

rdx[®] LOCK

Administration Guide



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Overland Storage/Tandberg Data
9112 Spectrum Center Boulevard
San Diego, CA 92123 USA

TEL 1.800.729.8725 (toll free)
1.858.571.5555
FAX 1.858.571.3664

www.overlandstorage.com
www.tandbergdata.com



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Product Information

rdxLOCK is a hardware-independent software product, which provides infinite or fixed (by date or period) WORM (Write Once, Read Many) protection for data on standard hard disk systems.

Topics in Product Information:

- [Overview](#)
- [Key Features](#)
- [rdxLOCK Manager](#)

Overview

Applications can write data locally, via CIFS, FTP, or NFS, directly to a **rdxLOCK** protected file system, but are not allowed to make any modification after the data has been locked. The locking mechanism is completely controlled by **rdxLOCK** on a directory- or file-level basis and ensures that a file object is changed to WORM based on the selected protection policy. A special API is not necessary for this.

rdxLOCK's protection policies ensure that files can't be modified, renamed, moved, or overwritten in any way, preserving data in a non-rewritable, non-erasable manner for an infinite period of time. Additionally, **rdxLOCK** prevents the alteration of file attributes. A special feature, RansomBlock (see [page 7](#)), also prevents unauthorized modification. Special permission must be granted either manually or automatically for any changes.

To meet regulatory compliance requirements, **rdxLOCK** allows the deletion of data after a pre-defined retention period, but still prevents the user from modifying expired data.

As **rdxLOCK** is able to use the existing server and disk storage infrastructure, an audit-compliant archive can be implemented in a cost-effective manner. Even existing file systems can be converted to WORM file systems by **rdxLOCK**.

rdxLOCK supports NTFS volumes on 32-bit and 64-bit Windows architectures.

Key Features

NOTE: Starting with version 2.3.0, the availability of some functions and features depends on the installed license. This administration guide documents the full function and feature set.

Protection Policies

Protection policies can be configured on the root level. The following protection policies are supported:

- **DLR** – Directory-Level Retention
The DLR policy is based on directory level. The advantage of this policy is the option, to prolong the retention period of a data pool by changing only one single figure.
- **SFR** – Single File Retention (SnapLock interface)
The SFR policy allows an individual retention period for every individual file. It provides compatibility with the NetApp SnapLock interface.

Enhanced Security Mode (ESM)

rdxLOCK protected volumes can be managed on operating system level mostly like any volume. In particular, you can move them from one disk system to another one, and you can mount them on any computer, even if there is no **rdxLOCK** software installed.

Enhanced Security Mode is an additional security level to encrypt the volume in a way that no content of the real volume is visible, if **rdxLOCK** is not installed. Instead of the real content of the NTFS volume, you can see a small FAT – volume with warning information. It also inhibits the deletion of files on **rdxLOCK** protected volumes in the following cases:

- The **rdxLOCK** file system filter has been stopped.
- **rdxLOCK** has been uninstalled from the system.
- A **rdxLOCK** WORM volume has been moved to a server system, which does not have **rdxLOCK** installed.

Since **rdxLOCK** 2.3.0, ESM V5 has been used. This version supports encryption with AES-256. ESM V4 volumes are still supported and can optionally be set to V5. New created volumes will only be created as V5 with a FAST encryption. The internal ESM number is increased to prevent older **rdxLOCK** version mounting this volume. V4 and V5 volumes can be converted to V5 AES-256.

NOTE: Please run a backup of the WORM volume before changing the encryption method.

Since **rdxLOCK** 2.3.1 all productively used volumes need to be set to ESM. Only test volumes work without ESM and expire after 60 days.

Verified Retention Clock (VRC)

A compliant data storage system needs a secure tamper-proof time base to measure retention periods and ensure WORM integrity.

rdxLOCK provides a secure and compliant retention time management, called Verified Retention Clock (VRC). This facility has to be synchronized directly after setting up the software by entering a special TimeSync key. (See [TimeSync Key](#) on page 18.)

This key contains a trusted timestamp for verifying that the system clock is in a certain range compared to UTC (Coordinated Universal Time). Only if the verification succeeds, WORM volumes can be initialized, configured, and controlled. As long as the verification has not been implemented, the system can not be used for managing WORM volumes.

All WORM volumes created by a **rdxLOCK** application with a non-verified system clock are marked as “TEST WORM VOLUMES” and can only be converted to valid, productive WORM volumes on systems with a verified system clock and as long as their temporary license is still valid.

After a successful system clock verification, VRC closely monitors the system clock and ensures that system clock manipulations cannot be used to delete files before they expire. Such manipulations can end in temporary prolongation of retention periods when the system clock is set in the future or to access restrictions when it is set in the past.

Small changes in the system clock are manageable, but when the clock is adjusted over large ranges, or the system is switched off or rebooted for any reasons, this does result in a prolongation of retention periods. To mitigate such artificially extended retention time periods, VRC allows a drifting of the retention time offset (RTT-Offset) up to a week per year to make up for downtimes due to system maintenance and other housekeeping events. Any longer periods of downtime will need to be handled via a TimeSync key, if the RTT-Offset is beyond an acceptable value (out of bounds). In most cases, a new TimeSync key will need to be installed.

VRC is designed to support removable WORM media as well. Taking a WORM volume offline for an extended time period does not end up in a temporary prolongation of retention periods registered in a volume.

RansomBlock

RansomBlock protects data on Windows file systems from unauthorized modification. New data can be written by any application locally to a RansomBlock protected file system. However, when a file is closed, no applications (not even the owner) is allowed to modify, rename, move, or overwrite the file (except if the change request is approved by a system administrator or an authorized user account). The approval can be issued specifically (such as for a certain process on a certain file object) or generally (such as for the lifetime of a process on any file object).

Applications can be blocked from modifying files by adding them to a banned list of applications (blacklisted) or can be granted write access to all local files by adding them to a trusted list of applications (whitelisted). The integrity of a whitelisted application is ensured by its SHA1 hash value. Therefore unwanted modifications on a trusted application can be detected and reported to the user.

Also existing file systems can be converted to RansomBlock file systems. RansomBlock supports NTFS volumes on 32-bit and 64-bit Windows architectures.

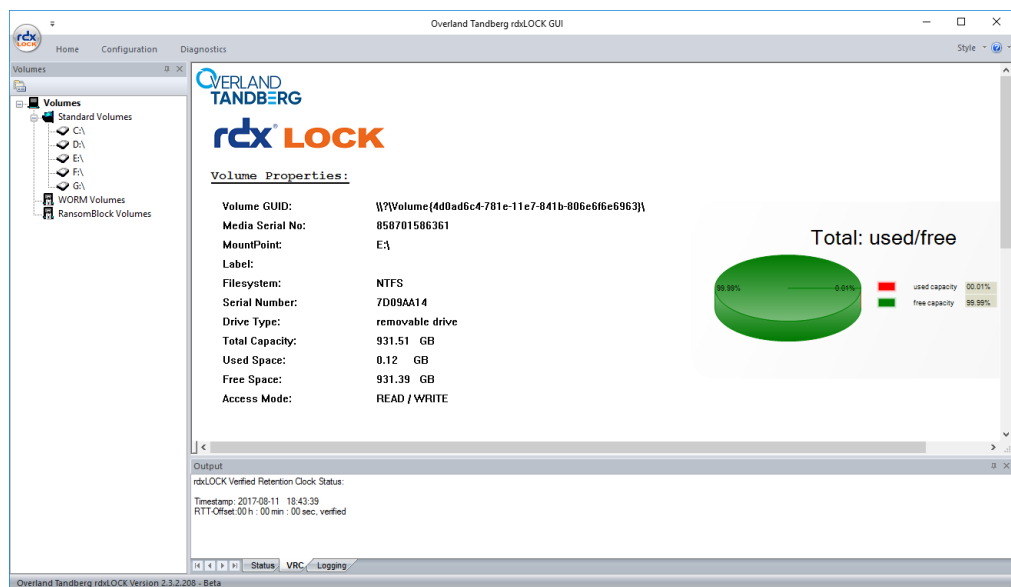
Restrictions

- **rdxLOCK** Version 2.3.2 is designed for NTFS formatted volumes on primary partitions of basic disks with MBR (master boot record) and GPT (GUID Partition Table) partitioning scheme. If **rdxLOCK** is configured for a volume residing on a dynamic disk, the Enhanced Security Mode will not be supported on that volume.
- **rdxLOCK** may not be installed on systems which do have any version of TrueCrypt installed.
- **rdxLOCK** supports certified removable media and certified removable devices such as RDX media and docks.
- Other file systems than NTFS are not supported.
- System volumes and cluster quorum disks are excluded by the configuration procedure.
- Appending data to **rdxLOCK** protected files is not supported.
- Files having Extended Attributes or reparse points attached can't be set to WORM.

- The Recycle Bin functionality can not be used on WORM volumes, since **rdxLOCK** denies the move operation to the recycle bin when an expired WORM file is selected for deletion. Therefore it is recommended to deactivate the Recycle Bin for the individual WORM volumes to make the deletion of expired WORM files possible. Please note that Microsoft has redesigned the Recycle Bin behavior in Windows VISTA, Windows 2008 Server, and Windows 7. The properties of the Recycle Bin are now tied to user profiles rather than the actual disk. Therefore each user must explicitly switch off the Recycle Bin of the corresponding WORM volumes when accessing them locally for deleting expired WORM files.
- Upgrades are only supported from **rdxLOCK** version 2.1.0 Build 29 and higher. Previous versions need special support, so please contact your service provider.
- Read-only volumes are not supported.
- Volumes mounted inside a WORM volume are not WORM protected.
- Shrinking an ESM protected volume is not supported.
- Adding a mirror to an ESM protected volume is not supported.
- Volumes marked as 'active' can not be used in ESM mode.
- Backing up an image of a single, ESM encrypted partition on a GPT disk is not supported. In this case an image backup of the entire GPT disk must be created including the backup of unused sectors.
- The replication service user account needs administrative rights including the backup, restore, and take ownership privilege. When replicating to a remote share, the appropriate share permissions and NTFS security rights must be granted to the service user account accordingly.

rdxLOCK Manager

Management is handled primarily through the **rdxLOCK** Manager GUI.



2

Installation

This section covers the installation of the **rdxLOCK** software.

NOTE: Administrative rights are required to install, configure, license, update, and set policies and retention times for **rdxLOCK**. When installing **rdxLOCK** on Windows 7 or Windows 2008 Server (or higher), you need to be logged in as Administrator or to run the installation program using the Run as administrator context menu option.

Topics in Installation:

- [Install rdxLOCK](#)
- [Post-Installation Actions](#)
- [Uninstall rdxLOCK](#)

Install rdxLOCK

When installing **rdxLOCK**, you can use either a “silent” mode or the normal Windows process.

Installation Preparation

1. Close all applications running on the system.
2. Copy the **rdxLOCK** executable program (**rdxLocksetup_<version>.exe**) to your Windows system and note its location.

Silent Mode

You can run **rdxLOCK** setup in a “silent” mode. This applies to new installations and updates. In “silent” mode the **rdxLOCK** setup runs with default settings (with installing ESM) automatically and, if wanted, in the background. If it is not deselected, a reboot is performed after setup.

The “silent” setup is started in CMD with following parameters:

<code>/SILENT</code>	automatically, status dialogs are still displayed
<code>/VERYSILENT</code>	automatically, completely in the background
<code>/NORESTART</code>	the reboot is deselected (only with a “silent” mode)

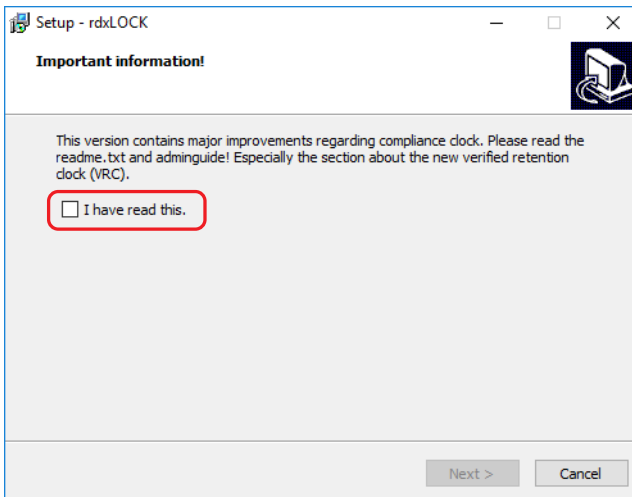
Example:

```
rdxLocksetup_<version>.exe /SILENT /NORESTART
```

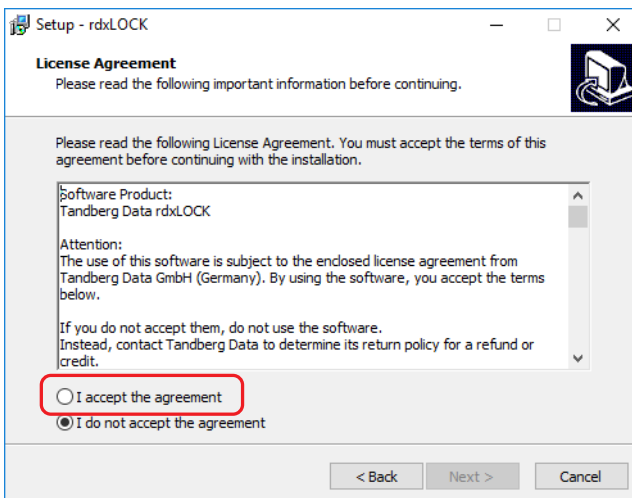
Install rdxLOCK Procedure

To install **rdxLOCK** using the wizard:

1. Run the **rdxLOCK** program to start the installation wizard.

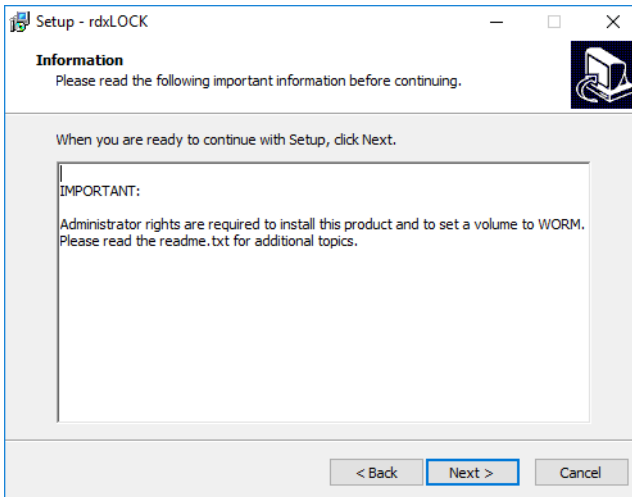


2. Check the **I have read this** box and click **Next** for the License Agreement.
You must agree to the license contract to continue with the **rdxLOCK** installation.

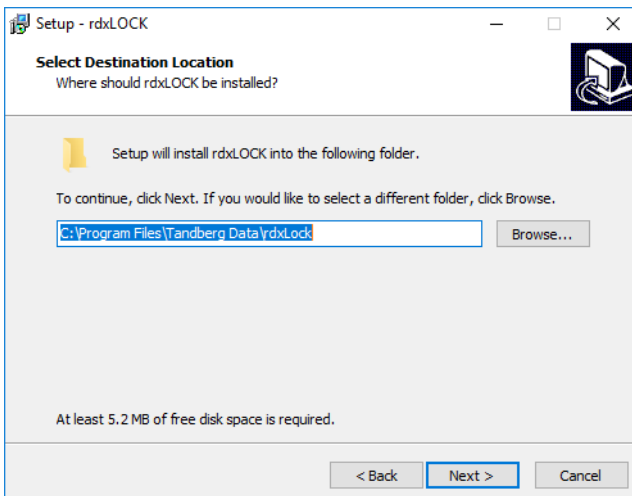


3. Select **I accept the agreement** and click **Next**.

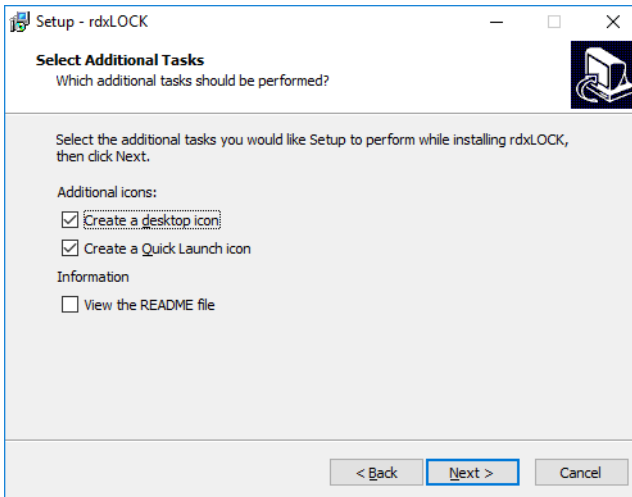
A dialog information box is displayed regarding administrator rights.



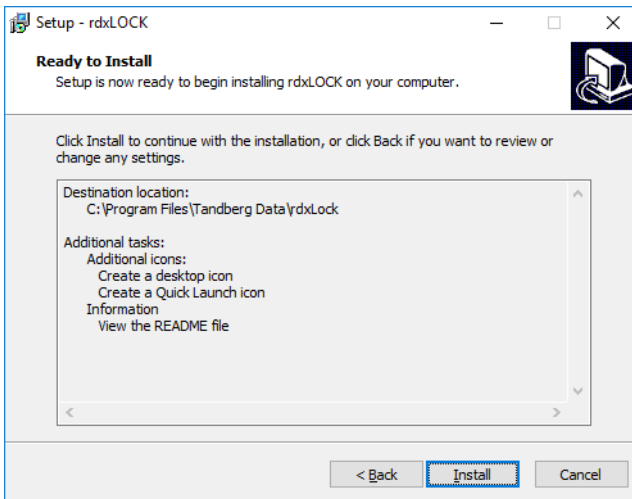
4. At the **Select Destination Location** screen, either accept the default location or, using the **Browse** button, select the folder where you want to install **rdxLOCK**.



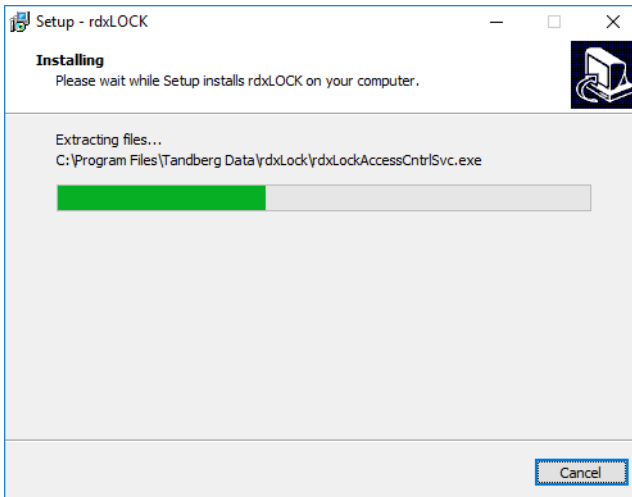
- At the **Select Additional Tasks** window, choose the tasks you want.



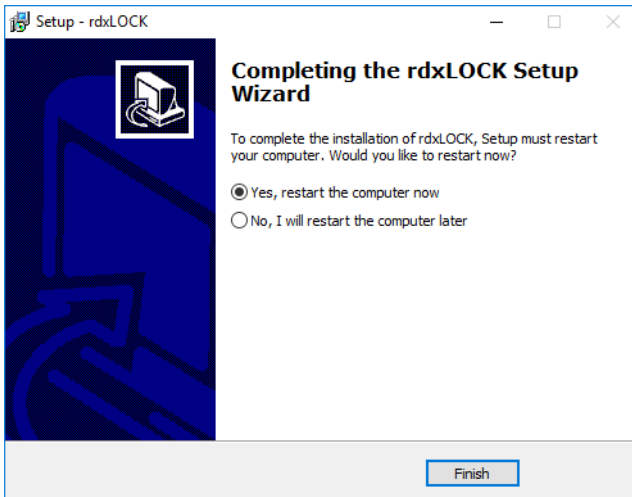
- Create a desktop icon (recommended).
 - Create a Quick Launch icon (recommended).
 - View the README file.
- At the **Ready to Install** screen, verify the settings and click **Install**.



rdxLOCK will be installed to the selected destination folder.



7. At the final Wizard screen, click **Finish** to reboot the computer.



Post-Installation Actions

Once the **rdxLOCK** is up and running, perform the following actions.

System Clock Verification

After a new installation or an upgrade from versions prior to 2.2.6, the system clock needs to be verified by a TimeSync key (see [TimeSync Key on page 18](#)).

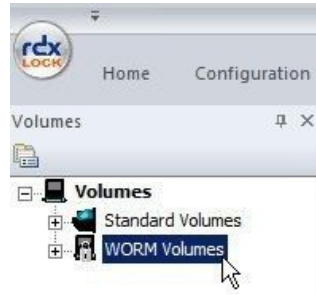
As long as the system clock is not verified by TimeSync, the following restrictions exist:

- New volumes cannot be initialized.
- WORM volumes created by **rdxLOCK** version 2.2.5 or previous are put into READ-ONLY mode and are not switched to the regular WORM mode until the TimeSync verification has succeeded.

Existing WORM Volumes Upgrade

After an upgrade from versions prior to 2.3.1 all WORM volumes need to be upgraded.

1. Start the **rdxLOCK Manager** and select **WORM Volumes**.



2. Right-click a WORM volume and click **Upgrade**.

MountPoint	Label	Filesystem	Total [GB]	Free [GB]	Access Mode	Encryption
E:\	Volume Lock	FAT	0.00	0.00	dismounted	

An 'Upgrade' button is overlaid on the table, with a mouse cursor pointing to it.

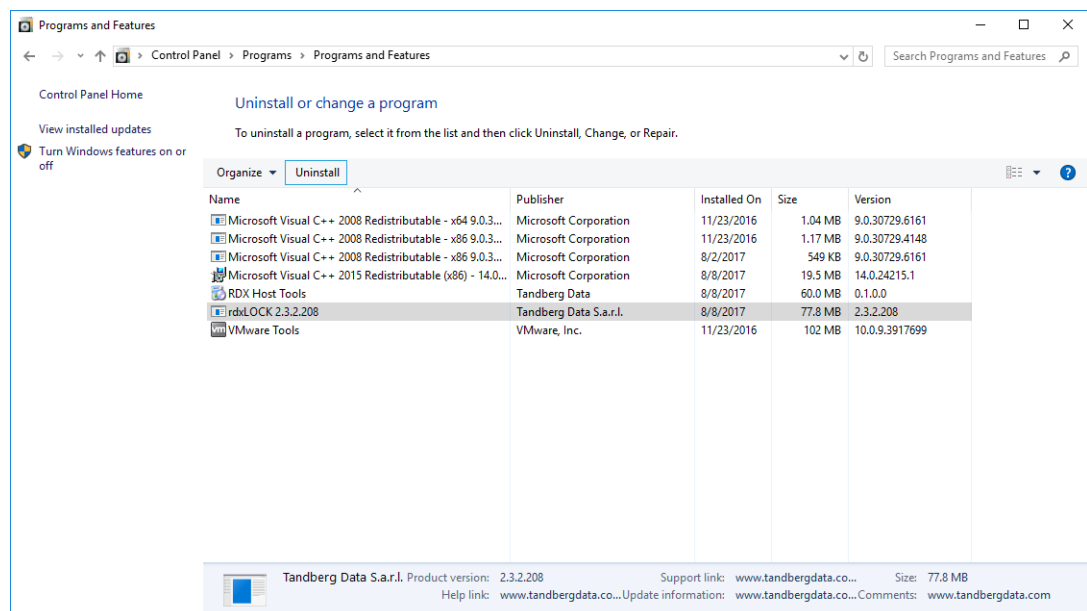
NOTE: Upgraded Volumes can no longer be read by prior versions.

Uninstall rdxLOCK

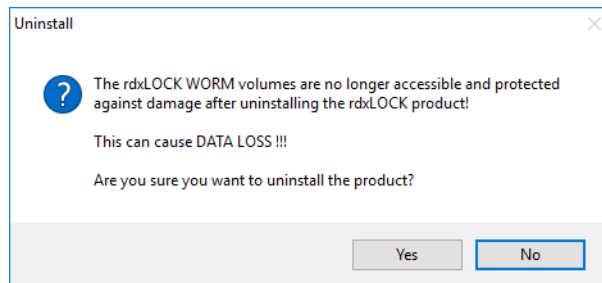
NOTE: You must exit **rdxLOCK** before it can be uninstalled.

You can uninstall **rdxLOCK** using the Windows Software Manager:

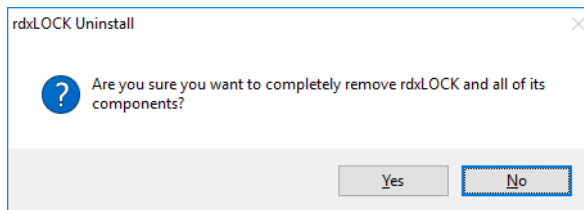
1. Click **Start > Control Panel > (Add or Remove) Programs**.
2. From the list of programs, select the **rdxLOCK** product and click **Uninstall** (or **Remove**).



- At the first conformation screen, click **Yes**.

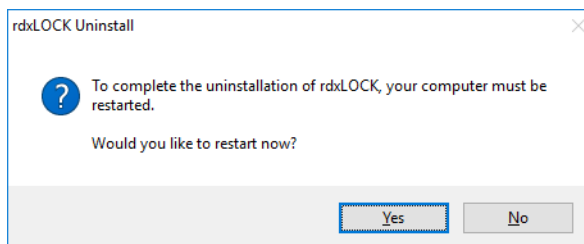



- At the second conformation screen, click **Yes** again.



During uninstall, a status screen shows the progress.

- Due to the Enhanced Security Mode, a reboot is required to completely remove **rdxLOCK** from your system; click **YES**.



 **IMPORTANT:** If you remove the **rdxLOCK** product from your system, you will not be able to access WORM-committed files anymore.

In addition, due to the Enhanced Security Mode applied to a WORM volume, the WORM NTFS file system is hidden and inaccessible after uninstalling the **rdxLOCK** product.

3

Configuration

This section focuses on the setup and configuration of newly installed **rdxLOCK** software.

Topics in Configuration:

- [TimeSync Key](#)
- [WORM Volume Setup](#)
- [RansomBlock Volume Setup](#)
- [Protection Policies and Retention Periods](#)
- [License Keys](#)

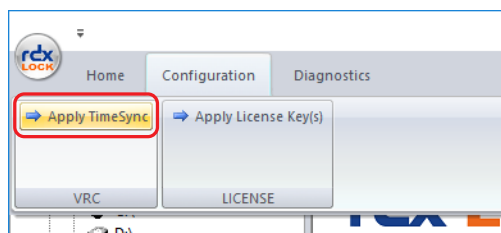
TimeSync Key

A TimeSync key is used to verify that the system clock is in a certain range compared to UTC and therefore ensures that file retention times are managed in a safe and secure fashion.

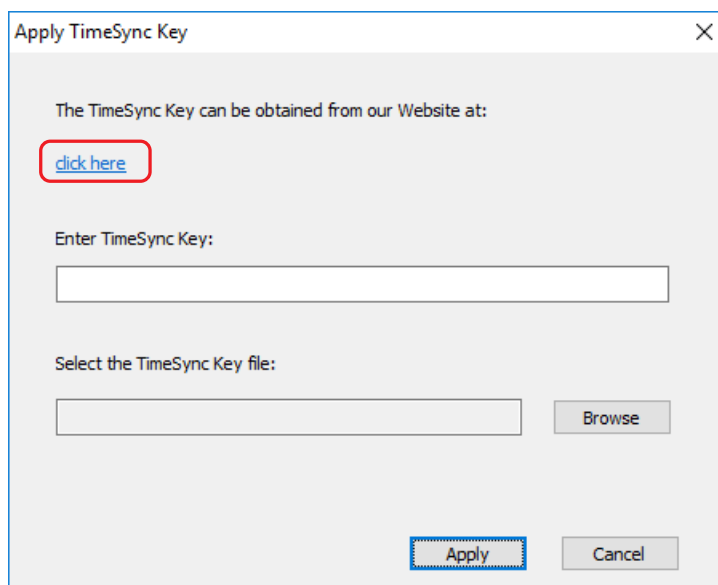
Once the TimeSync key verification process succeeds, the system is ready for handling WORM volumes. Every additional TimeSync operation resets the internal “corrective retention time offset” parameter (RTT-Offset). **rdxLOCK** maintains this RTT-Offset to manage the time offset between the system clock and the Verified Retention Clock (VRC). These offsets occur due to normal situations like the system being powered down or potentially abnormal situations where the system clock is changed or potentially rolled back.

To apply a TimeSync key, take the following steps:

1. Start the **rdxLOCK** GUI application.
2. Select the menu item **Configuration > Apply TimeSync**.

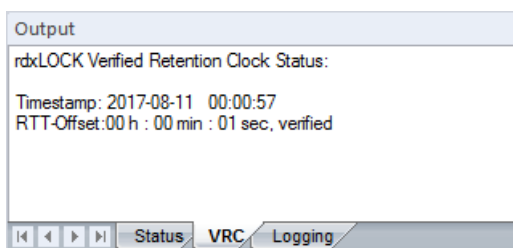


3. Click the **click here** link.



4. Copy the **TimeSync key string** from the web page directly to the corresponding dialog's input field and press **Apply**.
Alternatively, you can save the key to a file first and then select that file for applying the TimeSync key using **Browse**.

NOTE: This can take up to 2 minutes (until the system clock gets verified). VRC information is displayed in the output panel view called "VRC" of the **rdxLOCK Manager** application.



WORM Volume Setup

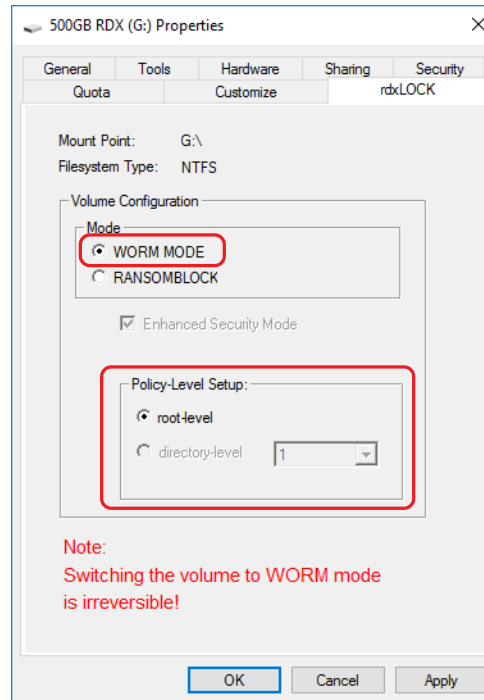
For converting an NTFS volume to a WORM volume, use **rdxLOCK Manager** to open the **Properties** page of the appropriate volume. Alternatively, you can use MS Explorer or Disk Management.

NOTE: This approach can only be used if you are logged in as the local administrator or as a domain administrator with special security options.

1. Run the **rdxLOCK Manager** program, right-click the appropriate volume, and select **Properties**.

If you are logged in as a standard user, who is not a member of the local administrator group, you will get an UAC prompt for entering the administrator's password to run the program with full elevated rights and privileges as an administrator.

2. Select the **rdxLOCK** tab.
3. Select **WORM MODE**.



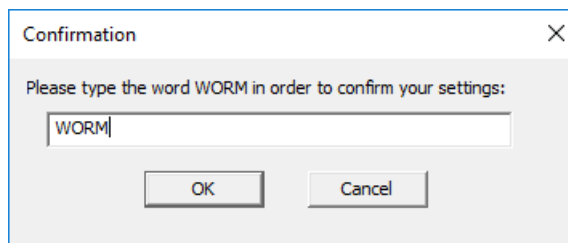
CAUTION: Switching the volume to WORM mode is irreversible!

The **Policy Level Setup** is automatically set to **root level** and **Enhanced Security Mode (ESM)** is activated.



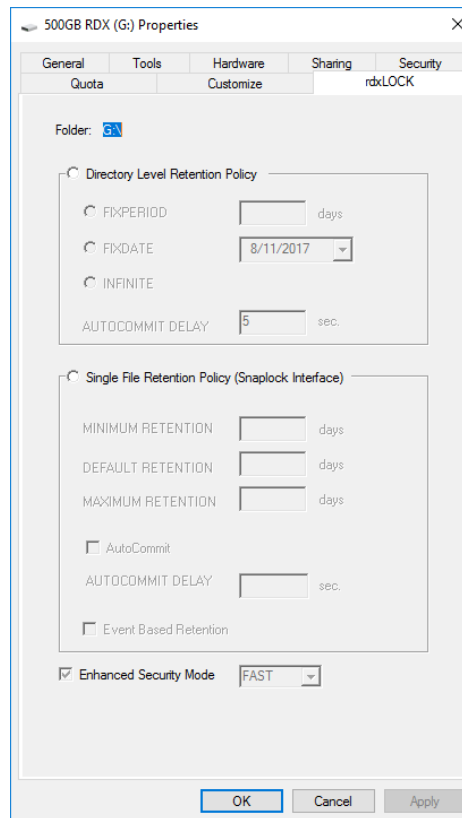
IMPORTANT: Under Enhanced Security Mode, data on the volume will be encrypted after confirmation. This process can take a very long time (days or even weeks) depending on the amount of used data blocks on the volume and your hardware. It is highly recommended that only empty RDX Media be converted and used with WORM.

4. Click **OK** to save the settings.
5. At the Confirmation screen, type **WORM** (all caps) and click **OK**.



NOTE: Enhanced Security Mode encryption can be activated on a WORM volume at any time, but cannot be switched off after its activation.

The tab information changes to policy options once the volume is converted to a WORM state:



RansomBlock Volume Setup

For converting an NTFS volume to a RansomBlock volume, use **rdxLOCK Manager** to open the **Properties** page of the appropriate volume. Alternatively, you can use MS Explorer or Disk Management.

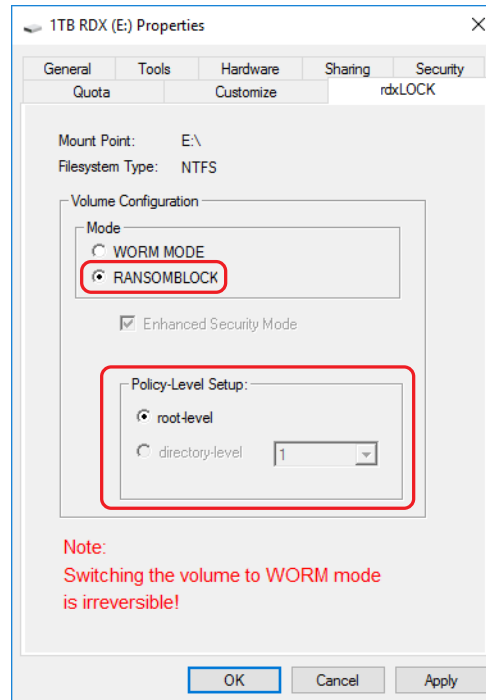
NOTE: This approach can only be used if you are logged in as the local administrator or as a domain administrator with special security options.

1. Run the **rdxLOCK Manager** program, right-click the appropriate volume, and select **Properties**.

If you are logged in as a standard user, who is not a member of the local administrator group, you will get an UAC prompt for entering the administrator's password to run the program with full elevated rights and privileges as an administrator.

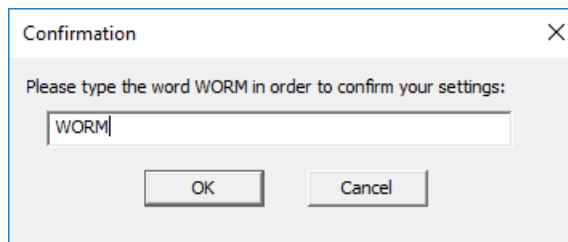
2. Select the **rdxLOCK** tab.

3. Select **RANSOMBLOCK**.



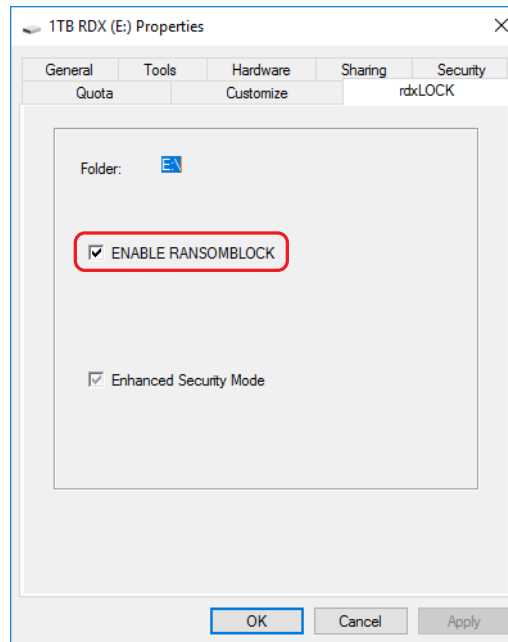
The **Policy-Level Setup** should show “root-level.”

- 4. Click **OK** to make this volume’s mode RansomBlock.
- 5. At the Confirmation screen, type “WORM” (all caps) and click **OK**.



After confirming, the whole volume is ready for monitoring and controlling file system access using RansomBlock.

- Open the **Properties** page of the appropriate volume again, select the **rdxLOCK** tab, and verify that the **ENABLE RANSOMBLOCK** box is checked.



Enhanced Security Mode is automatically checked.

Protection Policies and Retention Periods

After a volume has been configured for WORM, protection policies should be defined on the root directory. WORM policies must be configured as they are required for WORM to function. All subdirectories created under the configured root directory inherit the same configured policies.

Definition of terms:

- **Directory-Level Retention (DLR)** – Retention periods are related to directories, not to single files. All files in a certain directory and all sub-directories are treated the same way.
- **Single File Retention (SFR)** – Retention periods are related to individual files.
- **Auto-Commit Mode** – Files written into a certain location are committed to be WORM after a defined period of time (AUTOCOMMIT DELAY) by **rdxLOCK** software. (No application activity is needed.)
- **Application-Commit Mode** – Files written into a certain location are NOT committed to be WORM without application activities. To set files to WORM status, the application has to follow the SnapLock procedure and set the read-only flag for the file or directory.
- **Event-Based Retention** – Files written into a certain location can be committed via Auto-commit (no application activity is needed) or by setting the read-only flag. The files have now an Infinite retention time.

Depending on the WORM mode, retention periods are handled differently. **rdxLOCK** distinguishes between directory-level (DLR) and single file (SFR) retention periods.

Directory-Level Retention (DLR)

The **rdxLOCK** DLR policy determines the expiration date of a WORM file by adding the retention period to the WORM-commit timestamp of that file. The expiration date is configured on a directory level and inherited to all its subdirectories.

The DLR policy always uses the Auto-commit mode which means all files are set to WORM after the Auto-commit delay period. No file stays as a non-WORM status in such folders.

Single File Retention (SFR)

The **rdxLOCK** SFR policy allows for association of file retention periods and WORM status at the granularity of individual files.

By setting the read-only attribute of the file, the WORM-commit operation is either triggered automatically by **rdxLOCK** (Auto-commit mode) or a third-party application (Application-commit mode).

The Auto-commit mode of the SFR policy is similar to the Auto-commit mode of the DLR policy, but when retention periods have to be prolonged, auto-committed WORM files have to be set individually.

When Application-commit mode is active, files **MUST** be set read-only to get WORM protection. If the file's read-only attribute is not set in Application-commit mode, the file remains unprotected.

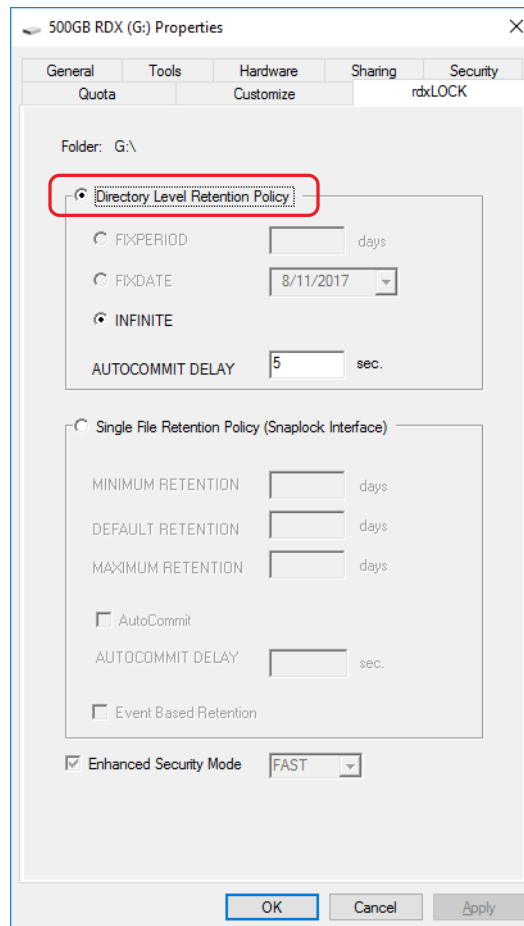
NOTE: The retention period for an RDX WORM volume is set to Infinite for both DLR and SFR.

rdxLOCK Directory-Level Retention Policy

The **rdxLOCK** DLR policy allows the configuration of an infinite retention period on the root directory or on any folder of the first- and second-directory level of a WORM volume.

The **rdxLOCK** DLR policy automatically commits files to WORM after their creation, however the WORM trigger can be delayed by a value that is configured for the "AUTOCOMMIT DELAY" parameter. This value can be set between 0 and 100000 seconds (~ 27.7 hours). The value can be modified at any time (increase/decrease) to fit to your needs.

The following configuration screen can be modified by right-clicking the appropriate folder using MS Explorer and selecting **Properties** (or **Configure** when using **rdxLOCK Manager**).



These rules apply to WORM files covered by a **rdxLOCK** DLR policy:

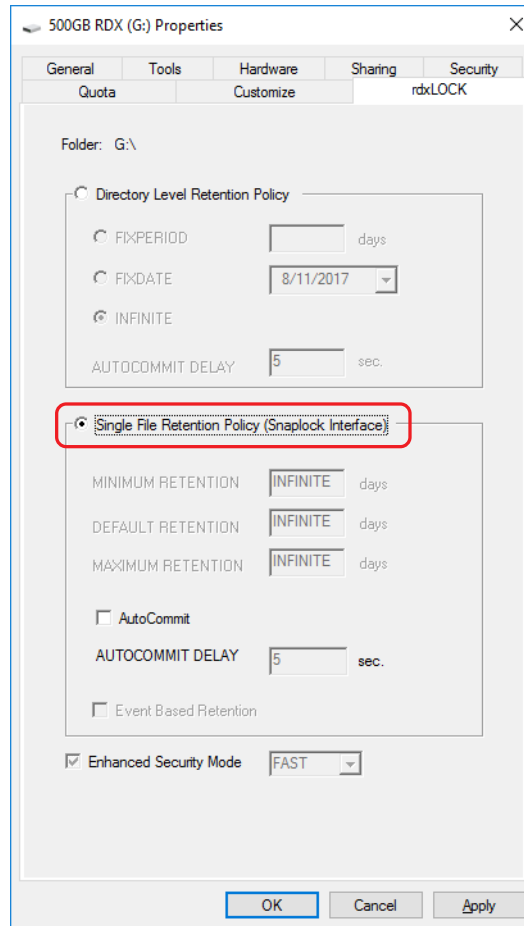
- WORM files cannot be modified, overwritten, renamed, or deleted.
- WORM files cannot be changed back to non-WORM files.
- Security settings (ACL) on WORM files can not be changed any more. Therefore, we recommend to always using security groups in order to be able to change security for single users by adding or removing them from the assigned group.

The following rules apply to expired WORM files covered by a **rdxLOCK** DLR policy:

- Expired files can only be deleted. Renaming or modifying an expired WORM file is not allowed.
- Increasing the retention period of a DLR policy will also be reflected on expired WORM files, which means that an expired WORM file can be WORM protected again depending on the length of the new retention period.

rdxLOCK Single File Retention Policy

The **rdxLOCK** SFR policy provides compatibility with applications using the SnapLock interface to write data to a NetApp filer or similar systems.



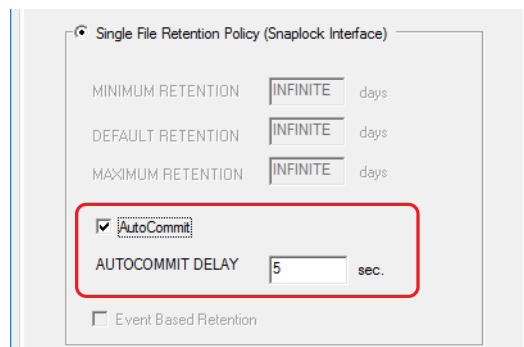
All retention options are automatically set to **INFINITE**.

The following steps are necessary to convert a file to WORM when using the **rdxLOCK** SFR policy without the **AutoCommit** feature enabled.

1. Copy a writable file to a directory which is covered by the SFR policy.
2. Setting the read-only attribute of the file.

This triggers the WORM commit operation.

If the **AutoCommit** feature is enabled, after files have not been modified for a specified period of time (**AUTOCOMMIT DELAY**), the files are automatically converted to WORM state.



These rules apply to WORM files covered by a **rdxLOCK** SFR policy:

- WORM files can not be modified, overwritten, renamed or deleted.
- WORM files can not be changed back to non-WORM files.
- The retention period for an RDX WORM volume is set to Infinite.
- Since the expiration date of a WORM file is stored in its last-access timestamp attributes, the last-access timestamp is not updated on a read access as on a standard NTFS file system.
- Security settings (ACL) on WORM files can not be changed any more.
We recommend to always using security groups in order to be able to change security for single users by adding or removing them from the assigned group.

The following rules apply to both RDX WORM policies:

- RDX WORM policies are configured on the root level.
- When configuring protection policies on the directory level, it is not mandatory to assign a WORM policy to each folder in this hierarchy.
- Directories containing WORM files cannot be renamed.
- New created directories can be renamed within the “AUTOCOMMIT-DELAY” time period after their creation (or within 60 seconds if the Auto-commit feature is disabled).

License Keys

NOTE: A permanent license key can only be requested on a system with a Verified Retention Clock installed. See [Verified Retention Clock \(VRC\)](#) on page 6.

rdxLOCK includes a trial license that allows each volume to be used for 60 days after they are configured as either WORM or RansomBlock. While the trial license does not have a capacity limit and is not limited to a specific number of volumes, you must register those volumes to obtain a permanent license if you want to use them past the 60-day trial period.

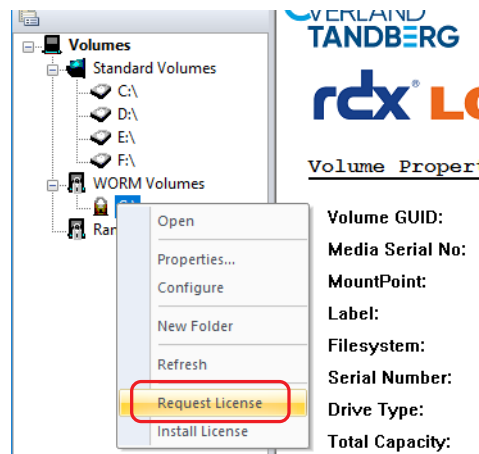
NOTE: Access to all WORM volumes on a system with an expired trial license will be denied.

To obtain a permanent license key, each WORM volume must be registered separately using both the Capacity ID provided with the RDX media and the media's serial number. The license key you receive is then used to generate the permanent license for that specific media's capacity and is linked to that media's serial number.

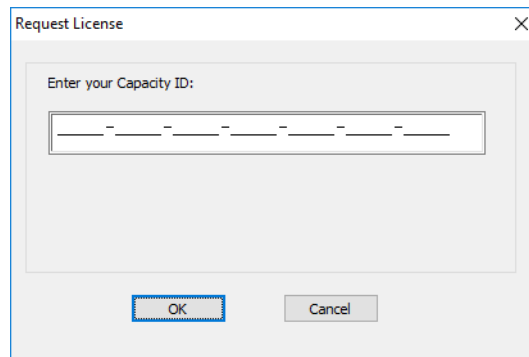
To obtain and install a permanent license:

1. In the Windows Start menu, select **Programs > rdxLOCK > rdxLOCK Manager**.
2. From the **WORM Volumes** list, right-click the **specific WORM volume drive letter** for which you want to request a permanent license.

- From the volume's context menu, select **Request License**.

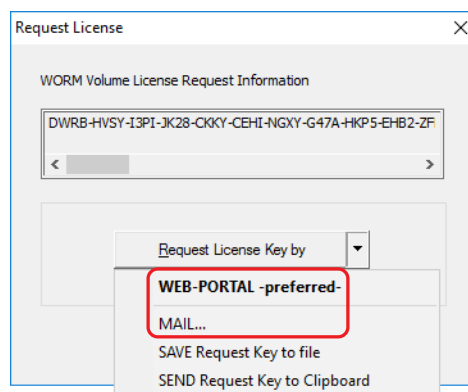


- At the **Request License** screen, enter the **Capacity ID** which was provided with your RDX media.



Characters are automatically converted to uppercase letters if lowercase letters are entered.

- Click **OK** to generate the WORM Volume License Request Information.
- Send the **request** to the licensing service using either the online **WEB-PORTAL** option (recommended) or via email.



- **WEB-PORTAL Option:**

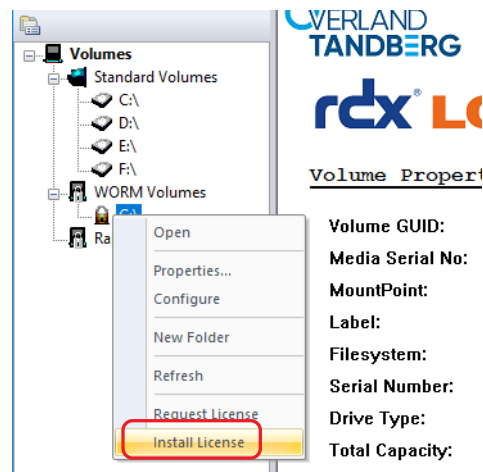
NOTE: When using the WEB- PORTAL option, your server **MUST** be connected to the internet.

Use the drop-down menu item WEB-PORTAL to launch your browser and access the WEB-PORTAL. Log into the WEB-PORTAL and follow the steps online to acquire the license key file. If you do not yet have login access, you need to register and provide a valid email address. The licensing service then responds back to you using that email address.

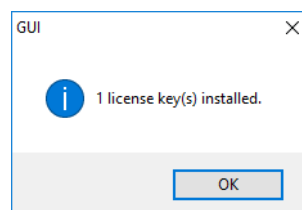
- **Email Option:**

Use the drop-down menu item MAIL to launch your email client and automatically generate an email with the necessary information. Copy the WORM Volume License Request Information to a text file and send it as an email attachment to supportEMEA@tandbergdata.com.

7. After receiving the email with the permanent license key file, save the file to an easy-to-access location.
8. In the **rdxLOCK Manager**, right-click the **volume letter** and select **Install License** from the context menu.



9. Browse to the **permanent license key file** and click **Open** to activate the license. Alternatively, select the **rdxLOCK Manager** menu item **Configuration > Install License Key(s)** which automatically assigns license keys to the corresponding WORM volumes based on their serial numbers.
10. At the successful installation message, click **OK**.



11. Check the license type and status on the right-side pane of the **rdxLOCK Manager**.

It can take up to four (4) minutes before the license status is updated.

After you have installed a permanent license, you can still add additional WORM capacity to a WORM volume with add-on licenses. Add-on license keys are also installed using the **Install License** option in volume's context menu.

rdxLOCK monitors the capacity on each WORM volume and displays a warning message in the **rdxLOCK** event log when a WORM volume nears its capacity limit. If the capacity limit is exceeded, write operations on the volume are denied until additional WORM capacity is licensed for the volume.

Volume Properties in the **rdxLOCK Manager** provides an overview of the installed license types, statuses, and used/free WORM capacities.

Permanent License Reuse

Once you obtain a permanent WORM license to use on a specific RDX cartridge, that license is stored on the RDX media itself. If you delete the license by either erasing, reformatting, repartitioning, or, in any other way, changing the cartridge and its metadata, the license is deleted. However, the license can be regenerated and reused on that same cartridge by just re-registering the RDX media using the same Capacity ID and serial number to get a new key.

To reuse your existing license:

1. On a system that does NOT have rdxLOCK installed, **reformat or clean** the RDX cartridge using Windows.

You can use your existing system only if rdxLOCK has been completely uninstalled including the removal of the Enhance Security Module (ESM). When you are done reformatting the media, reinstall rdxLOCK.

2. On an rdxLOCK system, use the **normal licensing procedure** to request a permanent license key for the media.

Use the same Capacity ID and serial number to generate the WORM Volume License Request Information. Refer to License Keys on [page 27](#).

3. Send the **request** via WEB-PORTAL or email.
4. Install the **new permanent license key** you receive.

The cartridge is now ready to reuse on your rdxLOCK system.

4

Best Practices

rdxLOCK is a software solution that enables RDX WORM Media to be used as a storage device for regulatory compliance archiving via WORM protection mode where data must not be deleted or overwritten. Also included is RansomBlock mode which protects data on Windows file systems from unauthorized modification.

rdxLOCK software is downloadable for free and provides an infinite period of WORM data retention.

RDX WORM media includes a 60-day software license linked to the RDX Media and its capacity.

RDX WORM media should be used with Enterprise Content Management (ECM) systems, Document Management Systems (DMS), Finance Data, Data Logging, Patient Files (such as PACS), Documentation, and Video and Voice recordings since it helps you meet compliance requirements for electronically stored data.

If you plan to use **rdxLOCK** with a Backup application, we recommend using the RansomBlock feature and convert your RDX Media volume into a RansomBlock volume. After conversion, backup software can use RDX media for its automated backup jobs and all backup data on the RDX media is protected from unauthorized manipulation by viruses, ransomware, and other malicious malware.

It is important to note that data on a RansomBlock volume can be deleted or modified if data access is granted because it doesn't have the compliance WORM protection like a configured WORM volume.

Topics in Best Practices:

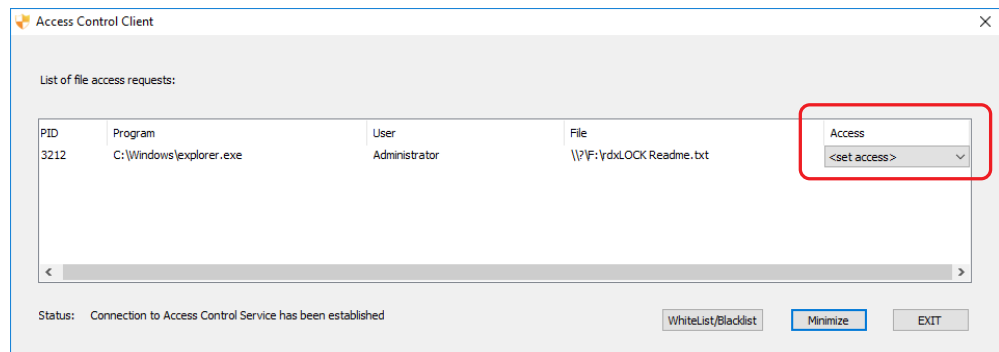
- [Authorization in RansomBlock](#)
- [Whitelist/Blacklist Viewer](#)

Authorization in RansomBlock

The following options are available to control volume access under RansomBlock configuration:

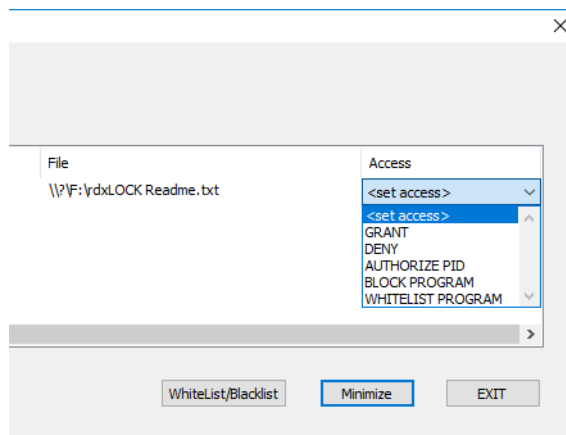
- **GRANT** – Access is granted for one action.
- **DENY** – Access is denied.
- **AUTHORIZE PID** – Access is granted for the lifetime of a process.

If any application or service wants to modify a file on a RansomBlock volume, access is blocked and the request with the full-qualified program name is listed in Access Control Client window.



If there is no answer to a request within 1 minute, the access is automatically denied.

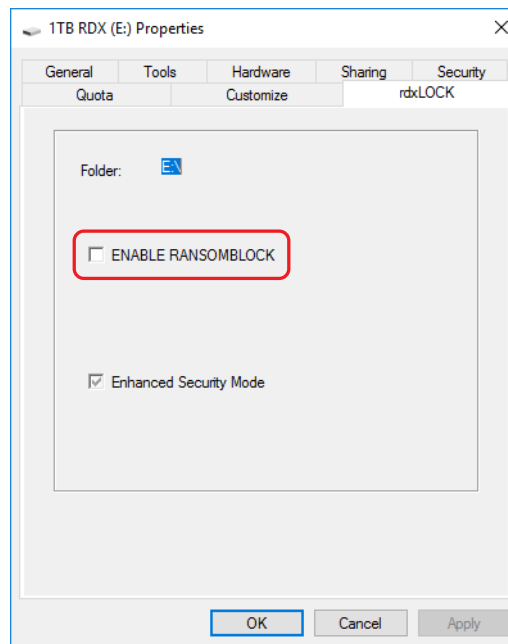
Access can be manually set by clicking the **<set access>** drop-down list in the **Access** column and choosing an access option.



The following manual access options are available:

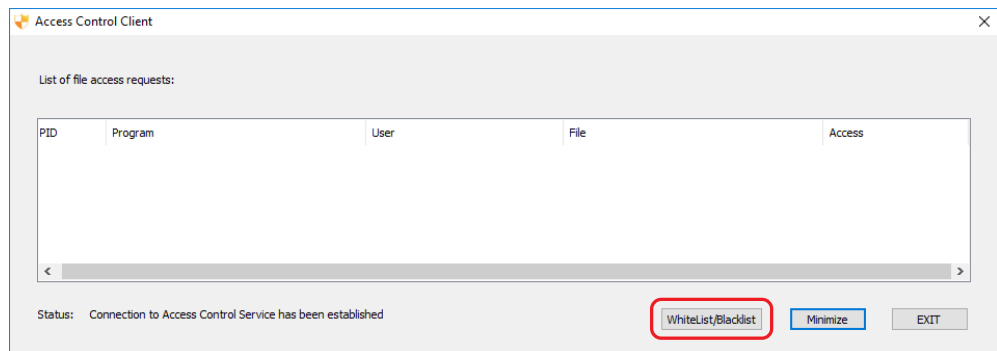
- **GRANT** – Allows the process to modify the specified file object.
- **DENY** – Denies the process from modifying the specified file object.
- **AUTHORIZE PID** – Write access is granted to all files for the specified process identifier until its termination. (NT kernel and system processes are excluded.)
- **BLOCK PROGRAM** – Write access on files is always blocked (blacklisted) for the specified program.
- **WHITELIST PROGRAM** – Write access on files is granted (whitelisted) for the specified program in general.

In exceptional cases, it may be necessary to switch off the RansomBlock function. Open the **Properties** page of the appropriate volume again, select the **rdxLOCK** tab, uncheck the **ENABLE RANSOMBLOCK** box, and click **OK**.



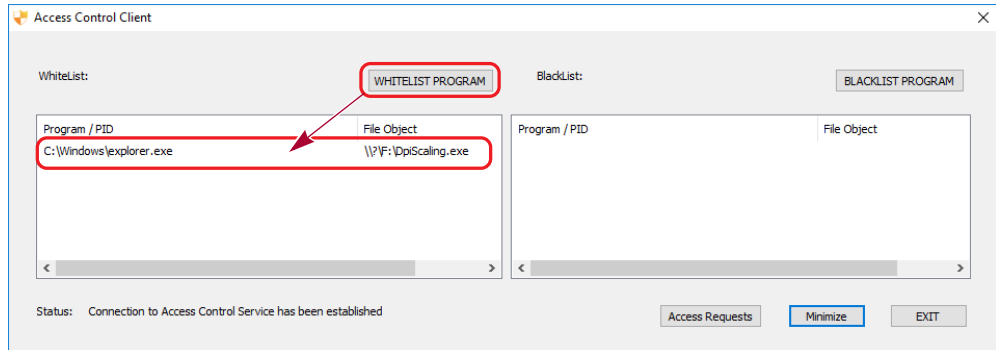
Whitelist/Blacklist Viewer

Whitelisted and blacklisted applications can be viewed by clicking **Whitelist/Blacklist** in the **Access Control Client**.

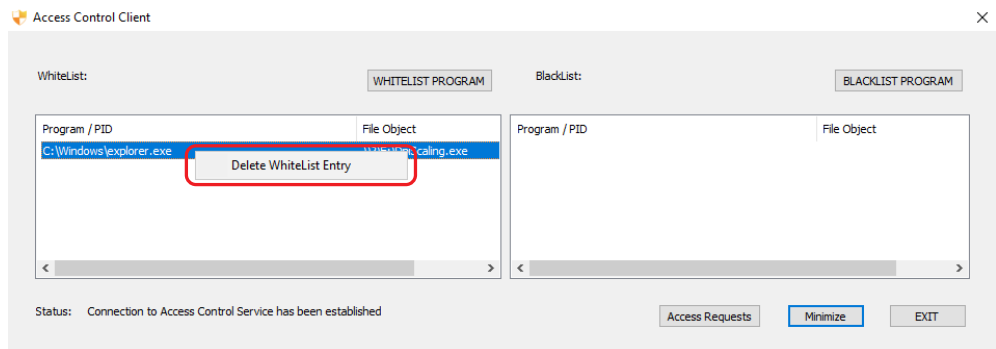


Whitelist/Blacklist Manually

To manually whitelist or blacklist a program, click either **WHITELIST PROGRAM** or **BLACKLIST PROGRAM**, browse to select the item in the new explorer screen that opens, and click **Open**. The program appears on the appropriate list:



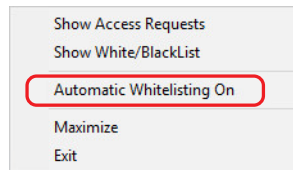
To remove an entry from a list, right-click the item and click **Delete <list_type> Entry**.



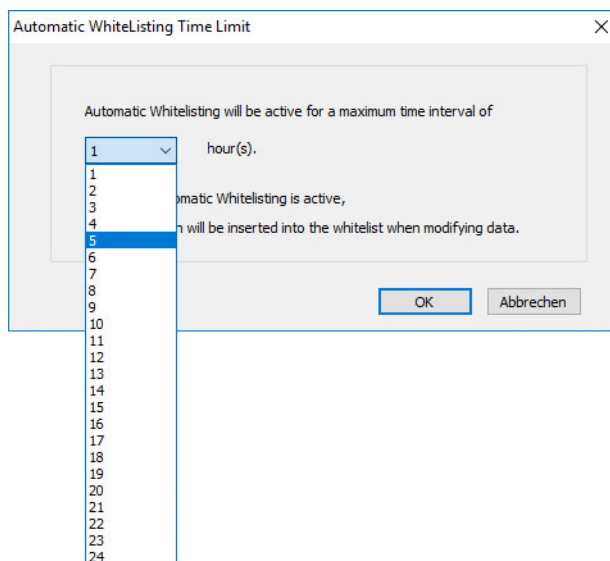
Whitelist Automatically

The **Automatic Whitelisting** feature can be accessed by right-clicking the Access Control symbol in the system tray.

1. Right-click the system tray **Access Control** symbol (🛡️).
2. In the context menu, click the **Automatic Whitelisting On** option.



3. At the **Automatic Whitelisting Time Limit** dialog, use the drop-down list choose between 1 and 24 hours.



4. Click **OK** to activate the timer.

After the countdown has ended, automatic whitelisting is turned off automatically.



CAUTION: When using Automatic Whitelisting, ALL programs/processes requests are granted and they are added to the Whitelist. This can be dangerous as this does NOT protect against Viruses, Worms, Ransomware, or human error.



Troubleshooting

This appendix provides information on error codes and some basic troubleshooting questions and solutions.

Topics in Troubleshooting:

- [Reporting a Problem](#)
- [rdxLOCK Tab Not Available on MS Explorer's Property Page](#)
- [Application Event Log Message: "Invalid license"](#)

Reporting a Problem

For technical assistance with a registered version of **rdxLOCK**, email your inquiries to supportEMEA@tandbergdata.com.

Include the following information in your email when you report a **rdxLOCK** issue:

- Issue description
 - Provide symptoms of the issue.
 - When did the issue occur?
 - Which activities have caused the issue?
 - Which file objects are affected by the issue?
- **rdxLOCK** Service Report.

The **rdxLOCK Manager** automatically generates a Service Report by selecting **Diagnostics > Generate Service Report**. All service information is stored in the file **FL_Diag.zip**, which is located in the directory:

```
<rdxLOCK installation directory>\Diagnostics.
```
- List of third-party-applications installed on your system, including antivirus scanners and backup management applications.

rdxLOCK Tab Not Available on MS Explorer's Property Page

The **rdxLOCK** tab on the MS Explorer's property page is only available for local or domain administrators.

If **rdxLOCK** is running on Windows 7, Windows 2008 Server, or Windows 2012 Server, set up the User Account Control accordingly:

- If the built-in domain administrator account is used for configuring **rdxLOCK**, the local security policy **User Account Control: Admin Approval Mode for the Built-in Administrator Account** must be disabled.

- If another domain admin account than the built-in domain administrator is used for configuration, the local security policy **User Account Control: Run all administrators in Admin Approval Mode** must be disabled.

Application Event Log Message: “Invalid license”

An invalid license may result from the following conditions:

- Temporary license has expired.
- License information can't be read on the WORM volume. Check if the **rdxLOCK** service is running.
- WORM volume has been restored. In this case, a new, permanent license must be requested.



Compatibility

Filter Compatibility

rdxLOCK was successfully tested in combination with the following third-party applications:

- Symantec Antivirus Version 12
- McAfee VirusScan Enterprise 8.7
- TrendMicro ServerProtect 5.58

NOTE: Third-party replication tools were not tested with **rdxLOCK** version 2.2.

For last-minute information regarding any limitations and known problems, read the **ReadMe.txt** file.



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