



streamcore

SGMCONF GUIDE



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1 Introduction

The StreamGroomer Manager, commonly named SGM, is the central platform designed to manage, configure and monitor both the logical and physical views of the WAN access links, sites and applications. The SGM helps network administrators and managers to understand how network resources are used and applications behave on the network with reporting features.

This document is the user guide for the Streamcore administrator. It describes the tasks to configure and monitor the SGM:

- Installation and initial configuration (network configuration) to allow the StreamGroomers to communicate with the SGM and the Streamcore users to connect with StreamView, StreamReport, etc
- Software version management,
- Database management
- User and security management
- High availability setup and monitoring

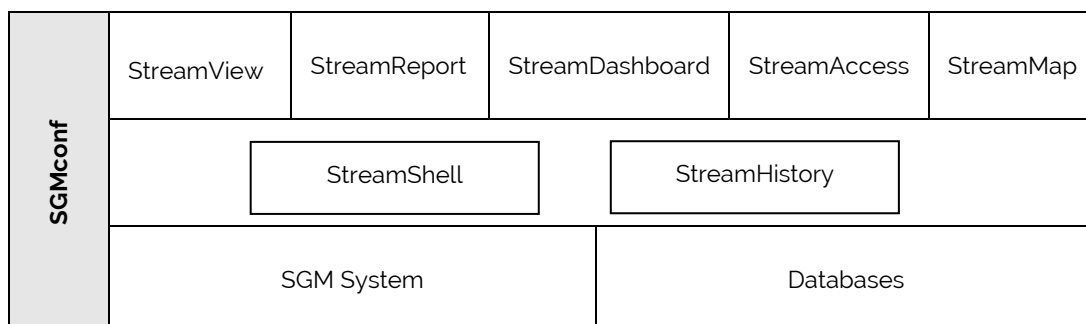
1.1 WHAT IS STREAMGROOMER MANAGER (SGM)?

StreamGroomer Manager (SGM) is the Streamcore management appliance. The SGM can be a hardware or virtual appliance and both types provide the same features.

A SGM instance hosts the following software applications:

- **SGM System:** SGM operating system
- **SGMconf:** SGM management application
- **Databases:** coherent sets of data associated with one or several StreamGroomers
- **StreamShell:** the Streamcore command mode (cli) on which all the applications are interfaced
- **StreamView:** configuration and supervision application in graphic mode
- **StreamHistory:** access module to long-term data and graph generation
- **StreamReport:** application for editing PDF reports
- **StreamDashboard:** application for managing personalized Web dashboards
- **StreamAccess:** application for managing flexible access rights to the Web applications
- **StreamMap:** application for alarms and performance summary display in a geographic map

This software suite can be represented as follows:



Managed objects such as sites, rules, StreamGroomers, network configurations, reports, dashboards and scorecards definitions, user and permissions are stored in Streamcore databases. A SGM can handle several databases so the Streamcore administrators can manage different network infrastructures.

Management of these databases (i.e., creation, deletion, back up, and restoration) is handled through the SGMconf application.

A database is used through the middleware (StreamShell, StreamHistory) by the applications (StreamView, StreamReport, StreamDashboard, StreamAccess and StreamMap) to configure and manage all Streamcore solution features.

Capacity and performances of the SGM depend on the CPU (speed and number of cores), memory and storage available. Different models of SGM are designed to support from small configurations declaring a few sites and managed rules to large network configurations implementing hundreds or thousands of sites and rules. It is recommended to study carefully the size of the network infrastructure (DC sites, branch office sites, applications) and if possible, try to anticipate the addition of new branch offices or the need to monitor new deployed applications in the organization. This will determine the SGM model that will support the future changes of the IT organization.

1.2 THE SGMCONF APPLICATION

Administrating StreamGroomer Manager (SGM)

Updating software and databases is done using the Streamcore application SGMconf. It is accessed via HTTP or HTTPS, using a web browser. The following section presents instructions on how to use the SGMConf application.

The application lets you:

- Access online documentation
- **Configure the SGM System:**
 - Manage SGM backups
 - Update parameters and SGM server security
 - Customize the welcome page and logo used by applications
 - Access maintenance information and manage license upgrades
- Update SGMconf and install a StreamGroomer Software Suite (SGSS) which consists of all **SGM applications:**
 - StreamView
 - StreamReport
 - StreamDashboard
 - StreamAccess
 - StreamMap
 - SGM middleware (StreamShell, StreamHistory)
 - Other embedded software used by StreamGroomers
- Manage configuration of StreamGroomers, sites and rules as well as statistic in Streamcore databases. Management tasks include the creation, deletion, backup and the recovery of databases.

2 Initial Configuration of the SGM

This chapter describes how to set the basic configuration of the SGM, so it is manageable and able to communicate with the managed StreamGroomers and StreamCollector.

Basic configuration consists in setting the network parameters:

- IP address, IP gateway and subnet mask
- Host name and domain
- DNS server and secondary DNS server

Initialize the SGM as a hardware appliance

When the SGM has booted after the installation, it is required to initialize its network configuration. It is required to connect a keyboard and a screen to the appliance to get access to the console of the SGM and to plug the SGM on the network with its the ADMIN interface.

The user account **boot** has been created in 6.5 in the system to allow the Streamcore administrator to enter the basic configuration, as for the StreamGroomers. The default password is boot and it is highly recommended to modify it.

To enter the menu boot on a hardware SGM, use the console (screen + keyboard). The login screen should appear.

Logon as **boot** user. A short menu is displayed as shown in the picture below. The serial number of the SGM is already set and cannot be changed as this is the identifier of the SGM. By default, all the parameters are empty.

```
sc@SGM:~$ su - boot
Password:
Welcome to Streamcore configuration tool.
Actual SGM parameters are:
    SGM device model: 'V'
    Serial number: 'E00F0003'
Ethernet interface name: 'ens192'
                        available: ens192
    Host name: 'SGM'
    IPv4 address: ''
    Network mask: ''
    Gateway address: ''
    Primary DNS: ''
    Secondary DNS: ''
    Domain: ''
1 - Change ethernet interface, IP address and gateway.
2 - Set host name, domain and DNS servers.
3 - Apply changes to SGM.
0 - Quit.
Enter your choice from 0 to 3:
```

Use the menu to set or update the network parameters:

Enter 1 to set the IP address of the SGM, the network mask and the gateway IP address as shown below:

```

1 - Change ethernet interface, IP address and gateway.
2 - Set host name, domain and DNS servers.

3 - Apply changes to SGM.

0 - Quit.

Enter your choice from 0 to 3: 1
Ethernet interface name[ens192] :
IPv4 address: 192.168.15.164
Network mask: 255.255.255.0
Gateway address: 192.168.15.254
SGM device model: 'V'
Serial number: 'E00F0003'

Ethernet interface name: 'ens192'
available: ens192
Host name: 'SGM'
IPv4 address: '192.168.15.164'
Network mask: '255.255.255.0'
Gateway address: '192.168.15.254'
Primary DNS: ''
Secondary DNS: ''
Domain: ''

1 - Change ethernet interface, IP address and gateway.
2 - Set host name, domain and DNS servers.

3 - Apply changes to SGM.

0 - Quit.

```

Connecting via a virtual SGM (VMware)

The type of vSGM you install depends on the number of sites and rules that you will use:

	SGM Av	SGM Bv	SGM Cv
CPU	2 * 2 Ghz	4 * 2 Ghz	8 * 2 Ghz
RAM (Gb)	1	2	4
HD	80 GB 7200 rpm	120 GB 10 000 rpm	200 GB 15 000 rpm
Max number of rules	750	3 000	10 000

Note: You must have administrator privileges on VSphere to deploy an OVA.

- Launch VSphere client and select "Deploy OVF Template".
- Use the browse button to select the source location and then click **Next**.
- Verify the template details for example the "Product", "Description" and "Download size", then click **Next**.
- Specify a machine name then click **Next**.

- Select a specific host to deploy the OVA file then click **Next**.
- Select where you want to store the VM files then click **Next**.
- Map the network vlan then click **Next**.
- Finalise the deployment by reading details and then clicking **Finish**.
- Launch the VM and then connect to the console using
 - Login: **sgm**
 - Password: **sgm**
 - Connect as a **su** – password: **streamcore**
- Change default IP address using the following command:
 - `/sbin/ifconfig eth0 <@IP> netmask <mask>`
- Add a default gateway if needed:
 - `Route add default gw <@gw> eth0`
- Connect appliance with a browser:
 - Go to the following url : <http://@IP-SGM>
 - Connect to SGMConf (login : cli, password : cli)
 - In **System > Configuration > Parameters**, click the **Apply** button.

Connecting via the network interface

It is possible to connect a computer directly to SGM's GigaEthernet interface using a crossover cable. This computer's network interface then has to be configured in the same sub-network as the SGM, and a Web browser has to be started up from the following URL address: **http://<@IP-SGM>/sgmconf**. The SGM is delivered within the following IP address range: 172.16.0.150/24 to 172.16.0.159/24.

From the SGMConf welcome page, enter the login "cli" with the password "cli", then click on "System" to open the SGM configuration screen.

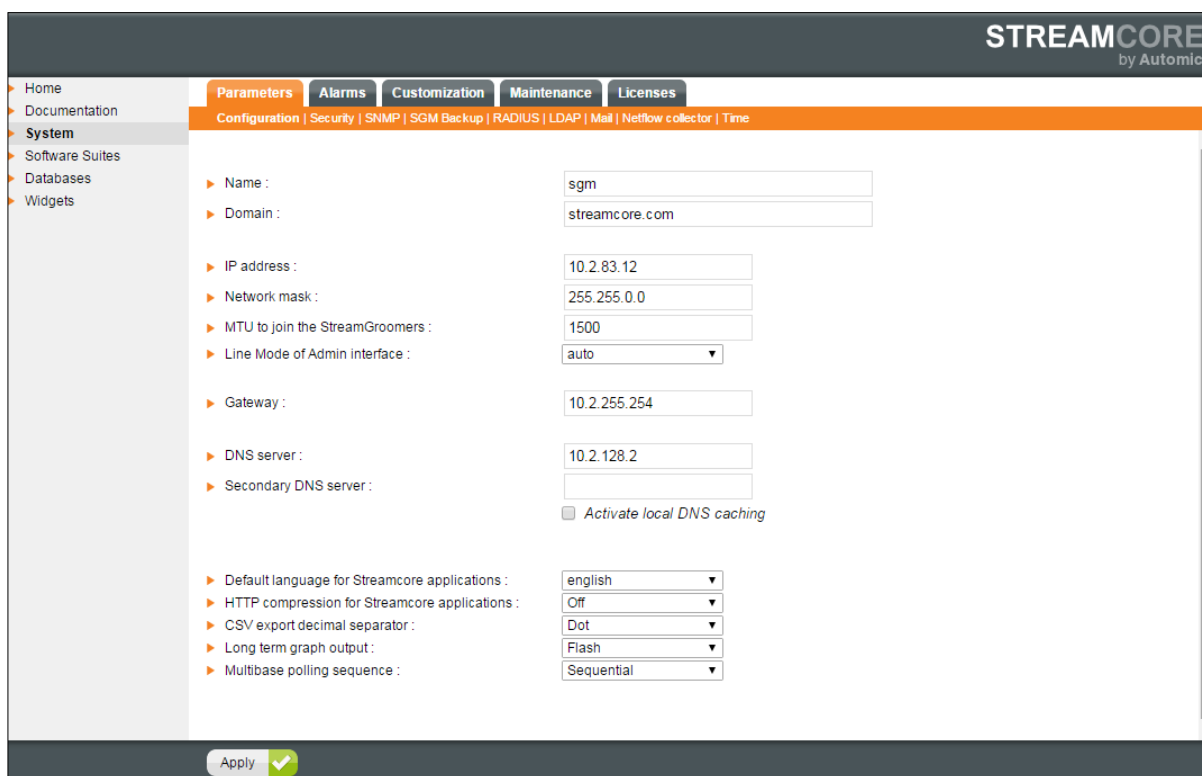


Figure 1: SGM Settings

After entering the IP address, network mask and default gateway, click **Apply**. All modifications are dynamically applied. The SGM can now connect to your company's network.

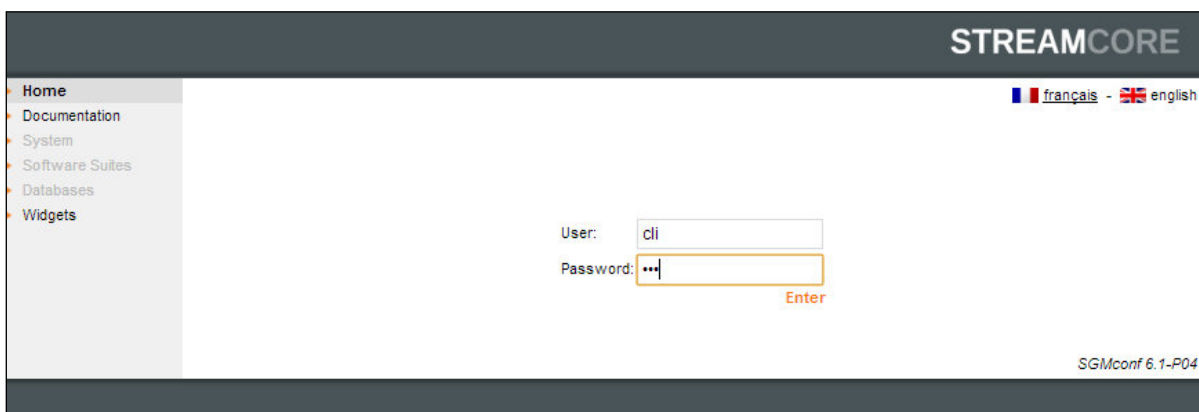
3 Getting Started with SGMconf

Accessing the Application

The SGM is accessible from any computer on a network once the IP address has been configured and the server positioned on the LAN. To access a configured SGM:

- Open a browser.
- Enter the URL: **http://<@IP-SGM>/sgmconf/** in which **<@IP-SGM>** is the SGM IP address (the name attributed by the DNS can also be used).
 - For example: **http://127.0.0.1:8120/sgmconf/**

Note: By replacing "http" with "https" in the URL above, the connection between the browser and the SGM is secure.



SGMconf Homepage

2 -

User Session – Anonymously or Password Protected

There are two ways to use an SGM:

- **Anonymously:** access is given to consult documentation only, other actions cannot be accessed (menu options are greyed-out).
- **User and Password:** by identifying yourself using one of the user names stored in the application.
 - **cli** (default password **cli**). This user has unlimited (administrator) rights and has the ability to read all available documentation as well as perform any action.

Note: User login credentials described above are related only to a SGMconf session and not to logins used for the StreamView / StreamReport / StreamDashboard / StreamAccess / StreamMap applications.

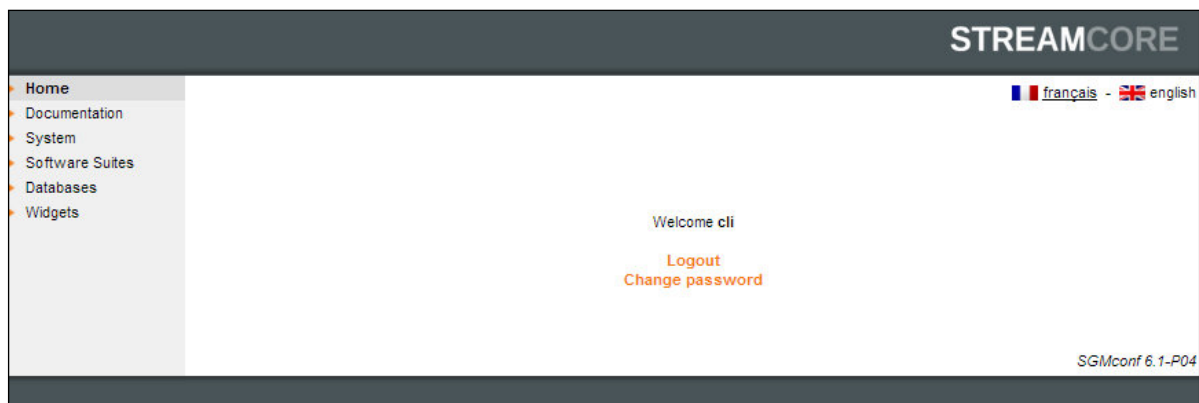


Figure 3 – Welcome Page after connecting as the user cli

To change the "cli" password click the "change password" text displayed on the welcome page.

Important: A new password must not contain the following characters:

' " <space> / ! \ [] * \$

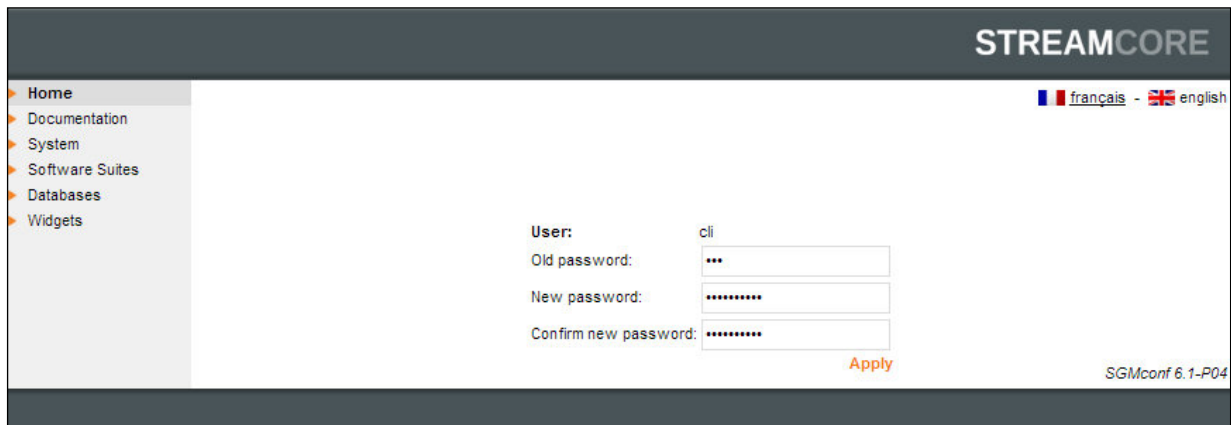


Figure 4 – Changing Password for User cli

Supported Interface Languages

SGMconf supports two languages: English and French. To change to a language interface, click the flag icon displayed at the top right-hand corner of the homepage.

It is also possible to add the option "**?LANG=fr or en**" to the current URL from any screen.

For example:

<http://172.16.100.1xx/sgmconf/local/?LANG=fr> or <http://172.16.100.1xx/sgmconf/local/?LANG=en>

4 SGMconf Features

Consulting the Documentation

SGMconf lets you to consult documentation online. When **Documentation** is selected from the displayed menu, the software searches for and displays all available documentation on the server. Each new software version is accompanied by a corresponding list of documentation.

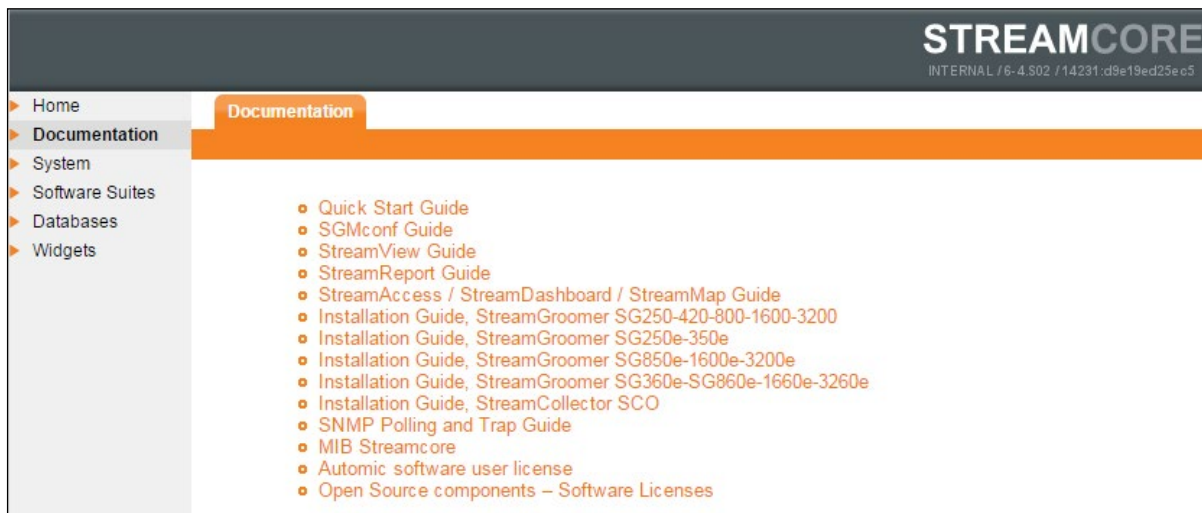


Figure 5 - List of documentation associated with a software suite

To consult online documentation, click on the required document from the displayed list. A new browser window will open to display the document.

Note: If documents are downloaded, you may need to install a PDF reader on your device.

1.3 MANAGING THE SYSTEM/SERVER

Overview

The functions offered, after selecting the "System" option, are used to:

- configure SGM server parameters (network, security, SNMP, SGM Backup, RADIUS, LDAP, time setting)
- manage alarms related to SGM performance
- customize SGM welcome page and logo
- access maintenance information
- manage licenses

Network Settings

The **Parameters>Configuration** tab enables SGM network settings.

The screenshot shows the Streamcore web interface. The top navigation bar includes 'Parameters', 'Alarms', 'Personalization', 'Maintenance', and 'Licenses'. The 'Parameters' tab is active, and the 'Configuration' sub-tab is selected. The left sidebar shows a navigation menu with 'System' expanded. The main configuration area contains the following settings:

- Name: sgm
- Domain: streamcore.com
- IP address: 172.16.100.150
- Network mask: 255.252.0.0
- MTU to join the StreamGroomers: 1500
- Line Mode of Admin interface: auto
- Gateway: 172.16.0.39
- DNS server: 8.8.8.8
- Secondary DNS server: (empty)
- Activate local DNS caching
- Default language for Streamcore applications: english
- HTTP compression for Streamcore applications: Off
- CSV export decimal separator: Dot
- Long term graph output: PNG
- Hide today statistics: off
- Multibase polling sequence: Sequential

An 'Apply' button with a green checkmark is located at the bottom of the configuration area.

Figure 6 – SGM System Settings

The following options are displayed on the configuration page; they enable settings to be modified and configured:

Name:	The host name that identifies the SGM server ⁽¹⁾
Domain:	DNS domain name ⁽²⁾
IP address:	Local IP address of SGM server
Network mask:	Local IP mask identifying the local network
MTU to join the StreamGroomers:	Smallest MTU on the WAN to join a StreamGroomer
Line Mode of Ethernet Ports:	Mode and duplex of the SGM Ethernet Port
Gateway:	Address identifying the default router

⁽¹⁾ The name must be made up of alphanumeric characters and start with a letter. The characters "_" and "-" are also authorized, unlike spaces (" ") or full stops (".")

⁽²⁾ Necessary in order to be able for the SGM to send requests to the DNS. The domain must be made up of alphanumeric characters and start with a letter. The characters "_", "-", and "." are also authorized, unlike spaces (" ")

DNS server:	Address identifying the DNS server (used by StreamView to display the names instead of IP addresses on some screens). By activating a local cache, you can speed up the DNS name translation.
Secondary DNS server:	Backup DNS server
Local DNS caching:	Activate a local caching of all DNS requests
Default language:	Language used when the applications StreamView / StreamReport / StreamDashboard / StreamAccess / StreamMap are started.
HTTP compression:	HTTP compression used or not automatically when the applications StreamView / StreamReport / StreamDashboard / StreamAccess are started.
CSV export decimal separator:	Decimal separator used in CSV files generated by StreamView or StreamReport applications.
Long term graph output:	Type of graph (Flash or PNG) generated by StreamView or StreamDashboard applications. Choose PNG for faster response or Flash to get information directly on the graph.
Hide today statistics:	On a backup configuration, it displays or not the period: "day->today" in long-term graphs.

Click **Apply** after changing any of the above settings. All changes are dynamically applied.

Note: When changing SGM IP settings, attention should be paid to the following points:

- Remember to also change the IP address of the SGM in the StreamGroomers configurations.
- If the IP setting is changed remotely using another computer, it may become impossible to connect to the SGM: this is the case, for example, when the SGM is configured in a new sub-network.

Security Settings

The **Parameters>Security** tab enables SGM security settings to be modified.

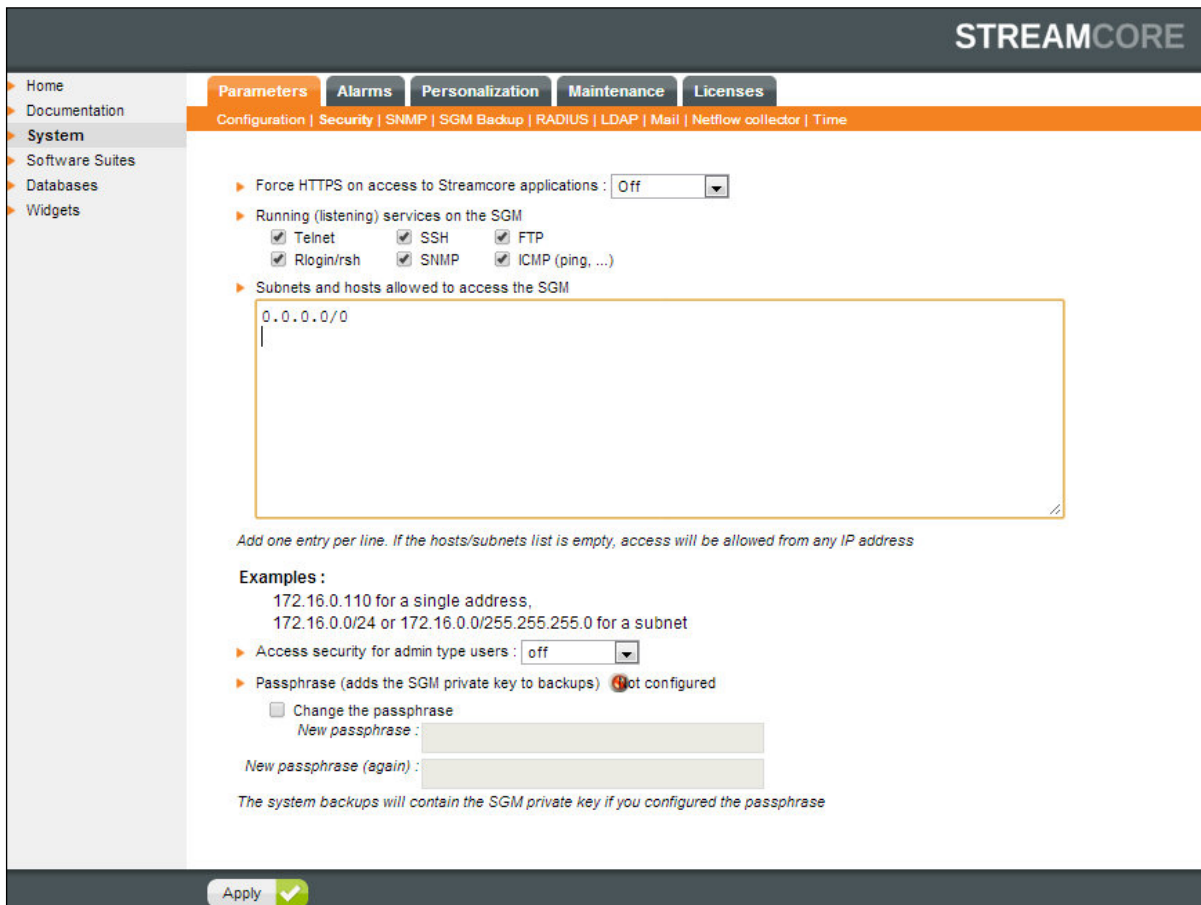


Figure 7 – Security

The security page enables the following settings to be displayed and modified:

- | | |
|---|--|
| HTTPS automated access: | HTTPS used or not automatically when the applications SGMConf / StreamView / StreamReport / StreamDashboard / StreamAccess / StreamMap are started. |
| Running (listening) services on the SGM: | It is possible to restrict access to services (listening) running on the SGM: Telnet, SSH, FTP, Rlogin/rsh (required for SGM-Backup), SNMP, and ICMP |
| Restricted access to the SGM: | It is possible to restrict the SGM access to specific hosts or subnets |
| Access security for admin: | Only one admin user can be connected to a database at a time |
| Passphrase: | When SSH communications is used between the SGM and SG, it is compulsory to configure a passphrase. Indeed, database backups will then include the SGM private RSA key (encrypted with the passphrase). When restoring the database on a new SGM, the passphrase will be required in order to decrypt the SGM private key. |

Click **Apply** after changing any of the above settings. All changes are dynamically applied.

SNMP Settings

The **Parameters>SNMP** tab enables SNMP parameters to be displayed, defined and modified:

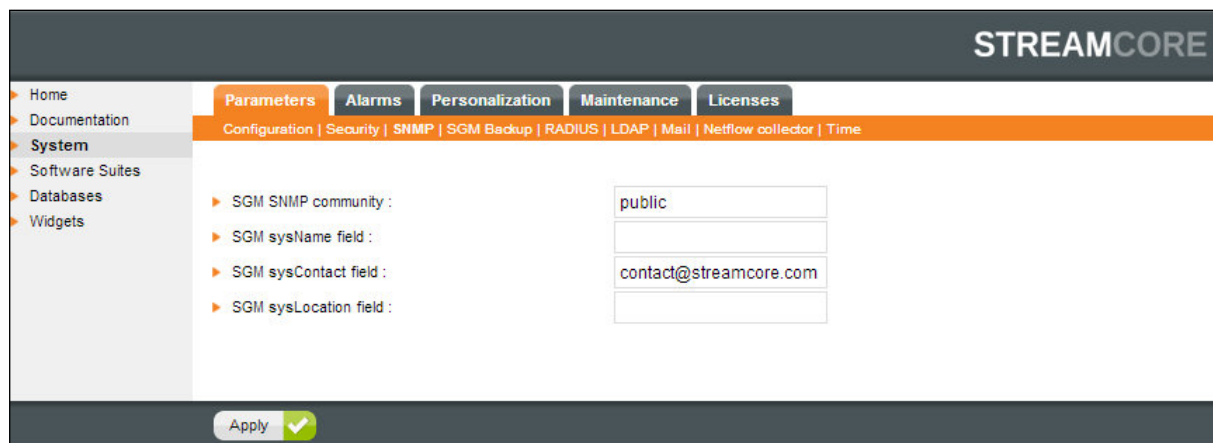


Figure 8 – SNMP Parameters

This SNMP page enables the following settings to be displayed, defined and modified:

SGM SNMP community:	SNMP community used to poll SGM MIBs
SGM sysName Field:	MIB II sysname information
SGM sysContact Field:	MIB II syscontact information
SGM sysLocation Field:	MIB II syslocation information

Click **Apply** after changing the above settings. All changes are dynamically applied.

Note: SNMP usage is defined in the document "SNMP Guide" which also includes details of the MIB STREAMCORE.

SGM Backup Settings

1 OVERVIEW

This feature is only available for a 64 bit SGM (version S16 and above). Both SGM's have to be in the same version. Two SGM's can cooperate to provide high availability. One SGM operates as the active SGM, and the second SGM operates as the passive SGM.

The SGM backup feature automatically synchronises from the active to the passive SGM:

- the configuration: in real-time, once a day, once a week or scheduled
- all statistics: once a day, once a week or scheduled

If the active SGM fails, an alarm is generated (by email, SNMP trap or syslog) and the administrator has to change manually the state of the passive SGM into active.

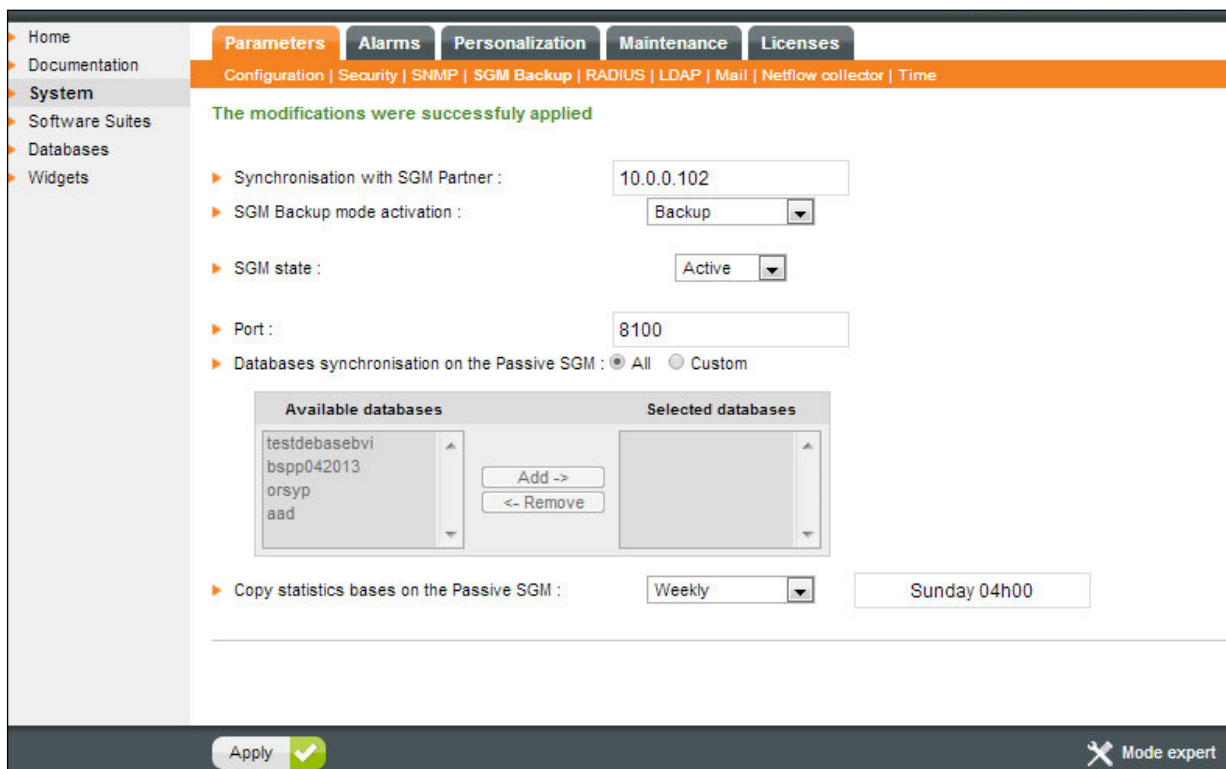


Figure 9 – View of an active SGM

2 CONFIGURATION

The configuration needs to be done on both SGM's, active and passive. By default the backup daemon is disabled on a SGM. As a first step, enable it through the expert mode to have access to the configuration windows.

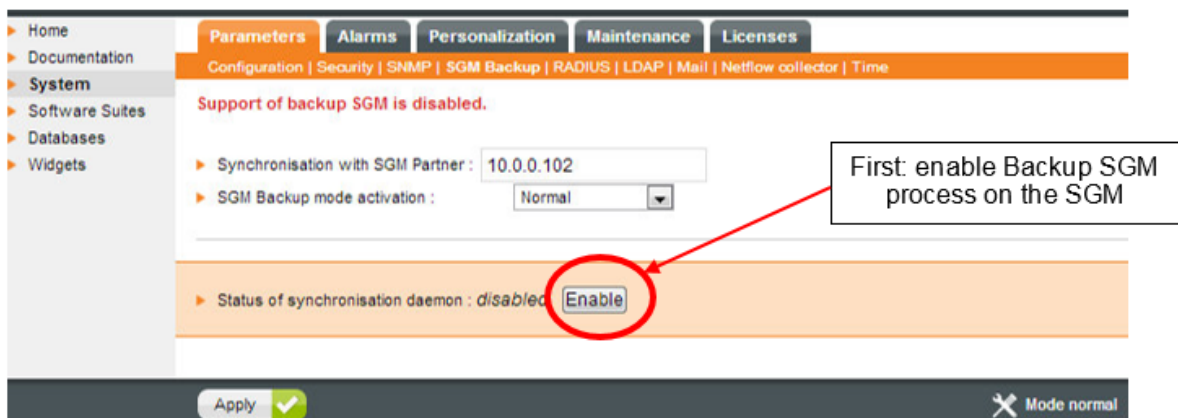


Figure 10 – Enable SGM Backup function

To activate the synchronisation, one SGM should be in "active" mode and the other in "passive" mode.

Figure 11 – Active SGM configuration

Synchronisation with SGM Partner:	Define the IP address of the SGM in backup mode
SGM Backup mode activation:	Choose the role of the SGM (<u>a</u> ctive/passive)
Port:	Choose the TCP port used for backup information exchange
Database synchronisation...:	Choose the database which will be synchronised to the backup SGM. All available database are synchronised by default
Copy statistics bases...:	Choose the synchronisation frequency

If the real-time synchronisation is disabled, the synchronisation will be performed at the same time as for the statistics (daily, weekly or scheduled).

It is also possible to force synchronization. This is done by selecting the expert mode and then clicking the force synchronization button.

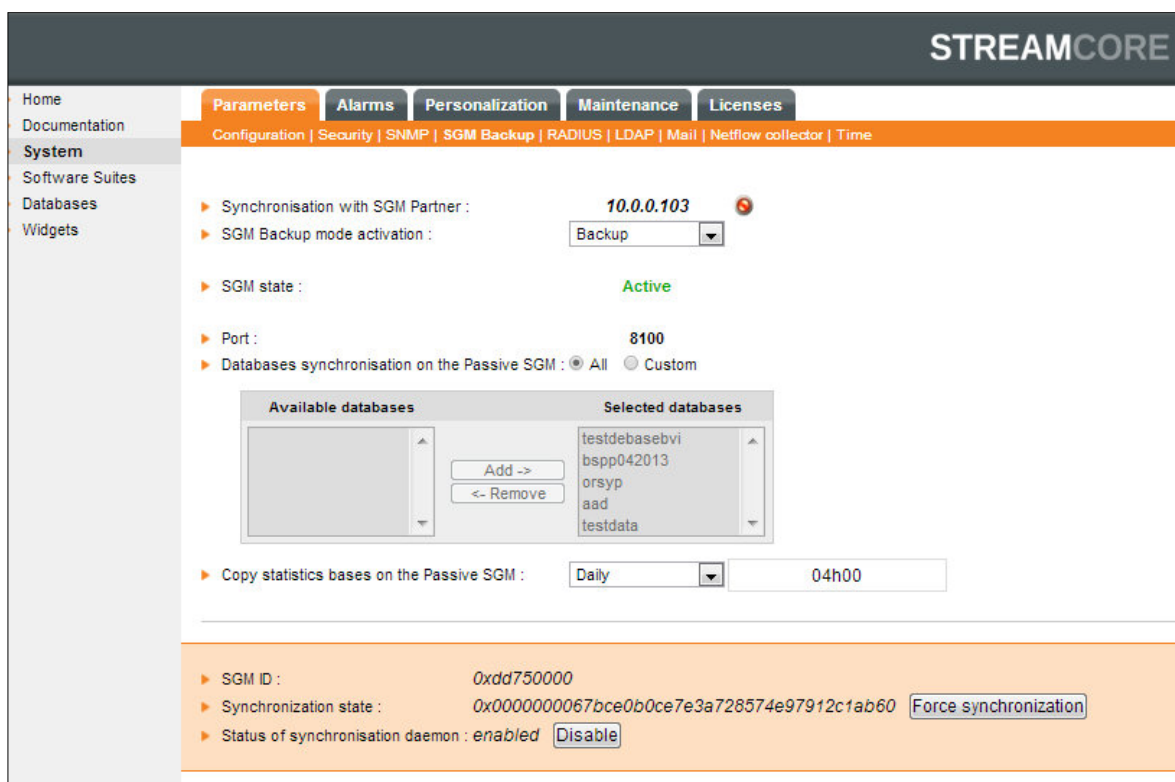


Figure 12 - Force Synchronization

4 PASSIVE SGM CONFIGURATION:

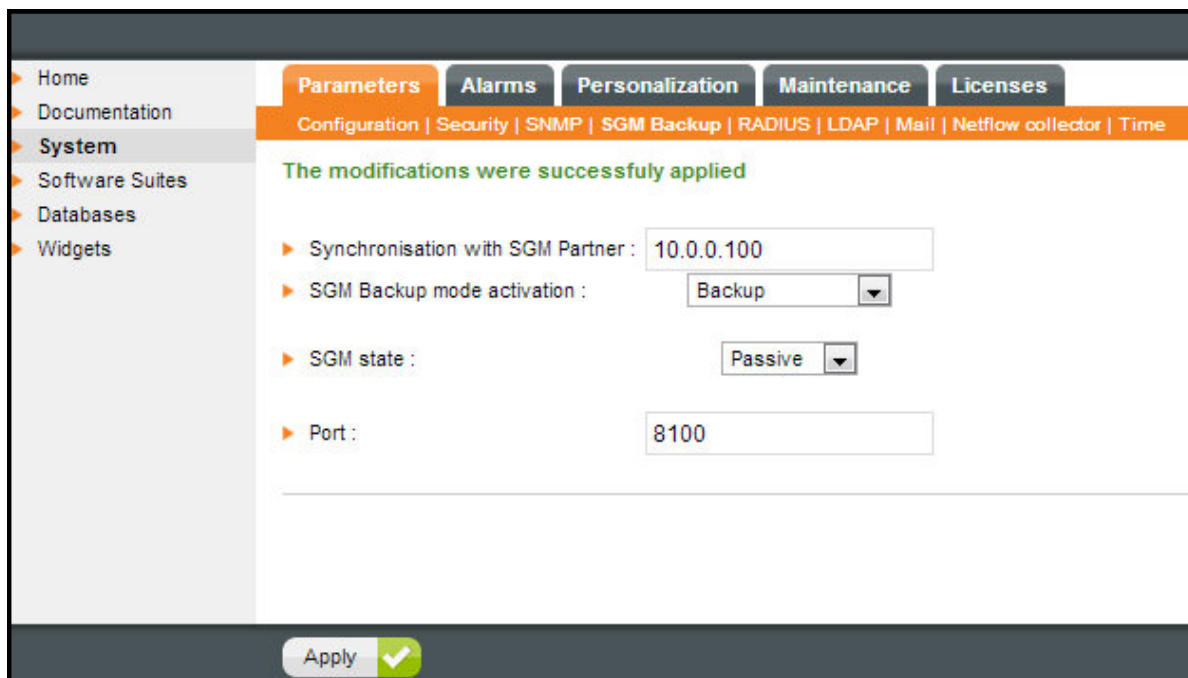


Figure 13 – Passive SGM Configuration

The passive SGM does not need specific configuration except the IP Address of the active SGM and the tcp port used for synchronisation.

The actions available on a passive SGM are restricted to:

- Documentation

- System
- Software Suite (upgrade the SGM)

5 CHANGING A PASSIVE SGM STATE TO ACTIVE

In case the active SGM fails, an alarm (email, SNMP trap or syslog) is automatically generated by the passive SGM (alarms must be configured). The administrator has then to connect to the passive SGM, and force it to become active.

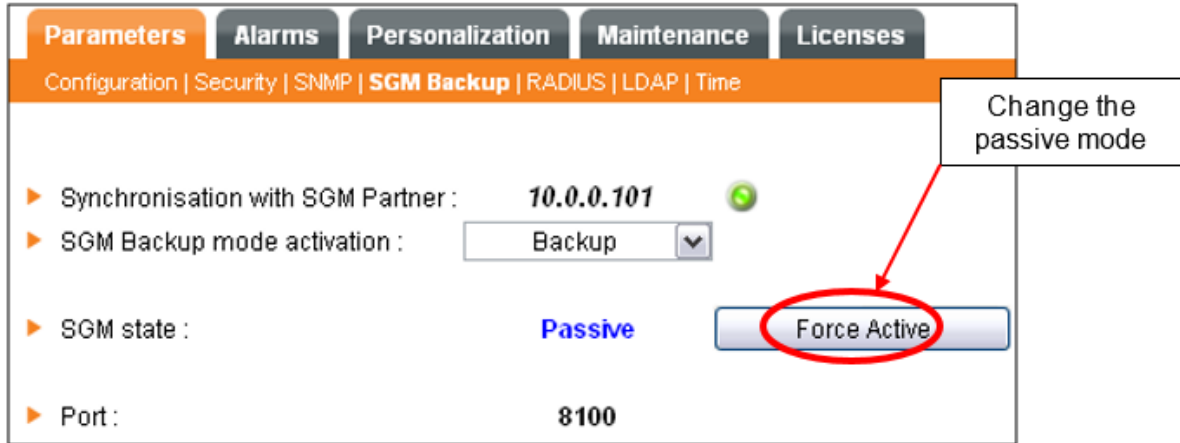


Figure 14 – Passive Mode Configuration Windows

There can only be one SGM in active mode at any one time. In the event of an active SGM becoming available again, both SGMs will be placed in "Standby" mode. The administrator will then have to choose and set the active SGM.

To choose the role between both standbys SGM, the administrator needs to force a standby SGM in active, and automatically, the other SGM will become passive.

When both SGMs are available, at the same time, the administrator can force the passive SGM to become active, and automatically, the previously active SGM will become passive.

6 SGM BACKUP STATE MATRIX

SGM state	Passive not synchronised	Active not synchronised	Passive synchronised	Active synchronised	Standby
StreamXXX access	NO	YES	NO	YES	NO
Statistics Polling	NO	YES	NO	YES	NO
Multi-Shaping Management	NO	YES	NO	YES	NO
Waiting for an admin action	NO	NO	NO	NO	YES
Conf and stat synchronisation	NO	YES	NO	YES	YES

The synchronisation between two SGM can be checked through the SGM Backup tab

Note: In order to run backup, the "Rlogin/rsh" option must be checked on the **Parameters>Security** tab

RADIUS Settings

The **Parameters>RADIUS** tab enables parameters to be defined for RADIUS authentication. This can be used to manage user access rights to the StreamAccess application.

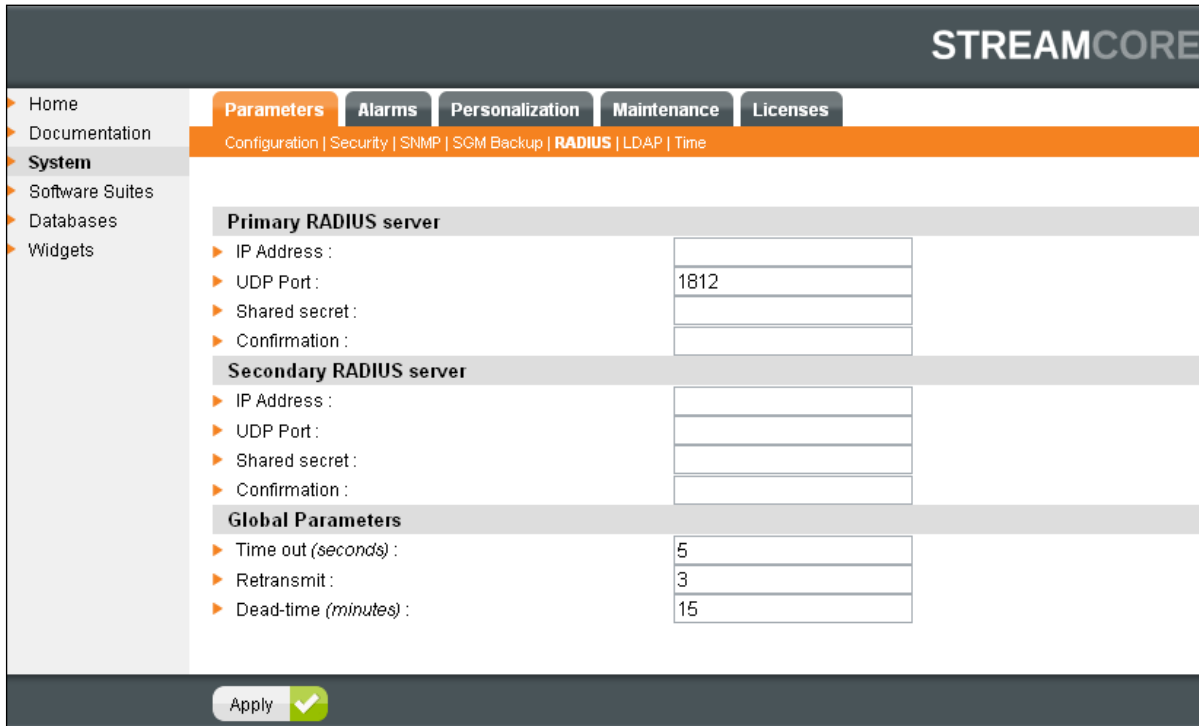


Figure 15 – RADIUS Parameters

This RADIUS page enables the following settings to be displayed and modified:

- IP Address:** IP address of the RADIUS Server
- UDP Port:** UDP port number used for authentication
- Shared secret:** Secret key used to access the server. The same key must be configured on the RADIUS server
- Confirmation:** Confirm the shared secret
- Timeout:** Number of seconds the SGM waits for the server to respond
- Retransmit:** Number of times that requests are retransmitted to a server before changing to local authentication
- Dead-time:** If the server fails to respond to all retransmissions, number of minutes that the SGM waits before trying to access the server again.

LDAP Settings

The **Parameters>LDAP** tab allows LDAP authentication parameters to be defined. This can be used to manage user access rights to the StreamAccess application.

Two connection modes are available: Standard or Domain. The standard configuration can be used for every type of LDAP server, and the domain configuration can be used if a shortcut exists on the base to the base DN.

7 STANDARD CONNECTION MODE

Figure 16 – LDAP Standard Parameters

IP address:	IP address or name of the LDAP server travelled
TCP Port:	TCP port to use for the LDAP connection (389 by default)
Secure TCP Port:	If you prefer to use a secure TCP port
Secondary LDAP server:	Used if no answer from the primary LDAP server
Connection mode:	<u>Standard</u> / Domain
Time out (seconds):	Time to wait for an answer from the server
Base DN:	Path to the user's directory (example: dc=OpenLDAP, dc=Org)
Search filter (login):	User field name used to automatically find the entire DN (examples: sAMAccountName= or uid= or cn=)
Manager Distinguish name:	Login of a user allowed to browse the LDAP base (administrator account)
Test login:	To test your access to your base with a standard username

The screenshot shows the StreamCore web interface with the 'Parameters' tab selected. The breadcrumb trail is 'Configuration | Security | SNMP | SGM Backup | RADIUS | LDAP | Time'. The left sidebar contains a navigation menu with 'System' expanded. The main content area is titled 'LDAP Domain Parameters' and is divided into three sections:

- Primary LDAP server:**
 - IP Address : ldap.streamcore.com
 - TCP Port : 389
- Secondary LDAP server:**
 - IP Address :
 - TCP Port :
- Global Parameters:**
 - Connection mode : Domain (dropdown menu)
 - Time out (seconds) : 3
 - Domain : streamcore

At the bottom of the form, there are two buttons: 'Apply' and 'Test'. Below the 'Test' button, there are two input fields for 'Test login' and 'Test password'.

Figure 17 – LDAP Domain Parameters

- IP address:** IP address or name of the LDAP server
- TCP Port:** TCP port to use for the LDAP connection (389 by default)
- Secondary LDAP server:** Used if no answer from the primary LDAP server
- Connection mode:** Standard / Domain
- Time out (seconds):** Choose the time to wait for an answer from the server
- Domain:** Domain name defined on the LDAP server
- Test login:** To test your access to your base with a standard username

Mail

The **Mail** tab allows you to view and enter mail sender details. The page is split into two sections. The first section is for entering mail sender parameters and the second section is for security and authentication.

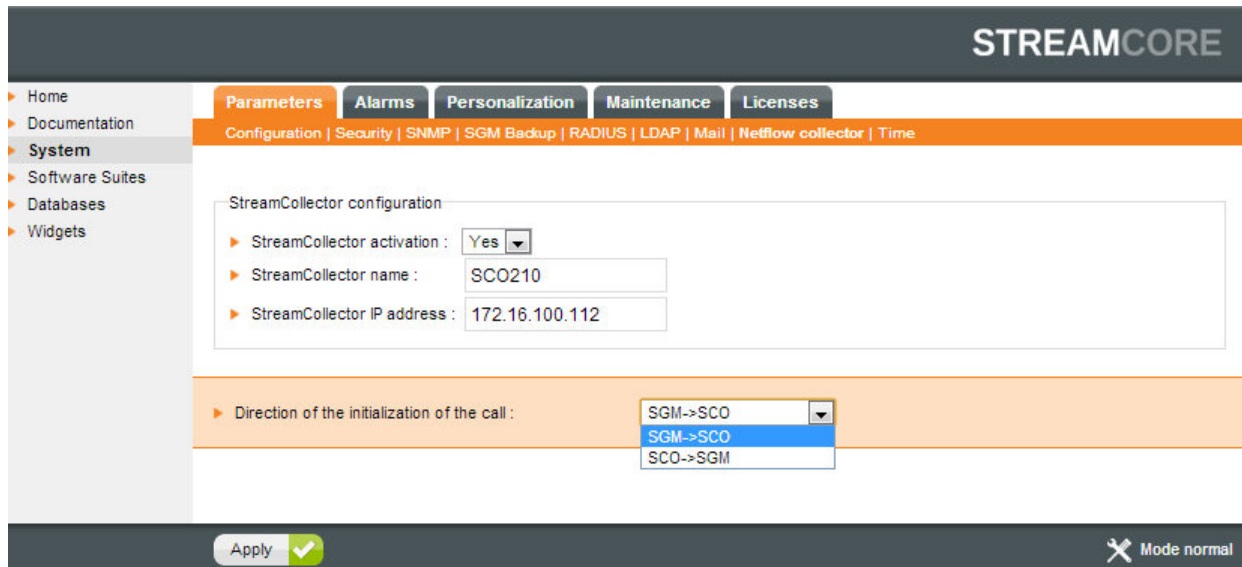
- Mail sender:** Email address used to send mails from the SGM
- Mail server:** Address of the SMTP gateway (used by SGMConf / StreamView / StreamReport)
- Port:** Enter the mail server the port
- Security:** From the menu select the security your mail server uses.
Default is set to "None"
- Login:** Enter your login details
- Password:** Enter your password details

Test Send Email: To test your email settings

Subsequent to adding your details click **Apply**. You can then test the mail function by using the test feature at the bottom of the page.

Netflow Collector

The NetFlow Collector function allows you to take advantage of a StreamCollector; this is done by an activation process:



The screenshot shows the StreamCore web interface. The top navigation bar includes tabs for Parameters, Alarms, Personalization, Maintenance, and Licenses. The main content area is titled 'StreamCollector configuration' and contains the following fields:

- StreamCollector activation: Yes (dropdown)
- StreamCollector name: SCO210 (text input)
- StreamCollector IP address: 172.16.100.112 (text input)

Below these fields is a section for 'Direction of the initialization of the call' with a dropdown menu showing the following options:

- SGM->SCO
- SGM->SCO
- SCO->SGM

The 'Apply' button is located at the bottom left, and 'Mode normal' is at the bottom right.

Figure 18: Activating StreamCollector

StreamCollector Activation: Select **Yes** to active. Set to **No** by default

StreamCollector Name: Enter the StreamCollector name

StreamCollector IP address: Enter the StreamCollector IP address

In order to initialize the direction of the call, select **Expert mode** then select from the drop-down list the direction of the call.

Click **Apply** after changing the above settings.

Time

The **Time** tab allows you to update an SGM's date and time. It's recommended to carry out this operation when you first install the application. You can also synchronize the SGM on an NTP server.

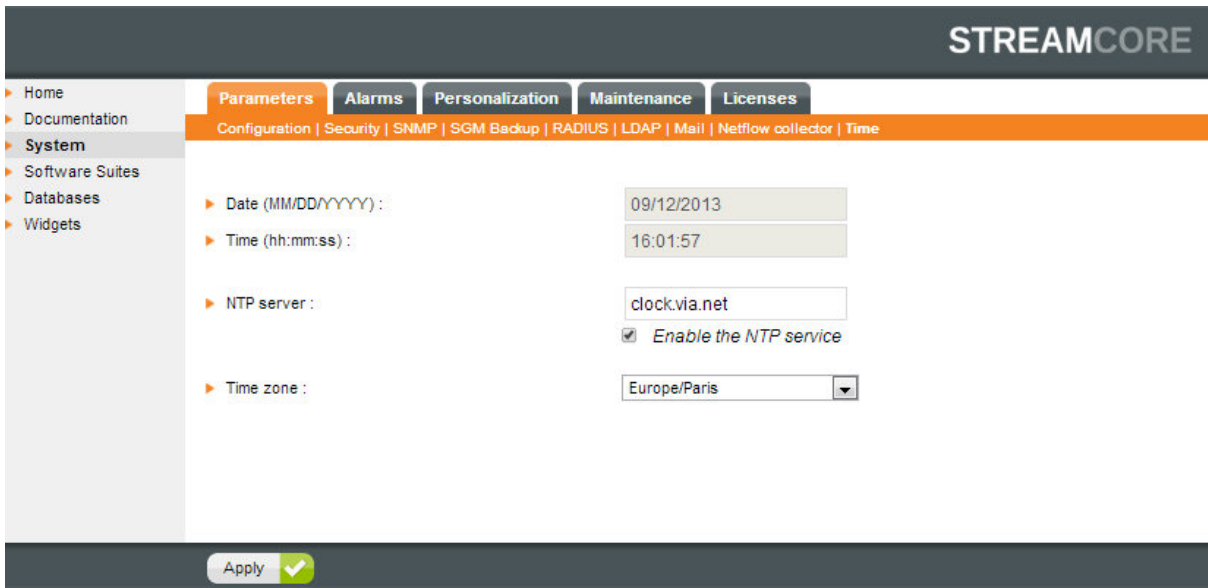


Figure 19 – Setting the time on the SGM manually

Note: StreamGroomers are automatically synchronized by the SGM every day.

Alarms Settings

The **Alarms** tab is divided into two sections:

- **Parameters (alarm export)**

The **Alarms>Parameters** tab enables the following settings to be displayed or modified:

SGM's Alarms exports:	Select the minimum level of alarms to be sent for each export option
Email configuration:	Configure Email addresses of alarms recipients
Syslog configuration:	Configure syslog servers collecting syslog messages
SNMP trap configuration:	Configure SNMP trap collectors

Note: To send alarms by email, the mail server defined in SGMconf must be able to accept relay emails from the SGM without authentication.

The following alarms are automatically available to follow SGM performance and events:

Type	Level	Type	Threshold criteria	Rearm criteria
Hardware				
Hard drive failure (SMART indicators)	Critical	State	-	-
Cold start	Info	State	-	-
Link up/down	Info	State	-	-
Software				
Authorized total number of rule exceeded	Minor	Threshold	SGM type	SGM type
Hard drive partition nearly full	Major	Threshold	95%	75%
Load too high	Major	Threshold	Load = 5	Load = 2
Free memory too low	Major	Threshold	5%	15%
nbLinesCache	Critical	Threshold	15	10
FlushProcess	Critical	State	-	-
Polling	Critical	State	-	-
FsckError	Major	State	-	-
Backup SGM				
Standby transition	Critical	State	-	-
Active-Passive connection failure	Major	State	-	-
Active-Passive connection establishment	Info	State	-	-
Active/Passive state transition	Info	State	-	-
Backup Activation/Deactivation	Info	State	-	-
Synchronization start	Info	State	-	-
Synchronization stop	Info	State	-	-

- **Log**

The screenshot shows the 'Alarms' tab in a management interface. It includes a 'Selection:' section with filters for 'Max number', 'Date from', 'Date to', and 'Minimum level'. Below the filters is a table of alarm logs. The table has four columns: Date, Type, Message, and Level. The messages include 'Polling for wookiee is alive/dead', 'sgm: cold start', 'The fsck processus has fixed problems on the filesystems', and 'Hard drive failure on /dev/hda: /dev/hda (failed to read SMART info)'.

Date	Type	Message	Level
2016-01-15 17:24:41	statechange	Polling for wookiee is alive	critical
2016-01-15 17:14:40	statechange	Polling for wookiee is dead	critical
2016-01-15 17:14:39	statechange	sgm: cold start	info
2016-01-13 18:12:10	statechange	Polling for wookiee is alive	critical
2016-01-13 18:02:08	statechange	Polling for wookiee is dead	critical
2016-01-13 18:02:08	statechange	sgm: cold start	info
2016-01-12 10:41:58	statechange	sgm: cold start	info
2015-02-05 11:17:05	statechange	sgm: cold start	info
2015-02-05 11:14:30	statechange	sgm: cold start	info
2015-02-05 10:51:06	statechange	The fsck processus has fixed problems on the filesystems	major
2015-02-05 10:51:06	unknown	Hard drive failure on /dev/hda: /dev/hda (failed to read SMART info)	critical
2015-02-05 10:51:06	statechange	sgm: cold start	info

Figure 20 – Alarms Log

Customization Settings

The **Customization** tab allows you to change the logo (displayed in the upper frame, the welcome login page and in the reports generated by StreamReport) and also change the SGM welcome message.

The **Customization** tab allows the following settings to be displayed or modified:

- Logo choice:** Logo to be displayed in all applications – recommended dimension: 220*45px Two different logos can be defined for applications and reports
- Show SGM home page:** Option to hide the access to the home SGM page with the bases' list
- Welcome message:** Option to change the SGM welcome page message
- Display link to SGMConf:** Option to hide the link to SGMConf on the SGM welcome page

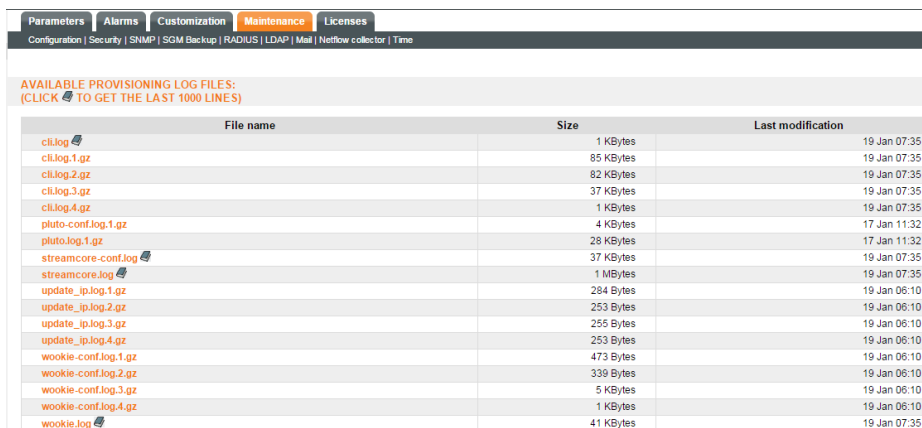
Click **Apply** after changing the above settings. All changes are dynamically applied.

Note: Refresh the page (Ctrl-F5) or empty you Web cache to display the new logo.

SGM Maintenance

The **Maintenance** tab provides a general picture of the SGM system performance and service status. Three sub-tabs are available:

- **Actions**
 - Restart Streamcore services
 - Reboot the SGM
 - Turn off the SGM
 - Test email sending
- **Status**
 - SGM status
 - Disk usage
 - Memory usage
 - System daemon status
 - Running processes
 - Database status (polling statistics)
- **Log files**



File name	Size	Last modification
cli.log	1 KBytes	19 Jan 07:35
cli.log.1.gz	85 KBytes	19 Jan 07:35
cli.log.2.gz	82 KBytes	19 Jan 07:35
cli.log.3.gz	37 KBytes	19 Jan 07:35
cli.log.4.gz	1 KBytes	19 Jan 07:35
pluto-conf.log.1.gz	4 KBytes	17 Jan 11:32
pluto.log.1.gz	28 KBytes	17 Jan 11:32
streamcore-conf.log	37 KBytes	19 Jan 07:35
streamcore.log	1 MBytes	19 Jan 07:35
update_ip.log.1.gz	284 Bytes	19 Jan 06:10
update_ip.log.2.gz	253 Bytes	19 Jan 06:10
update_ip.log.3.gz	255 Bytes	19 Jan 06:10
update_ip.log.4.gz	253 Bytes	19 Jan 06:10
wookie-conf.log.1.gz	473 Bytes	19 Jan 06:10
wookie-conf.log.2.gz	339 Bytes	19 Jan 06:10
wookie-conf.log.3.gz	5 KBytes	19 Jan 06:10
wookie-conf.log.4.gz	1 KBytes	19 Jan 06:10
wookie.log	41 KBytes	19 Jan 07:35

Figure 21 – Maintenance Logs

Licenses

The licenses page provides the opportunity to check if the databases infringe the licenses associated with the SGM. Two subtabs are available:

SGM license management

This page allows you to import a license file and display a consolidated report:

Import license file: Import the license file provided by Streamcore (file "sc_XXXXXXXXX.lic")

Consolidated report: Report summary consolidating the licenses used by all databases on the SGM (updated once a day automatically). The report summary is updated as well whenever a new license file is imported.

Note: To be able to access to Streamcore support, you need to have a correct license report

Report (per database)

This tab provides a license report for a single or all existing databases configured on the SGM. The report can be exported as a CSV file.

5 Managing the Software Suites and the SGMconf Version

1.4 OVERVIEW

To view the list of software installed on the SGM server click **Software Suites** from the display menu option. Displayed is a list of installed packages with the following information:

- Software Suite Version
 - OPE version
 - USINE version
 - ACC version



Figure 22 - Example of installed software suite

Important: It is not possible to downgrade from the installed ACCXX version. This software is automatically installed with the latest version of the Software Suite and therefore cannot be altered.

Note: When you install an OPE on a SG, the SGM automatically deploys the appropriate BOOT version (Sxx) for the OPE. Therefore, you do not have to be concerned that the boot version is not up to date.

Included in the software suite is:

- StreamGroomers embedded software:
 - OPE available for SGs
 - USINE (Boot software)
 - ACC (Acceleration software)
- SGM applications and middleware:
 - StreamView application
 - StreamReport application
 - StreamPortal application (StreamDashboard+StreamAccess)
 - StreamMap application

- StreamSNMP middleware
- StreamService middleware
- StreamShell middleware
- StreamHistory middleware
- StreamCollector middleware
- The **SGMconf** application
- Single **OPEs** for StreamGroomers
- All the **documentation** associated with a suite

If multiple software suites are installed on an SGM:

1. For each SGM application (as mentioned above) the most recently installed software version is used.
2. For StreamGroomer software, you choose the version to use on each StreamGroomer using the If several versions of SGMconf are present on the SGM, the most recently installed software version is used.

1.5 INSTALLING SOFTWARE

- Download the SCR file (using FTP or SCP) to the SGM repertory /var/tmp (or a sub directory)
- From the Package Installation section, select the Choose **File** button navigate to directory (/var/tmp for instance).

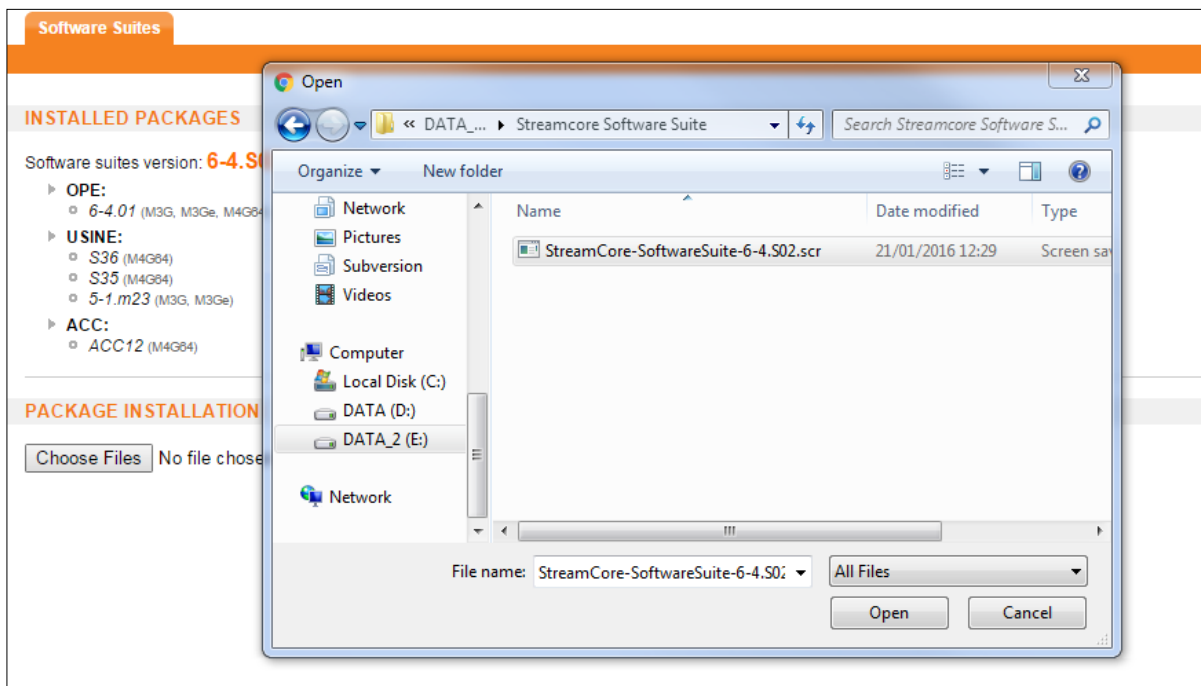


Figure 23 - Browsing for installation software

- Select the file and contents of the file will automatically upload to display on the screen.

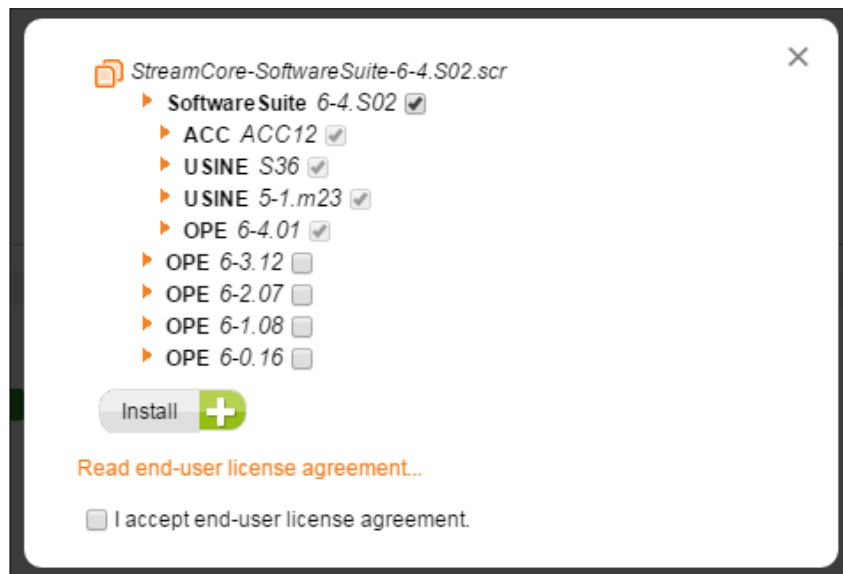


Figure 24 - Selecting software to install

- Select the individual components from the install list or click on check the Software Suite checkbox to install all suite components. If you select the Software Suite the items not part of the suite will be excluded. For example in [Figure 24](#) only the latest OPE is included in the software suite.
- Read and accept to the end-user license to continue.
- Click the **Install** button to begin installation.

Note: If multiple software suites are installed on an SGM, it will not be possible to delete them individually (one by one). Ensure you delete all software suites (not the most recent SGMConf) before installing a new one. (cf §4.3.3.1)

OPE boot version: When you install an OPE on a SG, the SGM automatically deploys the appropriate BOOT version (Sxx). This means you do not have be concerned that the boot version is not up to date.

1.6 DELETING SOFTWARE

Deleting old versions of SGMconf or documentation

Select the **Remove** tab to delete old versions of SGMconf or documentation. Just check the elements you wish to delete, and then click **Remove**. It is not possible to delete the last version of SGMConf.

Deleting a Software Suite

This feature is used to delete actual or old software suites installed on the SGM.

After having selected the software suites you wish to delete, click **Remove**. Once the operation is finished, the suites disappear from the installed software suites.

All elements of a software suite are removed with the deletion. If you need to keep an old version, you will have to re-install this specific version after the deletion.

Note: It is essential to install a new software suite after the deletion of all the software suites installed. Indeed, after the removal:

- except SGMconf, the other SGM applications are no longer available (StreamView, StreamReport, StreamDashboard, StreamAccess, and StreamMap).

- it is no longer possible to access to the databases or upgrade StreamGroomers.

Deleting software suites do not affect the running of the StreamGroomers deployed and does not alter the databases present on the SGM.

However, if no Software Suite is present on an SGM, no new data is stored in the database.

6 Managing Databases

1.7 OVERVIEW

A database is a coherent set of data associated with one or more StreamGroomers. It contains:

- The configuration of the StreamGroomers referenced
- The statistics of StreamGroomers collected via polling by the SGM
- The definition of the reports and PDF files associated with the database
- The definition of personalized Web portals associated with the database
- The definition of users and their access rights associated with the database

Note: In order to ensure data coherence, a StreamGroomer can only be managed by one database at a time.

1.8 DATABASE LIST

The screen below presents an example of an SGM containing several databases:



Database name	Rules	Status
testdebasebvi	76	✓
bsp042013	6462	✓
orsy	751	✓
aad	/	✓
testdata	8	✓
Historized rules total	7297	

Figure 25 - List of databases

SGM applications can be accessed directly by clicking on a displayed database name (as shown above).

1.9 DATABASE CONFIGURATION

The database configuration tool lets you specify how long you want to keep long-term statistics for every rule. Specifically, this tool displays the impact of an **increase** or **decrease** in granularity for kept records. Messages in relation to an increase or decrease are displayed in three colors: **green**, **orange** and **red**. In some cases, you have the ability to determine what action to take as a consequence of your new settings, in other instances changes are restricted. The table below outlines the significance of each message color and actions that can be taken.

Displayed Message Color	Message Description	Can changes be applied?
Green	New settings can be supported by the SGM.	Yes
Orange	A message is displayed warning of potential limitations. For example, by increasing the number of records observed per period.	Yes (not recommend)
Red	New settings exceed the SGMs capacity. This is due to the number of records required to store the current rules.	No (no Apply button displayed)

Examples:

If the number of records by rule are within the SGM's capacity, the **total record, historicized rules and license rules** text will be displayed in green as shown in [Figure 26](#).

If the number of records by rule exceed the SGM's capacity orange text will be displayed as shown in [Figure 27](#). In this case you will be allowed to apply changes, however this will have an impact on how many rules the system can handle.

If number of records is decreased per observation period, orange text will also be displayed. By decreasing the retention of records per observation period, the granularity per rule will be decreased by removing the oldest records of every rule from existing databases. This will be done according to the specified days/months/years you want to retain in the database. You will be informed that **One of the periods is shortened, data will be lost** but you will be able to apply the settings.

For each specified metric you can manually configure its parameter by entering a number in duration box and/or changing the day/month/year combo box.

Metrics are recorded for every:

- 10 Minutes
- 30 Minutes
- 2 Hours
- Every day

Records can be kept for:

- Days
- Months
- Years

For example: In the 10-minute box the desired granularity is 1009 points over 7 days. These points when plotted on a graph would be portioned out over a 7-day period. Therefore 10 minutes of data would be represented by 6 points plotted on a graph.

Continuing with the above example; granularity in the 1-day box is represented by 733 points over 2 years. If these points are plotted on a chart, 1 point would represent 24hrs worth of data. Initially this may not seem

representative; however, when you consider data is over a 2 year period; it not be practical to use a smaller granularity.

Important: A total 4305 points can be assigned to each rule.

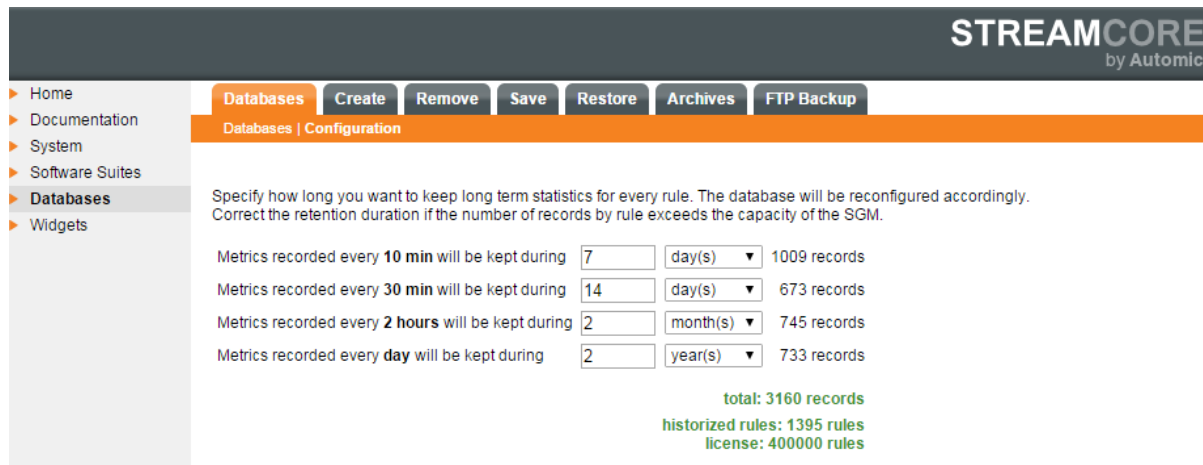


Figure 26 - Number of records by rule are within the SGM's capacity

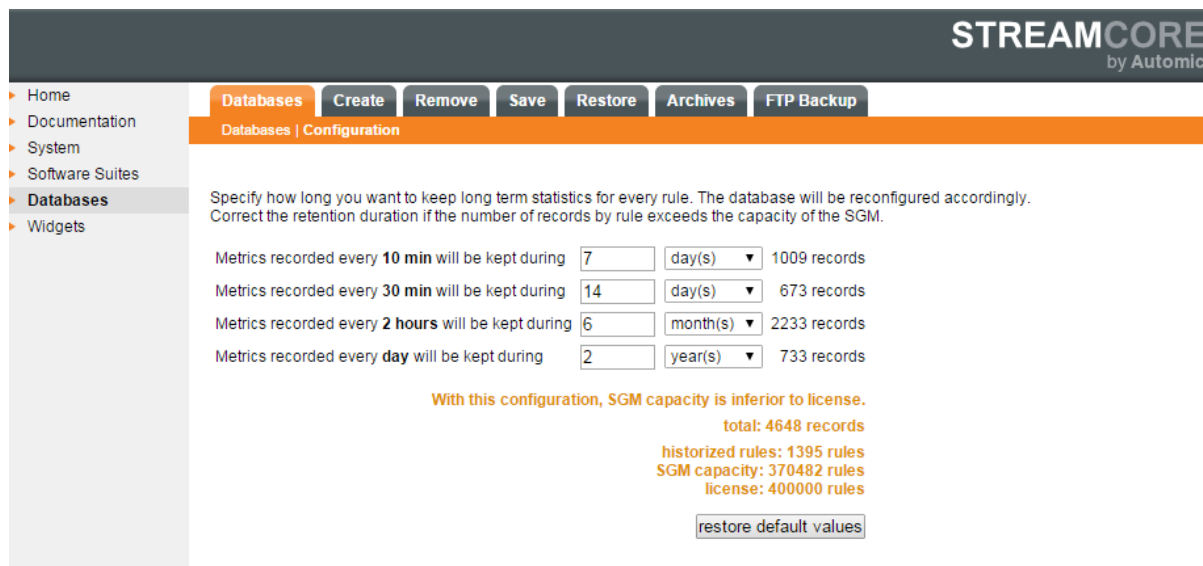


Figure 27 - Number of records by rule exceed the SGM's capacity

Creating a Database

To create a database first select the **Create** tab, the following screen is displayed:

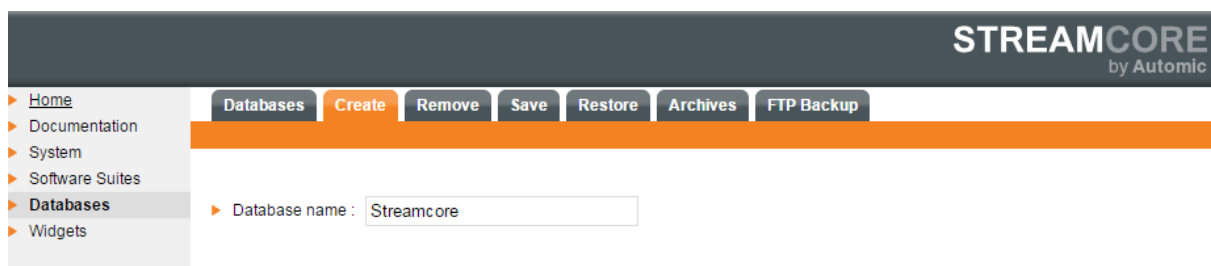


Figure 28 - Creating a Configuration Database

A database name must:

- Be unique on the SGM server (a test to check that it is unique is carried out)
- Be exclusively made up of alphanumeric, lower-class characters
- Start with a letter

Click the **Create** button to create database.

Deleting a Database

To remove a database select the **Remove** tab, the following screen is displayed:

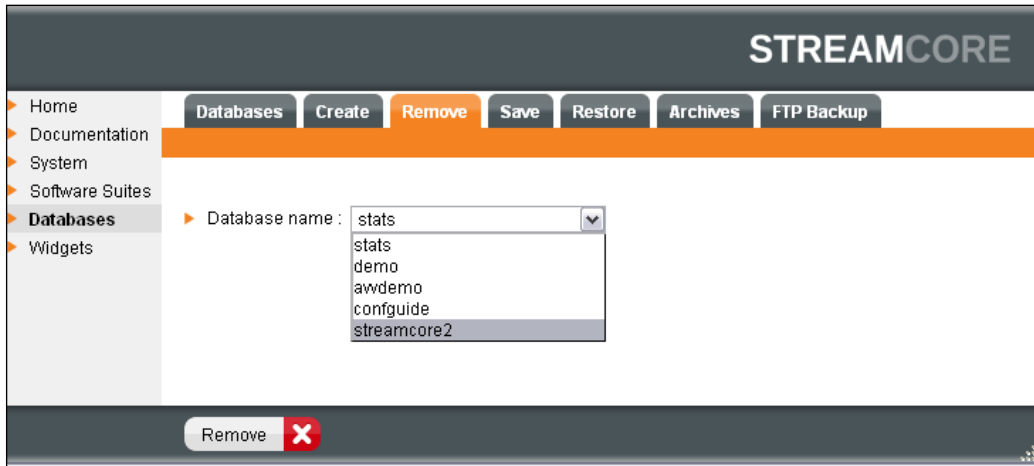


Figure 29 - Removing a Configuration Database

Select the database you wish to delete from the "Database name" list, and then click **Remove**.

The deletion process is irreversible, if required make a backup of the database beforehand.

Note: If the database name still appears in the database list, repeat the deletion process a second time. If you repeatedly fail to delete the database, restart the SGM and then repeat the deletion process.

Saving a Database

To save a database select the **Save** tab, the following screen is displayed:

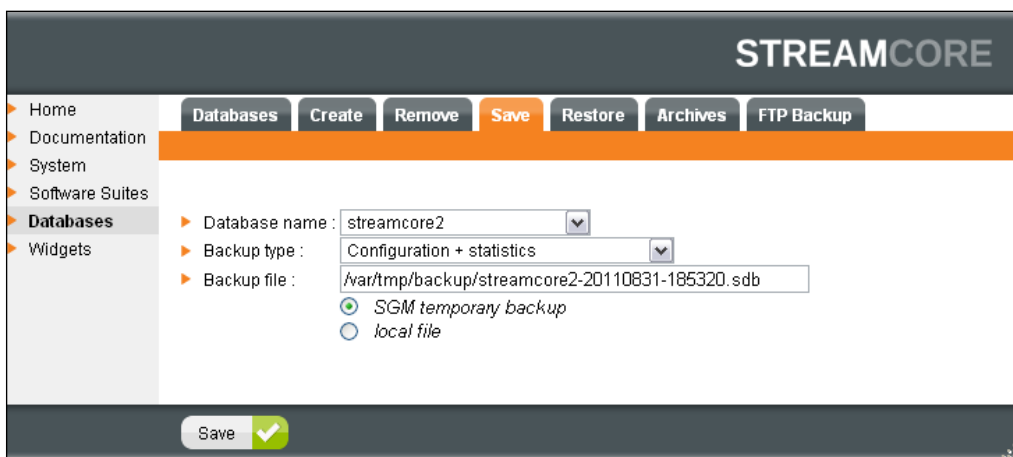


Figure 30 - Saving a Database

The following parameters must be defined:

Interface label	Description
Database name	Select a database from the databases present on the server.
Backup type	<p>Configuration + Statistics: backup of the StreamGroomers configuration, the StreamView graphs, the definition of StreamReport reports and StreamDashboard portals, the users defined in StreamAccess.</p> <p>Configuration only: backup of the configuration of StreamGroomers in StreamView, the definition of StreamReport reports and StreamDashboard portals, the users defined in StreamAccess.</p>
Backup file	<p>The databases can be saved:</p> <p>SGM temporary backup: specify the directory and the name of the backup file (/var/tmp/backup by default) on a local file: specify the name of the backup file</p>

When you have indicated these parameters, start the action by selecting **Save**. If you have chosen to save to a local file, a screen will appear asking you to choose a backup location on the PC or network.

Note: Automated backup on the SGM are available with the Archive tab (§ 4.4.7)

Saving a large database can be a lengthy process.

Restoring a Database

The **Restore** tab allows you to install databases onto an SGM server, if they have been previously saved according to the save procedure defined above. The database can have any name (the same as the database when it was saved or different).

A specific database can be recovered from a backup file stored on an SGM, on the computer from which SGMconf is launched or from any resource that this computer can access (with a maximum size of 32 Mb due to browser limitations). An option "Restoration for graph consultation only" can be checked in order to restore a database without activating StreamGroomers polling and statistics database consolidation (in order to preserve the same time granularity).

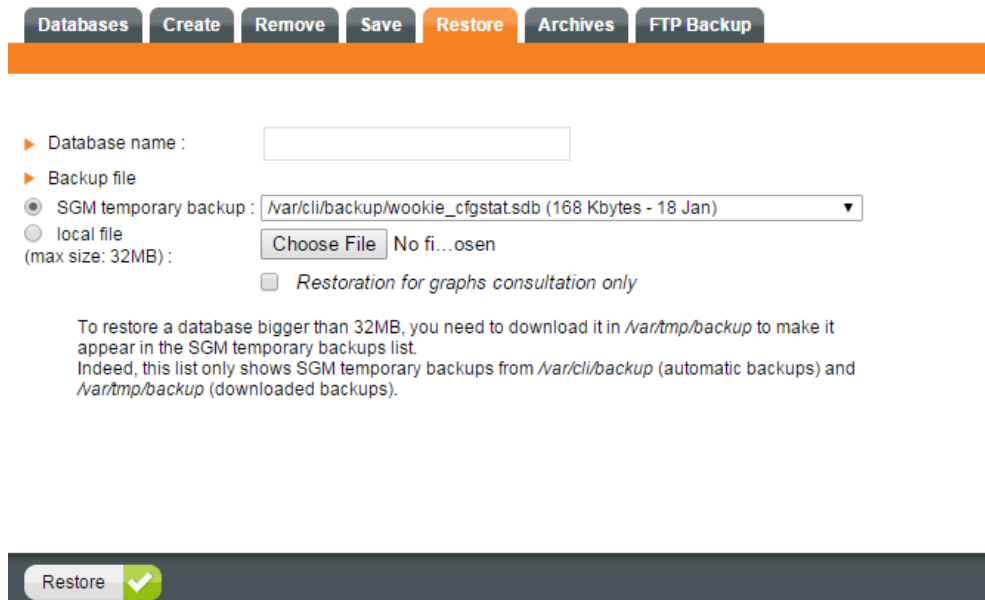


Figure 31 - Recovering a Database

Note: If you wish to recover a database in order to return to an earlier version to the one currently used on an SGM (as a result of an incorrect operation for example), always **start by deleting the database you wish to replace first**. Then start the recovery process. It is necessary to perform this operation to avoid having StreamGroomers managed by 2 databases at the same time.

Note: Restoring a large database can be a lengthy process.

Note: Only saved databases located in /var/cli/backup (automatic archives) and /var/tmp/backup are listed. When restoring a database on a new SGM, it is therefore necessary to first download the database to /var/tmp/backup.

Note: Elements in /var/tmp (and sub directory) are kept only for 1 month.

1.10 ACCESS TO ARCHIVES

An automated backup of all databases (configuration only and configuration+statistics) is performed on an SGM everyday (starting at 1 A.M.). By default, an SGM stores configuration only backups for 7 days, and configuration+statistics backups for 1 day.

Databases backup are the following:

- Configuration+statistics:
 - <dbname>_cfgstat.sdb Current day
 - <dbname>_cfgstat.sdb.1 Current day -1
- Configuration only :
 - <dbname>_cfgonly.sdb. Current day
 - <dbname>_cfgonly.sdb.1 Current day -1
 - <dbname>_cfgonly.sdb.2 Current day -2
 - <dbname>_cfgonly.sdb.3 Current day -3
 - <dbname>_cfgonly.sdb.4 Current day -4
 - <dbname>_cfgonly.sdb.5 Current day -5
 - <dbname>_cfgonly.sdb.6 Current day -6
 - <dbname>_cfgonly.sdb.7 Current day -7

Click on a backup name to download it.

STREAMCORE

Home
Documentation
System
Software Suites
Databases
Widgets

Databases Create Remove Save Restore Archives FTP Backup

Database backups available on the SGM

CONFIGURATION + STATISTICS

Last backups	Size	Creation date
avvdemo_cfgstat.sdb	24 Mbytes	31 Aug
bspb_cfgstat.sdb	642 Mbytes	23 Aug
configuide_cfgstat.sdb	171 Kbytes	31 Aug
demo_cfgstat.sdb	230 Kbytes	31 Aug
stats_cfgstat.sdb	25 Mbytes	31 Aug
test_cfgstat.sdb	190 Mbytes	1 Jul

Other backups	Size	Creation date
avvdemo_cfgstat.sdb.1	24 Mbytes	30 Aug
bspb_cfgstat.sdb.1	642 Mbytes	22 Aug
configuide_cfgstat.sdb.1	170 Kbytes	30 Aug
demo_cfgstat.sdb.1	229 Kbytes	30 Aug
stats_cfgstat.sdb.1	25 Mbytes	30 Aug
test_cfgstat.sdb.1	158 Mbytes	30 Jun

CONFIGURATION ONLY

Last backups	Size	Creation date
avvdemo_cfgonly.sdb	1 Mbytes	31 Aug
bspb_cfgonly.sdb	2 Mbytes	23 Aug
configuide_cfgonly.sdb	144 Kbytes	31 Aug
demo_cfgonly.sdb	145 Kbytes	31 Aug

Figure 32 – Access to Archives

1.11 FTP BACKUP

The FTP backup feature allows you to save archives to an external backup server by FTP. It uses database archives saved at 01:00 AM (see chapter 6.1.8).

The configuration of the FTP backup is performed in two parts:

1. configuring the FTP server parameters (server address, FTP connection type...)
2. configuring the content of the backup and scheduling its export to the FTP server

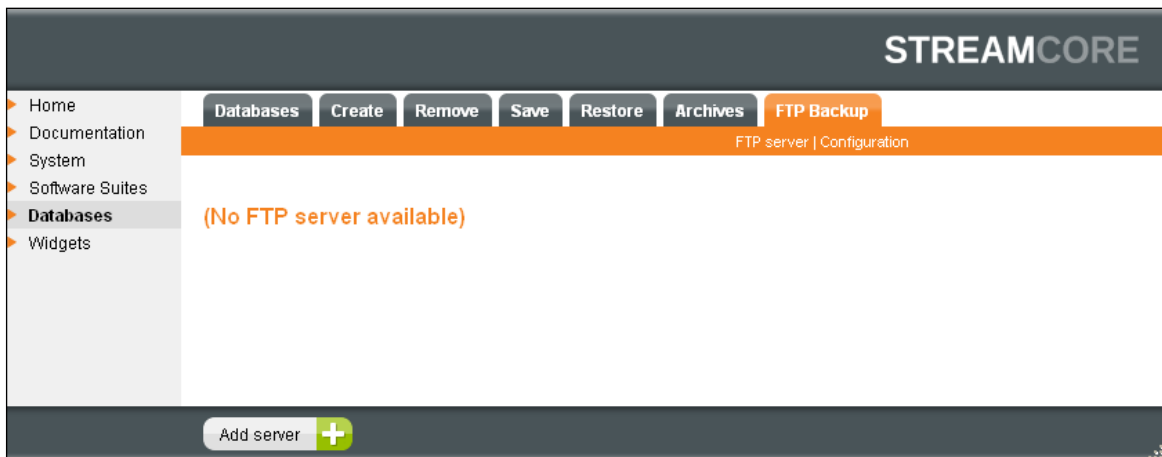


Figure 33 – FTP Backup Configuration

Configuration of the FTP server: click "add server":

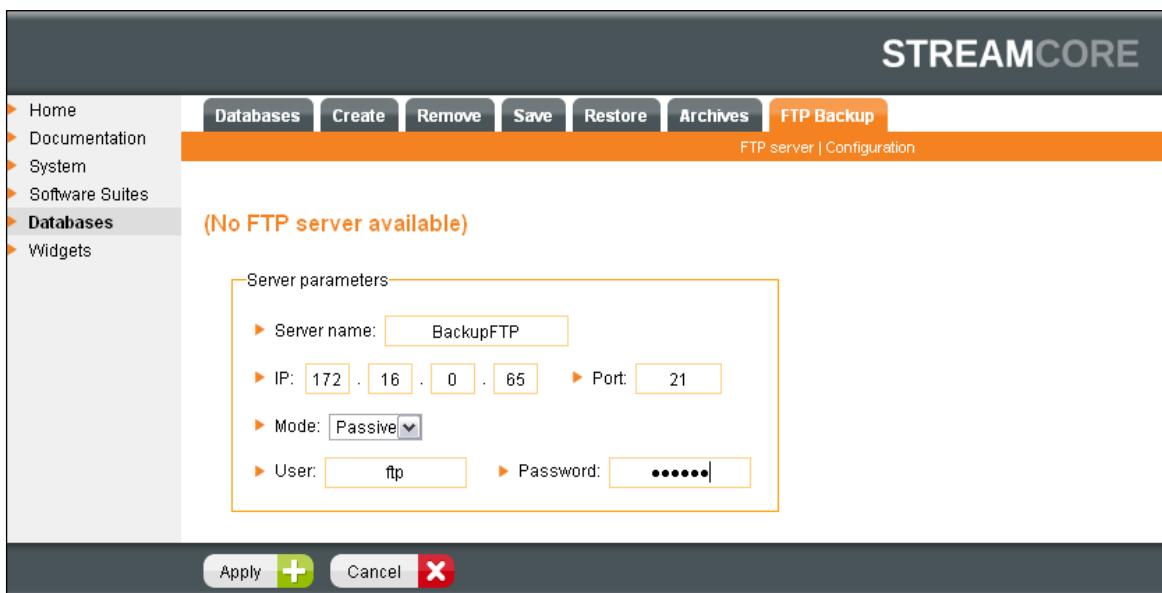


Figure 34 – FTP Server Configuration

The following parameters must be provisioned:

- Server name:** FTP server template name
- IP:** FTP server IP address
- Mode:** Active / Passive FTP mode
- Nat environment (for active mode):** Define real IP address and port to use
- User / Password:** Login used to connect to the FTP server

Once the FTP server template has been defined, the export scheduling can be configured using the "configuration" sub-tab:

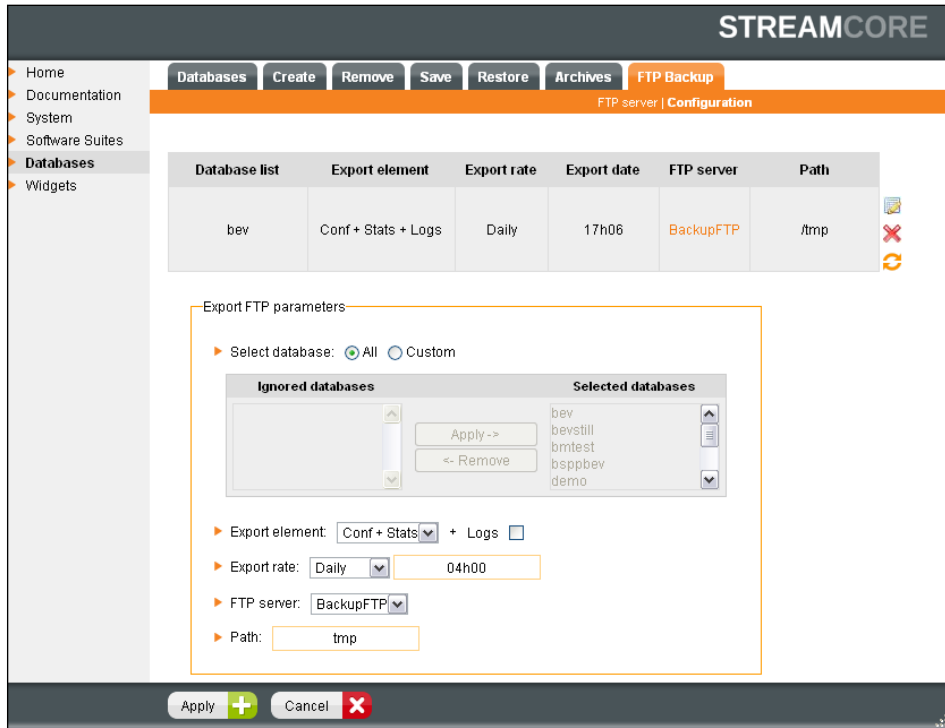


Figure 35 – Export Scheduling Configuration

The following parameters must be provisioned:

- Select database:** Select the database to be exported (all by default)
- Export element:** Select "conf only" or "conf+stats" archive to export with SGM logs
- Export rate:** Select at which frequency the archive is sent to the FTP server: daily/weekly/scheduled (once)
- FTP server:** Select one server template
- Path:** Add a directory in the home of the FTP user.

Archives are stored in: **FTPuserHome/\$Path/\$databasename/backup**
 Logs are stored in: **FTPuserHome/\$Path/\$databasename/logs**

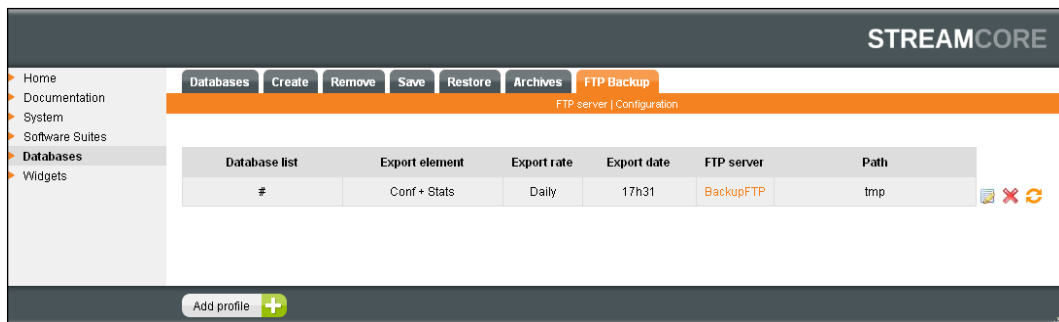


Figure 36 – Export Scheduling Configuration

Once the configuration is completed, the export can be changed, deleted or immediately launched using the three buttons on the right.

7 High Availability

Streamcore provides customers with service availability by removing individual SGM servers as a single point of failure. In a clustered SGM environment, the SGM and its data are shared and replicated across a pool of two

servers, the active SGM and standby SGM. If the active SGM fails, the SGM service continues to run on the surviving SGM which becomes the active one.

Streamcore High Availability enables Streamcore administrator and users to continue accessing Streamcore functions and environments in the event of a server failure. It also helps to further reduce costs of downtime by reducing the amount of time the SGM is taken offline for planned maintenance operations.

In Release 6-5, high availability has been redesigned by Streamcore. The technical architecture of the cluster has evolved allowing a better monitoring of the status of the cluster of SGM and automated failover.

1.12 CLUSTERING THE SGM

A cluster of SGM is implemented by the Streamcore administrator. The cluster is composed of 2 instances of SGM, which can be hardware appliances or virtual appliances. Both SGM must be the same type, for example 2 physical SGM H appliances. Each SGM has a copy of all the Streamcore databases. Periodically, the databases of the active member of the cluster are replicated to the standby member.

Each SGM has its own IP address. The cluster is also assigned the IP address that is used to connect to the SGM applications, such as StreamView, StreamReport, ...

The SGM cluster is categorized as an active/passive cluster. When the standby member detects that the active member becomes unreachable, the standby SGM becomes active to serve Streamcore user requests, collect statistics and execute the same tasks as the other SGM.

During the polling process initiated by the SGM, only the active member of the SGM connects to the StreamGroomers of all the databases to collect their statistics every 10 minutes. When the failover occurs, the SGM which has become active executes the same polling procedure against all the SG and updates its databases. To allow both SGM to connect to the StreamGroomers, their IP addresses must be declared on each StreamGroomer to allow the SGM to communicate with it. This is done with the Boot menu of a StreamGroomer or with a USB key prepared with the SGM.

1.13 REQUIREMENTS FOR HIGH AVAILABILITY

To activate the failover cluster of SGM, the following requirements must be met:

- 1) Always install and configure 2 SGM of the same type to create a cluster: Example:
 - 2 hardware appliances SGM H
 - 2 hardware appliances SGM F
 - 2 virtual appliances SGMv with the same specifications for the CPU, memory and storage.

Note: High availability is more appropriate when using hardware appliances. Virtual images can be saved as snapshots or moved from one host machine to another one according to the host capacity.

- 2) Ensure that each SGM is running with a valid license that enables the SGM Backup feature. If one of them has not the SGM Backup enabled, the High Availability feature is not accessible, and the cluster cannot be created.
- 3) Update both appliances with the same software versions. The minimum version of the Software Suite is 6-5.03.
- 4) Allocate three IP addresses: one IP address for each member of the cluster, and one IP address as virtual IP address (or VIP) of the cluster. The VIP will be entered during the creation of the cluster. The IP addresses of the SGM instances and the VIP belong to the same subnet.
- 5) Make sure that the SGM appliances can communicate with each other, so they can monitor their status and replicate data in both directions.

- 6) Make sure that the configurations of both SGM appliances have been set with the same values for the NTP server and time zone, and the DNS servers so their date and time are synchronized.
- 7) Make sure that security parameters, SNMP, Radius, LDAP, email, Netflow are also configured with the same values on both SGM.

1.14 CONFIGURING HIGH AVAILABILITY

This section explains how manage a cluster with 2 identical SGM. It is assumed that Streamcore administrator has prepared both SGM as specified above in this document.

Checking the License

Before creating the cluster, the Streamcore administrator must check that the High Availability feature is enabled on the two members of the cluster.

To check the SGM license on an SGM, connect as administrator and look at the Licenses tab in the System section. The column SGMSpare should display **enabled** for the feature, as shown by the figure below:

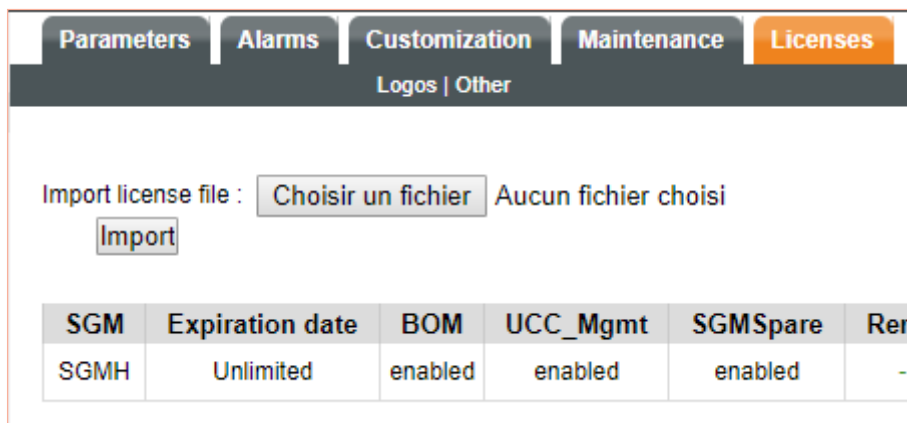


Figure 37 - The SGM license enables the failover cluster.

If the feature is enabled, the item **High availability** is present in the main menu of SGMConf:

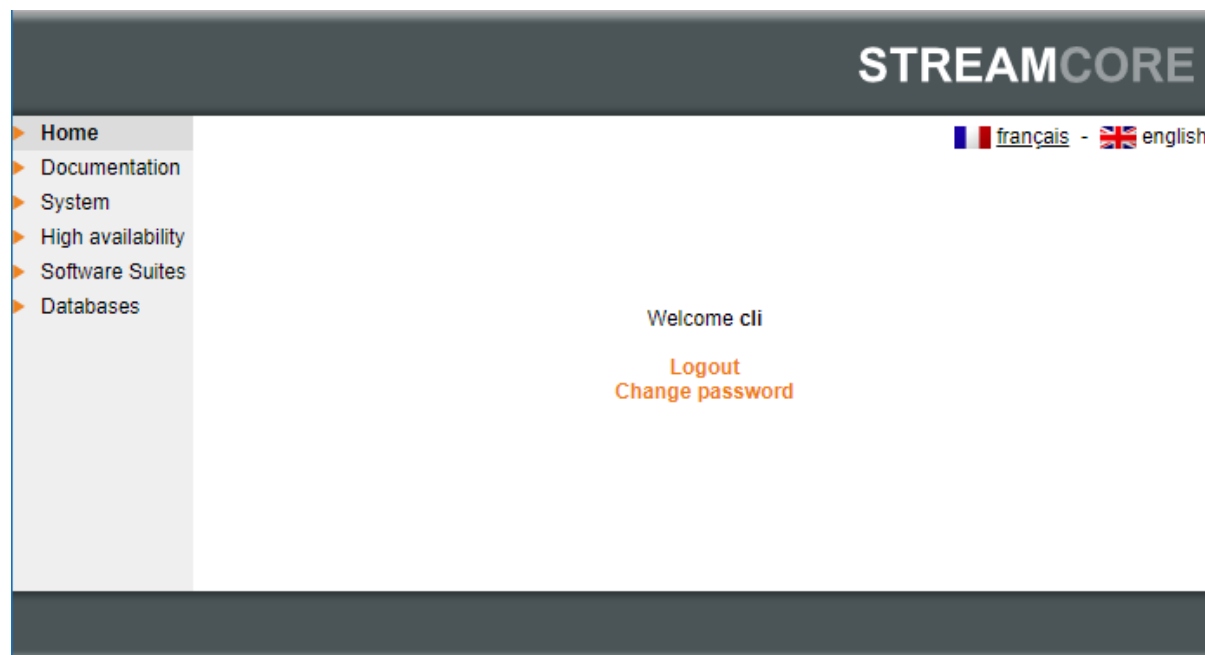


Figure 38 - High availability feature is enabled

Create a Cluster

In the following, it is assumed that the requirements listed in the paragraph **7.2 Requirements for High Availability** are met. Remember that an IP address is reserved in the same subnet as the two instances of SGM that will become members of the cluster.

To create a cluster, the administrator executes the following steps:

- Choose an SGM instance and logon as Streamcore administrator. **This chosen instance will be the active member when the cluster is created.**
- Select the High Availability item on the left panel. In this panel, the IP address of the current SGM instance and the subnet are already fill in. They cannot be changed. The cluster does not exist at this moment, so the status is Stopped.
- Enter the IP address of the second SGM instance and the virtual IP address of the SGM service.
- Then click on “Create the cluster” at the bottom of the page.
- Once the cluster is created, **the virtual address must be entered in their browsers by Streamcore users when connecting to the SGM.**

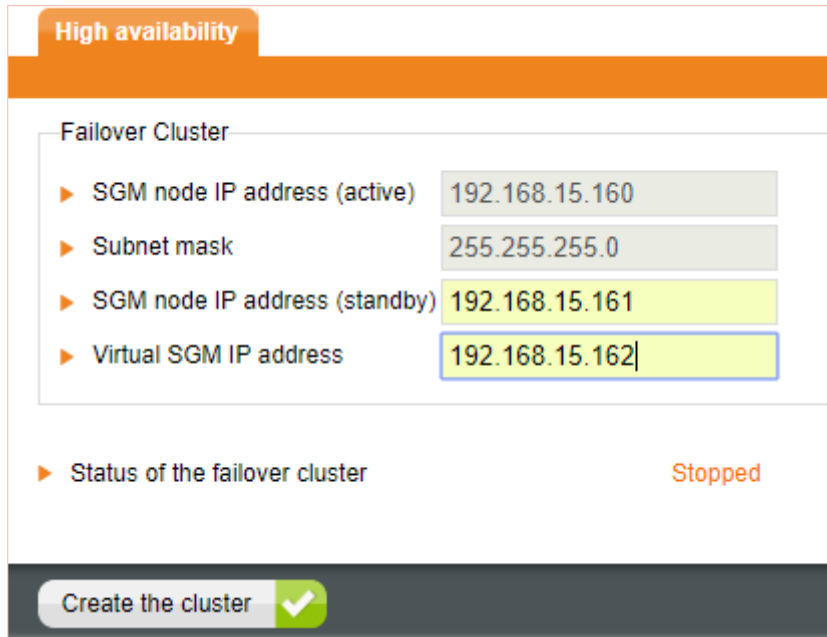


Figure 39 - IP addresses of the members and VIP of the SGM

While executing the setup procedure, SGMConf displays the progress. The procedure takes less than 2 minutes to create the failover cluster.

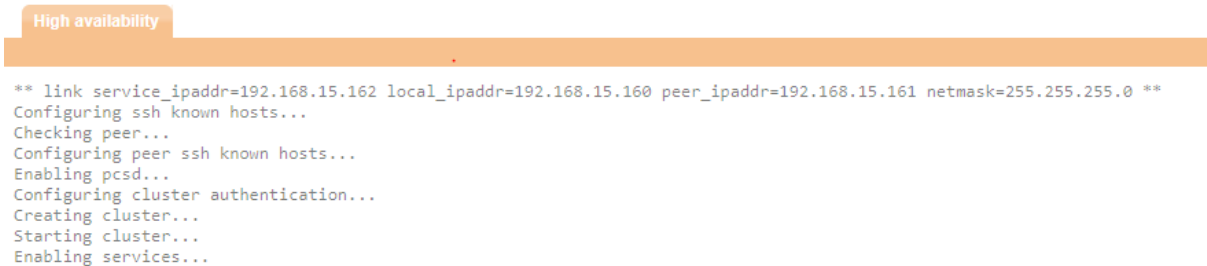


Figure 40 - Messages displayed during the creation of the cluster

When the cluster is ready, the characteristics and status of virtual SGM are displayed:

- the members of the cluster, their status and software versions are shown.
- For each member, the status and statistics of the databases. A database must appear on the active and standby. The

High availability

Connected on the SGM **actif** (192.168.15.160)

- ▶ Status of the cluster **Operational**
- ▶ Cluster IP address (VIP) **192.168.15.162**
- ▶ Date of the last status check 10/25/2018 4:44:31 PM
- ▶ Date of the last status change 10/25/2018 4:35:47 PM
- ▶ Last change made on the member olive.streamcore.com


▶ Members of the cluster


olive.streamcore.com

- ▶ Node role **actif**
- ▶ Node status **en ligne**
- ▶ IP address **192.168.15.160**
- ▶ Subnet mask **255.255.255.0**
- ▶ Software Suite **6-5.T03**
- pizzaplanet2018**
 - ▶ Database updated 10/9/2018 5:14:31 PM
 - ▶ Statistics updated 10/25/2018 6:21:18 PM
- protovision2018**
 - ▶ Database updated **10/25/2018 5:25:03 PM**
 - ▶ Statistics updated 10/25/2018 6:21:18 PM

popeye.streamcore.com

- ▶ Node role **standby**
- ▶ Node status **en ligne**
- ▶ IP address **192.168.15.161**
- ▶ Subnet mask **255.255.255.0**
- ▶ Software Suite **6-5.T03**
- pizzaplanet2018**
 - ▶ Database updated 10/9/2018 5:14:31 PM
 - ▶ Statistics updated 10/25/2018 6:21:15 PM
- protovision2018**
 - ▶ Database updated **10/9/2018 5:09:11 PM**
 - ▶ Statistics updated 10/25/2018 6:21:15 PM

Undo the cluster 

Fail over 

Undo the cluster

Monitor a cluster

Cf Status and alarms in SGMConf → System → Alarms → Log

Update the Software Suite of the SGM

1.15 TROUBLESHOOTING

- Logs dédiés à la fonction HA