



USER MANUAL

This document describes how to administer ALCASAR with the ALCASAR Control Center (ACC) or by using Linux command lines.

Project : ALCASAR	Author : Rexy and 3abtux with support of « ALCASAR Team ». Thanks to the main translator (Clément).
Object : User manual	Version : 2.9.2
Keywords : captive portal, access control, accountability, traceability, authentication	Date : 2016 January

Table of contents

1. Introduction	3
2. Network settings	4
2.1. ALCASAR settings.....	5
2.2. Client devices settings.....	5
3. Managing users and their devices	7
3.1. Network activity.....	7
3.2. Creating groups.....	8
3.3. Editing and removing a group.....	9
3.4. Creating users.....	9
3.5. Searching and editing users.....	10
3.6. Importing users.....	11
3.7. Emptying the user database.....	11
3.8. Authentication exceptions.....	11
3.9. Auto-registration via SMS.....	12
4. Filtering	15
4.1. Blacklist and Whitelist.....	15
4.2. Protocols filtering.....	16
5. Access to Statistics	17
5.1. Number of connections per user per day.....	17
5.2. Connection status of users.....	17
5.3. Daily use.....	18
5.4. Global and detailed traffic.....	18
5.5. Security Report.....	20
6. Backup	20
6.1. Connection logs.....	20
6.2. The users database.....	21
7. Advanced features	21
7.1. Administration accounts management.....	21
7.2. Secure administration across the Internet.....	21
7.3. Display your logo.....	24
7.4. Modifying the certificate of security.....	24
7.5. Use of an external directory server (LDAP or AD).....	25
7.6. Integration in a complex architecture (AD, external DHCP, LDAP).....	25
7.7. Encryption of log files.....	27
7.8. Managing multiple Internet connections (load balancing).....	28
7.9. Creating an ALCASAR dedicated PC.....	28
7.10. Bypassing the portal.....	28
8. Shutdown, restart, update and reinstallation	29
8.1. Shutdown and restart.....	29
8.2. Operating system update.....	29
8.3. ALCASAR minor updates.....	29
8.4. ALCASAR major update or reinstallation.....	29
9. Troubleshooting	30
9.1. Network connectivity.....	30
9.2. Available disk space.....	30
9.3. ALCASAR server services.....	30
9.4. Client devices connection.....	31
9.5. Connection to ALCASAR with a serial terminal.....	31
9.6. Problems experienced.....	32
9.7. Optimization server.....	33
10. Security	34
10.1. On ALCASAR.....	34
10.2. On the network.....	34
11. Annexes	36
11.1. Useful commands and files.....	36
11.2. Helpful authentication exceptions.....	37
11.3. User sheet.....	38

1. Introduction

ALCASAR is a free and open-source Network Access Controller (NAC). This paper describes how to use it and how to administer it.

The following screenshot is displayed for users attempting to access an HTTP website. This page is available in English, Spanish, German, Dutch, French and Portuguese depending on the browsers settings. As long as the user is not logged in, no traffic will pass through ALCASAR.



Information System Security

- That control was set up regulations to ensure traceability, accountability and non-repudiation of connections.
- The recorded data can be able to be operated by a judicial authority in the course of an investigation.
- Your activity on the network is registered in accordance with privacy.
- These data will be automatically deleted after one year.
- Click [here](#) to change your password or to integrate the security certificate in your browser



Contrôle d'accès au réseau



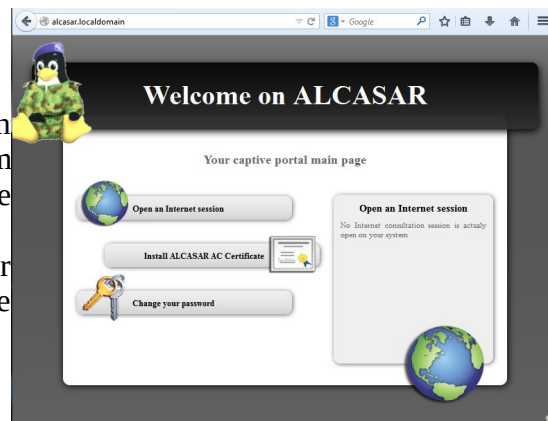
Sécurité des Systèmes d'Information

- Ce contrôle a été mis en place pour assurer réglementairement la traçabilité, l'immuabilité et la non-répudiation des connexions.
- Les données enregistrées ne pourront être exploitées que par une autorité judiciaire dans le cadre d'une enquête.
- Votre activité sur le réseau est enregistrée conformément au respect de la vie privée.
- Ces données seront automatiquement supprimées au bout d'un an.
- Cliquez [ici](#) pour changer votre mot de passe ou pour intégrer le certificat de sécurité à votre navigateur.



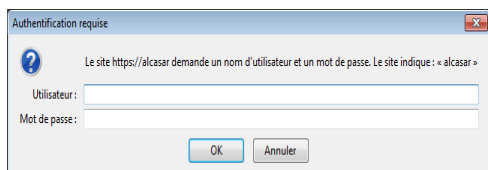
The homepage of the portal is available for any browser connected on the network. By default, the URL is <http://alcasar.localdomain>. From there, users can log on, log out, change their password and install the security certificate into their web browsers.

Administrators can access the graphical ALCASAR Control Center (A.C.C) by clicking the little notched wheel at the bottom right of the page (or via <https://alcasar.localdomain/acc/>).

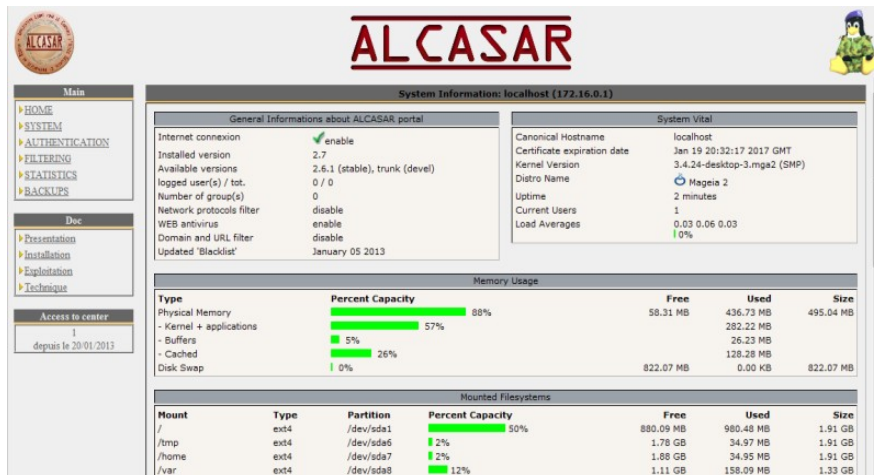


This ACC is available in two languages (English and French) via an encrypted flow (HTTPS). An authentication is required with a login name in one of the three following profiles (cf. §7.1) :

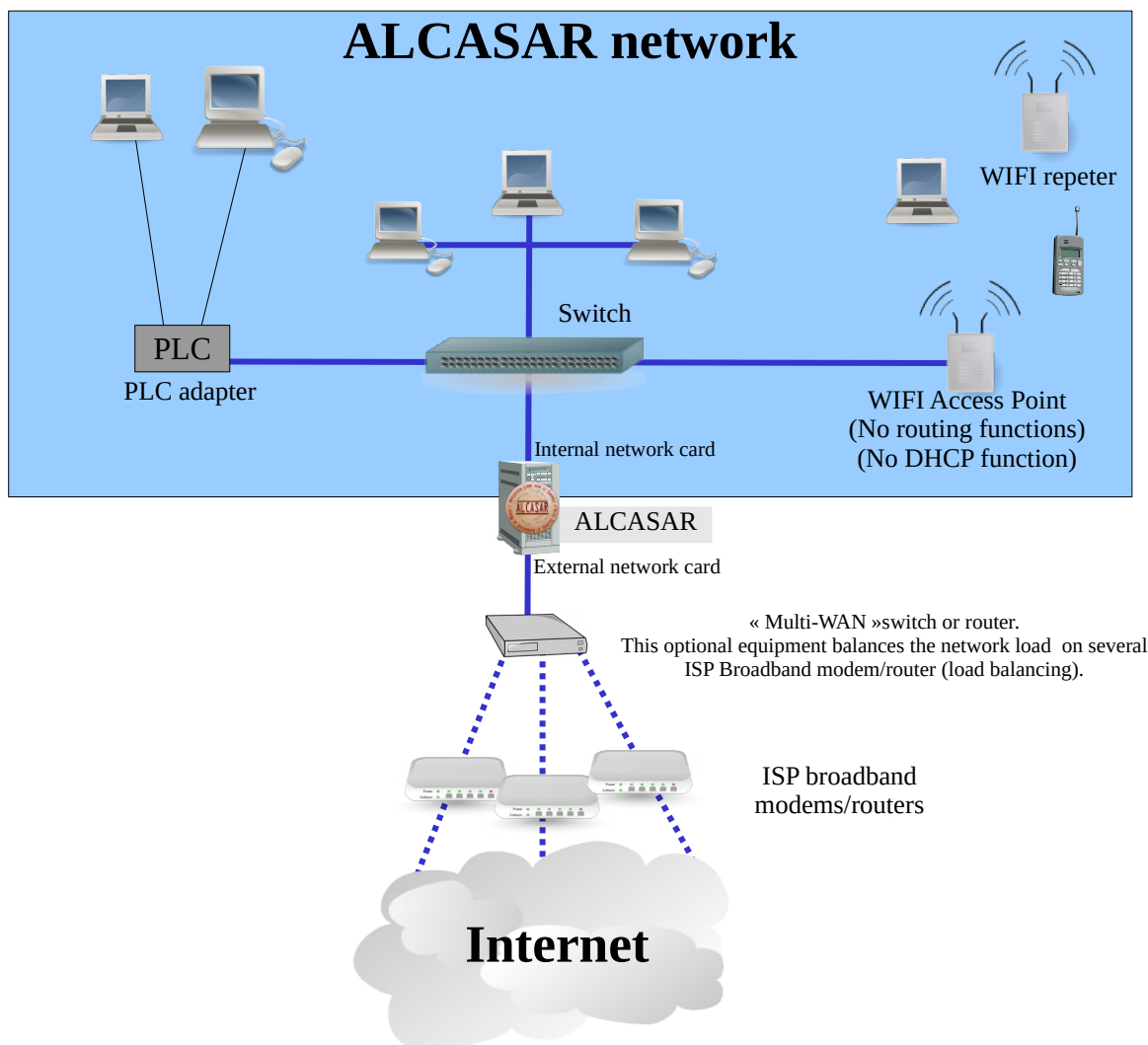
- profile « admin » can use all the administration functions ;
- profile « manager » is limited to user management functions ;
- profile « backup » is limited to a backup (of the log files) function.



Warning : The intrusion detection system of ALCASAR will forbid new connection attempts during 3' if it detects three connection failures on ACC.



2. Network settings



On the ALCASAR network, devices can be connected with multiple technologies (wired Ethernet, WiFi, PCL, etc.). For all these devices, ALCASAR is the DNS, the time server and the default gateway.

CAUTION: On the consultation network, no other gateway should be present (verify the PLC and WIFI Access Point settings).

The IP address setting of the network is defined during the installation process of the portal.

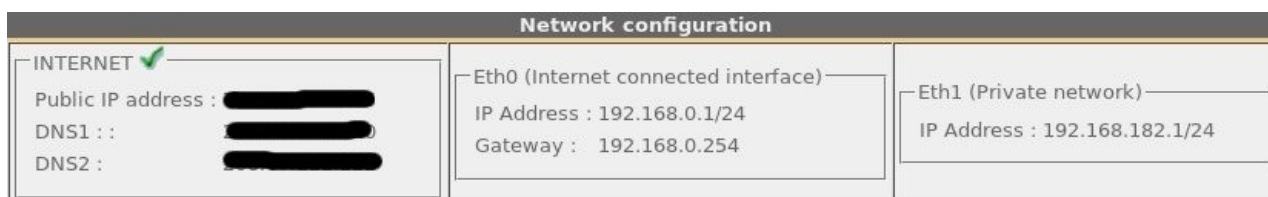
For example, with a class C network (default configuration)

- Network IP Address : 192.168.182.0/24 (sub-net mask : 255.255.255.0) ;
- Max number of devices : 253 ;
- IP address of internal network card of ALCASAR : 192.168.182.1/24 ;
- Parameters of connected devices :
 - available IP addresses : between 192.168.182.3 and 192.168.182.254 (static or dynamic) ;
 - DNS server address : 192.168.182.1 (IP address of internal network card of ALCASAR) ;
 - DNS suffix : localdomain (this DNS suffix must be set in the static address setting of the client device) ;
 - Default gateway IP address : 192.168.182.1 (IP address of internal network card of ALCASAR) ;
 - network mask : 255.255.255.0

2.1. ALCASAR settings

You can change ALCASAR network settings in the « system » + « network » menu.

a) IP configuration

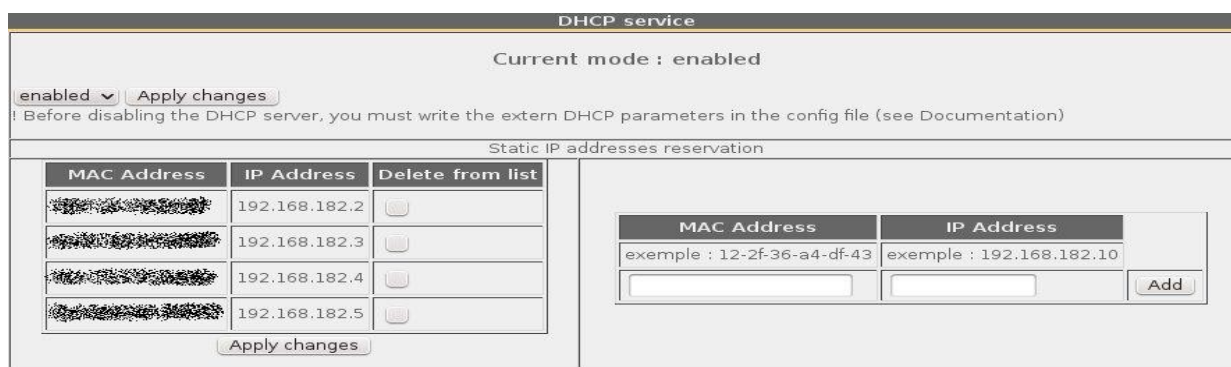


The screenshot shows the 'Network configuration' window. It is divided into three main sections:

- INTERNET** (with a green checkmark):
 - Public IP address : [redacted]
 - DNS1 : : [redacted]
 - DNS2 : [redacted]
- Eth0 (Internet connected interface)**:
 - IP Address : 192.168.0.1/24
 - Gateway : 192.168.0.254
- Eth1 (Private network)**:
 - IP Address : 192.168.182.1/24

Currently, these parameters cannot be modified directly with the ACC. Nevertheless, you can change them in a text console by editing the file « `/usr/local/etc/alcasar.conf` ». When modifications are made, apply them with the command line « `alcasar-conf.sh --apply` ».

b) DHCP server



The screenshot shows the 'DHCP service' configuration window. It includes the following elements:

- Current mode**: enabled
- Control**: A dropdown menu set to 'enabled' and an 'Apply changes' button.
- Warning**: A message stating, 'Before disabling the DHCP server, you must write the extern DHCP parameters in the config file (see Documentation)'. The word 'extern' is highlighted in yellow.
- Static IP addresses reservation**: A table with three columns: 'MAC Address', 'IP Address', and 'Delete from list'. It contains four rows of reserved addresses.
- Addition Form**: A form with two input fields for 'MAC Address' and 'IP Address', and an 'Add' button.
- Apply changes**: A button at the bottom of the reservation table.

The DHCP (Dynamic Host Control Protocol) server provides IP settings to client devices connected on the network.

You can reserve IP addresses for devices that need static IP addresses (servers, printers, WiFi AccessPoint). Be sure that no other DHCP server is connected on your network. Or be sure to well knowing how manage multi-DHCP service (cf. §8.5a to manage the cohabitation with a A.D. © server).

2.2. Client devices settings

a) Client device setting

A “User sheet” is available at the end of this manual.

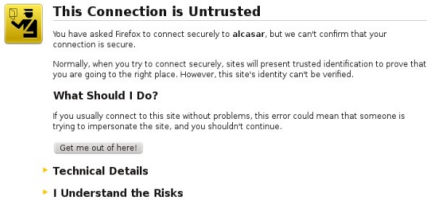
Users only need a system in **DHCP mode** and a browser supporting « **JavaScript** » and « **pop-up** » windows. To be intercepted by ALCASAR, browsers must try to access a **HTTP** (and only HTTP) website. The **proxy** server settings must be **disabled**.

b) Adding bookmark

On browsers, it can be useful to add ALCASAR homepage (<http://alcasar.localdomain/>) to bookmarks in order to allow users to change their password, to log out or to install the ALCASAR security certificate.

c) Installing the ALCASAR security certificate

Some communications between client devices and ALCASAR are encrypted with SSL (Secure Socket Layer) protocol. This protocol needs two certificates created during the installation: the ALCASAR certificate and the local Certification Authority (C.A.) certificate. By default, browsers don't know this certification authority. So, one of the following page is displayed when they connect to the portal for the first time.



« Mozilla-Firefox »

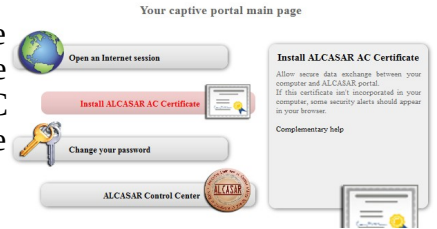


« Microsoft-I.E. »

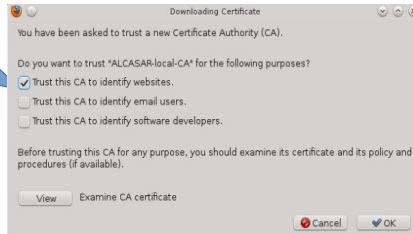


« Google-chrome »

Although it is possible to continue to browse, it is recommended to install the security certificate of this C.A. in browsers so that they don't display these pages anymore¹. To do that, click the zone « Install ALCASAR AC certificate » of the ALCASAR homepage. For each browser, follow the following steps :



Select « Trust this CA to identify websites ».

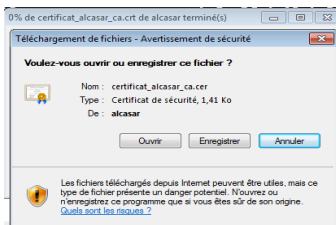


Select : « Open in Kleopatra »

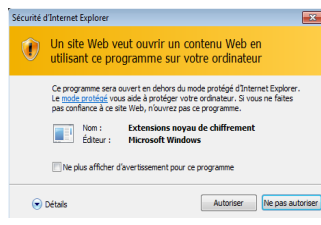


« Mozilla-Firefox »

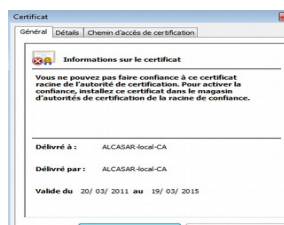
Konqueror



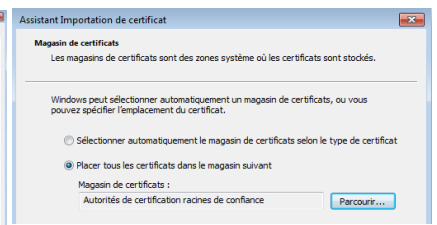
1 – click « open »



2 – click « authorize »



3 – click « install the certificate »



4 – Choose the store « Trusted root certification authorities »

« Internet Explorer 8 » and « Safari »

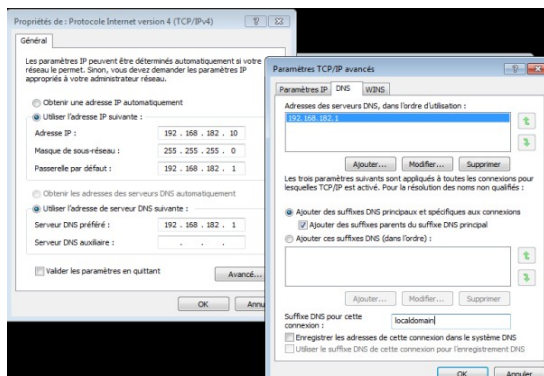
« Google chrome »: Google Chrome saves the certificate locally (« *certificat_alcasar_ca.crt* »). Select « preferences » in the configuration menu, then « advanced options », then « manage certificates » and then « import » in the tab « Authorities ».

¹ You can avoid this manipulation either in buying and including in ALCASAR an official certificate which is known by all web browsers (see §8.4), or in disabling the encryption of authenticating flow with the script « *alcasar-https.sh* {--on|--off} ». Disabling the encryption means that you perfectly manage your ALCASAR network (see §11).

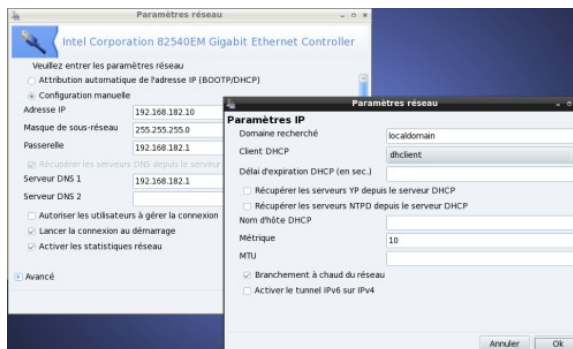
d) Network configuration in static mode (servers, printers, WIFI access points, etc.) :

For these devices, the required parameters are the following :

- default gateway : IP address of the eth1 network interface of ALCASAR ;
- DNS server : IP address of the eth1 network interface of ALCASAR ;
- DNS suffix : localdomain



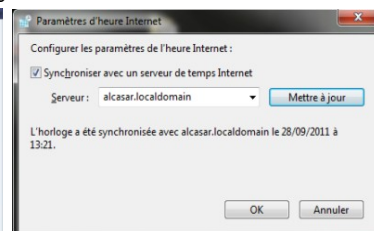
« Windows Seven »



« Mageia Linux »

e) Time synchronization

ALCASAR includes a network time server (« NTP » protocol) allowing you to synchronize devices connected to the ALCASAR network. Thus, on Windows or on Linux, you can define ALCASAR server as the time server by right clicking on the clock of the desktop. Enter « alcasar » on Linux and « alcasar.localdomain » on Windows.



Note: All NTP flows from consultation network are redirected to ALCASAR.

3. Managing users and their devices



User management interface is available in the menu « AUTHENTICATION »). You can :

- display the network activity. Disconnect a user.
- create, search, modify and remove a user or user group ;
- import user names from a text file or from a user database backup ;
- empty the user database ;
- define trusted client devices allowed to connect to the Internet without authentication (exceptions).

3.1. Network activity

ALCASAR				
Activité sur le réseau de consultation				
Cette page est rafraîchie toutes les 30 secondes				
#	Adresse IP	Adresse MAC	Usager	Ac
1	192.168.182.100	00-21-97-6B-57-E5	██████████	Déconnecter
2	192.168.182.173	00-02-72-85-75-ED	██████████	Déconnecter
3	192.168.182.130	00-16-EA-58-9B-04	██████████	Déconnecter
4	192.168.182.131	00-16-6F-A1-EB-60	██████████	Déconnecter
5	192.168.182.137	00-1A-A0-2F-10-DB	@MAC autorisée	
6	192.168.182.162	00-24-01-0B-95-CB		Dissocier
7	192.168.182.132	00-24-2B-71-24-1C		Dissocier
8	192.168.182.165	00-0F-3D-67-E2-48		Dissocier

A connected user device. You can log out him or click on his name to view his profile

Device allowed to browse the Internet without authentication on ALCASAR (trusted device - see §4.7.c)

Device connected on the ALCASAR network but with no user authenticated. You can remove this record (disassociate). It is required if you want to change the device's static IP address or when a client device has a wrong IP address.

3.2. Creating groups

Generally, in order to minimize the administration load, it's interesting to manage user group instead of each user. For that, the first thing to do is to define the list of user group to create.

When you create a user group, you can define attributes of all the users of this group. These attributes are taken into account only if they are not empty. Thus, let the attribute empty if you don't want to use it. For assistance, click on the attribute name.

Create a group

Already created group(s)	The group list is empty	
Group name	<input type="text"/>	
Members of group : (separate by a 'space' or a 'carriage return')	<input type="text"/>	
Expiration date	:=	<input type="text"/>
Maximum time of connection (in seconds)	:=	<input type="text"/> s
Maximum time for a session (in seconds)	:=	<input type="text"/> s
Maximum time of connection per day (in seconds)	:=	<input type="text"/> s
Maximum time of connection per month (in seconds)	:=	<input type="text"/> s
Number of concurrent login	:=	<input type="text"/>
Weekly period	:=	<input type="text"/>
Maximum of data uploaded (in octets)	=	<input type="text"/>
Maximum of data downloaded (in octets)	=	<input type="text"/>
Maximum of data exchanged (in octets)	=	<input type="text"/>
Maximum upload bandwidth (in kbits/second)	=	<input type="text"/>
Maximum download bandwidth (in kbits/second)	=	<input type="text"/>
Redirection URL	=	<input type="text"/>
Filtering	:=	<div style="border: 1px solid #ccc; padding: 2px;"> None None Antivirus Blacklist + antivirus Whitelist + antivirus </div>

The name is case sensitive (« group1 » and « Group1 » are two different names) and can't contain any accents or special characters.

[Expiry date](#)
After this date, users of this group can't log in anymore. A week after this date, users will be automatically deleted. Click on the zone to see a calendar.

[Maximum time of connection](#)
This time of connection is independent from the number of sessions. Thus, the user can spend this time as he wants (in one or more sessions).

[Limit of time](#)
When one of these limits is reached, the user is logged out.

[Number of concurrent session per user](#)
Examples : 1 = only one session at a time, « empty » = no limit, X = X authorized concurrent sessions, 0 = account locked.
Note : It's a good way to temporarily lock or unlock a user account

[Authorized periods in a week](#)
Example for a period from Monday at 7 am to Friday at 6 pm :
Mo-Fr0700-1800

[5 quality of service parameters \(QoS\)](#)
You can set limitations.
Data volume limit is set for one session. When the limit value is reached, the user is logged out.

[URL redirection](#)
Once authenticated, the user is redirected to this URL. The URL must contain the protocol name. Example :
« http://www.site.org »

[Filtering](#)
Choose the filtering policy. See §4 for more explanations about the blacklist, whitelist and antivirus filtering system.

Page d'aide : session simultanée
Cet attribut définit le nombre maximum de sessions simultanées qu'un usager peut ouvrir (non renseigné = infini)
This attribute defines the maximum number of concurrent logins for a user. It is independent from the number of ports the user is allowed to open in a multilink session.
Close Window
For assistance, click on the attributes name.



3.3. Editing and removing a group

Click the name of the group to edit it

Liste des groupes		
#	groupe	Nombre d'utilisateurs
1		13
2		2
3		4
4		7
5		7
6		11
7		164
8		186
9		136
10		149
11		158

Group : classroom1 (-)

Remove all members of this group :

Are you sure to remove classroom1 ?

Groups management

MEMBERS **ATTRIBUTES** **REMOVE**

Group : classroom1

Members to remove : classroom1
 The selected members will be remove from the group.
 Use 'shift' or 'Ctrl' for multiple selection.
 lulu paulo sophie

Members to add :
 Separate the members with a 'space' or a 'carriage return'.

3.4. Creating users

Login and password are case sensitive
 (« James » and « james » are two different users)

If you choose a group, the user inherits its attributes*.

* When an attribute is defined both for user and for his group (example : “maximum time” for a session), user attribute takes precedence over group attribute.

* When a user is member of several groups, you can set his primary group in the user attributes window (see next §).

* When an attribute prevents a user to log in, a message is displayed in his login window (see « user sheet » at the end of this manual).

* if you set the “surname and name”, it will be display in the different administrative screens.

Login

Password

Group The group list is empty

Surname and name

Email Address

Expiration date

Authorized period after the first connection (in seconds) s

Number of concurrent login 1

Filtering None

Voucher language Français

Or:

Note: when creating multiple tickets simultaneously :
 - username and password are randomly generated,
 - fields "Surname and name" and "Email Address" are not use.

see the previous chapter to get details on attributes

To see/hide all attributes

When the users are created, PDF vouchers are generated in the language of your choice.



Enter the number of users to create

If you create multiple users, it's interesting to fix an expiration date (see the remark below)



Remark : if an expiration date is enabled, one week after this date, the user is automatically deleted. When a user is deleted from the database, his connections logs are kept in order to be able to impute his connections.

3.5. Searching and editing users

You can search users with several criteria (login name, attributes, etc.). If you leave the criteria field blank, all users will be listed.

Search filter

Search criteria: Login

Value (empty = all)

Start search

Search filter

Search criteria: Special attribute

Attribute: Expiration date

Value (empty = all)

Start search

- Expiration date
- Maximum time of connection(in seconds)
- Maximum time for a session(in seconds)
- Maximum time of connection per day(in seconds)
- Maximum time of connection per month(in seconds)
- Number of concurrent login
- Weekly period
- Maximum of data uploaded(in octets)
- Maximum of data downloaded(in octets)
- Maximum of data exchanged(in octets)
- Maximum upload bandwidth(in kbits/second)
- Maximum download bandwidth(in kbits/second)
- Redirection URL

The result is a list of users matching your search criteria. Each user's toolbar includes the following functions :

User attributes

Préférences du dupont (DUPONT Loïc)

Mot de passe (modification uniquement) : Le mot de passe existe

Durée limite d'une session (en secondes) : 3600

Durée limite journalière (en secondes) : 10800

Durée limite mensuelle (en secondes) :

Période hebdomadaire : lwk0800-1700

Date d'expiration : 20 juin 2009

Membre de (le groupe auquel appartient l'utilisateur est surligné) : clirisi paul

Change

Personal information

Page d'information personnelle de dupont (DUPONT Loïc)

Nom complet (NOM Prénom) : DUPONT Loïc

Mail : dupont@loic.fr

Service : comptabilité

Téléphone personnel :

Téléphone bureau : 22020

Téléphone mobile :

Modifier

Deleting a user

Suppression du User palette

Êtes-vous certain de vouloir supprimer le user palette ?

Oui supprimer

General information (connections list, statistics, password test, etc.)

Etat des connexions pour paulo (-)

L'utilisateur est en ligne depuis : 2009-01-06 22:58:30

Durée des connexions : 00:01:26

Serveur : alcasar-rexy (192.168.182.1)

Port du serveur : 1

@MAC de la station cliente : 08-00-27-E7-EA-89

Upload : not available

Download : not available

Sessions autorisées : L'utilisateur peut s'identifier pendant unlimited time

Description complète de l'utilisateur : -

Check Password

Password : [] check

Analyse

	mensuel	hebdomadaire	journalier	par session
limite	none	none	none	none
durée utilisée	-	0 seconds	0 seconds	00:00:17



Active sessions (From here, you can disconnect the user)

Fermeture des sessions ouvertes pour l'utilisateur : dupont

L'utilisateur dupont a 1 session(s) ouverte(s)

Êtes-vous certain de vouloir les fermer ? Oui, Fermer

Connections list (you can define an observation period)

Analyse pour rrey

Dates du 2007-12-03 au 2008-05-11

#	logged in	session time	upload	download	server	terminate cause	callerid
1	2007-12-26 14:11:02	17 minutes, 13 seconds	0.63 MBs	7.63 MBs	alcasar-dsisi3	User-Request	00-00-56-53-25-0F
2	2007-12-03 13:07:29	10 minutes, 31 seconds	457.71 KBs	2.93 MBs	alcasar-dsisi2	User-Request	00-00-56-D9-B3-9B
3	2007-12-03 13:55:30	23 minutes, 20 seconds	1.31 MBs	7.63 MBs	alcasar-dsisi2	User-Request	00-00-56-D9-B3-9B
Total pages		51 minutes, 4 seconds	2.41 MBs	18.21 MBs			

Utilisateur : rrey

début date : 2007-12-03

fin date : 2008-05-11

nbr.page classé le : 10

plus récent en premier

show

3.6. Importing users

In the ACC (menu « AUTHENTICATION », « Import ») :

a) From a user database backup

When you import a user database backup, the current database will be emptied. Because this database needs to be provided in case of inquiry, a backup is automatically done (see §7 to retrieve this backup).

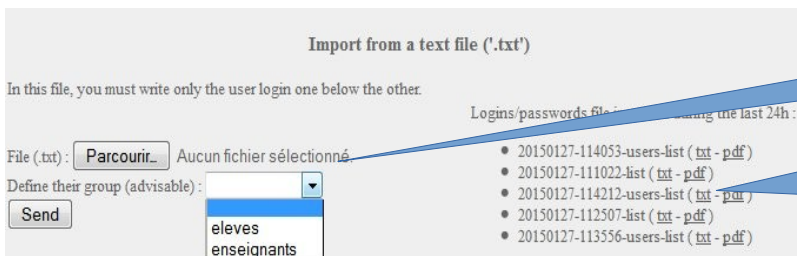


b) From a text file (.txt)

This function allows you to easily add users to the current database. This text file must be formatted like this : one user login per line followed (or not) by a password separated by a space. Without a defined password, ALCASAR creates one randomly. This file can come from a spreadsheet application :

- from the « Microsoft office suite », record the file in « Text (DOS) (*.txt) format » ;
- from the « LibreOffice office suite », record the file in « Text CSV (.csv) » format and remove separators (option « edit filter parameters »).

Once the file is imported, ALCASAR creates each new account. If the login name already exists, the password is just changed. Two files in « .txt » and « .pdf » format, including login names and passwords, are created and saved in the directory « /tmp » (during 24 hours). These files are available in the ACC.

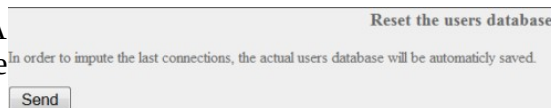


In order to ease the management of new users, you can define their group of ownership.

For each import, a file including logins and password is available during 24 hours (« txt » and « pdf » format).

3.7. Emptying the user database

This function allows you to delete all the users in one click. A backup of this database is automatically done. See §7 to retrieve the backup. See previous chapter to re-inject it.



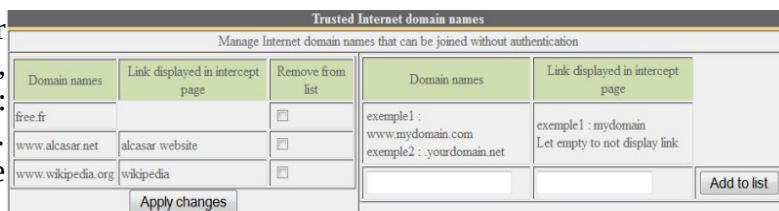
3.8. Authentication exceptions

By default, ALCASAR is configured to stop the network flow from a user not logged in. Nevertheless, you can define some exceptions :

- to allow auto update of antivirus and auto-update of operating systems (See §11.2) ; On « Windows© » : to keep the “Internet access” icon on, even if nobody is connected.
- to access a server or a security zone (DMZ) located behind ALCASAR ;
- to allow some devices to not be intercepted.

a) To trusted sites or trusted domain names

In this window, you can input trusted site names or trusted domain names. In case of a domain name, all the linked sites are allowed (example : « .free.fr » allows “ftp.free.fr”, “www.free.fr”, etc.). You can display a weblink to a trusted site on the ALCASAR homepage.



b) To trusted IP addresses or trusted network IP addresses

Trusted IP addresses		
Manage systems addresses or networks IP addresses that can be joined without authentication		
Trusted IP addresses	Comments	Remove from list
192.168.182.3	my_nas	<input type="checkbox"/>
<input type="button" value="Apply changes"/>		
Trusted IP addresses		Comments
exemple1 : 170.25.23.10		my_web_server
exemple2 : 15.20.20.0/16		my_dmz
<input type="text"/>		<input type="text"/>
		<input type="button" value="Add to list"/>

In this window, you can manage trusted IP addresses or trusted network ip addresses (a DMZ for example). The network protocol filtering, if enabled (see § 4.2.c), has no effect on the addresses mentioned here.

c) Allowing trusted client devices

It is possible to allow some client devices to go through ALCASAR without being intercepted. In order to do that, create a user whose name is the MAC address of the device (example: 08-00-27-F3-DF-68) and the password is “password”. It should be borne in mind that in this case, traces of connection to the Internet will be charged to the device (not to the user).

To have more information on the MAC address, you can add user information in the “user info” menu (like in the following screenshot).

In order to be immediately considered, the “chilli” service must be restarted (see §9.3).

#	Usager	Actions	Membre du groupe
1	00-11-09-2D-25-4C (PC proviseur)		
2	48-5B-39-4D-0D-77 (PC profs)		
3	fabien_y		eleves
4	jerome_m		eleves
5	laurent_t		eleves

3.9. Auto-registration via SMS

a) Purpose, principle and prerequisite



The objective of this module is to provide to the users a self registration, while respecting the legal requirements. In order to work, this module required a GSM modem (also called 3g key), and a subscription to a mobile operator.

How does it work? The user who want an ALCASAR account in order to access to the Internet send a simple SMS to number of the ALCASAR 3g key. The SMS content is the password, and the phone number of the user is the login. When the SMS is received by ALCASAR, the account is created.

During our tests the following 3g key were used :

- **Huawei E180**

- ~ 30€
- Connectivity: USB
- Power : USB
- Little issue with the Huawei firmware.
- Configuration : **at19200**



- **Wavecom Fastrack suprem 10**

- ~ 60€
- Connectivity: RS-232 (with an RS-232/USB link)
- Power: Power mains
- No issues.
- Configuration : **at115200**



- **Wavecom Q2303A Module USB**

- ~ €
- Connectivity: USB
- Power: USB
- No issues.
- Configuration : **at9600**



b) enable the service

- ▼ **AUTHENTIFICATION**
 - ▶ Créer un usager
 - ▶ Éditer un usager
 - ▶ Créer un groupe
 - ▶ Éditer un groupe
 - ▶ Importer / Vider
 - ▶ Exceptions
 - ▶ Activité
 - ▶ Auto enregistrement (SMS)

You can have an access to the configuration of this module in the autoregistration entry.

If no 3g key are plugged, the configuration page is disabled.

Status of your device

No device detected

If a valid 3g key is connected (don't start the service before entering all the information !!!) :



Status of your device

Your 3g key is connected

Connection : at115200

Configuration : at

Service status	Signal strength	Device IMEI	Number of SMS received
<input checked="" type="checkbox"/> Gammu is down <input type="button" value="Start"/> <input type="button" value="Stop"/>	-	-	-

Configuration	Current configuration
Phone number (3g key) <input type="text"/>	XXXXXXXXXX
PIN password <input type="text"/>	1234
Time for a new session <input type="text"/> days	1
Max number of try before a permanent ban <input type="text"/>	2
Duration of a ban (for example, after X try) <input type="text"/> days	1

Show entries

Phone number	Reason	Expiration date	Action
No matching records found			

No matching records found

previous next

Show the service status

Configure the baud rate connexion⁽³⁾

Phone number of the 3g key⁽¹⁾

PIN code to unlock the SIM card
Be sure !!!⁽²⁾

Time available when a account is created⁽⁵⁾

Number of try before a ban⁽⁴⁾

Time of a ban⁽⁴⁾

⁽¹⁾ This number must be written as the international pattern: +xxYYYYYYYYYY. « xx » for country indicative. « YYYYYYYYYY » for the phone number (9 digits). This number will be write on the user information page (see next §). Example : for the french number “0612345678”, the international number is “+33612345678”.

⁽²⁾ Be careful, If the PIN code is wrong, the SIM card will be locked. In this case, follow the instructions in the documentation “alcasar-2.9-technique.odt - §8.2 Auto-inscription par SMS »” to unlock it.

⁽³⁾ This field give a value (in days) for a valid account.

⁽⁴⁾ A policy against the spam has been implanted :

- Number of tries allowed by phone when receiving an invalid password (just one word in the content of the SMS).
- If the number of try is exceed, the phone number of this user will be banned for a time (in days). Each phone number ban will be ignored by ALCASAR.

⁽⁵⁾ Each 3g key has a different baud rate transfer. See previous chapter to find the rate for the 3g keys we have tested. A bigger list of configuration can be find on : <http://wammu.eu/phones/>

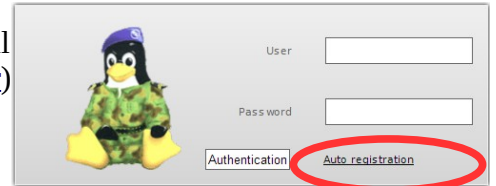
If all is set correctly, you can start the module with the “starts” button.

Service status	Signal strength	Device IMEI	Number of SMS received
<input checked="" type="checkbox"/> Gammu is running <input type="button" value="Start"/> <input type="button" value="Stop"/>	-- 60 %	353805013215525	0

This table show the status of the service, the signal strength, the IMEI number and the number of SMS received (reset when the service is stopped).

c) User interface

Once the service is started, the interception page provides an additional link « Auto registration ». The ALCASAR main page (<http://alcasar>) display also a dedicated link.



CVO

Page d'auto enregistrement

Bienvenue sur la page d'auto enregistrement.
Le portail auquel vous essayez de vous connecter offre la possibilité de s'inscrire automatiquement, en envoyant votre mot de passe par SMS au numéro (prix d'un SMS, non surtaxé):
+33122334455

Votre SMS ne doit contenir qu'un seul mot.
À la suite de votre inscription, vous pourrez retrouver votre numéro de téléphone dans le tableau ci-dessous, avec l'état et la date d'expiration de validité ou blocage de ce dernier.

Le champ de recherche ci-dessous vous permet de rechercher votre numéro suivant les 5 derniers chiffres.

Montrer 10 résultat par page Recherche (5 dernier chiffre):

Numero de téléphone	Etat de votre numéro	Expiration du blocage
336****18961	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****18961	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****28961	Compte actif	13 June 2014
336****38551	Compte actif	13 June 2014
336****38941	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****38961	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****38961	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****38961	Compte actif	13 June 2014
336****38961	Numéro bloqué: nombre d'essai dépassé.	13 June 2014
336****38961	Compte actif	13 June 2014

Affiche la page 1 sur 3 Précédent 1 2 3 Suivant

This link gives some information about the SMS account already created. Moreover, each user can have an information on the status of his phone number.



d) Accounts management [administration]

Each account created by the auto-registration module has just one attribute : the expiration date. These accounts belong to the users group “sms”. So, if you want to set an attribute, you can edit the “sms” user group (see §3.2). These accounts are not seen in the standard user management section of the ACC.

This table give the state of phone number which have sent one or more SMS. If you click on delete, the account (if it is already available) will be delete, and the user can create an account again.

Numéro	Raison	Date d'expiration	Action
336****	Un compte a été créé	13 June 2014	Effacer
336****	Un compte a été créé	13 June 2014	Effacer
336****	Le nombre d'essais maximum a été dépassé	13 June 2014	Effacer

Affiche la page 1 sur 1 précédent 1 suivant

e) Country filtering

By default, the SMS auto registration module allows only french numbers (country code: +33). A web interface is available to change the level of filtering:

- only french numbers
- only European numbers
- Allow every numbers
- Personal configuration: the administrator can authorize a personal list of country.



f) Error messages [administration]

Can not listen the ttyUSB0 port.	You 3g key is maybe used by an other program
Timeout. Can not connect to modem.	The 3g key has beed disconnected
An issue with your Sim card was detected. Is it in the key?	The Sim card is not in the 3g key
Warning, during the last startup, the PIN code was wrong.The Sim card must be blocked. Please read the documentation.	The PIN password is invalide. The SIM card is maybe blocked. Please instructions in the technical documentation of ALCASAR (§8.2 - Auto-inscription par SMS ».

4. Filtering

FILTERING ALCASAR has several optional filters:

- ▶ **Blacklist**
 - a blacklist and a whitelist of domain names, URLs and IP addresses;
- ▶ **Whitelist**
 - an anti-malwares on the WEB flow;
- ▶ **Protocols**
 - a filter for network protocols.

The first filter was developed at the request of organization likely to welcome young people (schools, secondary schools, recreation centers, etc.). This filter can be compared to the parental/school control system. You can enable or disable it for each user (or group of users) by modifying users or groups attributes (see §3).

Domain names, URLs and IP addresses are referenced in two lists.

- Either you operate a whitelist. The filtered users using that list can access only the sites and IP addresses of the whitelist
- Either you operate a blacklist. The filtered users using that list can access all the sites and IP addresses except those of the blacklist.

On ALCASAR, this filter runs on all network protocols. For example, if the domain name “warez.com” is blocked, all protocols for this domain will be blocked (HTTP, HTTPS, FTP, etc.).

ALCASAR uses **the excellent** list (black + white) drawn up by the University of Toulouse (France). This list was chosen because it is distributed under a free license (creative commons) and its content refers to France. In that list, domain names (eg www.domaine.org), URLs (eg www.domaine.org/rubrique1/page2.html) and IP addresses (eg 67.251.111.10) are listed by categories (games, astrology, violence, sects, etc.). The ACC allows you :

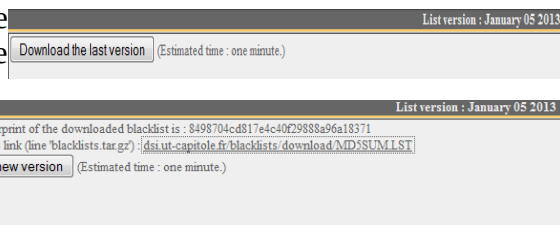
- to update that list and to define the categories of sites to block or to allow;
- to rehabilitate a blocked site (exemple : a site that was banned, was closed and purchased by new people);
- to add sites, URLs or IP addresses that are not in the list (CERT alerts, local directive, etc.).

The anti-malware can detect a lot of type of files (virus, worm, phishing, etc.). It can be combined with previous filter. It is enabled by user. It is updated every 4 hours.

4.1. Blacklist and Whitelist

a) Updating the list

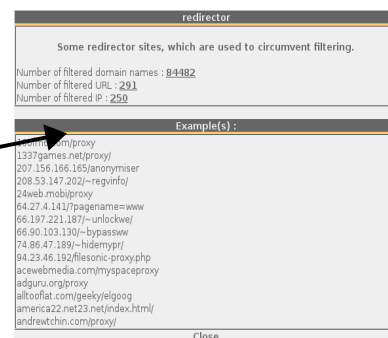
The update of the blacklist will download the latest version of the list of the University of Toulouse (France) and will install it. Once the file is downloaded, ALCASAR calculates and displays its fingerprint. Then, you can compare this fingerprint with the one available on the website of the university of Toulouse. If the two are identical, you can confirm the update. Otherwise, discard it.



b) Editing the blacklist

You can choose categories to filter and restore or add sites to the « blacklist ».

BlackList									
Domain names : 1248186, Url : 54296, Ip : 214557									
Select the categories to filter									
ariel	astrology	audio-video	blog	celebrity	chat	cooking	filehosting	financial	forums
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
games	lingerie	manga	mobile-phone	publicite	radio	reaffected	shopping	social_networks	sports
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
webmail	adult	agressif	dangerous_material	dating	disque	gambling	hacking	malware	marketingware
<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
mixed_adult	phishing	redirector	remote_control	sect	strict_redirector	strong_redirector	tricheur	warez	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	



By clicking on the category name, you display its definition and the number of domain names, URLs and IP addresses it contains. By clicking on one of these number, you display the first 10 sites.

You can rehabilitate domain names or IP addresses.

You can add domain names or IP addresses directly in the ACC or by importing text file (one domain or one address per line).

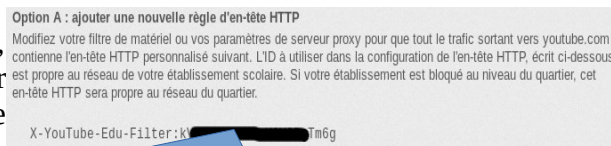
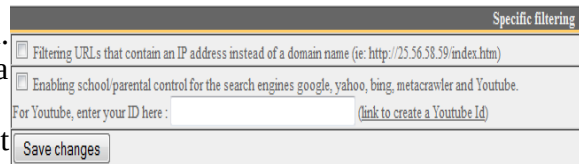
Info: if you want to test site filtering or site restoring, remember to clear the cache memory of the browsers.

c) Special blacklist filtering

The blacklist has two special filters available for HTTP protocol. The first one blocks URLs containing an IP address instead of a domain name.

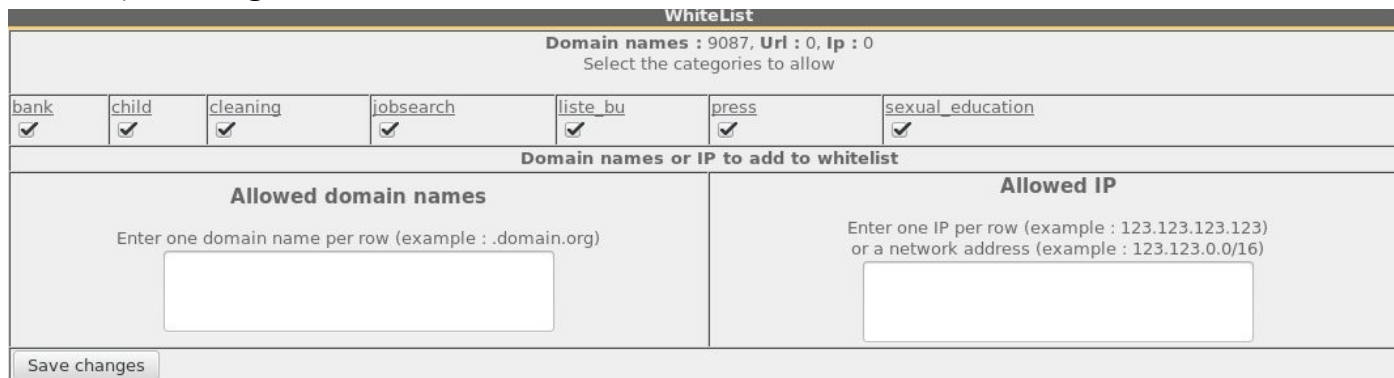
The second one exclude results from search engines that may not be suitable for minors ("Safe search" function). This second filter is compatible with "Google", "Yahoo", "bing" and "metacrawler". This second filter works only on HTTP requests.

It works with "YouTube" only if you get a Youtube ID. For that, visit : http://www.youtube.com/education_signup. Once your YouTube account is created, copy the ID in the ACC and save the changes.



Once your account is created, get your Youtube ID (character string just after the ':' character).

d) Editing the Whitelist

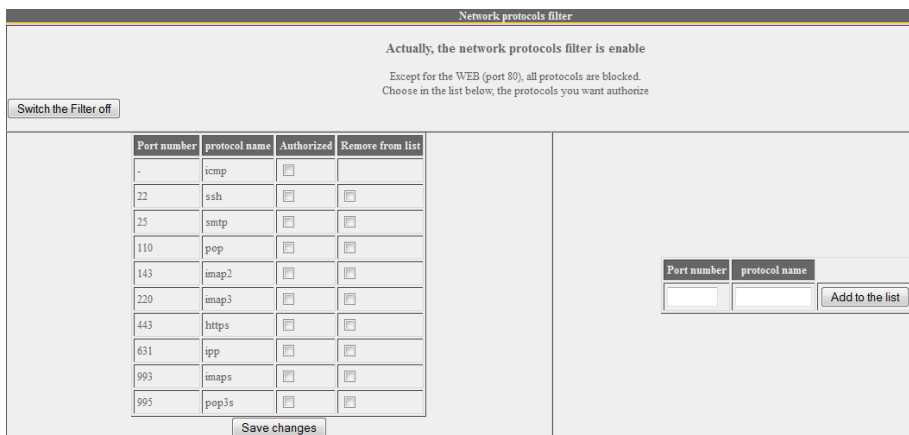


As for the blacklist, you can select categories and add your own domain names and IP addresses.

Note : "liste_bu" is a category used by french students (bu=bibliothèque universitaire=university library). This category contains a lot of useful websites validated by teachers and learning teams.

4.2. Protocols filtering

When this filter is not enabled, a logged in user can use any protocol (Internet access is limitless). All the actions of logged in users are traced and recorded regardless of the protocol used. When the filter module is enabled, only the HTTP protocol is enabled by default. All other protocols are blocked. It is possible from this restrictive mode, to enable, one by one, the network protocols you want to allow. A list of standard protocols is presented by default. You can enrich it.



- ICMP is used for example by the «ping» command.
- SSH (Secure SHell): to allow secure remote connections.
- SMTP (Simple Mail Transport Protocol) : to allow emails to be sent from a thick client (outlook, thunderbird, etc.).
- POP (Post Office Protocol) : to allow thick clients to download emails.
- HTTPS (HTTP secure) : to allow secure web surfing.

Note: When enabled, this filter is active for all users. In future, ALCASAR will be able to associate it (or not) to each user (as for blacklist/whitelist/anti-malware).

5. Access to Statistics

STATISTICS

- ▶ user/day
- ▶ connections
- ▶ daily use
- ▶ global traffic
- ▶ detailed traffic
- ▶ security

Statistics are available on the ACC (menu "statistics"), after logging in.

This menu provides access to the following information:

- number of connections per user per day (updated every night at midnight);
- connection status of users (updated in real time);
- daily load of the portal (updated every night at midnight);
- global & detailed network traffic (updated every 5 minutes);
- security reports (updated in real time).

5.1. Number of connections per user per day

This page displays, per day per user, number, connection time and volumes of data exchanged.

Please note: the volume of data exchanged is what ALCASAR sent to the user (upload) and what it received from the user (download).

	User name	Number of connections	Cumulative time	Volume of data exchanged
67	2007-06-04 chillspot.lyon.fr	3	34 minutes, 58 seconds	1.51 MBs 52.37 MBs
68	2007-06-04 chillspot.lyon.fr	3	17 minutes, 38 seconds	0.78 MBs 3.15 MBs
69	2007-06-04 chillspot.lyon.fr	3	32 minutes, 4 seconds	1.84 MBs 12.61 MBs
70	2007-05-30 chillspot.lyon.fr	4	3 hours, 50 minutes, 26 seconds	3.25 MBs 17.91 MBs
71	2007-06-01 chillspot.lyon.fr	4	57 minutes, 16 seconds	4.04 MBs 23.44 MBs
72	2007-05-31 chillspot.lyon.fr	4	1 hours, 20 minutes, 26 seconds	6.80 MBs 26.79 MBs
73	2007-05-30 chillspot.lyon.fr	4	50 minutes, 32 seconds	4.03 MBs 29.53 MBs
74	2007-05-30 chillspot.lyon.fr	4	32 minutes, 49 seconds	1.79 MBs 11.75 MBs
75	2007-06-05 chillspot.lyon.fr	5	21 minutes, 22 seconds	1.97 MBs 71.12 MBs
76	2007-05-31 chillspot.lyon.fr	5	1 hours, 12 minutes, 26 seconds	0.88 MBs 4.71 MBs
77	2007-06-01 chillspot.lyon.fr	5	1 hours, 3 minutes, 25 seconds	1.41 MBs 59.74 MBs
78	2007-05-30 chillspot.lyon.fr	6	25 minutes, 10 seconds	1.86 MBs 61.05 MBs
79	2007-06-04 chillspot.lyon.fr	6	1 hours, 11 minutes, 4 seconds	6.33 MBs 39.43 MBs
80	2007-06-05 chillspot.lyon.fr	7	33 minutes, 45 seconds	1.40 MBs 9.79 MBs
81	2007-05-31 chillspot.lyon.fr	8	1 hours, 2 seconds	0.63 MBs 32.22 MBs
82	2007-05-30 chillspot.lyon.fr	10	3 hours	17.60 MBs 39.65 MBs
83	2007-05-31 chillspot.lyon.fr	14	3 hours, 51 minutes, 40 seconds	2.63 MBs 15.65 MBs

start time: 2007-05-30 stop time: 2007-06-06 pagesize: 10 sort by: connections number order: ascending show

On Access Server: all

One line per day

You can customize this state by:

- Filtering on a particular user;
- Defining a certain period of time;
- Sorting with different criteria.

5.2. Connection status of users

This page lists log-in and log-out events from the portal. An input box allows you to specify your search and display criteria.

With no search criteria, the chronological list of connections is displayed (since the installation of the portal).

Please note: the volume of data exchanged is what ALCASAR sent to the user (upload) or what it received from the user (download).

Afficher les attributs suivants :

- Accounting Stop Delay
- AcctAuthentic
- CalledStationId
- Caller Id
- Client IP Address

Classé par : Accounting Id

Nbr. Max. de résultats retournés : 40

Envoyer

Critère de sélection : --Attribute--

Select your search criteria here. By default, no criteria is selected. The list of connections made since the installation of the portal will be displayed in chronological order. Two examples of search are detailed below.

Select your display criteria here. Criteria have been pre-defined. They meet most needs (user name, IP address, log-in, log-out, volume of exchanged data). Use <Ctrl> and <Shift> to change the selection.

- Example of search No1 : Display, in chronological order, of the connections established between June 1 and June 15, 2009 with the default display criteria:

Journal des connexions

Afficher les attributs suivants :

- Accounting Stop Delay
- AcctAuthentic
- CalledStationId
- Caller Id
- Client IP Address

Classé par : Accounting Id

Nbr. Max. de résultats retournés : 40

Envoyer

Critère de sélection : --Attribute--

Login Time >= 2009-06-01 del

Login Time <= 2009-06-15 del

Client IP Address	Download	Login Time	Logout Time	Session Time	Upload	User Name
192.168.182.10	443.61 KBs	2009-05-29 11:19:54	2009-05-29 11:32:34	12 minutes, 40 seconds	11.52 MBs	
192.168.182.22	1.66 MBs	2009-06-03 18:24:20	2009-06-03 18:44:20	20 minutes	33.55 MBs	
192.168.182.129	46.12 MBs	2009-06-03 18:58:23	2009-06-04 09:39:01	14 hours, 40 minutes, 38 seconds	1.10 GBs	
192.168.182.10	381.81 KBs	2009-06-04 12:58:10	2009-06-04 13:06:08	7 minutes, 58 seconds	1.77 MBs	
192.168.182.10	400.14 KBs	2009-06-04 13:41:29	2009-06-04 13:43:45	2 minutes, 16 seconds	1.55 MBs	
192.168.182.10	327.07 KBs	2009-06-04 14:50:24	2009-06-04 15:22:37	32 minutes, 13 seconds	1.29 MBs	
192.168.182.10	96.93 KBs	2009-06-04 15:23:13	2009-06-04 15:37:46	14 minutes, 33 seconds	443.14 KBs	
192.168.182.10	286.75 KBs	2009-06-04 15:38:37	2009-06-04 16:20:42	42 minutes, 5 seconds	375.28 KBs	
192.168.182.129	10.33 MBs	2009-06-04 16:29:46	2009-06-04 19:15:48	2 hours, 46 minutes, 2 seconds	463.62 MBs	
192.168.182.110	303.47 KBs	2009-06-04 16:47:30	2009-06-04 18:05:17	1 hour, 37 minutes, 38 seconds	5.57 MBs	

- Example of search No2 : Display of the 5 shortest connections during the month of July 2009 and with the IP address "192.168.182.129". The display criteria include the cause of disconnection but not the volume of data exchanged:

Afficher les attributs suivants :

- Stop Connect Info
- Terminate Cause
- Unique Id
- Upload
- User Name

Classe par : Session Time

Nbr. Max. de résultats retournés : 5

Envoyer

Critere de selection : --Attribute--

Login Time >= 2009-07-01 del

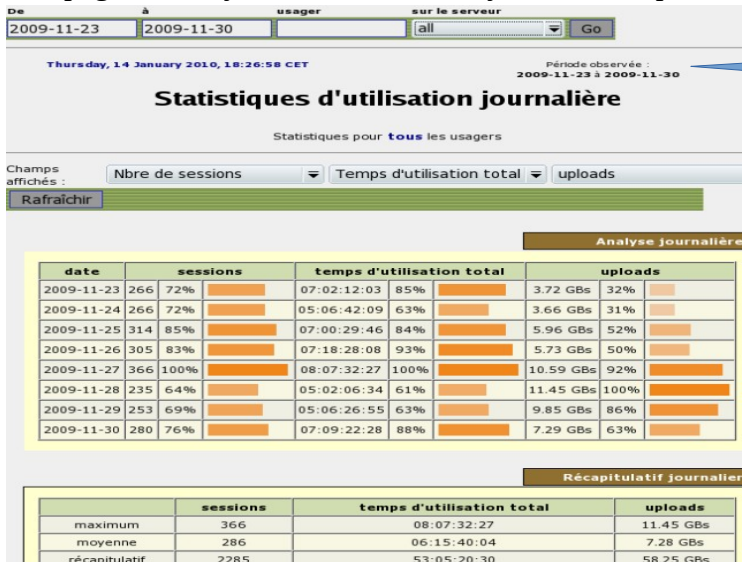
Login Time <= 2009-07-31 del

Client IP Address = 192.168.182.147 del

Client IP Address	Login Time	Logout Time	Session Time	Terminate Cause	User Name
192.168.182.147	2009-07-01 14:07:28	2009-07-01 14:08:30	1 minutes, 2 seconds	User-Request	
192.168.182.147	2009-07-21 10:57:19	2009-07-21 10:58:26	1 minutes, 7 seconds	Admin-Reset	
192.168.182.147	2009-07-01 16:21:43	2009-07-01 16:23:00	1 minutes, 17 seconds	User-Request	
192.168.182.147	2009-07-07 09:50:35	2009-07-07 09:54:02	3 minutes, 27 seconds	User-Request	
192.168.182.147	2009-07-01 17:50:50	2009-07-01 17:54:30	3 minutes, 40 seconds	User-Request	

5.3. Daily use

This page allows you to know the daily load of the portal.

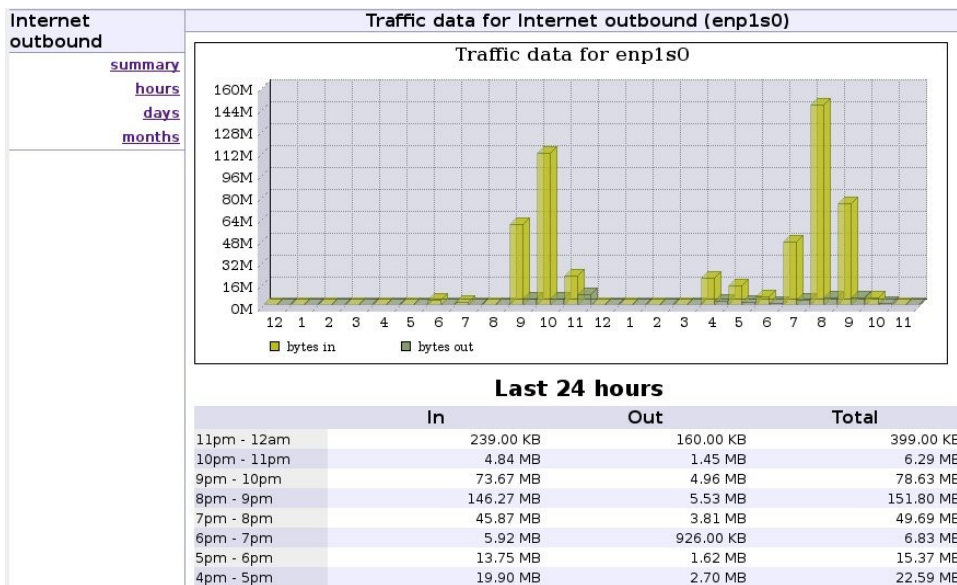


Here, set the period. You can specify a particular user (leave this field blank to accommodate all users).

5.4. Global and detailed traffic



Global traffic



This graph allows to show network statistics by hour, day, month.

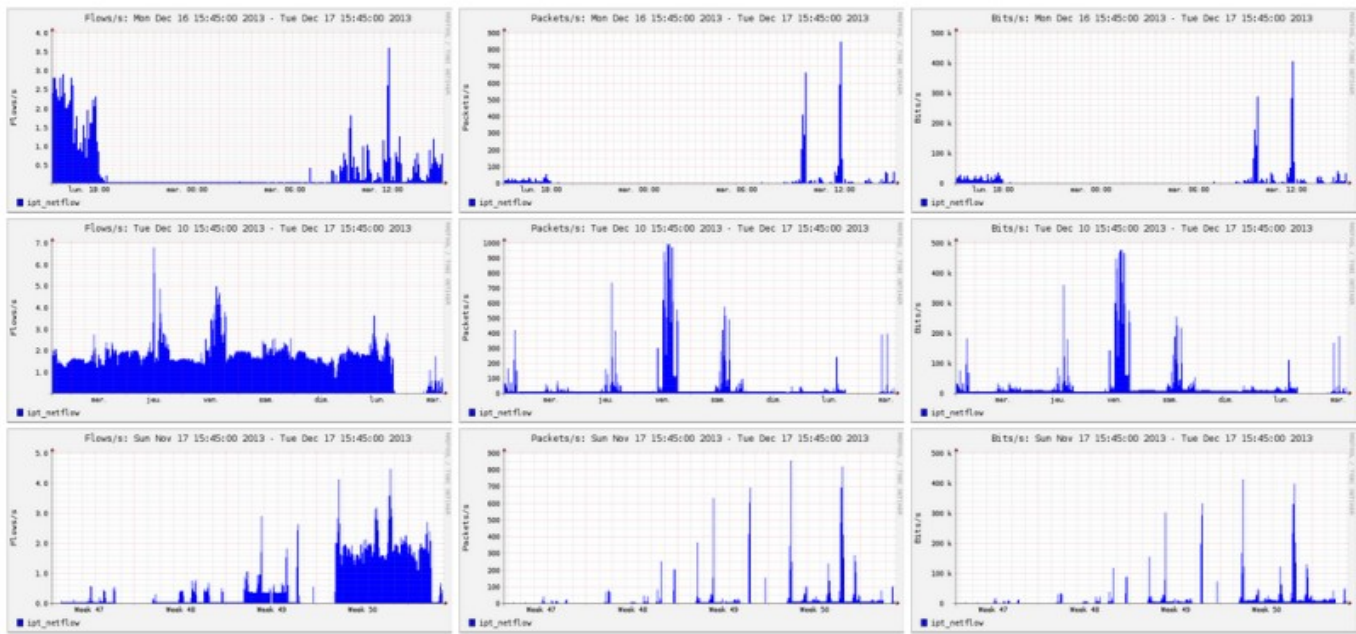
Detailed traffic



This page shows the statistics for outbound network traffic (by day, by week and by month). The data are updated every 5'.

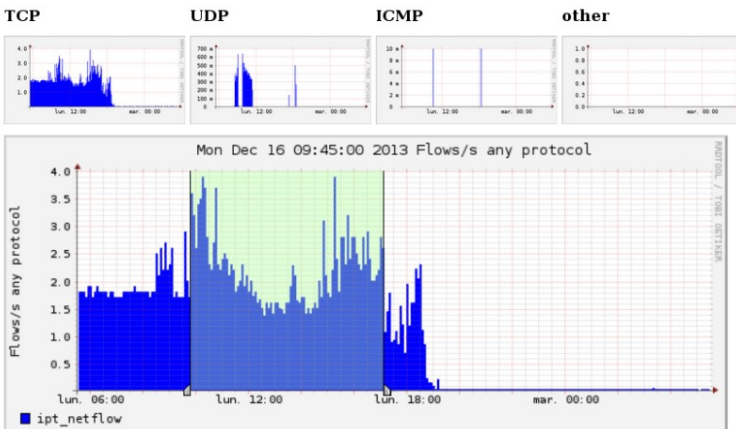
[Home](#)
[Graphs](#)
[Details](#)
[Alerts](#)
[Stats](#)
[Plugins](#)
[live](#)
[Bookmark URL](#)
[Profile:](#) live ▾

Overview Profile: live, Group: (nogroup)



The “details” menu allows you to zoom on a particular time slot. For the HTTP flows, network IP addresses are hidden and replaced with the IP address of ALCASAR.

Profile: live



Netflow Processing

Source: Filter:

Options: List Flows Stat TopN

Top: order by

Stat: order by

Limit: Packets > < > < >

Output:

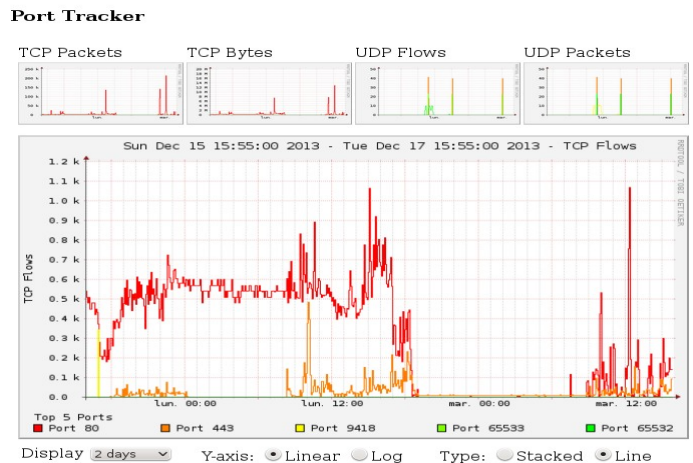
```

** nfdump -M /var/log/nfsen/profiles-data/live/ipt_netflow -T -R 2013-12-16/nfcapd.201312160945:2013
nfdump filter:
any
Top 10 dst Port ordered by bytes:
Date first seen Duration Proto Dst Port Flows(%) Packets(%) Bytes(%)
2013-12-16 09:44:48.692 26689.479 any 80 50589(86.6) 730755(98.9) 61.3 M(99.2)
2013-12-16 09:44:54.617 26683.314 any 443 5180(8.9) 52171(6.7) 322601(0.5)
2013-12-16 09:56:00.115 5470.785 any 21592 150(0.3) 186(0.0) 12897(0.0)
2013-12-16 10:04:10.241 4963.755 any 1030 12(0.0) 106(0.0) 8351(0.0)
2013-12-16 09:50:43.685 281.302 any 27019 120(0.2) 120(0.0) 5120(0.0)
2013-12-16 10:39:26.645 19.331 any 60225 1(0.0) 40(0.0) 3145(0.0)
2013-12-16 09:50:42.985 2.051 any 27017 46(0.1) 46(0.0) 2944(0.0)
2013-12-16 09:50:42.985 2.051 any 27018 46(0.1) 46(0.0) 2944(0.0)
2013-12-16 09:45:35.640 2258.334 any 993 43(0.1) 43(0.0) 2729(0.0)
2013-12-16 10:33:58.632 20569.346 any 21 31(0.1) 33(0.0) 1980(0.0)

```

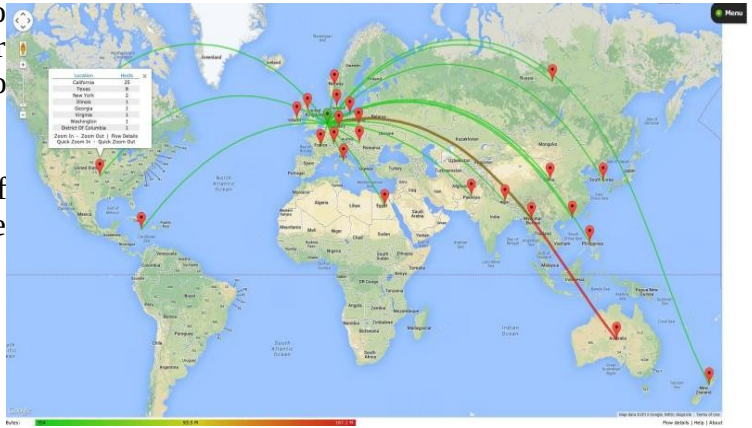
Summary: total flows: 58436, total bytes: 61.8 M, total packets: 739076, avg bps: 18520, avg pps: 27, Time window: 2013-12-16 09:44:48 - 2013-12-16 17:09:38
 Total flows processed: 58436, Blocks skipped: 0, Bytes read: 3049352
 Sys: 0.024s flows/second: 2337814.1 Wall: 0.020s flows/second: 2851927.8

PortTracker



The “plugins” menu shows the network traffic based on the traffic protocol (port tracker). You can see the protocols currently in use (“now”) or all protocols used during the last “24 hours”.

SURFmap is a plugin which gives the possibility to have a visual of all the flows (not only HTTP). Your web-browser must be connected to Internet to retrieve the base map!!!



Different filters are available in the *Menu* : number of flow, begin and end date, show just the flows of one @ip (“src host 123.123.123.123”)


Do not enter a huge value of flow. More this value is high, more the time of process is high.

The “Auto-refresh” checkbox refresh this page each 5 minutes.

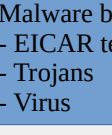
5.5. Security Report

This page displays three safety information identified by ALCASAR:


- The list of users disconnected due to a MAC address spoofing of their device;
- The list of malwares intercepted by the integrated antivirus;
- The list of IP addresses banned during 5' by the intrusion detection system. The reasons can be : 3 successive SSH connection failures – 5 successive connection failures on the ACC – 5 successive login failures for a user – 5 successive attempts to change password in less than one minute.

Adresse(s) MAC usurpée(s) (Watchdog)	
alcasar-watchdog : 172.16.0.10 is usurped (54-04-A6-1E-F7-DB). Alcasar disconnect the user (
alcasar-watchdog : 172.16.0.10 is usurped (54-04-A6-1E-F7-DB). Alcasar disconnect the user (
alcasar-watchdog : 172.16.0.10 is usurped (54-04-A6-1E-F7-DB). Alcasar disconnect the user (
alcasar-watchdog : 172.16.0.10 is usurped (54-04-A6-1E-F7-DB). Alcasar disconnect the user (
alcasar-watchdog : 172.16.0.10 is usurped (54-04-A6-1E-F7-DB). Alcasar disconnect the user (
alcasar-watchdog : 172.16.0.10 is usurped (00-24-81-12-52-01). Alcasar disconnect the user (

User logged out due to MAC address spoofing

Virus bloqué(s) (HAVP)	
2013 Aug 30 18:16:55 127.0.0.1 GET 200 http://securite-informatique.info/virus/eicar/download/eicar_niveau1.zip 276+474 VIRUS ClamAV: Eicar-Test-Signature	
2013 Oct 03 10:15:29 127.0.0.1 GET 200 http://am4-r1f9-stor05.uploaded.net/dl/efb34de0-af7b-4851-81d0-caa42ca4a2e4 299+5000632 VIRUS ClamAV: Eicar-Test-Signature	
2013 Oct 03 11:30:49 127.0.0.1 GET 200 http://www.hackerzvoice.net/ceh/CEHv6%20Module%2008%20Trojans%20and%20Backdoors/valnet%20Trojan.Netbus.KeyHook170	
2013 Oct 03 11:31:39 127.0.0.1 GET 200 http://www.hackerzvoice.net/ceh/CEHv6%20Module%2008%20Trojans%20and%20Backdoors/nuclear%20ClamAV: Trojan.Dropper.Delf-152	
2013 Oct 03 11:42:33 127.0.0.1 GET 200 http://www.drivehq.com/folder/p7275651/1833479246.aspx 471+182652 VIRUS ClamAV: PHP.C99-5	
2013 Oct 07 16:09:53 127.0.0.1 GET 200 http://t[redacted] 305+5001325 VIRUS ClamAV: PHP.Optix	

Malware blocked
EICAR test files
Trojans
Virus

Adresse(s) IP bloquée(s) (Fail2Ban)	
2013-09-25 11:52:51,640 fail2ban.actions: WARNING [ssh-iptables] Ban 172.16.0.12	
--> 2013-09-25 12:02:52,370 fail2ban.actions: WARNING [ssh-iptables] Unban 172.16.0.12	
iptables -D fail2ban-SSH -s 172.16.0.12 -j ULOG --ulog-prefix "Fail2Ban -- DROP" returned 100	

IP address blocked by the IDS

6. Backup

6.1. Connection logs

The menu "Backup" from the ACC displays, in the first column, the list of traceability files containing the users activity logs. To save them on another media "right click" on the file name, then "save target as".

These files are automatically generated once a week in the directory « /var/Save/archive/ ». The files older than one year are deleted.

Traceability log files	
traceability-20150720-05h35.tar.gz	(1.9 Mo)
traceability-20150713-05h35.tar.gz	(364.95 Ko)
traceability-20150706-05h35.tar.gz	(1.39 Mo)
traceability-20150629-05h35.tar.gz	(1.55 Mo)
traceability-20150622-05h35.tar.gz	(1.58 Mo)
traceability-20150615-05h35.tar.gz	(1.18 Mo)
traceability-20150608-05h35.tar.gz	(1.19 Mo)
traceability-20150601-05h35.tar.gz	(2.56 Mo)
traceability-20150525-05h35.tar.gz	(1.76 Mo)
traceability-20150518-05h35.tar.gz	(1.31 Mo)
traceability-20150511-05h35.tar.gz	(3.11 Mo)
traceability-20150504-05h35.tar.gz	(2.34 Mo)

In case of legal inquiry

In a legal inquiry, law enforcement officials may ask for connection logs of your users. Give them the file of activity of the week of the offence.

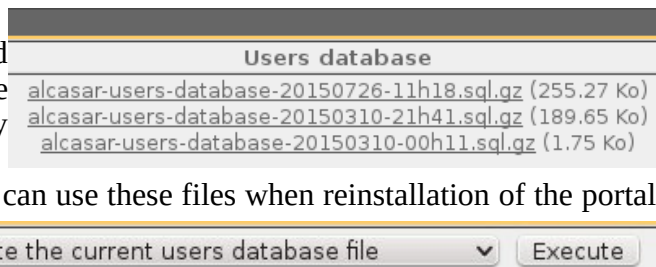
If the officials ask for the files of the current week , create this file via the menu.

Create the traceability file of the current week

6.2. The users database

The menu "Backups" from the ACC displays, in the second column, backup files (in compressed "SQL" format) of the users database. They can be generated at any time by clicking in the menu "Create the current users database file".

These files can be imported in ALCASAR (cf. §3.6.a). You can use these files when reinstallation of the portal (see §8.4).



7. Advanced features

7.1. Administration accounts management

ALCASAR server has two system accounts (or Linux accounts) that were created during the installation of the operating system:

- « root » : This is the account used for system administration ;
- « sysadmin » : This account allows you to take secure remote control of your system (see next §).

Along with these two "system" accounts, "management" accounts have been defined to control some functions through the graphical ALCASAR Control Center (ACC). These "management" accounts can belong to one of the three following profiles:

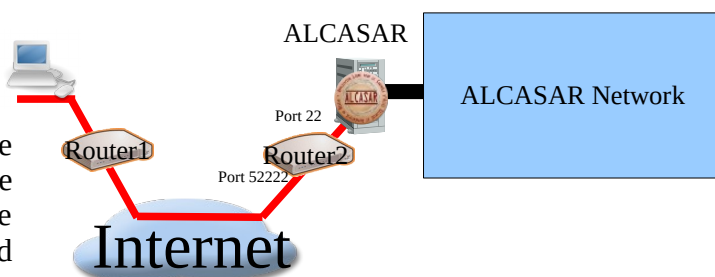
- « **admin** » : this account give access to all the functions of the ACC. A first "admin" account was created during the installation of ALCASAR (see Installation documentation);
- « **manager** »: this account only give access to users and groups management functions (see §3) ;
- « **backup** » : this account only give access to backup and archiving of log files (see previous chapter).

You can create as many management accounts as you want in each profile. To manage these management accounts, use the « `alcasar-profil.sh` » command as « root » :

- `alcasar-profil.sh --list` : to list all the accounts of each profile
- `alcasar-profil.sh --add` : to add an account to a profile
- `alcasar-profil.sh --del` : to delete an account
- `alcasar-profil.sh --pass` : to change the password of an existing account

7.2. Secure administration across the Internet

It is possible to establish a secure remote connection to an ALCASAR portal using encrypted data flow ("SSH protocol" - Secure SHell). Let's take an example of an administrator who seeks to administer, through the Internet, an ALCASAR portal or devices on the consultation network. Firstly, you need to enable the "SSH" service on ALCASAR (menu "system" and "services"). You must know the IP address of the "Broadband modem/router#2".



a) **Broadband modem/router configuration**

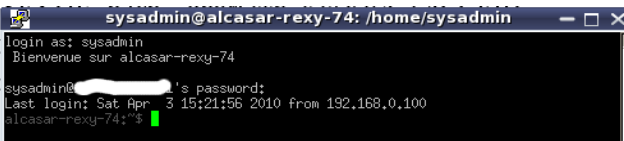
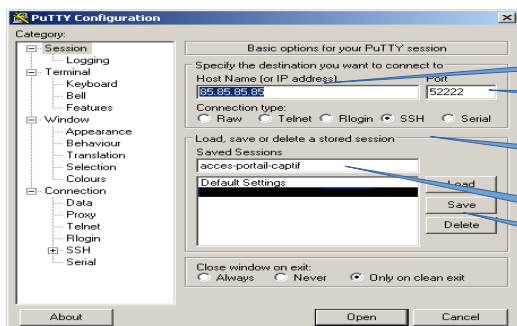
It is necessary to configure broadband modem/router#2 so that it doesn't block the "SSH" protocol. To anonymise the SSH data flow on the Internet, the default port (22) is replaced by another one (52222). If you want, you can still use the port 22.

Refer to your broadband modem/router documentation before performing this operation.

b) administration of ALCASAR in text mode

You can log in remotely to ALCASAR using the Linux "sysadmin" account created during the installation of the system. Once you are logged in, you can use the administration commands of ALCASAR (see § 11.1). Use the "su" command to become "root".

- On Linux, install "openssh-client" (you can also install "putty") and run the command « `ssh -p 52222 sysadmin@w.x.y.z` » (replace « w.x.y.z » with the public IP address of the broadband modem/router#2 and replace the "external_port" with the listening port number of the broadband modem/router#2 (52222 in our example). You can add the "-C" option to enable the compression algorithm.
- On Windows, install "Putty" or "putty-portable" or "kitty" and create a new session:



Public IP address of the broadband modem/router#2

Listening port for the administration in ssh mode

Protocol

Session name

Save the session before finish

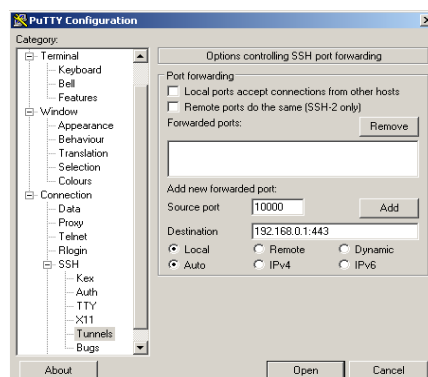
click on "Open", accept the server key and log in as "sysadmin".

c) Administration ALCASAR in GUI mode

The goal is now to redirect the data flow from the workstation's browser, through the SSH tunnel, to the internal network card of ALCASAR. To create this tunnel:

- On Linux, run the command:
« `ssh -L 10000:@IP_alcasar_internal_card:443 -p 52222 sysadmin@w.x.y.z` »
- On Window, configure « putty » as describe bellow:

- Load the previous session
- On the left side of the windows, select "Connection / SSH / Tunnels»
- In "Source Port" enter the port of entry of the local tunnel (greater than 1024 (here 10000))
- In "Destination", enter the IP address of internal network card of alcasar followed by the port 443 (here 192.168.182.1:443)
- Click on "Add"
- Select "Session" on the left side
- Click on "Save" to save your changes
- Click on "Open" to open the tunnel
- Enter the user name and password



Start your browser and go to : «<https://localhost:10000/acc/>»

⚠ ("acc/" in the end of URL is important!)

d) Managing devices on the ALCASAR network

Following the same logic, it is possible to manage any device connected to the consultation network (WIFI access points, switches, LDAP / AD, etc.).

- On Linux, run the command: « `ssh -L 10000:@IP_equipement:Num_Port -p 52222 sysadmin@w.x.y.z` ».
« @IP_equipement » is the IP address of the device to manage. « NUM_PORT » is the administration port of this equipment (22, 80, 443, etc.).
- On Windows, enter the IP address and the port of the device in the form "Destination" of "Putty".

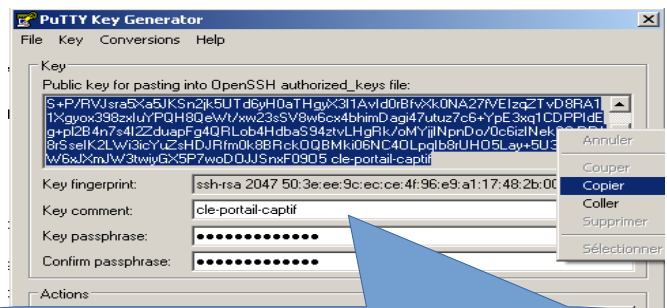
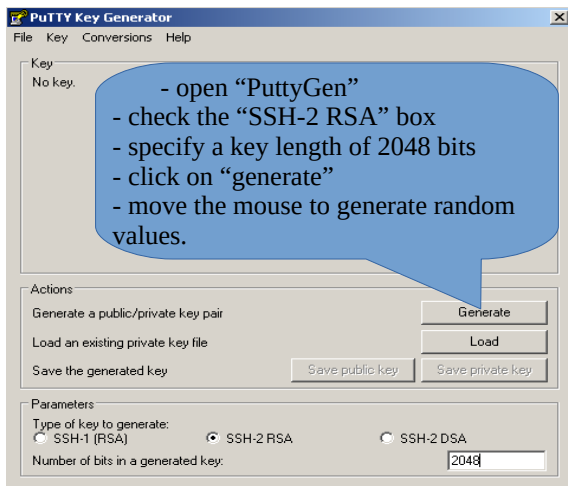
Run the command : « `ssh login@localhost:10000` » to use SSH for secure remote administration.

To connect the web-based interface, go to : « `http(s)://localhost :10000` ».

e) Use of SSH tunnel with public / private key pair (public/private key)

This paragraph, although not essential, adds an additional layer of security using private key authentication.

- generate a keys pair (public key / private key)
 - On Windows with « puttygen »



The keys are now created.

- Enter a representative comment in the "Key-comment" field;
- Enter and confirm the passphrase in the "Key passphrase" field;
- Save private key by clicking on "Save private key";
- Select and copy the public key (right click)

- Linux with « `ssh-keygen` »

In your personal directory, create the directory « `.ssh` » if it is not exist. From this one, generate your public/private key pair (« `ssh-keygen -t rsa -b 2048 -f id_rsa` »). The command « `cat id_rsa.pub` » displays your public key and allows you to copy it.

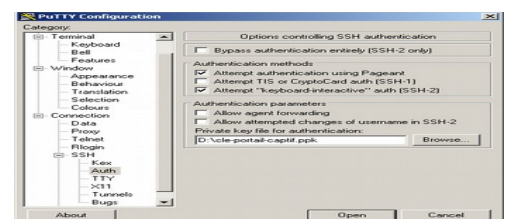
```
richard@rexy ~]$ mkdir .ssh
richard@rexy ~]$ cd .ssh/
richard@rexy .ssh]$ ssh-keygen -t rsa -b 2048 -f id_rsa
Generating public/private rsa key pair.
Enter passphrase (empty for no passphrase):
Enter same passphrase again:
Your identification has been saved in id_rsa.
Your public key has been saved in id_rsa.pub.
```

```
richard@rexy .ssh]$ cat id_rsa.pub
ssh-rsa AAAAB3NzaC1yc2EAAAABIwAAAQEAyL4yMM8B018Quusv1Iq/v
BkF2vwhuHzmNmH9ITFTALWHPHA9lWnx1cDPE9DPR7FPqrEZf/uT84C2Gj
o7d/IX+/JyPlVxoUdXaZ9wjtusU3SVWSr6o9NXmbZqoGzrGpjN7Vfu53
npCrDQ6fuq6PIm06AQcJQkySm0XDIGFVr4r5Zbw== richard@rexy
```

- Copy the public key on the remote portal:
 - run the following command to copy your public key directly on the remote server:
 - `ssh-copy-id -i .ssh/id_rsa.pub sysadmin@<@IP_interne_consultation>`
 - Enter your password; your public key is copied in the `sysadmin/.ssh/authorized_keys` automatically with the correct permissions.
 - Another method : log on through SSH to the remote ALASAR as "sysadmin" and execute the following commands : « `mkdir .ssh` » then « `cat > .ssh/authorized_keys` » ;
 - copy the contents of the public key from the clipboard ("Ctrl V" for Windows, middle mouse button for Linux) type « `Enter` » then « `Ctrl+D` » ; protect the directory : « `chmod 700 .ssh` » and key file « `chmod 600 .ssh/authorized_keys` » ; check the file : « `cat .ssh/authorized_keys` » and log out : « `exit` ».

- Connection test from Linux host : « `slogin sysadmin@w.x.y.z` »

- Connection test from Windows host :
 - load the previous session of putty;
 - on the left side, select "Connection / SSH / Auth";
 - click on "browse" to select the key file;
 - on the left side, select "Session";
 - click on "Save" then on "Open";
 - enter the user "sysadmin";



- the key is recognized, it remains only to enter the passphrase.
- If now you want to prevent the connection with passphrase, configure the sshd server:
 - become root (`su -`) and set the following options on the file `« /etc/ssh/sshd_config »` :
 - `ChallengeResponseAuthentication no`
 - `PasswordAuthentication no`
 - `UsePAM no`
 - restart the sshd server(`« service sshd restart »`) and close the ssh session(`« exit »`).

```

[~]# su login sysadmin@
Bienvenue sur alcasar-rexy-74
Enter passphrase for key '/home/richard/.ssh/id_rsa':
Last login: Sat Apr 3 20:14:51 2010 from
alcasar-rexy-74:~$

```

7.3. Display your logo

It is possible to display your logo by clicking on the logo on the upper right corner of the ACC. Your logo will be inserted in the authentication page and at the top of the page of your management interface. Your logo must be in "png" format and its size must not exceed 100KB. Refresh the page to see the change.



7.4. Modifying the certificate of security

Data is encrypted between ALCASAR and devices on the ALCASAR network in the following cases :

- for users : authentication request and changing passwords;
- for administrators : access to the ALCASAR Control Center (ACC).

Système	
Nom d'hôte canonique	alcasar
Date d'expiration du certificat	May 30 23:59:59 2012 GMT
Version du noyau	2.6.33.7-desktop586-2mnb (SMP)
Distribution	Mandriva Linux 2010.2
Uptime	51 minutes
Utilisateurs	1
Charge système	0.00 0.00 0.00 1 0%

Encryption uses TLS protocol with a server certificate and a local certificate authority (CA) created during the installation. This server certificate has a validity of four years. You can check it on homepage of the ACC. If the server

⚠ certificate is expired, you can regenerate it with the following command : `« alcasar-CA.sh »`. It will be necessary to remove the old certificate from browsers before using the new one.

a) Installation of an official certificate

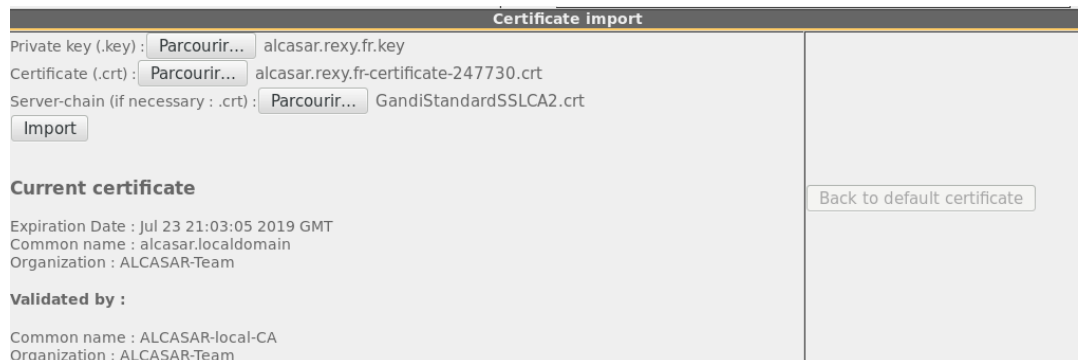
It is possible to install an official certificate instead of the auto-signed certificate. The installation of such certificate avoids security warnings on browsers that did not install the certificate of the certification authority of ALCASAR (cf. §2.2.c).

To acquire your certificate, follow the instructions of your provider knowing that the Web server used in ALCASAR is an “Apache server with mod SSL”.

Tips: You must have a domain name (ex: mydomain.org). Then, create a certificate for the server “alcasar.mydomain.org”. Via the ACC, you can import this certificate (menu : “System” +”Network”). The files you need are:

- The private key you used to create the “certificate request” (extension : .key)
- The certificate created by the provider (extension : .crt)
- Optionnally : the file which defines the certification chain of your provider (extension : .crt). When requested, this file is available on the provider website.

Example with the provider “Gandi.net”, the domain name “rexy.fr” and a certificate for a server named “alcasar.rexy.fr” :



Once imported, you must reboot all the devices connected on the consultation network (same thing for your computer).

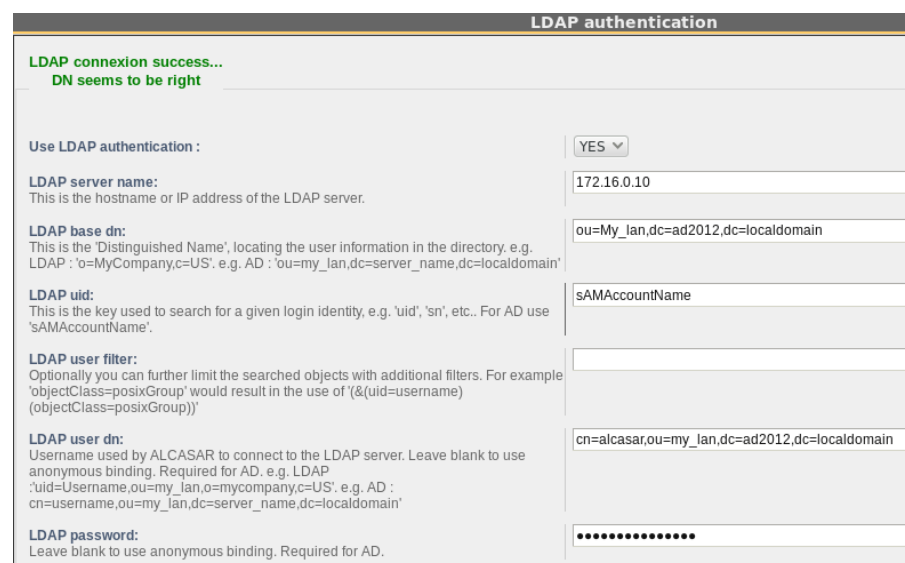
In case of issues, you can go back to the original auto-signed certificate via ACC or with the command line : `« alcasar-importcert.sh -d »`.

7.5. Use of an external directory server (LDAP or AD)

ALCASAR contains a module capable of requesting an external directory server (LDAP or AD) located either on the LAN side or on the WAN side.

When this module is enabled, ALCASAR uses the external directory to authenticate a user, but, if an error occurs, the local database will be used.

In all cases, user events logs are recorded in the local database of ALCASAR. Here is the management GUI of this module :

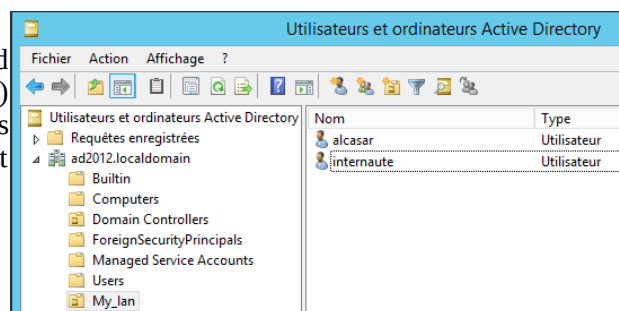


Remark :

- attributes of users stored in the external directory can't be modified with the ACC;
- use of the secure protocol "ldaps" is not available for now. The network segment between ALCASAR and the directory server must be under control, for obvious reasons of security (cf. § 10);
- External directories do not support case sensitive unlike the local database of ALCASAR.

Example for an A.D.: This screenshot shows the directory organized as follows: standard users are put into the Organizational Unit (O.U.) "My_lan". The account used by ALCASAR to request the directory is the account "alcasar". This account is a standard account that does not need special rights.

- DN of the directory : 'ou=My-lan,dc=ad2012,dc=localdomain'. This DN set the position where searching the users.
- LDAP ID : 'sAMAccountName' for an AD; 'uid' in general for other LDAP.
- Filter : leave this field empty unless you want to select only specific users.
- LDAP user : it's the "DN" of the account used by ALCASAR to read the remote directory : 'cn=alcasar,ou=My_lan,dc=ad2012,dc=localdomain' Please note that this field and the field "Password" can be left blank if the directory server accepts requests in anonymous mode.
- Password : of the user « alcasar ».



From an external directory server (LDAP or AD) and in order to provide to users some attributes specific to ALCASAR (bandwidth, concurrent session, etc.), it is possible to create a group named "ldap" (respect lower case letters) for which you set the desired attributes.

It is also possible to assign attributes to a particular account authenticated on an external directory. To do this, create a user in the ACC with the same name / identifier as that is in the directory.

7.6. Integration in a complex architecture (AD, external DHCP, LDAP)

ALCASAR can be installed in an existing network with a Windows domain, a DHCP server and an external directory for the authentication process (LDAP or AD) (see previous §).

a) **Managing Windows DNS**

If your existing environment already has Active Directory enabled, then, Windows computers of your domain controller must request the DNS of this controller for specific resolutions of the domain and they must request


ALCASAR for Internet access. One solution is to configure the ALCASAR DNS so it redirects to the domain controller the DNS queries concerning resolution of the domain. In this way, devices are configured with a unique DNS : ALCASAR.

On ALCASAR, the only change to make is to add the following line in the file `«/usr/local/etc/alcasar-dns-name »` :
`'server=/your.domain/<@IP_SRV-AD-DNS>'`

Example : “brock.net” domain is managed by the AD/DNS server “192.168.182.10”. The line to add is :
`“server=/brock.net/192.168.182.10”`

Please note that it is the domain name and not the name of the server “srv-ad.brock.net”.

Restart the service DNSMASQ to take your changes into account (`« service dnsmasq restart »`).

 **Reminder** : The computers (whether in static IP address mode or in DHCP mode) integrated into a Windows domain must have their primary DNS suffix configured with the Windows domain name and in addition with the suffix '.localdomain'.

b) Using an External DHCP Server

With an external DHCP server, ALCASAR must not assign network settings anymore, but this task must be carried out by the external DHCP server.

In order to do this, ALCASAR will act as a relay agent to enable assignment of IP addresses by the DHCP server.

It is necessary to stop the ALCASAR DHCP server (in the ACC: System/Network: No DHCP mode) and to modify the following variables to manage the external server (configuration file `«/usr/local/etc/alcasar.conf »`) :

- `EXT_DHCP_IP=<@IP_srv_external>`
- `RELAY_DHCP_IP=<@IP_internal_ALCASAR>`
- `RELAY_DHCP_PORT=<relay port to the external DHCP server> : (default 67)`

The external DHCP server must be configured to provide to devices:

- a range of IP @ corresponding to the range allowed by ALCASAR (default 192.168.182.3 to 254/24)
Warning: ALCASAR keep for itself the following address for its internal interface: 192.168.182.1 and 192.168.182.2.
- a gateway address corresponding to the internal IP address of ALCASAR (by default 192.168.182.1);
- the DNS suffix "localdomain";
- the IP address of the DNS server -> the internal IP address of ALCASAR (default 192.168.182.1);
- the IP address of the time server (NTP) -> the internal IP address of ALCASAR (default 192.168.182.1) or the domain controller (to avoid temporal drifts, synchronize the server clock with a trusted NTP server on the internet or with the ALCASAR server).

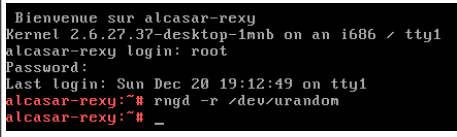
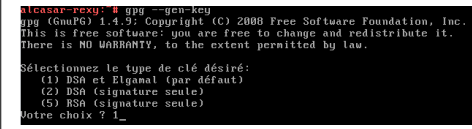

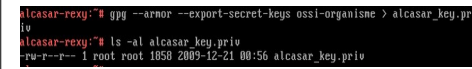
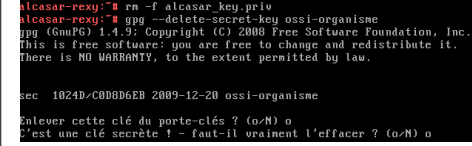
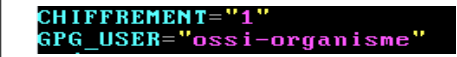
7.7. Encryption of log files

ALCASAR can automatically encrypt weekly log files (cd. §7.1). For this, it uses the GPG asymmetric algorithm (public key + private key).

By Providing the private key to an official of your company, you prevent administrators from being accused of log files modification.

In case of inquiry, simply provide log files and the private key for decryption.

The procedure for activating the encryption is as follows:

Printscreen	Comments	To do
	- Log on as « root ». - Start the entropy generator (random values).	<code>rngd -r /dev/urandom</code>
	- Generate the key pair (public key + private key). - Choose the algorithm, the size and the lifetime of the keys (no expiration). - Choose a user name and passphrase.	<code>gpg --gen-key</code> info: The user name must not contain spaces. This name is summarized in the term <username> later in this procedure.
	- Stop the entropy generator.	<code>killall rngd</code>
	- Export the private key. Copy this to an external media. - Provide it (with passphrase and username) to an official of your organization (Private key escrow).	<code>gpg --armor --export-secret-key \<username> > alcasar_key.priv</code> info : cf. installation doc for the USB management.
	- Delete the previously generated keys - Delete the private key from the GPG keyring	<code>rm -f alcasar_key.priv</code> <code>gpg --delete-secret-key <nom_utilisateur></code>
	- Enable encryption by changing the variables "CRYPT" and "gpg_user" in the file « /usr/local/bin/alcasar-archive.sh ».	<code>vi /usr/local/bin/alcasar-log-export.sh</code> info : assign the "username" to the variable « gpg_user »

Infos :

- ALCASAR uses the keyring "root" in the directory « /root/.gnupg » ;
- '`gpg --list-key`' : allows to list all the key pairs contained in this kit;
- '`gpg --delete-key <user_name>`' : deletes a public key keyring;
- '`gpg --delete-secret-key <user_name>`' : deletes a private key keyring;
- You can copy the directory « /root/.gnupg » on another server ALCASAR. Thus, you can use the same key and the same <username>;
- To decipher an encrypted archive: '`gpg --decrypt -files <filename_crypt_archive>`'.

7.8. Managing multiple Internet connections (load balancing)

ALCASAR has a script to distribute requests over a number of gateways to the Internet "`alcasar-load_balancing.sh start | stop | status`".

The parameters are not included in the ACC, it is necessary to modify the global configuration file "`alcasar.conf`" located under "`/usr/local/etc`".

Associated parameters (virtual networks card, weights, gateway ip address, etc.) must be defined in the following format: `WANx = "active [1 | 0], @ IPx / mask, GWx, Weight, MTUX"`.

The script creates the interfaces on the fly.

To make it active, the parameter "MULTIWAN" must include the "on" or "On" value; otherwise insert the "Off" value to enable the "single gateway" mode.

The connection test frequency is set by default to 30 sec.

Please note:

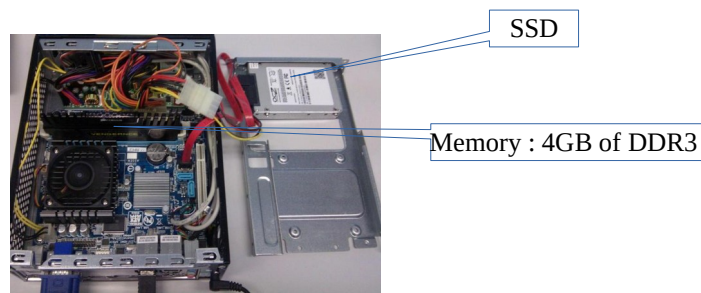
The parameter "FAILOVER=0" enables the MULTIWAN mode with no connection test to the gateways (no gateway failure detection).

7.9. Creating an ALCASAR dedicated PC

This chapter presents an example of a dedicated PC ALCASAR (appliance) whose constraints are : miniature (mini-itx), low noise, low cost and low energy consumption.

The configuration is the following :

- Case mini ITX (12V powerline);
- motherboard GigaByte GA-J1900N-D3V (with two network cards and Intel 4-core Celeron onboard);
- 4GB of DDR3 SODIMM memory;
- HDD 2.5' 200GB SATA.



The cost of this configuration is around 250 € (shipping included).

The consumption of this mini-PC is not more than 30W; the cost of the annual electricity consumption in France is about 30€ ($30 * 24 * 365/1000 * 0.1329$).

ALCASAR is installed via a USB drive as usual.

Once deployed, the unit requires no keyboard, no mouse and no screen.

7.10. Bypassing the portal

For reasons of maintenance or emergency, a portal by-pass procedure was created.

It disables user authentication and filtering.

Logging network activity remains active.

Network event logging remains active, but ALCASAR does not trace internet connections anymore.

- Bypass the portal by running the script « `alcasar-bypass.sh --on` ».
- To stop it, run the script « `alcasar-bypass.sh --off` ».

Please note:

Bypass mode is no longer active after restarting the server.

8. Shutdown, restart, update and reinstallation

8.1. Shutdown and restart

There are three possibilities to stop or restart properly the system:

- Via ACC
- by briefly pressing the power button of the PC;
- by connecting to the console as root and running the command "init 0";

When restarting the portal ALCASAR a procedure deletes all connections that have not been closed due to an unplanned shutdown (failure, power failure, etc.).

8.2. Operating system update

Mageia-Linux provides an excellent mechanism to apply security patches on the system and its components. ALCASAR has been developed to be fully compatible with this mechanism. So, every night at 3:30, the security updates are downloaded, checked and applied. As root, you can manually update the system with the command « `urpmi -auto --auto-update` ».

Once the update is complete, a message may warn you that a system reboot is required. This message appears only if a new kernel or a major library were updated.

8.3. ALCASAR minor updates

You can see if an update is available on ALCASAR web page, or on the cover page of the ACC, or by executing the following command « `alcasar-version.sh` ». Download and extract the archive of the latest version like a normal installation.

When starting the installation script (« `sh alcasar.sh --install` »), it detects your current version and offers you the possibility to update automatically ALCASAR to the latest version available.

Only minor updates can be done by that way. If it's impossible, the script ask you to perform a reinstallation.

During an minor update, the following settings will still remain:

- network configuration;
- the name and logo of the organization;
- logins and passwords for administrative accounts of the portal;
- users and groups database;
- main and secondary blacklists;
- trusted sites and MAC addresses list;
- network filtering configuration;
- the certificates of the Certification Authority (C.A.) and the server certificate.

8.4. ALCASAR major update or reinstallation

Via ACC, create a backup of the current users database (see §6.2). Save this backup file on a extern system.

Install the new operating system and the new version of ALCASAR (see installation documentation).

Via ACC, import the users database (see §3.6.a).

9. Troubleshooting

If you have any problem with ALCASAR, this chapter sets out several troubleshooting steps that may indicate the cause. All commands (italic text on a yellow background) must be run in a console as « root ».

9.1. Network connectivity

Retrieve the network informations in the file “*/usr/local/etc/alcasar.conf*”

- **Check the network card status:** run the command “*ip link*” to know the name of your two network cards. In the following of this document, we use “INTIF” for naming the internal network card (connected to the consultation network). “EXTIF” is the name of the external network card (connected to the broadband router). Run “*ethtool INTIF*” and “*ethtool EXTIF*” in order to check the status of both network cards (“*Link detected*” and “*Speed*” fields for example) ;
- **gateway/router connection test:** Run the command “*route -n*” to display the IP address of the broadband modem/router. Ping the broadband modem/router (Internet router). If an error occurs, check the cable connections and the status of the gateway/router;
- **External DNS servers connection test:** Ping the DNS servers. If an error occurs, try with another server;
- **Internal DNS server connection test (dnsmasq) :** Send a name resolution request (ex. : *nslookup www.google.fr*). If an error occurs, check state of the service "dnsmasq". You can restart the dnsmasq service with the command : « *systemctl restart dnsmasq* » ;
- **Connection test to the Internet:** run the command « *wget www.google.fr* ». In case of success the Google page is downloaded and saved locally (index.html). The result of this test is displayed in the menu "system / service" of the ACC;
- **Device connection test :** Run the command « *arping -I INTIF @ip_equipment* » to know if a device is connected to the ALCASAR network.
- To discover all the device, install the “arp-scan” package (“*urpmi arp-scan*”) and run the command « *arpscan -I INTIF --localnet* » ;


```
00:1C:25:CB:BA:7B 192.168.182.1
00:11:25:B5:FC:41 192.168.182.25
00:15:77:A2:6D:E9 192.168.182.129
```

9.2. Available disk space

If the available disk space is not enough, some modules may not run properly anymore. You can check the available disk space (especially the */var* partition) :

- in GUI-mode via the homepage of the ACC;
- in text mode, using the command « *df* »

Point	Type	Partition	Utilisation	Libre	Occupé	Taille
/	ext3	/dev/sda1	50% (1%)	383,34 Mo	547,34 Mo	980,49 Mo
/tmp	ext3	/dev/sda5	3% (1%)	1,93 Go	33,77 Mo	1,12 Go
/home	ext3	/dev/sda7	3% (1%)	1,97 Go	33,46 Mo	1,10 Go
/var	ext3	/dev/sda8	10%	62,74 Go	251,01 Mo	66,36 Go
Total:			13%	85,21 Go	885,59 Mo	69,53 Go

In case of excessive reduction of this space, delete old log files after they have been archived
(directory */var/Save/**).

9.3. ALCASAR server services

In order to complete these tasks, ALCASAR uses several server services. The status of these services is displayed in the ACC (menu « system/services »). You can stop or restart them.

Status	Nom du services	Actions	
✓	radiusd	---	Arrêter Redémarrer
✓	chilli	---	Arrêter Redémarrer
✓	dansguardian	---	Arrêter Redémarrer
✓	mysqld	---	Arrêter Redémarrer
✓	squid	---	Arrêter Redémarrer

If one of these services can't be restarted, you can diagnostic the mistake. Connect to the console of ALCASAR (directly or with SSH). You can control the services with the command « *systemctl start/stop/restart service_name* ». At the same time, display the log file with the command « *journalctl -f* ».

9.4. Client devices connection

In the ACC (menu "System / Activity"), make sure that all your clients' network settings are correct (MAC address / IP address). If not, delete the old settings set by ALCASAR and save the new correct settings..

#	adresse IP	adresse MAC	usager	Action
1	192.168.182.130	00-0B-6C-3A-55-4D	██████	Déconnecter
2	192.168.182.22	00-1A-A0-2F-10-DB	██████	Déconnecter
3	192.168.182.15	00-15-58-E7-24-BA	██████	Supprimer
4	192.168.182.10	00-15-58-E7-5B-22	██████	Déconnecter

On the client devices :

- check the network settings: run « `ipconfig /all` » on Windows, « `/sbin/ifconfig` » on Linux ;
- if they are not correct, update them. For devices that use dynamic IP addresses, send again a DHCP request : « `ipconfig /renew` » on Windows, « `dhclient network_card_name` » on Linux.

If the interface is not configured, check the cable connections and make sure that DHCP frames of your client pass on the network (use the network analyser "Wireshark" for example). On ALCASAR, you can see incoming DHCP requests by running the command « `journalctl -f` » or by displaying the terminal 12 (<Alt> + F12).

```
Dec 29 22:31:27 alcasar coova-chilli[2299]: chilli.c: 2694: New DHCP request from MAC=08-00-27-E7-EA-89
Dec 29 22:31:27 alcasar coova-chilli[2299]: chilli.c: 2661: Client MAC=08-00-27-E7-EA-89 assigned IP 192.168.182.129
```

- **Connection test to the portal :** Send a ping request to the IP address of ALCASAR. If an error occurs, check the cable connections and the network settings.
- **Name resolution test :** On Windows and on Linux, run « `nslookup alcasar` ». The result should be the @IP ALCASAR. In case of failure, check that the IP address of ALCASAR is the DNS server of the client. Verify that the suffix "localdomain" is correctly set in the network parameters of Windows PCs : « `ipconfig /all` » or Linux PCs : « `cat /etc/resolv.conf` ».
- **The ACC:** On a client, with a browser try to connect to ALCASAR (http://alcasar).
- **Internet Connection test :** Try to visit a site on Internet. ALCASAR must "intercept" your request and display the login window.

9.5. Connection to ALCASAR with a serial terminal

It can be useful to use a keyboardless and screenless server. Below, the tutorial explains how to connect to a serial terminal (thank you [Igor Popowski](#)) :

<p>File <code>/etc/inittab</code> :</p> <ul style="list-style-type: none"> • save the original : <code>cp /etc/inittab /etc/inittab.save</code> • edit the file : <code>vi /etc/inittab</code> before this line : « # Single user mode », add the following lines: <code>#connexion au terminal serial</code> <code>s0:2345:respawn:/sbin/agetty -L 9600 ttyS0 vt100 -f /etc/issue</code> then save « Esc » then « :wq! » 	<p>File <code>/etc/securetty</code> :</p> <ul style="list-style-type: none"> • save the original : <code>cp /etc/securetty /etc/securetty.save</code> • edit the file : <code>vi /etc/securetty</code> add one of the two following line at the end of file: <code>ttyS0</code> if using a 9-pin serial port <code>ttyUSB0</code> if using a Serial / USB and save «Echap» and « :wq! » • run the command « <code>init q</code> » to account for this change.
<p>To display the output of the boot in GRUB, edit the file <code>/boot/grub/menu.lst</code></p> <ul style="list-style-type: none"> • save the original: <code>cp /boot/grub/menu.lst /boot/grub/menu.lst.save</code> • in the section 'title linux' after adding <code>vga=791</code> to end of line : <code>console=tty0 console=ttyS0,9600n8</code> by standard serial port <code>console=tty0 console=ttyUSB0,9600n8</code> in USB port 	

Connect your management station to ALCASAR with a null modem cable on the serial port COM1 (or through a serial/usb adaptator).

Configure « PuTTY » to use this COM1 serial connection in vt100 mode.

9.6. Problems experienced

This chapter presents feedbacks of organizations who have faced problems and have solved them.

a) On some sites, pictures are not displayed

When the domain names and URLs filtering is enabled, by default, ALCASAR filters links without domain name (links containing IP addresses). Thus, pages containing this kind of links are partially displayed.

To prevent from this problem, two solutions : uncheck the « IP » box from the blacklist (cf. § 5.1.c) or save the IP addresses contained in these links as "Domain names rehabilitated" (cf. § 5.1.c).

For example, the site "leboncoin.fr" hosts its pictures on the following IP addresses : 193.164.196.30, .40, .50 and .60 and 193.164.197.30, .40 and .50.

b) Navigation impossible with some antivirus

Disable the « proxy-web » function integrated in some antivirus. In Trend-Micro antivirus, for example, this function relies on a whitelist/blacklist downloaded from the servers of Trend Micro (backup30.trendmicro.com, etc.) that analyses/validates each request of a website... A limited rights user can enable it.

To avoid all inconvenience of this function incompatible with ALCASAR, it is better to stop the service « Proxy Trend service » and to restart the computer.

c) Windows Stations previously connected to a public hotspot

When a system connects to a "public hotspot", it provides network parameters and a lease time which determines the validity time of these parameters. Windows XP stations do not reset these settings during a reboot.

Thus, even if they change of wifi network, they will try to connect with the parameters of the previous hotspot. This problem is recognized by Microsoft that offers the following solution: Manually force the refreshing of the ip address with the command « `ipconfig /renew` ».

d) Windows clients with static addressing

It is necessary to add the DNS suffix « localdomain » (Network configuration / Advanced / DNS).

e) No Internet browsing but the browser accesses the homepage of ALCASAR (<http://alcasar>)

This can occur after a complete reinstallation of the portal or after an update with a change of the server certificate. Browsers display the following pages when they attempt to access a website:



Impossible d'afficher la page

La page que vous recherchez est actuellement indisponible. Le site Web rencontre peut-être des difficultés techniques, ou vous devez modifier les paramètres de votre navigateur.

Essayez de la manière suivante :

- Cliquez sur le bouton Actualiser ou recommencez ultérieurement.
- Si vous avez entré l'adresse de cette page dans la barre d'adresses, vérifiez qu'elle est correcte.
- Pour vérifier vos paramètres de connexion, cliquez sur le menu **Outils**, puis sur **Options Internet**. Dans l'onglet **Connexions**, cliquez sur **Paramètres**. Les paramètres

With IE6

Internet Explorer ne peut pas afficher cette page Web

Essayez la chose suivante :

[Diagnostiquer les problèmes de connexion](#)

Informations

With IE 7 - 8 and 9

Échec de la connexion sécurisée

Une erreur est survenue pendant une connexion à 192.168.182.1.

Vous avez reçu un certificat invalide. Veuillez contacter l'administrateur du serveur ou votre correspondant de messagerie et fournissez-lui les informations suivantes :

Votre certificat contient le même numéro de série qu'un autre certificat émis par l'autorité de certification. Veuillez vous procurer un nouveau certificat avec un numéro de série unique.

(Code d'erreur : sec_error_reused_issuer_and_serial)

La page que vous essayez de consulter ne peut pas être affichée car l'authenticité des données reçues ne peut être vérifiée.

- Veuillez contacter les propriétaires du site Web pour les en informer.

[Réessayer](#)

With Mozilla

This is because browsers try to authenticate the ALCASAR portal using an old certificate. The old certificate must be deleted on the clients' browsers (« Tools » / « Internet options » / tab « content » / button « Certificates » / tab « Root certification Authority ») to be replaced by the new one as described in chapter §2.2.c.

f) No Internet browsing but the « Trusted sites » section is filled in

ALCASAR verifies the validity of domain names entered in this section (cf. § 4.7.a). If a domain name is not valid, the 'chilli' service can no longer start. Then, change the invalid domain name and restart the 'chilli' service

with the command « `service chilli restart` ».

g) Operating system and memory overload

The Linux system always attempts to use the maximum amount of memory (RAM) available. On the homepage of the ACC, the bar graph indicating the use of the memory can be regularly beyond 80 percent and can turn red. This is normal. If the system needs more memory, it will use the swap. This swap is an area of the hard disk used when your computer runs out of RAM but this “memory” is approximately 1000 times slower. If you notice that the system uses swap space (> 1%), you can consider increasing the RAM to significantly improve system responsiveness especially when the domain names and URLs filtering is enabled. You can display the system load on the home page of the ACC in 'System /Load system', or in a console with the commands « `top` » ou « `uptime` » :

- 3 values shown represent the average system load average for the last hour, the five last hours and the last 15 minutes. The average load is the number of processes waiting for CPU usage. These values are normally less than 1.
- A value greater than '1 .00' results from an under-sized server (especially if it affects the three values (long-term overload).
- Search the process which represents a high proportion of the load (command « `top` »).

9.7. Optimization server

In the case of large networks, Internet delays can be detected while the system does not seem to be overloaded (see main page of the ACC: load average <1, no or little use of the area swap processor operated 'normally', etc.).

Check your bandwidth while Internet access is compatible with the number of users simultaneously connected (throughput per user = overall throughput / number of connected users).

These delays can occur especially when the filter attributes are enabled (blacklist / whitelist).

Depending on the physical capabilities of the server, it is possible to attempt to optimize certain parameters.

Several of them have already been integrat in the 2.9.2 version of ALCASAR, but they can be adjusted to better stick to your architecture. It will be good to test over a short period before validating the parameters.

The services on which it is possible to act are:

- The instance of "dnsmasq-blacklist" by increasing the buffer size (256MB by default). To increase it to 2048MB add value `cachesize 2048` in `/etc/dnsmasq-blacklist.conf` .
- The "dansguardian" service the number limit "son process" can be reached quickly. In `/etc/dansguardian/dansguardian.conf` file, you can assign the following values:
 - `Maxchildren = 500`
 - `Minchildren = 30`
 - `Minsparechildren = 24`
 - `Preforkchildren = 10`
 - `Maxsparechildren = 256`
 - `maxagechildren = 10000`
- The antivirus service "havp" which is directly related to the Dansguardian service. In `/etc/havp/havp.config`, you can assign the following value: `SERVERNUMBER 30`

To take into the changes, restart the services:

- `systemctl restart dnsmasq-blacklist`
- `systemctl restart dansguardian`
- `systemctl restart havp`

On the main page of the ACC, check that the "Load Average" setting does not increase beyond measure; otherwise decrease parameters at once.

10. Security

On the consultation network, ALCASAR is the Internet Access Controller. It also helps to protect the network from external threats or from internal usurpation. To this end, it includes :

- protection credentials theft. The authentication flow between devices and ALCASAR users are encrypted. Passwords are stored encrypted in the database of users;
- protection against forgetting to log out. The users whose the equipment do not respond during 6 minutes are automatically disconnected; moreover, the attribute "time limit of one session" (cf. § 4.1) allows to automatically disconnect a user after a pre-set time;
- protection against session hijacking by spoofing network settings. This spoofing technique exploits the weaknesses of "Ethernet" and WIFI protocols. To reduce this risk, ALCASAR incorporates an auto-protection process which is running every 3 minutes ([alcasar-watchdog.sh](#));
- protection of the bootloader (GRUB) of the portal with a password. This password is stored in the file « `/root/ALCASAR-passwords.txt` »;
- antiviral protection using an antimalware running on the WEB flows (HTTP) of the users whose the attribute is set;
- several filtering systems and anti-bypass systems (DNS proxy, dynamic firewall, evolutive blacklists (IP addresses, domain names and URLs), configurable whitelists.

The mere presence of ALCASAR not guarantee an absolute security against all threats, including internal threat (hacker on the ALCASAR network). In most cases, this threat remains very low. Without being paranoid and if you really need a high security, the following measures can improve the overall security of your system.

10.1. On ALCASAR

- Choose a strong "root" password (you can change it by running the command « `passwd` ») ;
- Protect your "ALCASAR" server and ISP's equipment to prevent unauthorized access, theft or installation of equipment between the modem and ALCASAR (locked premises, padlocks, etc.).
- configure the BIOS so that only the internal hard disk drive is bootable.
- Set a password to access the BIOS setup.

10.2. On the network

a) Network type "hotspot"

If you want to set up free access computers, it may be interesting to install products ensuring both the protection of the privacy and security of these computers (like "cybercafe" computers). These products allow the user to be compartmentalised in a sealed environment. At the end of his session, the user environment is totally cleaned.

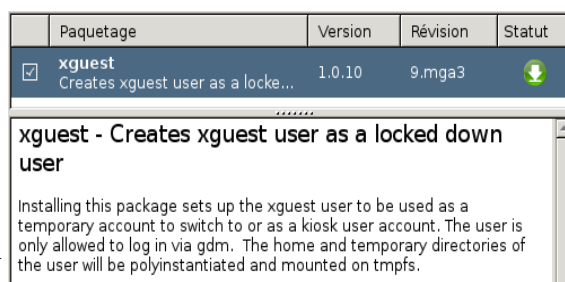
- On Linux, you can install the product "xguest" (it is provided natively with Mageia, Mandriva, Fedora, RedHat and Centos distributions)
- On Windows, you can chose one of these not free projects : "Openkiosk", "DeepFreeze", "Smartshield" and "reboot restore RX". They save all the computer and restore it after a reboot. Microsoft gave the software "Steady state" for XP/Vista. This software is no longer supported.

On WIFI Access Points (AP) :

- Enable the "client isolation" option (also called wireless isolation). It prevents a user connected to an access point to communicate with another one connected to the same access point. They can only connect to Internet via ALCASAR.
- enable WPA2-Personal encryption (also known as WPA2-PSK). It avoids user to listen WIFI traffic (even if the key is the same for everyone). You can choose a simple WPA2 key as your organization name for example.

On switches of wired Ethernet networks :

- enable "DHCP snooping" on ALCASAR port and on interswitch ports. This will prevent false (fake) DHCP servers.



b) Controlled networks

On these networks, the stations must be protected by physical measures to ensure their integrity. Physical access to network consultation must be secured by the following:

- disconnect unused network jacks;
- on WIFI hotspots:
 - camouflage the network name (SSID)
 - enable encryption WPA2 "personal" with a strong key;
- on Ethernet switches:
 - Enable the "lock port" ("Port Security" function) to associate the MAC addresses of devices to the physical ports of switches;
 - select the "DHCP snooping" function on the port used by ALCASAR and on the interswitch ports. This will prevent false DHCP servers (Fake DHCP servers).

Devices can (should) incorporate several security features such as locking the BIOS setup, locking the desktop configuration, antivirus, automatic update security patches (patch), etc.. To facilitate downloading of security patches or antivirus updates(cf. § 4.7), ALCASAR can authorize devices to automatically connect without authentication on sites specifically identified.



Make your users aware of these two security features:

- **Password must be changed**
- **Credentials must remain confidential (Each user is responsible of "friend's session" using his credentials).**

11. Annexes

11.1. Useful commands and files

The administration of ALCASAR can be done from a command line interface (as 'root'). All these commands (shell scripts) begin with "alcasar-..." are located in the directories « */usr/local/bin/* » and « */usr/local/sbin/* ». Some of them rely on the central configuration file of ALCASAR (« */usr/local/etc/alcasar.conf* »). The "-h" argument lists available command line arguments.

- **alcasar-archive.sh**
 - [-l|--live]: create the archive file (named 'traceability') of the users log files and the users database for the last day;
 - [-n|--now]: create the archive file (named 'traceability') of the users log files and the users database for the last week (launch by cron every monday at 5:35 pm);
 - [-c|--clean] : remove archive files older than one year.
- **alcasar-bl.sh**
 - [-download|--download] : download the latest version of the BlackList (BL);
 - [-adapt|--adapt] : adapt the freshly downloaded BL to the ALCASAR architecture ;
 - [-reload|--reload] : activate the freshly downloaded BL;
 - [-cat_choice|--cat_choice]: apply changes done via ACC (modifying categories, adding/removing domain names, etc.).
- **alcasar-bypass.sh** [-on/--off] : enables/disables the « BYPASS » mode.
- **alcasar-CA.sh** : creates a local CA certificate and a server certificate for the host "alcasar.localdomain". The Web server need to be restarted (*systemctl restart httpd*).
- **alcasar-conf.sh**
 - [-create|--create]: creation of an archive file of ALCASAR (*/tmp/alcasar-conf.tgz*) use when the system is updated;
 - [-load|--load]: load an archive file (don't apply);
 - [-apply|--apply] : apply the parameters of the configuration file (*/usr/local/etc/alcasar.conf*).
- **alcasar-daemon.sh** : Check the state of the main ALCASAR services (17 in V 2.9.2). Restart those that seem not running. Launch by cron every 18'.
- **alcasar-dhcp.sh** [-on|--on][--off|--off] : enable/disable DHCP service.
- **alcasar-file-clean.sh** : cleanning of several ALCASAR conf files (sort, remove empty lines, etc.).
- **alcasar-https.sh** [-on|--on][--off|--off] : enables/disables HTTPS to authenticate the users.
- **alcasar-importcert.sh**
 - [-i certificate.crt -k keyfile.key (-c certificate_chain.crt)] : import an official certificate of security;
 - [-d] : go back to the auto-signed certificate.
- **alcasar-iptables.sh** : apply the ALCASAR iptables rules to the firewall.
- **alcasar-load-balancing.sh** : Aggregates several Internet connections. IP addresses, bandwidth and MTU of available modems/routers must be configured in the file */usr/local/etc/alcasar.conf* to work properly. Remember, the script is automatically launched when the system starts up only if the MULTIWAN parameter is set up in the file */usr/local/etc/alcasar.conf*. To ensure the script is running properly, execute the command : *ip route*. ("start", "stop" and "status" are the options available for this command).
- **alcasar-logout.sh**
 - [username] : logout the user <username>;
 - [all] : logout all the logged users.
- **alcasar-mysql.sh**
 - [-i file.sql | --import file.sql] : import a users database (! overwrite the existing one);
 - [-r|--raz] : reset the users database;
 - [-d|--dump] : create an archive file of the current users database in « */var/Save/base* » ;
 - [-a|--acct_stop] : stop the opened accounting sessions;
 - [-c|--check]: verify the integrity of the users database and try to repair it if needed.
- **alcasar-nf.sh** [-on|--on][--off|--off] : enable/disable the filtering of network protocols;
- **alcasar-profil.sh**
 - [--list
- **alcasar-rpm-download.sh** : downloads and creates an archive file of all the needed RPM to install ALCASAR (*/root/rpms-arch.tar.gz*). Use this file if you want to install an ALCASAR on a very tiny bandwidth.
- **alcasar-sms.sh** : manage gammu process when an 2G/3G adapter is detected.
- **alcasar-ticket-clean** : remove pdf tickets (vouchers) generated when a user is created (launched by cron every 30').
- **alcasar-uninstall** : remove ALCASAR (used when an update is perform).
- **alcasar-url_filter.sh**
 - [-safesearch_on|--safesearch_off] : enable/disable the safesearch system on search engine (Google, Bing, etc.);
 - [-pureip_on|--pureip_off] : enable/disable the filtering of URLs containing IP addresses (instead of a domain name).
- **alcasar-urpmi.sh** : install and update ALCASAR needed RPMs (used during the installation process).
- **alcasar-version.sh** : display the current version and the last available.
- **alcasar-watchdog** : test the Internet connectivity. Test if an authenticated user isn't usurped (launched by cron every 3').

11.2. Helpful authentication exceptions

The following values allow network devices to access WEB sites without authentication process in order to connect to the following services:

- The following values allow client devices to access the Internet without authentication in order to connect to the following services:
- perform a test of Internet connection,
- Microsoft system update,
- “TrendMicro” and “Clamav” antivirus update,
- check Mozilla version and its modules,
- ...

Sites, IP addresses or URLs can be configured in the ACC or in the following file “*/usr/local/etc/alcasar-uamallowed*”:

```
uamallowed="activation.sls.microsoft.com"
uamallowed="www.msftncsi.com"
uamallowed="crl.microsoft.com"
uamallowed="download.microsoft.com"
uamallowed="download.windowsupdate.com"
uamallowed="go.microsoft.com"
uamallowed="ntservicepack.microsoft.com"
uamallowed="stats.update.microsoft.com"
uamallowed="update.microsoft.com"
uamallowed="update.microsoft.com.nsatc.net"
uamallowed="pccreg.trendmicro.de"
uamallowed="pmac.trendmicro.com"
uamallowed="tis16-emea-p.activeupdate.trendmicro.com"
uamallowed="update.nai.com"
uamallowed="download.mozilla.org"
```

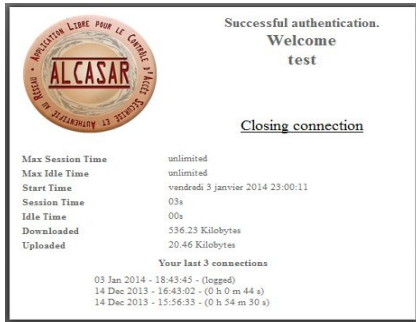
Domains can also be configured in the ACC or in the file “*/usr/local/etc/alcasar-uamdomain*”:

```
uamdomain=".download.microsoft.com"
uamdomain=".download.windowsupdate.com"
uamdomain=".ds.download.windowsupdate.com"
uamdomain=".microsoft.com"
uamdomain=".update.microsoft.com"
uamdomain=".update.microsoft.com.nsatc.net"
uamdomain=".windowsupdate.com"
uamdomain=".windowsupdate.microsoft.com"
uamdomain=".trendmicro.com"
uamdomain=".activeupdate.trendmicro.com"
uamdomain=".akamaiedge.net"
uamdomain=".akamaitechnologies.com"
uamdomain=".clamav.net"
```

It is necessary to restart the “chili” service if these files are changed directly.

11.3. User sheet

ALCASAR is now deployed in your organization. ALCASAR is a network access controller, it means that when you will go on the Internet, the following login window will be displayed. (Both fields are case sensitive; "smith" and "Smith" are two different users).



When login is successful, this popup window appears. It allows you to logout from ALCASAR. This window provides information on your account permissions (lease time, download limits, connection history, etc.).

If this window is closed when you want to logout, just type "logout" in your browser address bar.



If login fails, a message will give you more information: Expired account, maximum download volume reached, attempts to login outside the allocated slot times, etc.

You can access your account details(login/logout, change your password, installation of the certificate in your browser) by entering "http://alcasar" in your browser address bar.



The portal embeds a WEB flow antimalware and a website filtering to prevent unauthorized web browsing. It also helps to know if there is a problem with the Internet connection (hardware failure or ISP network failure). The following pages are displayed:

