in almost all the software like MS-Word, MS-Excel, Adobe Acrobat etc.

As shown in the screenshot above, you can select the report type from the dropdown combo box; then select the tracker for which you need the report to be generated and lastly define the period for which you need the report. Click over the **"Generate Report"** button to get the report.

Sample trip report

In the screenshot below, a sample trip report for a tracker is shown below which is self explanatory.

Account — Modify Password

You may modify your passwords for main account and associated public accounts through this utility. The screenshot of the Account utility is shown below and various options available are described in the table there-under.

Option	Description
Current Password	Your valid password for login when you visit http://track.findnsecure.com.
New Password	New password which you wish to assign.
Confirm Password	Repeat the new password which you wish to assign, so that you don't make any typing error.
Save	Save the main account password to the database server.
Public Accounts	All the public accounts associated with your account are displayed down here and you may reset the password of these accounts by selecting the username and typing new password for the account.
Save	Save public account password to the database server.
Back	Return back to the main Advanced utilities window.

Directory

Directory services offer you to create a database on the server with the information about your clients. Directory is a very useful tool for dispatch system and it is integrated with the Locator tool to allow dispatch of the

vehicles as fast as possible to your clients and thereby increasing the overall efficiency of your fleet. Click on the **"Directory"** in the advanced utilities to open the directory tool as shown in the screenshot below.

You can feed the details of your clients in the fields of this tool. Two fields are mandatory viz., Name & Mobile number. Once you have completed the entries, simply click on the Add button to save the details on to the server.

Directory services are equipped with extensive search module in which you can perform search on basis of the following :

1. Name or Email

2. Phone number

3. Any

Once you have performed the search, you may click on any of the records that come up in the search list to load it on the screen.

Two unique fields in this Directory are Latitude and Longitude of your client which you can find out from the live module and feed in here. Once you have

valid latitude and longitude you can use the Locate button to open up the Locator tool window automatically and check out trackers closest to your client place.
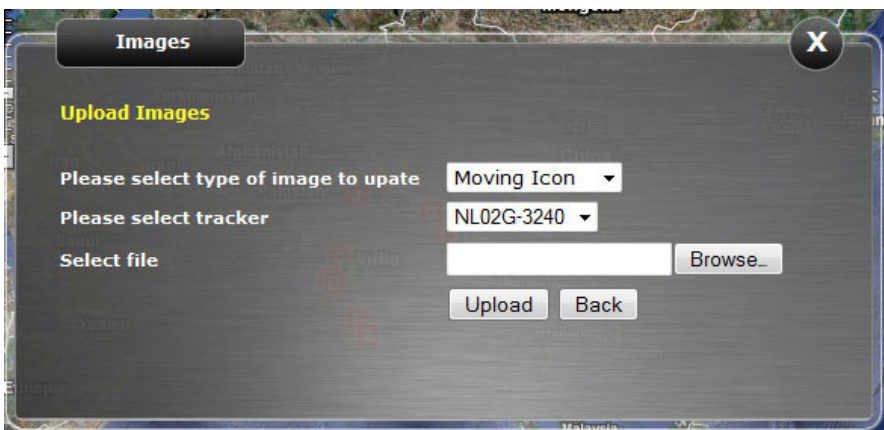
Images

This utility of the software is meant for customizing the looks of your Graphical User Interface (GUI). All the trackers may have their custom icons for different modes namely moving, stopped, idling, no data & alerts. In the first combo-box you need to select the type of the icon you wish to update among the following choices :

1. Moving Icon
2. No Data Icon
3. Idle Icon
4. Stopped Icon
5. Alerts Icon

Once you have selected the type of icon, you need to identify the tracker from the combo-box below it. After this, click on the **"Browse"** button to select the icon image which you wish to assign and click the **"Upload"** button.

The last option in the type of image is the profile image option which updates the image that appears in the profile section when you log in to the software. This image can be your company logo or your vehicle or anything you wish to be displayed there.

The sizes of the icons and images should be kept within the parameters mentioned below otherwise they will take time to download and will be of no use.

- Icons: 23x23 pixels
- Profile Image: 60x60 pixels

File format being uploaded should be in PNG. Some common icons can be downloaded from the www.findnsecure.com/downloads.html

Forgot Username/Password

If you have forgotten your login username/password then on the login screen you will see the Forgot Password option on which you can click and feed in your email address which is registered on Find'n'Secure® software. Your username/password will then be sent via email to your account.

Public User Interface

Public accounts are used as a public utility account in which people whom you distribute the username/password may only view the elementary information about the tracking and simple analysis.

For example, a person hires a taxi from a fleet owner (a company) and he wants his to track the vehicle so hired by him. In this case, the Taxi Company (the fleet owner) will assign a User Name and password to their client who has hired the taxi. Such a case will fall under public accounts. This public accounts feature can also be used by parents to track the school bus in which their children are travelling.

As you can see in the screenshot given on the next page, the following panels are deactivated from the public mode:

- Alerts

- ETA

- History & Controls

Additionally, public accounts also disable the use of any advanced utilities like geofencing, reports generations, directory maintenance etc.
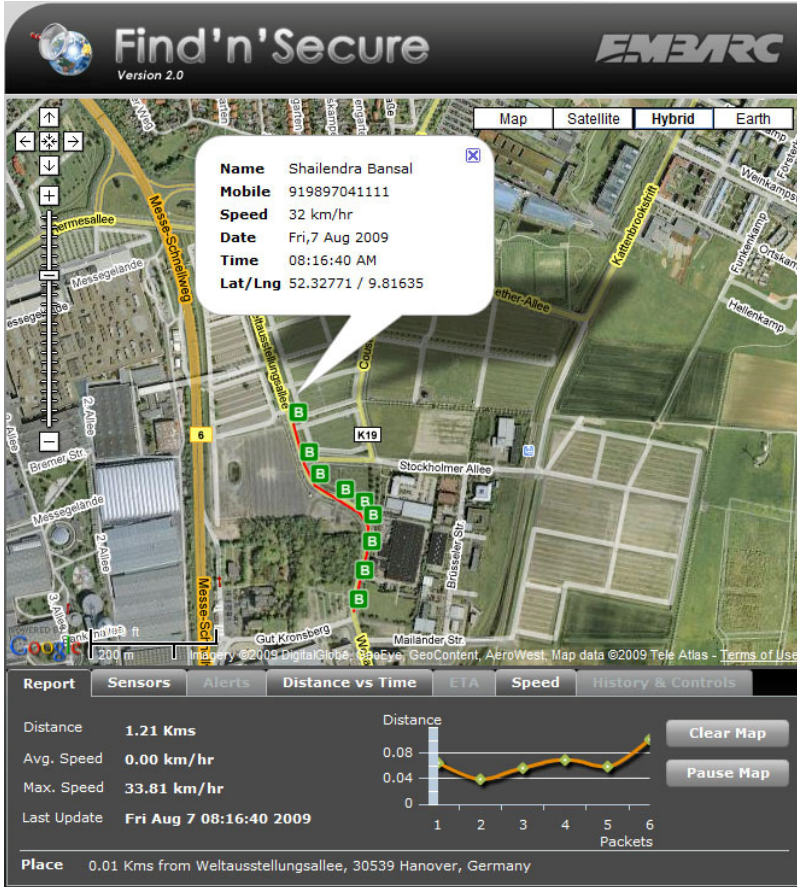

Customer Care User Interface

Your customer care center can be a vital utility in providing fast after sales service to your clients. Keeping this in mind Find'n'Secure® software provides customer care accounts described in the administration section.

When you login as a customer care executive you have the complete list of the client accounts (Group / Individuals) accessible to you. You may select the account to whom you wish to provide the service and login to his account

without the need of asking your client about his username or password. The screenshot below shows you the customer care login screen
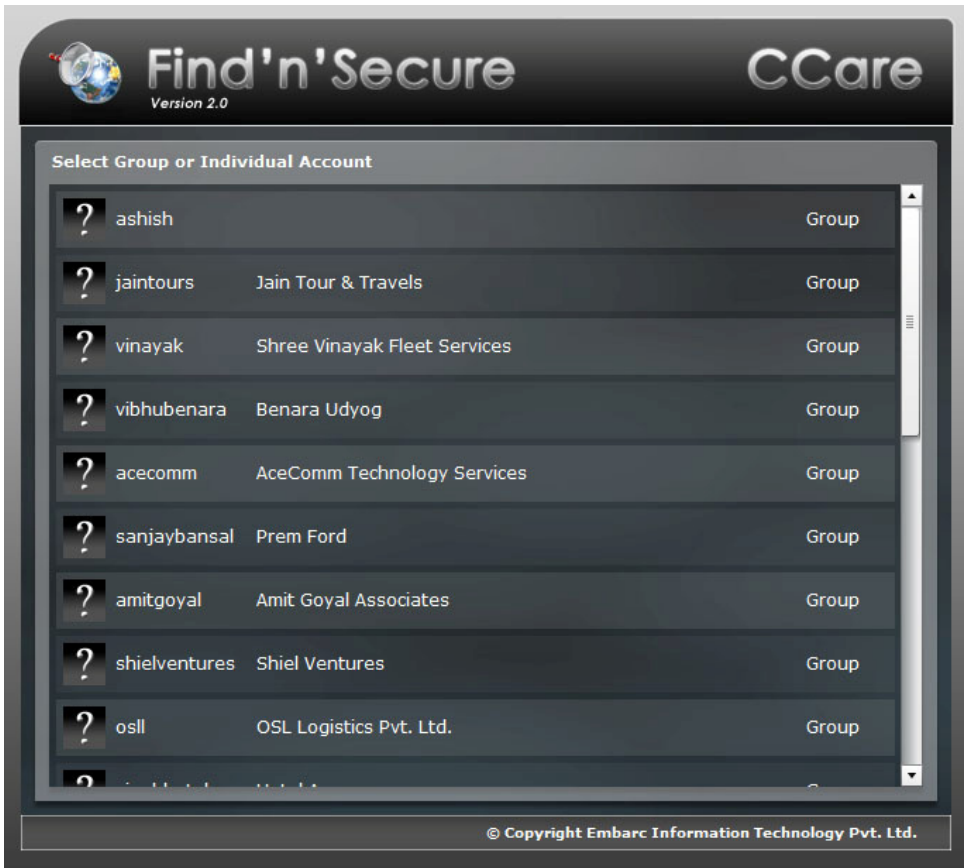
Some day-to-day scenarios are explained below to understand this utility :

Scenario I

The vehicle of your customer has been stolen and he doesn't have internet accessibility. He rings you up for help and wants that the engine of his vehicle be blocked and reported to police. Your Customer Care Centre executive may enter into the customer's account without asking him the username and password by simply clicking on his name in the list appearing in the screenshot shown above and after verifying his credentials may carry out the activity of tracing the vehicle, blocking the engine and informing the police.

Scenario 2

One of your customers has forgotten the location of his car parked by him in the market. He rings you up to help him in locating the car by blowing its horn. Your customer care executive may enter into his account by clicking on the customer's name and then carry out the activity of blow horn after verifying his credentials.

Alerts on Mobile

Whenever alerts are generated, they are delivered to the group head on his email address. The group head can choose to have the alerts forwarded to his mobile phone too. There are many ways to do this. One of them is to use "push email" wherein email received on the specified email address is automatically "pushed" to the mobile phone of the user. GMAIL is now providing free IMAP and Push email service to its users. More information on configuring mobile phone for GMAIL push email can be had from http://mail.google.com/support/bin/topic.py?topic=12760 The other method is to setup email account such that email from a specified email id is delivered as sms to the mobile phone of the user. Hotmail (www.hotmail.com) and Yahoo (www.yahoo.com) provide this type of service is many countries. There are country specific services too for email to sms delivery. Please check with your GSM operator for details.

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