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# **RCCMD – Multiple Server Shutdown Software**

User manual

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-017	Added: RCCMD Client as relay station	03/2009
-018	Update: Installation of RCCMD	06/2009
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-020	Added: Silent Installation Windows	08/2009
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## **1. What is the RCCMD Software?**

RCCMD is a network client software, which enables to receive shutdowns or messages from UPS servers like UPSMAN UPS Software, CS121 SNMP Adapters or any other kind of RCCMD capable network-cards of other licensed partners. RCCMD is the successfulliest multiple server shutdown and messaging tool in the entire UPS world.

### **1.1 Network Shutdown with RCCMD**

The program RCCMD is designed to execute a command on a remote system in a TCP/IP network. RCCMD works like the Remote Shell (RSH) known in the Unix environment. Inside the UPS-Management Software RCCMD is used to shutdown several servers that are all powered by a single UPS. For this job, one of these computers is configured as UPS-master server.

Install the UPS-Management Software UPSMAN on your UPS server and connect it to the UPS. Alternatively, a SNMP adapter CS-111 or CS-121 can be used for this as well. The other servers are only connected to the UPS power supply, no RS-232 connection is necessary. On these remote systems, install RCCMD (copy the modules) and create a shutdown routine for every system. This shutdown routine may be a batch file, shell script or ncf-file, that contains the down and other commands for this system. After that, add *RCCMD* to the shutdown job or to the EVENT configuration of the computer running as UPS master server.

So now you have a computer in your server network supervising the UPS. The other servers execute RCCMD and wait for the RCCMD signal of the UPS server. If a power failure forces the master computer to shutdown the server-network, the shutdown-job of the UPS-server will start RCCMD. RCCMD now sends the RCCMD-signal to all computers in its list. The computers receive this signal and the installed RCCMD will execute the programmed command.

Please note that it is required to install RCCMD in two different operating ways:

1. as a sending process on the UPS-server,  
(RCCMD -s) (send)
2. as a receiving process (background-process) on the receiving computers.  
(RCCMD -l) (listen)

In contrast to the RSH, RCCMD does not include the command that is to be executed in the sending process, but instead deposits the command with the receiving process. This provides a security advantage in comparison to the RSH. Furthermore the receiving process may check, which computer sends the RCCMD-signal and determines whether to accept it or not.



**Attention:**

**If a name resolution is achieved via DNS, please always use the IP-address (and not the computer name) for a network shutdown with RCCMD. In case the DNS is not available, the network shutdown will not work, if this method is not used.**

### RCCMD Version 2 or higher

The extended Version of RCCMD is also able to execute commands on remote computers, execute the shutdown batch in the same TCP/IP port 6003, execute an e-mail batch, enable log file entries etc. The RCCMD 2 sender (UPSMAN or CS121 SNMP adapter) sends the corresponding RCCMD signal and the RCCMD 2 client starts the corresponding batch file, which lead to the execution of the net send message.

The initial command will always come from the UPSMAN or CS121 where as the execution will always be on the RCCMD client side.

Example: The CS121 should send a net send (network message) to a Windows NT network. The CS121 can be programmed so that during the event "Powerfail" a "RCCMD message" will be send. The text of the message is configurable by the user.

Upon on receiving the message by the RCCMD 2 client, the client is starting a batch file and sends the net send message. Sender of the message will be the client and initiator is the UPSMAN or CS121.

This way it is possible to send messages, e-mail etc. in the different networks and operating systems, initiated by an UPS alarm.

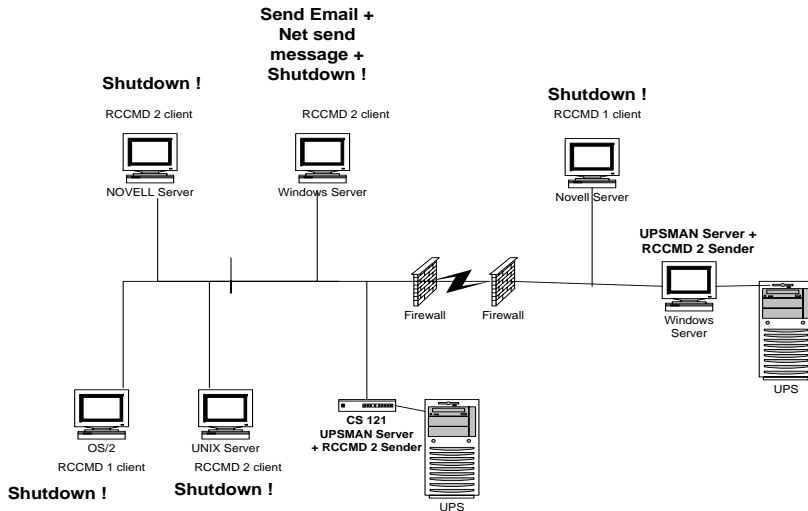


Figure 1 RCCMD and UPSMAN in a network environment

## 2. Installation / Configuration of RCCMD for Windows



**Note:**

The RCCMD Installer is using our delivered Java Runtime Environment version, which is used for the installation or rather uninstallation only. In addition the RCCMD Web Configurator is using a Java web-server (jetty). You can deactivate the RCCMD service RCCMDWebI into the services administration and RCCMD is running without Java!

### 2.1 Installation of RCCMD

Prior of the start, please make sure that you have full administrator rights in order to complete the installation.

- Step 1: Put the CD into the CD-ROM drive of your computer or download the software into a specific directory.
- Step 2: Please execute the installation program *installRCCMD.exe* in order to copy the files to your system and chose a desired setup language.

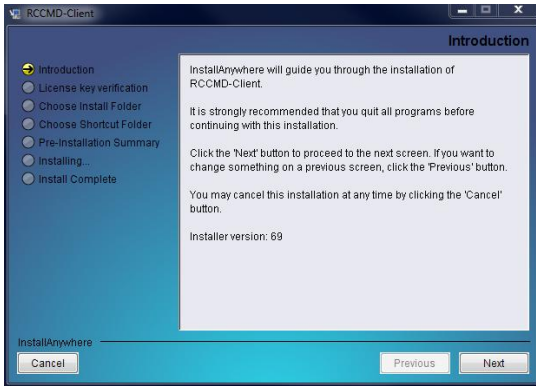


Figure 2 Introduction

In the next menu you can see the progress column where the next steps are visible. Click the “NEXT” button to continue.

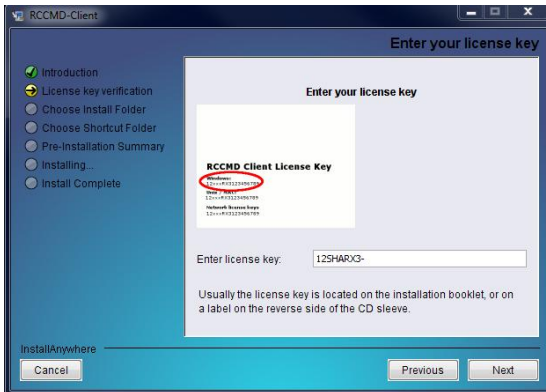


Figure 3 License Key Entry

Step 3:

Please enter your license key and choose your corresponding Windows OS from the list. The used license determines, which module can be installed.



**Attention:**

If you enter a wrong license number at this stage, the RCCMD client software will be set to a 30 day trial version. Please contact your UPS dealer for the full, correct license if it was not with the original CD-ROM.



You need a special license key for your RCCMD software. You can identify the key with the “RX3” in the first part of the license key. Most of the times you need to order the key separately.

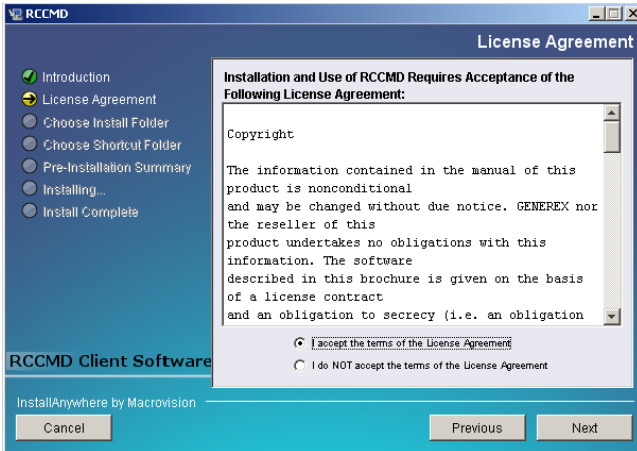


Figure 4 License Agreement

Select the feature you want to install.

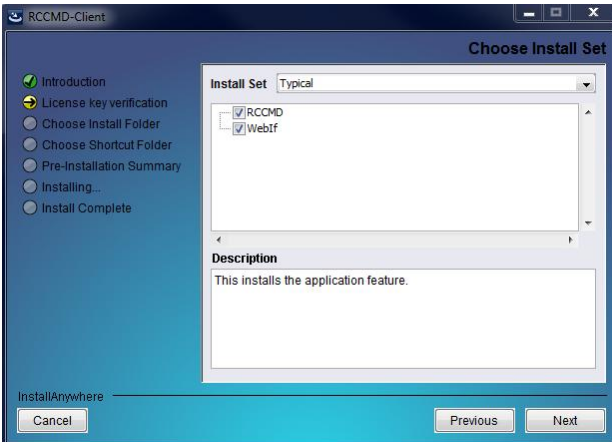


Figure 5 Choose Install Set

Read and confirm the license agreement and continue with the “NEXT” button.

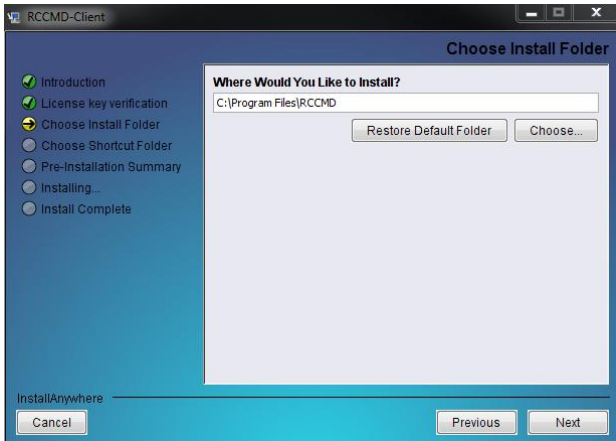


Figure 6 Install Folder Selection

In the next window enter the path where you want to install the software. Default is the subdirectory “RCCMD” into the program files folder onto the hard disk “C:”.



**Attention:**

If you want to execute a program or a batch file with RCCMD, it is required that this program or batch file is located into the **RCCMD** installation folder `\RCCMD` (Not into “Program files\RCCMD like default) or a search path is set on the folder.

It will be signaled into the next window, that firewall exceptions will be created for the RCCMD.exe (6003, 5769 TCP), the RCCMDTray.exe (971 TCP) and the RCCMD WebIf (8080 TCP).

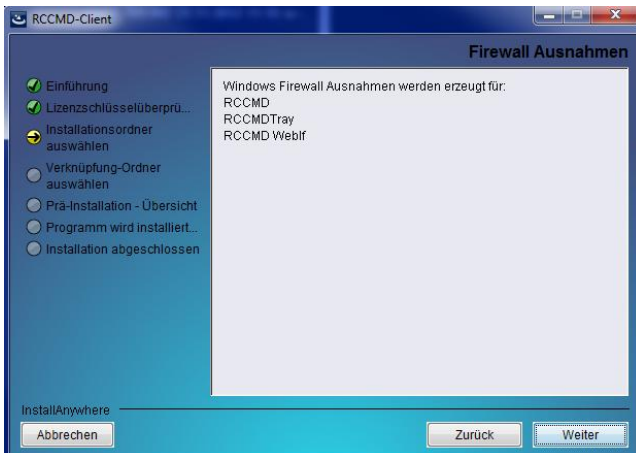


Figure 7 Firewall Exceptions

The RCCMD tray provides the appearance of the RCCMD message box as pop-up into the foreground. If you do not want to receive messages from the RCCMD, please close the RCCMD tray via the context menu. To disable the RCCMD tray permanently, you can disable it into the RCCMD configuration.

The RCCMD tray appears into the taskbar.

The red point means, that the RCCMD service is not started or rather a problem has occurred (powerfailure, communication lost). Green means, that the UPS status is okay.



Figure 8 RCCMD Tray

In next menu you can choose to create a new program group (default) or to choose icons elsewhere or not at all.

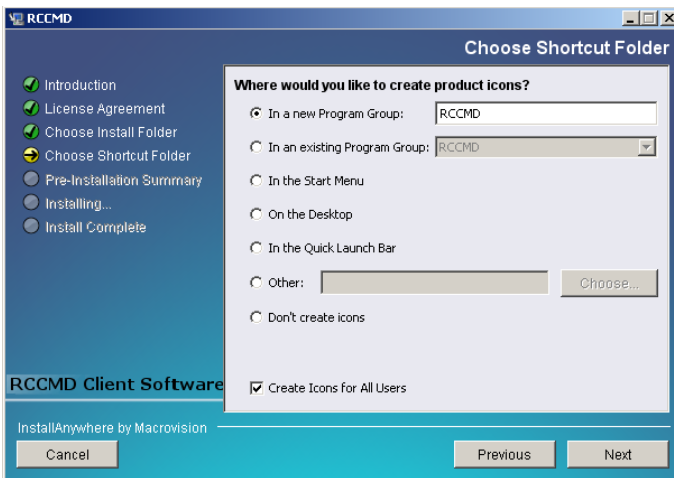


Figure 9 Shortcut Folder Selection

In the next menu you see an overview of your installation and you may now press "Install" to begin.

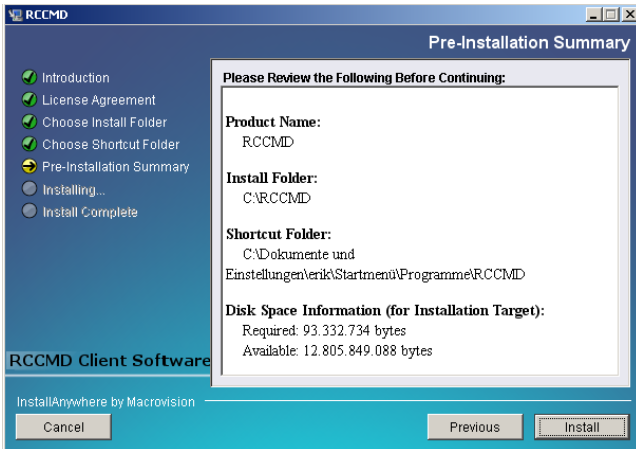


Figure 10 Summary

Select these default values for port and protocol for RCCMD Webf or select new ones.

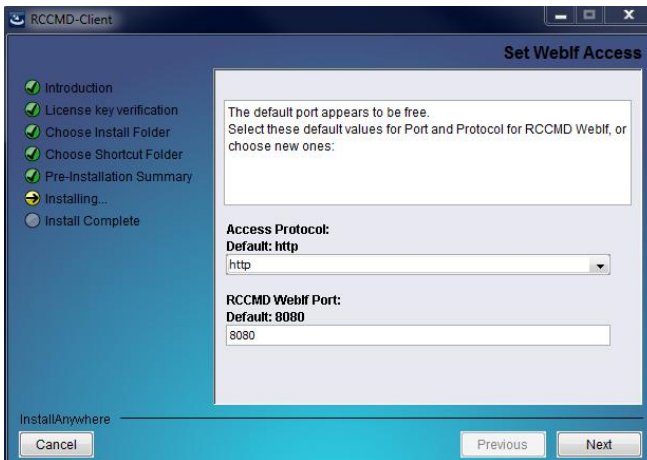


Figure 11 Set Webf Access

RCCMD has been installed successful.

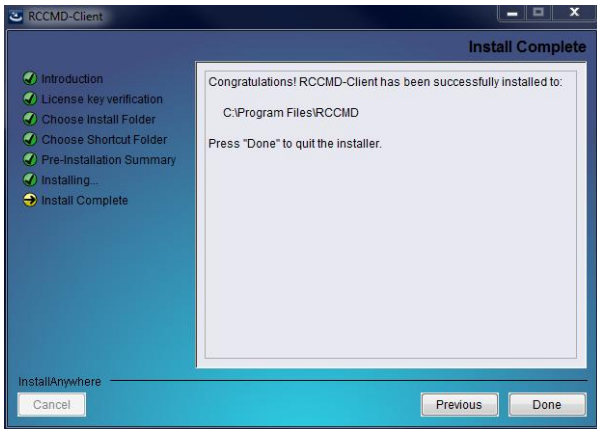


Figure 12 Installation Complete

### 2.1.1 Silent Installation of the RCCMD Installation

The RCCMD Software provides a silent installation, but it is required to enter some settings into the "Installer.Properties" file. This file is located into the CD folder \Rccmd\Windows\12.

# Usage:

#

# To record a new response file start the installer from command line

# with parameter '-r'.

# Use the new Values for the provided Variables from this file.

# To perform a silent install, start the installer on the commandline.

# The installer also needs the parameters '-f <path/to/resonsefile>'.

# Choose Install Folder

# -----

## Uncomment this variable to set a new default Folder into which the program will be installed.

## The example represents the default, that will be used, if no folder is provided.

## According to the example backslash characters ('\') need to be escaped by a backslash.

## Spaces in the path also require a backslash as an escape character.

## USER\_INSTALL\_DIR=C:\\RCCMD

```
# Choose Link Location
# -----

## You can tell the installer in which folder the shortcuts should be installed.
## The absolute path must be given.
## options are: "Do Not Install" if you do not want any shortcuts,
## or a path to the folder in which the shortcuts should be created.
## Here are two examples:
## USER_SHORTCUTS=Do Not Install
## USER_SHORTCUTS=C:\Dokumente und Einstellungen\<Windows
    User>\Startmenü\Programme\UPS
## Choose Feature List
## -----

## If you want to install a subset of features from this installer,
## make a list of all the features you want to be installed.
## The List must be entered in the CHOSEN_INSTALL_FEATURE_LIST variable.
## Options for the list are: RCCMD, WebIf
## CHOSEN_INSTALL_FEATURE_LIST=RCCMD,WebIf
## Choose OEM
## -----

## Enter your OEM number here.
## OEM=0
## Choose locatization
## -----

## If you want to install a different language than English
## you will want to provide the valid country code here
## This is only important for silent installations.
## Valid codes are: zh_cn, de, en, fr, el, it, ja, ko, pt, ru, es, tr
## INST_LANG=de

## Choose License Key
```

```
## -----  
## For silent installation your License Key must  
## be provided here.  
## GXLICENSEKEY=yournumber  
## Choose Installer User Interface  
## -----  
## For installation in console modus, pass the parameter: "-i console" to  
## the installer.  
## If you want to use the installer in silent mode with no user interaction,  
## you can set this variable to "silent".  
## Default is "gui".  
## INSTALLER_UI=silent  
#INSTALLER_UI=gui  
## WebIf Settings  
## -----  
## Here you can override default settings for access to the RCCMD WebIf.  
## These settings are ignored, if the variable CHOSEN_INSTALL_FEATURE_LIST  
## is set and does not contain the WebIf feature.  
## In interactive install modes (gui, console) the installer will check, whether  
## the chosen port is free to be used.  
## Valid values are: 1-65535  
## WEBIF_PORT=8080  
## Valid protocols are: http, https  
## WEBIF_PROTOCOL=http
```

Figure 13 Content of the "installer.properties"

It is required to remove the hash mark prior of the variable `INSTALLER_UI=silent`. In addition the setting of the license key is required behind the variable `GXLICENSEKEY=`.

## 2.1.2 RCCMD Silent Installation and Takeover of own Configuration

After you have finished the edition of the “installer.properties” file, it is possible to create an own RCCMD configuration and to “silent” install. There to it is required to execute the RCCMD configuration manually once. Then export this configuration out of the registry into a file as follows:

- Click the right mouse button on “Parameters” into the directory HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\rccmd, select “Export” and save the file with the name “rccmd.reg” as “WIN95/NT4 Registration File”.
- Store the file “rccmd.reg” into the directory, where the RCCMD-Installer packet is located.
- Open the file “rccmd.reg” with an editor and delete the complete line, which contains the license key.
- Create a new Windows batch-file (\*.bat) with an editor, e. g. with the name “InstalAndConfigRCCMD.bat”, which should look like as follows:

```
@echo off
cls
echo *** Installation of RCCMD, please wait... ***
installRCCMD.exe
echo *** Importing RCCMD configuration file ***
regedit.exe -s rccmd.reg
echo Ready
```

- Now you can start a combined RCCMD silent installation and configuration via executing of your Windows batch-file “InstallAndConfigRCCMD.bat”.

## 2.2 Console Installation of the RCCMD Installation

This console installation works interactive and will ask for user input, defined in the installation script file “installer.properties” (see above).



**Note:**

This concerns the installation only. The configuration will be performed via editor into the „rccmd.cfg“ file.

For the activation of the console installation, it is required to remove the hash mark prior of the variable `INSTALLER_UI=` and to enter `console`. This is the interactive RCCMD installation onto the console. Execute the “`installRCCMD.exe`” file.

### 2.2.1 Example of a Console Installation

Adjust the file “installer.properties” accordingly like described above or execute the following command:

```
installRCCMD.exe -i console
```



Select the desired language and note the introduction.

```
installRCCMD
-----
Choose Locale...
->1- Deutsch
   2- ENGLISH
   3- FRENCH

CHOOSE LOCALE BY NUMBER: 2
RCCMD                                     <created with InstallAnywhere>

-----
Preparing CONSOLE Mode Installation...

-----
Introduction

InstallAnywhere will guide you through the installation of RCCMD-Client.
It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation. If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

Installer version: 315
PRESS <ENTER> TO CONTINUE:
```

Figure 14 RCCMD Console Installation – Language Selection, Introduction

Enter your license key and note the license agreement.

```
-----
Enter your license key

Enter your license key
Usually the license key is located on the installation booklet, or on a label
on the reverse side of the CD sleeve.
Enter license key: 42SHREX3-23456789
Test version - Only meant for testing purposes, key only valid for 30 days.
Would you like to enter a different license key? <Yes/No>: No

-----
License Agreement

Installation and Use of RCCMD Requires Acceptance of the Following License
Agreement:

Copyright

The information contained in the manual of this product is nonconditional
and may be changed without due notice. GENEREX nor the reseller of this
product undertakes no obligations with this information. The software
described in this brochure is given on the basis of a license contract
and an obligation to secrecy (i.e. an obligation not to further publicize
the software material). The purchaser may make a single copy of the software
material for backup purposes. No parts of this manual may be transferred to
third persons, either electronically or mechanically, or by photocopies
or similar means, without the express written permission of the GENEREX
or the royalty holder.

The UPSMAN management software includes for every serialnumber the licence for
using the UPS service at one server with one UPS. The
UPSPON/JOURNOM/Webinterface
is freeware and may be copied and used from an unlimited numbers of connected
workstations.

The RCCMD client software requires a separate license key for every
installation.
Unless a RCCMD enterprise license is available, the user must NOT install

PRESS <ENTER> TO CONTINUE:
```

Figure 15 RCCMD Console Installation – License Key, License Agreement

Select the desired product features, enter an install folder and note the firewall exceptions.

```

=====
Choose Install Set

=====
Choose Product Features

ENTER A COMMA SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER?' . PRESS <RETURN> WHEN YOU ARE DONE:

  1- [X] RCCMD
  2- [X] WebIF

Please choose the Features to be installed by this installer.:

=====
Choose Install Folder

Where would you like to install?

  Default Install Folder: C:\Program Files\RCCMD

ENTER AN ABSOLUTE PATH, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
:

=====
Firewall Exceptions

Firewall Exceptions will be added for:
RCCMD
RCCMDTray
RCCMDWebIF

PRESS <ENTER> TO CONTINUE:

```

Figure 16 RCCMD Console Installation – Features Selection, Install Folder, Firewall Exceptions

Select a link location and note the pre-installation summary.

```

=====
Choose Link Location

Where would you like to create links?

->1- Default: C:\ProgramData\Microsoft\Windows\Start Menu\Programs\RCCMD
  2- In your home folder
  3- Choose another location...
  4- Don't create links

ENTER THE NUMBER OF AN OPTION ABOVE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT
:

=====
Pre-Installation Summary

Please Review the Following Before Continuing:

Product Name:
  RCCMD

Install Folder:
  C:\Program Files\RCCMD

Shortcut Folder:
  C:\ProgramData\Microsoft\Windows\Start Menu\Programs\RCCMD

Product Features:
  RCCMD,
  WebIF

Disk Space Information (for Installation Target):
  Required: 127.365.948 Bytes
  Available: 15.126.745.088 Bytes

PRESS <ENTER> TO CONTINUE:

```

Figure 17 RCCMD Console Installation – Link Location, Pre-Installation Summary

Set the WebIf port and the protocol and RCCMD has been installed successful.

```

Set WebIf Protocol
-----
This is the default protocol to access the RCCMD WebIf.
Select your preferred protocol here:
->1- http
   2- https
ENTER A COMMA-SEPARATED LIST OF NUMBERS REPRESENTING THE DESIRED CHOICES, OR
PRESS <ENTER> TO ACCEPT THE DEFAULT.

=====
Set WebIf Port
-----
This is the default network port to access the RCCMD WebIf.
Select your preferred port here:
Port: <DEFAULT: 8080>:

=====
Installation Complete
-----
Congratulations. RCCMD has been successfully installed to:
C:\Program Files\RCCMD
PRESS <ENTER> TO EXIT THE INSTALLER:

```

Figure 18 RCCMD Console Installation – Set WebIf Protocol, Port

## 2.3 RCCMD WebInterface (from version 4.0.1.9)

RCCMD provides its own web-interface from version 4.0.1.9 or higher. Therefore it is possible to configure and control RCCMD remotely. After the successful installation, as described into chapter 3.1, your default web-browser of your OS starts automatically.

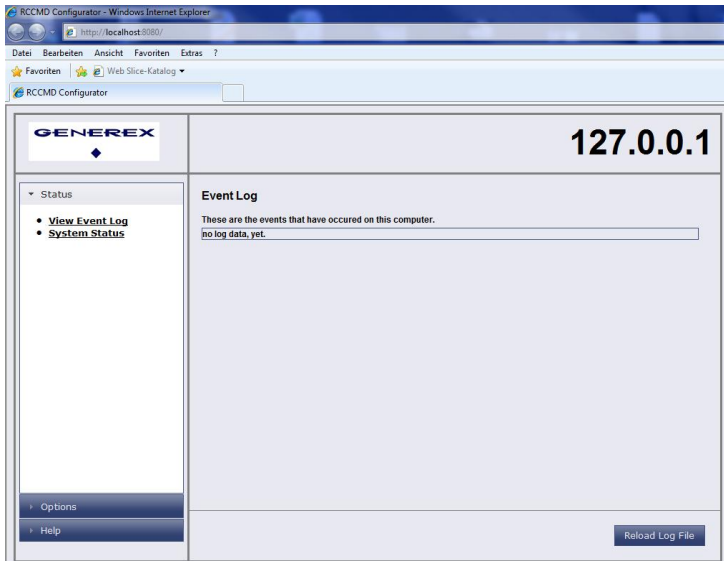


Figure 19 RCCMD WebInterface Certificate Error



**Attention:**

Use the access data “User: admin, Password: cs121-snmp”.

Click the “Ok” button, because the rccmd.log file is empty of course, because RCCMD was not started yet. Click the “Options” button to start the configuration.

You can enter the IP addresses of the allowed RCCMD senders (CS121/UPS MAN) into the “**Connections**” menu. Click the “Insert Sender” button to enter the IP address of the 1<sup>st</sup> sender. Click the “Remove Sender” button, if you want to remove the already entered IP address. Click the “Edit Sender” button, if you want to edit the entered IP address.



**Attention:**

**If you do not enter an address, then every server has the permission to send a shutdown command.**

You can define under “**Protocol**”, if RCCMD should use SSL certificates. Enable the “Reject expired SSL certificates”, if you want to reject connections with expired certificates. Please take a look into chapter 3.9 for further information about RCCMD with SSL.

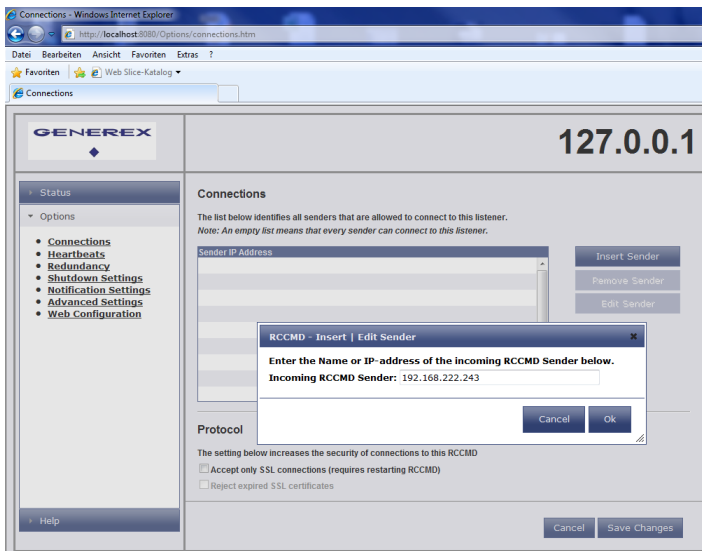


Figure 20 RCCMD WebInterface Configurator – Connections

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the “UPS MAN Alive Check” feature into the menu “**Heartbeats**”. This check is a signal, that will be send to the CS121/UPS MAN via port 5769, if the UPS MAN service still got UPS data. If not, the script file “alive.bat” will be executed, which will trigger an accordant pop-up message.

The feature “by the use of CS121/UPS MAN Traps” provides UPS MAN/RCCMD/UNMS messages, which will display the UPS status as message. If enabled, this feature will trigger a message, if the UPS status of the UPS MAN/RCCMD servers has changed.

The feature “by polling CS121/UPSMAN every x seconds” provides the pure signal polling without receiving UPS data or rather messages.

The polling rate (default 1800 seconds) defines the polling of the UPSMAN service, connection retries (default 100) means after 100 unsuccessful connection tries an alarm will be triggered.

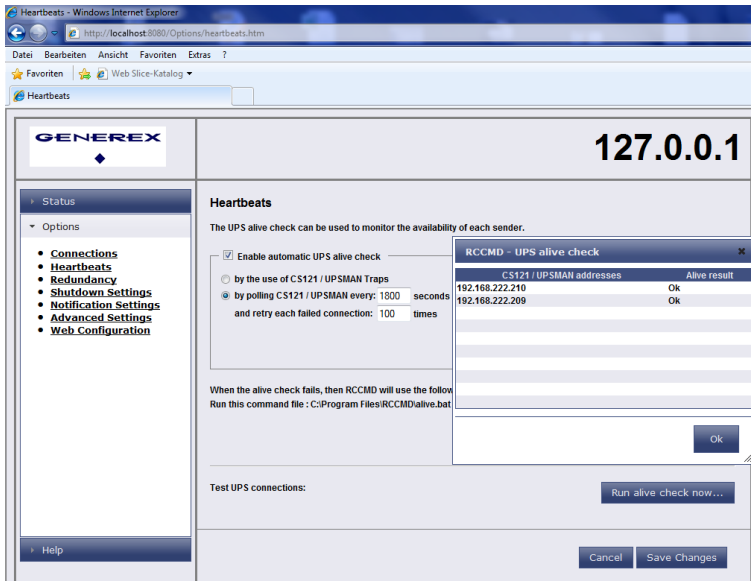


Figure 21 RCCMD WebInterface Configurator – Heartbeats

You can test the UPS connection, if you click the “Run alive check now...” button (the port 5769 will be tested).

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the redundancy management feature into the menu “**Redundancy**”. The redundancy level defines the number of redundant senders in the redundancy group. This means, that level 1+ senders must have sent a shutdown signal before this RCCMD starts its shutdown sequence.

When redundancy suppresses a shutdown, then RCCMD will trigger the “suppressed.bat”. You can edit this file, if you click the “Edit file...” button.

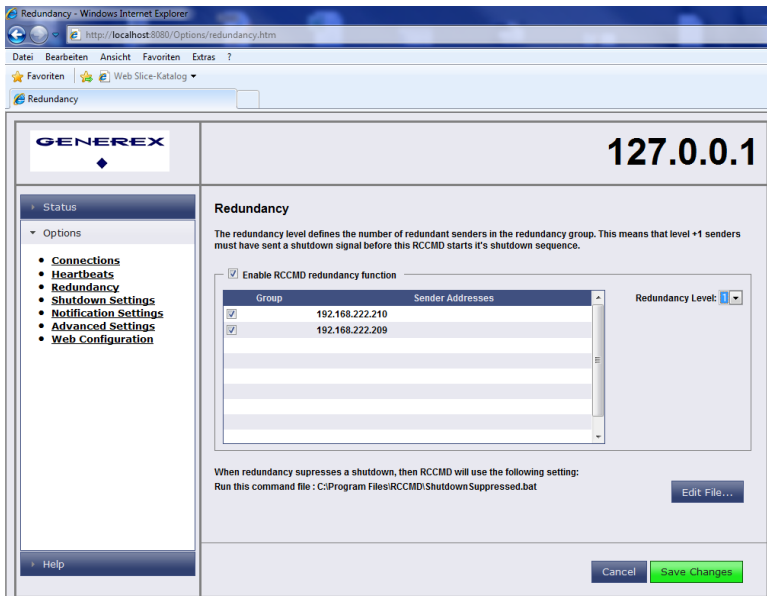


Figure 22 RCCMD WebInterface Configurator – Redundancy

Please note, that it is required to configure a reset of the redundancy alarm on the sender (CS121/UPSMAN). You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

Please take a look into chapter 3.4 or rather 3.4.1 for further information about RCCMD with redundancy.

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change or rather extend the shutdown sequence into the “Shutdown Settings” menu. The shutdown.bat will be executed by default:

```
rem created by setup
@echo off
set path=%path%;C:\Program Files\RCCMD
ExitWin.exe shutdown force
@cls
```

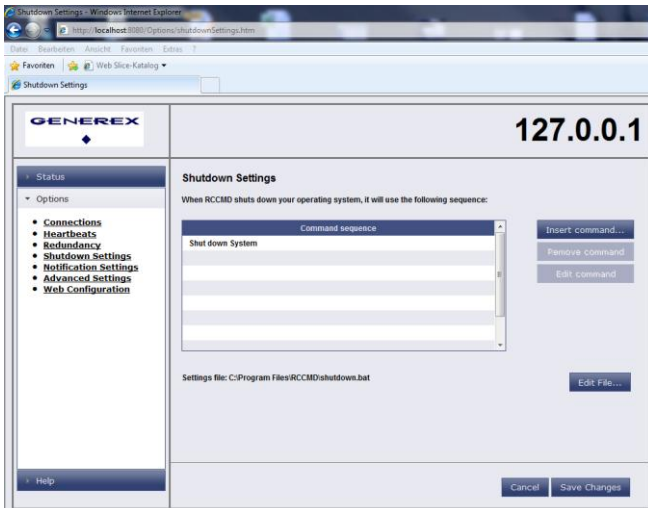


Figure 23 RCCMD WebInterface Configurator – Shutdown Settings

If you want to execute a powershell script, you can edit or add desired scripts here. If you want to edit the shutdown.bat, mark “Shut down System”, click the “Edit Command” button and the “Save Changes” button. Please note to restart RCCMD.

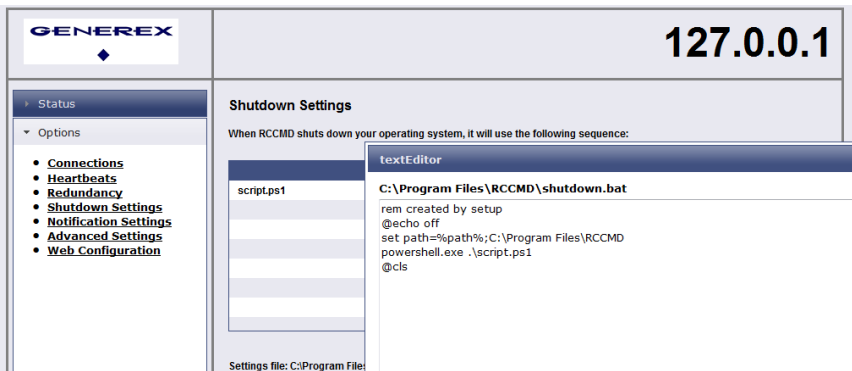


Figure 24 RCCMD WebInterface Configurator – Shutdown Settings – Edit File

You can define the email settings of the sender in the menu “E-mail Settings”. In addition you can enable the encryption or rather enter another SMTP port.

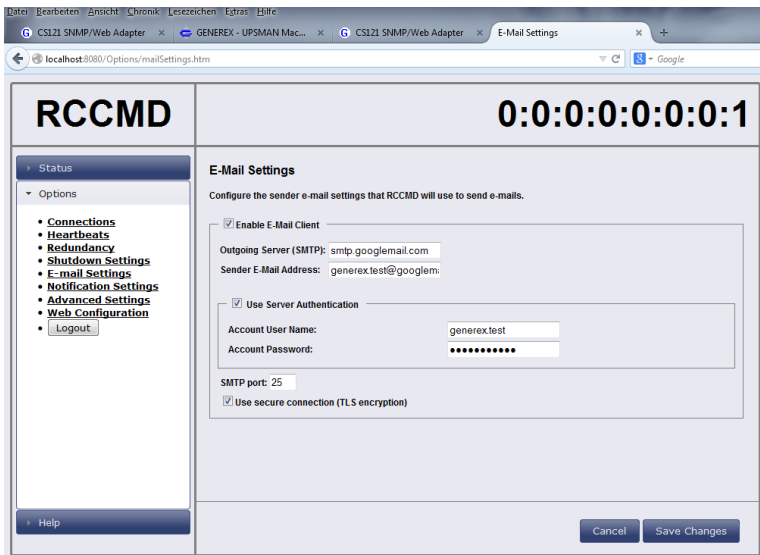


Figure 25 RCCMD WebInterface Configurator – E-Mail Settings

You can change or rather extend the default bat files for E-Mail, Message and Execute, if you click the “Edit File...” button.

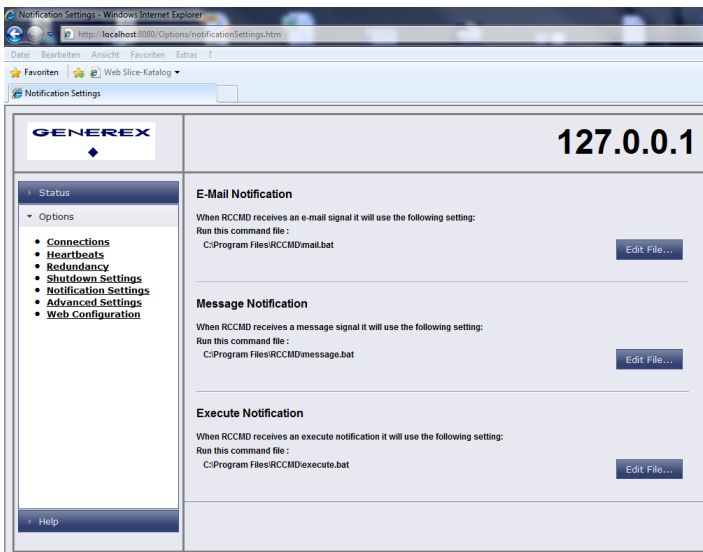


Figure 26 RCCMD WebInterface Configurator – Notification Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.



You can define the maximum size of the event logfile into the menu “Advanced Settings”, where the overwriting of older entries will start, the RCCMD bindings for the IP address, the RCCMD listener TCP port and the RCCMD Tray Message Port, which will be used for the RCCMD messages. In addition you can enable the “Start Jobs as interactive user” feature, that means, if disabled, that RCCMD will execute jobs only, if somebody is logged in on the system and the RCCMD Tray is active!



**Attention:**

The shutdown job would not be executed too, if nobody is logged in! If this feature is enabled, assure that somebody is logged in at anytime!

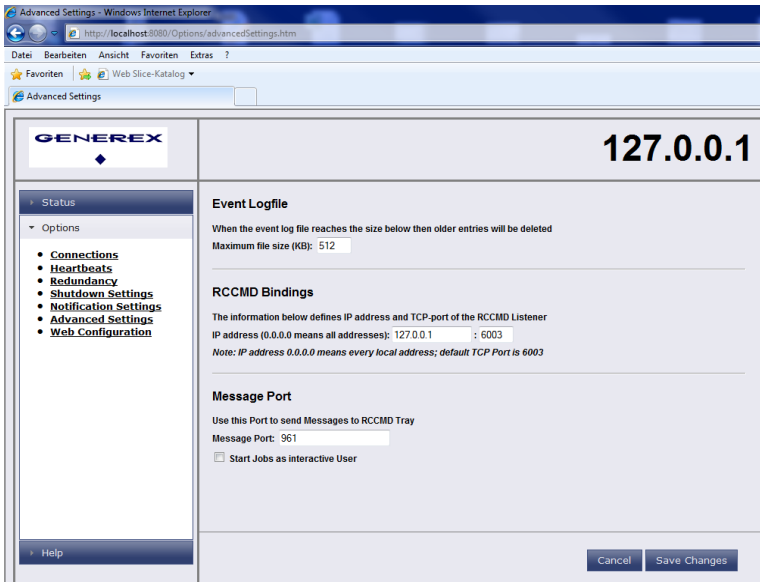


Figure 27 RCCMD WebInterface Configurator – Advanced Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change the default password for the user “admin” into the menu “**Web Configuration**”. In addition you can disable the HTTPS protocol, if you just want to use the HTTP protocol.

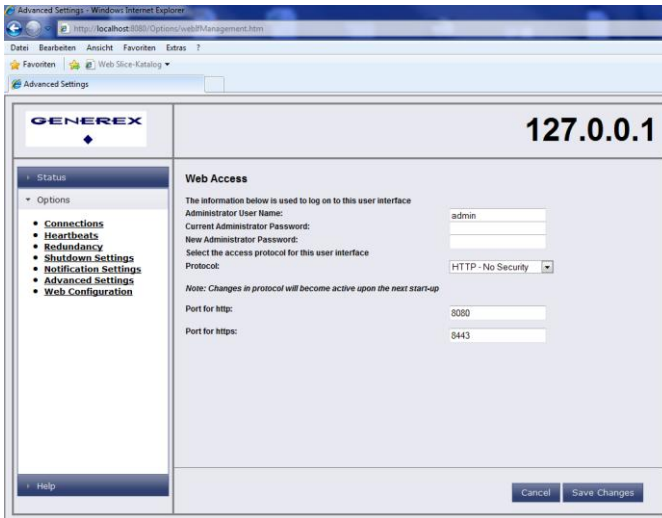


Figure 28 RCCMD WebInterface Configurator – Web Configuration

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can see the logging of the events into the menu “**Status, Event Log**”.

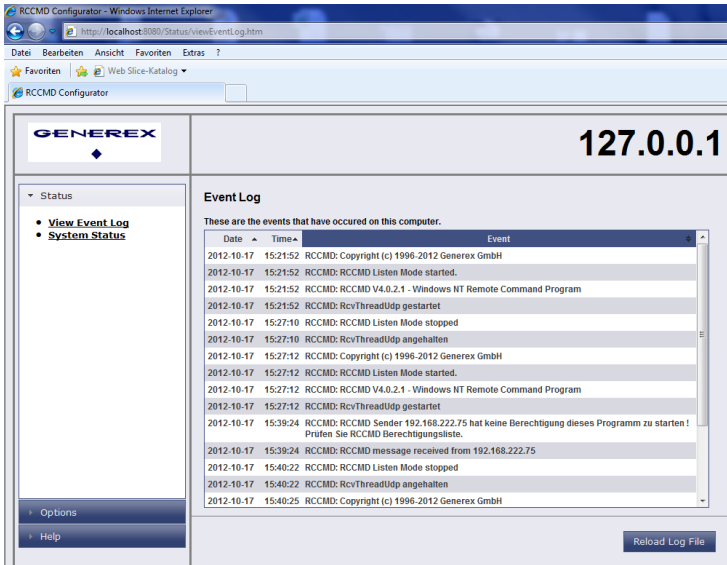


Figure 29 RCCMD WebInterface Configurator – View Event Log

You can check the current status of RCCMD into the menu “**Status, System Status**”, update the status and restart or rather stop/start the RCCMD service.

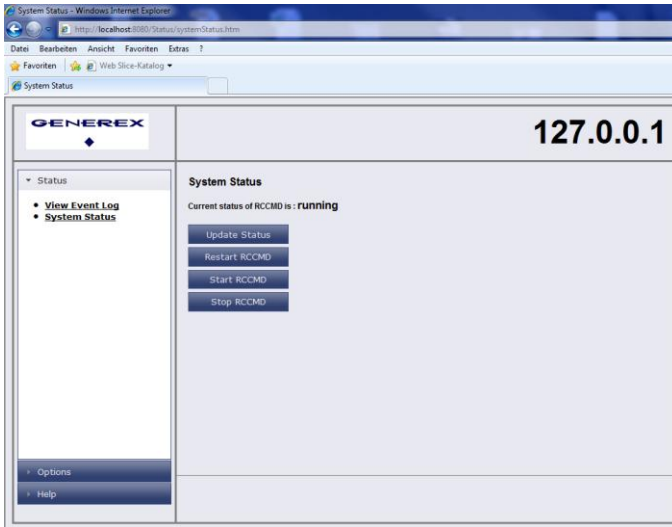


Figure 30 RCCMD WebInterface Configurator – System Status

You can open the RCCMD user manual into the menu “**Help**” and you can follow the link to [www.generex.de](http://www.generex.de).

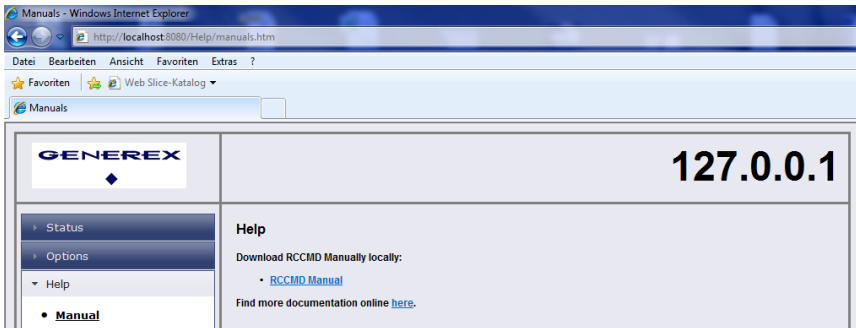


Figure 31 RCCMD WebInterface Configurator – Help

### 2.3.1 RCCMD WebInterface Remote Access

RCCMD provides its own web-interface from version 4.0.1.9 or higher. Therefore it is possible to configure and control RCCMD remotely. Please note, that the firewall port 8080 TCP is enabled. Enter the following into a web-browser, to connect to a workstation, where RCCMD is running:

http://IP address of the RCCMD client:8080

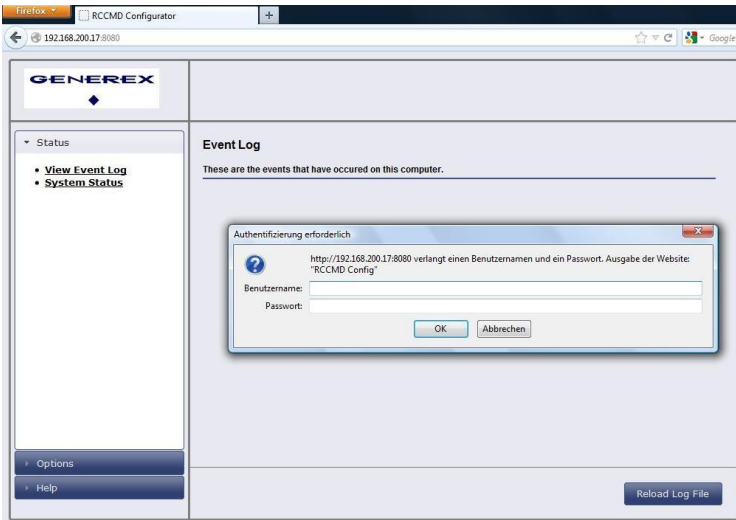


Figure 32 RCCMD WebInterface Configurator – Remote Access

## 2.4 RCCMD Client as Relay Station

In order to reach a bigger number of RCCMD receivers, one RCCMD client needs to be operated as relay station. The receiver will be configured so that it will receive a RCCMD signal and this signal will be used to start a batch file, which then starts even more RCCMD sender signals. This workstation is then sender and receiver at the same time and is therefore an important link in the UPS monitoring chain. Generally the usage of a RCCMD client as a relay station makes the management of several 100 RCCMD clients far easier than configuring this via the Web-interface of the CS121. Additionally, all Web-browser event configurations have a certain limitation so that it is required to use the relay function, if the number of jobs exceed 50 per event at the CS121 HW 131, at older CS121 adapters even earlier.

See the following script, which lets the RCCMD-client act as relay station:

```
rem created by setup
@echo off
set path=%path%;C:\Program Files\RCCMD
# RELAY RCCMD
# This batch will send RCCMD shutdowns to the IP addresses listed below
# At the end of the batch this computer will initiate the local shutdown
start rccmd -s -a 192.168.200.2
start rccmd -s -a 192.168.200.3
start rccmd -s -a 192.168.200.4
start rccmd -s -a 192.168.200.5
start rccmd -s -a 192.168.200.6
start rccmd -s -a 192.168.200.7
# to be continued
#
# local shutdown
ExitWin.exe shutdown force
@cls
```

Figure 33 Example: Batch File RCCMD act as Relay Station

“start” is a Windows batch command to start the program call in several instances. This allows to execute programs simultaneously and speeds up the shutdown process. Please note that “start” is not supported in all Windows versions and it should be tested before using.

## 2.5 Automatic Reset of the Redundancy Alarm

You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

This command can be set individually into your CS121, UPSMAN or BACS WEBMANAGER Events/Alarms configuration, but makes sense only, if the event, which will send the command, is true, if the UPS is back in normal condition. For this the events „POWER RESTORED“, „BATTERY LOW OFF“, „UPSMAN STARTED“ and „GENERAL ALARM OFF“ are suitable, if they are provided from your UPS into the CS121. The job „Send RCCMD cancel shutdown“ would be set into these all-clear events, so that e. g. at restart of the UPS, the event „UPSMAN STARTED“ would reset the accordant RCCMD client automatically.

Alternative: Should the job „Send RCCMD cancel shutdown“ not be present into your CS121, UPSMAN or BACS WEBMANAGER, you can use the job „Send RCCMD shutdown to remote client“ or rather „Send RCCMD execute to remote client“ alternatively.

The parameter „WAKEUP“ got the same function like the „Send RCCMD cancel shutdown“ and resets the redundancy alarm of a RCCMD Client into initial state. For this the events „POWER RESTORED“, „BATTERY LOW OFF“, „UPSMAN STARTED“ and „GENERAL ALARM OFF“ are suitable too, to configure the function „Send RCCMD command to remote client“ with the „WAKEUP“ command.



'Power restored' Job 3	
Function:	Send RCCMD Command to remote client ▾
Client IP:	192.168.200.17
Client Port (Default: 6003):	6003
Command:	WAKEUP
<input type="button" value="SS4 Command"/>	

Figure 34 CS121 Configuration “WAKEUP” Command

Click into the CS121 menu “Events/Alarms” onto “Power restored” and add a new job. Select the function “Send RCCMD command to remote client”, set the accordant IP address of the RCCMD client and enter the command “WAKEUP”.

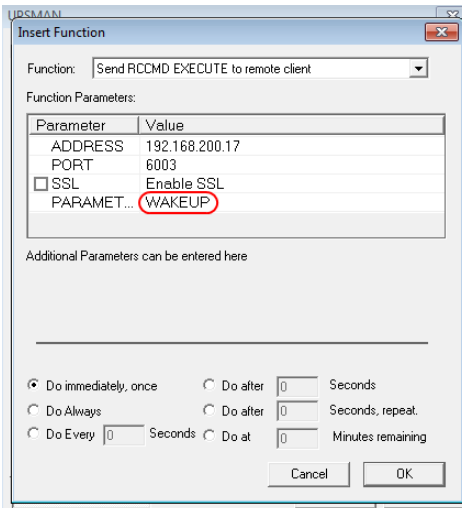


Figure 35 UPSMAN Configuration “WAKEUP” Command

Click into the UPSMAN configuration the buttons “Advanced Users”, “Events”, “Power restored” and “Insert”. Add the function “Send RCCMD execute to remote client”, set the accordant IP address of the RCCMD client and enter the command “WAKEUP”.

```

01/05/2010,14:59:54, RCCMD: RcvThreadUdp started
01/05/2010,14:59:54, RCCMD: RCCMD Listen Mode started.
01/05/2010,14:59:54, RCCMD: SendThreadCheckUpsman started
01/05/2010,14:59:54, RCCMD: RCCMD Trap client logged on to 192.168.222.177
01/05/2010,14:59:54, RCCMD: RCCMD Trap client logged on to 192.168.222.246
01/05/2010,15:01:01, RCCMD: RCCMD Trying to start program/job: ".\message.bat" "UPSMAN Notification
01/05/2010,15:01:01, RCCMD: RCCMD program/job: ".\message.bat" "UPSMAN Notification [192.168.222.177]
01/05/2010,15:01:03, RCCMD: RCCMD message received from 192.168.222.177
01/05/2010,15:01:04, RCCMD: Shutdown suppressed, redundancy-level = 1, failure count = 1.

01/05/2010,15:01:04, RCCMD: RCCMD Trying to start program/job: C:\RCCMD\ShutdownSuppressed.bat
01/05/2010,15:01:04, RCCMD: RCCMD program/job: C:\RCCMD\ShutdownSuppressed.bat executed. OK
01/05/2010,15:02:06, RCCMD: RCCMD Trying to start program/job: ".\message.bat" "UPSMAN Notification
01/05/2010,15:02:06, RCCMD: RCCMD program/job: ".\message.bat" "UPSMAN Notification [192.168.222.177]
01/05/2010,15:02:09, RCCMD: RCCMD message received from 192.168.222.177
01/05/2010,15:02:09, RCCMD: WAKEUP command received from 192.168.222.177.

01/05/2010,15:02:09, RCCMD: WAKEUP IP 192.168.222.177

```

Figure 36 “WAKEUP” Command into RCCMD Log File



**Advice:** The restart of the RCCMD service is a third opportunity to reset the redundancy alarm.

## 2.6 RCCMD with SSL for Windows

The Secure Sockets Layer (SSL) protocol is a cryptographic protocol that provides security and data integrity for communications over TCP/IP networks.

Use your Web-browser to navigate to the address of your UPS Web-Manager. Click the “Network & Security” configuration button and enable the SSL network feature.

The screenshot shows the 'Network & Security Settings' page. On the left, there are fields for MAC Address (00-03-05-0E-09-E1), Network Card Speed (AUTO), Local Address (192.168.202.98), Gateway Address (192.168.202.1), Subnet Mask (255.255.255.0), and DNS Server (192.168.202.8). Below these are password change sections for Administrator and UpsMon & SS4. On the right, there are checkboxes for 'Enable Telnet Server', 'Enable HTTP Server', 'Enable HTTP Tooltips', 'Enable UpsMon Server', 'Use RCCMD2 Traps', and 'Enable RCCMD Listener'. There are also input fields for 'HTTP Port' (80), 'HTTP Refresh Time' (10), 'HTTP Default Page' (UPS Status), 'RCCMD Listener Port' (6002), and 'RCCMD Timeout' (180). The 'Use RCCMD SSL' checkbox is checked and highlighted with a red circle.

Figure 37 RCCMD SSL Settings

The SSL network feature requires correct time settings, so it is required to configure a timeserver. Click the „Timeserver“ configuration button and enter the address of at least one timeserver.

The screenshot shows the 'Time Settings' page. It includes a warning about RFC869 TCP compatible timeserver listening on port 37. Below, it lists some public timeservers. The 'Current system time' is 'Thu Dec 4 23:49:26 2008'. The 'Timeserver Address 1' field is highlighted with a red circle and contains '192.53.103.103' with a dropdown menu set to 'SNTP'. Other timeserver addresses are '0.0.0.0'. The 'Timezone' is set to '(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna'. There are checkboxes for 'Automatically adjust clock for daylight saving changes' (checked), 'Synchronize Time on incoming RAS connection', and 'Synchronize Time on outgoing RAS connection'. The 'Apply' button is highlighted with a red circle. At the bottom, there are buttons for 'Test Timeserver 1', 'Test Timeserver 2', 'Test Timeserver 3', and 'Synchronize CS121 clock now'.

Figure 38 Timeserver Settings

Click the „Save Configuration“ button and the „Save, Exit & Reboot“ button to confirm your settings.

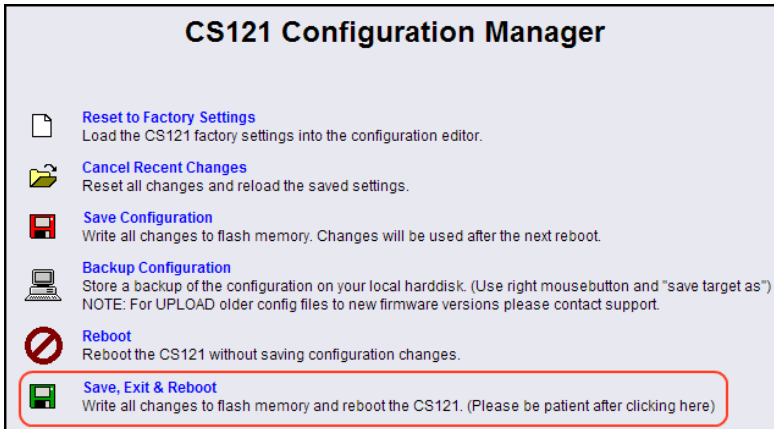


Figure 39 Settings Confirmation

Start the RCCMD Web Configurator again and enable the SSL network feature.

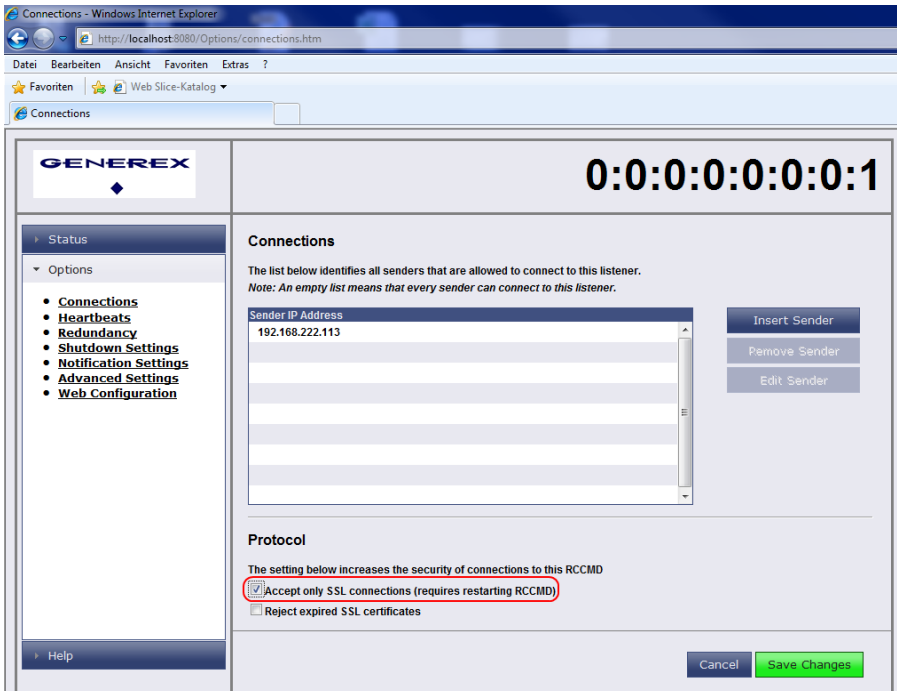


Figure 40 SSL Configuration

If you want to accept expired certificates, please enable the accordant function.



## 2.6.1 RCCMD with own SSL certificates

In this chapter we will describe, how to use an own SSL certificate with RCCMD, e. g. OpenSSL ( <http://www.openssl.org/related/binaries.html> ):

### Be your own CA

Using OpenSSL it is quite simple to become your own CA. Just run:

```
CA.pl -newca
```

Done! Just ensure, that you select a useful CN (common name)!

### Create your RCCMD certificate

You need to create your certificate for RCCMD now. As it will use it for verification, it should contain the same useful common name (CN), that you selected for the CA. The private key must not be encrypted to let the RCCMD Client (service) start without trouble. Therefore we use the “-nodes” option and the “-newreq” command:

```
CA.pl -newreq -nodes
```

Sign with your CA:

```
CA.pl -sign
```

Now create an empty file named “rccmd.pem” and copy the cert information of *newcert.pem* (rccmd certificate), *newkey.pem* (private key) and *cacert.pem* (CA) into it. Please note, that the exact copying is required to use it without trouble!

### Use your own RCCMD certificate

Do the following steps at the RCCMD Client and every sender (e. g. UPS Web Manager):

- Backup the existing “rccmd.pem”
- Replace the existing “rccmd.pem” with your own
- Restart the RCCMD Client

Restart the RCCMD Sender

## 2.7 Settings of the Authorization of the RCCMD Service

This function is used for the commitment of the user authorization of the UPSMAN service, which exceeds the system shutdown, e.g. execution of batch files, script files etc.

Open the menu of the properties window for the RCCMD service (via control panel, administration and services).

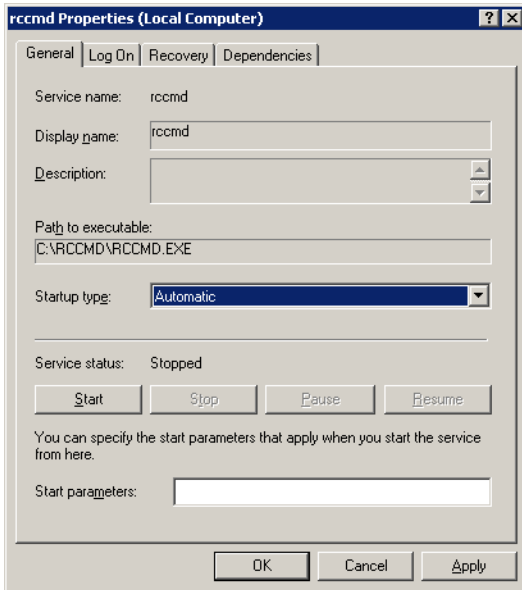


Figure 41 RCCMD Properties Window

Click the “Log On” button on the upper left side.

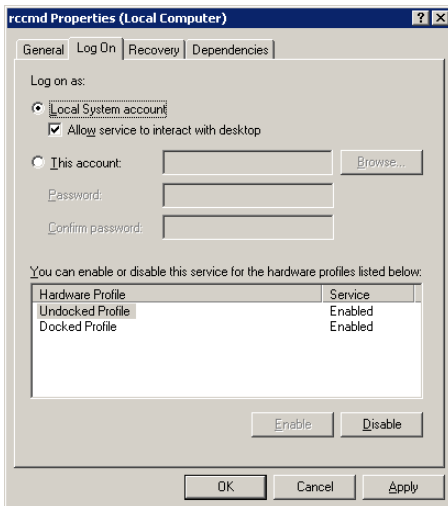


Figure 42 RCCMD Properties Log On Window

Check the “This account” ring and **delete the passwords** and click the “Browse...” button.

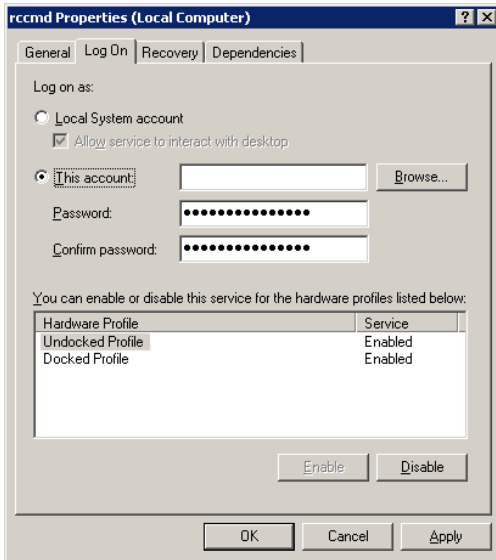


Figure 43 RCCMD Properties Password Confirmation

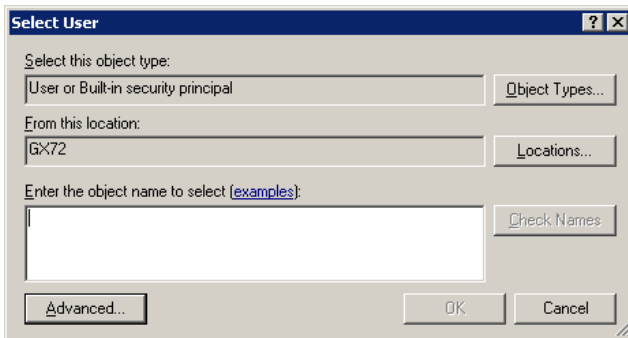


Figure 44 Select User Window

Click the “(examples)” button to select the object name.

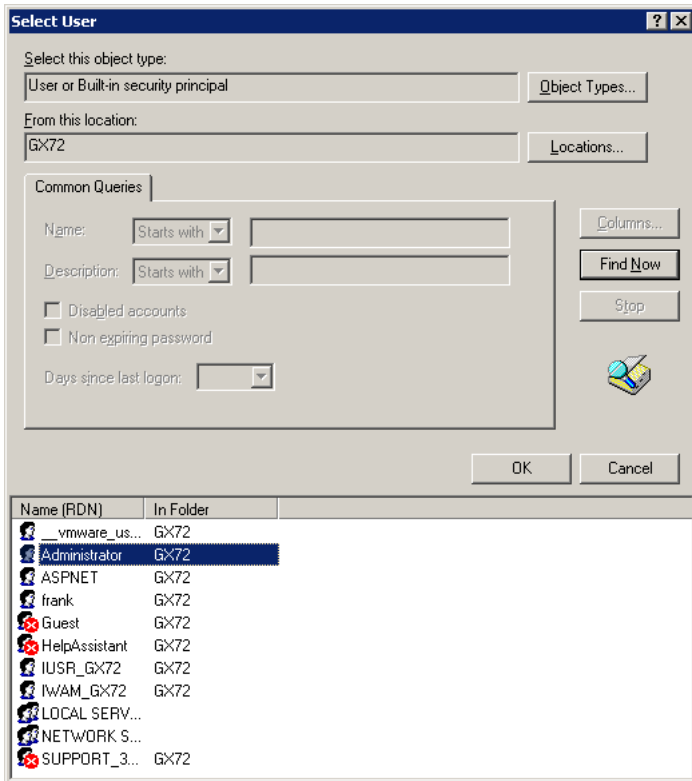


Figure 45 Selection of the Object Name

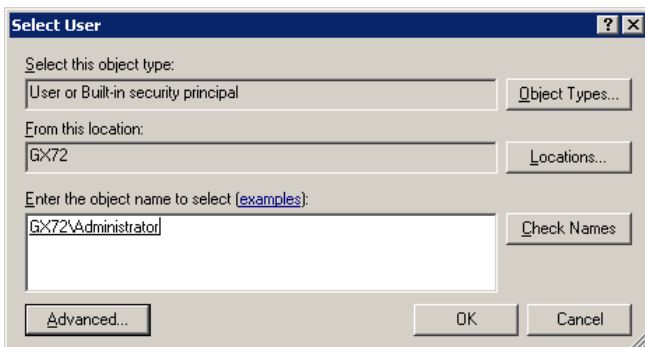


Figure 46 Administrator Selection

Click the "Ok" button and enter the new password twice.

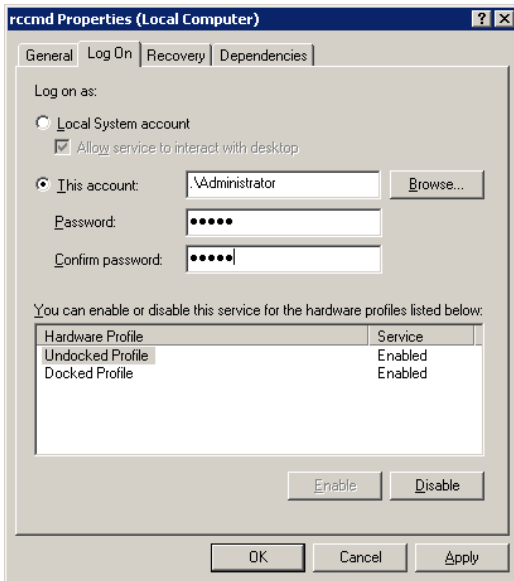


Figure 47 Administrator Password Confirmation

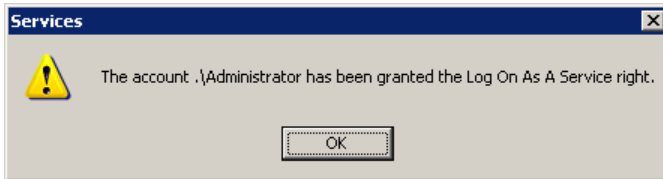


Figure 47 Service Right Info Window

## 2.8 Testing of the Shutdown.Bat File

We recommend to test the edited shutdown.bat file. The shutdown program EXITWIN.EXE is predefined. Just enter Exitwin.exe -? in the RCCMD directory for syntax help for this shutdown tool. You may use also your own shutdown tool or any other which we provide with this software.



### **ATTENTION:**

If your configuration works fine in the DEBUG mode, does not necessarily mean that it works also with the RCCMD as NT service. Please ensure that the RCCMD as service has been started in a user account with administrative rights, otherwise it may happen that only non-restrictive programs may be executed (like notepad.exe) but no Shutdown. (This will result in the NT error message "Adjust Token Privileges failed".) If a program has in fact started or not can be seen in Taskmanager window (ALT+CTRL+DEL), because a service does not a started program in the current user session due to non-interactive transaction with the desktop.

The full command syntax for the NT consol for RCCMD in <Listen mode>:

rccmd [-debug] -l [-a IP address] [-h hostname] [-p port] "command"

The command can be either a program or a path for another batchfile on this workstation. The command file should be given with full path. The -p port option can be included if you want to start RCCMD more than once at a single workstation to proceed different commands for different events. The default port number is 6003, use any other available port number for different RCCMD commands.

### RCCMD in the send mode:

rccmd [-debug] -s [-a IP address] [-h hostname] [-p port]

This command is regularly used in the batchfile of the sender (shutdown.bat) and sends a "ping" to the computers IP address or hostname. If this "ping" has been answered, the next command RCCMD -s may be executed, etc.

When you have finished the edition of the bat files, click the "Restart RCCMD" button into the "System Status" menu.

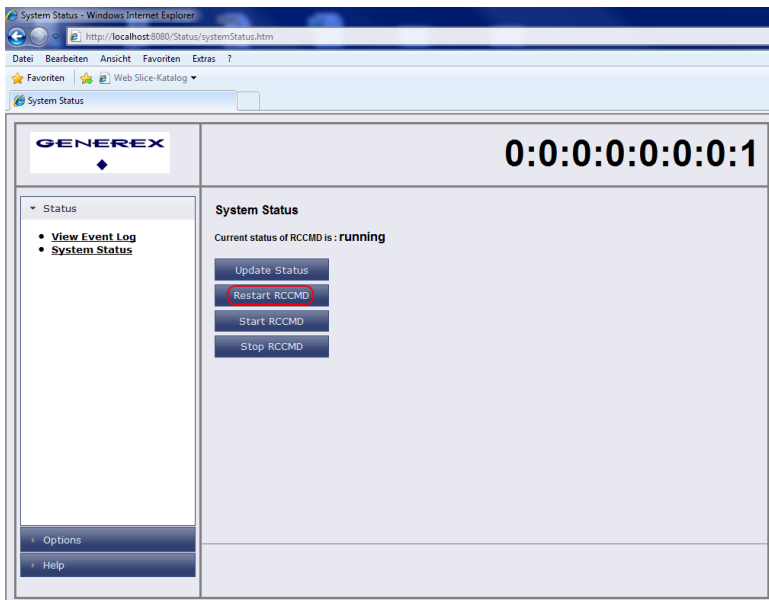


Figure 48 Client Installation successful Window

RCCMD is now running as Service with automatic startup. To configure the automatic start of RCCMD use administrative rights and control panel, service to change the settings.

**IMPORTANT:** RCCMD as service with local desktop interactions is permitted to execute local shutdowns – for this action no user rights – except administrative rights – are required. But for any user specific actions, e. g. starting a net send message or any other

command – the RCCMD may need extra rights! These rights have to configured in the Control panel, services.

Sending of a message to all RCCMD clients

To send a message to all RCCMD clients, please use the following syntax:


```
rccmd -se "MSG_TEXT ups_says_hello_world" -a 192.9.200.255
```

The RCCMD client, which should receive this message, need to get the entry of the ip-address of the RCCMD sender or rather the list should be empty. The CS121 is not able to send UDP broadcasts, so you have to enter the above mentioned syntax into the RCCMD client. The client will operate as relay station and will forward the message. It is no problem to send the message from a Windows-, UNIX- or MAC OS RCCMD sender.

## 2.9 Testing the RCCMD connection

Finally test your configuration if all RCCMDs are present and working. For this you may use the RCCMD in the Debug mode Syntax RCCMD -debug -s/l -a), so that you have screen output. "PING" every remote computer with the command "ping [hostname] [IP address]". If the PING works fine, you can now start to test the RCCMD connection with the debug mode. If everything works fine, you will see that a connection is established and closed again. This means that the remote RCCMD received your signal and will execute the shutdown script on the remote side.

**ATTENTION!** This test will execute the shutdown script! If you want to avoid the shutdown, please remove the shutdowncommand from the RCCMD client shutdown.bat/sh file!



```
Microsoft Windows [Version 4.0.9503]
(c) Copyright 1985-1996 Microsoft Corp.

D:\UPSMAN>rccmd -s -a 192.168.202.52
started in sending mode

RCCMD U3.0 - Windows NT Remote Command Program
copyright (c) QUAZAR/GENEREX GmbH 1996, All rights reserved

+ 08.01.99, 15:09:53 - Send Mode wird gestartet
+ 08.01.99, 15:09:53 - Es wird probiert eine Verbindung zu 192.168.202.52 aufzu
bauen
+ 08.01.99, 15:09:55 - Send Mode wird beendet.
+ 08.01.99, 15:09:55 - Verbindung zu 192.168.202.52 hergestellt.

D:\UPSMAN>
```

Figure 49 RCCMD Console Test

## 2.9.1 Testing the RCCMD 2 connection

In order to see under RCCMD 2 if the UPSMAN processes on the remote client are still active, the following syntax can be entered via command line:

```
rccmd -sc -ac <IP address>
```

```
C:\RCCMD>rccmd -sc -ac 192.168.222.201
started in sending mode

RCCMD U4.0.0.7 - Windows NT Remote Command Program
Copyright (c) 1996-2007 Generex GmbH

RCCMD Send Mode started
RCCMD Upsman at 192.168.222.201 alive.
RCCMD Send Mode stopped

C:\RCCMD>
```

Figure 50 RCCMD Alive Check via Command Line

If the UPSMAN is active, the message "UPSMAN <IP address> alive". There is no message if the UPSMAN is inactive.

Use this command to get help: C:\Program Files\RCCMD>rccmd -?

```
C:\WINDOWS\system32\cmd.exe
Microsoft Windows XP [Version 5.1.2600]
(C) Copyright 1985-2001 Microsoft Corp.

C:\RCCMD>rccmd -?
usage: rccmd [param]
       rc_init  install service and set default parameters
       -i      install service
       -u      uninstall service
       -v      display version info
       -name <name> use <name> instead of default RCCMD
       -debug   start as a console app for debugging <listenMode>
       -bs filepath set filepath for shutdown-event <listenMode>
       -ba filepath set filepath for upsmanNotAlive-event <listenMode>
       -li IP-Address bind listen socket on IP-Address <listenMode>
                (ATTENTION: this will override registry-settings)
       -s ...   start as a console app for sending mode
       -sc     check upsman
       -ssl    use SSL connection
       -ut     use traps to check upsman in server-mode
                or retrieve additional status-info if in client-mode
       -cr     connect retries for every check <default 5>
       -se "command [parameter]" ...
                valid commands: SHUTDOWN, EXECUTE, MSG_ID, MSG_TEXT,
                                MAIL_ID, MAIL_TEXT, LOG_ID, LOG_TEXT, WAKEUP
       ...-a 192.10.200.99 [-a 192.10.200.98] <max. 15>
       -ac ... [-ac ...] upsman address <max 15>
       -p[rl] portaddr rccmd <default 6003>
       -pc   portaddr check-upsman <default 5769>
       -t[rl] timeout rccmd <default 10 sec>
       -tc   timeintervall check-upsman <default 30 Min>
       -rc   max retries for check-upsman <default 0 <infinite>>

C:\RCCMD>
```

Figure 51 RCCMD Console -?



## 2.10 RCCMD on Windows 95/98

RCCMD for Windows 95/98 functions similar to RCCMD on Windows NT. The only difference is the program name, which changes to RCCMD95.EXE. Please also refer to the RCCMD Windows section of this manual.



**Attention:**

For Windows 95/98 users we do recommend the installation of the TCP/IP protocol first and then run the configuration program making use of the RCCMD WIZARD.



**Attention:**

In case Winpop.exe is used on Windows 95/98, RCCMD can not be started on port 6003 otherwise the computer will hang-up. Please change the sender and receiver call up accordingly.

Experienced users may use the registry editor and enter all changes manually. Unexperienced users should use the RCCMD wizard.

Registry settings: Please check the following: In order to start the RCCMD process in "Listen" mode, the RCCMD parameter have to be entered in the registration database. Please enter:

`regedit.exe rccmd95.reg` or simply start `rc_init.bat`

The parameters are now located under the registration-key

`HKEY_LOCAL_MACHINE\CurrentControlSet\Services\RCCMD95\Parameters`

Start *regedit.exe* again if you want to reconfigure RCCMD.

If you are unfamiliar with the registration editor of Windows 95 you can also modify the file *rccmd95.reg* and execute the command *regedit.exe rccmd95.reg* again.

Parameters:

*Port*: Special TCP-Port that receives the RCCMD signal.

*Addr1... 10*: TCP/IP address of the computer that accepts the RCCMD-signal.

*ExecutePrg*: Command that is to be executed when receiving the RCCMD-signal.

To start RCCMD execute the command:

```
rccmd95
```

Or start the program using the Windows 95/98-launch bar.

To start RCCMD in sending-mode (*send*) enter the following line in your shutdown-job:

```
RCCMD95 -s -a <address> [-p 6003]
```

For <address> enter the TCP-address of the machine to which you want to send the RCCMD-signal.

Optional parameters:

-p <port> TCP-Port on which the RCCMD-signal will be send

The option -a can be used several times, if a shutdown on more remote computers in the network should be executed.

Do not use the CD License key more than once. (Copyright regulations page 1). If more RCCMD modules need to be installed for the shutdown, additional CD license key must be purchased. Additional license keys are available from your UPS dealer, whereas the CD can be used again for the actual installation.

## 2.11 RCCMD for Windows NT/2000/XP/2003/2008

The RCCMD (remote console command) is a program that allows the execution of programs on remote computers. This tool is part of all UPSMAN supported operating systems with the exception of Windows 3.x.. With this tool it is possible to connect different operating systems. Is the UPS-Management Software installed on a Windows NT/2000/XP computer and should a remote shutdown be executed on a computer with a different operating system in a heterogeneous network, the RCCMD tool is necessary.

The RCCMD tool works in two different modes. The module works like a normal program start, as "Send Mode" in order to send RCCMD commands -s -a to other computers. In the so-called "Listen" Mode, installed as a NT/2000/XP service, the program (as background process) waits for a command from "Send Mode", of the RCCMD module. In "Listen Mode" the RCCMD module waits for the "ping" signal. After reception of this signal the module executes a batch file or program.



**Attention:**

**For first time users we do recommend the use of the RCCMD Wizard, which makes the configuration easier. Please start the RCCMD Wizard from your program group.**



**Attention:**

**Please do not use the wizard and manual settings at the same time.**

Eventually, the RCCMD service must be allocated with special system privileges if certain commands and programs like messaging using "net send", shutting down databases and the like are to be executed. The RCCMD start-up parameters in the control panel must be set to the administrator /superuser account (enter password twice) together with the correct password. If you are not allowed to use the administrator account you have to create an account, which has all the rights to shutdown this NT/2000 computer. Change to

the control panel and mark the RCCMD in the list, change the start-up parameters to "this account" and enter the any administrative account.

Now the RCCMD has been installed and configured to execute C:\ups\shutdown.bat.

## 2.12 RCCMD for Windows 2008 Server Core x64

The configuration of the RCCMD Software on Windows 2008 Server Core x64 got one specific. It is required to start the RCCMD configuration out of the default folder C:\RCCMD with the following command:

```
C:\RCCMD>RCCNF_NT.EXE
```

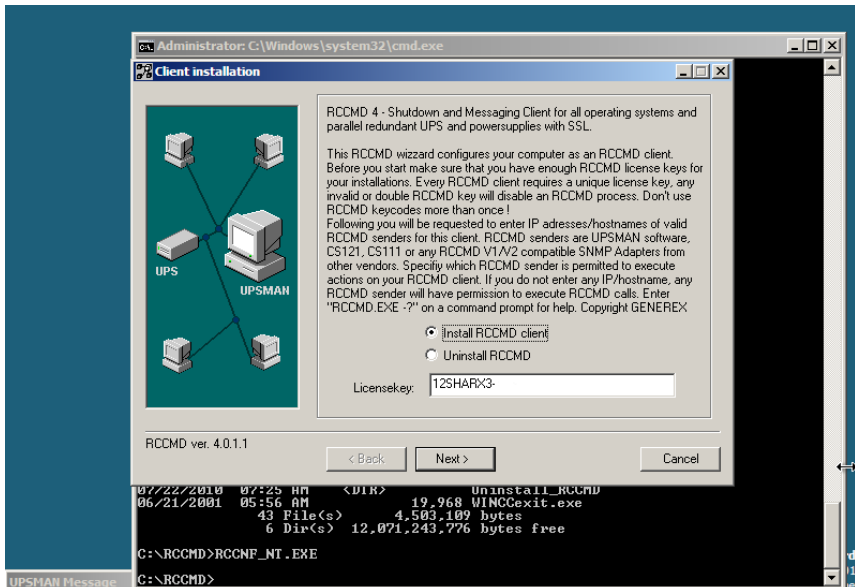


Figure 52 RCCMD Configuration

Please take a look into chapter 2 for the installation procedure and into chapter 2.12 the configuration of RCCMD.

## 2.13 Older RCCMD Configuration



### Attention:

In the following we are describing the RCCMD configuration of the Windows tool "Rccnf\_nt.exe", which was delivered until 04/2012. All functions are equal to the newer RCCMD WebInterface version, which is delivered since 05/2012. The detailed functions of RCCMD are user interface independent and will be described for the older RCCMD version.

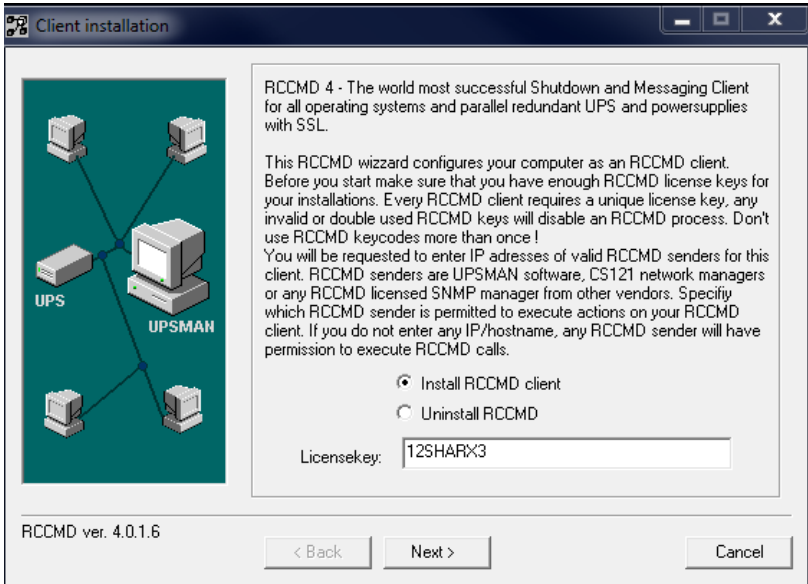


Figure 53 Client Installation

Click the „Next“ button.

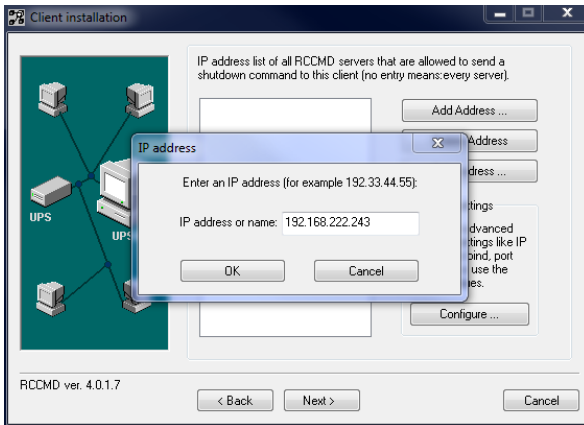


Figure 54 Add IP-Address Window

Step 4: Add the IP address of the RCCMD server, which is allowed to send a shutdown to this client.



**Attention:**

If you do not enter an address, then every server has the permission to send a shutdown command. If more than one CS121 or rather UPSMAN is existent, thus a redundancy

situation, you need to enter more than one address as authorized sender.

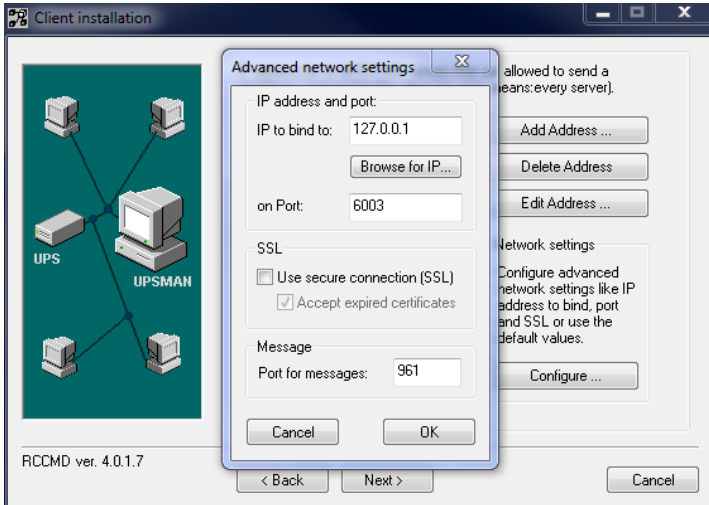


Figure 55 Advanced Network Settings

Step 5:

If you want to use the secure connection (SSL), click the "Configure..." button and check the "SSL" box and you can change the port for the messages.

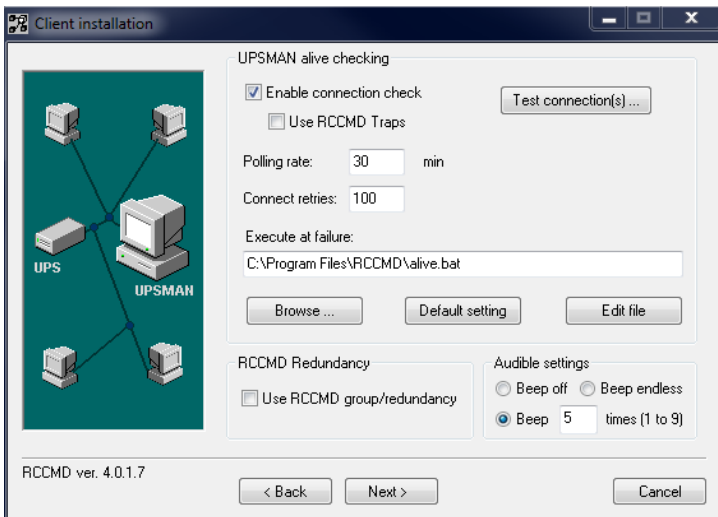


Figure 56 UPSMAN Alive Checking / Redundancy Window

Step 6:

If you want to use the UPSMAN alive checking (recommended), check the “Enable connection check” box. Alive check is a signal, send out to the UPSMAN or CS121 on port 5769 to check if the UPSMAN has still UPS data – or not. If this fails, the scriptfile alive.bat will be executed which causes a messagebox coming up. The polling rate (default 30 min.) defines the polling of the UPSMAN service, connect retries (default 5) means after 5 unsuccessful connection tries an alarm will be triggered.

The function “Use RCCMD Traps” enables UPSMAN/RCCMD/UNMS traps, which show the UPS status as a trap message. If activated it will display a local message when the UPS status of the UPSMAN/RCCMD server changes.

If you click the “Test connection(s)...” button, the UPSMAN alive checking of the entered IP addresses will start (port 5769 will be tested).

You can define the “Audible Settings” as follows:

- **Beep off**
- **Beep endless**
- **Beep amount (1 to 9)**

If you click the „Browse...” button, you will get a selection of the default batch files.

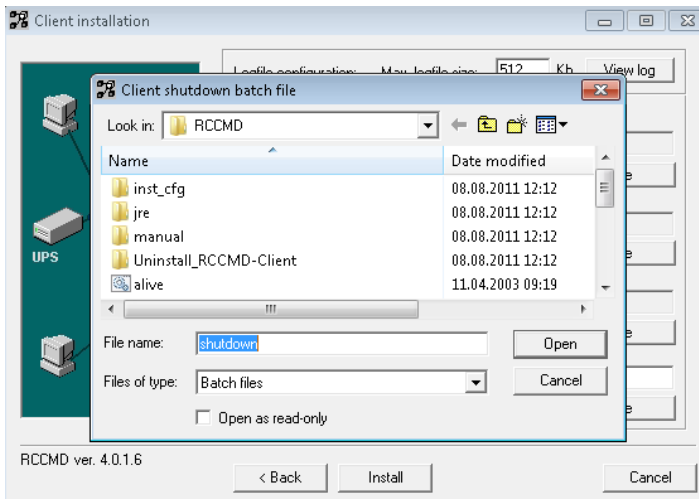


Figure 57 Client Check Connection Batch File Window

If you click the „Default setting“ button, you will get back to the default batchfile (alive.bat).

At the failure of the UPSMAN alive checking, you can define an executing file or edit the default file “alive.bat”: (file contents as follows)

**@echo off**

**rem \*\*\* "messagetext" %1 == ip-address, %2 == date, %3 == time \*\*\* "title" -c  
counter for beeps**

**start /b msg.exe "Check Upsman %1 failed (%2, %3)" "ATTENTION RCCMD:" -c:1**

Click the “Next” button.

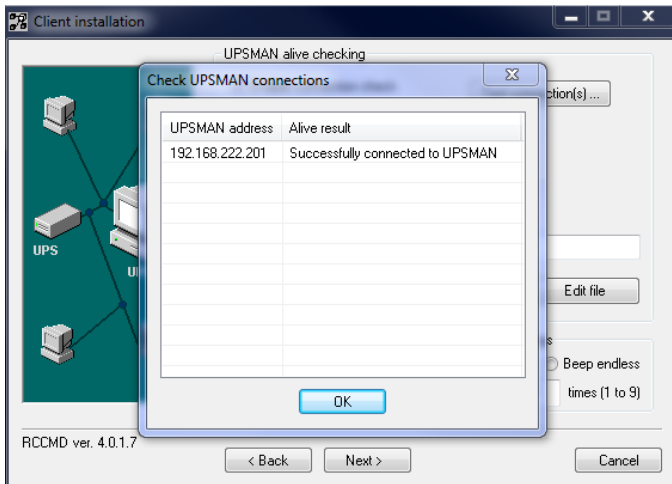


Figure 58 Check UPSMAN Connections Window

Step 7:

You can configure the log file size and edit the executing bat files in this installation window.

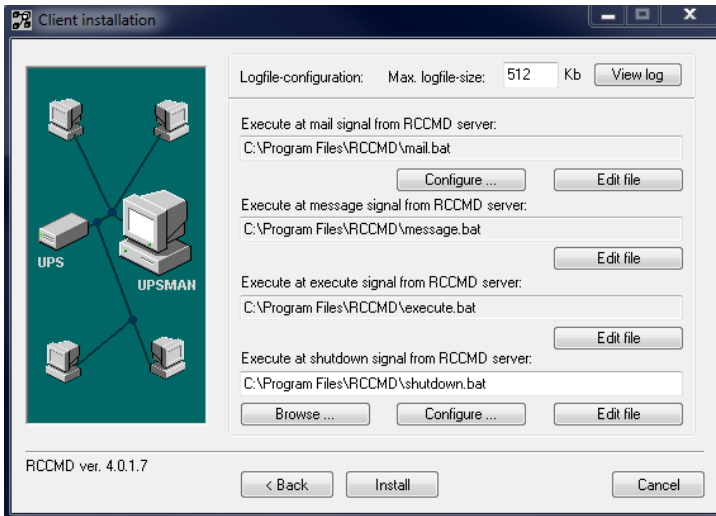


Figure 59 Configure / Edit Bat Files

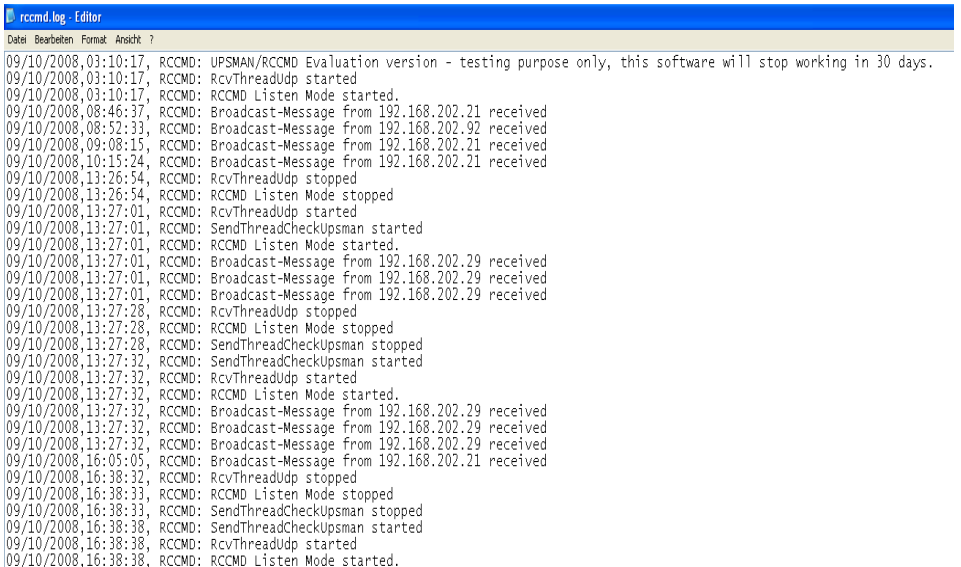


Figure 60 RCCMD Log File

**Step 8:** If you want to send emails via RCCMD, click the "Configure..." button.



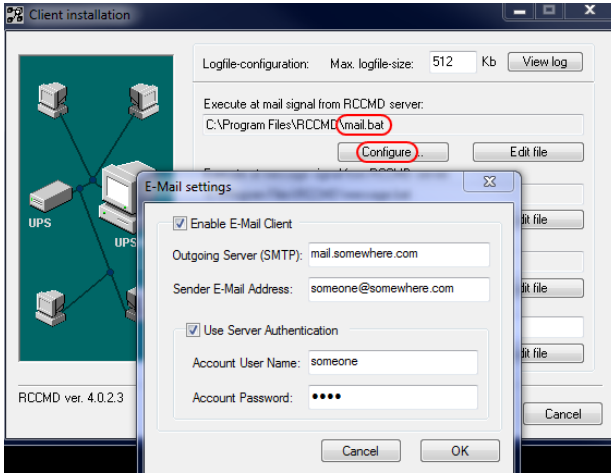


Figure 61 RCCMD Email Settings

Enter the accordant parameter and click the “OK” button. Use the following RCCMD command:

Mail receiver address text

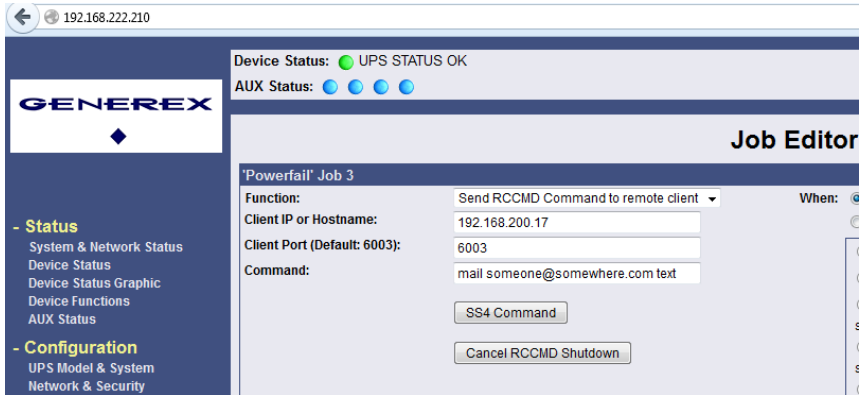


Figure 62 CS121 Email Command

Step 9:

If you want to change the shutdown sequence, click the “Configure...” button.

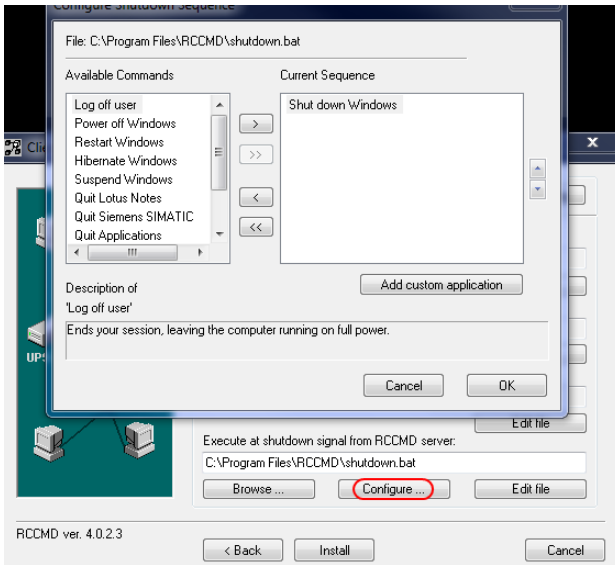


Figure 63 RCCMD Shutdown Sequence Configuration

The following commands are available for the shutdown sequence configuration:



**ATTENTION:** The shutdown sequence will be executed from top to down. The “Shutdown Windows” command should be at the bottom, because after the execution of the shutdown, no other commands will be executed.

**Log off user:** Ends your session, leaving the workstation on full power.

**Hibernate Windows:** Hibernates your session, the content of the RAM will be written on hard disk.

**Power off Windows:** Ends your session, shuts down Windows and turns off the power.

**Restart Windows:** Ends your session, shuts down Windows and restarts Windows.

**Suspend Windows:** Suspends your session, the content of the RAM will NOT be written on hard disk.

**Quit Lotus Notes:** Closes Lotus Notes prior of the shutdown of Windows. Please configure a “Wait” delay after this command.

**Quit Siemens SIMATIC:** Closes WIN CC Database prior of the shutdown of Windows. Please configure a “Wait” delay after this command.

**Quit applications:** Closes all applications prior of the shutdown of Windows.

**Wait some seconds...:** Waits a duration in seconds until the next command will be executed.

**RCCMD shutdown relay:** Relays RCCMD shutdown command to another workstation. Enter the IP address or the hostname of the remote station you want to shutdown.

**Shut down Windows:** Ends your session and shuts down Windows, so that you can safely turn off the power.

The default shutdown.bat content is as follows:

```
rem created by setup
```

```
@echo off
```

```
set path=C:\WINDOWS\C:\WINDOWS\system32\C:\Program Files\RCCMD\
```

```
ExitWin.exe shutdown force
```

```
@cls
```

### **2.13.1 RCCMD Client as Relay Station**

In order to reach a bigger number of RCCMD receivers, one RCCMD client needs to be operated as relay station. The receiver will be configured so that it will receive a RCCMD signal and this signal will be used to start a batch file, which then starts even more RCCMD sender signals. This workstation is then sender and receiver at the same time and is therefore an important link in the UPS monitoring chain. Generally the usage of a RCCMD client as a relay station makes the management of several 100 RCCMD clients far easier than configuring this via the Web-interface of the CS121. Additionally, all Web-browser event configurations have a certain limitation so that it is required to use the relay function, if the number of jobs exceed 50 per event at the CS121 HW 131, at older CS121 adapters even earlier.

See the following script, which lets the RCCMD-client act as relay station:

```
rem created by setup
@echo off
set path=%path%;C:\Program Files\RCCMD
# RELAY RCCMD
# This batch will send RCCMD shutdowns to the IP addresses listed below
# At the end of the batch this computer will initiate the local shutdown
start rccmd -s -a 192.168.200.2
start rccmd -s -a 192.168.200.3
start rccmd -s -a 192.168.200.4
start rccmd -s -a 192.168.200.5
start rccmd -s -a 192.168.200.6
start rccmd -s -a 192.168.200.7
# to be continued
#
# local shutdown
ExitWin.exe shutdown force
@cls
```

Figure 64 Example: Batch File RCCMD act as Relay Station

“start” is a Windows batch command to start the program call in several instances. This allows to execute programs simultaneously and speeds up the shutdown process. Please note that “start” is not supported in all Windows versions and it should be tested before using.

The RCCMD Version 4.0.1.0 or higher provides a graphical configuration of the RCCMD relay function.

Click the “Configure...” button.

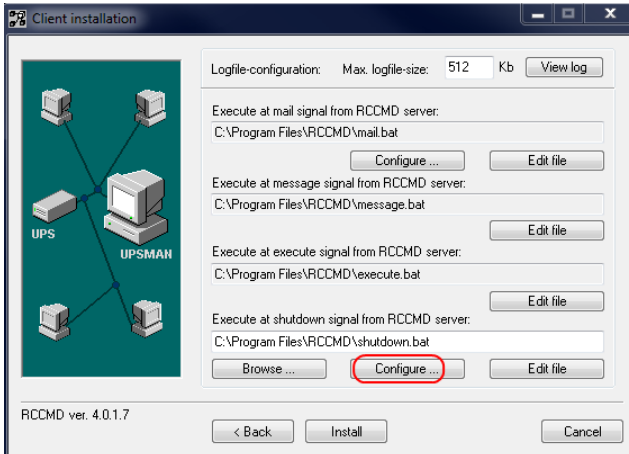


Figure 65 RCCMD Client Shutdown Configuration

Tag the “RCCMD shutdown relay” into the “Available Commands” window and click the “>” button, to add this function into the “Current Sequence”.

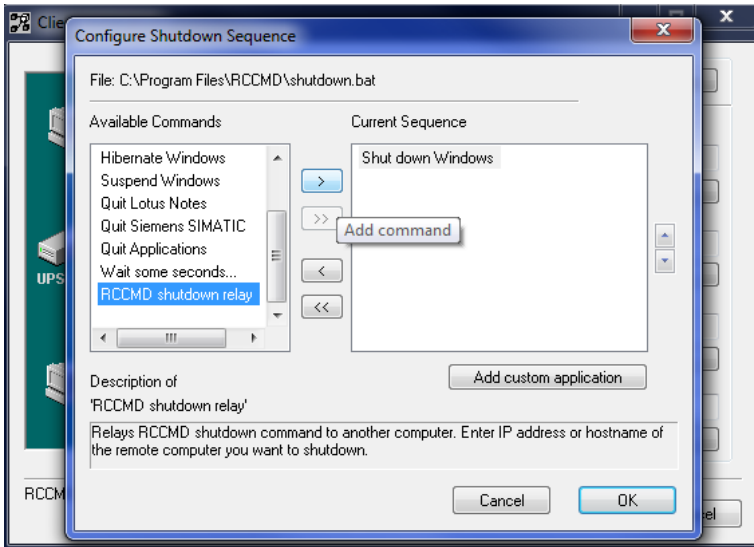


Figure 66 RCCMD Shutdown Relay

The following panel will appear, in which you can enter the desired IP address range.

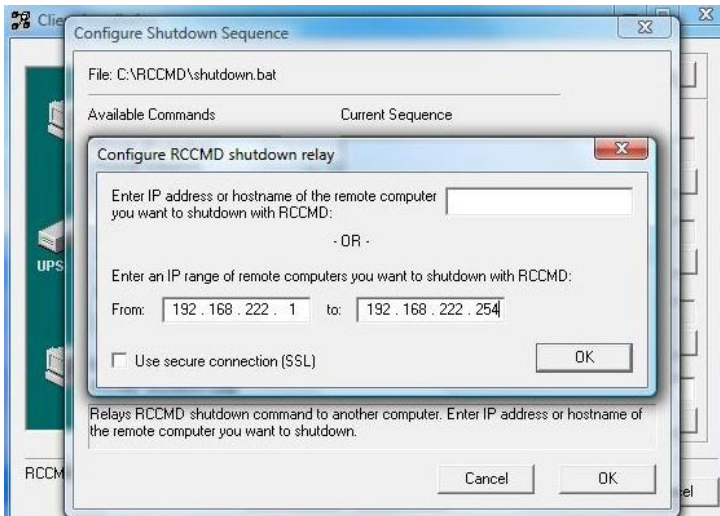


Figure 67 RCCMD Configuration IP Address Range

Additionally you can enable the SSL function (see also chapter 3.8).

If you want to remove single IP addresses, mark the line with its desired IP address and click the “<” button.

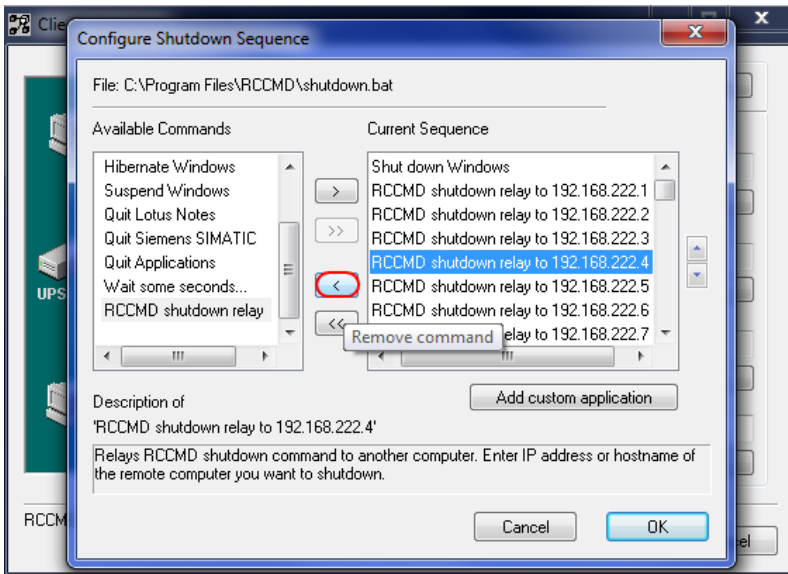


Figure 68 RCCMD Shutdown Relay Removal

The result of this graphical configuration of an RCCMD relay is found in the shutdown scriptfile "shutdown.bat".

```
@ECHO off
REM --- Created by RCCMD configuration ---
SET path=%path%;C:\Program Files\RCCMD
rccmd.exe -s -a 192.168.200.10
rccmd.exe -s -a 192.168.200.11
rccmd.exe -s -a 192.168.200.12
rccmd.exe -s -a 192.168.200.13
rccmd.exe -s -a 192.168.200.14
rccmd.exe -s -a 192.168.200.15
rccmd.exe -s -a 192.168.200.16
rccmd.exe -s -a 192.168.200.17
rccmd.exe -s -a 192.168.200.18
rccmd.exe -s -a 192.168.200.19
rccmd.exe -s -a 192.168.200.20
ExitWin.exe shutdown force
@CLS
```

Figure 69 RCCMD Shutdown Relay Removal

In difference to the above mentioned manual entries of an rccmd shutdown sequence, the graphical tool does not use the command "start" as parameter and therefore the shutdown is taken serially – which means one-after-the-other. Every IP address which does not respond to such an RCCMD call may take up to 10seconds (default) until the timeout is reached and the next command is executed.

### 3. RCCMD on UNIX (with graphical interface)

The RCCMD (remote console command) is a program that allows the execution of programs on remote computers. This tool is part of all UPSMAN supported operating systems as well as all GENEREX CS121 SNMP Manager, BACS Webmanager or RCCMD licensed SNMP Manager of other manufacturers (Rittal CMC, General Electric SNMP, Chloride Masterguard). With this tool it is possible to connect different operating systems. E.g. is the UPS-Management Software installed on a Unix computer and should a remote shutdown be executed on a computer with a different operating system in heterogene network, the RCCMD tool is necessary.

The RCCMD tool is based on the TCP/IP protocol. During the installation, the TCP/IP protocol should be installed in the first place.

The RCCMD tool works in two different modes. In the so called "Listen" mode, the program (as UNIX daemon in a background process) waits for a command from the "Send" mode of the RCCMD modul.



Note:

The RCCMD Installer is using our delivered Java Runtime Environment version, which is used for the installation or rather uninstallation only. In addition the RCCMD Web Configurator is using a Java web-server (jetty). You can delete the RCCMD Web Configurator out of the autostart (`etc/init.t/rccmdConfig`) or rename the symlink `/usr/rccmd/runRccmdConfig`. Then RCCMD is running without Java!



**ATTENTION:**

If you got an OS without grafical interface, please take a look into the FAQs, how to mount a USB stick.

#### 3.1 RCCMD Installation on UINIX OS

It is required to install RCCMD as user root out of a rootshell or a graphical terminal. Extract the file `rccmd.tar`, copy it to a temporary folder and start the program `installRCCMD.bin`. The following graphical installation will start:

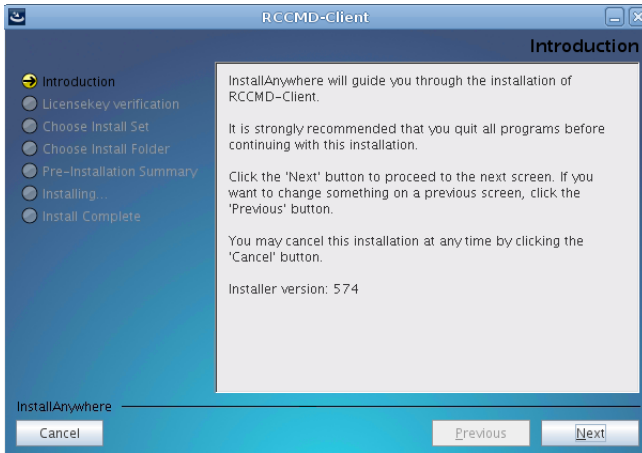


Figure 70 Installation – Introduction

Enter your license key:

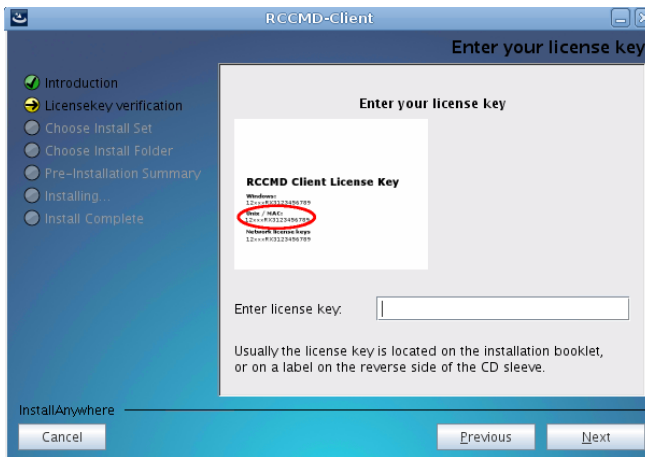


Figure 71 Installation – License Key

Choose the desired features.



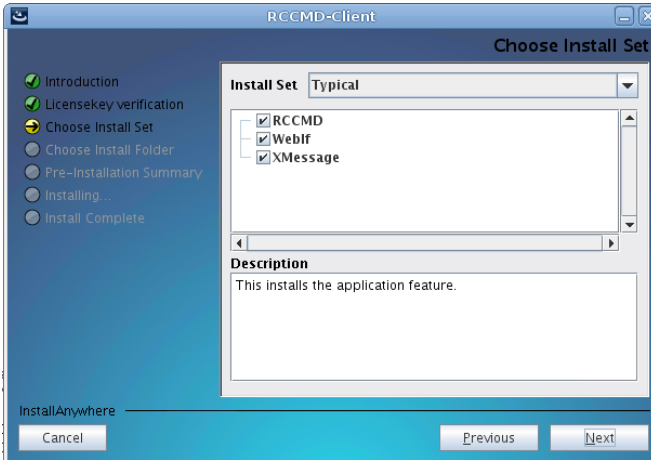


Figure 72 Installation – Choose Install Set

Choose your desired installation path.

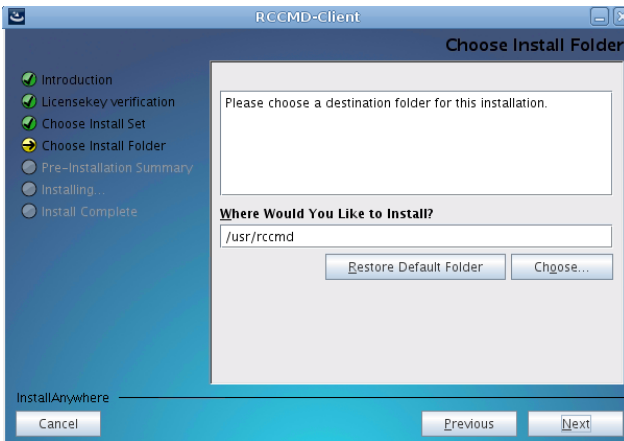


Figure 73 Installation – Choose Install Folder

Please note the required firewall exceptions.

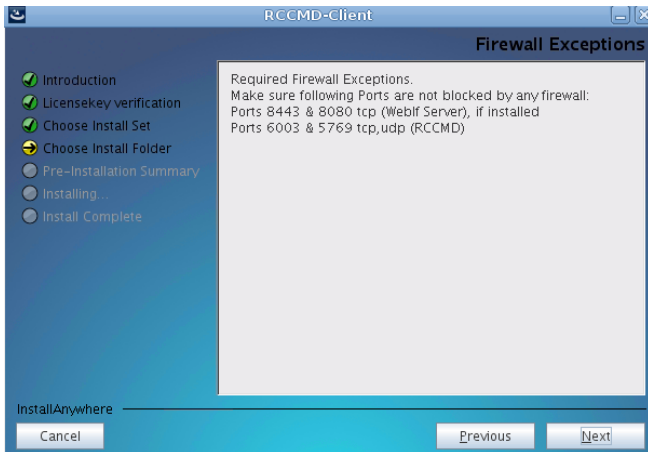


Figure 74 Installation – Firewall Exceptions

Choose the additional output options.

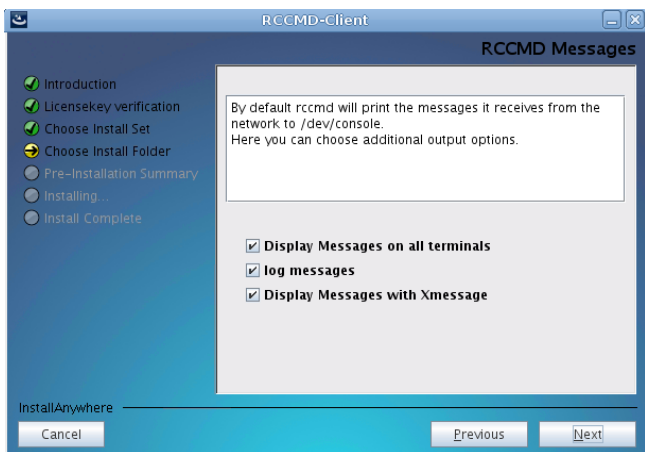


Figure 75 Installation – RCCMD Messages

In the next menu you see an overview of your installation and you may now press “Install” to begin.

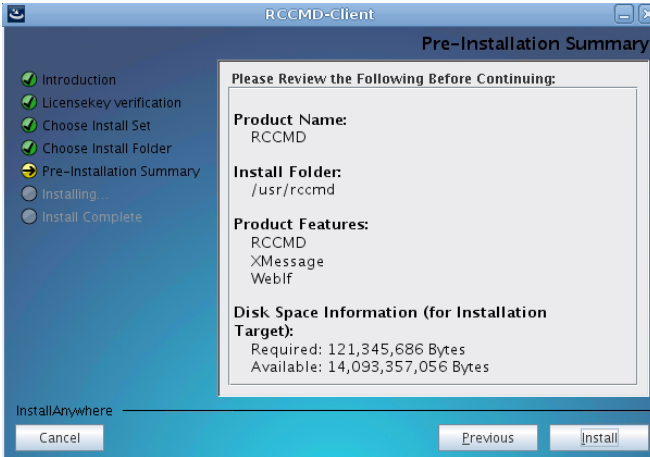


Figure 76 Installation – Pre-Installation Summary

Choose the RCCMD start behavior.

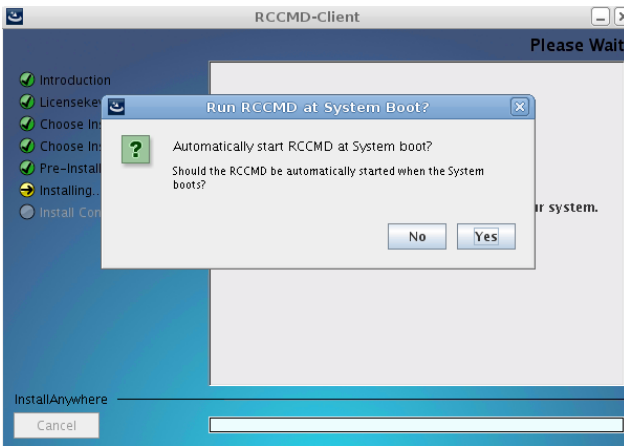


Figure 77 Installation – RCCMD Start Behaviour

Select these default values for the RCCMD WebIf port and protocol or select new ones.

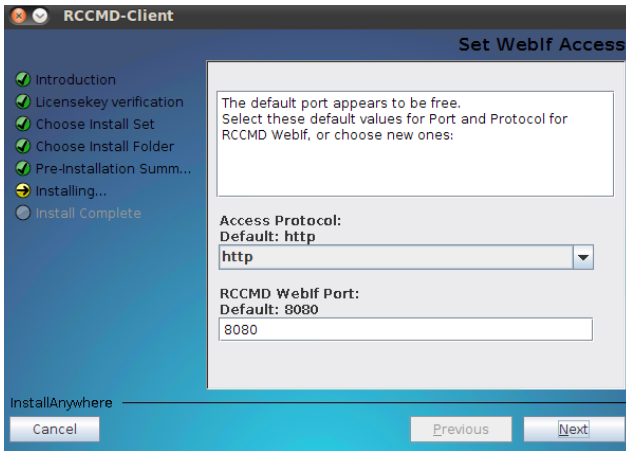


Figure 78 Installation – Set Webif Port

Please note this advice!

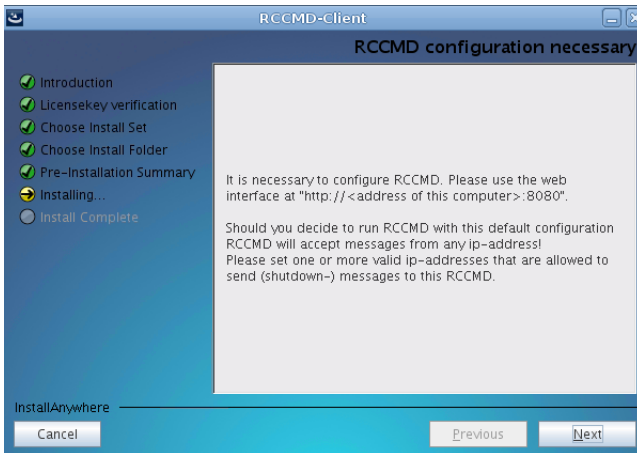


Figure 79 Installation – Configuration Advice

Choose RCCMD start.

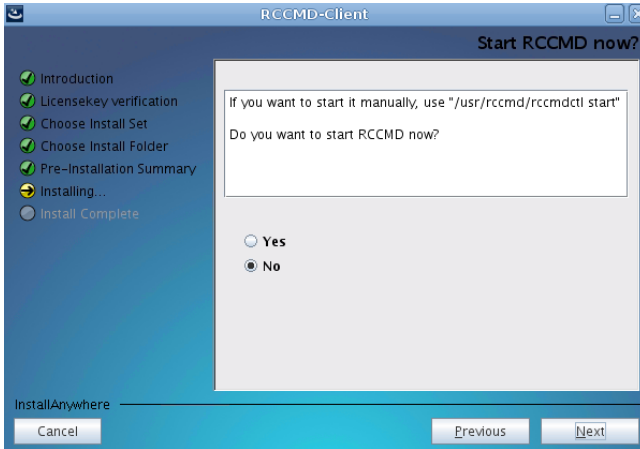


Figure 80 Installation – Start RCCMD now?

So, RCCMD has been installed successful.

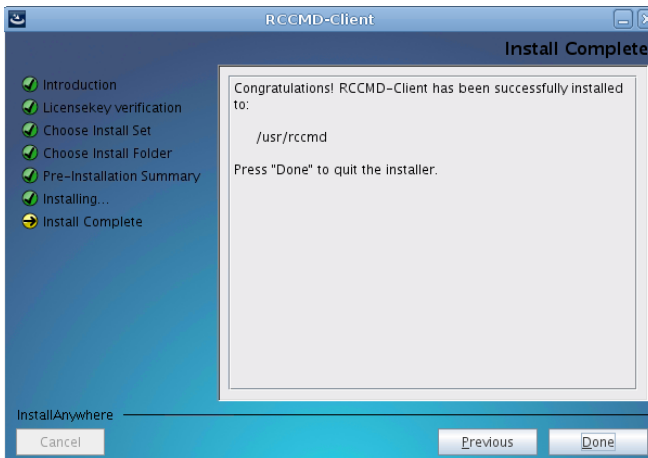


Figure 81 Installation – Install Complete

### 3.2 Silent Installation of the RCCMD Installation

A “Silent Installation” is an automated installation procedure, where the user inputs are received from a response file. This allows the user to install a software product without user input or graphical interface.

The RCCMD Software provides a silent installation, but it is required to enter some settings into the “installer.properties” file. This file is located into the CD folder \RccmdLinux\12.

## This file provides Values to alter the behaviour of the installer.

```
## You can preset Values for some internal Variables.

## For the installer to find and use this file it is necessary to either rename
## this file or pass a parameter to the installer when calling it.
## If this file is called 'installer.properties' or has the same name as the
## installer, e.g. 'install_RCCMD.properties' then the installer should
## automatically use this file.

## To call the installer with a parameter providing a properties file, the
## installer need the parameter '-f' in this case the command line call looks
## somewhat like this: "install_RCCMD.exe -f silent-installer.properties".
## To set the installer User Interface without providing the variable in the
## properties file, the parameter '-i' can be used.

## E.g. "install_RCCMD.exe -i silent"
## The interface options are "silent,gui,console" the gui option is default.
## Choose Feature List
## -----
## If you want to install a subset of features from this installer,
## make a list of all the features you want to be installed.
## The List must be entered in the CHOSEN_INSTALL_FEATURE_LIST variable.
## Options for the list are: RCCMD, WebIf,XMessage
## CHOSEN_INSTALL_FEATURE_LIST=RCCMD,WebIf,XMessage
## This will set the User Interface of the installer
## For installation in console modus, pass the parameter: "-i console" to
## the installer.
#INSTALLER_UI=silent
## This presets the Licensekey. This value is necessary for a silent
## installation, because there is no other way to pass this information to
## the installer.
#GXLICENSEKEY=
```

```
## The Dialogbutton variable contains the answer to the pop-up question whether
## the RCCMD should be started at system boot.
## The value '0' (default) resembles the answer 'Yes' the value '1' corresponds
## to 'no'.
#CHOSEN_DIALOG_BUTTON=0
## This variable decides whether RCCMD is started after installer ends. Use with care!
## RCCMD should be configured before it is started!
## '0' resembles the answer 'Yes' the value '1' (default) corresponds
## to 'no'.
#CONSOLE_START_RCCMD_NOW=1
## Select the language for the installed version of RCCMD by setting the
## INST_LANG variable to the desired country-code
## (e.g.: el,en,es,de,fr,he,it,ja,ko,pt,ru,tr,zh_cn).
#INST_LANG=en
## Select the destination where the program should be installed
#USER_INSTALL_DIR=/usr/rccmd
## If the target System is a vSphere Management Assistant (vMA)
## please provide the name or IP for the ESXi host.
#ESXI_HOST=127.0.0.1
## WebIf Settings
## -----
## Here you can override default settings for access to the RCCMD WebIf.
## These settings are ignored, if the variable CHOSEN_INSTALL_FEATURE_LIST
## is set and does not contain the WebIf feature.
## In interactive install modes (gui, console) the installer will check, whether
## the chosen port is free to be used.
## Valid values are: 1-65535
## WEBIF_PORT=8080
## Valid protocols are: http, https
```

```
## WEBIF_PROTOCOL=http
```

Figure 80 Content of the “installer.properties”

It is required to remove the hash mark prior of the variable `INSTALLER_UI=silent`. In addition the setting of the license key is required behind the variable `GXLICENSEKEY=.`. Execute the “installRCCMD.bin” file as root.

Further installation options are: `INSTALLER_UI=console` for a non-grafical user input console or: `INSTALLER_UI=gui` to use the graphical installation (default).

### 3.3 Console Installation of the RCCMD Installation

A console installation is required, if your target operating system does not have a grafical interface for the execution of the “installRCCMD.bin”. This console installation works interactive and will ask for user input, defined in the installation script file “installer.properties” (see figure 62).



**Note:**

This concerns the installation only. The configuration will be performed via editor into the „rccmd.cfg“ file.

For the activation of the console installation, it is required to remove the hash mark prior of the variable `INSTALLER_UI=` and to enter `console`. This is the interactive RCCMD installation onto the console. Execute as `root` the “installRCCMD.bin” file.

#### 3.3.1 Example of a Console Installation

Adjust the file “installer.properties” accordingly like described above or execute the following command:

```
./installRCCMD.bin -i console
```

Select the desired language and note the introduction.



```
Launching installer...

=====
Choose Locale...
-----
  1- Deutsch
->2- English
  3- Español
  4- Français
  5- Italiano
  6- Português

CHOOSE LOCALE BY NUMBER: 2
=====
RCCMD (created with InstallAnywhere)
-----

Preparing CONSOLE Mode Installation...

=====
Introduction
-----

InstallAnywhere will guide you through the installation of RCCMD-Client.

It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation. If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:
```

Figure 82 Console Installation – Language Selection, Introduction

It continues with the OS and platform detection, the RCCMD license key and the license contract.

```
=====
SysOS & Platform
-----
OS & CPU architecture: unknown unknown GNU/Linux

PRESS <ENTER> TO CONTINUE:

=====
Enter your license key
-----
Enter your license key
Usually the license key is located on the installation booklet, or on a label
on the reverse side of the CD sleeve.
Enter license key: 12SHARX3-1234567

=====
License Agreement
-----
Installation and Use of RCCMD-Client Requires Acceptance of the Following
License Agreement:

Copyright

The information contained in the manual of this product is nonconditional
and may be changed without due notice. GENEREX nor the reseller of this
product undertakes no obligations with this information. The software
described in this brochure is given on the basis of a license contract
and an obligation to secrecy (i.e. an obligation not to further publicise
```

Figure 83 Console Installation – OS Detection, License Agreement

Select the features, you want to install or press the “Enter” key, if you want to use them all.

```
=====
Choose Product Features
-----
ENTER A COMMA SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER>'. PRESS <RETURN> WHEN YOU ARE DONE:

  1- [X] RCCMD
  2- [X] WebIf
  3- [X] XMessage

Please choose the Features to be installed by this installer.:

=====
Pre-Installation Summary
-----
Please Review the Following Before Continuing:

Product Name:
  RCCMD

Install Folder:
  /usr/rccmd

Product Features:
  RCCMD,
  WebIf,
  XMessage

Disk Space Information (for Installation Target):
  Required: 116,423,910 Bytes
  Available: 3,049,369,600 Bytes

PRESS <ENTER> TO CONTINUE:
```

Figure 84 Console Installation – Features Selection

It continues with the selection of the RCCMD automatic start, WebIf protocol and port.

```
Run RCCMD at System Boot?
-----
Should the RCCMD be automatically started when the System boots?

->1- OK
   2- NO

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:

=====

Set WebIf Protocol
-----

This is the default protocol to access the RCCMD WebIf.
Select your preferred protocol here:

->1- http
   2- https

ENTER A COMMA-SEPARATED LIST OF NUMBERS REPRESENTING THE DESIRED CHOICES, OR
PRESS <ENTER> TO ACCEPT THE DEFAULT:

=====

Set WebIf Port
-----

This is the default network port to acces the RCCMD WebIf.
Select your preferred port here:

Port: (DEFAULT: 8080):
```

Figure 85 Console Installation – RCCMD Autostart, WebIf Protocol, Port

Please note, that it is required to configure the RCCMD Software and the required firewall exceptions.

```
RCCMD configuration necessary
-----

It is necessary to configure RCCMD. Please use the web interface at
"http://<address of this computer>:8080".

Should you decide to run RCCMD with this default configuration RCCMD will
accept messages from any ip-address!
Please set one or more valid ip-addresses that are allowed to send (shutdown-)
messages to this RCCMD.

PRESS <ENTER> TO CONTINUE:

=====

Required Firewall Exceptions
-----

Required Firewall Exceptions.
Make sure following Ports are not blocked by any firewall:
Ports 8080 tcp (WebIf Server), if installed
Ports 6003 & 5769 tcp,udp (RCCMD)

PRESS <ENTER> TO CONTINUE:
```

Figure 86 Console Installation – RCCMD Configuration required, Firewall Exceptions

Do you want to run RCCMD now ?

```
=====
Run RCCMD now?
-----

It is recommended to start RCCMD from WebIf after all necessary configuration.
If you want to start it manually, use "/usr/rccmd/rccmdctl start" or start it
via the web interface.

Do you want to start RCCMD now?

->1- OK
   2- NO

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT:

=====

Installation Complete
-----

Congratulations. RCCMD-Client has been successfully installed to:

    /usr/rccmd

PRESS <ENTER> TO EXIT THE INSTALLER:
```

Figure 87 Console Installation – RCCMD Start, Installation Complete

### 3.4 RCCMD WebInterface (from Version 4.2.0.0)

RCCMD provides its own web-interface from version 4.2.0.0 or higher. Therefore it is possible to configure and control RCCMD remotely. After the successful installation, your default web-browser of your OS starts automatically.



**Attention:**

Use the access data “User: admin, Password: cs121-snmp”.

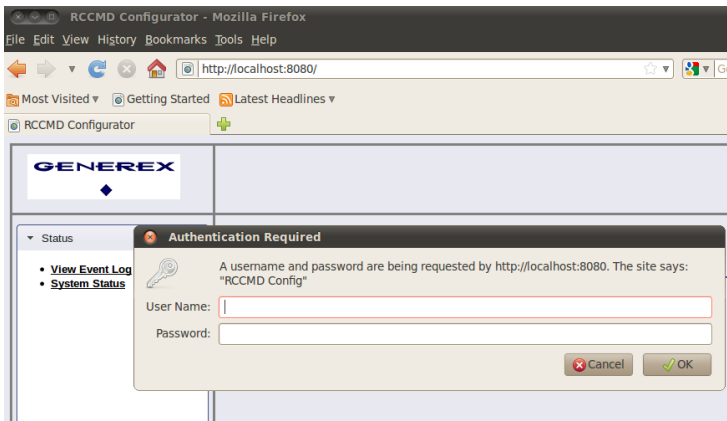


Figure 88 RCCMD WebInterface

You can enter the IP addresses of the allowed RCCMD senders (CS121/UPS MAN) into the “Connections” menu. Click the “Insert Sender” button to enter the IP address of the

1<sup>st</sup> ender. Click the “Remove Sender” button, if you want to remove the already entered IP address. Click the “Edit Sender” button, if you want to edit the entered IP address.



**Attention:**

If you do not enter an address, then every server has the permission to send a shutdown command.

You can define under “**Protocol**”, if RCCMD should use SSL certificates. Enable the “Reject expired SSL certificates”, if you want to reject connections with expired certificates. Please take a look into chapter 6.6.1 for further information about RCCMD with SSL.

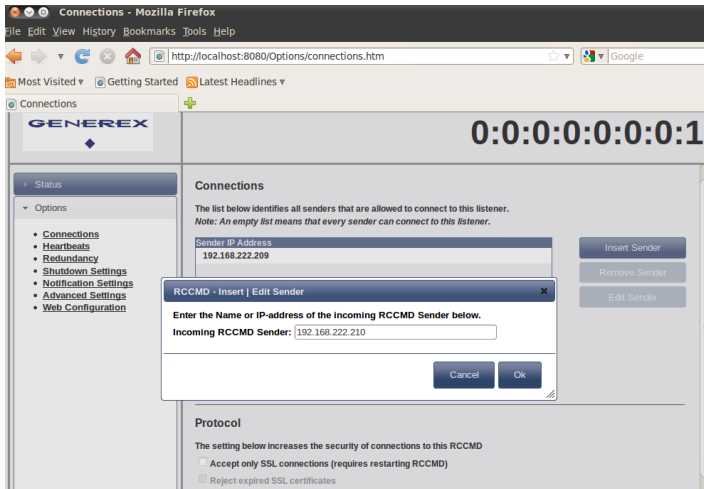


Figure 89 RCCMD WebInterface – Connections

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the “UPSMAN Alive Check” feature into the menu “**Heartbeats**”. This check is a signal, that will be send to the CS121/UPSMAN via port 5769, if the UPSMAN service still got UPS data. If not, the script file “alive.bat” will be executed, which will trigger an accordant pop-up message.

The feature “by the use of CS121/UPSMAN Traps” provides UPSMAN/RCCMD/UNMS messages, which will display the UPS status as message. If enabled, this feature will trigger a message, if the UPS status of the UPSMAN/RCCMD servers has changed.

The feature “by polling CS121/UPSMAN every x seconds” provides the pure signal polling without receiving UPS data or rather messages.

The polling rate (default 1800 seconds) defines the polling of the UPSMAN service, connection retries (default 100) means after 100 unsuccessful connection tries an alarm will be triggered.

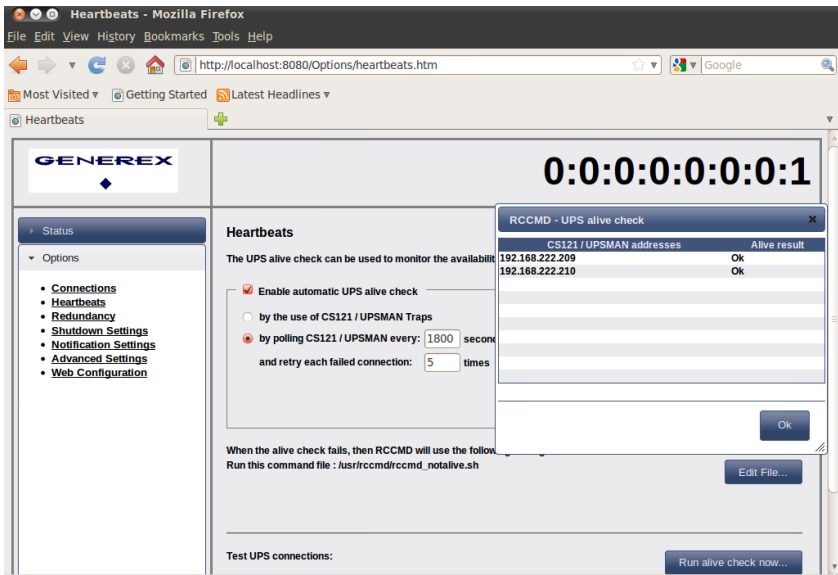


Figure 90 RCCMD WebInterface – Heartbeats

You can test the UPS connection, if you click the “Run alive check now...” button (the port 5769 will be tested).

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the redundancy management feature into the menu “**Redundancy**”. The redundancy level defines the number of redundant senders in the redundancy group. This means, that level 1+ senders must have sent a shutdown signal before this RCCMD starts its shutdown sequence.

When redundancy suppresses a shutdown, then RCCMD will trigger the “suppressed.bat”. You can edit this file, if you click the “Edit file...” button.

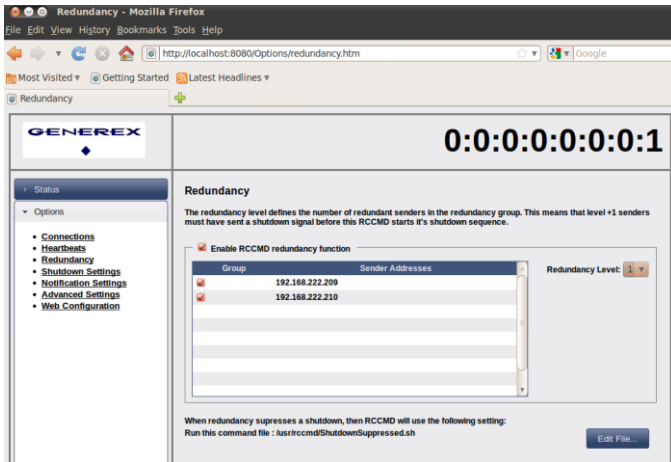


Figure 91 RCCMD WebInterface – Redundancy

Please note, that it is required to configure a reset of the redundancy alarm on the sender (CS121/UPSMAN). You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

Please take a look into chapter 6.1 for further information about RCCMD with redundancy.

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change or rather extend the shutdown sequence into the “Shutdown Settings” menu. The shutdown.bat will be executed by default:

```
rem created by setup
```

```
@echo off
```

```
set path=%path%;C:\Program Files\RCCMD
```

```
ExitWin.exe shutdown force
```

```
@cls
```

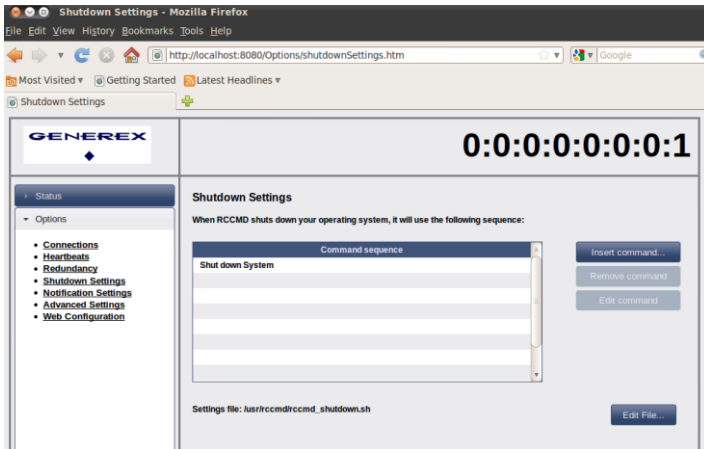


Figure 92 RCCMD WebInterface – Shutdown Settings

You can change or rather extend the default bat files for E-Mail, Message and Execute, if you click the “Edit File...” button.

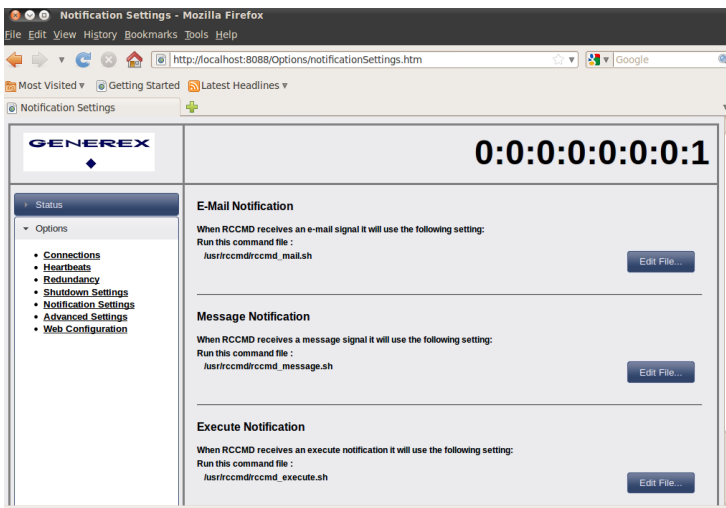


Figure 93 RCCMD WebInterface – Notification Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can define the maximum size of the event logfile into the menu “Advanced Settings”, where the overwriting of older entries will start, the RCCMD bindings for the IP address, the RCCMD listener TCP port and the RCCMD Tray Message Port, which will be used for the RCCMD messages. In addition you can disable the “Start Jobs as interactive user” feature, that means, if disabled, that RCCMD will execute jobs, if nobody is logged in on the system.



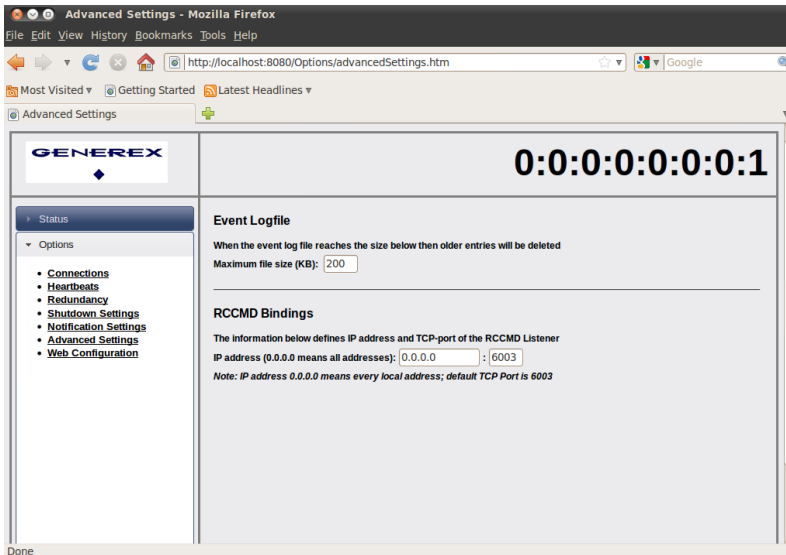


Figure 94 RCCMD WebInterface – Advanced Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change the default password for the user “admin” into the menu “**Web Configuration**”. In addition you can disable the HTTPS protocol, if you just want to use the HTTP protocol. The RCCMD version 4.2.3.0 or higher provides the feature of changing the default ports for HTTP and HTTPS.

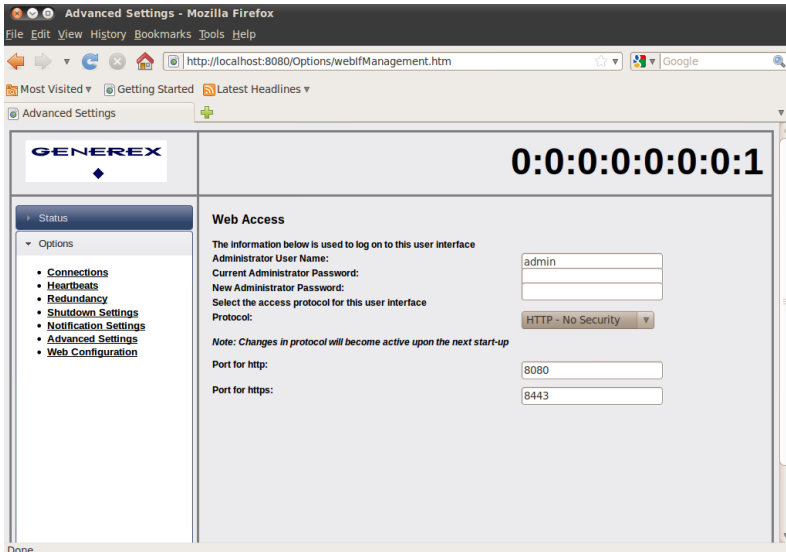


Figure 95 RCCMD WebInterface – Web Access

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can see the logging of the events into the menu “**Status, Event Log**”.

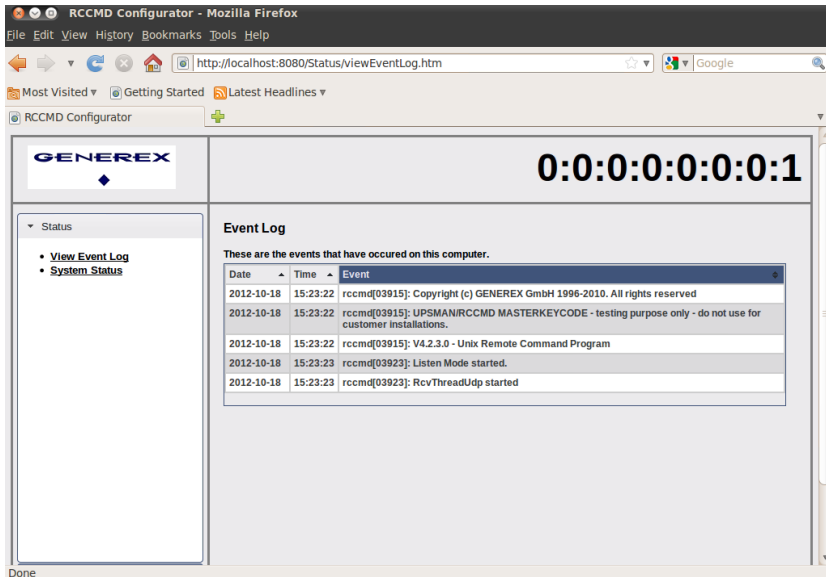


Figure 96 RCCMD WebInterface – Event Log

You can check the current status of RCCMD into the menu “**Status, System Status**”, update the status and restart or rather stop/start the RCCMD service.

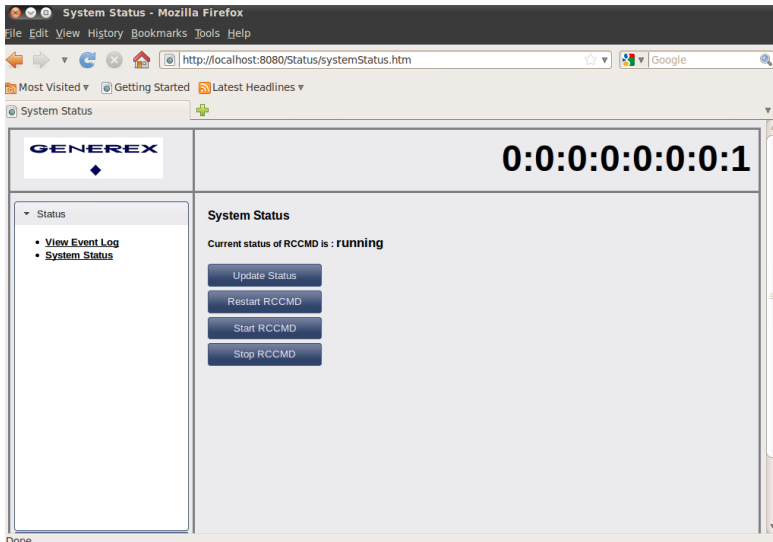


Figure 97 RCCMD WebInterface – System Status

You can open the RCCMD user manual into the menu “**Help**” and you can follow the link to [www.generex.de](http://www.generex.de).

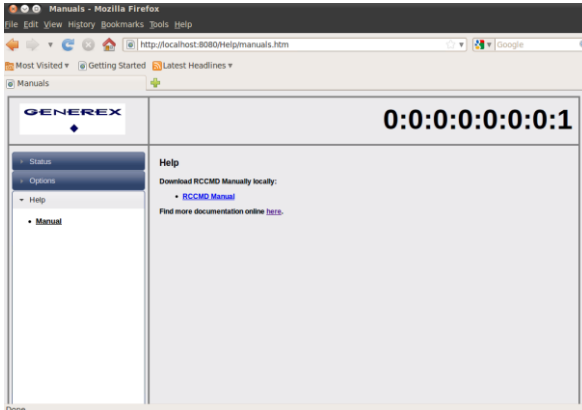


Figure 98 RCCMD WebInterface – Help

### 3.5 RCCMD Remote Access

RCCMD provides its own web-interface from version 4.0.1.9 or higher. Therefore it is possible to configure and control RCCMD remotely. Please note, that the firewall port 8080 TCP is enabled. Enter the following into a web-browser, to connect to a workstation, where RCCMD is running:

http://IP address of the RCCMD client:8080

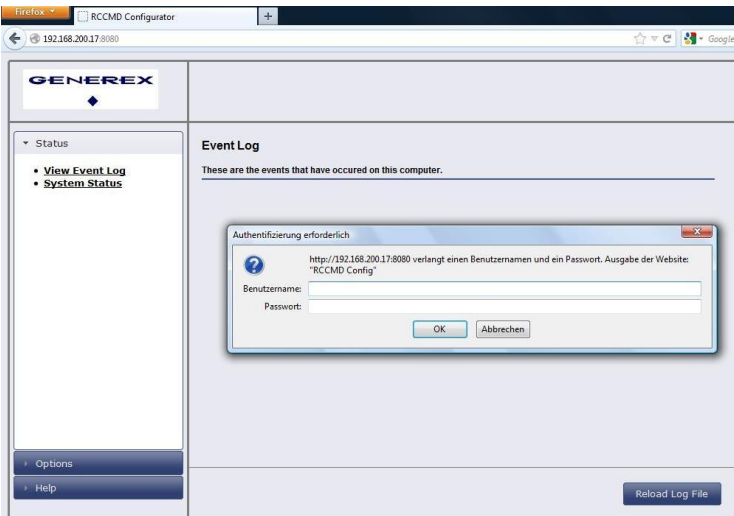


Figure 99 RCCMD WebInterface Configurator – Remote Access

### 3.6 Automatic Reset of the Redundancy Alarm

You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

This command can be set individually into your CS121, UPSMAN or BACS WEBMANAGER Events/Alarms configuration, but makes sense only, if the event, which will send the command, is true, if the UPS is back in normal condition. For this the events „POWER RESTORED“, „BATTERY LOW OFF“, „UPSMAN STARTED“ and „GENERAL ALARM OFF“ are suitable, if they are provided from your UPS into the CS121. The job „Send RCCMD cancel shutdown“ would be set into these all-clear events, so that e. g. at restart of the UPS, the event „UPSMAN STARTED“ would reset the accordant RCCMD client automatically.

Alternative: Should the job „Send RCCMD cancel shutdown“ not be present into your CS121, UPSMAN or BACS WEBMANAGER, you can use the job „Send RCCMD shutdown to remote client“ or rather „Send RCCMD execute to remote client“ alternatively.

The parameter „WAKEUP“ got the same function like the „Send RCCMD cancel shutdown“ and resets the redundancy alarm of a RCCMD Client into initial state. For this the events „POWER RESTORED“, „BATTERY LOW OFF“, „UPSMAN STARTED“ and „GENERAL ALARM OFF“ are suitable too, to configure the function „Send RCCMD command to remote client“ with the „WAKEUP“ command.



'Power restored' Job 3	
Function:	Send RCCMD Command to remote client ▼
Client IP:	192.168.200.17
Client Port (Default: 6003):	6003
Command:	WAKEUP
<input type="button" value="SS4 Command"/>	

Figure 100 CS121 Configuration “WAKEUP” Command

Click into the CS121 menu “Events/Alarms” onto “Power restored” and add a new job. Select the function “Send RCCMD command to remote client”, set the accordant IP address of the RCCMD client and enter the command “WAKEUP”.

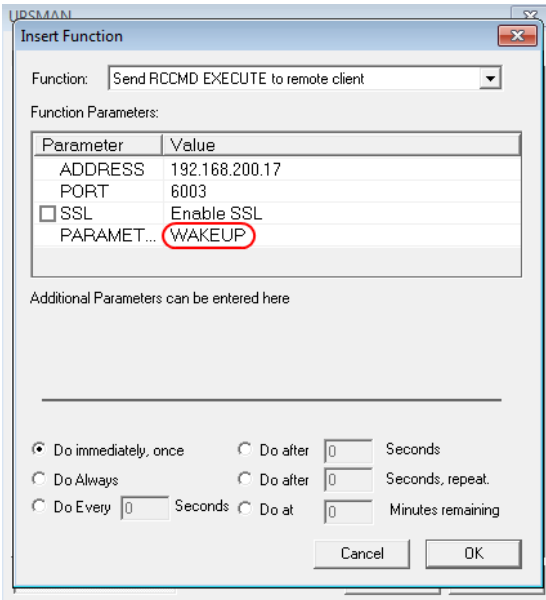


Figure 101 UPSMAN Configuration “WAKEUP” Command

Click into the UPSMAN configuration the buttons “Advanced Users”, “Events”, “Power restored” and “Insert”. Add the function “Send RCCMD execute to remote client”, set the accordant IP address of the RCCMD client and enter the command “WAKEUP”.

```

01/05/2010,14:59:54, RCCMD: RevThreadUdp started
01/05/2010,14:59:54, RCCMD: RCCMD Listen Mode started.
01/05/2010,14:59:54, RCCMD: SendThreadCheckUpsman started
01/05/2010,14:59:54, RCCMD: RCCMD Trap client logged on to 192.168.222.177
01/05/2010,14:59:54, RCCMD: RCCMD Trap client logged on to 192.168.222.246
01/05/2010,15:01:01, RCCMD: RCCMD Trying to start program/job: ".\message.bat" "UPSMAN Notification
01/05/2010,15:01:01, RCCMD: RCCMD program/job: ".\message.bat" "UPSMAN Notification [192.168.222.177]
01/05/2010,15:01:03, RCCMD: RCCMD message received from 192.168.222.177
01/05/2010,15:01:04, RCCMD: Shutdown suppressed, redundancy-level = 1, failure count = 1.
01/05/2010,15:01:04, RCCMD: RCCMD Trying to start program/job: C:\RCCMD\ShutdownSuppressed.bat
01/05/2010,15:01:04, RCCMD: RCCMD program/job: C:\RCCMD\ShutdownSuppressed.bat executed. OK
01/05/2010,15:02:06, RCCMD: RCCMD Trying to start program/job: ".\message.bat" "UPSMAN Notification
01/05/2010,15:02:06, RCCMD: RCCMD program/job: ".\message.bat" "UPSMAN Notification [192.168.222.177]
01/05/2010,15:02:09, RCCMD: RCCMD message received from 192.168.222.177
01/05/2010,15:02:09, RCCMD: WAKEUP command received from 192.168.222.177.
01/05/2010,15:02:09, RCCMD: WAKEUP IP 192.168.222.177

```

Figure 102 “WAKEUP” Command into RCCMD Log File

### 3.7 RCCMD with SSL for UNIX

The Secure Sockets Layer (SSL) protocol is a cryptographic protocol that provides security and data integrity for communications over TCP/IP networks.

Use your Web-browser to navigate to the address of your UPS Web-Manager. Click the “Network & Security” configuration button and enable the SSL network feature.

**Network & Security Settings**

MAC Address:	00-03-05-0E-09-E1	Enable Telnet Server:	<input checked="" type="checkbox"/>
Network Card Speed:	AUTO	Enable HTTP Server:	<input checked="" type="checkbox"/>
Local Address:	192.168.202.98	HTTP Port:	80
Gateway Address:	192.168.202.1	HTTP Refresh Time:	10
Subnet Mask:	255.255.255.0	HTTP Default Page:	UPS Status
DNS Server:	192.168.202.8	Enable HTTP Tooltips:	<input checked="" type="checkbox"/>
Change Administrator Password:	<input type="password"/>	Enable UpsMon Server:	<input checked="" type="checkbox"/>
Confirm Password:	<input type="password"/>	Use RCCMD2 Traps:	<input checked="" type="checkbox"/>
Change UpsMon & SS4 Password:	<input type="password"/> <input type="button" value="Clear"/>	Enable RCCMD Listener:	<input type="checkbox"/>
Confirm Password:	<input type="password"/>	RCCMD Listener Port:	6002
Use UpsMon Password for Web Pages:	<input type="checkbox"/>	RCCMD Timeout:	180
		Use RCCMD SSL:	<input checked="" type="checkbox"/>

Figure 103 RCCMD SSL Settings

The SSL network feature requires correct time settings, so it is required to configure a timeserver. Click the „Timeserver“ configuration button and enter the address of at least one timeserver.

**Time Settings**

RFC869 TCP compatible timeserver listening on port 37 required.  
To disable the timeserver feature set timeserver address 1 to 0.0.0.0.

Some public timeservers (could be used for both protocols):  
129.6.15.29 : National Institute of Standards and Technology  
192.53.103.103 : Physikalisch- Technische Bundesanstalt

Current system time: Thu Dec 4 23:49:26 2008

Timeserver Address 1: 192.53.103.103 SNTP

Timeserver Address 2: 0.0.0.0 SNTP

Timeserver Address 3: 0.0.0.0 SNTP

Timezone: (GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna

Automatically adjust clock for daylight saving changes:  (implemented for european timezones only)

Connection Retries: 2

Synchronize Time on Incoming RAS connection:

Synchronize Time on outgoing RAS connection:

Figure 104 Timeserver Settings

Click the „Save Configuration“ button and the „Save, Exit & Reboot“ button to confirm your settings.

## CS121 Configuration Manager







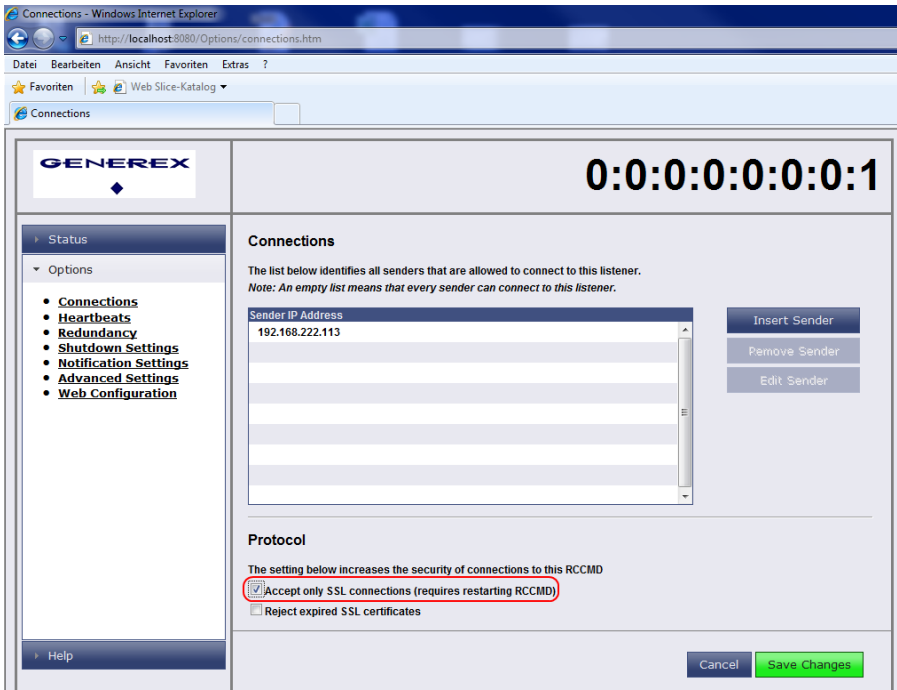
- 
**Reset to Factory Settings**  
 Load the CS121 factory settings into the configuration editor.
- 
**Cancel Recent Changes**  
 Reset all changes and reload the saved settings.
- 
**Save Configuration**  
 Write all changes to flash memory. Changes will be used after the next reboot.
- 
**Backup Configuration**  
 Store a backup of the configuration on your local harddisk. (Use right mousebutton and "save target as")  
 NOTE: For UPLOAD older config files to new firmware versions please contact support.
- 
**Reboot**  
 Reboot the CS121 without saving configuration changes.
- 
**Save, Exit & Reboot**  
 Write all changes to flash memory and reboot the CS121. (Please be patient after clicking here)

Figure 105 Settings Confirmation

Start the RCCMD Web Configurator again and enable the SSL network feature.



The screenshot shows the 'Connections' configuration page in the RCCMD Web Configurator. The browser window is titled 'Connections - Windows Internet Explorer' and the address bar shows 'http://localhost:8080/Options/connections.htm'. The page features the GenereX logo and a large IP address '0:0:0:0:0:0:0:1'. On the left, a navigation menu includes 'Status', 'Options', and 'Help'. Under 'Options', several settings are listed, including 'Connections', 'Heartbeats', 'Redundancy', 'Shutdown Settings', 'Notification Settings', 'Advanced Settings', and 'Web Configuration'. The main content area is titled 'Connections' and includes a note: 'The list below identifies all senders that are allowed to connect to this listener. Note: An empty list means that every sender can connect to this listener.' Below this is a table with one entry: '192.168.222.113'. To the right of the table are buttons for 'Insert Sender', 'Remove Sender', and 'Edit Sender'. The 'Protocol' section contains a note: 'The setting below increases the security of connections to this RCCMD'. It has two checkboxes: 'Accept only SSL connections (requires restarting RCCMD)' (checked and circled in red) and 'Reject expired SSL certificates' (unchecked). At the bottom right, there are 'Cancel' and 'Save Changes' buttons.

Figure 106 SSL Configuration

If you want to accept expired certificates, please enable the accordant function.

### 3.7.1 RCCMD with own SSL certificates

In this chapter we will describe, how to use an own SSL certificate with RCCMD, e. g. OpenSSL ( <http://www.openssl.org> ):

#### Be your own CA

Using OpenSSL it is quite simple to become your own CA. Just run:

```
CA.pl -newca
```

Done! Just ensure, that you select a useful CN (common name)!

#### Create your RCCMD certificate

You need to create your certificate for RCCMD now. As it will use it for verification, it should contain the same useful common name (CN), that you selected for the CA. The private key must not be encrypted to let the RCCMD Client (service) start without trouble. Therefore we use the “-nodes” option and the “-newreq” command:

```
CA.pl -newreq -nodes
```

Sign with your CA:

```
CA.pl -sign
```

Now create an empty file named “rccmd.pem” and copy the cert information of *newcert.pem* (rccmd certificate), *newkey.pem* (private key) and *cacert.pem* (CA) into it. Please note, that the exact copying is required to use it without trouble!

#### Use your own RCCMD certificate

Do the following steps at the RCCMD Client and every sender (e. g. UPS Web Manager):

- Backup the existing “rccmd.pem”
- Replace the existing “rccmd.pem” with your own
- Restart the RCCMD Client
- Restart the RCCMD Sender

### 3.8 Configuration of rccmd.cfg file in a non-grafical environment

It is required to perform the configuration via editor, if you do not have a graphical interface. The configuration file is the “rccmd.cfg” and is located into the /usr/rccmd folder (default). The file contains the description of the single configuration parameters. Please take a look into the following example of the “rccmd.cfg” file and change the settings to your installation:

```
#####
```

```
# RCCMD Configuration
```



#####

# Bind on Interface

# Defines on which interface we listen for incoming commands

# Default: 0.0.0.0 (All possible interfaces on this host)

ListenAddress=0.0.0.0

# Listen on Port

# Defines on which interface port we listen for incoming commands.

# Default: 6003

ListenPort=6003

# Enable UDP

# Defines if we should listen for rccmd (UDP) broadcasts

# Default: true

ListenUDP=true

# Access Control List

# A list of valid sender addresses, only its members can connect to us.

# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".

# Default: <empty> (Everyone is allowed to connect to us)

AllowedAddresses=

# Alive Check

# Enable Alive Check

# Defines if we should perform UPSMan alive checking.

# Default: false

AliveEnabled=false

# Alive Check Rate

# Defines the interval of UPSMan alive checking, in seconds.

# Default: 1800

AliveInterval=1800

# Alive Retry Rate

# Defines the number of UPSMan alive checking retries, in case of problems.

```
# Default: 0
AliveRetries=5
# Alive Check Group Members List
# A list of UPS device addresses that should be checked periodically.
# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".
# Default: <empty> (No alive checking)
AliveAddresses=
# Alive Program
# Full path to script that is executed when an alive check fails.
# Default: rccmd_notalive.sh
AliveProg=
# Redundancy Mode
# Enable Redundancy
# Defines if we should operate in redundancy mode.
# Requires an enabled <Alive Check> configuration.
# Default: false
RedundancyEnabled=false
# Redundancy Group Members List
# A list of redundancy group member addresses, must be also in <AliveAddresses>.
# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".
# Default: <empty> (No redundancy available)
RedundancyAddresses=
# Redundancy Level
# Defines how many of the <RedundancyAddresses> are redundant.
# Shutdown is executed when the number of shutdown requests exceeds this number.
# Default: 0 (No redundancy available)
RedundancyLevel=0
# Enable Redundancy Script
# Defines if we should NOT execute a script when redundancy suppresses a shutdown.
```

# Default: false.

RedundancyBatchSuppress=false

# Redundancy Script

# Full path to script that is executed when redundancy suppresses a shutdown.

# Default: ShutdownSuppressed.sh

RedundancyBatchFile=

### 3.9 Older RCCMD Configuration on UNIX OS

If no entries are changed in this default rccmd.cfg file, all incoming RCCMD commands will be executed from any sender and use the default shutdown scriptfile "rccmd\_shutdown.sh".

Add the IP address of the RCCMD server, which is allowed to send a shutdown to this client.

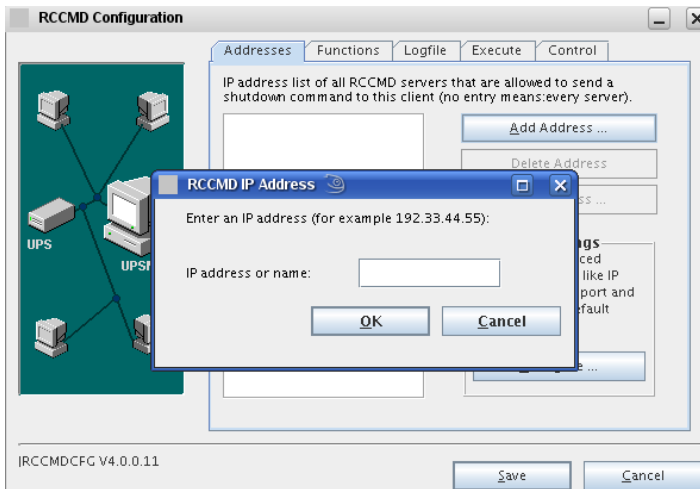


Figure 107 Configuration – RCCMD Sender IP Address



**Attention:**

If you do not enter an address, then every server has the permission to send a shutdown command. If more than one CS121 or rather UPSMAN is existent, thus a redundancy situation, you need to enter more than one address as authorized sender.

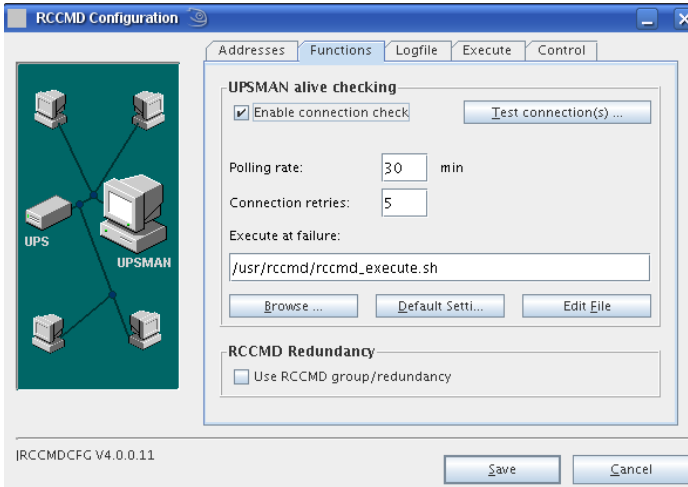


Figure 108 Configuration – RCCMD Functions

If you want to use the UPSMAN alive checking (recommended), check the “Enable connection check” box. Alive check is a signal, send out to the UPSMAN or CS121 on port 5769 to check if the UPSMAN has still UPS data – or not. If this fails, the scriptfile rccmd\_execute.sh will be executed which causes a messagbox coming up. The polling rate (default 30 min.) defines the polling of the UPSMAN service, connect retries (default 5) means after 5 unsuccessful connection tries an alarm will be triggered.

The function “Use RCCMD Traps” enables UPSMAN/RCCMD/UNMS traps, which show the UPS status as a trap message. If activated it will display a local message when the UPS status of the UPSMAN/RCCMD server changes.

If you click the “Test connection(s)...” button, the UPSMAN alive checking of the entered IP addresses will start (port 5769 will be tested).

If you click the „Browse...” button, you will get a selection of the default sh-files.

At UPS installation RCCMD offers redundancy management functionality as follows:

Every UPS must be equipped with a CS121 or UPSMAN software computer. When ticking the box “use RCCMD group/redundancy” – you are guided to a menue where you can choose which CS121 /UPSMAN are supplying this RCCMD client. E.g. if 4 CS121/UPSMAN are installed into 4 UPS – than each may send a shutdown signal to this RCCMD client.

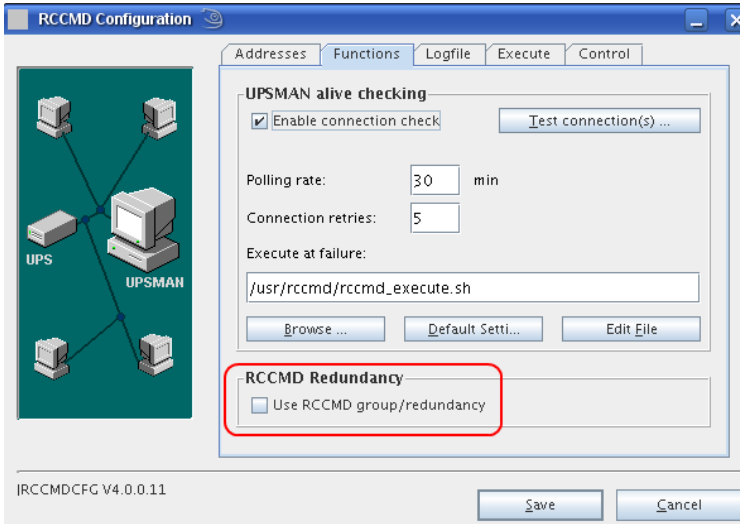


Figure 109 Configuration – RCCMD Redundancy

The redundancy level defines how many shutdown signals are required to execute the shutdown.bat file. As long as this number is not exceeded, the RCCMD client will react on such a shutdown signal only with a messagebox “Execute command when redundancy suppresses a shutdown” box. This will show a message to inform the user that there has been a shutdown signal from one of the UPS in the group, but since all other UPS are still reading OK – or did not yet send any shutdown, the shutdown is suppressed. 3 shutdown signals would create messages in the above example (redundancy level 3) only, just the 4<sup>th</sup> signal would initiate the shutdown.

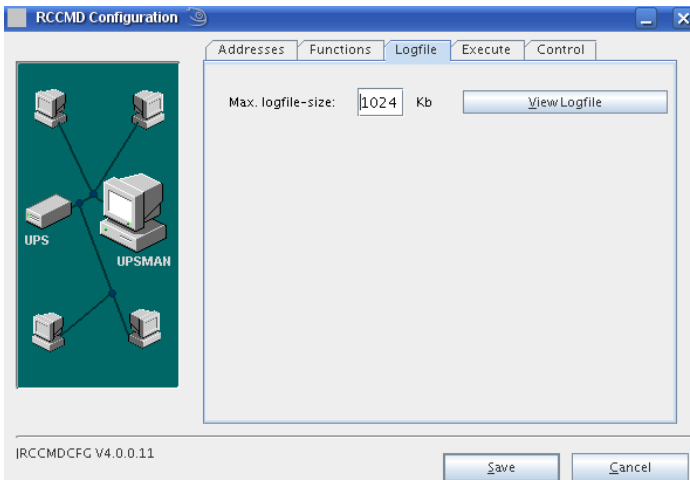


Figure 110 Configuration – RCCMD Log File

You can configure the log file size and edit the executing sh-files.

The RCCMD version 4.0.2.0 provides a graphical configuration of the shutdown sequence.

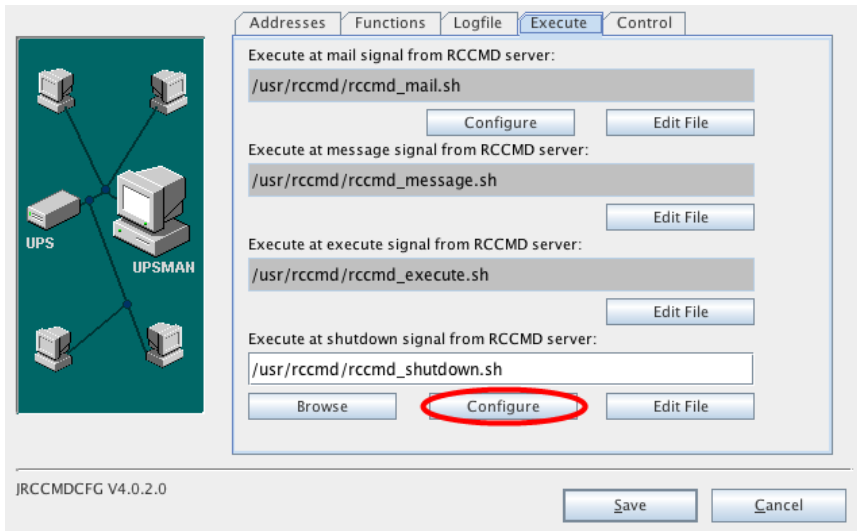


Figure 111 Configuration – RCCMD Execute

Click the „Configure“ button to enter the shutdown sequence settings.

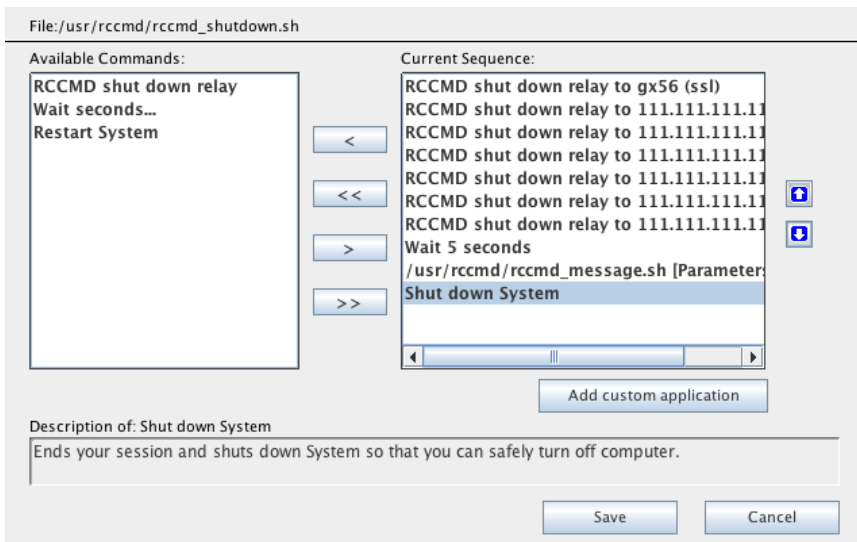


Figure 112 Configuration – RCCMD Shutdown Sequence

The following commands are available:

**RCCMD shutdown relay:** Relays RCCMD shutdown command to another workstation. Enter the IP address or the hostname of the remote station you want to shutdown (see chapter 4.4, page 73).

**Wait seconds...:** Waits a duration in seconds until the next command will be executed.

**Restart System:** Ends your session, shuts down the system and restarts it.

**Shutdown System:** Ends your session and shuts down the system, so that you can safely turn off the power.

Click the “Configure...” button to enter the E-Mail settings.

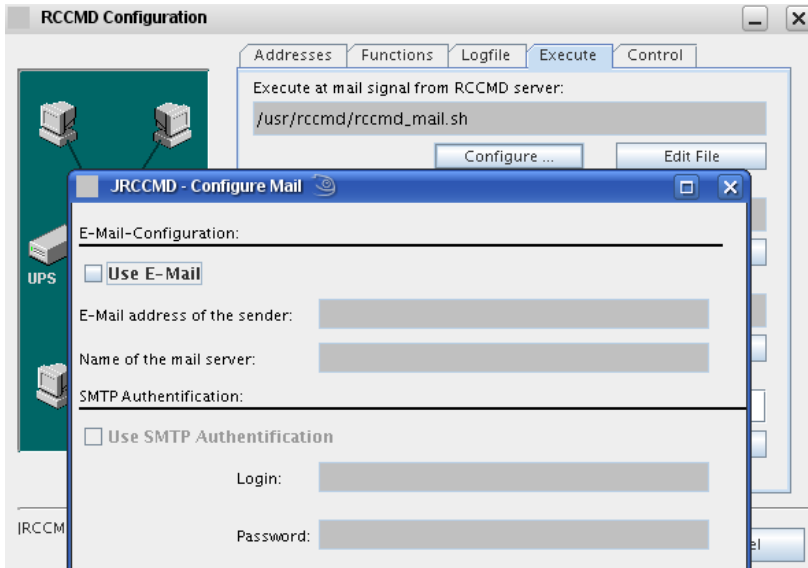


Figure 113 Configuration – RCCMD E-Mail Configuration

Click « Control » to get to the following functions:

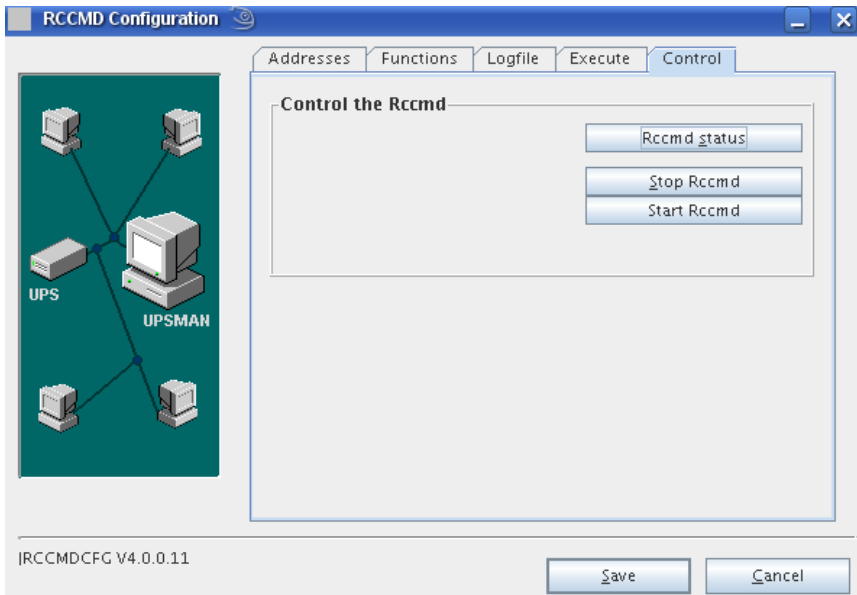


Figure 114 Configuration – RCCMD Control

### 3.9.1 RCCMD Client as Relay Station

If you need to reach a bigger amount of receivers, it is required to define the CS121 as relay station. The receiver must be defined, if receiving a RCCMD signal, that it will start a script, which will send further RCCMD signals. The workstation is receiver and sender at the same time and thus an important connection in the UPS monitoring. The usage of a RCCMD client as relay station makes the monitoring of more than hundred RCCMD clients as easier as the configuration of the CS121 via web-browser. Furthermore the web-browser event configuration got a limit, so that it is required to use the relay function, if the amount of jobs is more than 50 per event at the CS121.

The following steps are required for the configuration of the relay function:

- Open the file “rccmd\_shutdown.sh” with an editor.
- Add prior of the shutdown of the workstation (“shutdown -h now”) the relay calls, e. g. the call of the included “send\_shutdown.sh”.
- Add the desired IP addresses or rather the DNS names:

```
./send_shutdown.sh -a 10.10.10.10 -a 10.10.10.11 -a 10.10.10.12
```

- Save the settings of the “rccmd\_shutdown.sh”.

The RCCMD version 4.0.2.0 provides a grafical configuration of the shutdown sequence.



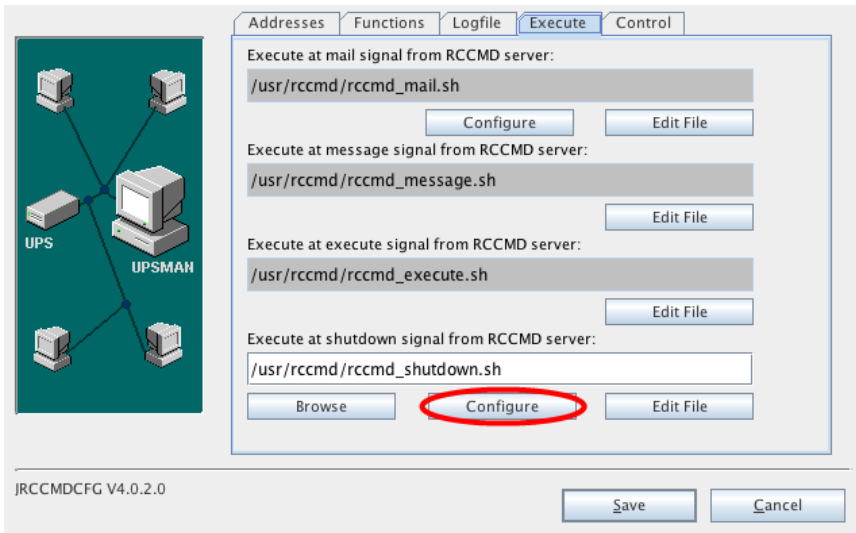


Figure 115 RCCMD Shutdown.sh

Tag the "RCCMD shutdown relay" into the "Available Commands" window and click the ">" button, to add this function into the "Current Sequence".

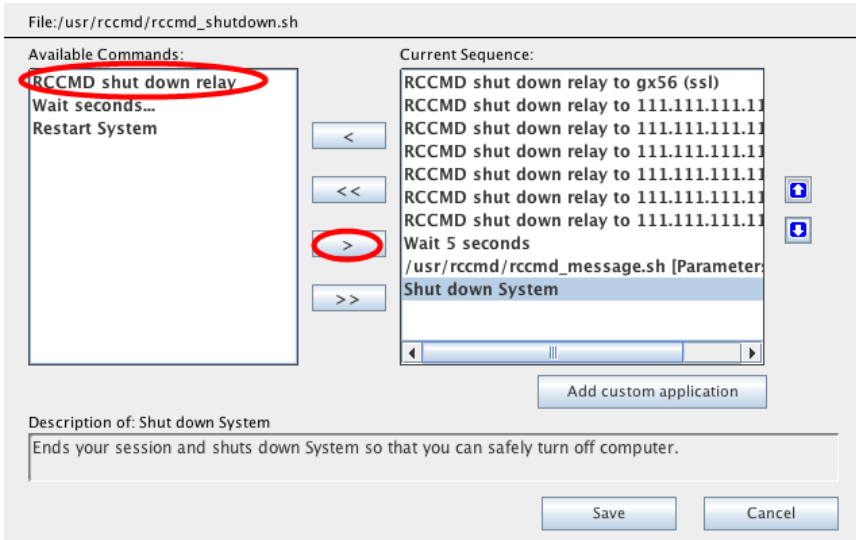


Figure 116 RCCMD Shutdown Sequence

The following panel will appear, in which you can enter the desired IP address range or hostname.

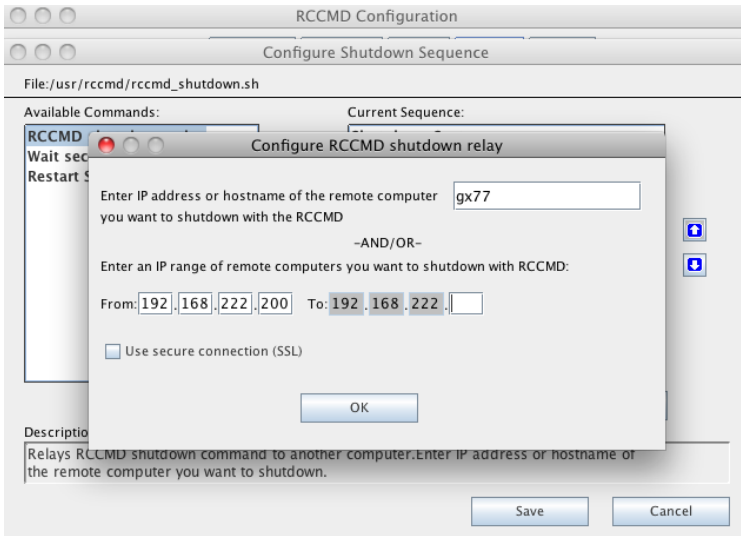


Figure 117 RCCMD Shutdown Relay

If you want to remove single IP addresses, mark the line with its desired IP address and click the “<” button.

Additionally you can enable the SSL function.

### 3.10 UNIX RCCMD Configuration With CURSES Library



**Note:**

This section does not apply to rccmd V1 for Unix, in addition it only applies to rccmd running in 'Listen' mode. This tool “rccmd\_conf” is not supported by newer operating systems. If you try to start on not supported OS, you will receive an error message about missing “curses” library.

Rccmd V2 running in 'Listen' mode may be configured using a configuration file. By default rccmd will look for a file named 'rccmd.cfg' in its startup directory (usually '/usr/ups'). This file may be generated using rccmd\_conf. Rccmd\_conf is a small curses-based utility which runs on the console or a terminal or a terminal-emulation under the X Window System (e.g. xterm).



**Note:**

The contents of 'rccmd.cfg' are vital to system security. It should be writeable only for the System User 'root'.

**Run rccmd\_conf:**

\$ su -

Password:

```
# cd /usr/ups
```

```
# ./rccmd_conf
```

if 'rccmd.cfg' does not exist (e.g. if you run rccmd\_conf for the first time) the following notice will be displayed:

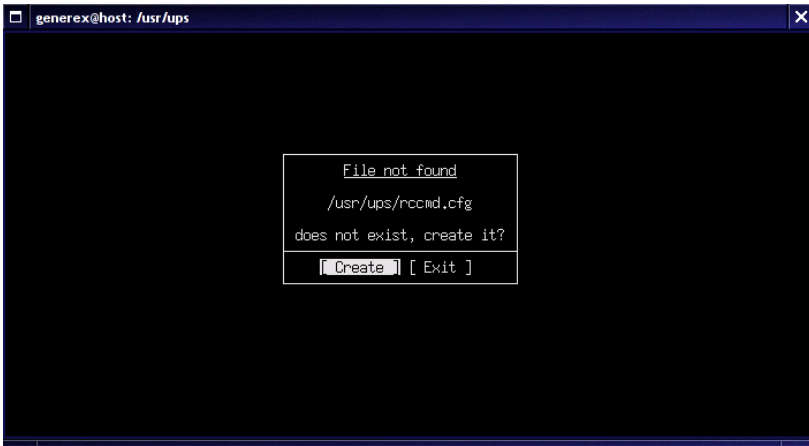


Figure 118 Making the Configuration File

To proceed hit the [Tab] key until the [Create] button it is highlighted and press [Enter], otherwise select [Exit].

If you created 'rccmd.cfg' or if the file existed already rccmd\_conf will switch to its main configuration menu.

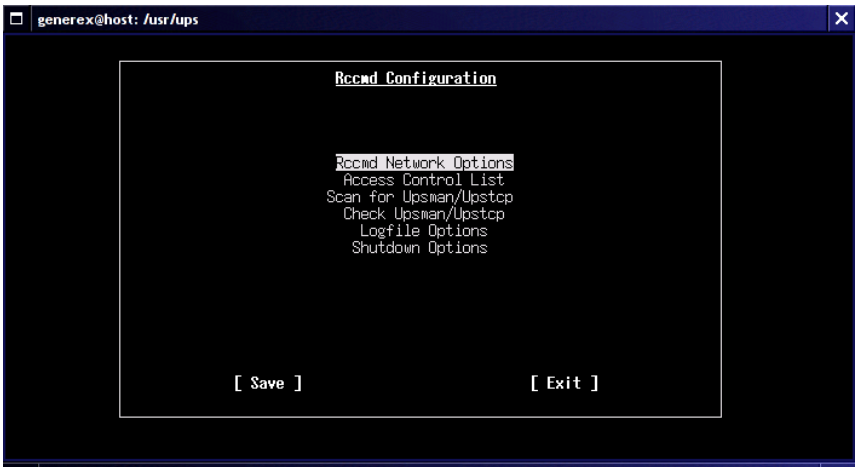


Figure 119 RCCMD Configuration Menu UNIX

To switch between the menu entries use the [Tab] key and/or the arrow keys [←], [→], [↑] and [↓]. To select an entry press [Enter].

It is not necessary to work from top to the bottom, you may configure the menu items in any order. In fact it is not necessary to configure anything at all, if you just select [save] 'rccmd.cfg' will be written with default values sufficient to run rccmd. To use all features of rccmd and/or improve security it is however strongly suggested to customize 'rccmd.cfg'.

### Configure “Rccmd Network Options”

In this screen you may configure network related options of the rccmd listener. To switch between the option-fields and buttons use the [Tab] key.

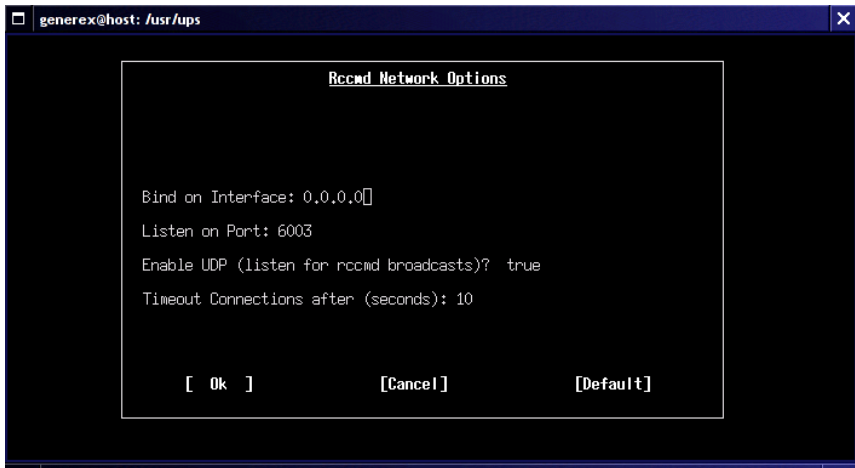


Figure 120 RCCMD UNIX Network Options

Bind on Interface:

This option tells rccmd on which network interface it binds its main tcp listen socket. You may enter any valid IP address your host can be reached.

The default value for this option is 0.0.0.0, this is a working value, it means 'listen on all possible interfaces of this host'. If your host has a dial up connection to the internet you may want to change the default, to ensure rccmd will not be connected from the internet. In this case you will enter the primary IP address of the host rccmd listener is running on.

Example:

Your company runs a private network in the 192.168.1.0/24 address range. The host rccmd listener is running on is assigned the IP 192.168.1.9. You may enter 192.168.1.9 for “Bind on Interface”, to ensure only host from the private network can connect to rccmd.

Listen on Port:

This is the port rccmd will listen to. Allowed values range from 1 to 65535 (inclusive). The default is 6003. If you change the port of the rccmd listener you will also have to switch the port of the rccmd sender in order to enable a connection. It is normally not necessary to change this setting.

Enable UDP:

If this option is enabled rccmd will open an UDP Listen Socket in addition to the TCP Socket. This allows the rccmd listener to receive rccmd broadcasts. Possible values are 'true' and 'false'. The default is “true”. To switch the value use the [↑] and [↓] keys.

Timeout:

Timeout for TCP connections. The default is 10 seconds. It is normally not necessary to change this setting.

To reset all values to their defaults select the [Default] button by hitting the [Tab] key, then press [Enter].

To leave the screen select either [Ok] or [Cancel] with the [Tab] key and press [Enter], [Ok] means accept all values as displayed on the screen, [Cancel] means discard all changes made to the screen.

### Configure “Access Control List”

“Access Control List” contains a list of valid sender addresses. A valid sender address is the IP address of an rccmd sender that is allowed to connect to the rccmd listener. Initially the list is empty.



**Note:**

**An empty Access Control List means everyone is allowed to connect.**

To switch between the entries in the list use the [↑] and [↓] keys, to switch between the buttons use the [Tab] key. To select an entry press [Enter].



Figure 121 RCCMD UNIX Add Sender

To add an IP address hit the [Tab] key until the [Add] button is highlighted, then press [Enter].

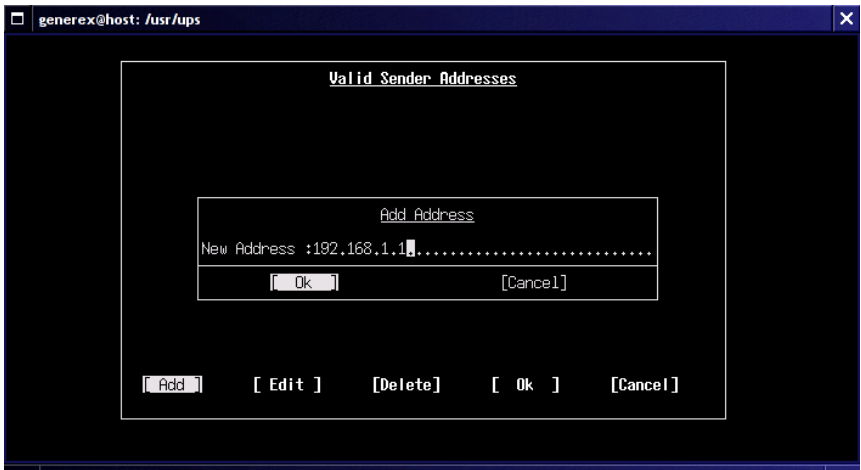


Figure 122 RCCMD UNIX Sender Example

Enter the IP address of the host you want to be able to connect, then press [Enter].

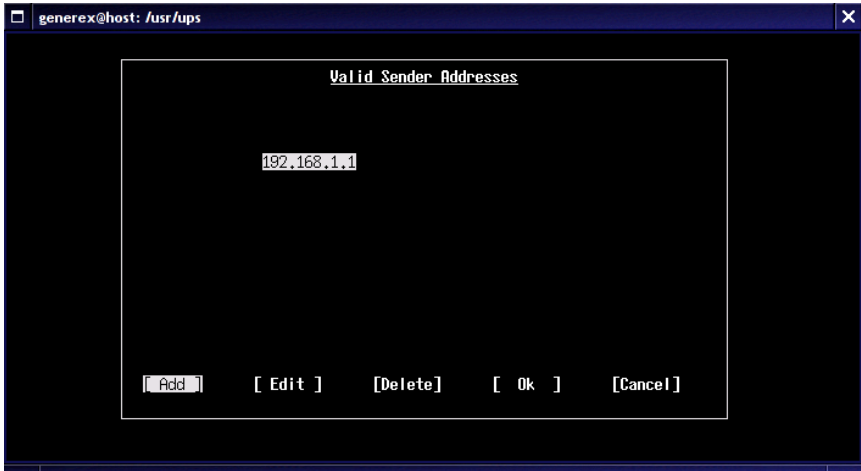


Figure 123 RCCMD UNIX Sender Overview

To edit an entry in the list select it by hitting the [↑] and [↓] keys until the entry is highlighted, then hit the [Tab] key until the [Edit] button is highlighted, then press [Enter].



Figure 124 RCCMD UNIX Edit Sender

Edit the Address in the “Edit Address” Window. To keep your changes select the [Ok] button with the [Tab] key and press [Enter] otherwise select [Cancel].

To delete an entry in the list select it by hitting the [↑] and [↓] keys until the entry is highlighted, then hit the [Tab] key until the [Delete] button is highlighted, then press [Enter].

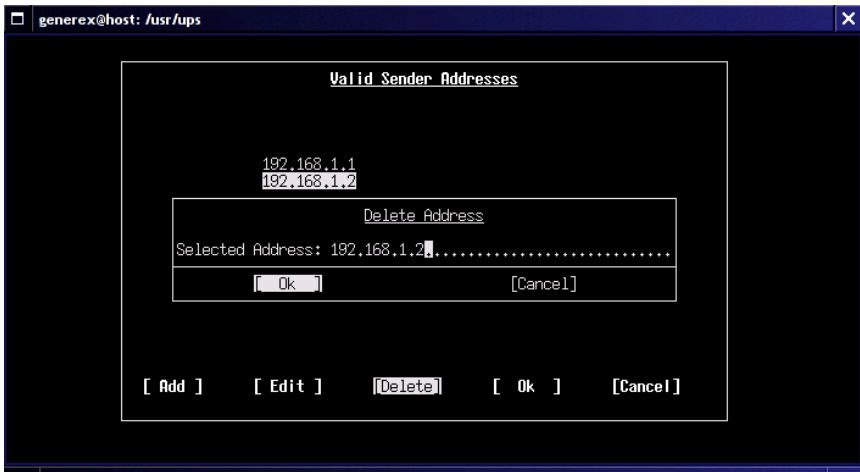


Figure 125 RCCMD UNIX Delete Sender

Confirm to delete the entry by selecting [Ok] with the [Tab] key and pressing [Enter], otherwise select [Cancel].

To leave the screen select either [Ok] or [Cancel] with the [Tab] key and press [Enter]. [Ok] means accept the list as displayed on the screen, [Cancel] means discard all changes made to the list.

### Scan for Upsman/Upstcp:

This screen allows you to scan your network for Upsman/Upstcp servers. You may want to add the detected IP addresses to the “Access Control List”.



**Note:**

The options on this screen do not directly affect rccmd. However, the results of a network scan may be transferred to the “Access Control List”.



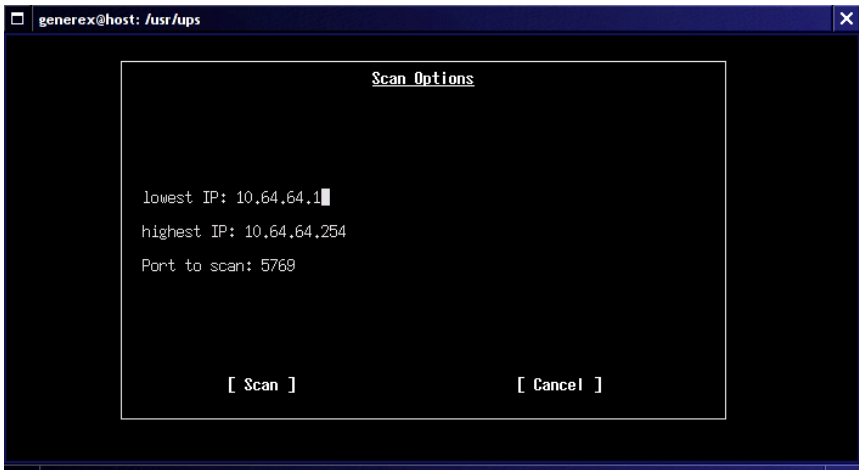


Figure 126 RCCMD UNIX Sender Scan

lowest/highest IP:

On startup rccmd\_conf tries to determine the hosts primary IP address. From this address a corresponding Class C network range is derived. These are the default boundaries for the network scan. If you want to scan another network or adjust the range, move to the desired entry (lowest and/or highest IP) using the [Tab] key and change the address as appropriate.

Port to Scan:

The port the scanner will try to connect to. The default is 5769, which is the default port of the Upsman/Upstcp server. If you have Upsman/Upstcp running on a different port you may want to switch this option accordingly.

To start the scan select [Scan] using the [Tab] key and press [Enter], otherwise select [Cancel].

### Configure “Check Upsman/Upstcp”:

The Rccmd listener has the ability to check periodically if the Upsman/Upstcp servers configured in “Access Control List” are alive.



**Note:**

The “Check Upsman/Upstcp” feature is only available if there are any addresses configured in the “Access Control List”.

If there are one or more entries in “Access Control List” the screen “Check Upsman Options” pops up.

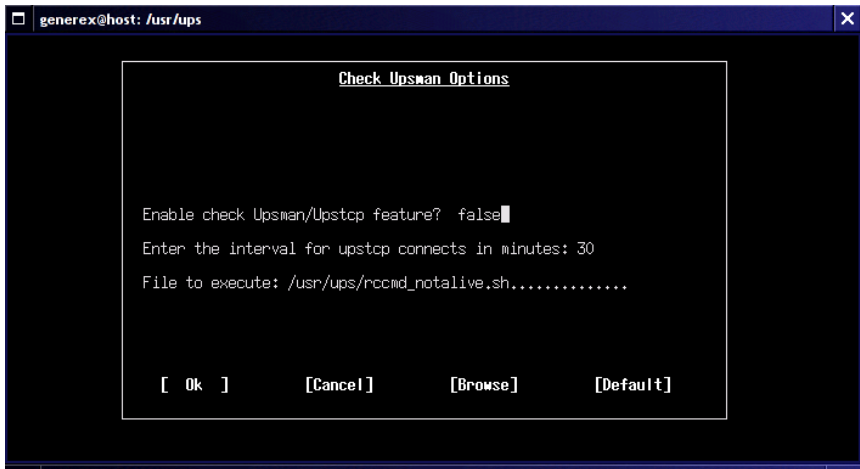


Figure 127 RCCMD UNIX Check Upsman

Use the [Tab] key to move through the option-fields and buttons.

Enable check Upsman/Upstcp feature: Possible values are “true” and “false”, “false” is the default. To change the value use the [↑] and [↓] keys.

Enter the interval for upstcp connects in minutes:

Interval to connect Upsman/Upstcp servers in minutes. Default is 30 minutes. To change overwrite the value in the options field.

File to execute:

This file will be executed if rccmd is not able to connect one (or more) of the configured Upsman/Upstcp servers, assuming that either the host is down or the Upsman/Upstcp process is not running. Default is '/usr/ups/rccmd\_notalive.sh'. You may change this value by overwriting the string in the options-field or by selecting a file in the file-browser. To invoke the file-browser hit the [Tab] key until the [Browse] button is highlighted, then press [Enter].

To reset all values to their defaults select the [Default] button by hitting the [Tab] key, then press [Enter].

To leave the Screen select either [Ok] or [Cancel] with the [Tab] key and press [Enter], [Ok] means accept all values as displayed on the screen, [Cancel] means discard all changes made to the screen and switch back to the previous state.

### Configure “Logfile Options”:

The rccmd listener is able to write and maintain a logfile. It will log events such as startup and shutdown of the program, accepted and denied network connections and executed commands. Some parameters may be configured on this screen.

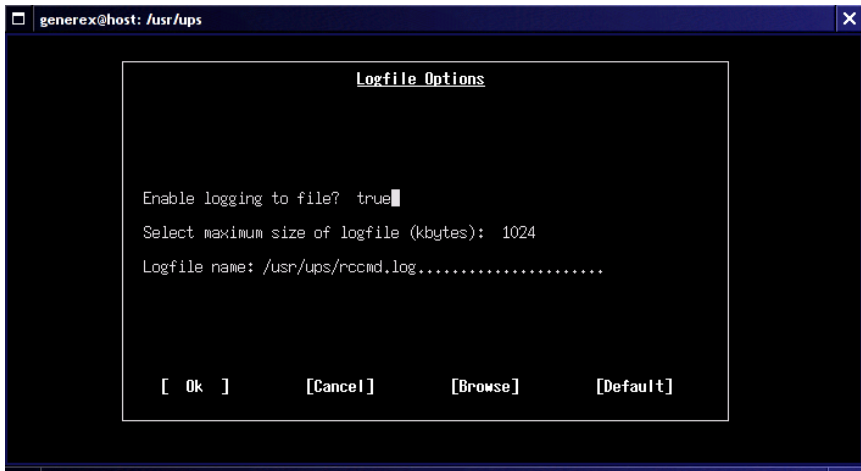


Figure 128 RCCMD UNIX Log File Options

- |                                  |   |
|----------------------------------|---|
| Enable logging to file:          | Possible values are “true” and “false”, “true” is the default. To change the value use the [↑] and [↓] keys.  |
| Select maximum size of log file: | The log file will not gain larger than this size. If the size of the log file would exceed this limit rccmd will automatically shrink it by 10% before it continues write to the log. The file will be shrinked from the start, so older entries will be removed first. The default size is 1024 Kb. To change the value use the [↑] and [↓] keys. The special value '0' means the file will not be shrinked. |
| Log file name:                   | This option specifies the name and location of the logfile. The default is “/usr/ups/rccmd.log”. You may change this value by overwriting the string in the options-field or by selecting a file in the file-browser. To invoke the file-browser hit the [Tab]  |

key until the [Browse] button is highlighted, then press [Enter].

To reset all values to their defaults select the [Default] button by hitting the [Tab] key, then press [Enter].

To leave the Screen select either [Ok] or [Cancel] with the [Tab] key and press [Enter], [Ok] means accept all values as displayed on the screen, [Cancel] means discard all changes made to the screen and switch back to the previous state.

### Configure “Shutdown Options”:



Figure 129 RCCMD UNIX Shutdown Options

File to execute:

This file will be executed if rccmd receives the “SHUTDOWN” command from the network. Default is /usr/ups/rccmd\_shutdown.sh. You may change this value by overwriting the string in the options-field or by selecting a file in the file-browser. To invoke the file-browser hit the [Tab] key until the [Browse] button is highlighted, then press [Enter].

To reset all values to their defaults select the [Default] button by hitting the [Tab] key, then press [Enter].

To leave the Screen select either [Ok] or [Cancel] with the [Tab] key and press [Enter], [Ok] means accept all values as displayed on the screen, [Cancel] means discard all changes made to the screen and switch back to the previous state.

### Exit rccmd\_conf:

In the main configuration menu "Rccmd Configuration" select either [Save] or [Exit] by hitting the [Tab] key until the desired button is highlighted and press [Enter]. [Save] means 'rccmd.cfg' will be written according to the actual values of the configuration screens, [Exit] will just exit the program, leaving 'rccmd.cfg' untouched.

### The File Browser:

Some of the screens above use a small build-in file browser like this:

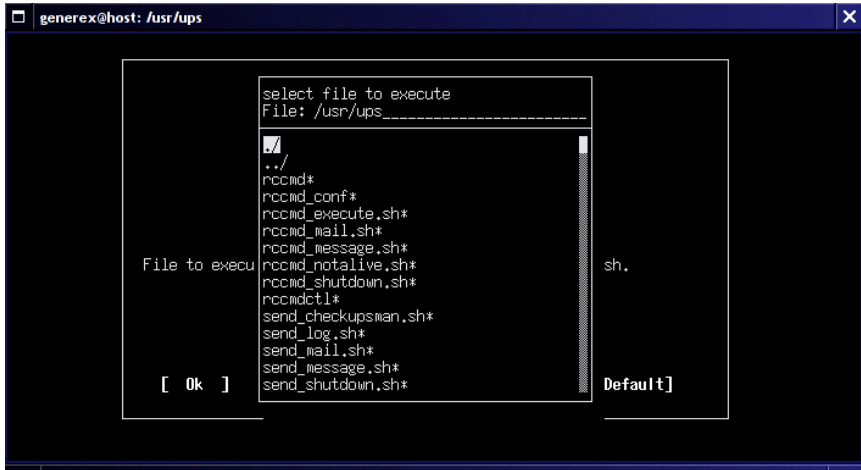


Figure 130 RCCMD UNIX File Browsing

The [↑] and [↓] keys may be used to move the list up and down. Pressing the [Enter] key will select the highlighted entry. If the selected entry is a directory the browser will move into this directory and list its contents. As usual the double dot '.' means the parent directory. File types are indicated similar to the output of 'ls -F'. This means a '\*' is appended for executables, '/' for directories, '@' for symbolic links and '=' for sockets.

### UNIX RCCMD multiple sender configuration (V1 – V2):

In case the user wants to utilise more than one sender address the rccmd.sh has to be modified like this:

```
#!/bin/sh
```

```
# You may specify a sender IP to accept signals from,
# default is everyone.
```

```
SENDER="-a 10.55.52.82 -a 10.55.52.83 -a 10.55.52.84"
```

```
# You may change the port to listen on,
# default is 6003.
```

```
PORT=
```

```
# You must define a command to be executed upon
# receiving signal.
SCRIPT=/usr/ups/doshutdown.sh
```

```
# test -z $SENDER || SENDER="-a $SENDER"
test -z $PORT || PORT="-p $PORT"
```

```
# to start:
./rccmd -l $SENDER $PORT $SCRIPT
```

### UNIX RCCMD multiple sender configuration (V3 and higher):

How to start several RCCMD sessions via different ports on UNIX?

Every RCCMD session needs an own TCP port, e. g.:

```
./rccmd -l -p 6003
./rccmd -l -p 6004
./rccmd -l -p 6005
```

Import into RC files:

Set an accordant amount of starting scripts and invoke them through the old ones:

- a) Create new starting scripts, copy 3 times the old script and rename them:

```
cp rccmdctl.sh rccmdctl-1.sh
cp rccmdctl.sh rccmdctl-2.sh
cp rccmdctl.sh rccmdctl-3.sh
```

- b) Adjust the new scripts through the variable "RCCMDPORT":

```
...
RCCMDPORT=6003
...
```

Adjust the old script, because it starts the new one, replace the start- and stop sector in the folder „rccmdctl“:

```
start)
/usr/ups/rccmdctl-1.sh start
/usr/ups/rccmdctl-2.sh start
/usr/ups/rccmdctl-3.sh start
;;

stop)
/usr/ups/rccmdctl-1.sh stop
/usr/ups/rccmdctl-2.sh stop
/usr/ups/rccmdctl-3.sh stop
;;
```

Attention:

Do not edit the scripts with a Windows editor, because the different word wrap of Windows/Unix would destroy them!

## 4. RCCMD on VMware

VMware is manufacturer for virtualization solutions and sales different constructions of those products. RCCMD is able to shut down the virtual guest systems AND the VMware physical host systems. We describe the specific features into the following chapters.

vCenter Server (\$) (license manager)	Server	ESX (\$) <a href="#">RCCMD for VMWare ESX 3.x-4.x Server</a> (vMotion, DRS, HA, Storage vMotion)	Guest OS Guest OS Guest OS...
	Hardware	ESXi (freeware) <a href="#">not supported by RCCMD</a> (ESXi freeware is managed by the Virtual Infrastructure (or vSphere) Client) <a href="#">not supported by RCCMD</a> ESXi (\$) <a href="#">RCCMD for VMWare ESXi 4.x</a> (vMotion, DRS, HA, Storage vMotion)	Guest OS Guest OS Guest OS...
Workstation Hardware	Windows or Linux OS <a href="#">RCCMD Linux</a> <a href="#">Windows</a>	VMWare Server (freeware)	Guest OS Guest OS Guest OS...
		User Session	VMWare Workstation (\$) VMWare Player (freeware) vSphere Client for managing ESX(i) hosts (freeware)

Figure 131 VMware Products

RCCMD is able to shut down the products ESX (\$) and ESXi (\$).

The RCCMD software supports the VMware ESX and VMware ESXi. The VMware ESX is liable to pay costs always and contains an integrated Linux desktop. VMware ESXi is available for free too and is an operating system, which is embedded in another system with web-interface. We describe the respective differences in the usage of RCCMD into the following chapters.

### 4.1 RCCMD on VMware ESX

The RCCMD Software for VMware ESX Server is a Linux based TCP client for receiving shutdown calls from UPSMAN software (any vendor), CS121 (any vendor) or other RCCMD licensed applications like SNMP adapters etc. from other vendors.

RCCMD for ESX Server runs on GNU Linux 2.6.18 or higher, which is the basis of the 2008 ESX 3.5.x Serverplatform.

For installing RCCMD please refer to chapter 4. RCCMD for UNIX, following we describe some special aspects which are only applicable to ESX Server.

#### Installation:

Since the ESX Server does not offer any graphical interface, the download of RCCMD client for ESX Server from the GENEREX Website or other sites is not easy – unless you have extra tools installed like commandline browsers like Wget.

Additionally, by default, there is no FTP server active on ESX Server, so a transfer of a downloaded RCCMD package may be blocked. For this reason we recommend to use a local interface on your ESX Server like CD ROM Driver or USB stick.

- Download RCCMD for ESX Server from the GENEREX Website – using your original RCCMD licensekey (not older than 2 years !) and extract the TAR file. Copy the files on a CD-R and insert this CD now into your ESX Server CD drive. Alternatively use UPSMAN CD ROM Version 5.48 or higher.
- Login as root and mount the CD ROM on the VMware ESX Server:  
Enter: “mount /dev/cdrom ”
- Change to the CD ROM by : “cd /mnt/cdrom” – by “ls” you can see the files on the CD, change now to the folder DRIVERS/PreviousVersions/UNIX-ALL (UPSMAN CD ROM) until you find the installationprogramm “install”.
- Start now the installation by entering : “./install” and follow the instructions on the screen – from here the installation is identical to any other RCCMD installation for UNIX.
- After the installation is finished, a new process will be running on your VMware ESX Server : “./rccmd -l” which means the system is ready now.  
**ATTENTION:** ESX Server has per default a firewall active, which does not allow to send from remote RCCMD signals.



**Attention:**

The VMware ESX server got an active firewall by default, which denies the RCCMD signals

**Firewall Configuration :**

The following firewall configuration of the VMware ESX Server is required to receive RCCMD signals:

```
esxcfg-firewall -o 6003,tcp,in,RCCMD
```

Restart the firewall service to apply your settings:

```
service firewall restart
```

RCCMD is now listening (client mode) and will start the file “shutdown.sh” on your VMware ESX Server, when any CS121 or UPSMAN transmit a RCCMD shutdown call. This file shutdown.sh makes an “init0” shutdown on your VMware ESX Server, edit this file, if you want to use a different shutdown procedure.



**Advice:**

We recommend to install RCCMD on the virtual guest systems too and to shut them down PRIOR of the shutdown of the



physical host. Therefore the secure shutdown of the guest systems is assured and avoids the lost of their data.

## 4.2 RCCMD on VMware ESXi 4.x – 5.x

The RCCMD Software for VMware ESXi Server is a Linux based TCP client for receiving shutdown calls from UPSMAN software (any vendor), CS121 (any vendor) or other RCCMD licensed applications like SNMP adapters etc. from other vendors.

The following requirements are needed for the installation and configuration of RCCMD on VMware ESXi:

1. A VMware vSphere is on a Windows workstation at present.
2. A installed and configured vMA is on an ESXi server at present. You can download the vMA from VMware. Please take a look into the VMware documentation, e. g. for the vMA 4 on page 13:

[http://www.vmware.com/support/developer/vima/vma41/doc/vma\\_41\\_guide.pdf](http://www.vmware.com/support/developer/vima/vma41/doc/vma_41_guide.pdf).

3. For the transfer of the RCCMD package, a SCP/SFTP client (like Filizilla or WINSFTP) is required. In addition a terminal tool (e. g. Putty) is needed, to open a command line on the vMA. Both tools are common tools of an ESXi server or any other UNIX system and will not be described in this user manual.
4. Amount of RCCMD VMware client licenses (min. One license).

**vSphere client:** This is a graphical administration tool for ESXi server. We suppose, that you already have installed a vSphere client and will not describe its installation and control.

**vMA:** The VMware ESXi server provides the vSphere Management Assistant (vMA) 4.x or 5.x as interface for external applications, in which RCCMD is running. That means, the RCCMD client on the vMA receives a CS121 shutdown and will forward the shutdown command to the ESXi server. The vMA provides a management interface for the script based control of the ESXi server. RCCMD will be installed on the vMA. The RCCMD installer detects automatically, that the installation is executed on a VMware application and will install adjusted scripts for the shutdown.



**Attention:**

The OEM versions of the VMware, which got another behavior than the original version, will not be supported!



**Attention:**

RCCMD does not support ESXi 4.x/5.x with free license!

```

=====
What is your ESXi Host called?
=====
Enter Name of managed ESXi Hosts
Name or IP-Address (DEFAULT: ): 192.168.200.34

=====
Installing...
=====

[===== | ===== | =====]
[----- | ----- | -----]

=====
ERROR: ESXi Host unsupported
=====

ESXi Host appears to run with free license.
RCCMD does not support ESXi server with free license.

PRESS <ENTER> TO CONTINUE: █

```

Figure 132 ESXi License-Error

### 4.2.1 The ESXi configuration via vMA and vSphere

RCCMD will be installed on the vMA. The shutdown will be defined at the accordant ESXi host. RCCMD will send a shutdown command from the vMA to the ESXi host. The following figure shows the RCCMD client on the vMA, from where the shutdown to the ESXi hosts will be initiated.

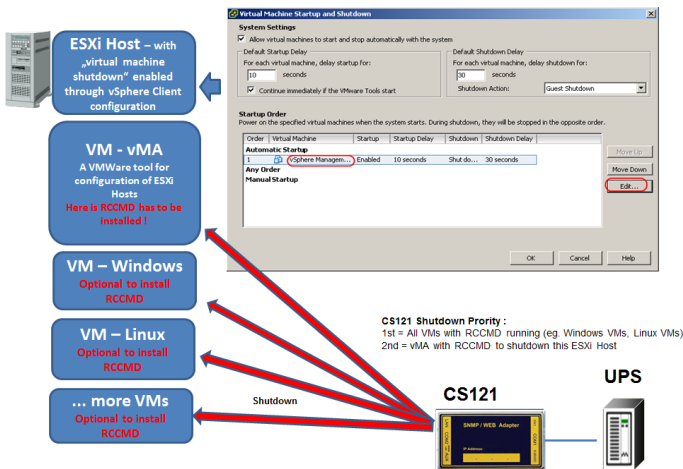


Figure 133 A RCCMD shutdown will be send to the optional RCCMD clients on the virtual machines, than to the ESXi host

The vSphere client provides the possibility, that every host can be configured, that the virtual machines will be shutdown prior of the shutdown of the physical host. To use this function, it is required to install the VMware tools on the virtual machines.

#### 4.2.2 Shutdown configuration of virtual machines on the ESXi host

Select into the vSphere Client your host (1), click at "configuration" (2) and tag "VMware starting/shutdown" (3). Now click the vMA button (4) and then "Properties" (5).

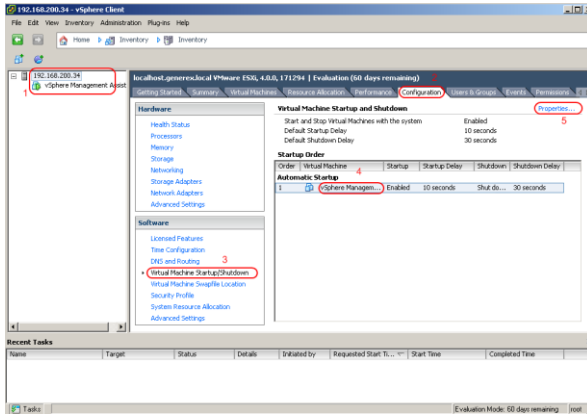


Figure 134 vSphere Client Configuration

Select into the properties dialog the vMA and set its values to 10 seconds start delay and 30 seconds shutdown delay.

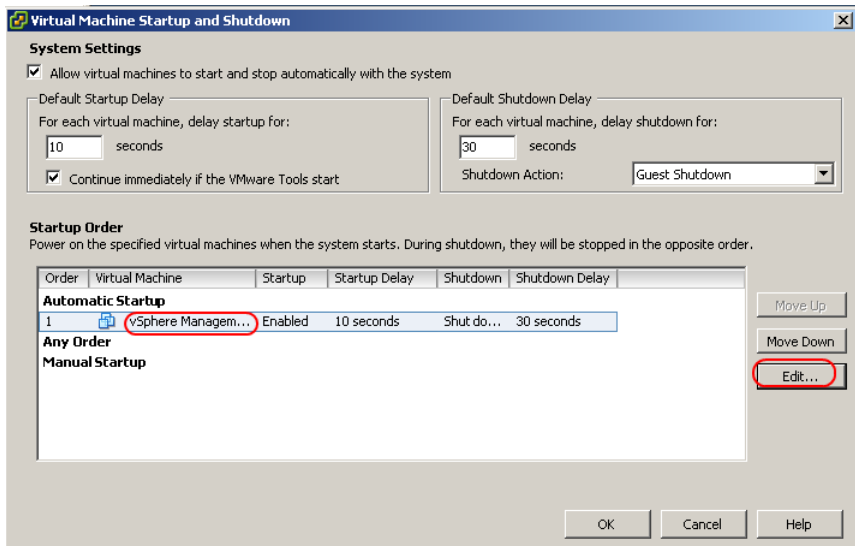


Figure 135 vSphere Client Auto-Start Configuration

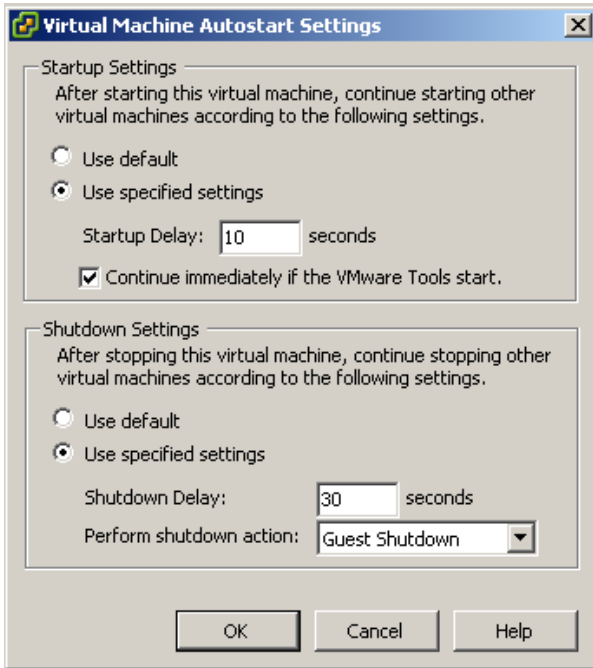


Figure 136 vSphere Client Auto-Start Delay

The vSphere client provides the following settings:

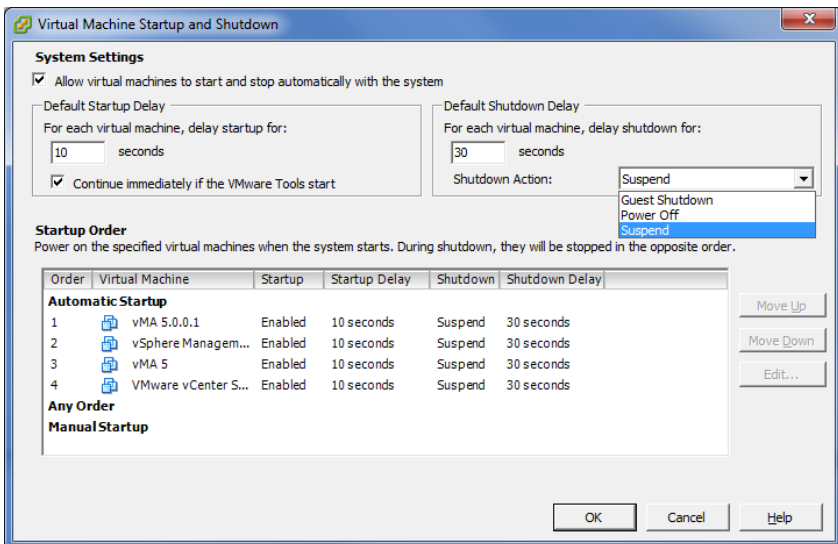


Figure 137 vSphere Client – Startup and Shutdown

Power Off: Switch off without shutdown

Guest Shutdown: Shutdown of the OS only, if the VMware tools are installed

Suspend: Hibernating or sleep mode, the virtual machines will be stopped



**Attention:**

The shutdown via the VMware tools do not assure, that the shut downed guest systems will start without losing data. To avoid this risk, you can use RCCMD on the virtual machines too. The RCCMD shutdown will be executed prior of the shutdown of the physical host. We recommend to use it, if you are using data bases.

The further times of delay for the guest systems/VMWares, who should be shut down via the host, can differ and should be arranged individually. Therefore the duration of the shutdown will increase accordingly.

The shutdown function of the guest systems/virtual machines will be transferred to the ESXi host. Some virtual machines are addicted from each other, so that it is required, to shut them down in a special order. This order and the desired actions (shutdown of the guest systems) have to be configured from the Administrator on the ESXi host. RCCMD sends the shutdown signal to the host, which will execute the defined actions.

### 4.2.3 RCCMD Installation

Download the RCCMD tar file from the website of your UPS manufacturer or [www.generex.de](http://www.generex.de) by using a RCCMD license. Copy the file RCCMDinst.tar via the SCP client (SFTP) onto the vMA. You can use a freeware SFTP client like Filezilla.

- Log on the vMA, e. g. with a terminal tool like Putty
- Create a temporary folder with « mkdir » (e. g. RCCMD) and copy the tar file into this new folder
- Extract the tar file as follows: `tar -xvf RCCMDinst.tar`

The following data occur after the extraction :

```
[root@vMA41 ~]# cd /home/vi-admin/
[root@vMA41 ~]# mv RCCMD/ tmp
[root@vMA41 ~]# ls
rccmdinst.tar tmp
[root@vMA41 ~]# mkdir RCCMD
[root@vMA41 ~]# mv rccmdinst.tar RCCMD/
[root@vMA41 ~]# cd RCCMD/
[root@vMA41 RCCMD]# tar -xvf rccmdinst.tar
gpg-pub.txt
installer.info
installer.properties
installRCCMD.bin
installRCCMD.bin.asc
installRCCMD.bin.md5
versionOEM12.xml
[root@vMA41 RCCMD]# ls
gpg-pub.txt      installer.properties  installRCCMD.bin.asc  rccmdinst.tar
installer.info  installRCCMD.bin     installRCCMD.bin.md5  versionOEM12.xml
[root@vMA41 RCCMD]#
```

Figure 138 Preparation of the installation

You should be logged in as root.

Start the installation with the call: `./installRCCMD.bin`

Or as vi-admin: `sudo ./installRCCMD.bin`

```
[root@vMA41 ~]# ls
RCCMD
[root@vMA41 ~]# cd RCCMD/
[root@vMA41 RCCMD]# ./installRCCMD.bin
```

Figure 139 Execution of the binary file and start of the installation

Select the language and press the “enter” key.

```
RCCMD (created with InstallAnywhere)
-----
Preparing CONSOLE Mode Installation...

=====
Introduction
-----
InstallAnywhere will guide you through the installation of RCCMD-Client.

It is strongly recommended that you quit all programs before continuing with
this installation.

Respond to each prompt to proceed to the next step in the installation. If you
want to change something on a previous step, type 'back'.

You may cancel this installation at any time by typing 'quit'.

PRESS <ENTER> TO CONTINUE:

=====
SysOS & Platform
-----
OS & CPU architecture: x86_64 x86_64 GNU/Linux

Recognized VMware ESXi environment.

PRESS <ENTER> TO CONTINUE: █
```

Figure 140 Introduction, OS recognition

Enter the RCCMD license key, the hostname or rather the IP address of the ESXi host, the root password and note the license agreement.

```
-----
Enter your license key
-----
Enter your license key
Usually the license key is located on the installation booklet, or on a label
on the reverse side of the CD sleeve.
Enter license key: █
```

Figure 141 RCCMD License Key

Select the desired product features.

```
-----
Choose Product Features
-----
ENTER A COMMA SEPARATED LIST OF NUMBERS REPRESENTING THE FEATURES YOU WOULD
LIKE TO SELECT, OR DESELECT. TO VIEW A FEATURE'S DESCRIPTION, ENTER
'?<NUMBER>'. PRESS <RETURN> WHEN YOU ARE DONE:

1- [X] RCCMD
2- [X] WebIf
3- [X] XMessage

Please choose the Features to be installed by this installer: █
```

Figure 142 RCCMD Product Feature Selection

### 4.2.3.1 RCCMD Installation without vCenter

Select option 2, if you do not use a vCenter.

```
=====
Is a vCenter available for use?
-----

If a vCenter is available, the credentials will be required. The vSpherePlugin
will be registered for use in the vSphere Client for Windows. RCCMD will then
be configured via that interface.

->1- Yes
   2- No

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT:: 2

=====

What is your ESXi Host called?
-----

Enter Name of one managed ESXi Host.
Additional Hosts may be configured in the Web interface after installation.

Name or IP-Address (Default: ): 192.168.200.30

=====

ESXi User details
-----

Provide user details for an account on Host qualified to shutdown the Host
(e.g. root)

username (Default: root):
```

Figure 143 RCCMD vCenter Selection, ESXi Access Data

Enter the shutdown duration for the virtual machines and the name of the vMA.

```
=====

What is the Shutdown Duration?
-----

Enter the amount of seconds required for the VMs on the Host to shut down.

Shutdown Duration (Default: 90):

=====

What is this vm's name?
-----

Enter the name of this vm as it is shown in vSphere Client.

vMA name (Default: ): vMA55_ES
```

Figure 144 RCCMD Shutdown Duration, vMA Name

### 4.2.3.2 RCCMD Installation with vCenter

Select option 1 and enter the vCenter access data.



```
=====
Is a vCenter available for use?
=====

If a vCenter is available, the credentials will be required. The vSpherePlugin
will be registered for use in the vSphere Client for Windows. RCCMD will then
be configured via that interface.

->1- Yes
   2- No

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT::

=====
What is your vCenter called?
=====

Enter Name or IP of the machine on which vCenter is running.

Name or IP-Address (Default: ): 192.168.200.104

User Name (Default: root):

=====
Enter Password for root
=====

Enter Password for root.

Please Enter the Password:
```

Figure 145 RCCMD vCenter Access Data



**Note:**

The vMA and the ESXi server will be shut downed at the same time. This behaviour is not critical for a RCCMD vMA. If vMotion is active on the vCenter server, the vMA will be moved on another ESXi server automatically (the IP address and the functionality will be kept).

Note the pre-installation summary.

```
=====
Pre-Installation Summary
=====

Please Review the Following Before Continuing:

Product Name:
  RCCMD

Install Folder:
  /usr/rccmd

Product Features:
  RCCMD,
  WebIf,
  XMessage

Disk Space Information (for Installation Target):
  Required: 121,388,311 Bytes
  Available: 506,830,848 Bytes

PRESS <ENTER> TO CONTINUE: █
```

Figure 146 Pre-Installation Summary

Set the WebIf port and enter a password for the RCCMD web-interface.

```
=====
Set WebIf Protocol
-----

This is the default protocol to access the RCCMD WebIf.
Select your preferred protocol here:

->1- https
   2- http

ENTER THE NUMBER FOR YOUR CHOICE, OR PRESS <ENTER> TO ACCEPT THE DEFAULT::

=====

Set WebIf Port
-----

The default port appears to be free.
Select these default values to connect to RCCMD WebIf, or choose new ones:

Port: (Default: 8443):

=====

Enter Password
-----

Set a password for RCCMD Web Interface. If no password is set, the default
password "cs121-snmp" will be used!

Please Enter the Password: █
```

Figure 147 RCCMD WebIf Protocol, Password

Note that a RCCMD configuration is required.

```
=====
RCCMD configuration necessary
-----

Use the RCCMD Plugin in vSphere Client for Windows or RCCMD web interface
directly at "https://192.168.200.103:8443" to complete RCCMD configuration and
start RCCMD service.

RCCMD is not configured correctly yet and does not provide any safety yet!

PRESS <ENTER> TO CONTINUE:

=====

Start RCCMD now?
-----

It is recommended to start RCCMD from WebIf after all necessary configuration.
If you want to start it manually, use "/usr/rccmd/rccmdctl start"

Do you want to start RCCMD now?

->1- Yes
   2- No

ENTER THE NUMBER OF THE DESIRED CHOICE, OR PRESS <ENTER> TO ACCEPT THE
DEFAULT: █
```

Figure 148 Configuration Advice, RCCMD Start

```
=====
Installation Complete
=====
Congratulations. RCCMD-Client has been successfully installed to:

    /usr/rccmd

PRESS <ENTER> TO EXIT THE INSTALLER: █
```

Figure 149 Conclusion

During the installation RCCMD will check the compatibility of the ESXi host. If the user details are incorrect, you will get the following warning at the end of the installation.

```
=====
Warning: License check of ESXi Host returned a problem
=====

Checking the compatibility of the ESXi host with RCCMD came up with the
following error message:
Error: Cannot complete login due to an incorrect user name or password.

This is just a warning. RCCMD will continue normal installation.
If applicable, please fix Problem and verify normal operation of RCCMD.

PRESS <ENTER> TO CONTINUE: █
```

Figure 150 Warning: License Check

### Automatic firewall configuration



**Attention:**

Not required for VMware ESXi 5, because this version will be delivered without firewall.

RCCMD is using the port 6003 (TCP and UDP) for incoming IP packages. At the usage of the “Check Alive” function, the port 5769 will be automatically enabled during installation too. The installer will open these ports automatically on the vMA 4.x.

```
=====
Firewall opened
=====

Port 6003 was opened for tcp and udp protocols.
Port 5769 was opened for tcp protocol.

PRESS <ENTER> TO CONTINUE:
```

Figure 151 Installer announces firewall ports opened

Note the firewall exceptions.

```
=====
Firewall Exceptions
=====

Firewall Exceptions (Iptables only) will be added for:
Ports 8443 & 8080 (WebIf Server)
Ports 6003 & 5769 (RCCMD)

PRESS <ENTER> TO CONTINUE: █
```

Figure 152 Firewall Exceptions

## 4.2.4 RCCMD WebInterface (from Version 4.2.0.0)

RCCMD provides its own web-interface from version 4.2.0.0 or higher. Therefore it is possible to configure and control RCCMD remotely. Please note, that the firewall port 8443 TCP must be enabled. Enter the following into your web-browser, to get remote access to the vMA, where RCCMD is running:

https://IP address of the vMA:8443

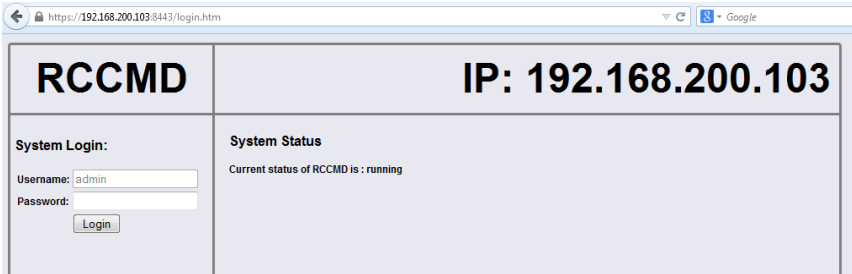


Figure 153 RCCMD WebInterface

You can enter the IP addresses of the allowed RCCMD senders (CS121/UPSMAN) into the **“Connections”** menu. Click the **“Insert Sender”** button to enter the IP address of the 1<sup>st</sup> sender. Click the **“Remove Sender”** button, if you want to remove the already entered IP address. Click the **“Edit Sender”** button, if you want to edit the entered IP address.



**Attention:**

**If you do not enter an address, then every server has the permission to send a shutdown command.**

You can define under **“Protocol”**, if RCCMD should use SSL certificates. Enable the **“Reject expired SSL certificates”**, if you want to reject connections with expired certificates. Please take a look into chapter 6.6.1 for further information about RCCMD with SSL.

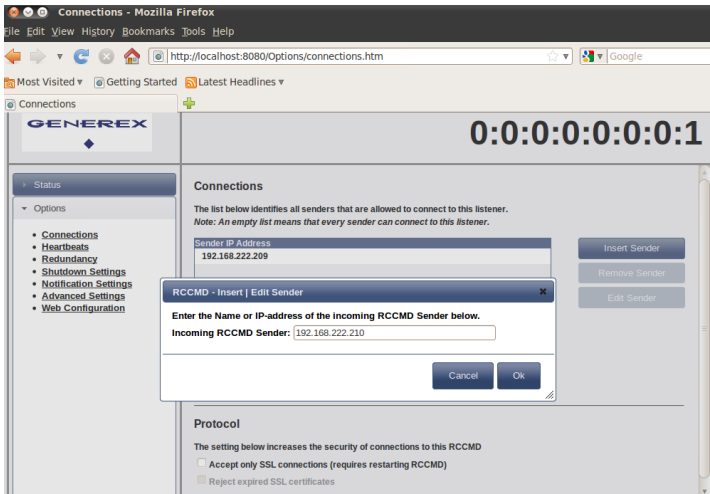


Figure 154 RCCMD WebInterface – Connections

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the “UPSMAN Alive Check” feature into the menu “**Heartbeats**”. This check is a signal, that will be send to the CS121/UPSMAN via port 5769, if the UPSMAN service still got UPS data. If not, the script file “alive.bat” will be executed, which will trigger an accordant pop-up message.

The feature “by the use of CS121/UPSMAN Traps” provides UPSMAN/RCCMD/UNMS messages, which will display the UPS status as message. If enabled, this feature will trigger a message, if the UPS status of the UPSMAN/RCCMD servers has changed.

The feature “by polling CS121/UPSMAN every x seconds” provides the pure signal polling without receiving UPS data or rather messages.

The polling rate (default 1800 seconds) defines the polling of the UPSMAN service, connection retries (default 100) means after 100 unsuccessful connection tries an alarm will be triggered.

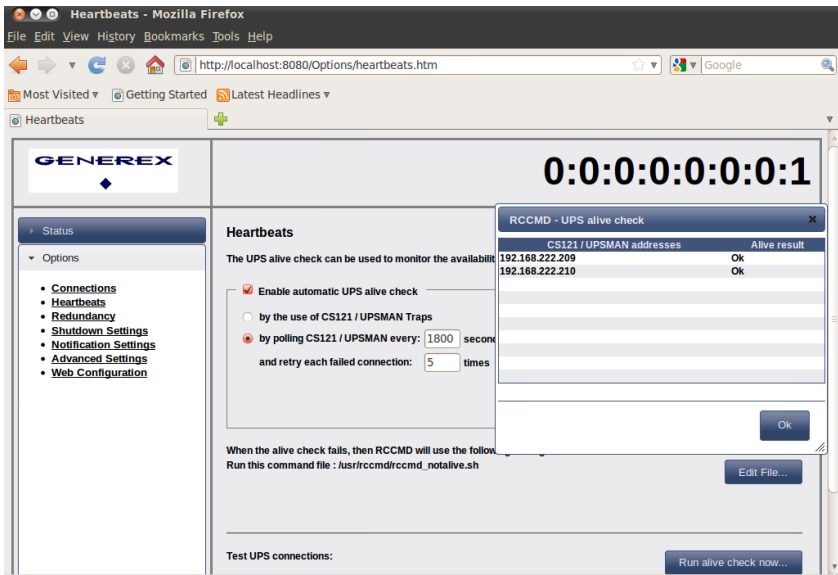


Figure 155 RCCMD WebInterface – Heartbeats

You can test the UPS connection, if you click the “Run alive check now...” button (the port 5769 will be tested).

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the redundancy management feature into the menu “**Redundancy**”. The redundancy level defines the number of redundant senders in the redundancy group. This means, that level 1+ senders must have sent a shutdown signal before this RCCMD starts its shutdown sequence.

When redundancy suppresses a shutdown, then RCCMD will trigger the “suppressed.bat”. You can edit this file, if you click the “Edit file...” button.

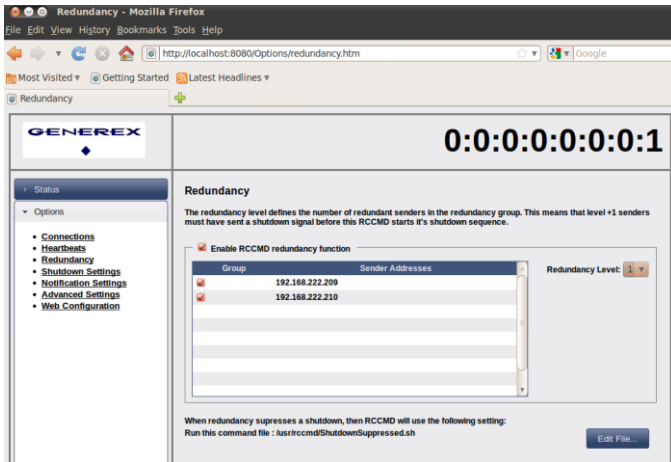


Figure 156 RCCMD WebInterface – Redundancy

Please note, that it is required to configure a reset of the redundancy alarm on the sender (CS121/UPSMAN). You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

Please take a look into chapter 6.1 for further information about RCCMD with redundancy.

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change or rather extend the shutdown sequence into the “Shutdown Settings” menu. The shutdown.bat will be executed by default:

```
rem created by setup
```

```
@echo off
```

```
set path=%path%;C:\Program Files\RCCMD
```

```
ExitWin.exe shutdown force
```

```
@cls
```

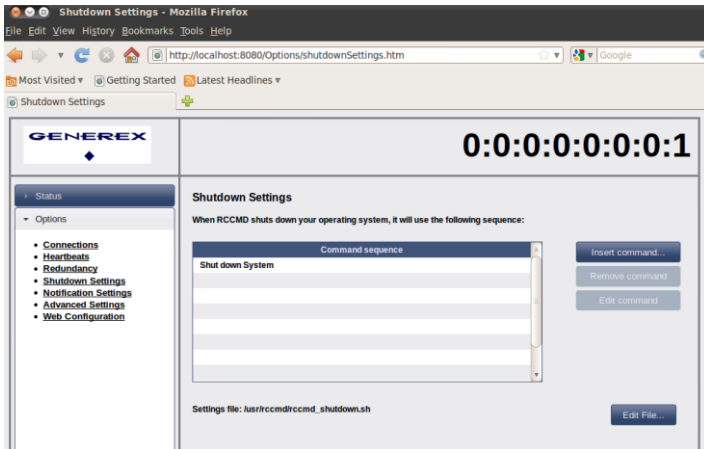


Figure 157 RCCMD WebInterface – Shutdown Settings

You can change or rather extend the default bat files for E-Mail, Message and Execute, if you click the “Edit File...” button.

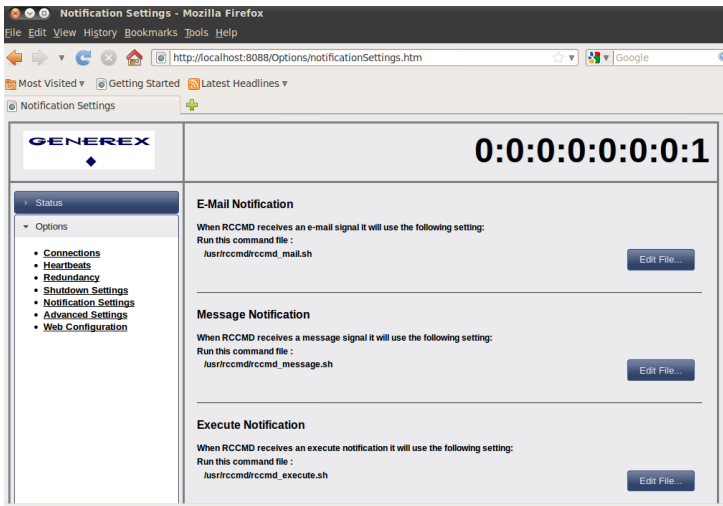


Figure 158 RCCMD WebInterface – Notification Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.



**Advice:**

We recommend not to change the command sequence for the shutdown of a vMA! The features „Insert command...” and „Edit File...” just make sense at other OS.



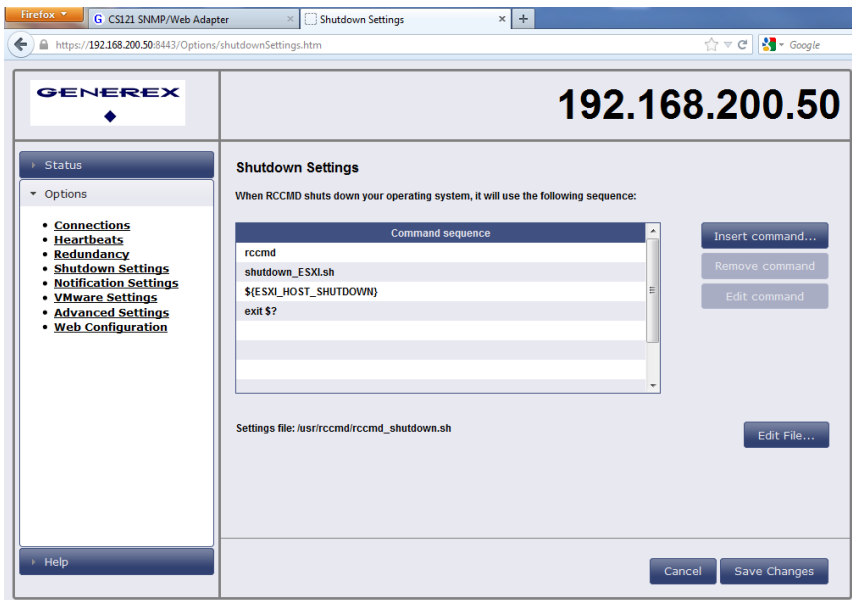


Figure 159 RCCMD WebInterface – Remote Access – vMA Shutdown Settings

The VMware Settings menu appears only, if you install the RCCMD webinterface on a vMA, this menu shows the parameters, which you entered during installation:

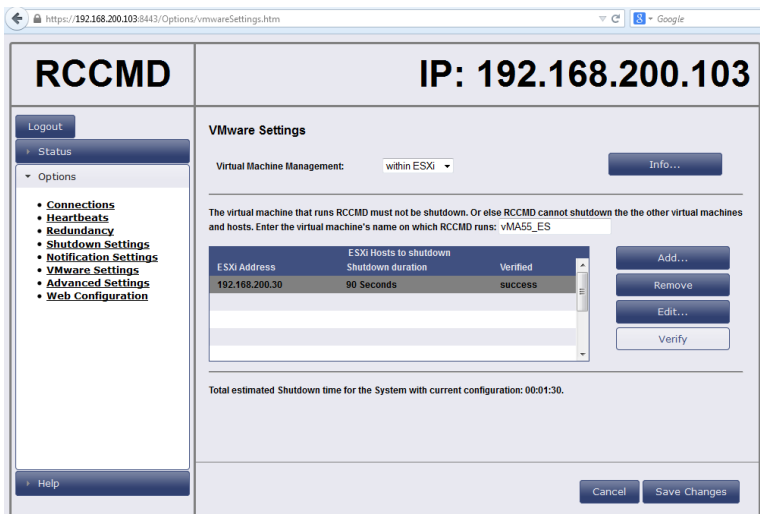


Figure 160 RCCMD WebInterface – Remote Access – VMware Settings

Select “**Virtual Machine Management: within ESXi**” to let the ESXi handle the virtual machines at shutdown time.

You can verify the access data and the connection to the ESXi host via the “Verify” button.



**Attention:**

Please note, that the name of the vMA in the RCCMD menu “VMware Settings” has to be identical with the name of the vMA in the vSphere Client or rather vCenter!

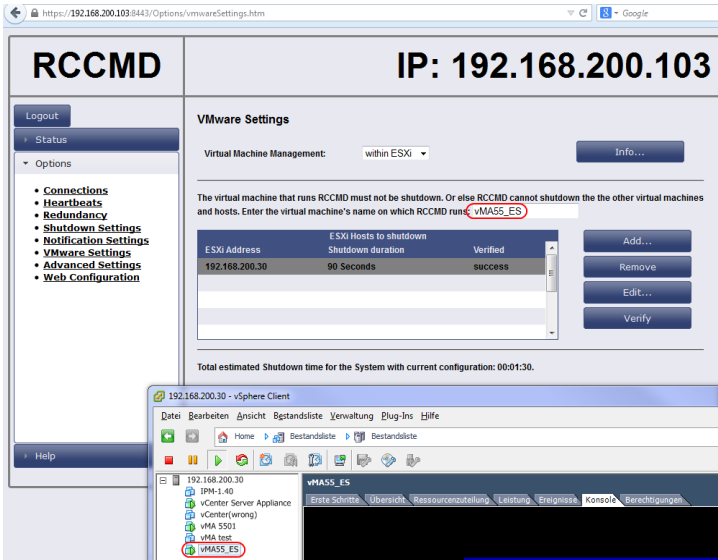


Figure 161 RCCMD WebInterface – VMware Settings – vMA Name

If you want to add a physical host, just click the “Add Host” button and enter the accordant parameters.

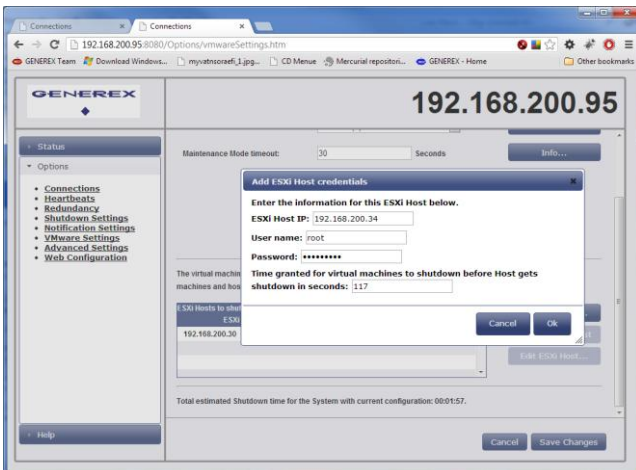


Figure 162 RCCMD WebInterface – Add Host

## 4.2.4.1 RCCMD WebInterface with vCenter

After the successful installation with vCenter, it is required, to enter the access data of the “red” ESXi hosts via the “Edit” button and to verify them via the “Verify” button.

The screenshot displays the RCCMD web interface for IP: 192.168.200.103. The interface is divided into a left sidebar and a main content area. The sidebar contains a 'Logout' button and a menu with 'Status' and 'Options'. The 'Options' menu is expanded, showing a list of settings: Connections, Heartbeats, Redundancy, Shutdown Settings, Notification Settings, VMware Settings, Advanced Settings, and Web Configuration. The main content area is titled 'Virtual Machine behaviour:' and shows a dropdown menu set to 'Put Host(s) into Maintenance Mode'. Below this, the 'Maintenance Mode timeout:' is set to 30 seconds. A section titled 'To enable Maintenance Mode enter the vCenter Server credentials:' contains a form with fields for 'Host name or IP:' (192.168.200.104), 'User name:' (root), and 'Password:' (masked with dots). A 'Check Values' button is located below the form. Below the form, a text box states: 'The virtual machine that runs RCCMD must not be shutdown. Or else RCCMD cannot shutdown the other virtual machines and hosts. Enter the virtual machine's name on which RCCMD runs:'. Below this text box is a table with the following data:

ESXi Address	ESXi Hosts to shutdown	Shutdown duration	Verified
192.168.200.30		900 Seconds	

The 'Edit' button for the first row is highlighted with a red circle. At the bottom of the interface, there are 'Cancel' and 'Save Changes' buttons.

Figure 163 RCCMD WebInterface – VMware Settings, Edit Host

Select “**Virtual Machine Management: by RCCMD**”, if the hosts are managed by a vCenter Server. RCCMD must be configured to manage virtual machine handling in case of a shutdown.

The selection of “**Virtual Machine Behaviour: Shutdown Virtual Machines**” is the safe choice. In this case RCCMD sends a shutdown signal via VMware Tools to the running virtual machines on each host. The order in which the virtual machines are shut down is not configurable.

The selection of “**Virtual Machines Behaviour: Put Host(s) into Maintenance Mode**” can attempt to send a host into maintenance mode, thereby triggering vMotion for the virtual machines. Select this option only, if DRS (Distributed Resources Scheduler) is configured to be in fully automated mode and vMotion has been successfully tested for every virtual machine! If maintenance mode fails, then the remaining hosts will proceed with the “Shutdown Virtual Machines Behaviour”. To calculate how much backup time remain, when initiating this RCCMD command, the values for the longest “Shutdown Duration” of the hosts and maintenance mode timeout must be added.

Enter the period of time after which to abort trying to reach **Maintenance Mode**. If Maintenance Mode is not reached after this time, then the remaining hosts will proceed

with the „Shutdown Virtual Machines“ behaviour. This is the last resort to shutdown the hosts and virtual machines gracefully.

Click the “Save Changes” button prior of the leaving of this site to save your changes and restart RCCMD.

You can define the maximum size of the event logfile into the menu “**Advanced Settings**”, where the overwriting of older entries will start, the RCCMD bindings for the IP address, the RCCMD listener TCP port and the RCCMD Tray Message Port, which will be used for the RCCMD messages. In addition you can disable the “Start Jobs as interactive user” feature, that means, if disabled, that RCCMD will execute jobs, if nobody is logged in on the system.

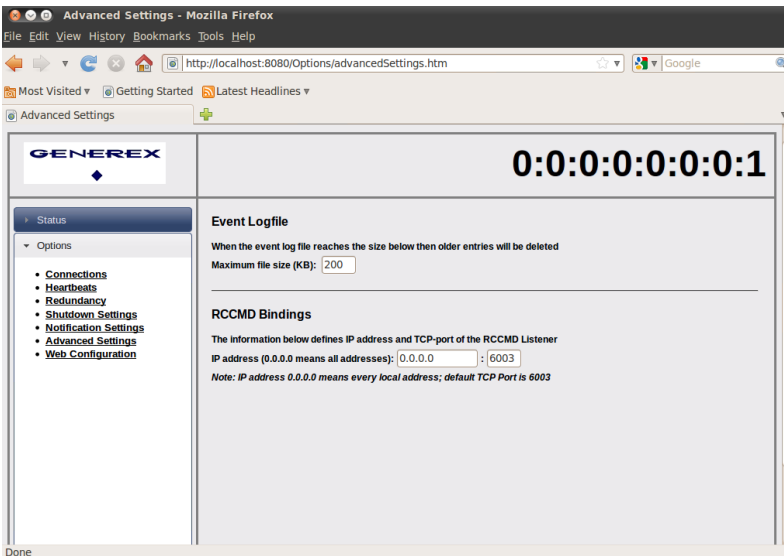


Figure 164 RCCMD WebInterface – Advanced Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change the default password for the user “admin” into the menu “**Web Configuration**”. In addition you can disable the HTTPS protocol, if you just want to use the HTTP protocol. The RCCMD version 4.2.3.0 or higher provides the feature of changing the default ports for HTTP and HTTPS.

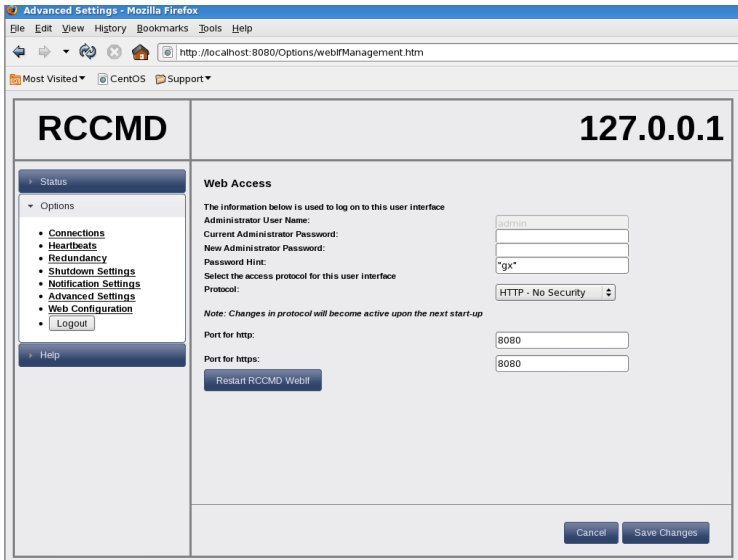


Figure 165 RCCMD WebInterface – Web Access

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can see the logging of the events into the menu “**Status, Event Log**”.

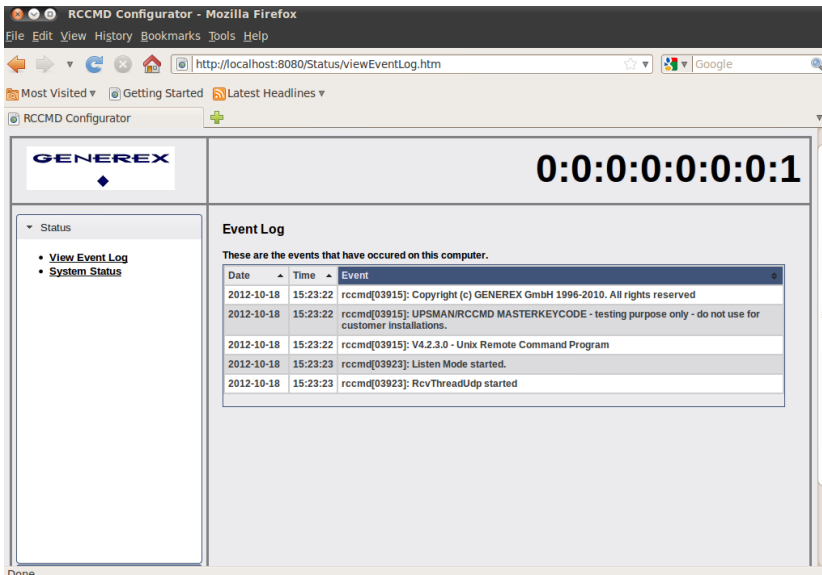


Figure 166 RCCMD WebInterface – Event Log

You can check the current status of RCCMD into the menu “**Status, System Status**”, update the status and restart or rather stop/start the RCCMD service.

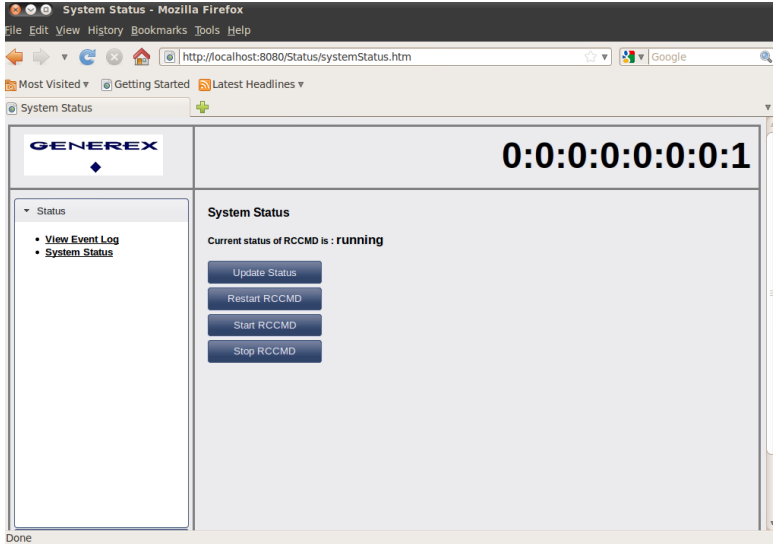


Figure 167 RCCMD WebInterface – System Status

You can open the RCCMD user manual into the menu “**Help**” and you can follow the link to [www.generex.de](http://www.generex.de).

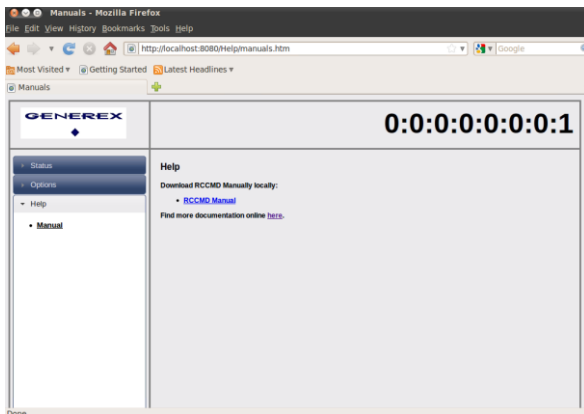


Figure 168 RCCMD WebInterface – Help



**Attention:**

Please note, that it is required, to start the vMA manually after a shutdown!

## 4.2.5 Alternative Configuration via Editor

You can edit the „rccmd.cfg“ file (default /usr/rccmd) as follows:

```
#####  
# RCCMD Configuration (v3-default)  
#####  
  
#  
# Bind on Interface  
# Defines on which interface we listen for incoming commands  
# Default: 0.0.0.0 (All possible interfaces on this host)  
ListenAddress=0.0.0.0  
#  
# Listen on Port  
# Defines on which interface port we listen for incoming commands.  
# Default: 6003  
ListenPort=6003  
#  
# Enable UDP  
# Defines if we should listen for rccmd (UDP) broadcasts  
# Default: true  
ListenUDP=true  
#  
# Access Control List  
# A list of valid sender addresses, only its members can connect to us.  
# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".  
# Default: <empty> (Everyone is allowed to connect to us)  
AllowedAddresses=  
#####  
# Alive Check  
#  
# Enable Alive Check  
# Defines if we should perform UPSMan alive checking.  
# Default: false  
AliveEnabled=false  
#  
# Alive Check Rate  
# Defines the interval of UPSMan alive checking, in seconds.  
# Default: 1800  
AliveInterval=1800  
#  
# Alive Retry Rate  
# Defines the number of UPSMan alive checking retries, in case of problems.  
# Default: 0  
AliveRetries=5  
#  
# Alive Check Group Members List  
# A list of UPS device addresses that should be checked periodically.  
# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".  
# Default: <empty> (No alive checking)  
AliveAddresses=  
#  
# Alive Program  
# Full path to script that is executed when an alive check fails.  
# Default: rccmd_notalive.sh  
AliveProg=/usr/rccmd/rccmd_notalive.sh
```

```
#####
# Redundancy Mode
#
# Enable Redundancy
# Defines if we should operate in redundancy mode.
# Requires an enabled <Alive Check> configuration.
# Default: false
RedundancyEnabled=false
#
# Redundancy Group Members List
# A list of redundancy group member addresses, must be also in <AliveAddresses>.
# Separate IP addresses with a space, e.g.: "192.168.0.1 192.168.0.2".
# Default: <empty> (No redundancy available)
RedundancyAddresses=
#
# Redundancy Level
# Defines how many of the <RedundancyAddresses> are redundant.
# Shutdown is executed when the number of shutdown requests exceeds this number.
# Default: 0 (No redundancy available)
RedundancyLevel=0
# Enable Redundancy Script
# Defines if we should NOT execute a script when redundancy suppresses a shutdown.
# Default: false.
RedundancyBatchSuppress=false
# Redundancy Script
# Full path to script that is executed when redundancy suppresses a shutdown.
# Default: ShutdownSuppressed.sh
RedundancyBatchFile=/usr/rccmd/ShutdownSuppressed.sh
# SSL encryption
# enables SSL encrypted messages RCCMD
SSL=false
# Rejection/Acceptance of expired Certificates
# disables SSL communication that try to use expired certificates
SSLRejectExpiredCert=false
ExecProg=/usr/rccmd/rccmd_execute.sh
#####
vCenter=true
shutdownHosts=192.168.200.34|91
hostshutdowndownactive=true
ups_vm_name=vMA5.1
Key=secret
Language=english
vMotion=true
vCenterAddress=192.168.200.65
vMotionTimeout=92
```

## 5. RCCMD on Citrix XEN Server

The RCCMD Software for Citrix XEN Server is a Linux based TCP client for receiving shutdown calls from UPSMAN software (any vendor), CS121 (any vendor) or other RCCMD licensed applications like SNMP adapters etc. from other vendors.

RCCMD for XEN Server runs on GNU Linux 2.6.18 or higher, which is the basis of the 2008 XEN Serverplatform.



For installing RCCMD please refer to the user manual of RCCMD for UNIX, chapter 5.3, page 61, following we describe some special aspects which are only applicable to XEN Server.

### **Installation:**

Since the XEN Server does not offer any graphical interface, the download of RCCMD client for XEN Server from the GENEREX Website or other sites is not easy – unless you have extra tools installed like commandline browsers like Wget.

Additionally, by default, there is no FTP server active on XEN Server, so a transfer of a downloaded RCCMD package is also blocked. For this reason we recommend to use a local interface on your XEN Server like CD ROM Driver or, USB stick.

- Download RCCMD for XEN Server from the GENEREX Website – using your original RCCMD licensekey (not older than 2 years !) and extract the TAR file. Copy the files on a CD-R and insert this CD now into your XEN Server CD drive. Alternativly use UPSMAN CD ROM Version 5.48 or higher.
- Login as root and mount the CD ROM on the XEN Server:  
Enter: “mount /dev/cdrom /media” – Since it’s a CD ROM in your driver, the system will respond “mount: block device /dev/cdrom is write protected, mounting read-only”
- Change to the CD ROM by : “cd /media” – by “ls” you can see the files on the CD, change now to the folder UNIX (UPSMAN CD ROM) or “generex” until you find the installationprogramm “install”.
- Start now the installation by entering : “./install” and follow the instructions on the screen – from here the installation is identical to any other RCCMD installation for UNIX.
- After the installation is finished, a new process will be running on your XEN Server : “./rccmd -l” which means the system is ready now.  
**ATTENTION:** XEN Server has per default a firewall active, which does not allow to send from remote RCCMD signals. To open this firewall you have to edit the file “iptables” (/etc/sysconfig #)

### **Firewall Configuration :**

Add the following lines to */etc/sysconfig/iptables* **before** the last *REJECT* rule.



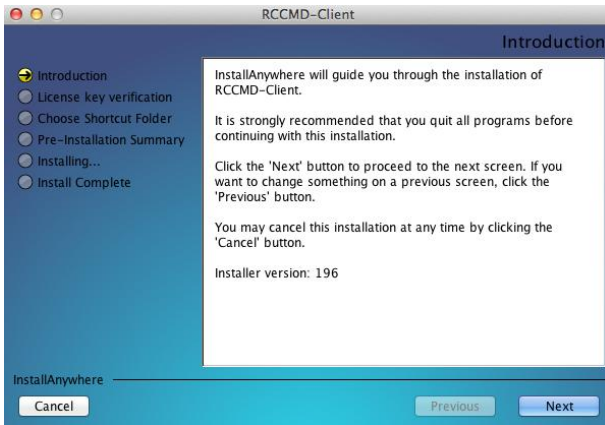


Figure 170 RCCMD Installation Welcome

You need a special license key for your RCCMD software. You can identify the key with the “**RX3**” in the first part of the license key. Most of the times you need to order the key separately.

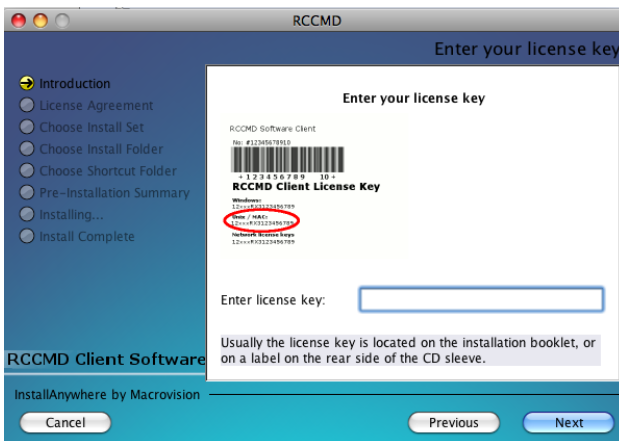


Figure 171 RCCMD Enter Your License Key

Select the features, you want to install.

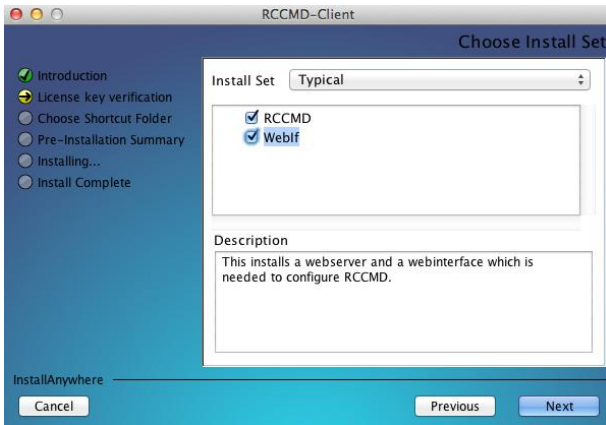


Figure 172 RCCMD Choose Install Set

Choose an alias folder.

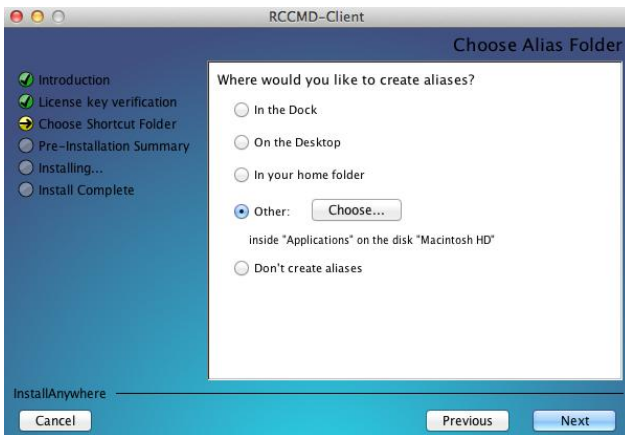


Figure 173 RCCMD Choose Alias Folder

Select the additional output options.

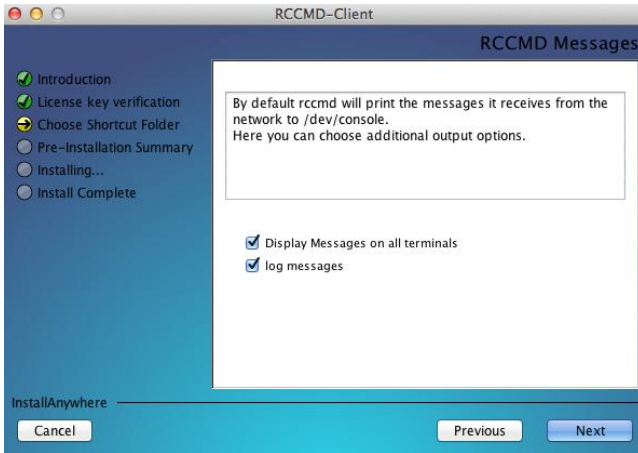


Figure 174 RCCMD Messages

It continues the pre-installation summary.

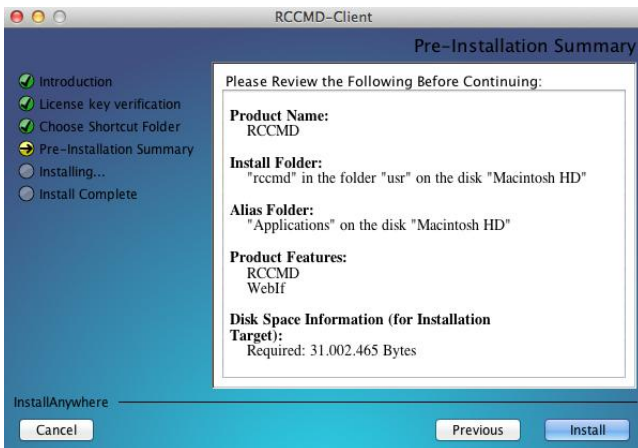


Figure 175 RCCMD Pre-Installation-Overview

Press the "Enter" key to finish the installation.

Select these default values for the port and protocol of the web-interface or select new ones.

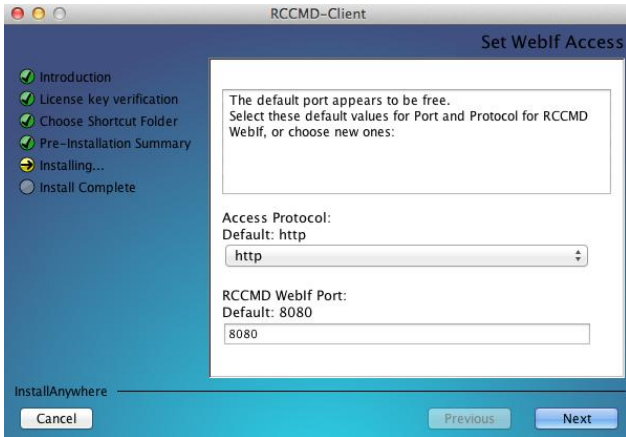


Figure 176 RCCMD Set WebIf Access

Please note the following.

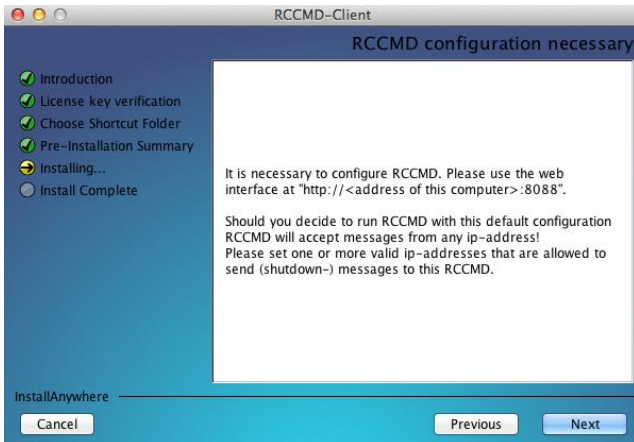


Figure 177 RCCMD Configuration required

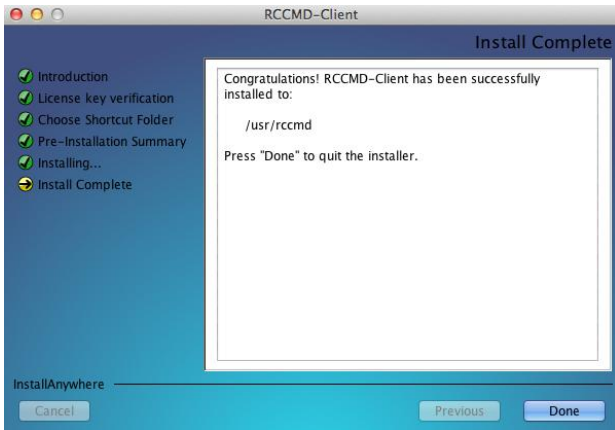


Figure 178 RCCMD Install Complete

## 6.1 RCCMD WebInterface (from Version 4.2.0.0)

RCCMD provides its own web-interface from version 4.2.0.0 or higher. Therefore it is possible to configure and control RCCMD remotely. After the successful installation, your default web-browser of your OS starts automatically.



**Attention:**

Use the access data "User: admin, Password: cs121-snmp".

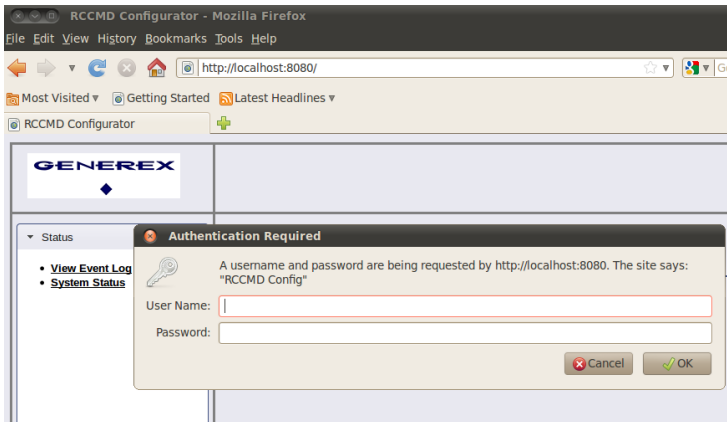


Figure 179 RCCMD WebInterface

You can enter the IP addresses of the allowed RCCMD senders (CS121/UPS MAN) into the "Connections" menu. Click the "Insert Sender" button to enter the IP address of the 1<sup>st</sup> sender. Click the "Remove Sender" button, if you want to remove the already entered IP address. Click the "Edit Sender" button, if you want to edit the entered IP address.



**Attention:**

If you do not enter an address, then every server has the permission to send a shutdown command.

You can define under **“Protocol”**, if RCCMD should use SSL certificates. Enable the **“Reject expired SSL certificates”**, if you want to reject connections with expired certificates. Please take a look into chapter 6.6.1 for further information about RCCMD with SSL.

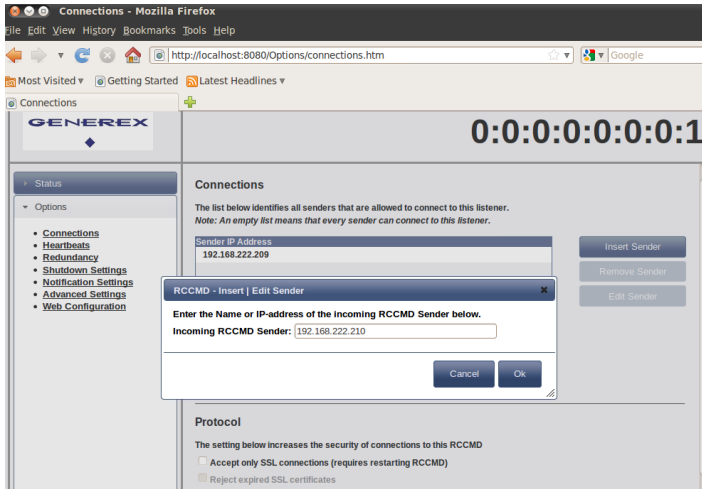


Figure 180 RCCMD WebInterface – Connections

Click the **“Save Changes”** button prior of the leaving of this site to save your changes.

You can enable the **“UPSMAN Alive Check”** feature into the menu **“Heartbeats”**. This check is a signal, that will be send to the CS121/UPSMAN via port 5769, if the UPSMAN service still got UPS data. If not, the script file **“alive.bat”** will be executed, which will trigger an accordant pop-up message.

The feature **“by the use of CS121/UPSMAN Traps”** provides UPSMAN/RCCMD/UNMS messages, which will display the UPS status as message. If enabled, this feature will trigger a message, if the UPS status of the UPSMAN/RCCMD servers has changed.

The feature **“by polling CS121/UPSMAN every x seconds”** provides the pure signal polling without receiving UPS data or rather messages.

The polling rate (default 1800 seconds) defines the polling of the UPSMAN service, connection retries (default 100) means after 100 unsuccessful connection tries an alarm will be triggered.



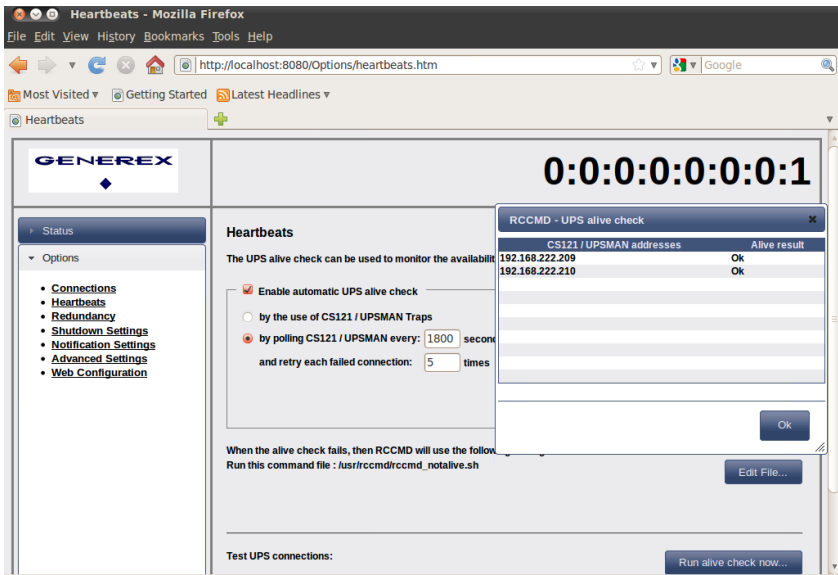


Figure 181 RCCMD WebInterface – Heartbeats

You can test the UPS connection, if you click the “Run alive check now...” button (the port 5769 will be tested).

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can enable the redundancy management feature into the menu “**Redundancy**”. The redundancy level defines the number of redundant senders in the redundancy group. This means, that level 1+ senders must have sent a shutdown signal before this RCCMD starts its shutdown sequence.

When redundancy suppresses a shutdown, then RCCMD will trigger the “suppressed.bat”. You can edit this file, if you click the “Edit file...” button.

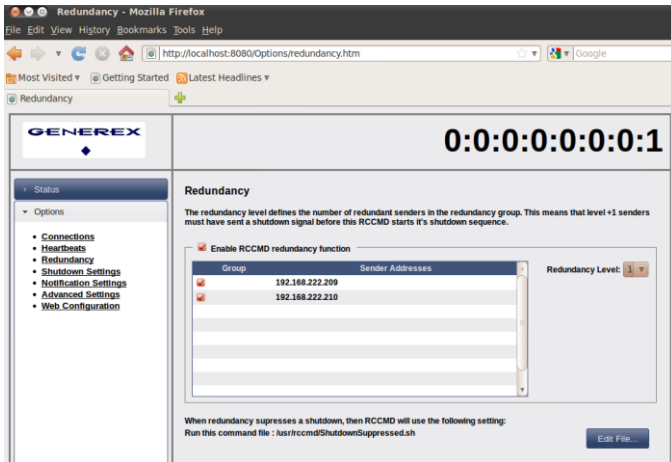


Figure 182 RCCMD WebInterface – Redundancy

Please note, that it is required to configure a reset of the redundancy alarm on the sender (CS121/UPSMAN). You can use the function „Send RCCMD cancel shutdown“, to discard a previously sent shutdown automatically. If a shutdown was suppressed, because of the existing redundancy at this point of time, but the problem was solved at the UPS intermediate, you can reset the shutdown with the function „Send RCCMD cancel shutdown“. The client, which received the shutdown, will be encouraged to reset it.

Please take a look into chapter 6.1 for further information about RCCMD with redundancy.

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change or rather extend the shutdown sequence into the “Shutdown Settings” menu. The shutdown.bat will be executed by default:

```
rem created by setup
@echo off
set path=%path%;C:\Program Files\RCCMD
ExitWin.exe shutdown force
@cls
```

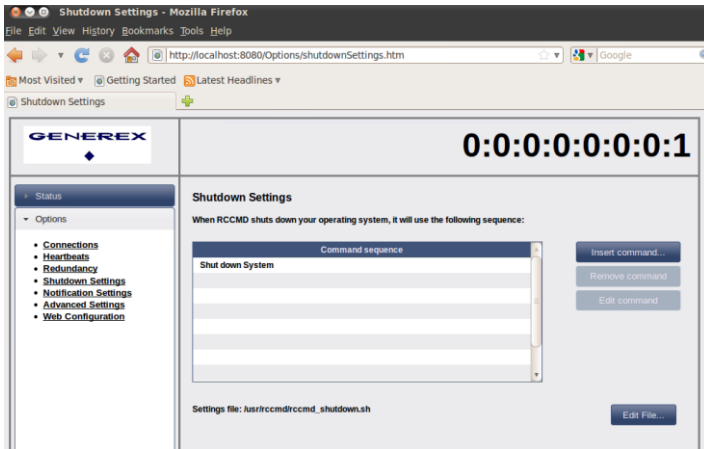


Figure 183 RCCMD WebInterface – Shutdown Settings

You can change or rather extend the default bat files for E-Mail, Message and Execute, if you click the “Edit File...” button.

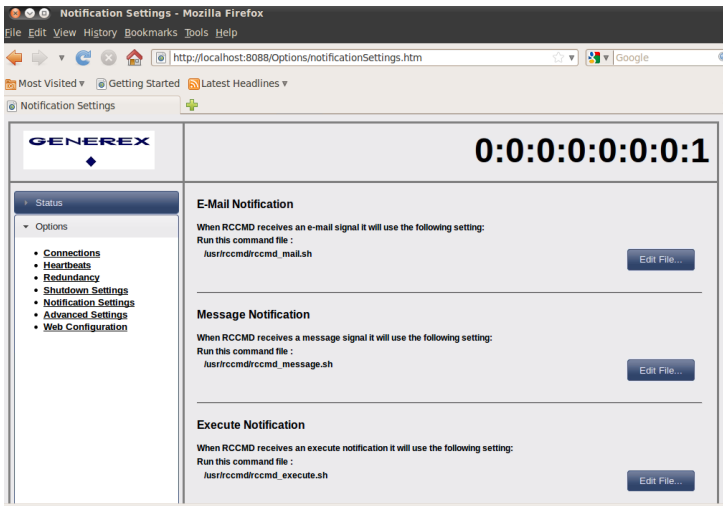


Figure 184 RCCMD WebInterface – Notification Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can define the maximum size of the event logfile into the menu “Advanced Settings”, where the overwriting of older entries will start, the RCCMD bindings for the IP address, the RCCMD listener TCP port and the RCCMD Tray Message Port, which will be used for the RCCMD messages. In addition you can disable the “Start Jobs as interactive user” feature, that means, if disabled, that RCCMD will execute jobs, if nobody is logged in on the system.

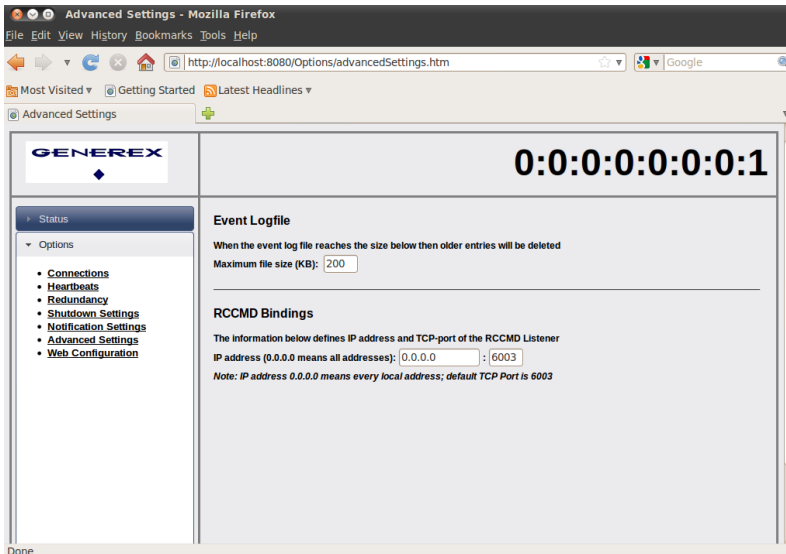


Figure 185 RCCMD WebInterface – Advanced Settings

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can change the default password for the user “admin” into the menu “**Web Configuration**”. In addition you can disable the HTTPS protocol, if you just want to use the HTTP protocol. The RCCMD version 4.2.3.0 or higher provides the feature of changing the default ports for HTTP and HTTPS.

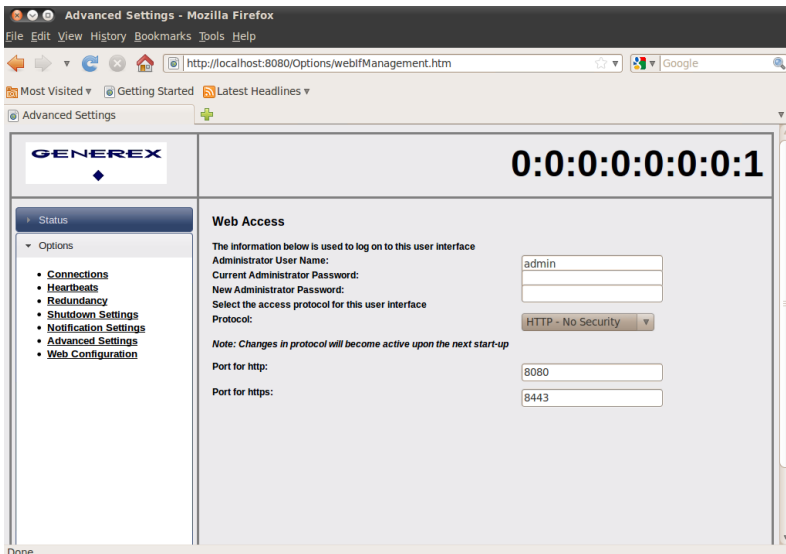


Figure 186 RCCMD WebInterface – Web Access

Click the “Save Changes” button prior of the leaving of this site to save your changes.

You can see the logging of the events into the menu “**Status, Event Log**”.

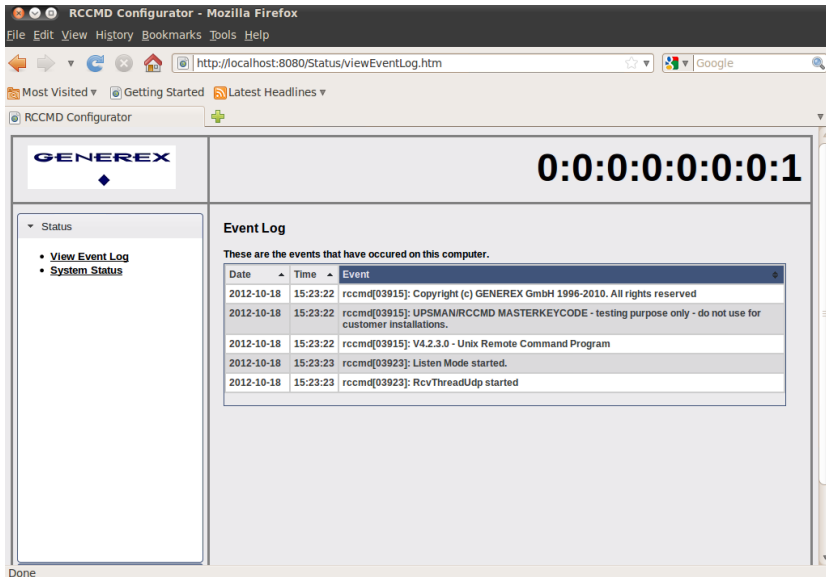


Figure 187 RCCMD WebInterface – Event Log

You can check the current status of RCCMD into the menu “**Status, System Status**”, update the status and restart or rather stop/start the RCCMD service.

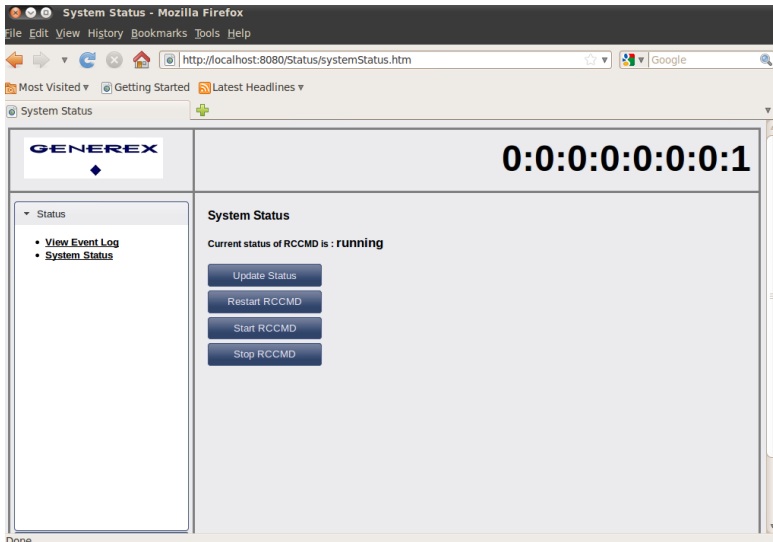


Figure 188 RCCMD WebInterface – System Status

You can open the RCCMD user manual into the menu “**Help**” and you can follow the link to [www.generex.de](http://www.generex.de).

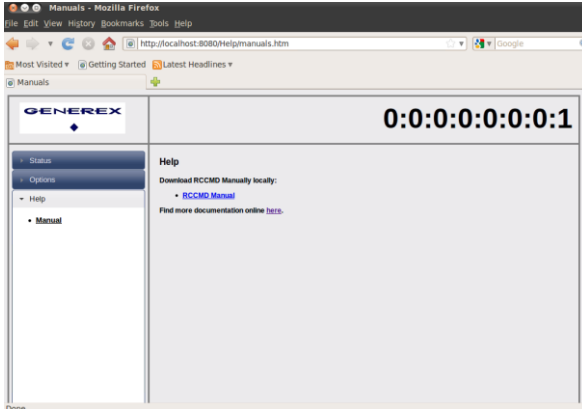


Figure 189 RCCMD WebInterface – Help

## 6.2 RCCMD Remote Access

RCCMD provides its own web-interface from version 4.0.1.9 or higher. Therefore it is possible to configure and control RCCMD remotely. Please note, that the firewall port 8080 TCP is enabled. Enter the following into a web-browser, to connect to a workstation, where RCCMD is running:

http://IP address of the RCCMD client:8080

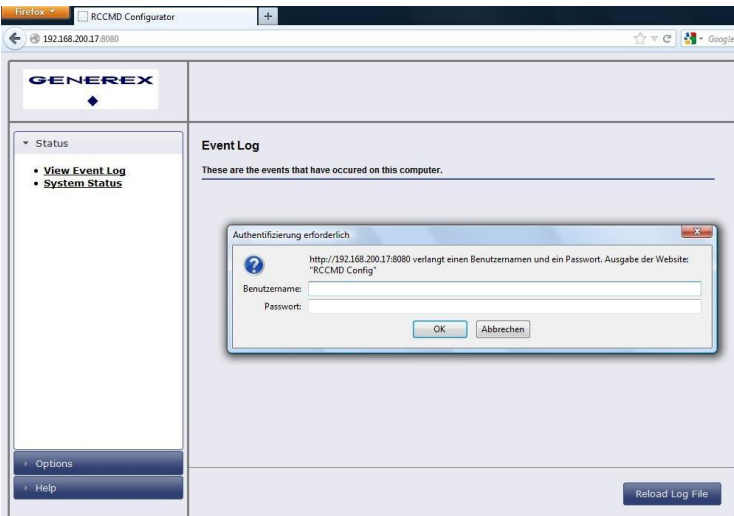


Figure 190 RCCMD WebInterface Configurator – Remote Access

## 6.3 Old RCCMD Configuration on MAC OSX

Add the IP address of the RCCMD server, which is allowed to send a shutdown to this client.

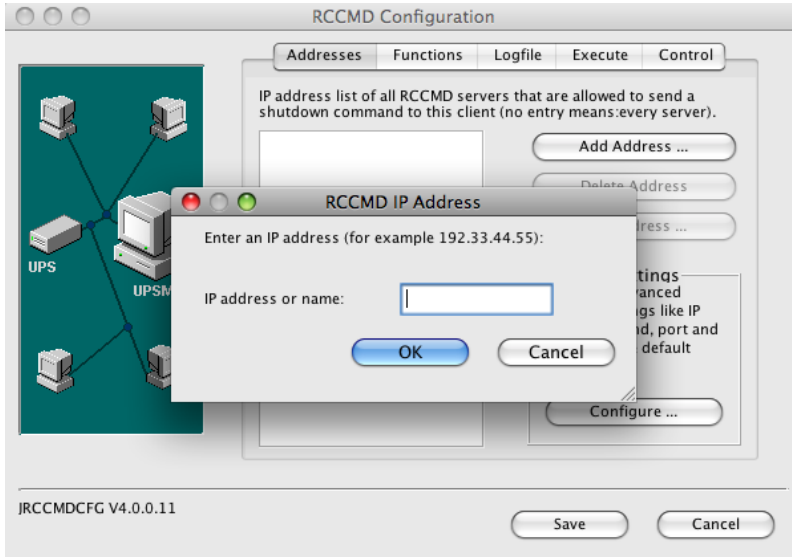


Figure 191 RCCMD IP Address Window



**Attention:**

If you do not enter an address, then every server has the permission to send a shutdown command. If more than one CS121 or rather UPSMAN is existent, thus a redundancy situation, you need to enter more than one address as authorized sender.

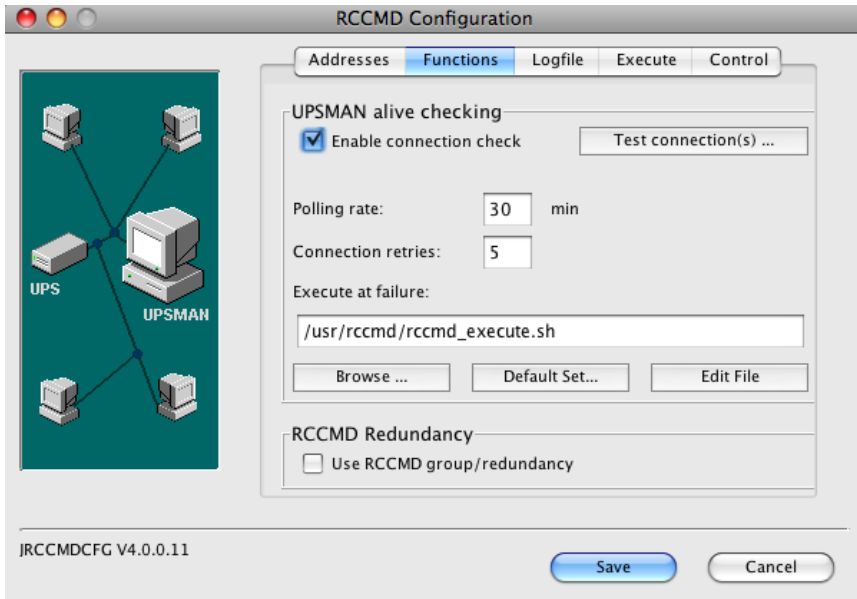


Figure 192 RCCMD Configuration Window „Functions“

If you want to use the UPSMAN alive checking (recommended), check the “Enable connection check” box. Alive check is a signal, send out to the UPSMAN or CS121 on port 5769 to check if the UPSMAN has still UPS data – or not. If this fails, the scriptfile alive.bat will be executed which causes a messagebox coming up. The polling rate (default 30 min.) defines the polling of the UPSMAN service, connect retries (default 5) means after 5 unsuccessful connection tries an alarm will be triggered.

If you click the “Test connection(s)...” button, the UPSMAN alive checking of the entered IP addresses will start (port 5769 will be tested).



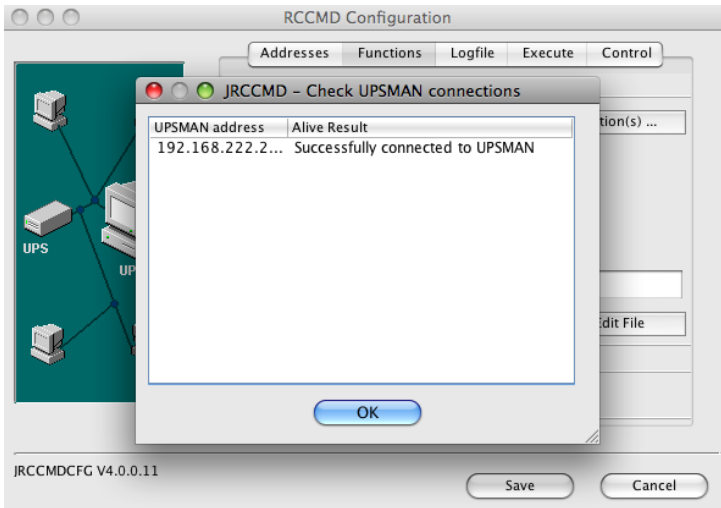


Figure 193 RCCMD Check UPSMAN Connections

If you click the „Browse...“ button, you will get a selection of the default batch files.

If you click the „Default setting“ button, you will get back to the default batchfile (alive.bat).

At the failure of the UPSMAN alive checking, you can define an executing file or edit the default file “alive.bat”.

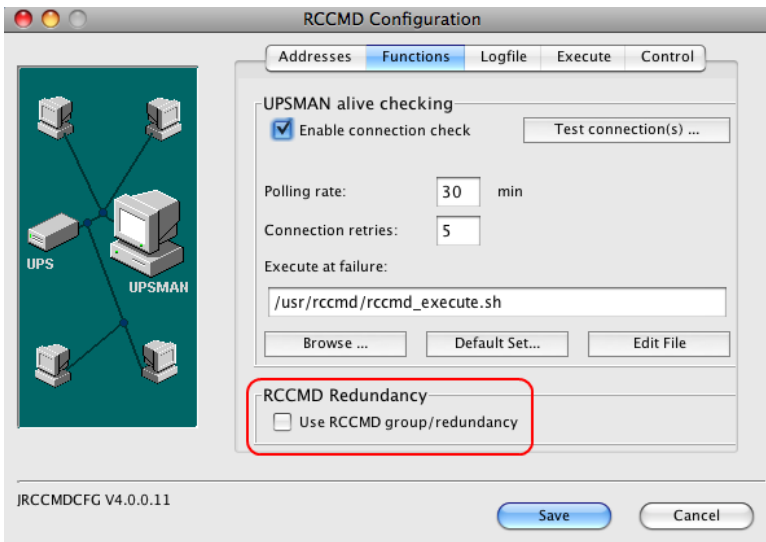


Figure 194 RCCMD Redundancy

At UPS installation RCCMD offers a **redundancy** management functionality as follows:

Every UPS must be equipped with a CS121 or UPSMAN software computer. When ticking the box “use RCCMD group/redundancy” – you are guided to a menu where you can choose which CS121 /UPSMAN are supplying this RCCMD client. E. g. if 4 CS121/UPSMAN are installed into 4 UPS – than each may send a shutdown signal to this RCCMD client.

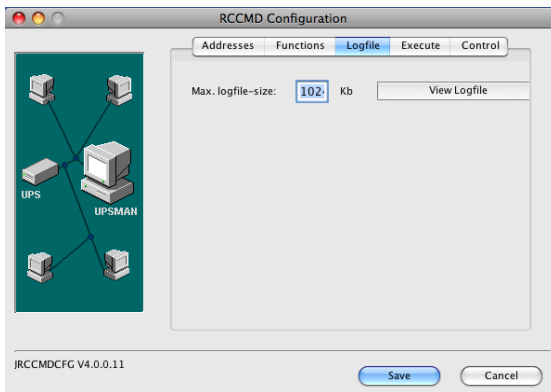


Figure 195 RCCMD Configuration Window „Logfile“

You can configure the log file size and edit the executing bat files in this installation window.

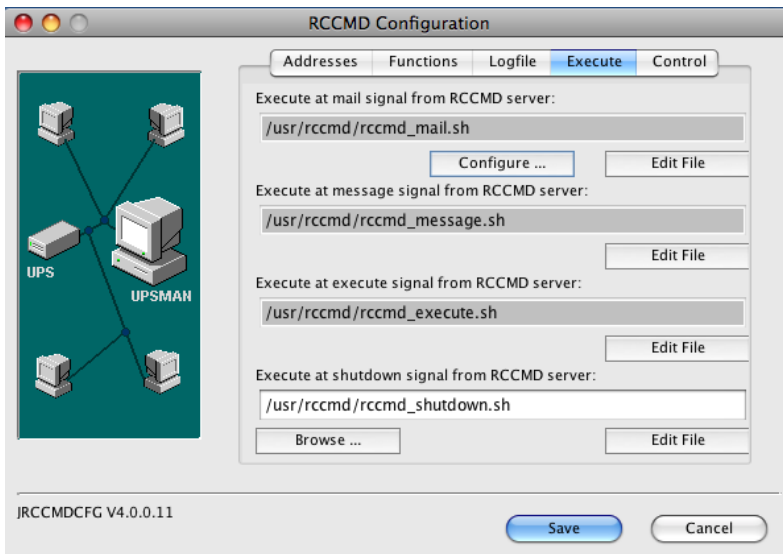


Figure 196 RCCMD ConfigurationWindow „Execute“

If you click the „Configure...“ button, you will be able to enter the mail settings and to use the mail function of RCCMD.

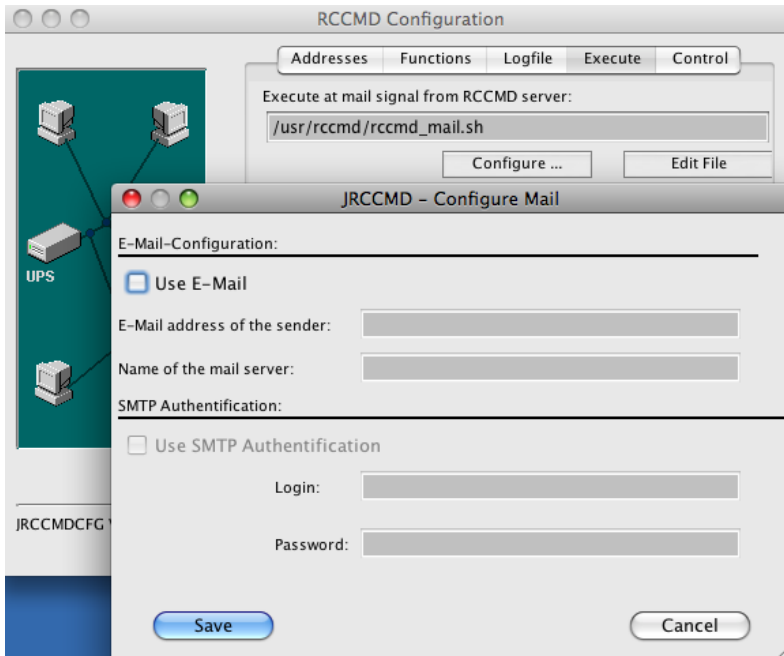


Figure 197 RCCMD E-Mail-Configuration

The RCCMD version 4.0.2.0 provides a graphical configuration of the shutdown sequence.

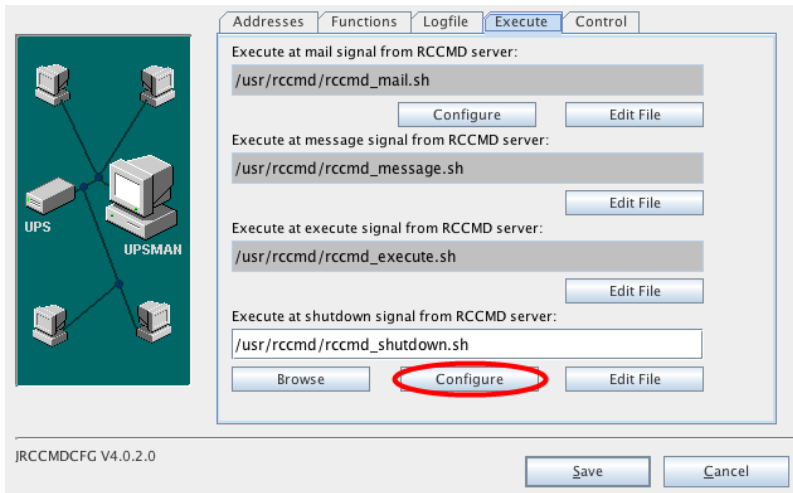


Figure 198 Configuration – RCCMD Execute

Click the „Configure“ button to enter the shutdown sequence settings.

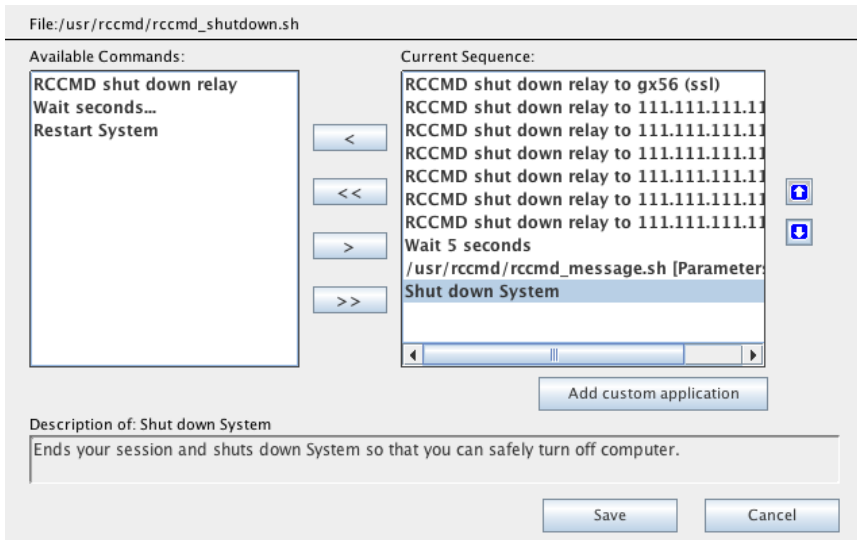


Figure 199 Configuration – RCCMD Shutdown Sequence

The following commands are available:

**RCCMD shutdown relay:** Relays RCCMD shutdown command to another workstation. Enter the IP address or the hostname of the remote station you want to shutdown (see chapter 4.4, page 73).

**Wait seconds...:** Waits a duration in seconds until the next command will be executed.

**Restart System:** : Ends your session, shuts down the system and restarts it.

**Shutdown System:** Ends your session and shuts down the system, so that you can safely turn off the power.

Click the „Control“ button to get into the following screen:

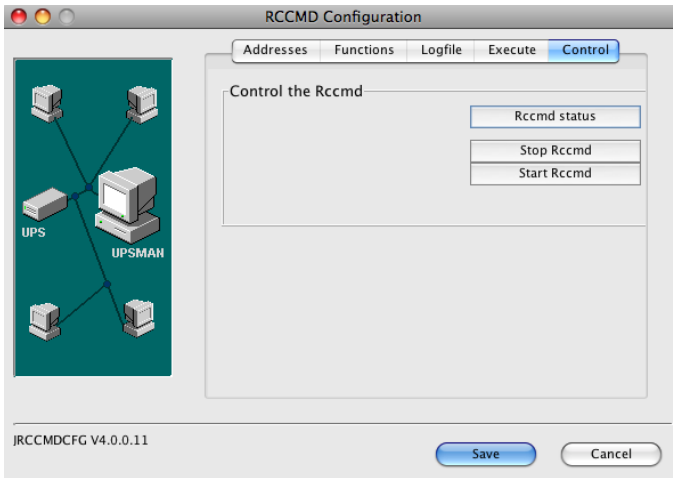


Figure 200 RCCMD Control



**Advice:** RCCMD provides its own web-interface from version 4.2.0.0 or higher. Therefore it is possible to configure and control RCCMD remotely. Please take a look into chapter 7 for further information.

## 7. RCCMD on NovellNetWare

Download the RCCMD netwar5.zip file. Extract it to any folder of your Windows or Novell server. Create a directory "UPS" on the Netware SYS Volume (e.g. F:\UPS). Copy the extracted file to this folder. Execute the following:

```
load rccmd.nlm -l -a load down.ncf
```

The following text is presented when entering RCCMD with the help parameter "?" inside a NovellNetWare console:

Possible parameters:

- l  
listen. waits for a command from RCCMD sender
- s  
sends a ping to a listening program
- se <command> <param>  
sends a command to a listening program
- p <port>  
Portaddress (Defaultaddress = 6003)

-a <ipaddress>  
Address in IP Format. Ex. -a 192.10.20.30 (max.  
10)

-t <timeout>  
Time in Seconds (Defaulttimeout = MAX\_TIMEOUT)

-?  
this help

Supported Commands (for use with -se argument):

SHUTDOWN  
This will call the configured shutdown-  
batchfile (default: shutdown.bat)

EXECUTE  
This will call the execute.bat file

MSG\_TEXT  
This will call the message.bat file  
<text, unrestricted word count>

MSG\_ID <ID>  
This will call the message.bat file  
<message parameters, seperated by blanks>

LOG\_TEXT  
This will write to configured log-file  
(default: rccmd.log) <text, unrestricted word count>

LOG\_ID <ID>  
This will write to configured log-file  
(default: rccmd.log) <message parameters, seperated  
by blanks>

Examples:

```
load rccmd.nlm -s -a 192.10.200.52 -a 192.10.200.53
load rccmd.nlm -s -a 192.10.200.52 -a 192.10.200.53
-t 10
load rccmd.nlm -se "SHUTDOWN" -a 192.10.200.52

load rccmd.nlm -se "EXECUTE" -a 192.10.200.52
load rccmd.nlm -se "MSG_TEXT this is a message" -a
192.10.200.52
```

```
load rccmd.nlm -l
load rccmd.nlm -l -a 192.10.200.52 -a 192.10.200.53
load rccmd.nlm -l -a 192.10.200.52
```

If you have added a search path i.e.: "search add sys:rccmd", otherwise you have to use the absolute path.

```
load sys:rccmd\rccmd.nlm -l
```

To start RCCMD in receiving-mode (*listen*) enter the following line:

```
load <path> RCCMD -l [-a 192.200.100.10] [-p 6003] load <path> shutcmd.nlm -f
```

Optional parameters:

*-a <address>* TCP/IP address of the master computer(s), which sends the RCCMD-signal.

*-p <port>* (optional) TCP-Port address, on which the master computer is sending

To start RCCMD in sending-mode (*send*) enter the following line in your shutdown-job:

```
load RCCMD -s -a <address> [-p 6003]
```

For *<address>* enter the TCP-address of the machine to which you want to send the RCCMD-signal. (Workstations in "listening" mode, with an active RCCMD with parameter -l)

Optional parameters:

*-p <port>* TCP-Port, which the RCCMD-signal is using.

The option *-a* can be used multiple times, if a shutdown on remote network servers should be initiated.

*Example:* (Example path *<path>* = sys:\ups\upsman\rccmd.nlm)

```
load <path> RCCMD.NLM -s -a 192.168.210.3 -a 192.168.210.4 -a 192.168.210.10
...etc.until "end of line"
```

```
unload RCCMD
```

```
load <path> RCCMD.NLM -s -a 192.168.210.8...etc.
```

```
unload RCCMD
```

Do not use the CD License key more than once. If more RCCMD modules need to be installed for the shutdown, additional CD license keys must be purchased. Additional license keys are available from your UPS dealer, whereas the CD can be used again for the actual installation.

rccmd.nlm

Modul for the multiserver shutdown in IP-networks.

The rccmd.nlm contains different command line parameters, which are either for the "send" or "listen" modul of the RCCMD modul.

rccmd -? Help

rccmd -s Sending off a "ping" signal to a waiting program

rccmd -l Waiting for a "ping" signal. A command can be executed after the reception of the "ping" signal.

rccmd -p Setting the port address (default = 6003 ).

rccmd -a Address in IP format e.g. 192.168.202.1

rccmd -t Time in seconds until a connection will be established. (default timeout = 10)

**Example:**

```
load sys:ups\rccmd.nlm -s -a 192.168.202.1 [-a 192.168.202.1]
```

```
load sys:ups\rccmd.nlm -s -a 192.168.202.1 -t 10
```

```
load sys:ups\rccmd.nlm -l -a 192.168.202.1 shutcmd.nlm [/para]
```

rccmdipx.nlm

This is a modul for just IPX networks. This modul sends a shutdown command (or any other console command) directly to every IPX server name. Please start RCCMDIPX on all Novell consols. The modul needs to be loaded on both servers.

This modul has to loaded on both servers first

(1. Rename RCCMDIPX to RCCMS.NLM 2. Load RCCMD The following syntax is valid:

```
rccmd <server name> <console command>
```

Whereas <server name> is a valid server in a network enviroment and <console command> a valid NetWare command is.

Example:

1. load sys:ups\rccmdipx (or load RCCMD if RCCMDIPX.NLM is renamed to RCCMD.NLM)

```
2. rccmd gnw1 forcedown
```

or 1. load sys:ups\rccmdipx

```
2. rccmd gnw1 sys:ups\down.ncf
```

Instead of the down command for older *clib.nlm* files, the *forcedown* command maybe used.



Multiple-start RCCMD on Novell

The multiple start RCCMD on Novell is relatively easy to manage. Several RCCMD clients may be started with the following command line:

```
load rccmd.nlm -l -a load down.ncf
```

whereas the syntax goes as follows:

```
LOADING RCCMD.NLM -L(LISTENER) -A(IP address of UPSMAN/CS121/RCCMD  
SENDER) COMMAND (COMMAND TO BE EXECUTED)
```

Example:

```
LOAD RCCMD.NLM -L -A 192.168.10.2 LOAD DOWN.NCF
```

In this scenario the “down.ncf” file is executed, which leads to an immediate shutdown of the client computer, if the RCCMD call from the RCCMD server (sender) is received. Other .ncf or .nlm (executables) files may be executed too.

A group of 8 .ncf example files can be found in the UPSMAN installation directory. Please note that these example files may have to be adjusted by user/administrator according to the configuration of the system.

## 8. RCCMD on DEC VMS

The UPS-Management-Software CD contains the RCCMD software. The VMS RCCMD installation can be done by following the UNIX installation instructions in this manual, all of the steps are the same.



**Note:**

**The VMS license is not part of the standard CD; It is to be ordered separately. It is not permitted to use the VMS version and its RCCMD modules without registered license.**

Prior of the installation you should verify that port 6003 is not in use. Check this with the command « netstat -an ». Ensure that there is no other process running or start the RCCMD module at another port address with the option -p for sending and receiving. Ensure too, that you will use this port for every command in the network. Please follow the instructions of the next chapter carefully. For further help you may use the user manual and the troubleshooting pages or contact your UPS software dealer.



**Important:**

**The Alpha-Version is linked to OpenVMS 7.1. For OpenVMS 6.x use the Version 6.x in the following CD directory (ex. DKA200:[VMS.ALPHA.6X]).**

Installation procedure:

- Connect the workstation to the network.
- Login into the VMS System using SYSTEM login.
- Mount the CD-ROM device (if DKA200 is the device name of the CD-ROM):

\$ MOUNT/OVERRIDE=IDENT DKA200: UPS UPS:

This is a system specific command. Use the VMS help pages for your system or ask the system operator, if you do not know, how to mount your input device.

- Start the VMS install procedure by: @SYS\$UPDATE:VMSINSTAL
- or: @SYS\$UPDATE:VMSINSTAL <device>
- e. g.: @SYS\$UPDATE:VMSINSTAL RCCMD DKA200: [VMS.ALPHA]

VMSINSTAL is an interactive script, so just follow the installation instructions on the screen (all instructions are additionally listed in the following subjects 5-11).

- Answer YES at the prompt: *"\* Are you satisfied with the backup of your system disk [YES]"*
- Answer the prompt: *"\* Where will the distribution volumes be mounted:"* with your correct input device name e. g.:

CDROM: *dka500: [VMS]* (your CDROM device and path [VMS], the device may be different on your system).

- Answer the prompt: *"\* Enter installation options you wish to use [none]:"* by pressing RETURN
- At the prompt: *"Please mount the first volume of the set on MKA300:." \** *"Are you ready?"* please insert your tape (or disk or CDROM) and answer "yes"
- Enter the license key of your RCCMD version
- Enter the complete path of the target directory, e. g.: *dka100: [ups]*
- Answer the question *"Would you like to start the RCCMD module automatically on your system?"*.
- Exit the VMSINSTALL procedure by RETURN at the *"\*Product:"* prompt and change to your target UPS directory (e. g.: *set default dka100: [ups]*)
- Now install the RCCMD software in sending mode on your RCCMD server workstation. Your server workstation is the computer, which is connected to the UPS via the RS232 port.

DEC ALPHA CD Problems: If the CD could not be mounted or if you have problems to start the VMSINSTAL script on the DEC ALPHA hardware, please follow the instructions below:

- Copy the archive VMSA.ZIP (ALPHA directory) into a temporary directory on your system. COPY RCCMD.ZIP DKA100:[TEMP]

If you have not installed the ZIP utilities on your workstation already, you have to assign a system value: UNZIP==\$DKA200:[VMS.ALPHA]UNZIP.EXE, where DKA200: is your CDROM device.

- Unpack your VMS UPS archive:

SET DEF DKA100:[TEMP] UNZIP RCCMD.ZIP

- Start the VMS installation routine: @SYS\$UPDATE:VMSINSTAL RCCMD DKA100:[TEMP]

### **Configuration procedure:**

After the installation there are 3 command files:

- RCCMDSTART.COM: RCCMD startup command file should be called in the VMS startup file
- RCCMD.COM: Command file to start RCCMD program itself, this should be configured to your requirements
- RCCMD\_SHUTDOWN.COM: sample command file which could be called by RCCMD to shutdown VMS

Configure the RCCMD.COM command file by calling the RCCMD program with the following command: "rccmd -l" optional you can use "rccmd -l -a<IP address of the sender> -p <port (standard 6003)>". After that you can start the RCCMD by calling the command file RCCMDSTART.COM with "@rccmdstart".

Check the process by calling "show system". There should be a process with the name RCCMD.

The automatic start of the RCCMD should be initiated from the VMS startup file. You may use the enclosed script rccmdstart.com. Add a line to your startup file (prior to the exit command):

\$ @your\_disk:[your\_path]rccmdstart.com (e. g.: \$ @dka100:[ups]rccmdstart.com)

The UPS software will be started automatically after the next reboot.

## **9. RCCMD AS400-Client**

RCCMD for AS 400 an iSeries is not described in this manual, but has identical functions as any other RCCMD. RCCMD for AS 400 comes with a separate user manual with the product.

[Download AS400 RCCMD Manual](#)

## 10. RCCMD FAQ

In this chapter we will give you some solutions of well known problems.

FAQ – Frequently Asked Questions

**Problem :** The execution of « `sudo sh rccmd_shutdown.sh` » on ESXi 4 with vMA 4.1 fails with the following error message or similar .:

“Compilation failed in require at /usr/lib/perl5/site\_perl/5.8.8/VMware/VIFPLib.pm line 10. BEGIN failed”

“compilation aborted at /usr/lib/perl5/site\_perl/5.8.8/VMware/VIFPLib.pm line 10. Compilation failed in require at /usr/rccmd/upsVIShutdown.pl line 12.”

“Can't load '/usr/lib/perl5/site\_perl/5.8.8/libvmatargetlib\_perl.so' for module vmatargetlib\_perl: libtypes.so: cannot open shared object file: No such file or directory at /usr/lib64/perl5/5.8.8/x86\_64-linux-thread-multi/DynaLoader.pm line 230.”

“BEGIN failed--compilation aborted at /usr/rccmd/upsVIShutdown.pl line 12. at /usr/lib/perl5/site\_perl/5.8.8/VMware/VmaTargetLib.pm line 10”

**Reason:** The procedure of the authentication is completely different from vMA 4.0 to vMA 4.1. The integration of RCCMD is not possible unless you use a newer version of RCCMD or to use vMA 4.0 instead

**Solution :** Use the vMA 4.0. A new setup for integration of the vMA 4.1 will be released after November 2010.

**Problem :** You get the following error, after the execution of the `upsVIShutdown.pl`

```
HostShutdown.pl      rccmd_execute.sh      send_log.sh
inst_cfg             RCCMD_InstallLog.log  send_mail.sh
isu.properties       rccmd_log              send_message.sh
isu.xml              rccmd_mail.sh          send_shutdown.sh
jrcmcdcfy.jar        rccmd_message.sh      serial.xxx
jrs                  rccmd_nfo              ShutdownSuppressed.sh
messages.dat         rccmd_notalive.sh     InstallRCCMDClient
my_checkVersion.pl  rccmd.pem              upsVIShutdown.pl
rccmd                 rccmd_redundancy.sh  xmessage
rccmd                 rccmd_shutdown.sh    xmessage-static

[ivi-admin@vMA rccmd]$ ./upsVIShutdown.pl 10.1.1.2
Use of inherited AUTOLOAD for non-method vifplib_perl::CreateUIUserInfo() is dep
recated at ./upsVIShutdown.pl line 40.
Undefined subroutine &vifplib_perl::CreateUIUserInfo called at ./upsVIShutdown.p
l line 40
[ivi-admin@vMA rccmd]$
[ivi-admin@vMA rccmd]$
[ivi-admin@vMA rccmd]$
[ivi-admin@vMA rccmd]$ ./upsVIShutdown.pl 10.1.1.2
Use of inherited AUTOLOAD for non-method vifplib_perl::CreateUIUserInfo() is dep
recated at ./upsVIShutdown.pl line 40.
Undefined subroutine &vifplib_perl::CreateUIUserInfo called at ./upsVIShutdown.p
l line 40
[ivi-admin@vMA rccmd]$
[ivi-admin@vMA rccmd]$ _
```

Figure 201 Error after execution of `upsVIShutdown.pl`

**Solution:** You do not use the latest RCCMD version. Please download the current RCCMD version from our website [www.generex.de](http://www.generex.de).

**Problem:** Shutdown of NetApp storages

**Solution:** Typically all low-cost NAS systems export their NFS shares in the "async" mode. This is an extremely fast write process, which secures, that no data is lost if the power suddenly fails. As long as the user has not changed the default NFS protocol write mode from "async" to "sync", than there is no risk to lose data.

Anyhow an UPS should be connected to any NAS to avoid, that network computers will not be shut downed but rather will die down. For this case, we recommend to connect an UPS to the NAS and we think it makes sense to connect an UPS to a NAS system.

Otherwise it is enough, if the computers will be shut downed via RCCMD, if a powerfail occurs. If the computers are down, there are no open data anymore, that can be lost. You could switch off any NAS as soon as the network computers are down.

Specific feature: QNAP/NETAPP systems are using the "sync" mode and are therefore faster and more sensitive accordingly, but these devices possess an own battery, to assure a secure shutdown at any time. This internal battery clears the cache and parks the recording head, if no data have to be stored. So, you will not lose data, if the network computers are down.

We do not think, that an additional cable connection between the UPS and the NAS is required, if it is assured, that the computers are down.

**Problem:** Error messages at "UPSMAN Alive Check" on Windows Server 2008

**Solution:** The firewall port 5769 has to be enabled for all profiles (domain, home, public)!

**Problem:** Mount of USB stick via command line

**Solution:** Change into the directory /dev. Execute ls. There you will see the connected devices. Note the devices like sda, sda1... Connect your USB stick. Execute ls again into /dev. Now you should see more entries under sda. My stick got the entry sdc1.

Enter the following : mount /dev/sdc1 /mnt

Use this command on **FreeBSD OS** : mount\_msdosfs /dev/da0s1 /mnt/usb

Execute ls -lisa

Now you should the folders of your stick. Change into the accordant directory : cd /mnt/name of the folder, which contains the installation data.

Extract the the rccmdinst.tar file : tar -xvf rccmdinst.tar

Execute the binary file : ./installRCCMD.bin

**Problem:** The RCCMD Software does not execute RCCMD shutdowns and you can determine the following error message into the file "rccmd.log" (default folder C:\Program Files\RCCMD):

11/23/2011,12:56:55, RCCMD: ERR: WaitForOkay - Read failed with error <0>

**Solution:** Update your RCCMD Software!

**Problem:** You got the following error into the CS121 alarm log:

12/06/2011,16:30:56, RCCMD could not connect. (RccmdConn01)  
Reason: Host prohibited

**Solution:** The server denied an incoming TCP connection. Check your firewall configuration.

**Problem:** Enable firewall ports manually

**Solution:** You can check, if the required ports were opened, with the following command:

```
sudo iptables -L
```

```
[root@vMA41 RCCMD]# iptables -L
Chain INPUT (policy ACCEPT)
target prot opt source destination
ACCEPT tcp -- anywhere anywhere tcp dpt:5769
ACCEPT udp -- anywhere anywhere udp dpt:6003
ACCEPT tcp -- anywhere anywhere tcp dpt:6003
RH-Firewall-1-INPUT all -- anywhere anywhere

Chain FORWARD (policy ACCEPT)
target prot opt source destination
RH-Firewall-1-INPUT all -- anywhere anywhere

Chain OUTPUT (policy ACCEPT)
target prot opt source destination

Chain RH-Firewall-1-INPUT (2 references)
target prot opt source destination
ACCEPT all -- anywhere anywhere
ACCEPT icmp -- anywhere anywhere icmp any
ACCEPT esp -- anywhere anywhere
ACCEPT ah -- anywhere anywhere
ACCEPT udp -- anywhere 224.0.0.251 udp dpt:mdns
ACCEPT udp -- anywhere anywhere udp dpt:ipp
ACCEPT tcp -- anywhere anywhere tcp dpt:ipp
ACCEPT all -- anywhere anywhere state RELATED,ESTABLISHED
ACCEPT tcp -- anywhere anywhere state NEW tcp dpt:ssh
ACCEPT udp -- anywhere anywhere state NEW udp dpt:snmp
ACCEPT udp -- anywhere anywhere state NEW udp dpt:snmptrap
ACCEPT tcp -- anywhere anywhere state NEW tcp dpt:http
REJECT all -- anywhere anywhere reject-with icmp-host-prohibited
[root@vMA41 RCCMD]#
```

Figure 202 Listing of the IP tables, see the "ACCEPT" at the TCP and UDP ports 6003, TCP port 5769

### Enable Firewall Port 6003 UDP/TCP manually

You can enable the firewall port 6003 UDP/TCP as follows :

```
/usr/sbin/esxcfg-firewall
```

```
esxcfg-firewall -o 6003,tcp,in,"RCCMD receive 6003"
```

```
esxcfg-firewall -o 6003,udp,in,"RCCMD receive udp 6003"
esxcfg-firewall -o 6003,tcp,out,"RCCMD transmit 6003"
esxcfg-firewall -o 6003,udp,out,"RCCMD transmit udp 6003"
```

or

```
/usr/sbin/iptables or /sbin/iptables
```

```
iptables -I INPUT -p tcp --dport 6003 -j ACCEPT
iptables -I OUTPUT -p tcp --sport 6003 -j ACCEPT
iptables -I INPUT -p udp --dport 6003 -j ACCEPT
iptables -I OUTPUT -p udp --sport 6003 -j ACCEPT
```

Save your settings as follows:

```
service iptable save
```

**Problem:** RCCMD error message on VMware ESXi server:

```
04/25/2012,14:40:24, rccmd[08066]: message received from 192.168.2.67
```

```
04/25/2012,14:40:24, rccmd[08066]: Trying to start program/job:
/usr/rccmd/rccmd_shutdown.sh
```

```
04/25/2012,14:40:24, rccmd[08066]: error: /usr/rccmd/rccmd_shutdown.sh program/job
start failed
```

The error message "job start failed" appears, if the user got no rights for the execution of the rccmd\_shutdown.sh.

**Solution 1:** Arrange the "X" right on the rccmd\_shutdown.sh as follows:

```
CHMOD +x rccmd_shutdown.sh
```

**Solution 2:** If the accordant rights are at present, the user did enter the wrong login data for the physical ESXi server. You can adjust these data into the file "esxi\_creds" in the folder /usr/rccmd.

**Problem:** You get the following message after the start of the installation on a vMA on an ESXi server:

```
192.168.200.94 - PuTTY
=====
Choose Locale...
-----
1- Deutsch
->2- English
3- Espa?ol
4- Fran?ais
5- Italiano
6- Portugu?s

CHOOSE LOCALE BY NUMBER: 1
=====
RCCMD (created with InstallAnywhere)
=====

Preparing CONSOLE Mode Installation...

This installer was created with an unlicensed version
of InstallAnywhere. The evaluation period has expired.
Please contact sales@flexerasoftware.com about licensing.
```

Figure 203 Error Message „Unlicensed Version“

**Solution:** It is required, that the OS contains a TMP folder (/tmp) to execute a successful RCCMD installation.

## Appendix

### A OpenSSL

"This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).

### B Syntax for the switching of the outputs

Set the RCCMD client at port 6002 to "on", define the CS121 AUX ports as outputs and restart the CS121. Install the RCCMD Windows Wizard and open a DOS box. The following is a syntax example with the IP address 192.168.202.165:

```
C:\Program Files\RCCMD\
rccmd -se "EXECUTE |AUX|1|1" -a 192.168.202.165 -p 6002
```

**ATTENTION!** The blank after the "Execute" is important!

Common syntax for the switching of AUX ports:

```
|AUX|1|0 Port1, set to low
|AUX|1|1 Port1, set to high
|AUX|2|0 Port2, set to low
|AUX|2|1 Port2, set to high
|AUX|3|0 Port3, set to low
|AUX|3|1 Port3, set to high
```



```
|AUX|4|0 Port4, set to low
|AUX|4|1 Port4, set to high
```

Syntax for the switching of the outputs of the SiteManager:

```
C:\Program Files\RCCMD\rccmd -s -a 192.168.222.238 -p 6002 -se
"EXECUTE |UPSCMD|20000|1,1"
```

**ATTENTION!** The blank after the "Execute" is important!

Common syntax for the switching of the outputs of the SiteManager:

```
|UPSCMD|20000|1,0 output 1 to low
|UPSCMD|20000|1,1 output 1 to high
|UPSCMD|20000|2,0 output 2 to low
|UPSCMD|20000|2,1 output 2 to high
|UPSCMD|20000|3,0 output 3 to low
|UPSCMD|20000|3,1 output 3 to high
|UPSCMD|20000|4,0 output 4 to low
|UPSCMD|20000|4,1 output 4 to high
|UPSCMD|20000|5,0 output 5 to low
|UPSCMD|20000|5,1 output 5 to high
|UPSCMD|20000|6,0 output 6 to low
|UPSCMD|20000|6,1 output 6 to high
|UPSCMD|20000|7,0 output 7 to low
|UPSCMD|20000|7,1 output 7 to high
|UPSCMD|20000|8,0 output 8 to low
|UPSCMD|20000|8,1 output 8 to high
```

## C Know How Pool

### SuSE 8.1 or older Linux versions

If you are using a SuSE 8.1 or an older Linux version, it is required to select the OS „XEN-Server“ during the interactive RCCMD installation!

## D RARITAN Dominion PDU Configuration

In the following, we will describe, how a RARITAN PDU Type Dominion can be controlled through any RCCMD client or any CS121 or any other RCCMD compatible device :

1. Install a RCCMD client on a Windows OS and copy/create a file, like the following, into the RCCMD directory (default C:\Program Files\RCCMD) and use a SNMPwalk tool from an open source with the mandatory distribution txt-file « Copying.txt ». This file is included for legal reasons (Open Source).

```

@echo off
set PX_OID=1.3.6.1.4.1.13742.4.1.2.2.1.3.

if x%1==x goto paramerror
if x%2==x goto paramerror
if x%3==x goto paramerror
if x%4==x goto paramerror

snmpset -v 2c -c %2 %1 %PX_OID%3 i %4
goto end

:paramerror
echo.
echo missing parameter!
echo.
echo Usage: pxout.bat ip community port value
echo ip:      address of the PX device
echo community: SNMP community string
echo port:    1-12
echo value:   0 or 1

:end

```

Figure 204 “pxout.bat”

The command is called « pxout.bat » and expect 4 parameters :

- IP address or hostname of the Raritan device
- SNMP community string (the one for write access)
- Outlet number (1 to 12)
- 0 = off, 1 = on

2. The batch file “pxout.bat” accepts now several parameters from incoming RCCMD executes and translates these into SNMP set commands for the Raritan.

The “pxout.bat” accepts the following command syntax:

“pxout.bat <IP address> <community> <Outlet> <on/off>”

- **IP address:** This is the IP address of the Raritan
- **Community:** This is the community string for “write access”, configured at the Raritan or SNMP set commands, default is “public”.
- **Outlet:** This is the number of the Raritan Outlet 1 to 12, which you want to switch.
- **On/Off:** This is the signal you want to transmit, where “0” is off and “1” is on.
- **Example:** “pxout.bat 192.168.200.11 public 0” This example will switch the Raritan with the IP address 192.168.200.11, the outlet 4 to off!

If this works manually from your Windows RCCMD computer, than you can go ahead with step 3.

3. Now you have to select the desired CS121 event and add a RCCMD command, which will be send to the Windows computer, where RCCMD is running and the “pxout.bat” file is located.

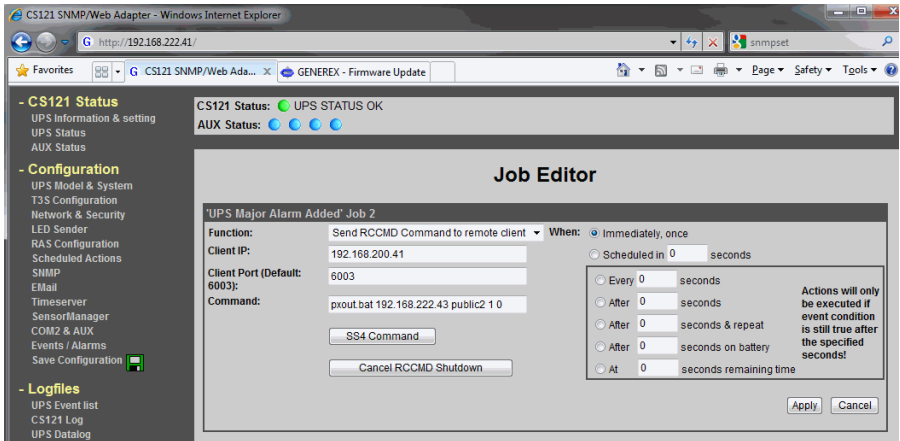


Figure 205 CS121 Configuration for such a relay command

The target of the RCCMD command is the Windows computer with RCCMD and the „pxout.bat“ with the IP address 192.168.200.41. If the event „UPS Major Alarm Added“ will occur, this Job will execute the command „pxout.bat 192.168.222.43 public2 1 0“ to switch off the socket number 1 at the Raritan with the IP address 192.168.222.43 immediately.

**Tip:** You should stop RCCMD running in the background on this Windows computer, so you will better see, whats going on. Stop the RCCMD service, than open a command line into the RCCMD folder and start „rccmd.exe –debug“. Now the software will run in the foreground and you can watch the communication.

4. The Raritan with firmware 1.4.1 is unfortunetaley buggy. Here the workaround:

The default community strings for the Raritan are identically set for „read“ and „write“ to „public“, but this configuration is invalid! It must be different!


Solution: Stop the SNMP Agent at the Raritan, change the community for „write“ to any other than „public“ and restart it!

The screenshot shows the Raritan web interface for a Dominion PX device. The 'Device Settings' menu is expanded, and a red arrow points to the 'SNMP Settings' option. The interface includes a navigation bar, a left sidebar with device information, and a main content area with a table of outlets.

Name	State	Control	RMS Current	Active Power	Group Member
Outlet 1	on	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 2	off	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 3	on	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 4	on	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 5	on	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 6	on	On Off Cycle	0.00 Amps	0 Watts	no
Outlet 7	on	On Off Cycle	0.00 Amps	0 Watts	no

Figure 206 Raritan Device Settings

The default Raritan user is „admin“, password is „nimda“.

 Attention! This does not work with MS Internet Explorer! Use any other web-browser, e. g. Mozilla Firefox.

The screenshot shows the Raritan web interface for a Dominion PX device, specifically the SNMP Settings page. The 'Enable SNMP Agent' checkbox is checked, and the 'Enable SNMP v1 / v2c Protocol' checkbox is also checked. The 'Read Community' is set to 'public' and the 'Write Community' is set to 'public2'. The 'System Location' is set to 'Here' and the 'System Contact' is empty.

Figure 207 Raritan SNMP Settings

Click on „Stop“, change the configuration on „Write Community“, e. g. to „public2“ and restart.

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