RNX

UPDU RN3000 family software user manual

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0.2.   Confidentiality level

Public

0.3. Document History

Date	Revision	Who	Comment
2020-06-03	0.1	FRIE	First draft user manual for firmware only
2020-09-15	1.1	FRIE	Draft user manual for firmware v1.1
2020-11-25	1.2	FRIE	Draft user manual for firmware v1.2
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2021-06-18	2.0	FRIE	Draft user manual for firmware v2.0
2021-09-03	2.1	IGIA	First complete user manual draft updated for firmware v2.1
2022-05-20	2.5	IGIA	Updated and kept only SW in this document
2022-10-21	2.7	IGIA	Minor updates

0.4.   Glossary

AC	Alternating Current
API	Application Programming Interface
AUX	AUXiliary
CBM	Circuit Breakers Module
CLI	Command Line Interface
COM	COMmunication
DC	Direct Current
DCIM	Data Center Infrastructure Management
DHCP	Dynamic Host Configuration Protocol
ETH	ETHernet
FW	FirmWare
HTTP	HyperText Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure
ICM	Interface and Control Module
IP	Internet Protocol
LED	Light Emitting Diode
MCB	Miniature Circuit Breaker
MIB	Management Information Base (SNMP)
PC	Personal Computer
PD	Powered Device
PDU	Power Distribution Unit
PE	Protection Earth
PIM	Power Inlet Module
PLC	Power-Line Communication
PoE	Power over Ethernet
POM	Power Outlet Module
PSE	Power Source Equipment
RCD	Residual Current Device
RCM	Residual Current Monitor
REST	REpresentational State Transfer
RNX	Riedo Networks Ltd.
RS232	Recommended Standard 232
RSTP	Rapid Spanning Tree Protocol
RTC	Real Time Clock
SNTP	Simple Network Time Protocol

SNMP	Simple Network Management Protocol
SSH	Secure SHell
STP	Spanning Tree Protocol
TCP	Transfer Control Protocol
TFT	Thin Film Transistor
UPDU	Universal Power Distribution Unit
USB	Universal Serial Bus

1. Introduction

Thank you for purchasing a Universal Power Distribution Unit of the RNX RN3000 family. With its high precision measurements it is one of the most advanced PDUs available on the marked today.

This document gives an overview of its software features and in some cases will redirect you to more specific manuals for more detailed information.

2. Finding the IP address of the PDU

To connect to your PDU via one of the Ethernet ports you may need to know its IP address. You can directly read it on the UPDU display by pressing the enter button ◉ several times to reach the information page and then scroll with the arrow buttons ◉ ◉ until the IP address is shown.

Figure 1: Finding the IP address on the PDU display.

An alternative way to find the IP address is to connect to the PDU through the serial console and using the "show ip" command. You will need a special cable and to log in to the PDU. See section 4.1 for more details.

Figure 2: Finding the IP address with the serial console.

3. Web interface

The PDU can be accessed and controlled by its integrated web interface. A detailed description on how this works is available in "UPDU RN3000 family web user manual".

4. CLI (command line interface)

The PDU can be accessed and controlled with its own command line interface (CLI). This is the most powerful control interface of the PDU and has more data and options than the other interfaces.

There are three ways to access the CLI: with a serial console, through telnet or through ssh.

Regardless of how you connect to the PDU, the CLI is always the same and works in the same way.

(i)	A maximum of 3 ssh or telnet sessions can be open at the same time.
(i)	ssh and telnet sessions will time out after 15 minutes of inactivity. This delay can be modified with the CLI.

4.1. Serial console connection

To use the serial console interface connect your PC to the AUX3 port with a **RN1080 USB Adapter cable**. Then open your favorite terminal application and connect to the virtual serial USB port.
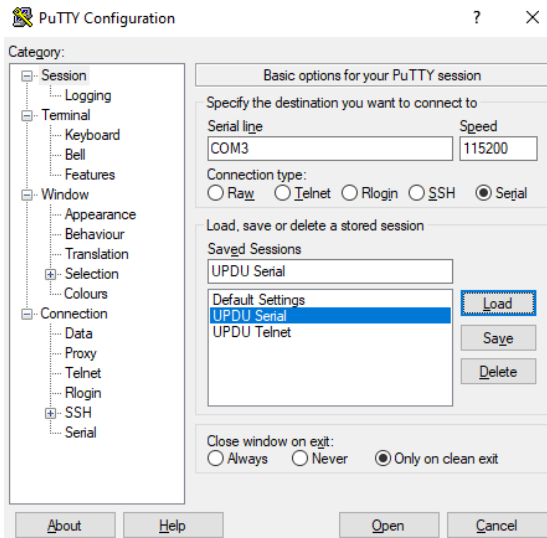

Figure 3: Example of console connection using the PuTTY application.

To connect the cable you need to be in close proximity of the PDU as the cable is only 1.8m long. But this connection has the advantage of being always able to connect to the PDU, even when the IP configuration is wrong or you don't know the IP address of the PDU.

	The serial interface configuration is **115200/8-N-1** i.e. 115'200 bits per second, 8 data bits, no parity bit, 1 stop bit.
	The console only works on port AUX3.
	Once logged in via the console, you can display the IP addresses of ETH1/2 and ETH3 with the "show ip" CLI command.

4.2. SSH connection

The easiest way to connect to the PDU CLI is opening an ssh connection over the Ethernet network.

The IP-address can be found on the PDU display (see section 2). Make sure that your PC and the PDU are on the same network then, on the command shell, simply type "ssh " followed by the IP address you just got and hit return (e.g. "ssh 192.168.1.57"). Alternatively, you can use a suitable terminal application, such as PuTTY.
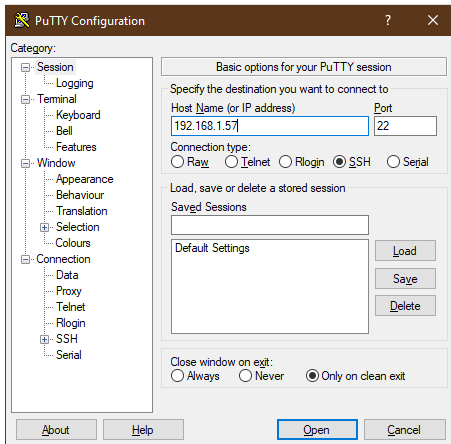

Figure 4: Example of ssh connection using the PuTTY application.

4.3. Telnet connection

If enabled, you can also directly open a telnet connection to the UPDU via the Ethernet network.

⚠	The telnet protocol is not encrypted and is insecure. It's disabled by default. It will only work if explicitly enabled in the settings. Use the serial console, ssh or the web interface to enable it.

This works in a similar way as ssh we just described: in the command shell, simply type "telnet " followed by the IP address you just got and hit return (e.g. "telnet 192.168.1.57"). Alternatively, you can use a suitable terminal application, such as PuTTY.
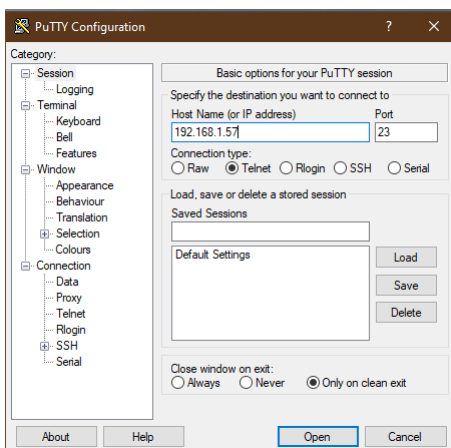

Figure 5: Example of telnet connection using the PuTTY application.

4.4. Console login

To access the CLI you must first log in. When prompted, simply enter the user name and its corresponding password.
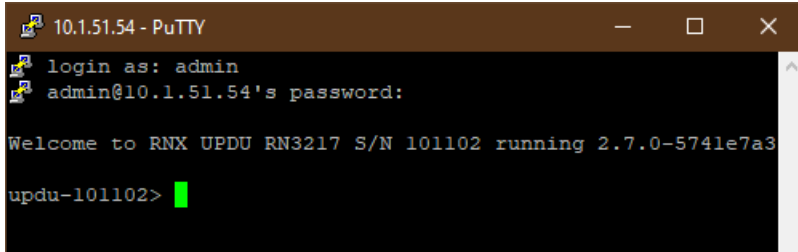

Figure 6: Logging in to the CLI, in this case with ssh.

ℹ	The default username is "**admin**" and the default password is "**admin**" as well.

4.5. CLI command reference

Please refer to "CLI Reference Manual" for a complete and up to date description of the commands available in the CLI.

5. SNMP

SNMP is the most common protocol used by DCIM software to collect data and control PDUs. This product supports both SNMP v2 and SNMP v3.

To use SNMP, first it must be configured and enabled. You can do this from the web interface or with the CLI. SNMP v3 also requires at least one user with the SNMP role.

ℹ	The MIB file can be directly downloaded from the PDU web interface, in the settings page at the SNMP section.
ℹ	*To view the MIB file and structure you can use an application like "ireasoning MIB browser" (https://www.ireasoning.com/)*
⚠	When remotely switching a relay, make sure that the load connected to the outlet being remotely switched on will not generate a dangerous situation.

6. UPDU tool

For customers owning many PDUs, the "RNX UPDU and E3METER IPS PDU Tool" allows automated discovery and mass upgrade of all PDU in the local network with a simple command line interface. Binaries are available for Windows, MacOS and Linux upon request.

(i)	Please contact info@riedonetworks.com for a copy of the UPDU tool.

Please follow the instruction in the included README.txt file for more information on how to use this tool.