

FORTRA



Powertech Encryption for
IBM i
4.03
Installation Guide

Copyright Terms and Conditions

Copyright © Fortra, LLC and its group of companies. All trademarks and registered trademarks are the property of their respective owners.

The content in this document is protected by the Copyright Laws of the United States of America and other countries worldwide. The unauthorized use and/or duplication of this material without express and written permission from Fortra is strictly prohibited. Excerpts and links may be used, provided that full and clear credit is given to Fortra with appropriate and specific direction to the original content.

202412020242

Table of Contents

Installing Powertech Encryption for IBM i	4
Before You Begin	4
Installing/Updating Powertech Encryption for IBM i	10
After You Are Done	13
Contacting Fortra	14
Fortra Portal	14

Installing Powertech Encryption for IBM i

These instructions describe how to install Powertech Encryption for IBM i.

Before You Begin

Read this section before you install Powertech Encryption for IBM i.

System Requirements

Powertech Encryption requires the following:

- IBM i version 7.3 or higher
- PTFs:
 - IBM i 7.3:
 - MF64713
 - SI72668
 - MF65065
 - IBM i 7.4:
 - SI74025
- 75 MB of disk space
- If you plan to encrypt database fields that are referenced by a referential constraint (foreign constraint), the following PTF or a superseding PTF needs to be applied before the fields are encrypted:
 - IBM i 7.3: SI84738
 - IBM i 7.4: SI84755
 - IBM i 7.5: SI84754

NOTE: For details please see **Referential Constraint Considerations** in **Appendix B** of the [Powertech Encryption User Guide](#).

System Values

It is Powertech's goal not to change system values on customer systems because we recognize that security-conscious organizations have rigorous change control processes in place for even small changes to system values. Therefore, we ask you to make any system value changes that are needed. However, the Powertech Encryption for IBM i installation process could change a system value to allow the install to proceed if a system value is not set as specified below. If the Installation Wizard changes a system value during install, it changes it back to its original value when the install completes.

To install Powertech Encryption for IBM i on your system, the following system values that control object restores must be configured as shown.

- Set QALWOBJRST to *ALWPGMADP (at a minimum) to allow the system to restore programs that adopt authority. Many Powertech Encryption for IBM i programs adopt the authority of the product owner, rather than forcing you to give authority directly to administrators and end users. (Note: For some system configurations, *ALL is required temporarily.)
- QALWUSRDMN controls which libraries on the system can contain certain types of user domain objects. You should set the system value to *ALL or include the name of the Powertech Encryption for IBM i product library (CRYPTO) as well as QTEMP as a minimum for the product to function properly.
- Set QVFYOBJRST to 1, 2, or 3. This allows Powertech Encryption for IBM i to restore all objects regardless of their signature. (Note: If you normally check signatures, remember to check this system value after the Powertech Encryption install process completes.)
- Set QFRCCVNRST (Force conversion on restore) to 0. Do not convert anything.

Product Updates

Read this section if you are updating from a prior release of Powertech Encryption for IBM i.

Fortra recommends all customers update Powertech Encryption for IBM i software on a test system before updating production systems to ensure data is accessible and that applications run correctly.

Always backup Powertech Encryption and encrypted data prior to update.

WARNING: Before you update, make sure there are no Jobs Encrypting or Decrypting data.

If your current version is 3.57 or below

If your current version of Powertech Encryption is 3.57 or below, use the **SAVLICPGM** command to save the product prior to updating. If you are updating from a version below 3.57, you must first update to 3.57 before you update to the current version. Version 3.57 can be found in the Previous Versions tab of this [link](#).

New Product License Keys (when upgrading from a version prior to 3.0 or to a version after 3.58).

New product license key(s) are required when upgrading from a version prior to 3.0 or for the first update after the update to 3.58 or higher. Contact Fortra at keys@fortra.com to request new product license keys.

WARNING: The product will stop functioning if you fail to first get and enter a new license key when doing one of these upgrades.

Update Considerations

The instructions for upgrading Powertech Encryption depend on these two factors:

- Whether library CRYPTO is contained in the system portion of the library list
- Whether IFS encryption is used

If library CRYPTO **is** contained in the system portion of the library list (defined through system value QSYSLIBL), the upgrade **must** be performed while the system is in restricted state.

To do this:

1. Perform a staged load install. This installs the Powertech Encryption IBM i installer of the new version on the system.
2. Run the upgrade in restricted state during a maintenance window.

If IFS encryption **is** utilized, or if Powertech Encryption's IFS exit programs have been registered to exit points, follow the instructions in the [Upgrading Powertech Encryption when IFS Encryption is used](#) subsection below.

If library CRYPTO **is not** contained in the system portion of the library list (as defined through system value QSYSLIBL), **and** IFS encryption is not active, the upgrade does not require any special actions. Go to [Retention of User Data](#).

Upgrading Powertech Encryption when IFS Encryption is used

If library CRYPTO is **not** contained in the system portion of the system library list in the system library list **but** IFS encryption is utilized or Powertech Encryption's IFS exit programs have been registered to exit points, then follow the instructions below.

1. Plan for an upgrade window during which one of the following paths can be taken:
 - a. The system can be brought to a full restricted state and your applications can be restarted in a normal fashion.
 - b. The system can be brought to a full restricted state and IPL'd to restart applications.
2. Begin by running a staged install. This places the Powertech Encryption IBM i installer of the new version on the system.
3. During the upgrade window:
 - a. Let users know that connectivity might be disrupted during the upgrade process. Mapped drives will not be available. Other access to encrypted data or applications that access encrypted data should be shut down.
 - b. Bring your system to a restricted state following your company's usual procedures for ending your processes and jobs.
 - c. Use the WRKOBJLCK command to check for locks on any of the following files:

TIP: Use F6 on WRKOBJLCK to also check for member locks.

CRPFIFS

CRPFIFSL1

CRPFIFSL2

CRPFIFSL3

CRPFIFSL4

CRPFIFSPRC

CRPFIFSPR1

CRPFIFSLOG

- d. Use the WRKOBJLCK command to check for locks on library: CRYPTO
OBJTYP(*LIB).

WARNING: If any locks are found, then you must resolve them by ending the jobs before proceeding.

- e. If no locks are found use the HSLOADMGR/HSWRKLOAD command as described in [Loading Staged Objects on the IBM i](#).

- f. Once the upgrade is successful, register the new universal exit programs to the File Server and Scan Open/Exit points. Use the ADDIFSEXT command to add new programs to IBM i Exit Points. If you already have programs other than Powertech's Encryption and Anti-virus programs registered to these, see [Using Exit Program Integration with multiple Powertech products](#) for more information.
- g. If you are following path (1a) for the Restricted State, follow normal procedures to start your system. For path (1b), proceed with the IPL and restart of your system.

Retention of User Data

WARNING: You should not delete the existing Powertech Encryption for IBM i CRYPTO library before upgrading; otherwise, user-defined data in the library will be lost.

If you already have a permanent license key to Powertech Encryption for IBM i, this license key will be retained during the update. After version 3.58, a new license key format is used.

The following user-defined data will be retained through the Powertech Encryption for IBM i update:

- External Key Managers
- Key Policy settings
- Security Alert settings
- Key Officer entries
- Master Encryption Keys
- Key Stores
- IFS Encryption Registry Entries (if used)
- Field Encryption Registry entries
- External files used to store encrypted field values (if applicable)

During the installation process, a copy of the existing user-defined data will be saved into a library called CRYPTxxxx, where xxxx is a sequential number starting with 00001. This library will only be needed if an update fails; in which case, contact Fortra.

User Authorities

IMPORTANT: Customers using program CRRP015 prior to version 4.0, and who are upgrading to version 4.0 and above, will need to re-assign authorities following the upgrade, using the following command:

```
GRTOBJAUT OBJ(SWAPPROF) OBJTYPE(*USRPRF) USER(PTENCUSR) AUT (*USE) (where SWAPPROF is the profile to be swapped to).
```

Elevated authority processes will fail if this command is not run.

Installing/Updating Powertech Encryption for IBM i

Follow these instructions to install/update Powertech Encryption for IBM i.

Ensure the following servers are available and running prior to installation or updating:

- FTP Server
- Remote Command Server

Stop any replication of the CRYPTO library prior to updating.

Do the following to perform the installation or update:

1. Download the Powertech Encryption for IBM i installer (setupEncryption.exe) from the Powertech Encryption for IBM i download page. (The "Trial" download is the full product, which can be unlocked with a valid License Key).
2. On the Choose Components panel, select which components you want to install. You can choose to install the Manuals and the Software for IBM i. Click **Next**.
3. If you are only installing the Manuals, the process completes and the installer closes. The Manuals have been installed. You can skip the rest of these steps. Note: The manuals are installed to the following location: C:\Program Files\PowerTech\Encryption\manuals
4. On the IBM i Details panel:
 - a. Select or enter the IBM i where you want to load Powertech Encryption for IBM i.
 - b. Enter a user profile and password that's a member of the user class *SECOFR and has at least the following special authorities: *ALLOBJ, *SECADM, *JOBCTL, *IOSYSCFG, *AUDIT, and *SERVICE. The user profile should have Limit capabilities set to *NO. This profile will be used to restore and copy objects, and for product maintenance on the IBM i.
 - c. (Optional) In the Advanced Settings section:
 - Enter a port number or use the arrows if you want to change the FTP port number to something other than the default of 21.
 - Select Secure File Transfer if you want to use FTPS (FTP over SSL) during the file transfer. The default FTPS secure port is 990, but it can be changed to the required secure port for your environment.
 - In the Timeout (seconds) field, enter the number of seconds the session should be kept active during an FTP transfer. You can choose anywhere between 25 and 1800 seconds (30 minutes). Note: If the transfer takes longer than the amount of time specified, the session will expire.
 - d. Click **Next**.

5. You have two options on the Product Load Options panel:
 - a. Click **Immediate Load** if you'd like to load the product on the IBM i now.
 - b. Click **Staged Load** if you'd like to transfer the objects now and load them on the IBM i at a later time. Note: See "Loading Staged Objects on the IBM i" (below) for instructions on how to load the staged objects on your selected IBM i system.
 - c. When the processing is complete, you have two choices:
 - If this is the only installation or update of Powertech Encryption for IBM i that you're doing, click **Finish**.
 - If you have installs or updates to do on other IBM i systems, click **Restart**. Then, return to step 4.
 - To verify that Powertech Encryption for IBM i installed successfully, enter the following command to display the Powertech Encryption for IBM i window, which shows the release and modification level of the product:

```
GO CRYPTO/CRYPTO
```

Loading Staged Objects on the IBM i

If you chose to stage your objects during step 5b of the installation or update process, do the following to manually load them on the IBM i you identified above.

1. On the IBM i, execute the following command to display the Work with Loads panel:

```
HSLOADMGR/HSWRKLOAD
```

2. Enter option **1**, Load, next to the Load Name for Powertech Encryption for IBM i and press **Enter**.

Objects Installed on System

As of Powertech Encryption for IBM i version 4.0, two new user profiles that cannot sign on to the system will be installed with the product:

1. PTENCUSR: "User" Class profile, with *JOBCTL and *SAVSYS special authorities.
2. PTENCADM: "User" Class profile, with *ALLOBJ, *AUDIT, and *SECADM special authorities. This profile owns one object, used for elevated-authority functionality, within the product.

The installed CRYPTO library (and the objects contained in the library) will initially provide the following two object authorities:

1. For profile PTENCUSR: *ALL authority
2. For *PUBLIC: *USE authority

Two authorization lists are created: PCRADMIN and PCRREPORT.

After You Are Done

Congratulations! Powertech Encryption for IBM i is now installed. Read the following for additional information and next steps.

Licensing

After Powertech Encryption for IBM i has been installed, the next step is to add your license key to the product. Configuration of the product may then begin. Use the command Go CRYPTO/CRYPTO, take menu option 10 for Product Information, then 1 for License Setup.

NOTE: Find the *Powertech Encryption for IBM i User Guide* on the [Fortra Support Portal](#).

Contacting Fortra

Please contact Fortra for questions or to receive information about Powertech Encryption for IBM i. You can contact us to receive technical bulletins, updates, program fixes, and other information via electronic mail, Internet, or fax.

Fortra Portal

For additional resources, or to contact Technical Support, visit the [Fortra Support Portal](https://support.fortra.com) at <https://support.fortra.com>.