

Technical instructions

Configuring a Rimage RX400 in Perennity Media Burner

Applies to Perennity Media Burner v6 bld 109 and higher

REVISIONS

Revision	Date	Author	Description
1	Feb 2 nd 2022	Guy Derijcke	First version for bld 109
2	Apr 5 th 2022	Guy Derijcke	Added extra parameters
3	Jul 6 th 2022	Guy Derijcke	Updated for RX400 FW v0.6
4	Aug 2 nd 2022	Guy Derijcke	NotoSans font implementation
5	Nov 3 rd 2022	Guy Derijcke	Configurable share user
6	Jan 25 th 2023	Guy Derijcke	Add multi-WORM (FW v1.0)

INTRODUCTION

RX400 MedX is the official brand name for a USB key production system proposed by Rimage. It is part of a category of products called X5, which offers diverse flash production products. RX400 MedX combined with Perennity Media Burner is aimed at medical imaging customers with a need to distribute DICOM data in a standardized way, as an alternative to optical media (CD/DVD).

The product is still under development at this moment, and new features will be added to it in the near future. Therefore we have not yet included its setup and configuration in the Perennity Installation Guide. This technical document provides the needed information to connect Perennity to the RX400, and use the features currently available. It will be updated as new features become available.

RX400 will behave differently depending on the used USB keys. Rimage Baseline keys are single-WORM devices, which can only be used once; data is always written to the root of the key. Baseline Pro and Topline keys on the other hand are multi-WORM devices. For each writing session a new subfolder is added to the USB key that holds the data for the session. Its name is composed of the production date and time and the included modalities. The root folder of the USB key contains an index.html file that contains an overview of all sessions. Per session/subfolder there's also a json file with metadata for the session.

Please be aware that job cancelling is not propagated from Perennity to RX400, or the other way around. This is due to a current limitation in the RX400 APIs, and will become available in an upcoming firmware upgrade.



At this moment there are some limitations to combine RX400 with an optical autoloader. You have to use "auto select" mode for the media types, explicitly define the available media types in the burner_media table, and use a common buffer folder (UNC path using IP address or host name) as it has to be accessible to both systems. Ask Perennity support for assistance if needed.

IMPORTANT INFORMATION - DISCLAIMER

PERENNITY IS NOT RESPONSIBLE FOR ANY DATA LOSS THAT MAY HAVE BEEN CAUSED BY FOLLOWING THESE PROCEDURES.

ONLY PERENNITY PARTNERS TRAINED TECHNICIANS SHOULD CARRY OUT THESE PROCEDURES.

BACKGROUND INFORMATION

RX400 is a networked device, based on a Linux Ubuntu operating system. Perennity has to be installed on a separate Windows PC with network access to the RX400. Please refer to the available Perennity documentation (installation and administration guides) for detailed instructions on installing, configuring and using Perennity.

In the current Perennity release, not all settings are present in the interface yet. Several of the procedures hereunder demand extensive knowledge of Perennity configuration, networking, and database management. Please request our assistance if you are not sufficiently familiar with any of the described topics. It may be an opportunity to get some additional training.



After making any changes, make sure to restart the Burner and/or Autoloader services. You can easily do so via the Media Burner interface ("Server" > "Restart services").

ADDING AN RX400 IN MEDIA BURNER (MEDIA BURNER SETTINGS)

Add a target in the Media Burner settings as you would do for any type of output and select 'Rimage X5' as type. Give it a descriptive target name, e.g. 'RX400 Radiology front desk'.

By default any new RX400 unit has host name 'rx400' and listens to port '5675' for submitting production orders. When installing multiple units in the same network, you have to make sure to configure a unique host name on each unit to avoid conflicts.

After setting up your RX400, use the "Test connection" button to verify if the system is accessible. You should get a 'Connection was successfully established!' message. If not check your RX400 and/or network environment.

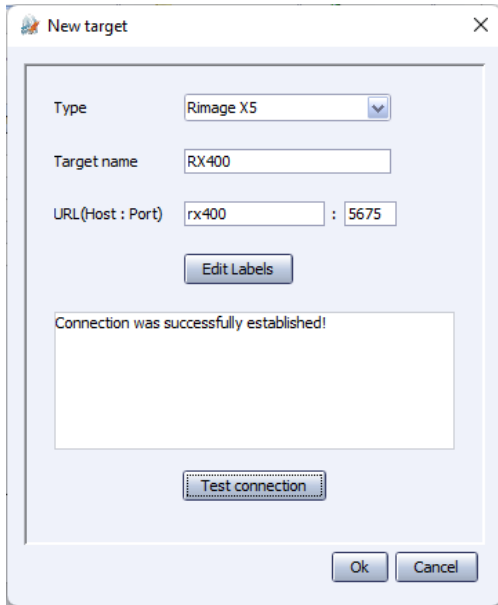


Fig. 1 - Set up a new Rimage RX400 target

If the connection is not successful, you may try to use the IP address of the RX400 instead of the host name. You can find that in the About menu via the display of the unit.

Device Information	
Device Status:	Online
License Status:	Valid
Serial Number:	RX400_PT_202111010
IP-Address:	192.168.1.39
Service ID:	7fyd9

Fig. 2 - IP address in About window

Close your target settings and configure your newly configured RX400 as default target device under the General tab.

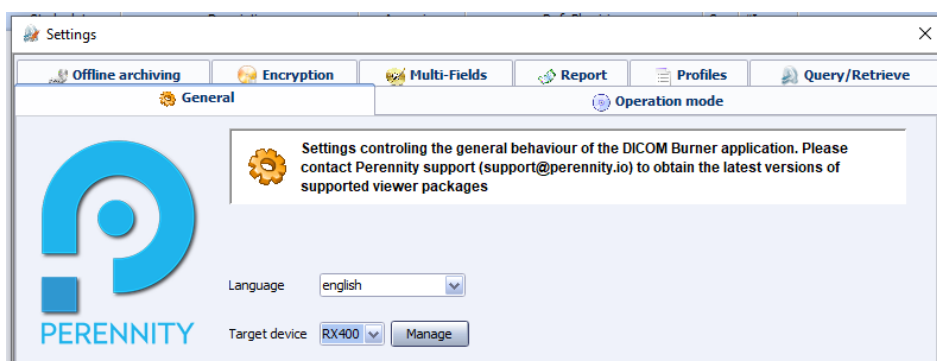


Fig. 3 - Set RX400 as default target device

CHANGING THE BUFFER PATH (MEDIA BURNER SETTINGS)

The most convenient way to set up Perennity with RX400 is to have Perennity copy the data to the already existing buffer folder on RX400 itself. The buffer can also be set up

on the Perennity PC, but that requires a more complex configuration from a networking point of view.

To set up the buffer on RX400, configure the buffer path in the General settings of the Media Burner to '\\rx400\x5storage' (or use the IP address).

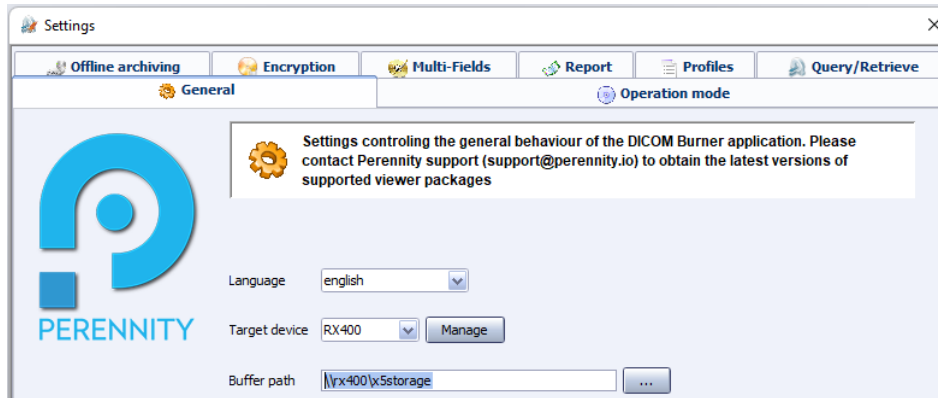


Fig. 4 - Set RX400 as default target device

Especially when using the Perennity encryption option, we recommend working with a local buffer (UNC path). That should improve performance, as the encryption is performed in the buffer folder. In that case you should set up the buffer path as a local share (e.g. '\\perennitypc\buffer', which can be accessed by the following user: 'pry' with password 'password1!' (default user/password)). Check the extra parameters section hereafter for configuring a different user/password combination ("Share user and password" topic).

DISABLE SYMBOLIC LINKS (DATABASE)

By default Perennity creates symbolic links in the buffer folder, but this Windows-specific feature cannot be used with the Linux based RX400. It is therefore essential to disable the symbolic links by setting the value of the key_name 'media_use_symlinks' (DCMB module) in the Perennity config table to 'false' instead of 'true'.

DCMB	media_use_symlinks	false
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Fig. 5 - Disabling symbolic links

CONFIGURE AVAILABLE MEDIA TYPES (DATABASE)

In the current release, you must manually configure the database burner_media table with the USB capacities that you plan to use.

Edit the table with a tool of choice and make sure you only set the available media types to enabled (value '1'). In the example hereunder only 16GB USB is enabled.

scope	name	size	enabled
archive	BDR	24000	0
archive	CDR	660	0
archive	DVDR	4000	0
default	CDR	660	0
default	DVDR	4000	0
default	USB128	128000	0
default	USB16	16000	1
default	USB32	32000	0
default	USB64	64000	0
default	USB8	8000	0

Fig. 6 - Enable available USB media



In the current Perennity release, combining optical media (CDR/DVDR/BDR) with USB media always requires the media type to be set to 'Auto Select' in the "General" settings!

SERVICE ACCOUNT SETUP (WINDOWS SERVICES / PERENNITY SCRIPT)

As Perennity will have to write data over the network to the RX400, it is necessary to change the service account on at least the Burner and Autoloader services.

You can either change the service account on only those services, or use the script provided by Perennity to set all services to start with the local account 'PerennityServices'.

The script can be found here:

C:\ProgramData\PerennityV6\Scripts\PerennityServices account deployment script.bat

Right-click the batch file and select 'Run as administrator'. The script first creates the PerennityServices user and assigns required rights to it. You will be prompted to enter a password for the new user (cannot be empty). After that all Perennity services will be configured to start up with the newly created service account.

LABEL CUSTOMIZATION (MEDIA BURNER SETTINGS)

After setting up a new RX400, default label templates are provided as json files, as shown here:

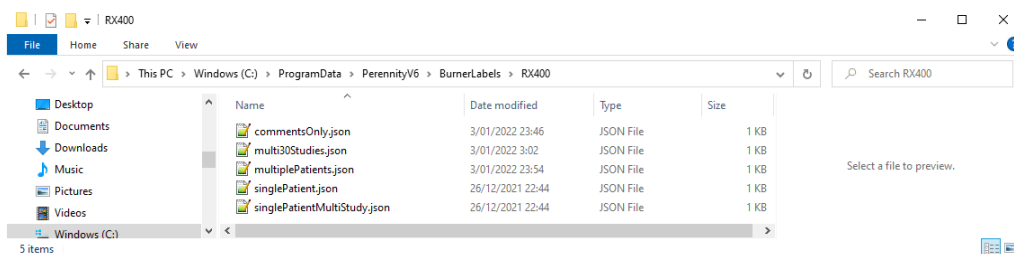


Fig. 7 - Perennity RX400 label templates

The "media" subfolder contains two NotoSans font files (NotoSansDisplay-Bold.ttf and NotoSansDisplay-SemiBold.ttf), which are used by the Perennity label templates. This font is recommended by Rimage for both its compactness and good print quality

It is essential to copy the complete "media" folder to the configured buffer path.

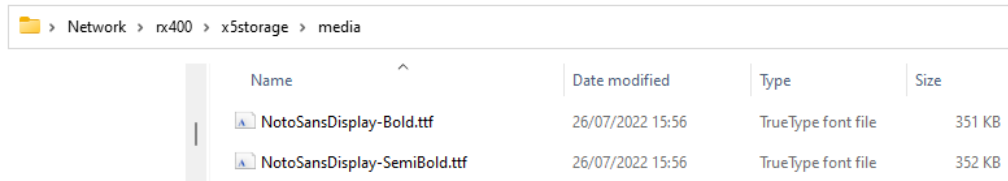


Fig. 8 - Media subfolder with NotoSansDisplay fonts in shared buffer

You can customize the labels by editing the json files. You can use any of the merge fields documented in Appendix 2 of the Perennity Media Burner Administration Guide.

Check the X-Net documentation for more detailed label editing instructions: <https://wiki.x-net.at/documentation/x5/x5-ticket-api-documentation#3-5-the-label-section>. As the json label interpreter is very rigid, make sure to adhere exactly to these guidelines.

KEEP JOBS ON RX400 (DATABASE)(OPTIONAL)

You may decide not to erase the contents of previously submitted production jobs on the RX400 share, so you can resubmit them again from the RX400 (web) interface.

To do so, set the value of the key_name 'KeepJobsInBuffer' (DCMB module) in the Perennity config table to 'true' instead of 'false'.

DCMB	KeepJobsInBuffer	true
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Fig. 9 - Keep jobs stored on RX400

EXTRA PARAMETERS (DATABASE)(OPTIONAL)

Several extra parameters are available, which must be edited in the 'autoloader_devices' table, 'extra_parameters' column.

File system

The 'filesystem' parameter allows for choosing a file system to be used on your USB media. Available options: exfat (default, recommended for performance and compatibility reasons), ntfs.

Verification

The 'verify' parameter allows for activating verification after writing, which by default is set to no. Available options: md5 (md5 hashes), sha (sha hashes), no (no verification).

Autostart (obsolete)

Jobs submitted by Perennity are automatically processed by the RX400. If you don't want to do so, set the 'autostart' parameter to 'false' instead of true. This will require you to manually submit jobs for writing through one of the RX400 interfaces (touchscreen or web).

Label font

The default Perennity templates use the NotoSans font, as described earlier (see Label Customization).

If you wish to use another font, it can be specified with the 'label_font_name'

parameter. Available fonts are: "Courier", "Courier-Bold", "Courier-BoldOblique", "Courier-Oblique", "Helvetica", "Helvetica-Bold", "Helvetica-BoldOblique", "Helvetica-Oblique", "Symbol", "Times-Bold", "Times-BoldItalic", "Times-Italic", "Times-Roman", "ZapfDingbats". If no font is explicitly specified in the json label template, Perennity will use the selected font for label printing.

Share user and password

By default Perennity uses "pry" with "password1!" as credentials for RX400 to access the configured share (buffer path). This should be OK with the open share on RX400. If however you want to define a share on the Perennity system, and use another account/password combination, it can be configured through the extra_parameters: 'share_user' and 'share_password'.

It is important that this user has full control access to the share, but also the Perennity Burner service account must have those rights (by default that's the local SYSTEM account).

TEST YOUR SETUP (PERENNITY SENDER & MEDIA BURNER)

After performing the previous configuration steps, you are ready to test the setup. Open the Perennity Sender application and send the sample study to Perennity.

If your Media Burner is set to attended mode (default), select the study and press the "Submit" button to create the production order. As with other outputs, Perennity will first create the media contents in the configured buffer folder, then create and send the order to RX400.

The status column in the 'Current jobs' tab will give feedback within the Media Burner. The job will also be visible in the RX400 interfaces now (display/web), on the "Pending jobs" page. Push "Select Patient" on the Home screen to pick a job to be processed in the selected USB slot. Single-WORM keys must be empty; otherwise you will get an error. If the inserted key is a multi-WORM key that already contains data, the new data will be appended if the patient is the same. The system will prompt for confirmation if there are inconsistencies (e.g. different birthdate).

After reaching 100%, you may remove the key from its slot and the corresponding label will be printed. As this is your guarantee that the label corresponds with the USB key that was just extracted, make sure to never remove multiple produced USB keys simultaneously.

CONNECTING TO RX400 MEDX

RX400 (web) interface

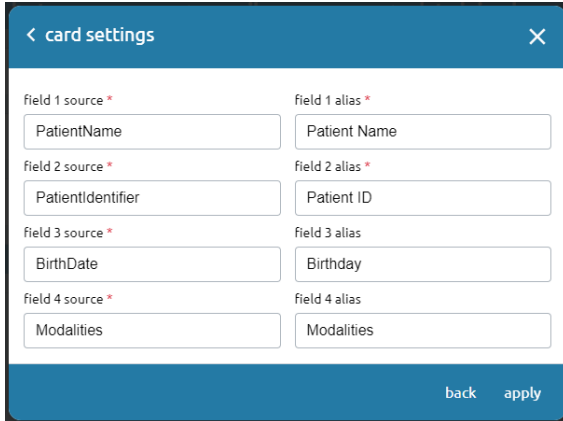
RX400 offers a web interface very similar to what is shown on the display of the unit. You can access it via <http://rx400/> (or IP address). You can login as administrator with username 'admin' and password 'x5webadmin'.

Both the display and the web interface have 5 tabs on top. The "home" tab shows productions in progress on the 4 available USB slots, the "current" tab shows current and past tickets, the "archive" tab shows information about past productions and gives the option to reprint a label. The "system control" tab offers a system management interface, the "sign out" tab signs out the currently logged in user.

Please check the RX400 manual for more information about the system itself and its configuration.

Configuring the home screen

Through "system control" > "settings" > "card" you can edit the information shown on the home tab. The field source information is included by Perennity in the jobs it sends (kind of merge fields), the alias is what is shown as field name in the interface. The following fields (sources) are currently available: PatientName, PatientIdentifier, BirthDate, Modalities. We suggest the following setup:



Field Source	Field Alias
PatientName	Patient Name
PatientIdentifier	Patient ID
BirthDate	Birthday
Modalities	Modalities

Fig. 10 - Configure home screen information

RX400 share level access

On a share level you can check out the UNC path '\\rx400' via Windows Explorer. It should give you access to the SMB shares of the unit. By default, the only share present is 'x5storage', which is therefore recommended to be used by Perennity as default buffer folder.

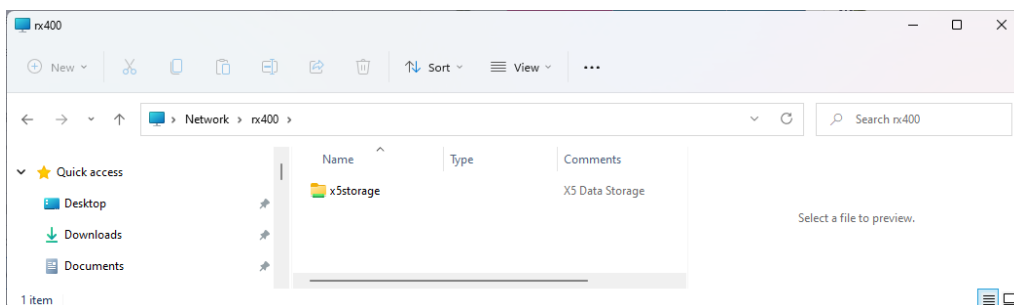


Fig. 11 - Share 'x5storage' on RX400