

Upgrading NGCs with digital board rev: AD, AE, AF, AG, AH, AI, AJ, AK, AL to OS 2102141-016 and Flash 2102411-043

PGC1000, NGCs 8203, 8206, 8209

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1 Introduction

NGC embedded software, OS (2102141-016) and Flash (2102411-043), includes several new features and changes that require specific instructions for successful upgrade. This technical bulletin describes the update procedure to these versions.

NOTICE – Software update to the latest revisions is not mandatory. If you benefit from the software improvements listed in section [2.1](#), and you have NGCs with the digital board revisions listed in section [2.3](#), then you must obtain the latest PCCU, and NGC Flash and OS versions to update.



Do not attempt to update device(s) until you have reviewed this document and downloaded the required PCCU and NGC software versions. Both the latest Flash and OS must be loaded on the NGC using the latest PCCU version. A partial load of Flash only or OS only may result in loss of device functionality. **After installing the latest PCCU version, load the Flash before loading the OS.**

The latest software does not support Active Sync for communications. Once the update is complete, the NGC will support only Serial Port (USB) and TCP/IP (Ethernet) communications.

2 Description

2.1 Latest software versions

[Table 2-1](#) lists the part numbers of the latest NGC embedded software versions. These versions support new functionality in local communication and analytical functions.

Table 2-1: Latest software versions

Component	Part number
Flash (standard without hydrocarbon dewpoint)	2102411-043
Flash (with hydrocarbon dewpoint)	2103600-014
Operating System (OS)	2102141-016

2.2 New features

The following new features have been added to the ABB Totalflow NGC software:

- New support for local communication with the NGC (OS):
 - Serial port TF loader service: Loader initializes when connecting to the NGC using the serial USB port. This communication option replaces the use of active synch USB communication and the need to utilize the Windows Operating System mobile device center add-on in the PCCU laptop computer.
 - New loader command to update OS registry settings
 - Bug fix in TCP/IP loader performing multi-file uploads
- New functions by application (Flash):
 - Calculate, store, and collect gas safety calculations (soot index and incomplete combustion factor)
 - Calculate, store, and collect GPA Net Heating Values
 - Calculate and store intermediate working values used in the gas safety equations
 - Emulate calculations (pre-GOST, GPA Liquids, including bug fixes)
 - USB port communication support

2.3 Products supporting update to the latest versions

The PCG1000 and NGCs 8203, 8206, 8209 support updates to the latest software versions if they have the following digital board revisions (REVs):

AD, AE, AF, AG, AH, AI, AJ, AK, and AL

Refer to section [2.5](#) to determine your board revision.

2.4 Is your product affected?

If your operations benefit from the features described in section [2.2](#), and your device(s) have the board revisions listed in section [2.3](#), then the update is appropriate and you must carefully follow the instructions in this document.



IMPORTANT NOTE: For devices with digital board revs older than those listed in section [2.3](#), please call ABB technical support for more information.

If you do not need the new features, you are not required to update. Earlier versions of the software will still be supported (see [Table 2-2](#)).

Table 2-2: Earlier software versions

Component	Part number
Flash (standard without hydrocarbon dewpoint)	2102411-042 or earlier
Operating System	2102141-015 or earlier

2.5 Locate the digital board REV

To locate the digital board REV, removal of the device's cover is required. In non-hazardous locations, the cover can be removed without powering off.

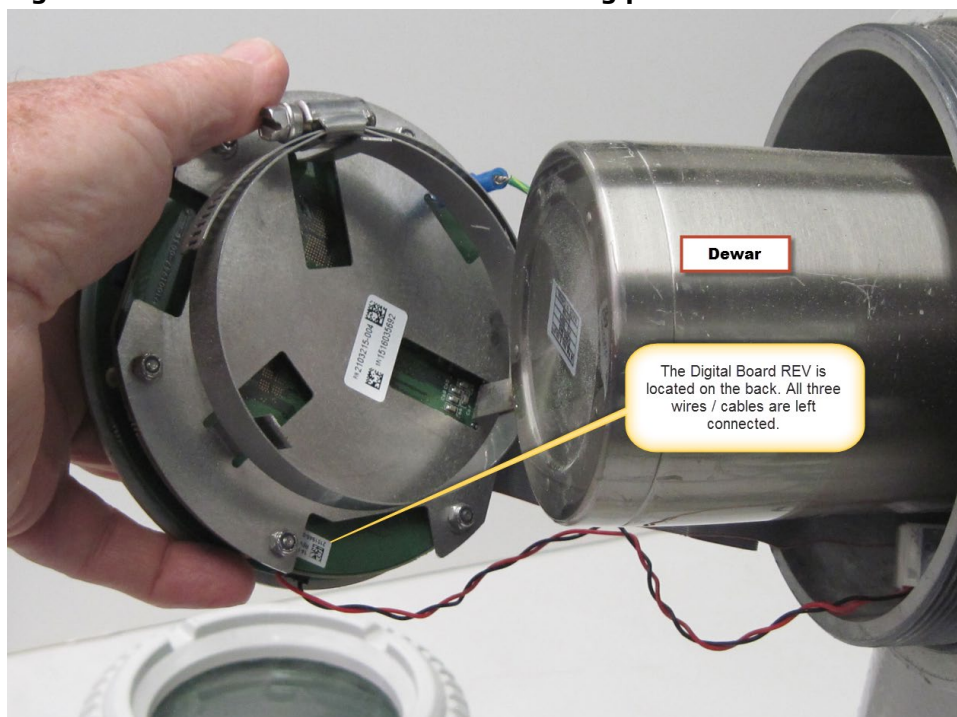


DANGER – Serious damage to health / risk to life. Do not open or remove cover(s) or apply power to the equipment while the covers are removed unless the area is known to be non-hazardous and an explosive atmosphere is not present

Locate the board REV by removing the front of the enclosure:

1. Unscrew the front enclosure piece.
2. Loosen the screw clamp holding the display assembly to the Dewar.
3. Gently slide the digital display off the Dewar without loosening any connection wires or cables ([Figure 2-1](#)).

Figure 2-1: Locate revision without removing power to the unit



4. Take note of the revision to determine if the unit can be updated. See [Figure 2-2](#) for a close up of the location of the board revision (REV). In the example below, the REV in the sticker is "AL". Therefore, this is a device that can update to the latest software.

Figure 2-2: Revision location (close up)



3 Update procedure

Make sure that the downloaded Flash and OS files are in the laptop or system used for the upgrade. This procedure applies to device updates to Flash version 2102411-043 and OS version 2102141-016 when the NGC digital board revisions are: AD, AE, AF, AG, AH, AI, AJ, AK, or AL.

For details on how to download software from the ABB library, see the NGC embedded software release notes.

Connect directly to the NGC using Ethernet for the update (recommended). Make sure you save the device configuration and data before you begin the update. You will be prompted before the main 32-bit loader screen displays.



IMPORTANT NOTE: Use PCCU 7.70.1 or later. PCCU 7.69 and 7.69.1 have been discontinued and are no longer supported. If you do not have the latest PCCU, download PCCU software from the ABB library and install it in your system prior to update.



IMPORTANT NOTE: The Flash and OS must be loaded in sequence for these versions. First load the Flash and then load the OS. A partial load of Flash only or OS only may result in loss of device functionality.



NOTICE – Communications using Active Sync will no longer be available after update. After the software update, the NGC only supports serial port (USB) and TCP/IP as communication options.

3.1 Upload software

To load software:

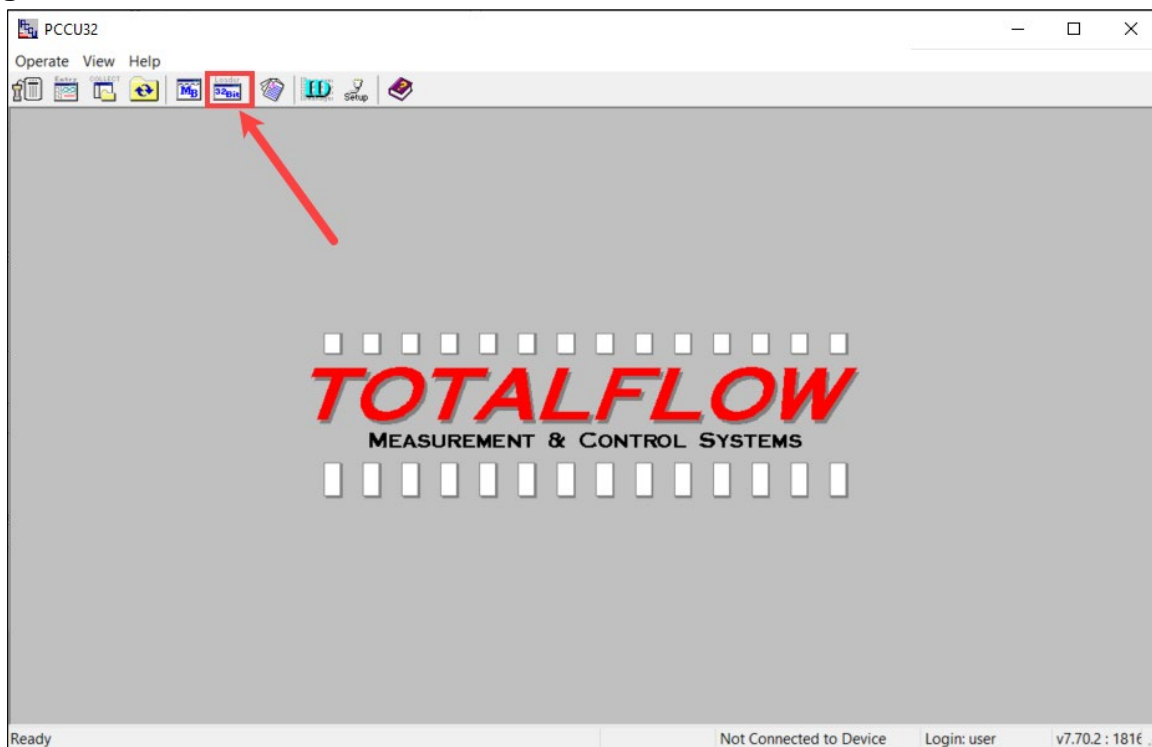


IMPORTANT NOTE: If at any point during software loading the process is interrupted or freezes, verify that the IP address in the Connection field is the address of the device you intend to update. Then click **Start** to resume loading. (This is a known issue, see section [4.1](#)).

1. Using an Ethernet cable, connect your laptop to the device's Ethernet port. Direct connection to the NGC's Ethernet port is the recommended connection for software update. A network connection is not recommended because an update can be interrupted due to network failure or heavy traffic. This can cause a partial update or file corruption which will render the device unusable.
2. If you are connected to the device using the latest PCCU on entry mode, click **Close**.

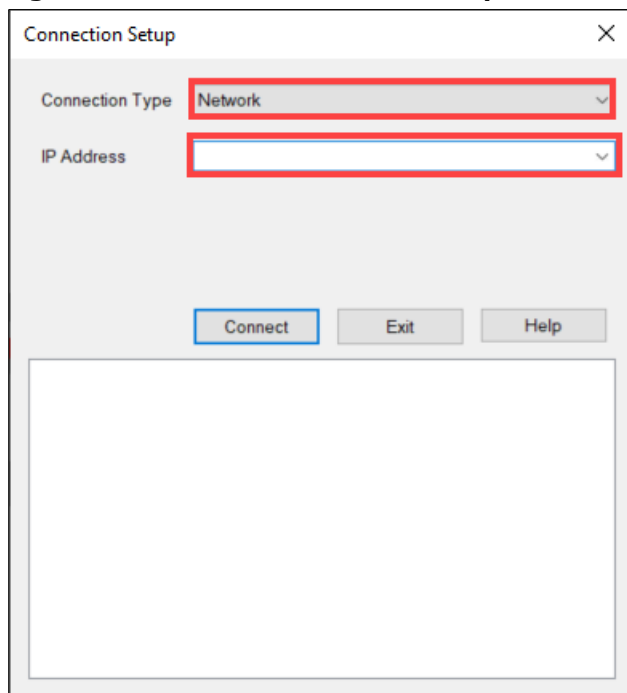
3. If you are not connected using the latest PCCU, launch the latest version of PCCU.
4. Select the 32-bit loader icon on the PCCU top menu ([Figure 3-1](#)).

Figure 3-1: Select 32-bit loader



5. Click **Yes** at the warning if you have backed up your device data.
6. Connection Setup window ([Figure 3-2](#)):
 - a. Select **Network** in the Connection Type drop-down list. "Network" is the correct option, even though the physical Ethernet is point-to-point. A point-to-point connection is recommended for update.
 - b. Type the IP address of the target NGC in the IP Address field.

Figure 3-2: Loader Connection Setup window



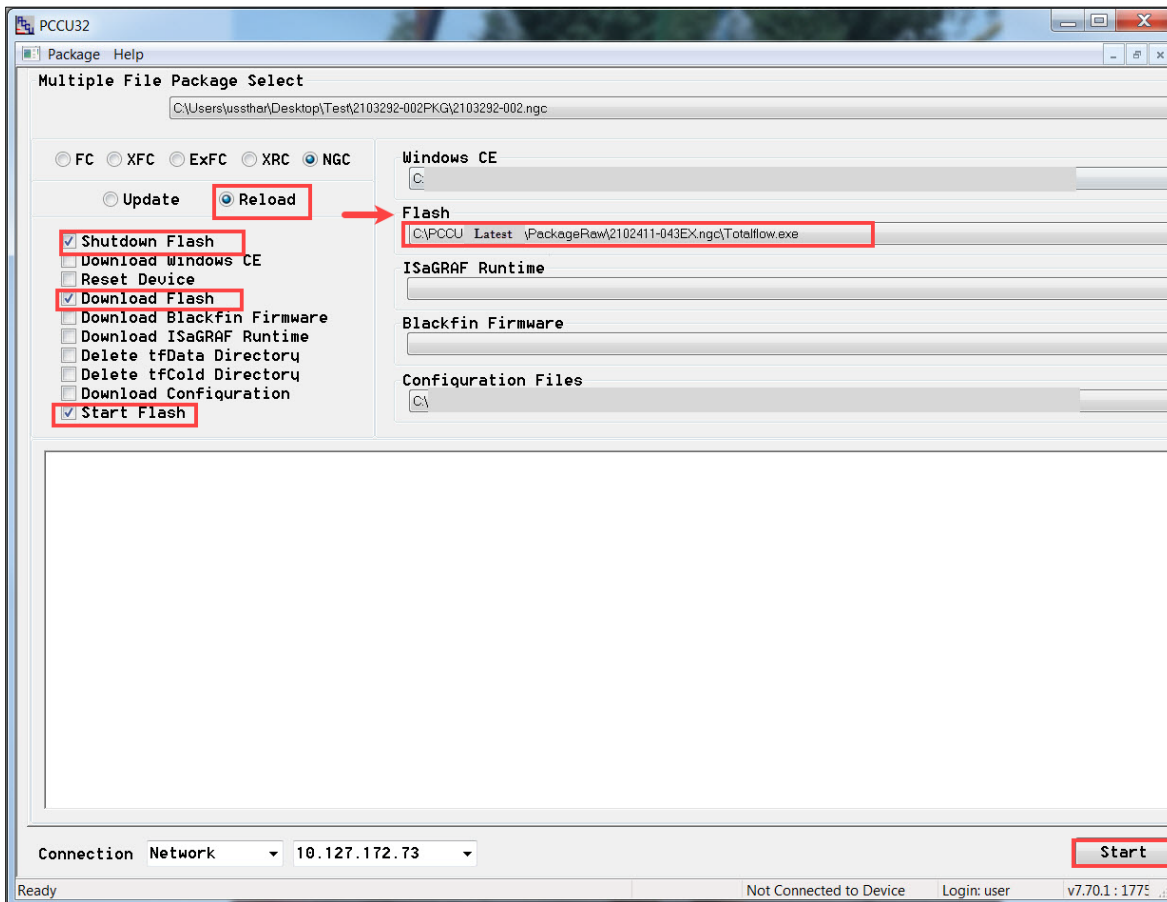
7. Click **Connect**. The loader screen displays.



IMPORTANT NOTE: Always verify that at the bottom left corner of the loader screen, the option: **Network** displays in the Connection drop-down list and that the IP address is the address of the target NGC. Avoid upgrading the wrong device. Direct connection to the device is always recommended to avoid connecting to the wrong device over a network.

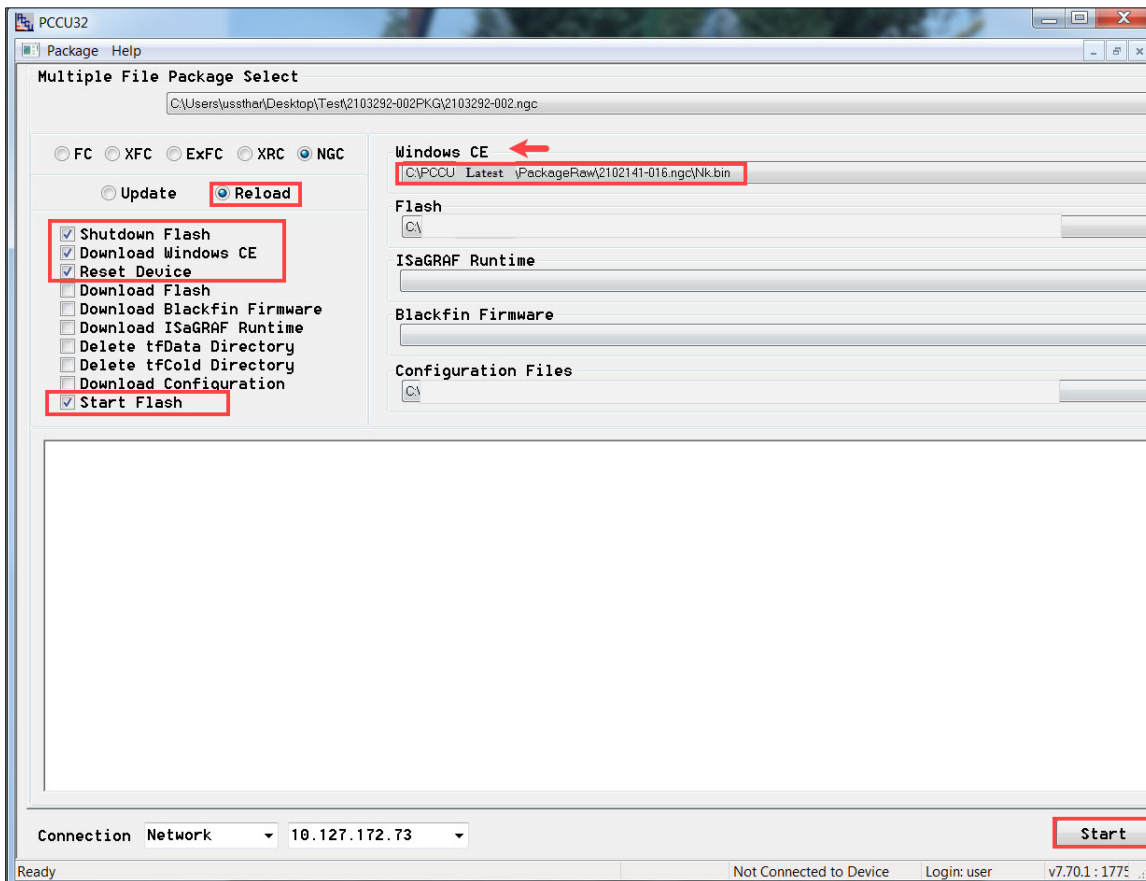
8. Load the Flash first ([Figure 3-3](#)).
 - a. Click the Flash browse button to locate the Flash file in your system.
 - b. Select the Flash file: **2102411-043EX.ngc**
 - c. Select **Reload**.
 - d. Select the following three reload options: **Shutdown Flash**, **Download Flash**, and **Start Flash**.
 - e. Verify that the IP address in the Connection field is the address of the device you intend to update.
 - f. Click **Start**.

Figure 3-3: Load the Flash first (2102411-043)



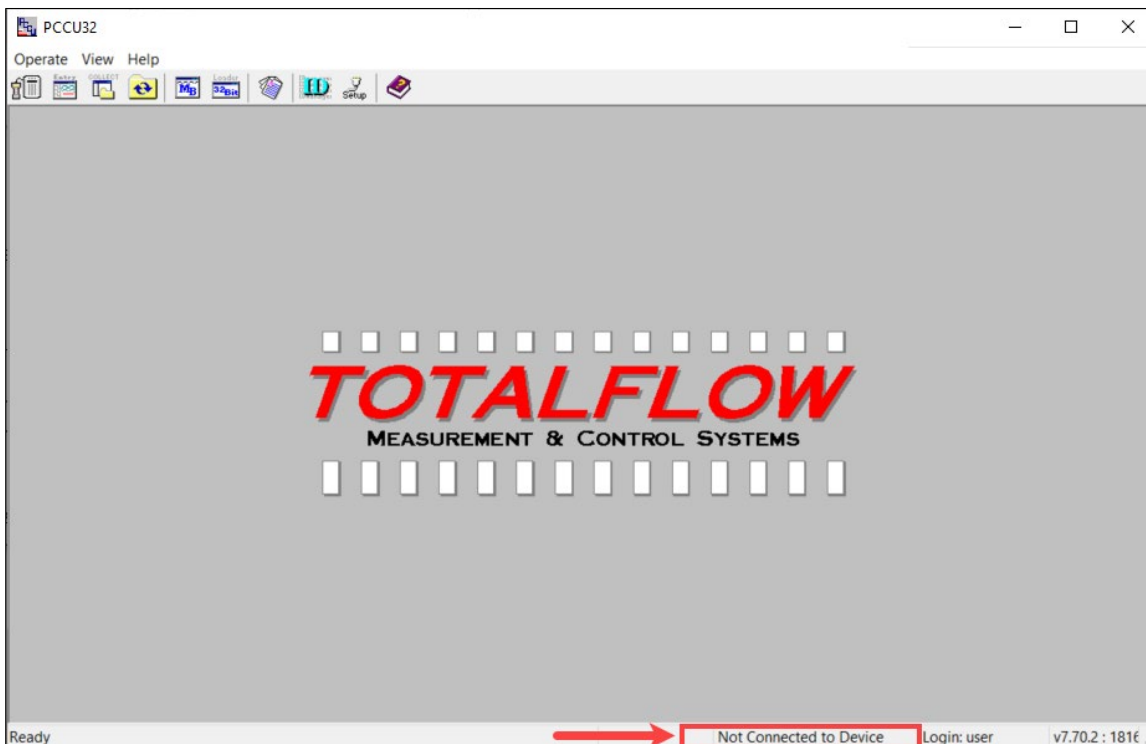
9. Load the OS second ([Figure 3-4](#)):
 - a. Click the Windows CE browse button to locate the Flash file in your system.
 - b. Select the OS file: **2102141-016.ngc**.
 - c. Select **Reload**.
 - d. Select the following four reload options: **Shutdown Flash**, **Download Windows CE**, **Reset Device**, and **Start Flash**.
 - e. Verify that the IP address in the Connection field is the address of the device you intend to update.
 - f. Click **Start**.

Figure 3-4: Load the OS (2102141-016)



10. Verify that the screen displays the message: "Operation complete".
11. Click **Close** to exit the 32-bit loader. The connection with the device using Ethernet closes and the home PCCU screen displays (Figure 3-5). Note that there is no connection with the device. Keep PCCU open for next procedure (3.2).

Figure 3-5: Home PCCU Screen (disconnected from device)



3.2 Verify local communication using serial port option

When the update completes successfully, PCCU supports the serial port communication option for USB-based communication with the NGC. This option must be selected at communication setup. This procedure describes how

to set up and verify connection with the NGC using USB communications. Make sure to exit 32-Bit Loader before starting this procedure.



IMPORTANT NOTE: With the new software, Active Sync is no longer the option required for USB-based communication. Active Sync is not supported after the upgrade.

To connect with the NGC using USB ([Figure 3-6](#): Communication setup for USB):

1. Connect the laptop to the NGC's USB port with the appropriate USB cable.
2. Click **Setup** on the PCCU top menu.
3. Select **Serial port** under Communications.
4. Select the laptop's serial port from the **PCCU Comm port** drop down list.
5. Click **Close** to exit setup.

Figure 3-6: Communication setup for USB

The screenshot shows the 'System Setup' dialog box with the 'Setup' tab selected. The 'Communications' section is active. Under 'PCCU Connect Method', the 'Serial port' radio button is selected. The 'PCCU Com. Port' dropdown menu is open, showing 'COM3' and 'COM4'. The 'Close' button at the bottom right is highlighted with a red box.

6. Click the Entry icon on the PCCU top menu and verify that the connection with the NGC is successful.

4 Known issues and workarounds

Known issues and workarounds are described in the following section.

4.1 Software loading stops occasionally

Software loading using the 32-bit Loader may stop before completion. The screen displays the error: "Unable to connect to device <IP address>" as shown in [Figure 4-1](#). Click **Start** to resume update.

Figure 4-1: Software loading interrupted

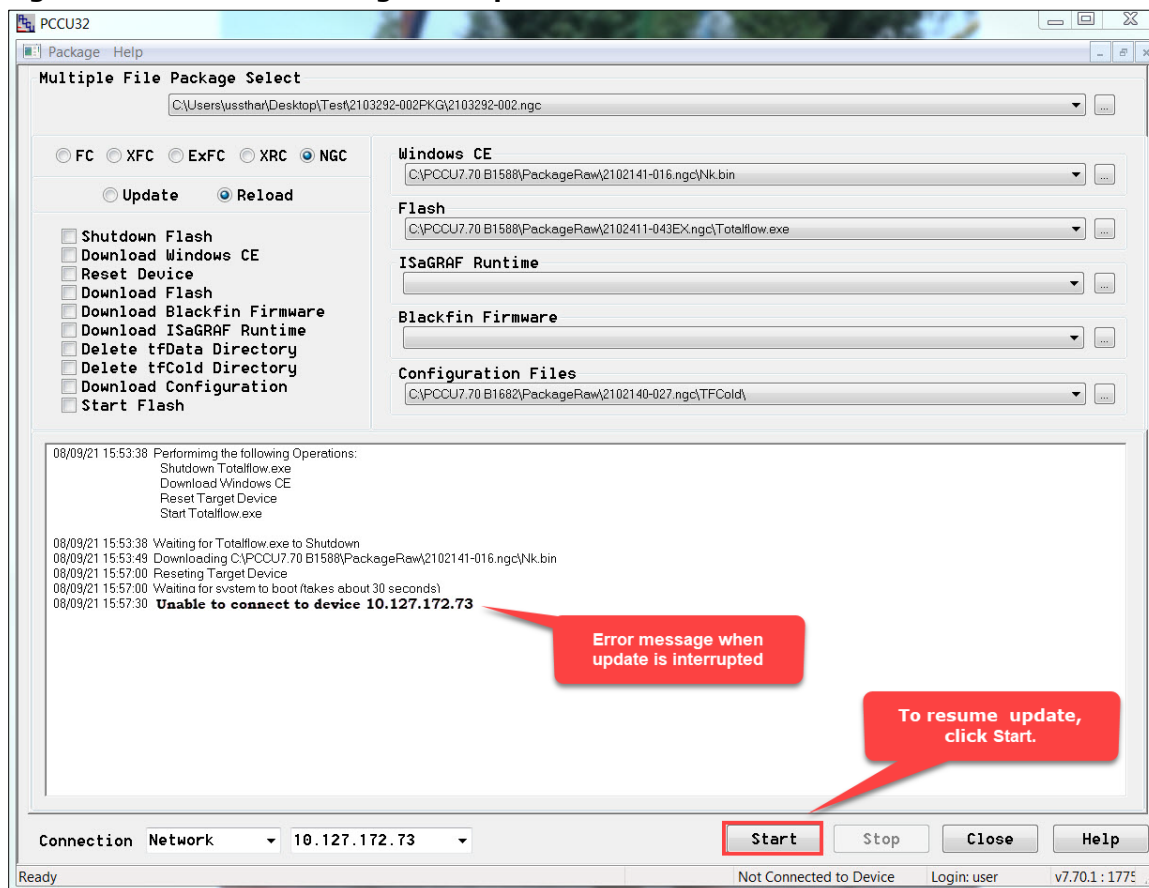


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