

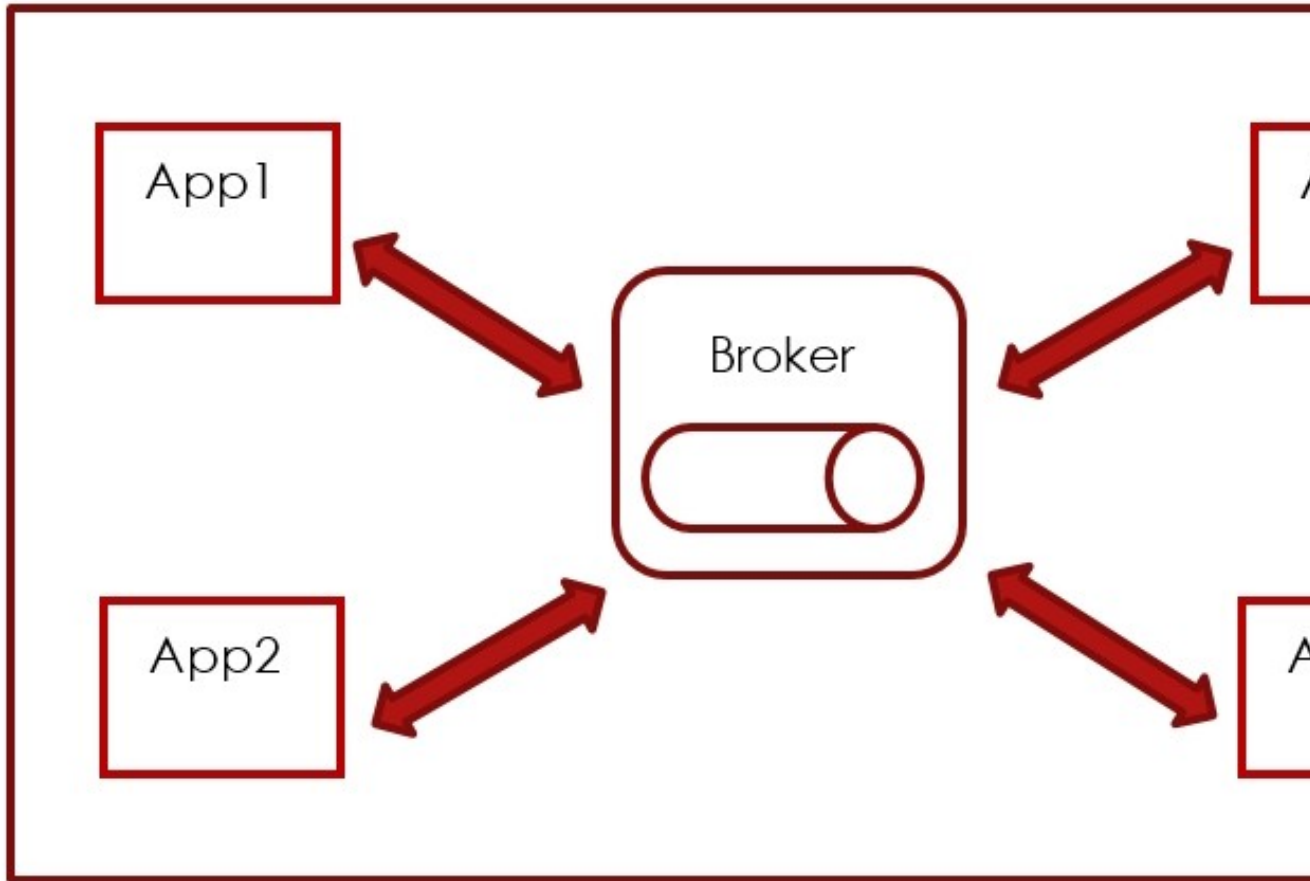
# How To Synchronize Configurations

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## Introduction

This feature allows, in a multi-appliance configuration, to synchronise configuration parameters between those appliances. The replication has an architecture multi-master, that means that each appliance will be able to communicate/receive the changes on the configuration to/from the other appliances but only one will start the broker to hold the messages. The next figure shows a multi-appliance configuration with the communication with the broker. In this case the broker is embedded in one of the appliances but the behavior will be the same:



The sections that can be replicated are:

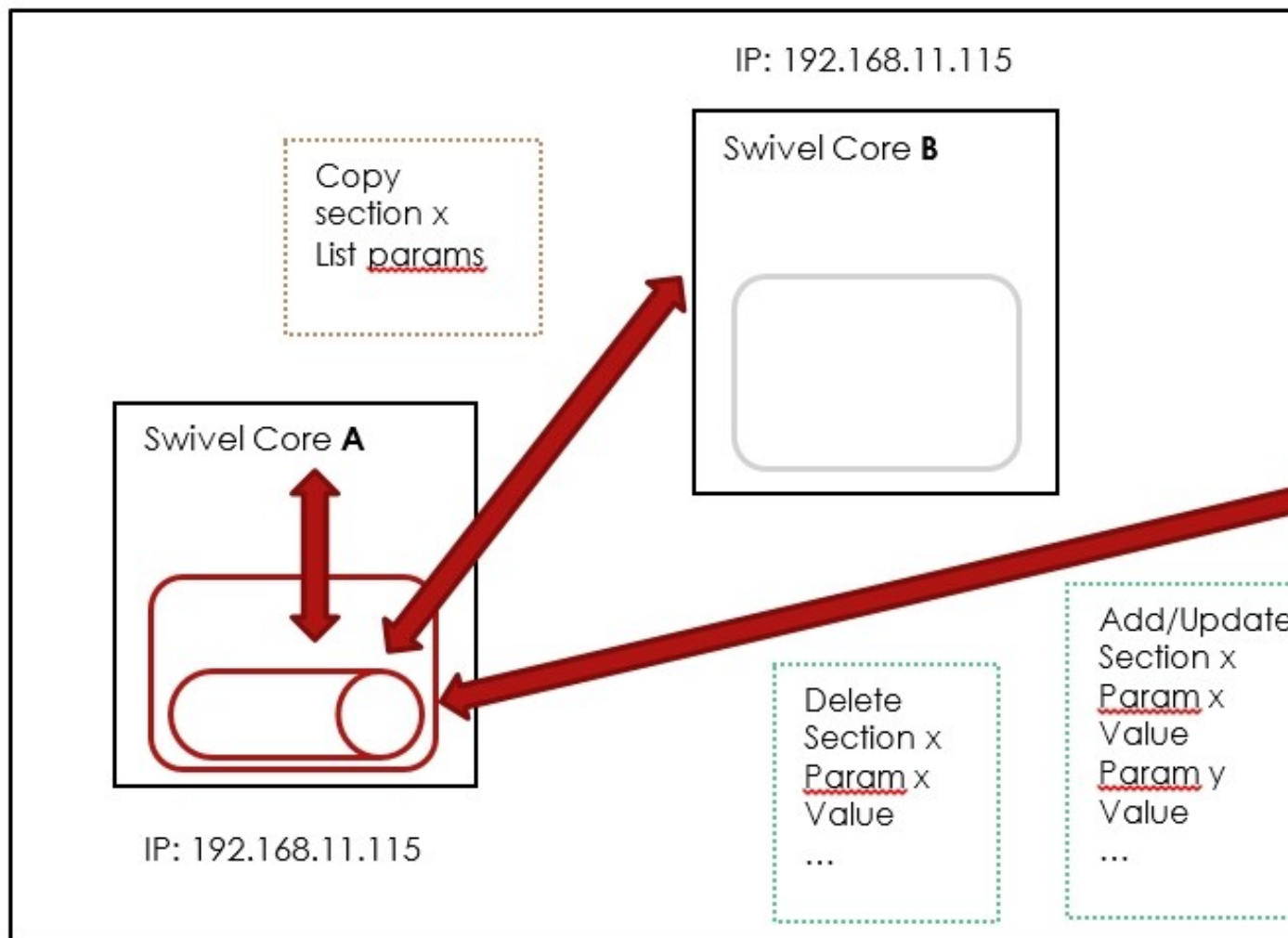
- Repository > Groups
- Repository > Attributes
- Policy > All sections

## Configuration Parameters screen

Please go to [Configuration Parameters](#) to see configuration parameters in detail.

## Example

Suppose the next configuration:



Configuration topic (Delete/update parameters and/or copy all se



Broker active



Broker NO active

The configuration parameters on each appliance will be the below (the appliances will have the same secret defined):

Swivel Core A

## Synchronisation Administration>Configuration parameters

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="Yes"/>
Broker IP:	<input type="text" value="192.168.11.115"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="Yes"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Config sync checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

When the broker has started the information message: ?Sync broker has been started? will be displayed and when the Synchronise configuration is activated ?Connected? will be shown:

## Synchronisation Administration>Configuration parameters

- Sync broker has been started
- Connected

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="Yes"/>
Broker IP:	<input type="text" value="192.168.11.115"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="Yes"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Config sync checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

## Synchronisation Administration>Configuration parameters

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="Yes"/>
Broker IP:	<input type="text" value="192.168.11.115"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="No"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

NOTE: If we try to start a broker in that machine, an error message will be shown because another broker is started in the same machine in the same port (in that case Swivel Core A):

## Synchronisation Administration>Configuration parameters

### Error starting sync broker

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="No"/>
Broker IP:	<input type="text" value="192.168.11.115"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="Yes"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Config sync checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

## Synchronisation Administration>Configuration parameters

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="Yes"/>
Broker IP:	<input type="text" value="192.168.11.115"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="No"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

NOTE: By default the IP that appears is the current IP, in that case 192.168.0.151. If the ?Synchronise configuration? is activated with that IP an error message is shown to indicate that it's not possible to establish the connection:

## Synchronisation Administration>Configuration parameters

**Error establishing connection: 192.168.0.151: 61616**

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:	<input type="text" value="Yes"/>
Broker IP:	<input type="text" value="192.168.0.151"/>
Broker port:	<input type="text" value="61616"/>
Act as Broker:	<input type="text" value="No"/>
Broker checking frequency (seconds):	<input type="text" value="60"/>
Shared Secret:	<input type="password" value="....."/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/>	

## Synchronisation Types

There are 3 synchronisation types:

Config sync type:

Manual ▼  
Manual  
Automatic  
Disable sync

This drop-down list only will appear on the sections mentioned before if 'synchronise configuration' is true.

## Synchronisation Administration>Configuration parameters

Defines the elements needed to synchronise data with other Swivel instances

Synchronise configuration:

Yes ▼

Broker IP:

192.168.11.115

Broker port:

61616

Act as Broker:

Yes ▼

Broker checking frequency (seconds):

60

Config sync checking frequency (seconds):

60

Shared Secret:

.....

Apply

Reset



Config sync type:

Manual ▼  
Manual  
Automatic  
Disable sync



## Automatic

The changes applied in the section will be synchronised with the other appliances whose section is configured as Automatic or Manual. Also the current appliance will be able to receive messages of synchronization about that section and they will be processed. With this option, the button 'Sync now' is shown which allows to replicate the whole section, not only the changes.

**Policy > General**

Please enter the policies to apply to authentication.

Security string type: Numbers

Non-Existent Users appear to be: PINned

Account lockout time (minutes): 0

Maximum login tries: 5

Increment Login failure count if user has no security strings: Yes

Audit Log length (days): 30

Inactive account expiry (days): 0

Auto. set credentials on user creation: Yes

Config sync type: Automatic

Apply Reset Sync now

NOTE: If a section, e.g. groups has more groups than the other appliances, if a new group is added this will not be created in the other appliances. In the sections repository groups and repository attributes if the repositories are different in the other sections, the value of the repository will not be updated.

## Manual

The changes applied in the section will NOT be synchronised but the current appliance will be able to receive messages of synchronisation about that section and they will be processed. In that case, the synchronisation only will be able to be done with the button 'Sync now'.

## Disable Sync

The changes applied in the section will NOT be synchronised. The synchronisation messages received about that section will be discarded and the button 'Sync now' will NOT be shown.

NOTE: if the shared secret defined in the appliance that receives the message is different than whose appliance that sent it, the message will be discarded independently of the sync type.

## Replicate Changes

To replicate the changes done in a section this should be configured with the sync type Automatic. There are 2 kinds of section, one that generate the parameters dynamically (Groups, Attributes, Policy?Banned Credentials) and others that have static parameters. For the first ones the changes can be: update, remove or create and for the second ones only update.

- Sections with static parameters

The changes applied on the parameter in a section with sync type Automatic will be synchronise with the other appliances.

- Sections with dynamic parameters

If the sections have different number of parameters only the attributes with the same position that in the section to sync will be updated/remove and in one immediately position after will be created.

NOTE: Attributes and groups sections have repository parameters. If the repositories are different the value of the repositories will not be updated.

## Replicate the whole section

In the sections to synchronise, if the configuration synchronisation is activated and the sync type is Manual or Automatic, the button 'Sync now' is shown which allows to synchronise the whole section with the other appliances, configured with the sync type Automatic or Manual, rather than only the

changes applied.

## Detect state broker and reconnection

Below is shown the flow of reconnection:

- Appliance A starts the broker and connects with the broker. In the status screen these new parameters will be shown:

<b>PINsafe License Name</b>	
<b>Licensed users</b>	5
<b>User accounts</b>	2
<b><u>Locked user accounts</u></b>	0
<b><u>Disabled user accounts</u></b>	0
<b><u>Deleted user accounts</u></b>	0
<b><u>Inactive user accounts</u></b>	0
<b>Active database</b>	Internal
<b>Mode</b>	Synchronized
<b>PINsafe RADIUS Enabled</b>	No
<b>Server IP address</b>	0.0.0.0
<b>Server hostname</b>	ITH000222
<b>Repository server name</b>	repodummy1
<b>Repository server ID</b>	1
<b>Logged in as</b>	admin
<b>Configuration version</b>	3.9.7.0
<b>Data Storage Root</b>	C:\Users\lmorales \swivel\
<b>End User Licence Agreement</b>	<a href="#">View</a>
<b>Transport Queue: SMTP</b>	0 messages pending
<b>Transport Queue: AQL</b>	0 messages pending
<b>State local sync broker</b>	Active
<b>Configuration sync state connection</b>	Connected

- **State local sync broker:** Indicates the broker's state. If the broker could not be started for some reason the state of the broker will be Inactive
- **Configuration sync state connection:** Indicates the status of the connection with the broker. Only appears if the appliance is configured to synchronise the configuration.



- ApplianceB connects with the broker (synchronise configuration is activated). In the status screen the parameter ?State connection sync configuration? will be shown.

<b>PINsafe License Name</b>	
<b>Licensed users</b>	5
<b>User accounts</b>	2
<b><u>Locked user accounts</u></b>	0
<b><u>Disabled user accounts</u></b>	0
<b><u>Deleted user accounts</u></b>	0
<b><u>Inactive user accounts</u></b>	0
<b>Active database</b>	Internal
<b>Mode</b>	Synchronized
<b>PINsafe RADIUS Enabled</b>	No
<b>Server IP address</b>	0.0.0.0
<b>Server hostname</b>	ITH000222
<b>Repository server name</b>	repodummy1
<b>Repository server ID</b>	1
<b>Logged in as</b>	admin
<b>Configuration version</b>	3.9.7.0
<b>Data Storage Root</b>	C:\Users\lmorales\serverB\sv
<b>End User Licence Agreement</b>	<a href="#">View</a>
<b>Configuration sync state connection</b>	Connected

- Appliance A (Broker) shuts down
- ApplianceB detects that broker is down and every x seconds (time configured in the configuration parameters screen) try to reconnect. In the status screen the parameter ?State connection sync configuration? will be disconnected.

<b>PINsafe License Name</b>	
<b>Licensed users</b>	5
<b>User accounts</b>	2
<b><u>Locked user accounts</u></b>	0
<b><u>Disabled user accounts</u></b>	0
<b><u>Deleted user accounts</u></b>	0
<b><u>Inactive user accounts</u></b>	0
<b>Active database</b>	Internal
<b>Mode</b>	Synchronized
<b>PINsafe RADIUS Enabled</b>	No
<b>Server IP address</b>	0.0.0.0
<b>Server hostname</b>	ITH000222
<b>Repository server name</b>	repodummy1
<b>Repository server ID</b>	1
<b>Logged in as</b>	admin
<b>Configuration version</b>	3.9.7.0
<b>Data Storage Root</b>	C:\Users\lmorales\serverB\swive
<b>End User Licence Agreement</b>	<a href="#">View</a>
<b>Configuration sync state connection</b>	Disconnected

- During this period if it is tried to send sync data of a section an error message will be shown:

## Policy>General

### Error sending synchronization data

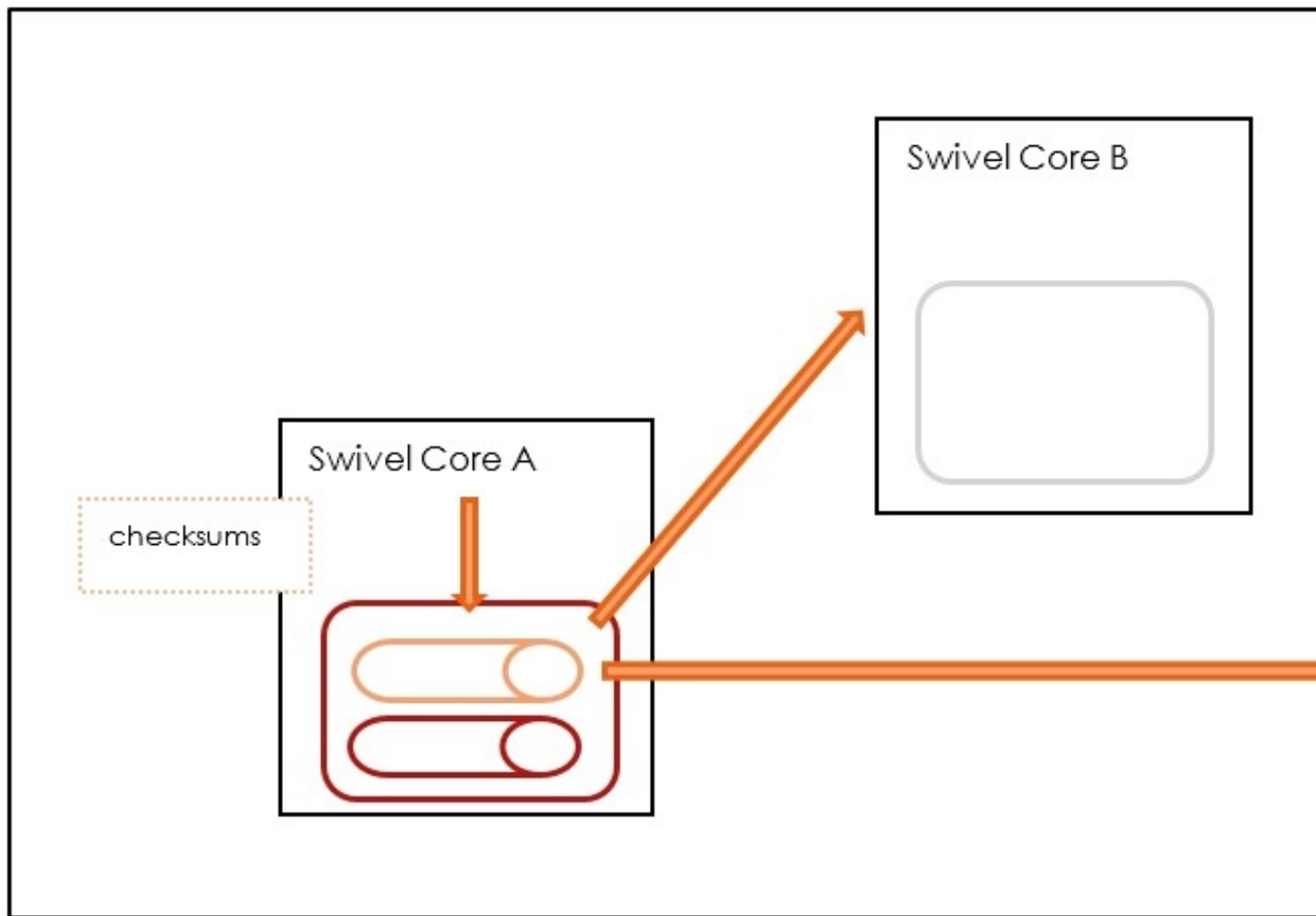
Please enter the policies to apply to authentication.

Security string type:	<input type="text" value="Numbers"/>
Non-Existent Users appear to be:	<input type="text" value="PINned"/>
Account lockout time (minutes):	<input type="text" value="0"/>
Maximum login tries:	<input type="text" value="5"/>
Increment Login failure count if user has no security strings:	<input type="text" value="Yes"/>
Audit Log length (days):	<input type="text" value="30"/>
Inactive account expiry (days):	<input type="text" value="0"/>
Auto. set credentials on user creation:	<input type="text" value="Yes"/>
Sync type:	<input type="text" value="Automatic"/>
<input type="button" value="Apply"/> <input type="button" value="Reset"/> <input type="button" value="Sync now"/>	

- Appliance A and the broker start up again.
- Appliance B reconnects with the broker. In the status screen the parameter ?State connection sync configuration? will be connected.

## Detection out of synchronisation

To detect if the sections are synchronised, the appliance configured as a broker and with the synchronisation activated, will send messages with a checksum of the sections, configured with a type sync "Manual" or "Automatic" (except groups and attributes due to if they have different number of repositories the state will be always ?No synchronised?). Those messages will be sent periodically to the other appliances. The other appliances when receive the messages with the checksums will compare with their section?s checksums to know if they are synchronised or not.



Status configuration topic (Status messages)



Configuration topic (Change parameters and/or copy all section

In the appliances that do not act as a broker the information showed in the status screen will be the following:

- Configuration sync status, last check: Indicates the date and time the last check of the synchronization status.
- Section > Group: Indicates if the group is synchronised. E.g. Policy > General : Synchronised.

It's a link to access to the section screen.

NOTE: if the shared secret defined in the appliance that receives the status message is different than the appliance that sent it, the message will be discarded.

<b>Configuration sync state connection</b>	Connected
<b>Configuration sync status, last check</b>	06-12-2013 13:26:56
<b><u>[Policy &gt; Helpdesk]</u></b>	Synchronised
<b><u>[Policy &gt; Password]</u></b>	Synchronised
<b><u>[Policy &gt; Banned Credentials]</u></b>	No synchronised
<b><u>[Policy &gt; Self-Reset]</u></b>	No synchronised
<b><u>[Policy &gt; Console Login]</u></b>	Synchronised
<b><u>[Policy &gt; Mobile Client]</u></b>	Synchronised
<b><u>[Policy &gt; General]</u></b>	No synchronised
<b><u>[Policy &gt; Reporting]</u></b>	Synchronised
<b><u>[Policy &gt; PIN and OTC]</u></b>	Synchronised