Installation Manual

GIT for Industry

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Nuno Besteiro	Critical Software GFI Team Member	31/07/2020	4.2.1
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Pedro Almeida		Critical Software Technical Manager	14/11/2019	3.0.2
Pedro Almeida		Critical Software Technical Manager	09/01/2020	3.1.0
Pedro Almeida		Critical Software Technical Manager	31/01/2020	3.1.1
Pedro Almeida		Critical Software Technical Manager	13/03/2020	3.2.0
Pedro Almeida		Critical Software Technical Manager	23/04/2020	3.2.1
Pedro Almeida		Critical Software Technical Manager	08/05/2020	3.3.0
Pedro Almeida		Critical Software Technical Manager	19/06/2020	4.0.0
Pedro Almeida		Critical Software Technical Manager	26/06/2020	4.0.1
Pedro Almeida		Critical Software Technical Manager	09/07/2020	4.1.0
Pedro Almeida		Critical Software Technical Manager	24/07/2020	4.2.0
Francisco Pinto		Critical Software GFI Team Leader	31/07/2020	4.2.1
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Pedro Almeida		Critical Software Technical Manager	18/08/2020	4.2.3
Pedro Almeida		Critical Software Technical Manager	31/08/2020	4.2.4
Pedro Almeida		Critical Software Technical Manager	10/09/2020	4.2.5
Pedro Almeida		Critical Software Technical Manager	15/09/2020	4.2.6
Pedro Almeida		Critical Software Technical Manager	18/09/2020	4.2.7
Pedro Almeida		Critical Software Technical Manager	06/10/2020	4.2.8
Pedro Almeida		Critical Software Technical Manager	26/11/2020	4.2.9
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1 Installation Process

GIT for Industry (GFI) is a software tool, provided by Smart DCC, for anybody that wishes to check whether their interpretation of the Great Britain Specification Companion for smart meters (GBCS) is consistent with Smart DCC's.

This manual describes the installation process for the GFI testing tool, step-by-step.

The GFI Installer is supplied on a USB stick and requires a PC certified to run Ubuntu Linux 18.04 LTS with minimum hardware requirements. Please note the GFI Installer completely wipes the Hard Drive/SSD on the target PC.

1.1 System Requirements

Table 1 presents the minimum and recommended systems requirements to run the GFI testing tool.

Minimum	Recommended
Core i3 CPU	Core i5 CPU
2GB RAM	8GB RAM
128GB SATA 7200RPM	128GB SSD or higher
UK spec and keyboard	UK spec and keyboard
Free USB 2.0 port	Free USB 2.0 or USB 3.0 port
Certified to run Ubuntu Linux 18.04 LTS	Certified to run Ubuntu Linux 18.04 LTS (Dell or Lenovo)
Intel graphics chipset i810	Intel graphics chipsets newer than and including i810 (with the exception of GMA 500)
1024x768 screen resolution	1920x1080 screen resolution

Table 1 – System requirements.

Please note: As of GFI 4.5.0, Ubuntu 18.04 is required to install GFI.

1.2 Reference Hardware

Suggested UK Spec laptop for GFI.

20DF004QUK - ThinkPad Edge E550, Intel Core i5-5200U, 1x8GB DDR3L-1600, 128 GB SSD, Intel HD Graphics, 15.6" FHD Antiglare (1920x1080).

1.3 Step-by-Step Installation Using USB

The following steps will destroy all data on the machine, please ensure that appropriate steps are taken to copy valuable information off the machine.

1.3.1 Step 1: Hardware Preparation

Ensure machine is powered off and insert the GFI installer USB stick into a spare USB 2.0 or 3.0 compatible port.

Do not connect any other USB storage device to the computer.

1.3.2 Step 2: Boot from Installer

Boot the machine into the BIOS quick boot menu. Please refer to the computer's manufacturer's instructions on how to boot into the BIOS quick boot menu. Usually, either the Escape (ESC), F2 or F12 keys pressed during boot will facilitate access to the boot menu.

Select [USB / USB HDD / Generic flash drive] as the boot option. The precise naming of the boot device will depend upon the computer used. Contact GFI Support Team if you are unable to locate your USB flash disk in the boot menu.

NB: On some computers the BIOS does not provide a quick boot selection menu, and the boot devices priority needs to be configured in the BIOS itself. In such circumstances, please refer to the computer manufactures manuals.

1.3.3 Step 3: Install

As of GFI Release 4.0.0, the officially supported Operating System is Ubuntu 18.04 LTS and as such the USB Storage Drive included in the GFI Kit has been updated to include the base installation image for Ubuntu 18.04 LTS. To install Ubuntu please follow the below online guide starting at the "Install Ubuntu" section.

https://linuxconfig.org/how-to-install-ubuntu-18-04-bionic-beaver

After you have completed installing Ubuntu 18.04, please follow steps 1.4 below to install GFI.

As Ubuntu is not a DCC product, if you have any issues with the installation please check online resources including https://askubuntu.com/

1.3.4 Step 4: Restart

At the end of the installation, the computer will inform the user of whether the installation was a success and prompt for the ENTER/RETURN key to be pressed before powering off.

Do not remove the USB flash drive before your computer switches off.

Remove the USB flash drive and power on your computer. Once the computer is turned on it will boot into the GFI Linux environment. Details on how to use this environment can be found in the user manual.

If an error is encountered during the installation phase, the exception will be printed to the screen and the user is advised to report the issue to GFI Support Team for a resolution. In addition, please see section 4.4 below in the troubleshooting section for information on where to find the log file that should be passed to the GFI Support Team.

1.4 Step-by-Step Installation for existing Ubuntu 18.04 LTS

1.4.1 Step 1: Pre-requirements

To use this installation method, it is required that the machine is running Ubuntu version 18.04 LTS.

1.4.2 Step 2: Install GFI Update

To install GFI into an existing installation of Ubuntu, the user only needs to install and run the “GFI Update” application. f

The “GFI Update” application will update an existing GFI or install from scratch if it does not yet exist in the machine.

To install the “GFI Update” application perform the following steps from within the Ubuntu system:

1. Download the following Debian package from the GFI update server:
   https://gfi-update.criticalsoftware.com/18/releases/LatestInstallerGFI.deb

   NOTE: Please use the following username/password to download the GFI Update Debian package:

   Username*:* installer

   Password: kPwwGTaMSh

   choose the option to open with the Ubuntu Software Center or double click the Debian package if it was downloaded to a local folder.

2. At the Ubuntu Software Center click in the Install button:

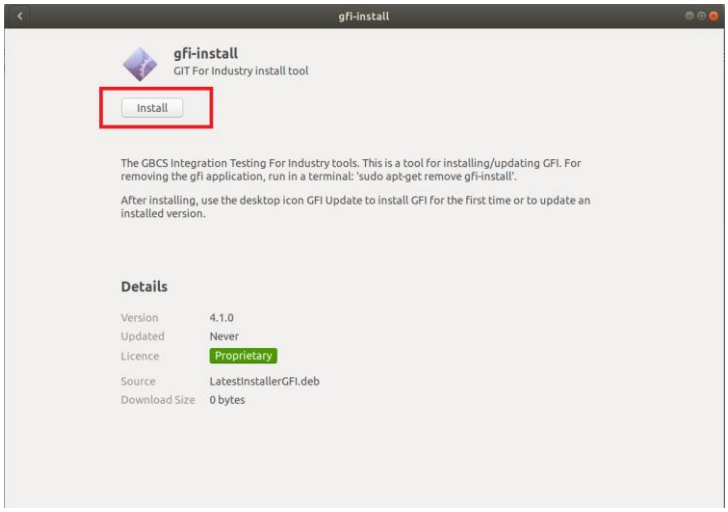

Figure 1- gfi-Install

3. After the installation is completed, an icon “GFI Update” will appear on the Desktop:

GFI Update

Figure 2 – GFI Updater

1.4.3 Step 3: Launch Updater

If there is no previous installation of GFI, the updater will install the GFI from scratch in the system.

Double click in the “GFI Update” icon on the Desktop and it will show all the available versions in the update server. Select the version to install or hit ENTER to install the latest available.

NOTE: Please enter the user password when requested.

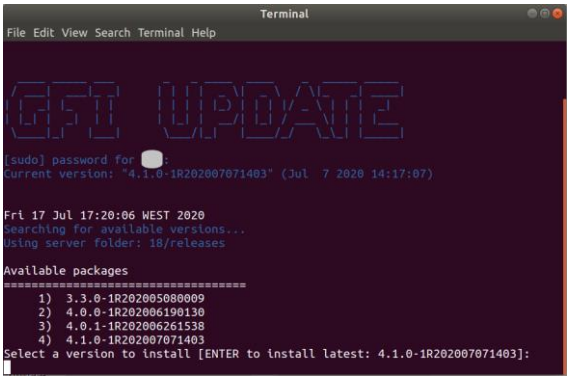

Figure 3 - Choose the version to install

The process will automatically install all the required dependencies and the GFI Debian package (automatically downloaded from the update server) that contains the GFI tools.

1.4.4 Step 4: Restart

At the end of the installation, RESTART must be done so that all users can access to the ZigBee USB dongle.

2 Upgrade Process

When starting with a running GFI installation, e.g. 1.0 RC1, it is possible to upgrade directly to 2.0 or later without the need for reinstalling the entire system.

2.1 System Requirements

Table 2 presents the minimum and recommended systems requirements to upgrade the GFI testing tool (these are in addition to those Table 1 which are required to run the tool).

Minimum	Recommended
Internet Connection	Wired Internet Connection (e.g. IEEE 802.3)
2 GB Free HDD	2 GB Free HDD

Table 2 – System Requirements for Upgrade

2.2 Reference Environment

The upgrade process is currently supported when starting with the reference hardware that is installed with a previous version of the GFI software or with a plain Ubuntu 18.04 LTS.

If the user has installed additional packages from the repositories, the installation of the dependencies may fail. In these circumstances, the user must either manually resolve the problem or reinstall the GFI Testing Tool from the USB, as detailed in Section 1.

Upgrading from 1.x.x to >= 2.0.0

⚠ For users owning a 2.4GHz single band ZigBee USB stick shown in Figure 4 (e.g. 1.3.9E), it is required to upgrade its internal firmware to be able to use it with the GFI versions >= 2.0.0.

Figure 4 – Single band 2.4GHz ZigBee USB stick

The firmware required comes with the GFI >=2.0.0 installation under the folder /opt/gfi/firmware/EM357.

To upgrade the USB stick firmware, it is recommended to do it using an “Ember Debug Adapter” from Silicon Labs (Silabs Mfr. No: *ISA3, see* Figure 5) that can be acquired at the major electronic-components online stores.

Figure 5 - Ember Debug Adapter (ISA3)

To upgrade the ZigBee USB stick firmware, please follow the instructions described at the document ***gfi-firmware-update-manual-em357***.

If the system has installed a GFI prior to version 2.0.0, e.g. 1.3.9E, then the “GFI updater” must also be upgraded. Please follow the instruction at section 1.4.2 and then continue to section 2.3.

Confirm that on the desktop the Update Icon changed as shown in Figure 6.

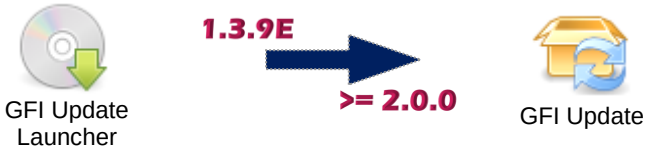

Figure 6 – Upgrading GFI Updater

2.3 Step-by-Step Upgrade

This section is a walkthrough of the update process, see each of the steps below for more information. Please confirm that the GFI GUI is closed and the GFI CommsHub is stopped.

2.3.1 Step 1: Launch Updater

The updater is launched by double-clicking the “GFI Update” icon located on the desktop:

Figure 7 – GFI Updater

If the “GFI Update” does not exist yet, or you still have the old pre-GFI 2.0.0 update icon, please follow the instruction at section 1.4.2 before this step.

2.3.2 Step 2: Select GFI version

The only user interaction required is to choose which GFI version to install. Pressing ENTER, without selecting a version, will install the latest version available.

NOTE: Please enter the user password when requested. Default gfi user password is *gfi*.

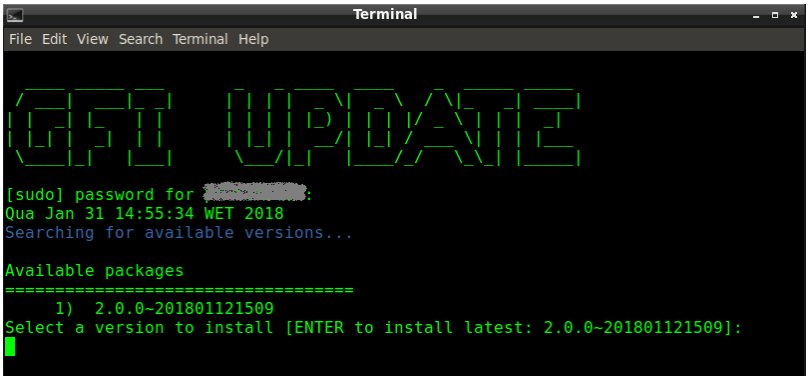

Figure 8 - Choose the version to install

Before installation it will create a backup of the existing GFI installations files into a zip file which will be saved to /opt/gfi-backups/.

The updater will install the required dependencies for the new version of the GFI.

When the installation is completed, there will be seven icons on the desktop as shown in Figure 9.

Figure 9 – GFI icons on the desktop

2.3.3 Step 3: Upgrade the dongle firmware (optional)

The upgrade of the dual-band ZigBee dongle firmware can be done by double clicking on the icon located in the desktop (GFI Flash Firmware).

Figure 10 - GFI Flash Firmware

The upgrade is only available for dual-band dongles. This should be done when the release notes indicates that GFI has a new ZigBee Stack version.

To perform the upgrade the following steps should be followed:

1- Make sure that the dual band and any other ZigBee dongles are disconnected.

2- Click on the icon “GFI Flash Firmware” in the desktop.

3- Enter the user password when requested.

4- Insert a paperclip into the small pinhole on the top of the ZigBee USB dongle, as shown in Figure 11, and **while pressing down the paperclip** connect the GFI radio to the PC using the USB cable.

Figure 11 - ZigBee dual-band USB dongle

5- After connected, remove the paperclip.

6- Wait for the upgrade process to finish.

7- Disconnect the dongle and reconnect it before use.

3 Diagnose of GFI issues

When having issues with the installation process or running the GFI tools, you will be asked to send the GFI Diagnostic Data to the support for making easier the debug process. To generate the diagData.zip file, double-click the "GFI DiagData" icon and the diaData.zip file will be generated on the desktop as shown in Figure 12.

Figure 12 - diaData.zip file generated on the desktop

4 Troubleshooting

4.1 GFI not installing or updating because of shim-signed error

Installation of Ubuntu debian packages may require an upgraded version of the “dpkg” package manager.

Run the following commands in a command line before installing or updating GFI:

```
sudo apt-get download dpkg
sudo dpkg -i dpkg_1.17.5ubuntu5.8_amd64.deb
sudo apt-get update
sudo apt-get -f install
sudo apt-get update
```

4.2 No image on screen (or blinking underscore at top left)

If after boot starts there is no image on the screen for five minutes, press Alt+F9. Capture (photograph) any eventual messages that appear then, and contact the GFI Support Team.

If this is the first time that this is experienced, then power off the machine and try the installation again before contacting GFI Support Team.

4.3 USB flash drive is not listed in boot devices

Check your USB flash drive connection. Make sure you have no USB HUB between the USB flash drive and the computer.

4.4 Installer aborts with “Exception caught”

In the case of an exception, the installer will attempt to save a log onto the USB pen drive called “log.txt”. Please insert the USB pen drive into an Internet connected computer and copy the file “log.txt” off the USB pen and include in any email to GFI Support Team along with a photo of the exception displayed on the screen.

Please note, every time an exception is caught, the log file will be replaced. Therefore, it is important the above process to retrieve the log file is performed directly after the exception is caught.

4.5 Computer does not turn off after installation

In the event your computer does not turn off after installation, wait for 2 minutes, and use the power button to force a power off. Remove the USB flash drive and power on the computer. If the GFI system does not boot, attempt a new installation. If it still fails to properly boot after installation, contact GFI Support Team along with the log file (see section 4.4).

4.6 Installer pauses for long period without error

The installation takes approximately 2:30 minutes on the reference hardware. If it is experienced that the installation takes a substantially longer time (e.g. 15 minutes) without making any progress or raising an exception, then it is recommended that the machine is powered off and the install process is repeated.

Should the above problem be experienced repeatedly, then please contact GFI Support Team for further assistance in resolving the issue.