

Your Global Automation Partner

**TURCK**

# TX Update Instructions

## Bootloader, Config OS, Main OS, Codesys/TX VisuPro Runtimes

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# 1 General Information

## 1.1 About these instructions

The following user manual describes the setup, functions, and use of the system. It helps you to plan, design, and implement the system for its intended purpose.

Please read this manual carefully before using the system. This will prevent the risk of personal injury or damage to property or equipment. Keep this manual safe during the service life of the system. If the system is passed on, be sure to transfer this manual to the new owner as well.

## 1.2 Explanation of symbols used

### 1.2.1 Warnings

Action-related warnings are placed next to potentially dangerous work steps and are marked by graphic symbols. Each warning is initiated by a warning sign and a signal word that expresses the gravity of the danger. The warnings absolutely have to be observed:



**DANGER!**

DANGER indicates an immediately dangerous situation with high risk of death or severe injury if not avoided.



**WARNING!**

WARNING indicates a potentially dangerous situation with medium risk of death or severe injury if not avoided.



**ATTENTION!**

ATTENTION indicates a situation that may lead to property damage if not avoided.



**NOTE**

In NOTES you will find tips, recommendations, and important information. The notes facilitate work, provide more information on specific actions, and help to avoid unnecessary effort caused by not following the correct procedure.

- 
- **CALL TO ACTION**  
This symbol identifies steps that the user has to perform.
  - ➔ **RESULTS OF ACTION**  
This symbol identifies relevant results of steps

## 1.3 Contents

- Before you begin
- Updating the bootloader
- Updating the operating systems
- Installing a Codesys or TX VisuPro runtime

## 1.4 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design, or if some information is missing in the document, please send your suggestions to [techdoc@turck.com](mailto:techdoc@turck.com).

## 1.5 Technical support

For additional support, please send all inquiries to [appsupport@turck.com](mailto:appsupport@turck.com), or call Application Support at 763-553-7300, Monday-Friday 8AM-5PM CST.

## 2 Background Information

### 2.1 The Software Components of a TX Device

TX devices rely on a handful of upgradeable software and firmware components to function. These are: a bootloader, two operating systems (Config OS and Main OS), and finally, applications that run on top of the operating systems. Two such applications are a Codesys runtime and a TX VisuPro runtime, which are responsible for running Codesys and TX VisuPro projects respectively. This guide covers installing and/or updating all these components. All upgrade methods will be outlined for each component.

### 2.2 Delivered State

In its delivered state, your TX will have the most up-to-date Main OS and Config OS as of the date it was produced, plus a Codesys runtime if it is a member of the TX200 or TX700 product families. Like most computers, by the time the end user receives the TX device, one or more components will likely be out of date.



#### ATTENTION!

Unless instructed to, do not remove power from your TX device while performing any upgrades outlined in this manual. Doing so could result in irreparable damage to the device.

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#### WARNING!

It is possible to downgrade any component of a TX device to a previous version, but doing so could result in malfunctions or unrecoverable errors. Turck is not responsible for devices damaged in this manner.

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## 3 Necessary Files for Updating Software Components

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### NOTE

In the context of upgrading a TX device, “image” files are upgrade data, and “MD5” files verify the integrity of that data.

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### 3.1 Bootloader

A bootloader upgrade consists of an image file and an MD5 file. Contact your distributor, local Turck business development manager, or application support to obtain them. They will be delivered in a folder named “Bootloader,” and it should be unzipped.

### 3.2 Config OS and Main OS (“BSP”)

Config OS and Main OS are always released in pairs with the same version number. They are often referred to together as a Board Support Package, or “BSP.” Contact your distributor, local Turck business development manager, or application support to obtain them. They will be delivered in two folders named ConfigOS and MainOS, which should be unzipped. Leave the TAR file and MD5 file inside those folders as they are.

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### NOTE

For instructions on how to check your TX device’s BSP version, see [section 7.6](#) in the appendix.

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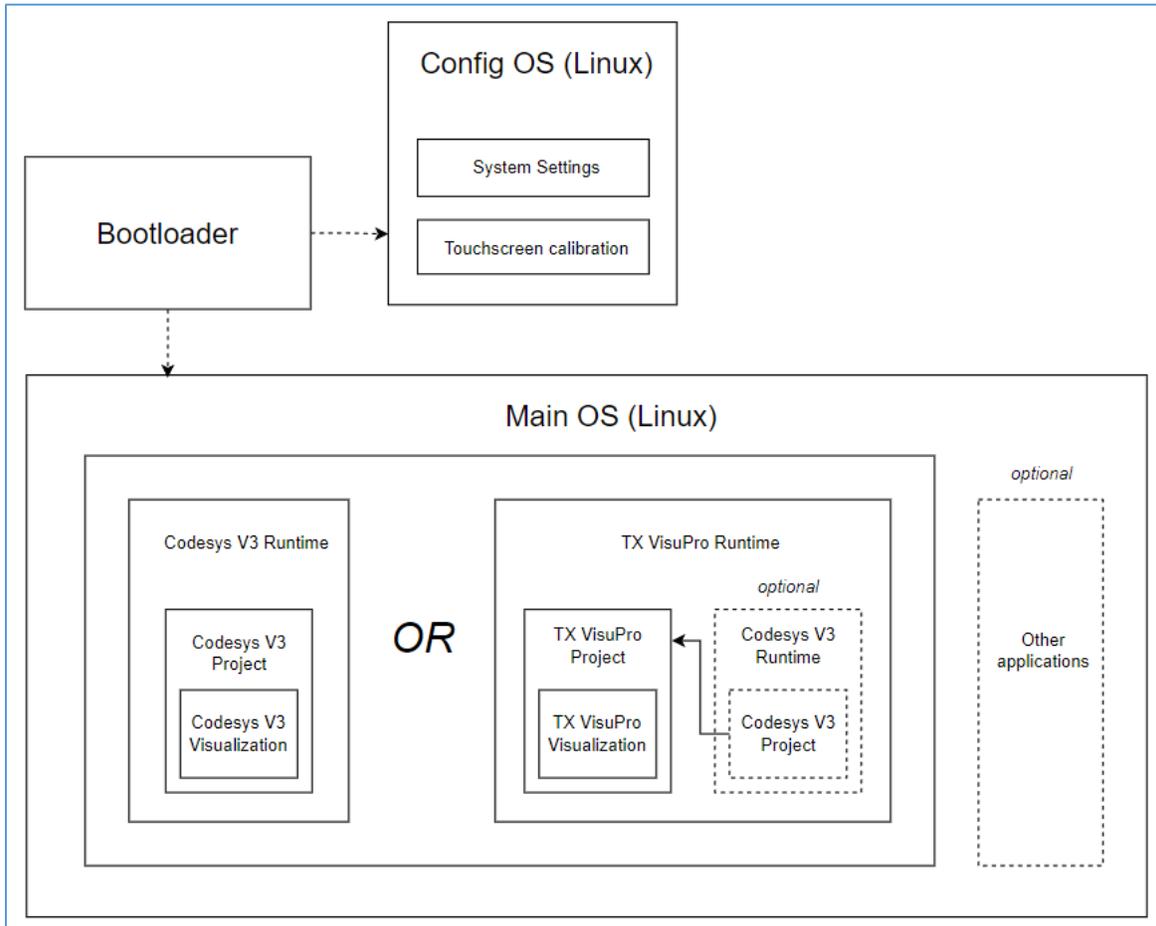
### 3.3 Codesys Runtime

The Codesys runtime is an application that runs on top of the operating systems. It is what automatically runs your Codesys project after the TX device starts up. Contact your distributor, local Turck business development manager, or application support for the necessary files. The folder should remain zipped, but ensure that it is not “double-zipped,” i.e. there should not be any other zipped folders inside the zipped folder that is downloaded to the TX.

### 3.4 TX VisuPro Runtime

The TX VisuPro runtime is an application that runs on top of the operating systems. It contains a Codesys runtime as well, provided your TX device has that ability. It is what automatically runs your TX VisuPro visualization and (optionally) your Codesys project after the TX device starts up. The TX VisuPro runtime is downloaded to the TX device by either your computer or a USB drive. In either case, you will need the TX VisuPro IDE, which is available [here](#). The version of the runtime is tied to the version of the IDE, so for the latest runtime, ensure you are running the latest IDE.

### 3.5 Software Component Diagram



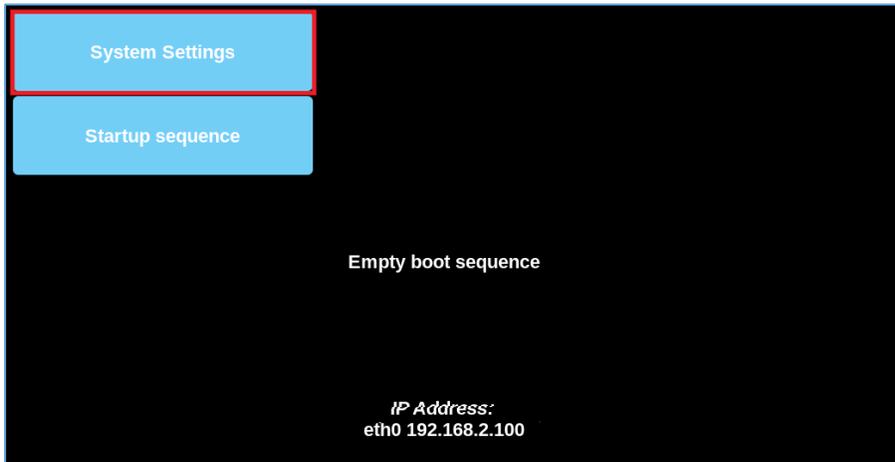
## 4 Bootloader

### 4.1 Overview

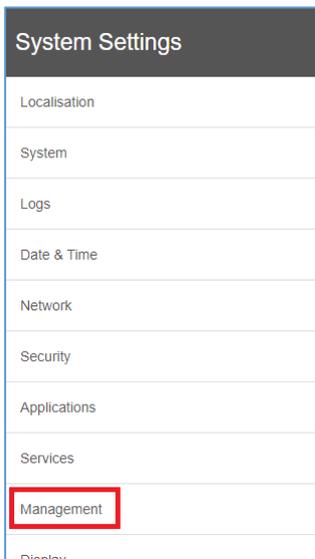
It is rare that you must upgrade the bootloader in your TX device, but that process is outlined here. The upgrade can be performed using the device's touchscreen (if it has one) or VNC connection with the upgrade files stored on a USB drive, or you may perform the upgrade using the TX device's webserver with the upgrade files stored locally on your computer.

### 4.2 Touchscreen/VNC + USB Drive Method

1. Load the Bootloader folder onto a USB drive.
2. Plug the USB drive into your TX device.
3. Get to the System Setup screen using any of the methods outlined in [section 7.3](#) of the appendix.
4. Tap or click **System Settings**. If you see a login box, enter administrator-level credentials.



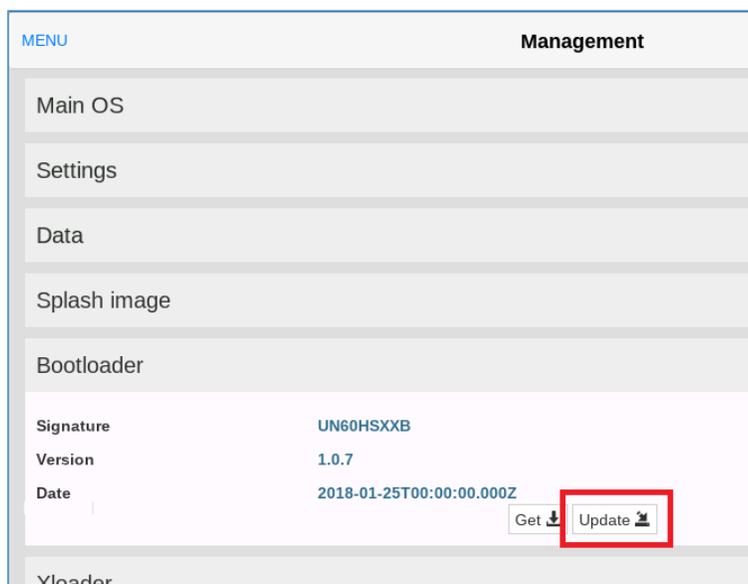
5. Tap or click **Management**



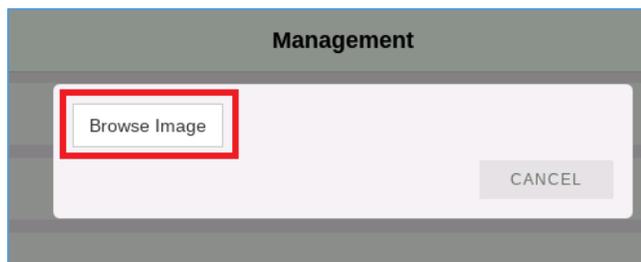
6. Tap or click **Bootloader**



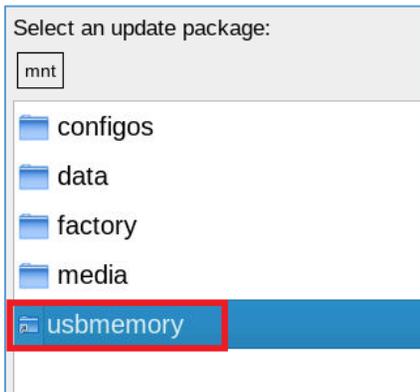
7. Tap or click **Update**



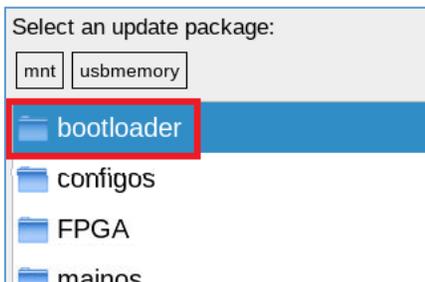
8. Tap or click **Browse Image**



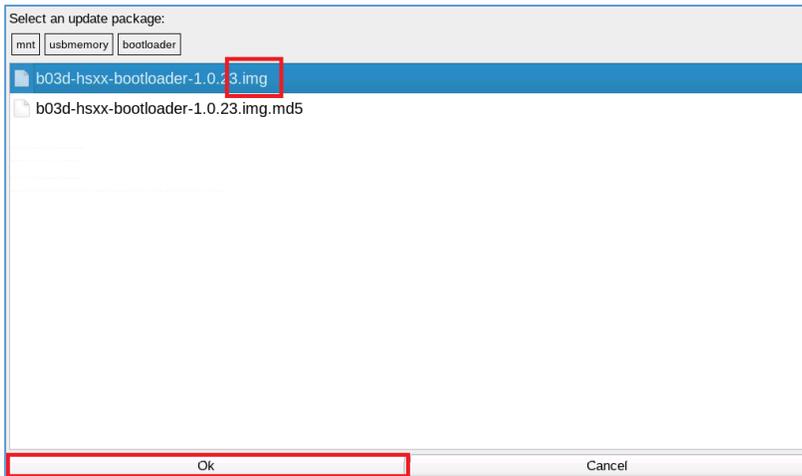
9. Double-tap or double-click the folder named **usbmemory**



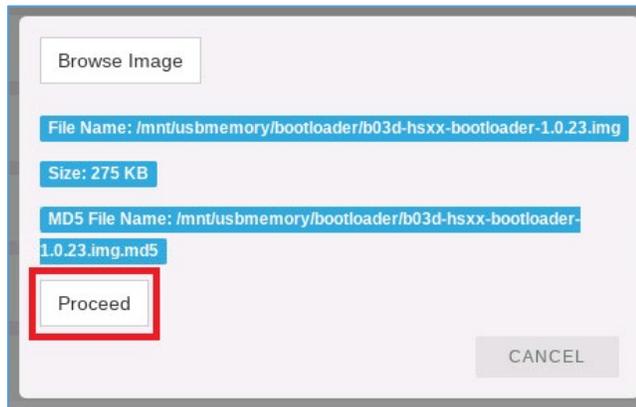
10. Double-tap or double-click the folder named **bootloader**



11. Tap or click the file that ends in .img, then tap or click **Ok**



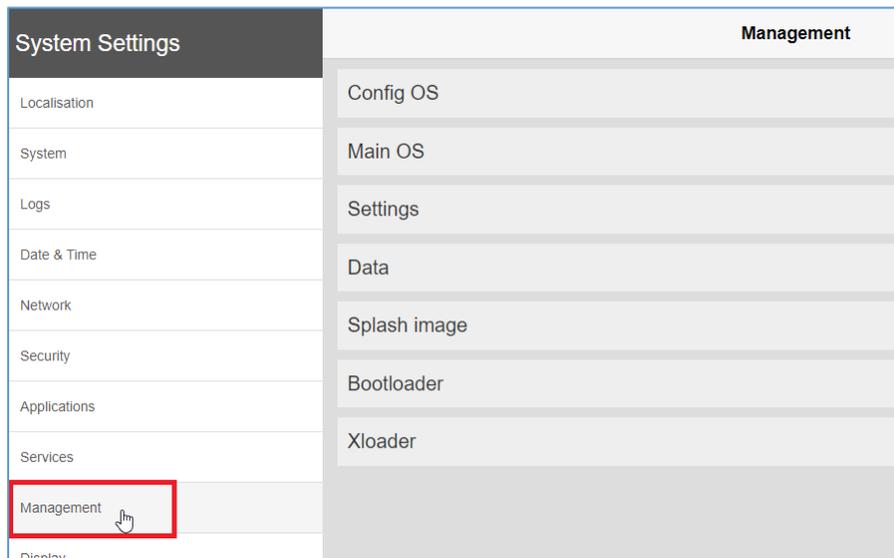
12. Tap or click **Proceed**



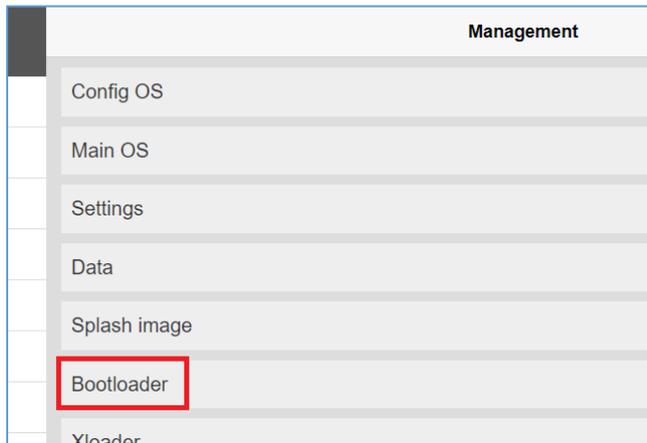
13. Let the update complete.

### 4.3 Webserver + Local Files Method

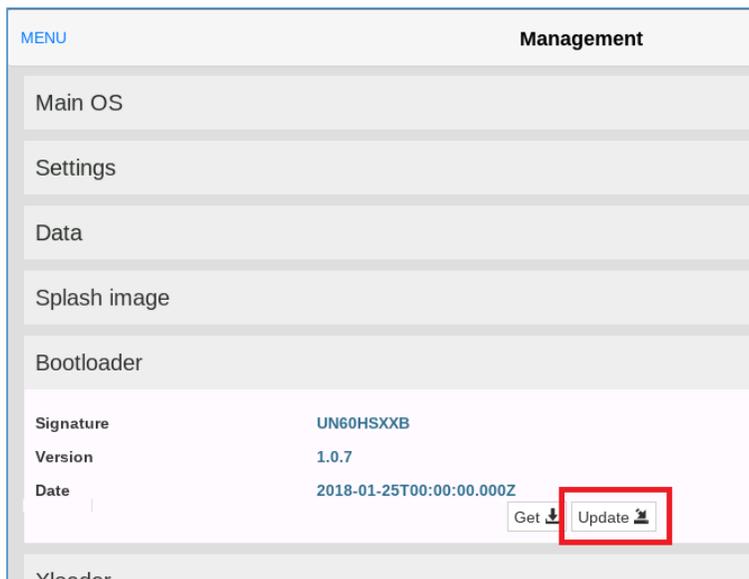
1. Navigate to the System Settings page of the TX device's webserver. If you are unsure how to do this or are having difficulty, see [section 7.4.2](#) of the appendix.
2. Click **Management**



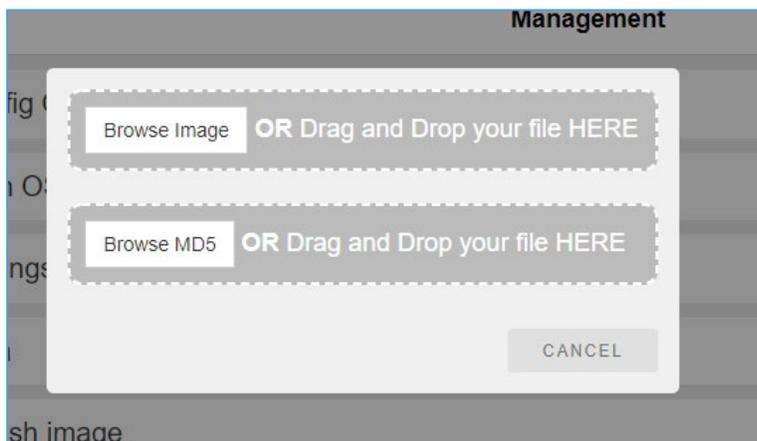
3. Click **Bootloader**



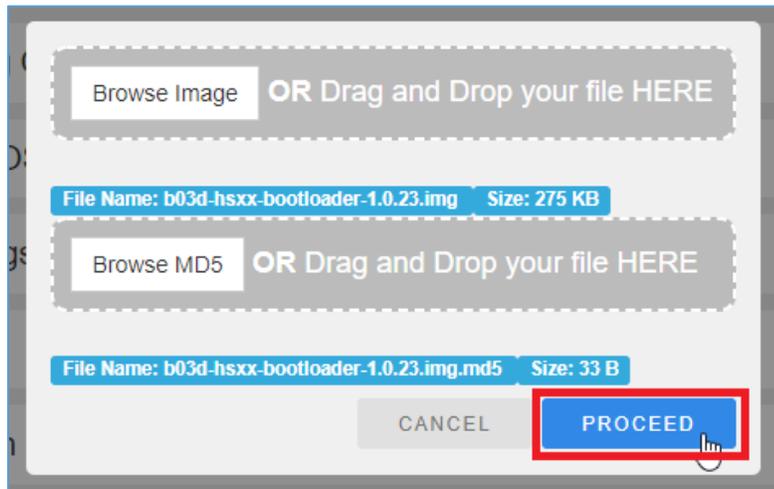
4. Click **Update**



5. Drag in or navigate to the bootloader image (ends in .img) and the bootloader MD5 (ends in .md5)



6. With the bootloader image and MD5 files selected, click **Proceed**



7. Let the update complete.

## 5 Config OS and Main OS (“BSP”)

### 5.1 Overview

This section covers updating Config OS and Main OS as a group, as they are always released in pairs with the same version number. They are often referred to as a Board Support Package, or “BSP.” The upgrade process is the same for both operating systems. It can be performed using the device’s touchscreen (if it has one) or VNC connection with the upgrade files stored on a USB drive, or you may perform the upgrade using the TX device’s webserver with the upgrade files stored locally on your computer.



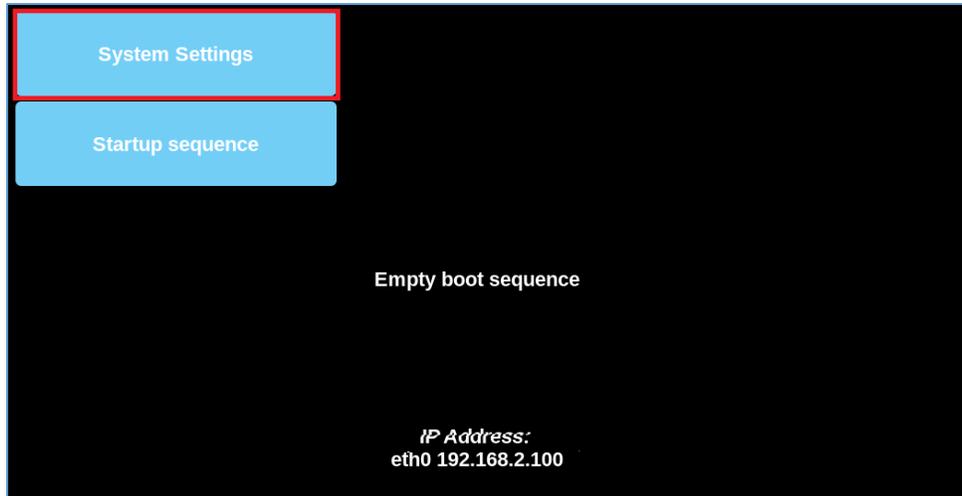
#### NOTE

For instructions on how to check your TX device’s BSP version, see [section 7.6](#) in the appendix.

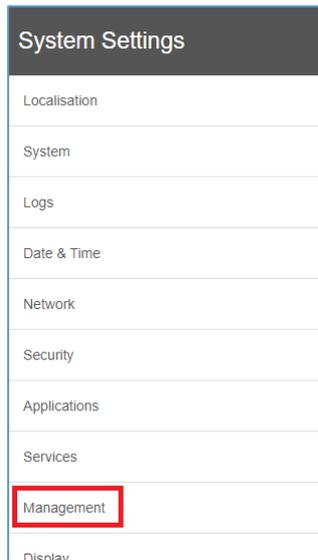
---

### 5.2 Touchscreen/VNC + USB Drive Method

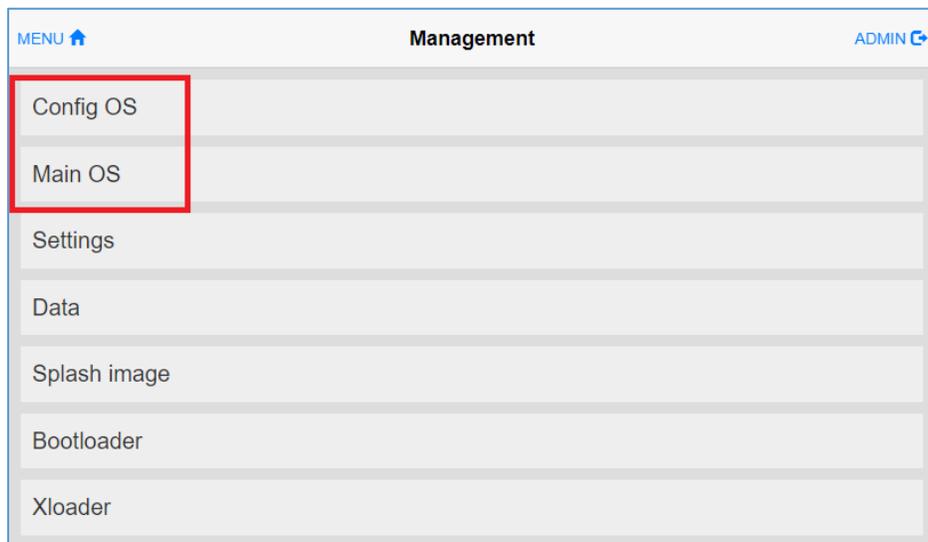
1. Load the ConfigOS and MainOS folders onto a USB drive.
2. Plug the USB drive into your TX device.
3. Get to the System Setup screen using any of the methods outlined [section 7.3](#) of the appendix.
4. Tap or click **System Settings**. If you see a login box, enter administrator-level credentials.



5. Tap or click **Management**



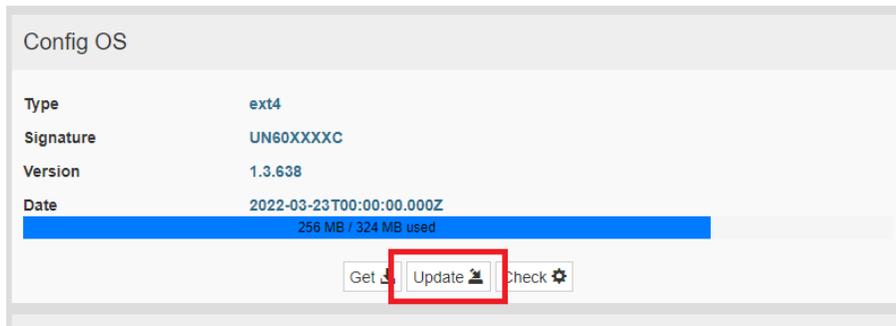
6. Tap or click the operating system you will be upgrading.



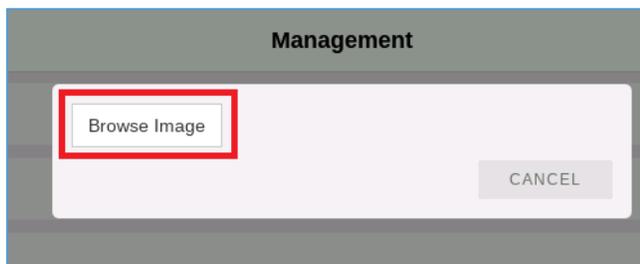
**ATTENTION!**

When upgrading the operating systems, start with Config OS, then do Main OS.

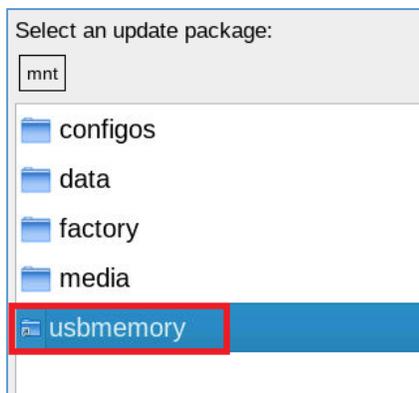
7. Tap or click **Update**



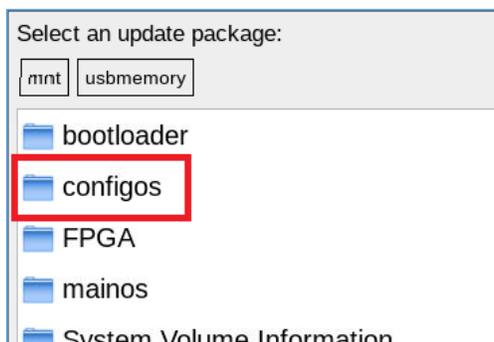
8. Tap or click **Browse Image**



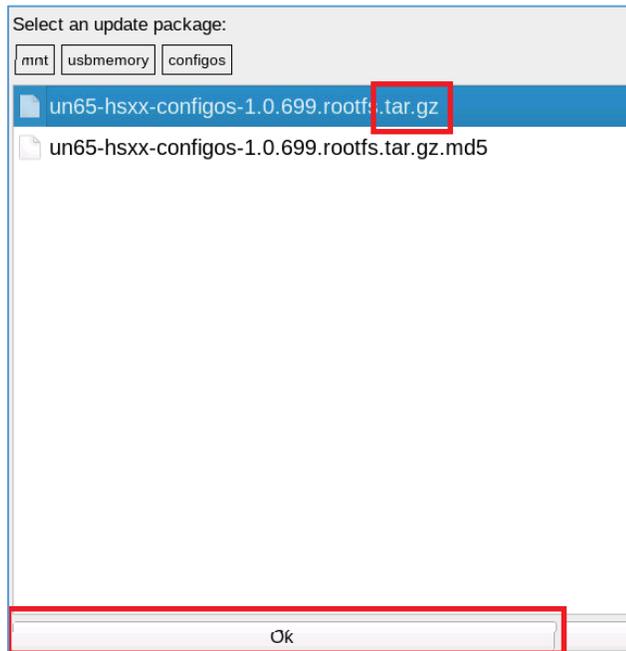
9. Double-tap or double-click the folder named **usbmemory**



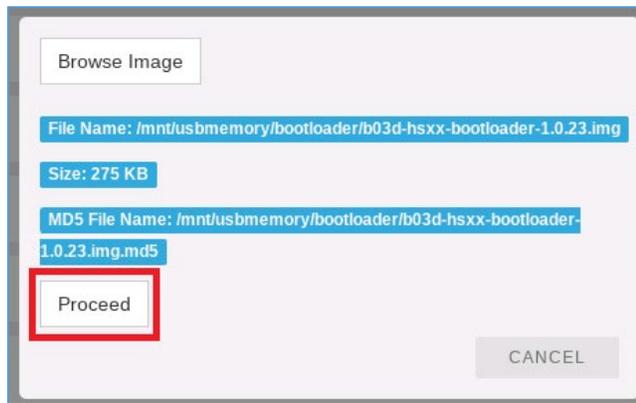
10. Double-tap or double-click the folder named **configs** or **mainos**, whichever one you are updating.



11. Tap or click the file that ends in .tar.gz, then tap or click **Ok**



12. Tap or click **Proceed**



13. If you receive a warning that the device will restart, acknowledge it, and let the upgrade complete.

**NOTE**

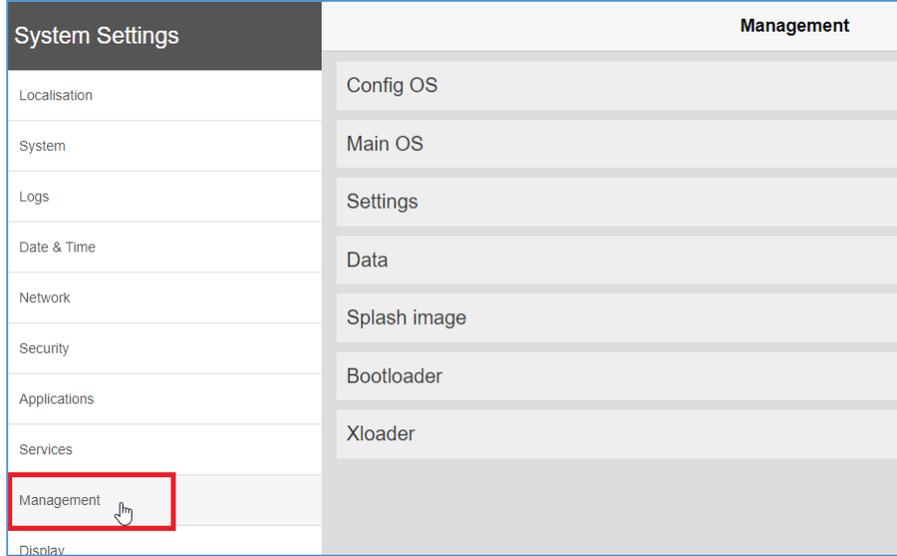
Depending on how extensive the upgrade is, this will take between 2-10 minutes.

---

14. If you just upgraded Config OS, go back to the [start of this section \(section 5.2\)](#) and upgrade Main OS. If you have just upgraded Main OS, continue to [section 5.4: final steps.](#)

### 5.3 Webserver + Local Files Method

1. Navigate to the System Settings page of the TX device's webserver. If you are unsure how to do this or are having difficulty, see [section 7.4.2](#) of the appendix.
2. Click **Management**



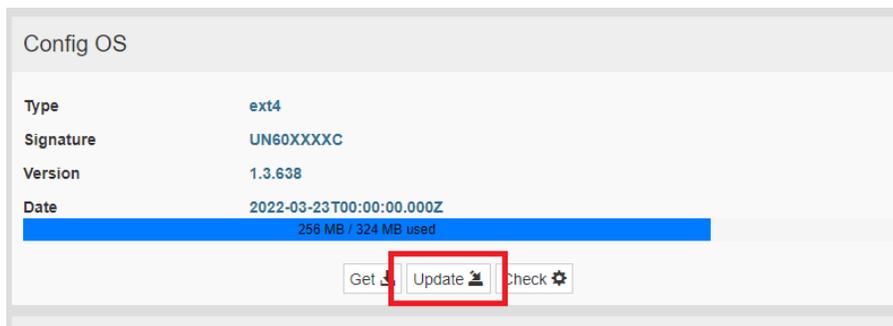
3. Click the operating system you will be upgrading.



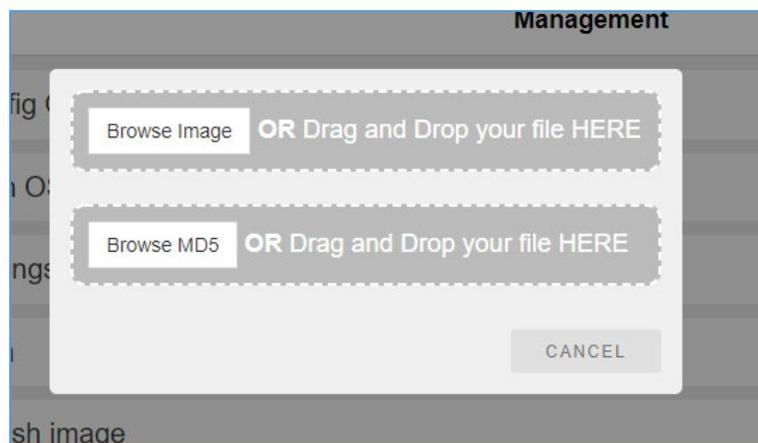
**ATTENTION!**

When upgrading the operating systems, start with Config OS, then do Main OS.

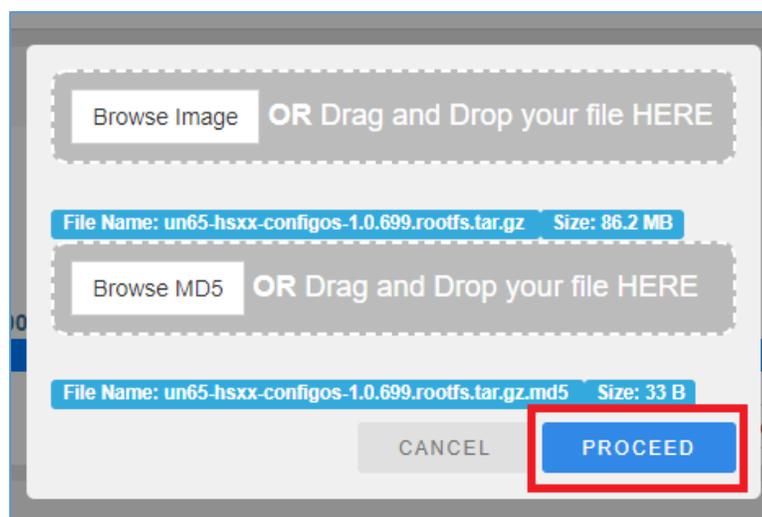
4. Click **Update**



5. Drag in or navigate to the OS image (ends in .tar.gz) and the OS MD5 (ends in .md5)



6. With the OS image and MD5 files selected, click **Proceed**



15. If you receive a warning that the device will restart, acknowledge it and let the upgrade complete.



#### NOTE

Depending on how extensive the upgrade is, this will take between 2-10 minutes.

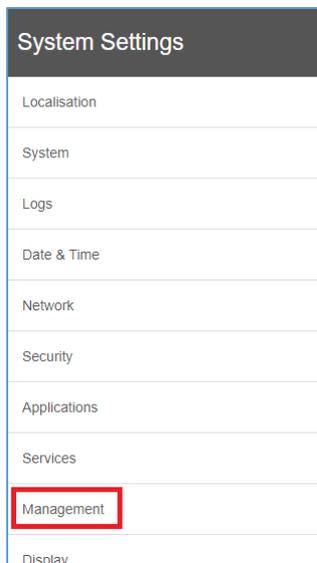
---

16. If you just upgraded Config OS, go back to the [start of this section \(section 5.3\)](#) and upgrade Main OS. If you've just upgraded Main OS, continue to the final steps below.

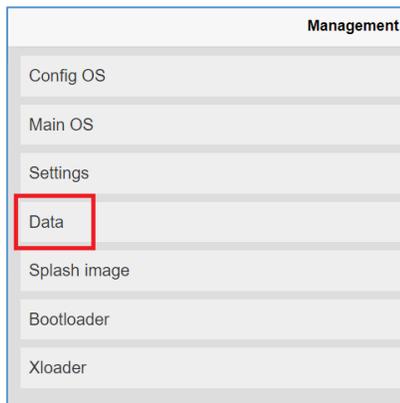
## 5.4 Final Steps for OS Upgrade (REQUIRED)

There are two steps that must be completed after you have finished upgrading the operating systems. They are also required if you plan on only installing a new runtime without updating the operating systems.

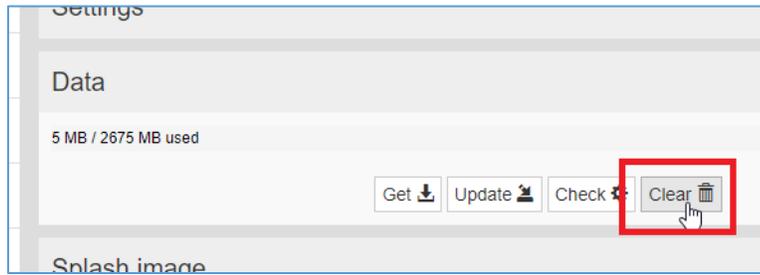
1. Navigate to the System Settings screen using the same method as before.
2. Click or tap **Management**.



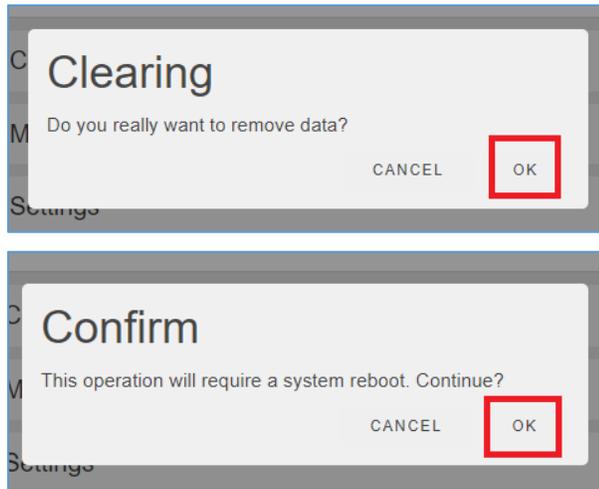
3. Click or tap Data



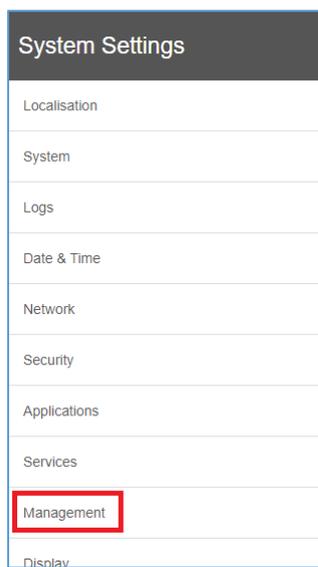
4. Click or tap **Clear**



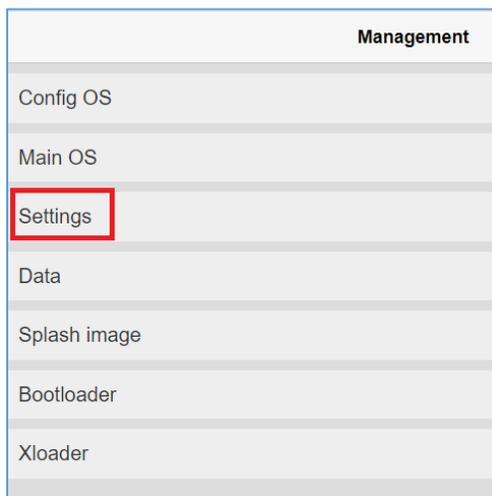
5. Click or tap **OK** on both popups



6. Once that has finished, navigate back to the System Settings screen using the same method as before.
7. Click or tap **Management**.



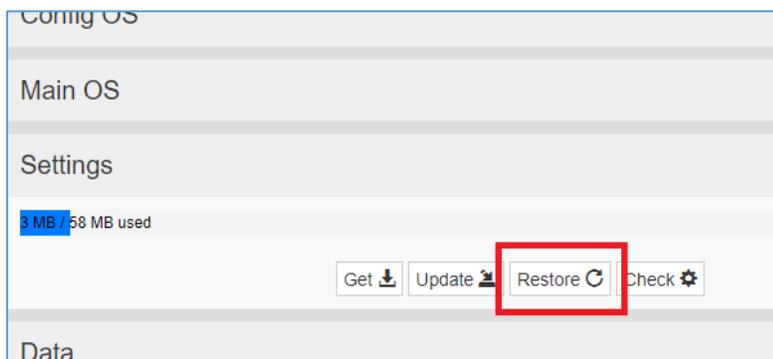
8. Click or tap **Settings**



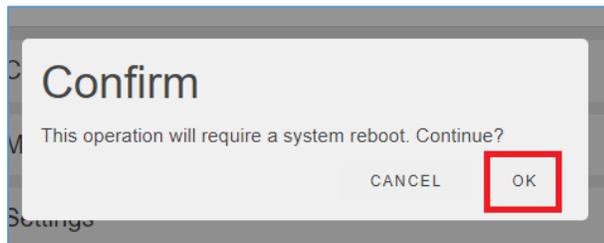
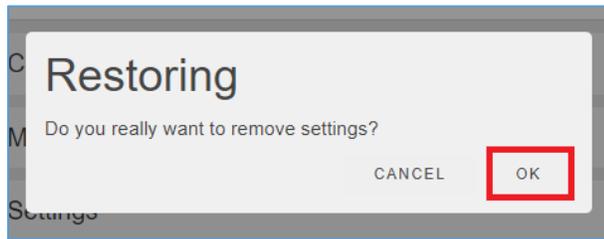
**ATTENTION!**

This necessary next step will reset almost everything on the TX device, including the network and service configurations. Any device-level usernames and passwords will remain.

9. Click or tap **Restore**



10. Click or tap **OK** on both popups



11. Once this operation has finished, the TX device's operating systems are now upgraded. You will want to reassign an IP address; see [section 7.2](#) of the appendix for help.

## 6 Codesys or TX VisuPro Runtime

### 6.1 Overview

This section covers installing or upgrading the Codesys runtime or TX VisuPro runtime. There is an important choice to make:

- If you plan on using only Codesys, install only the Codesys runtime.
- If you plan on using Codesys and TX VisuPro, or just TX VisuPro, install only the TX VisuPro runtime; every TX VisuPro Runtime includes a Codesys Runtime (provided your TX device supports Codesys), and the two applications are often used together.



#### ATTENTION!

The process of “upgrading” a runtime involves completely deleting the existing runtime and installing a new one. If you are upgrading a device that is in service, make sure you have a copy of the existing programs before continuing!

---

### 6.2 Codesys Runtime

#### 6.2.1 Startup Sequence Method

This method is only recommended for TX devices that are running BSP <1.0.691. If your TX device is running BSP 1.0.691 or higher, we recommend the method outlined in the [next section](#). To find out what BSP version your TX device is running, see [section 7.6](#) in the appendix.

1. If you did not just update Config OS and Main OS, complete the steps listed in [section 5.4](#) before continuing.
2. Load the zipped Codesys runtime onto a USB drive.



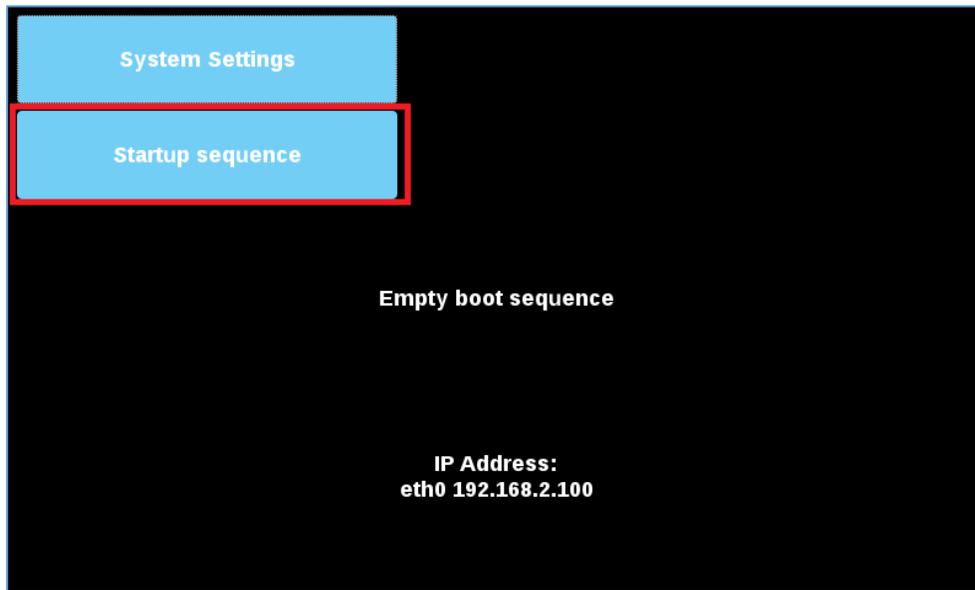
#### NOTE

Leave the runtime folder zipped. Ensure the folder is not “double zipped,” i.e. there should not be any other zipped folders inside the zipped folder you load onto the USB drive.

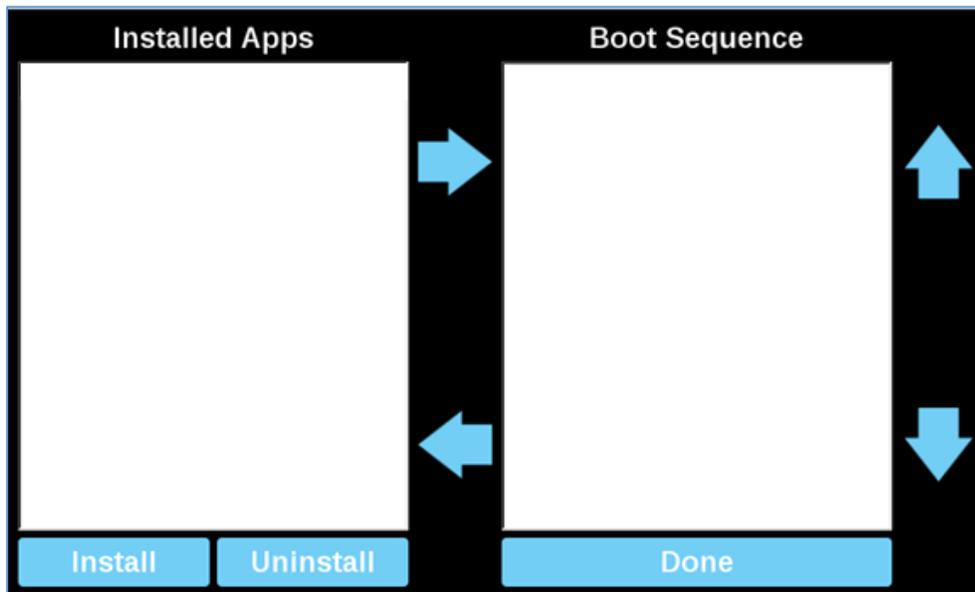
---

3. Plug the USB drive into your TX device.
4. Get to the System Setup screen using any of the methods outlined in [section 7.3](#) of the appendix.

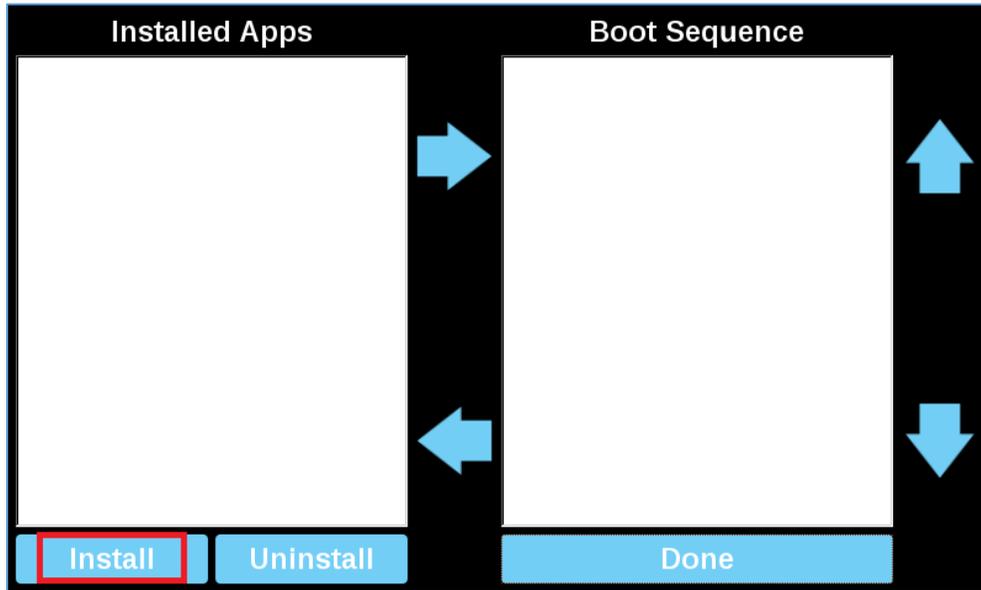
5. Tap or click **Startup Sequence**. If you see a login box, enter administrator-level credentials.



The left box contains any installed applications, and the right box contains the applications that will be run at startup, in the order in which they will be run.



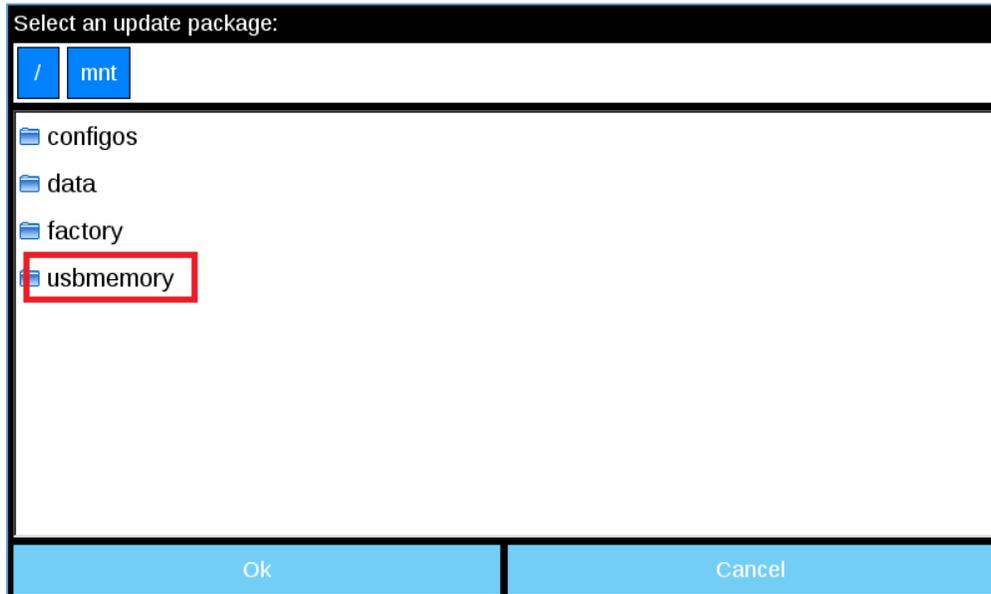
6. Tap or click **Install**.



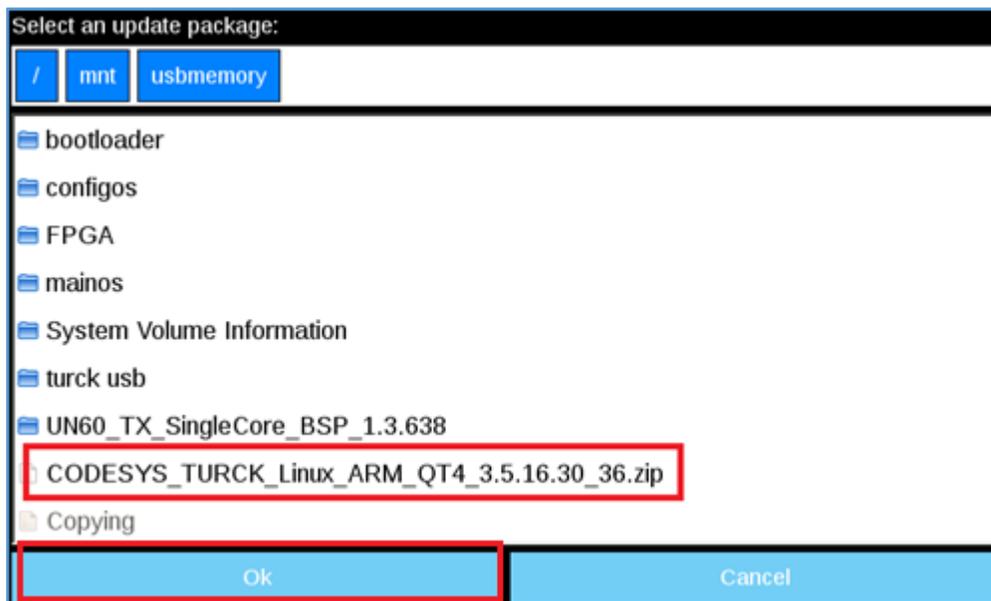
7. Double-tap or double-click **mnt**



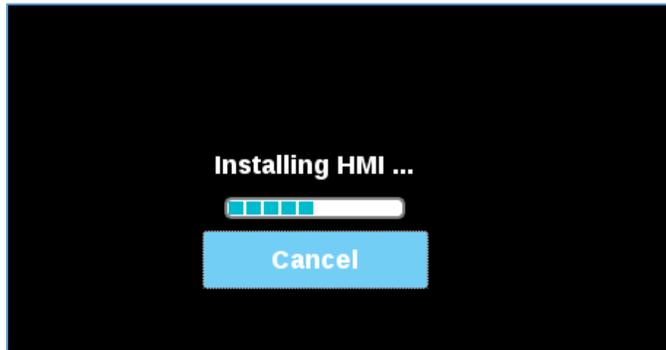
8. Double-tap or double-click **usbmemory**



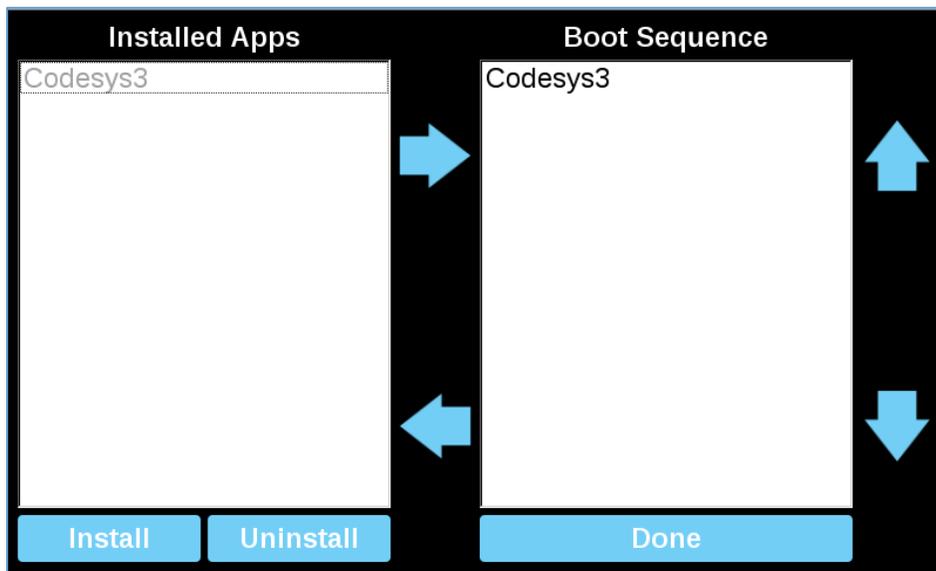
9. Tap or click the file that starts with "CODESYS" and ends in ".zip", then tap or click **Ok**



10. The runtime will begin installing.



11. When it has completed, you will see the following screen:



The runtime may or may not be present in the Boot Sequence column; if it is not, select the runtime from the Installed Apps column, and tap the **right arrow** which moves it into the boot sequence.

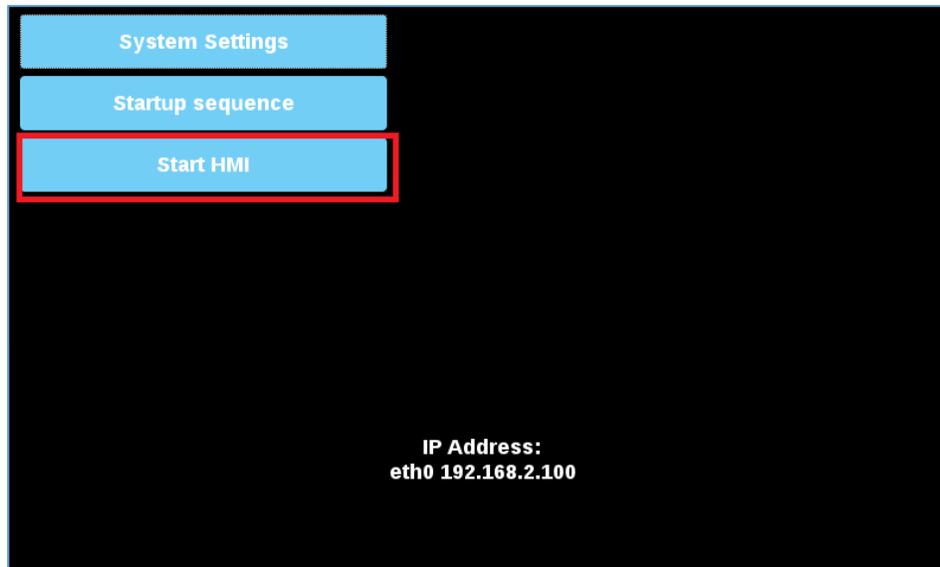
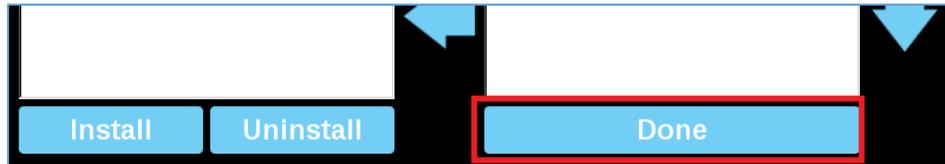


#### NOTE

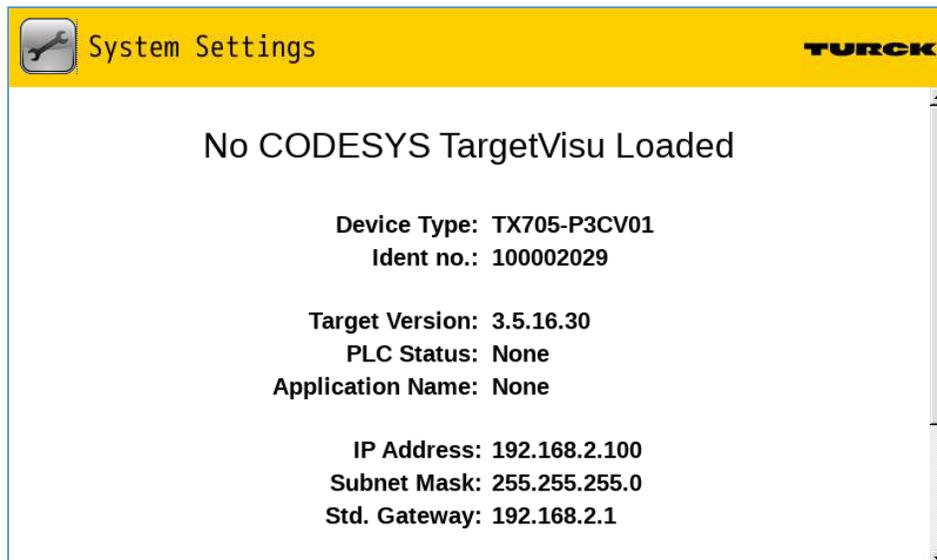
The **up and down arrows** change an application's position in the boot order; the correct boot order is entirely dependent on your use case.

---

12. The TX device may restart by itself, but if it doesn't, tap or click **Done**, then tap or click **Start HMI** on the System Setup screen



13. Once the HMI has restarted, you will see a screen that looks like this:



14. The displayed Target Version should match the version specified in the upgrade filename.

## 6.2.2 System Settings Method

This method requires your TX device to be running BSP 1.0.691 or higher. To find out what BSP version your TX device is running, see [section 7.6](#) in the appendix. It is recommended for all TX devices, especially those that do not have displays. Recall that the System Settings can be accessed by either the webserver or the TX device's touchscreen if it has one.

1. If you did not just update Config OS and Main OS, complete the steps listed in [section 5.4](#) before continuing.
2. If you are using the webserver, locate the zipped Codesys runtime on your computer. If you are using the TX device's touchscreen, put the zipped Codesys runtime on a USB drive and plug it into the TX device.

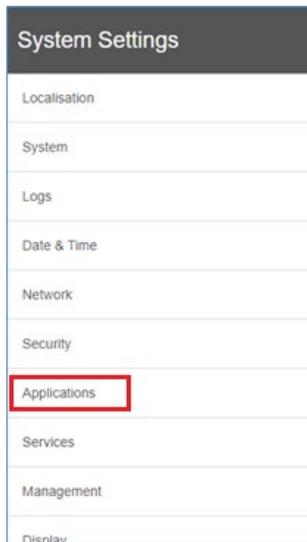


### NOTE

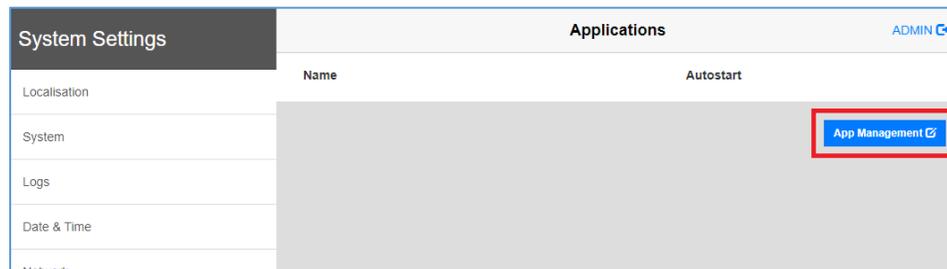
Leave the runtime folder zipped. Ensure the folder is not "double zipped," i.e. there should not be any other zipped folders inside the zipped folder you load onto the USB drive.

---

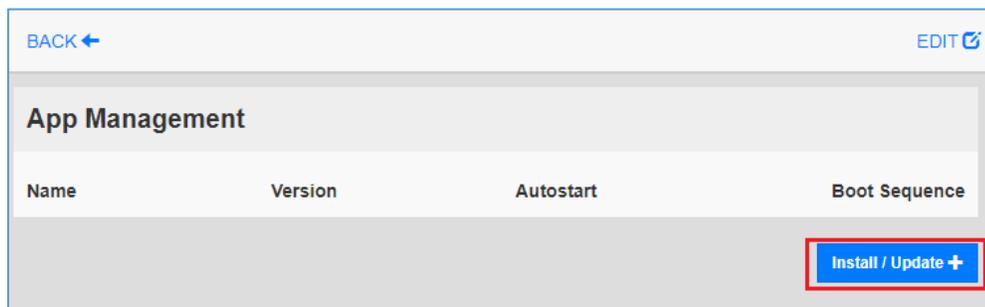
3. Access the TX device's System Settings. If you are unsure how to do this or are having difficulties, see [section 7.4](#) of the appendix.
4. Click or tap **Applications**



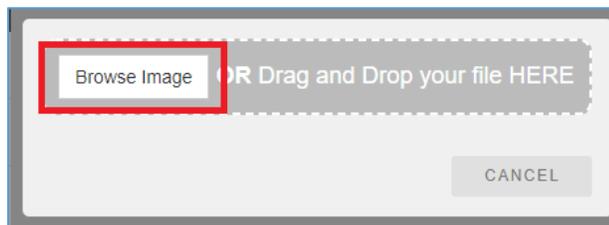
5. Click or tap **App Management**



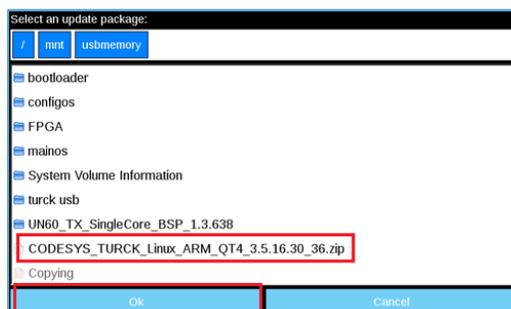
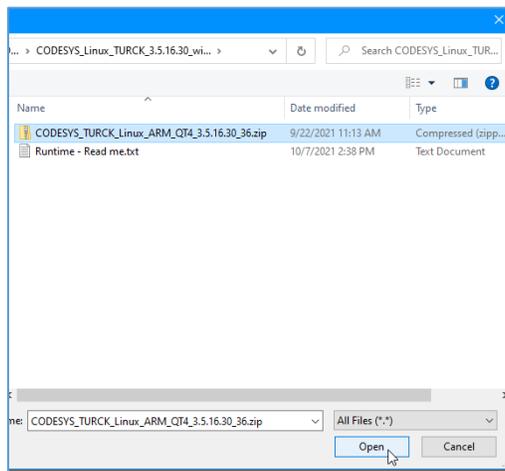
- Click or tap **Install / Update**



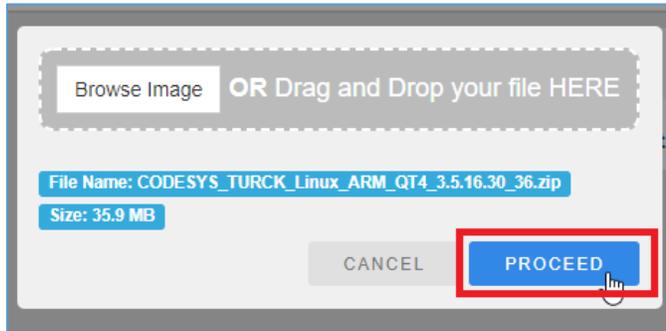
- Click or tap **Browse Image**



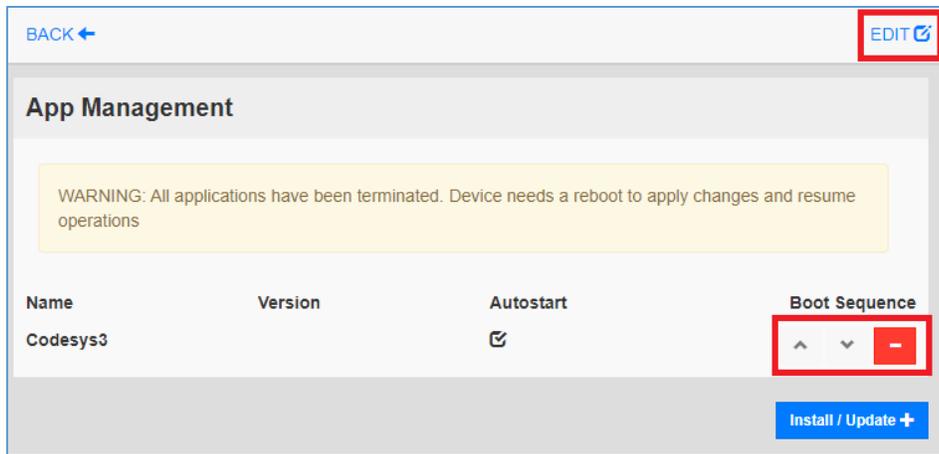
- Whether you are using the webserver or USB drive, navigate to where you have the zipped Codesys runtime saved.



9. With the zipped Codesys runtime selected, click or tap **Proceed**

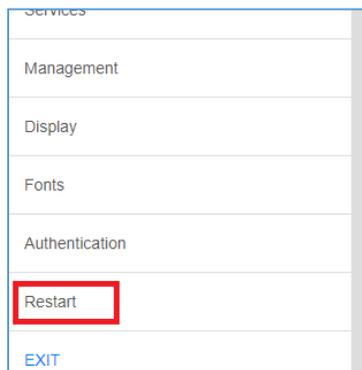


10. The runtime will begin installing. The TX device may restart. When installation has finished, go back to **System Settings** → **Applications** → **App Management**, and you will see your installed runtime.

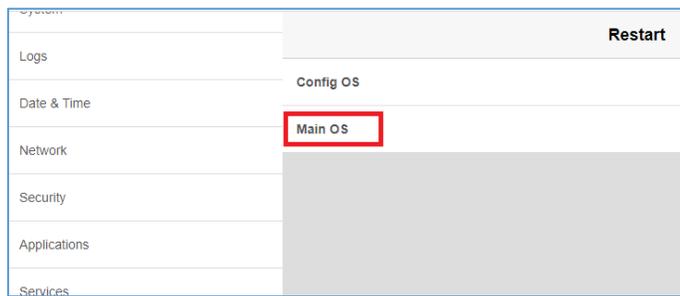


By default, it will be marked to autostart. If you have more than one application installed, you may use the up/down arrows and edit button to change the boot order or make the application not start automatically. This page functions just like the Startup Sequence page found on the System Startup screen.

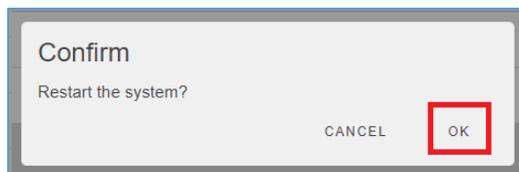
11. Click or tap **Restart**



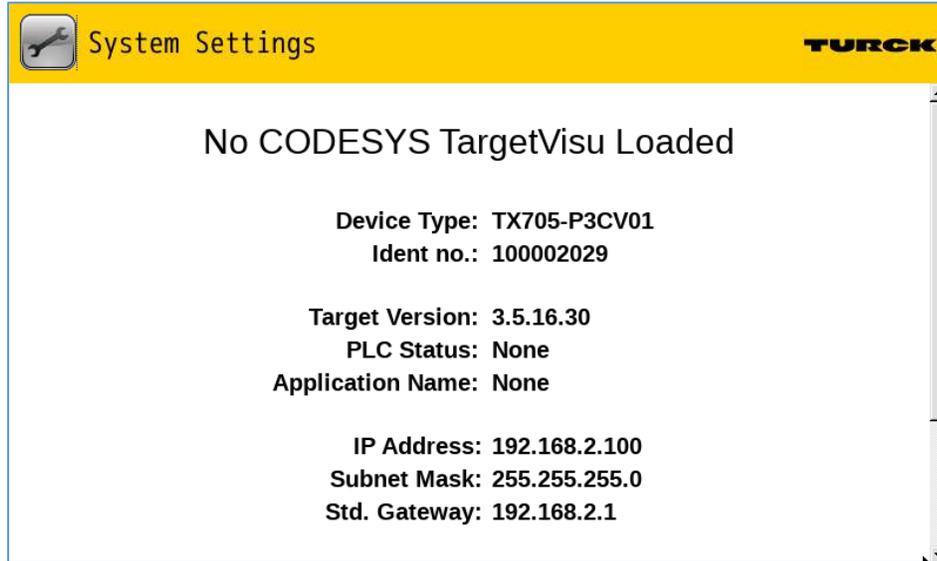
12. Click or tap **Main OS**



13. Click or tap **OK**



15. Assuming you have Codesys marked to autostart, once the HMI has restarted, you will see a screen that looks like this:



16. The displayed Target Version should match the version specified in the upgrade filename.

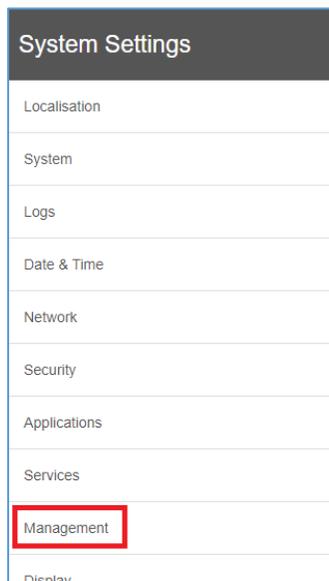
## 6.3 TX VisuPro Runtime

The TX VisuPro runtime (containing the optional Codesys runtime) is installed on the TX device by either your computer or a USB drive. In either case, you will need the TX VisuPro IDE, which is available [here](#). The version of the runtime is tied to the version of the IDE, so for the latest runtime, ensure you are running the latest IDE.

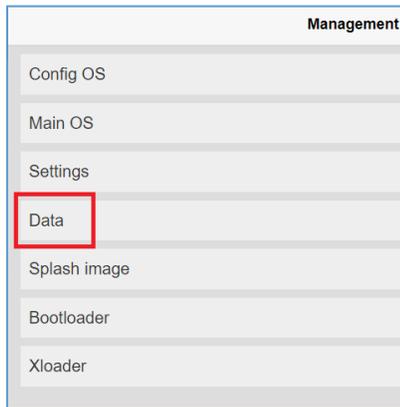
### 6.3.1 Recommended: Delete Existing Application(s) and Runtime(s)

Starting with a TX device that does not have any applications or runtimes installed will streamline the updating process and eliminate many sources of frustration before they become a problem. It is not required, but it is *strongly* recommended. Should you elect not to, and you have any difficulty installing the VisuPro runtime, come back to this section and complete these steps.

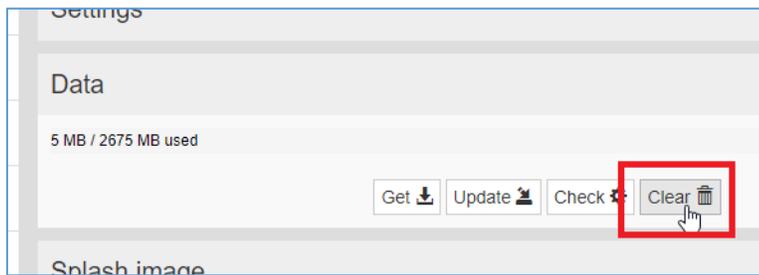
1. If you are deleting any non-Codesys or non-VisuPro applications, obtain installation files for those applications, and write them onto a USB drive. You will use that USB drive to reinstall them later.
2. Navigate to the System Settings screen using any method. If you are unsure how to do this or are having difficulties, see [section 7.4](#) of the appendix.
3. Click or tap **Management**.



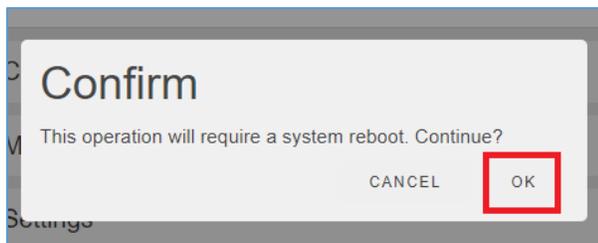
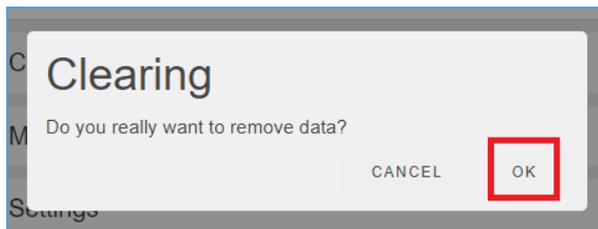
4. Click or tap **Data**



5. Click or tap **Clear**



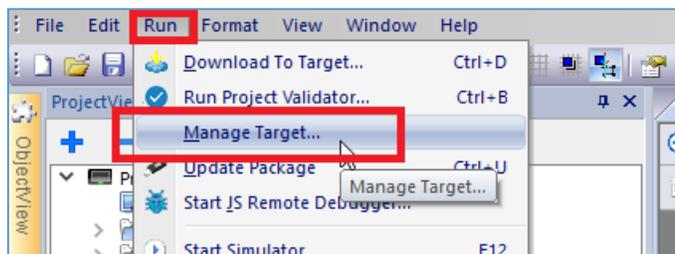
6. Click or tap **OK** on both popups



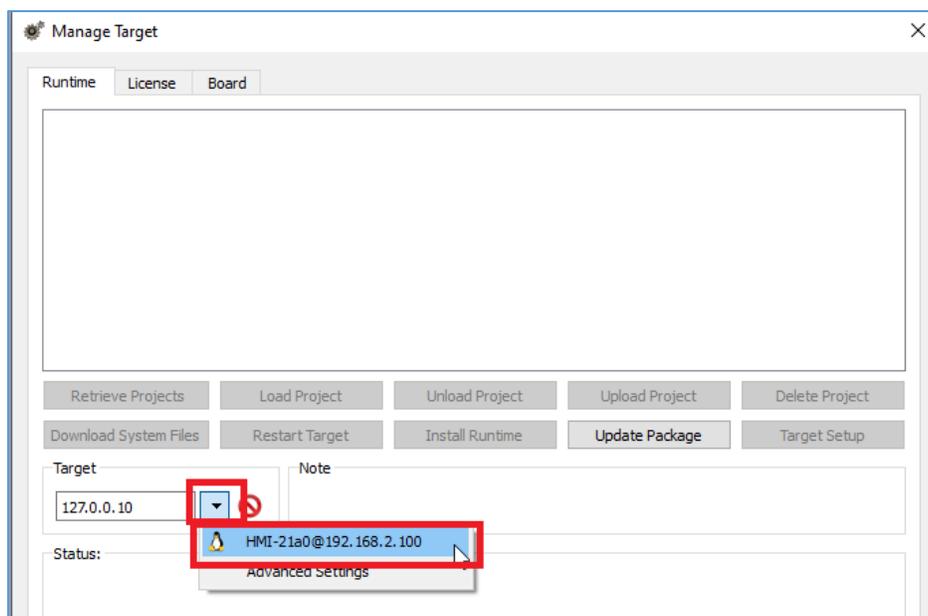
### 6.3.2 The PC Method

This is the simplest method. Your computer will need to be on the same subnet as your TX device. For instructions on how to assign an IP address to your computer and your TX device, see [section 7.1](#) or [section 7.2](#), respectfully.

1. Connect your TX device to your computer and power it on.
2. Once the TX has booted, open the TX VisuPro IDE, and click **Run** → **Manage Target...**

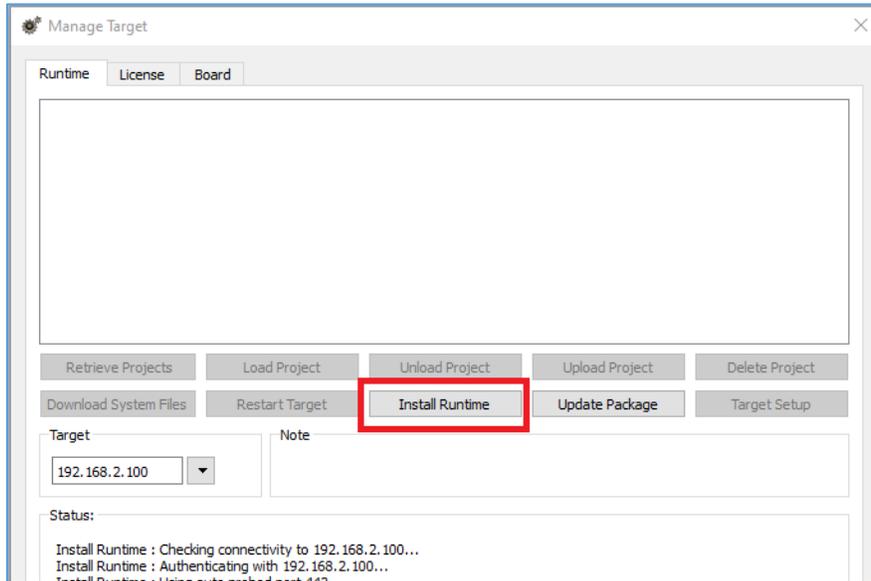


3. Click the dropdown arrow in the **Target** section, and select your TX device



4. If a popup appears, click **OK**.

5. Click **Install Runtime**



6. A popup will appear letting you know when the installation has completed. Click **OK**.



#### NOTE

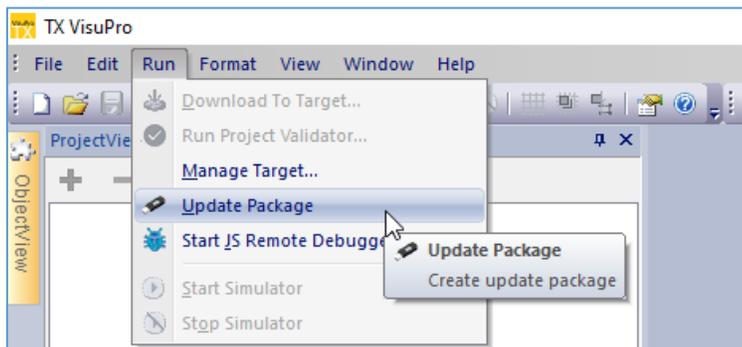
The TX device will restart, which is normal. Assuming you wiped any applications from the device before installing the TX VisuPro runtime, the runtime will be the only thing in the boot sequence.

7. You may reinstall any other deleted applications by following [the Codesys runtime installation instructions \(section 6.2\)](#), but instead of a Codesys runtime, install the desired application(s).

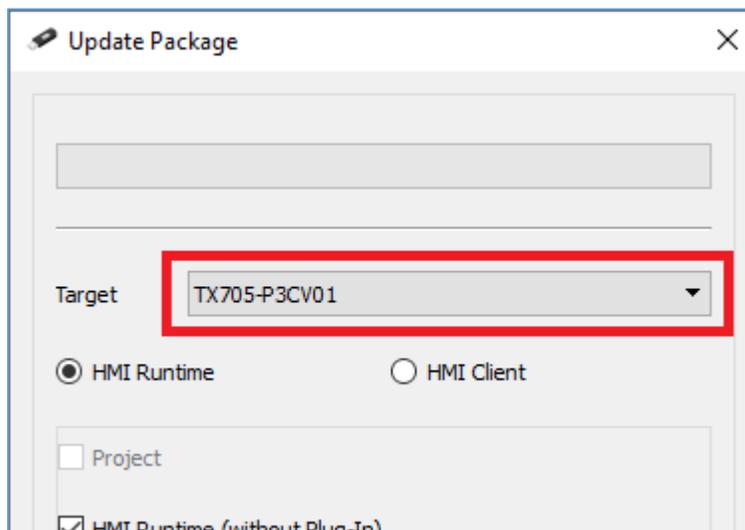
From here, you may download your TX VisuPro project (and optionally your Codesys project using the Codesys IDE) to your TX device like normal.

### 6.3.3 The USB Drive Method

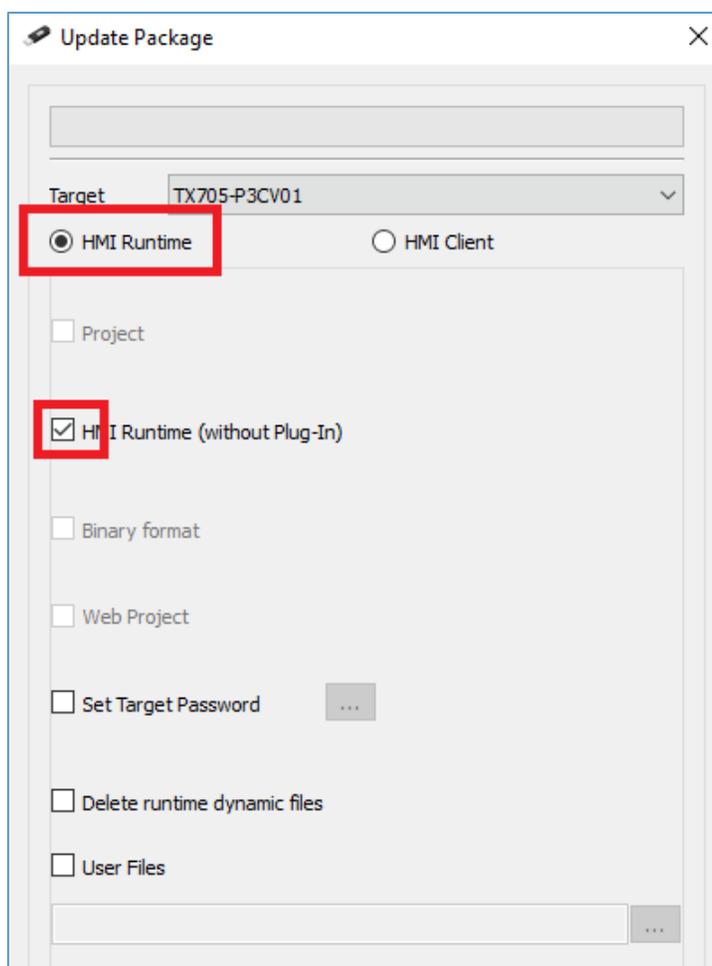
1. Connect the USB drive you plan to use for upgrading to your computer.
2. Open the TX VisuPro IDE, and click **Run → Update Package**



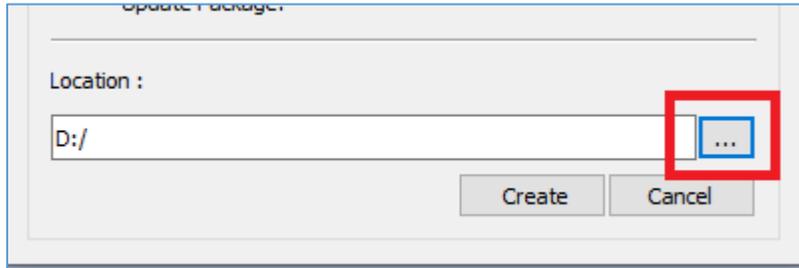
3. A window will appear. Select your TX device from the dropdown.



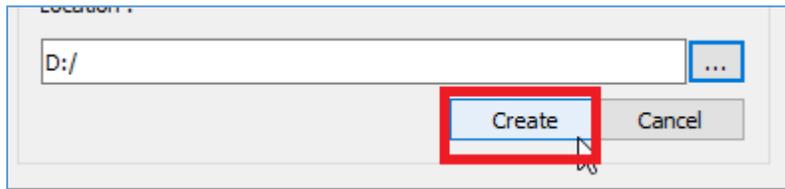
4. Make sure the HMI Runtime radio button and checkbox are selected. Optionally, you can have this update package update the TX VisuPro project running on the device, update the device password, or download other files to the TX device.



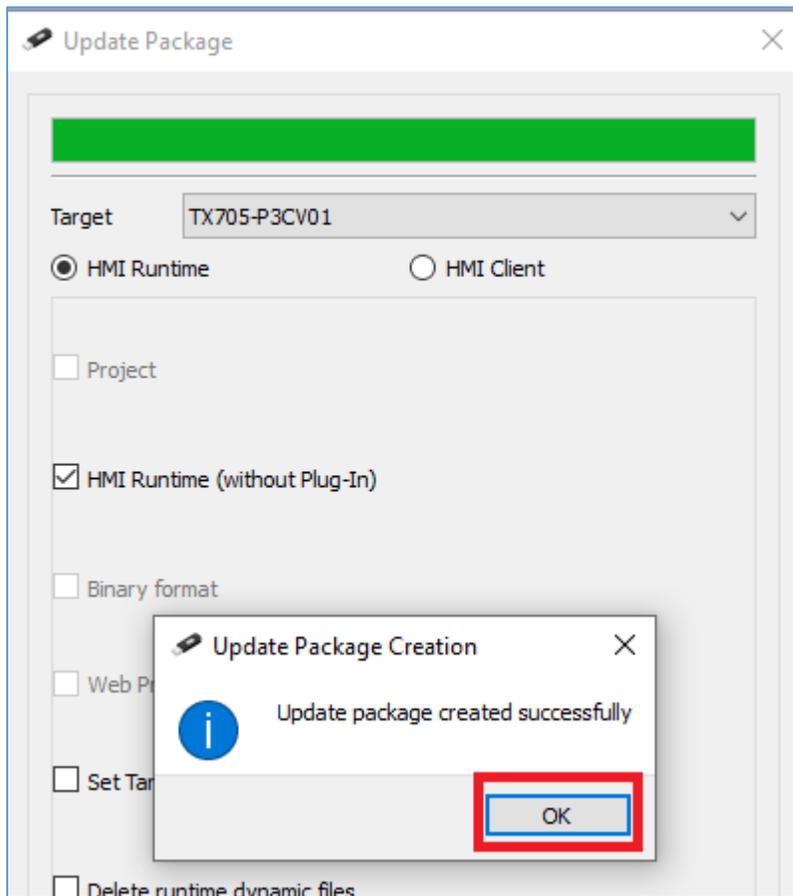
- Specify the location of your USB drive. This is where the update package will be saved.



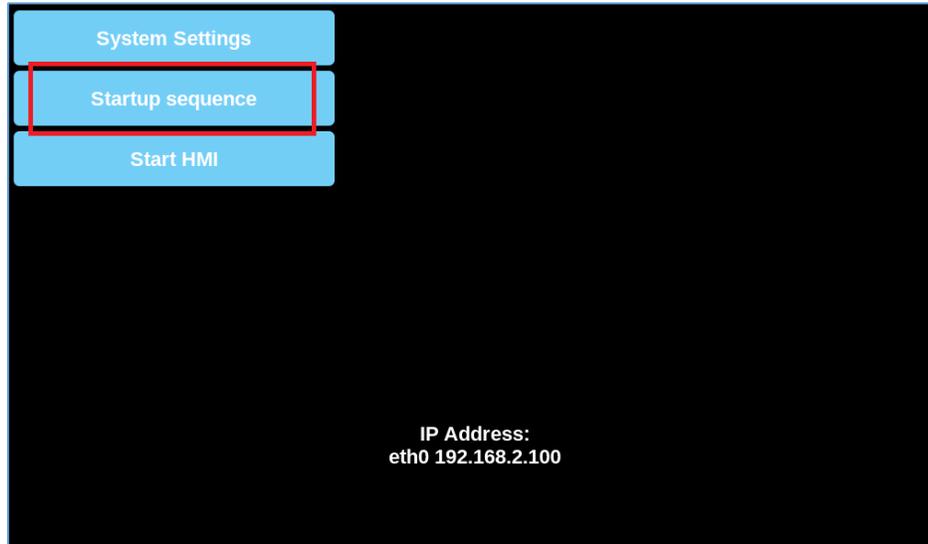
- Click **Create**



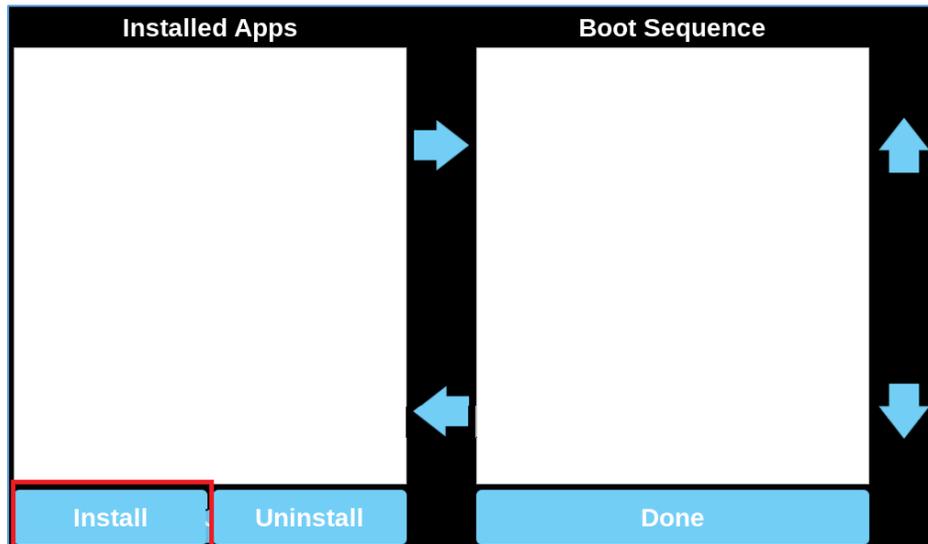
- Once the green progress bar at the top of the window fills up, a popup will appear letting you know the package has been created. Click **OK**



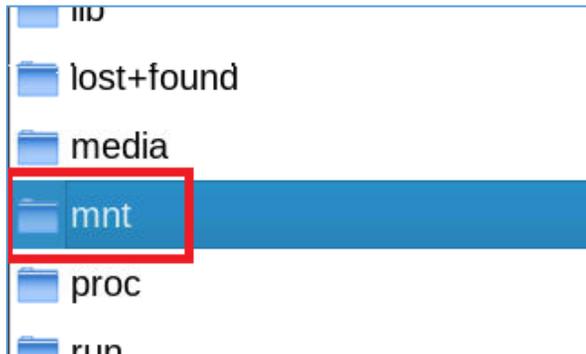
8. Safely eject your USB drive and plug it into your TX device.
9. Get to the System Setup screen using any method. If you are unsure how to do this or need help, see [section 7.3](#) of the appendix.
10. Tap or click **Startup Sequence**. If a login box appears, enter administrator-level credentials.



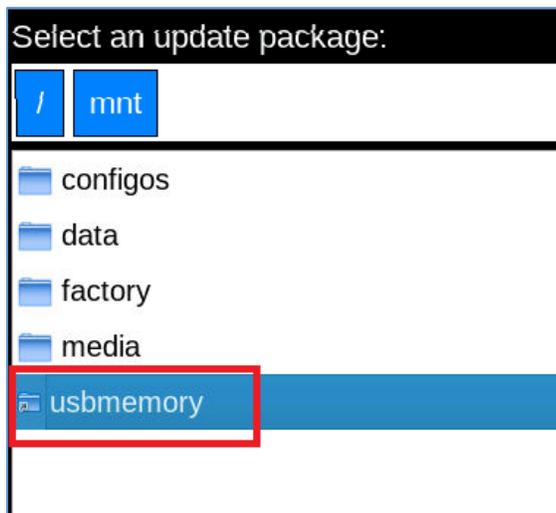
11. Tap or click **Install**



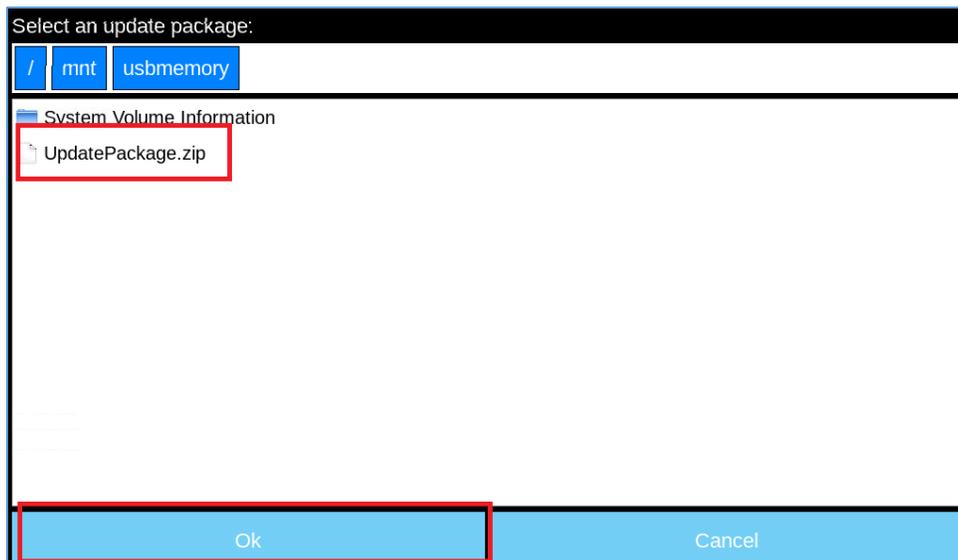
12. Double-tap or double-click **mnt**



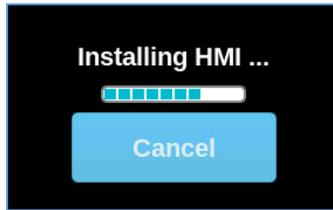
13. Double-tap or double-click **usbmemory**



14. Click or tap the update package, which will end in ".zip", then click or tap **OK**



- Let the TX device update.



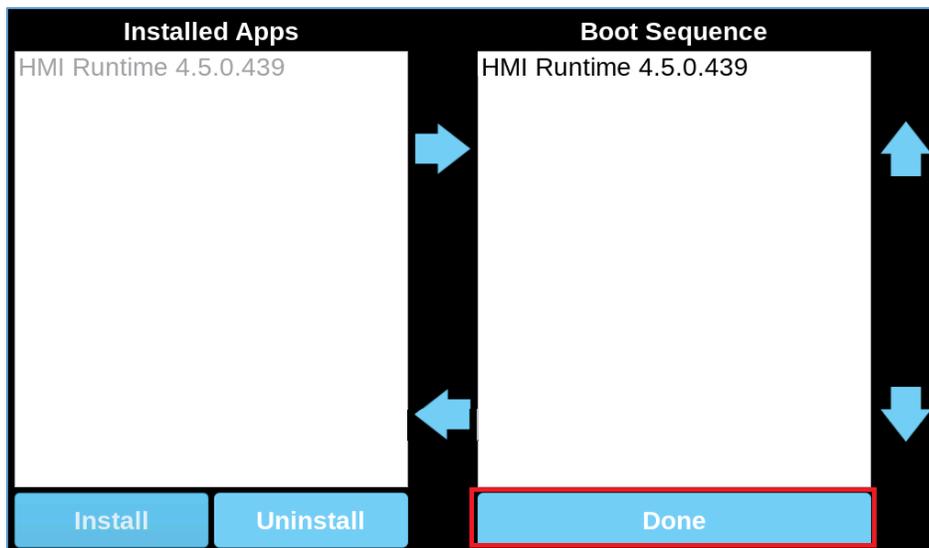
- Once installed, navigate back to the Startup Sequence page. You should see your TX VisuPro runtime installed.



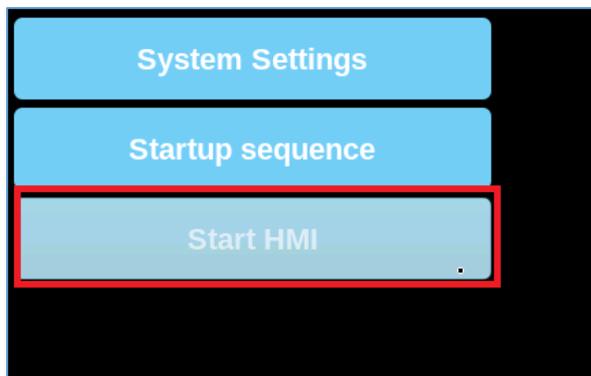
**NOTE**

If necessary, install any other programs, and move them to the appropriate spot in the boot sequence. The correct sequence is entirely dependent on your application.

- Click or tap **Done** to take yourself back to the System Setup screen.



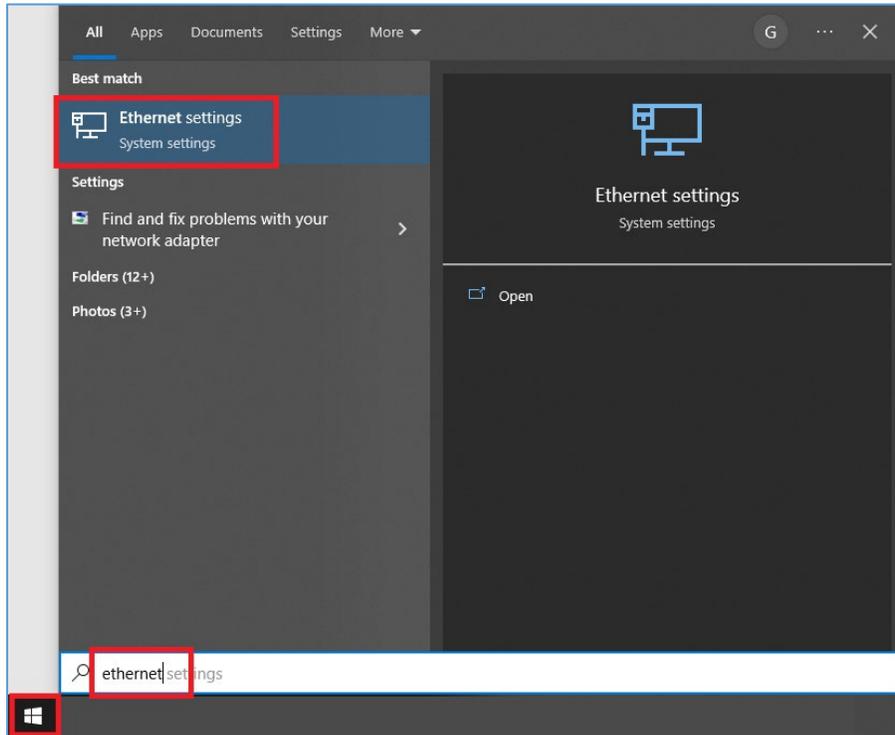
- Tap **Start HMI** to start booting into the runtime and/or application(s) specified in the Boot Sequence.



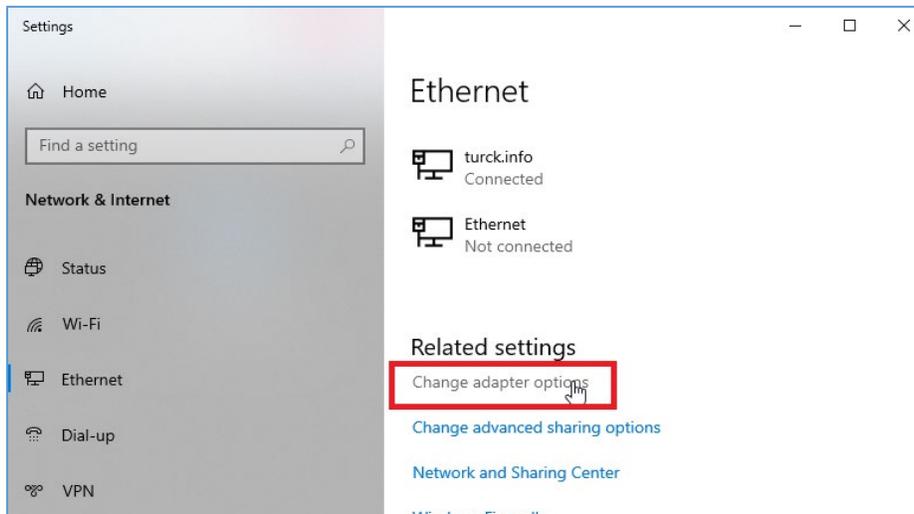
## 7 Appendix

### 7.1 Assign Static IP Address to Computer

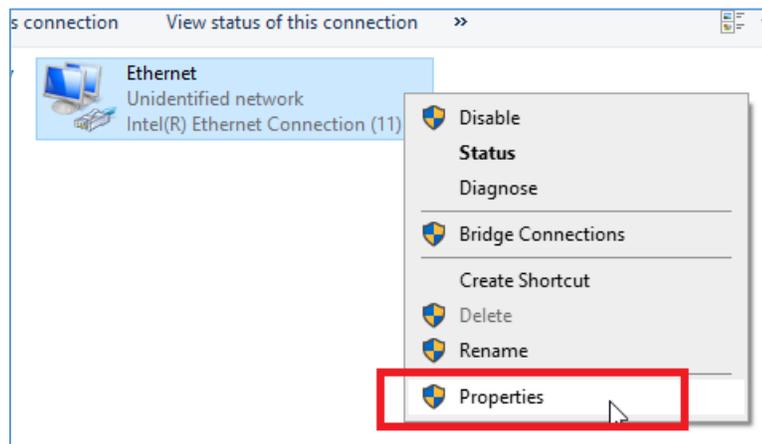
1. Click the **Start** button. Type “ethernet” and click the first result.



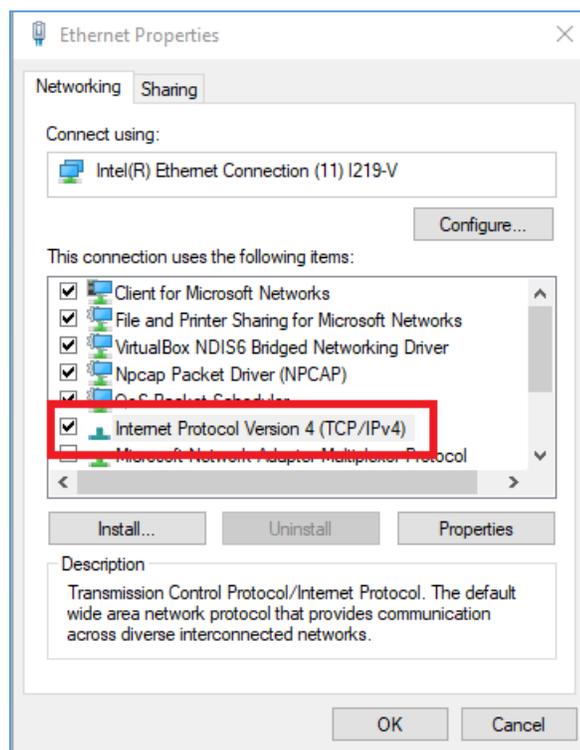
2. Click **Change Adapter Options** under Related Settings



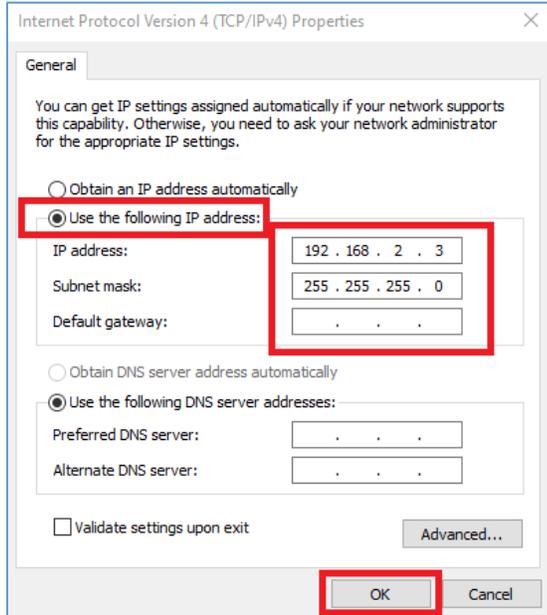
3. Right click the Ethernet adapter to which your TX device is connected, and click **Properties**



4. Double-click **Internet Protocol Version 4 (TCP/IPv4)**



5. Click the radio button next to **Use the following IP address**, type in the desired configuration for your computer's Ethernet adapter, and click **OK**



6. Your computer's Ethernet adapter now has a static IP address. You may close out of any related windows.

## 7.2 Assign IP Address to TX Device

### 7.2.1 The “Waiting” Method

If you leave any out-of-the-box TX device (or any TX device in DHCP mode) connected to a network without an active DHCP server running, the TX device will default to an IP address of 169.254.xxx.xxx after about 30 seconds. As long as your computer's Ethernet adapter is on the same 169.254 subnet, this is a usable Ethernet configuration for the purposes of upgrading your TX device, though it is not advised to use this address when commissioning the TX device.

### 7.2.2 Dynamic IP via DHCP



#### ATTENTION!

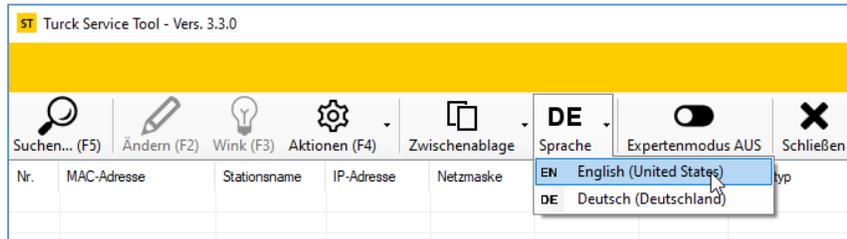
IP addresses assigned via DHCP will not be retained through a power cycle. If you want the IP address to be “permanent,” see either of the next two IP assigning methods.

DHCP is the default configuration for any TX device's Ethernet ports. If this is the method you wish to use, you do not need to do anything other than turn on your TX while a DHCP server is running on your network.

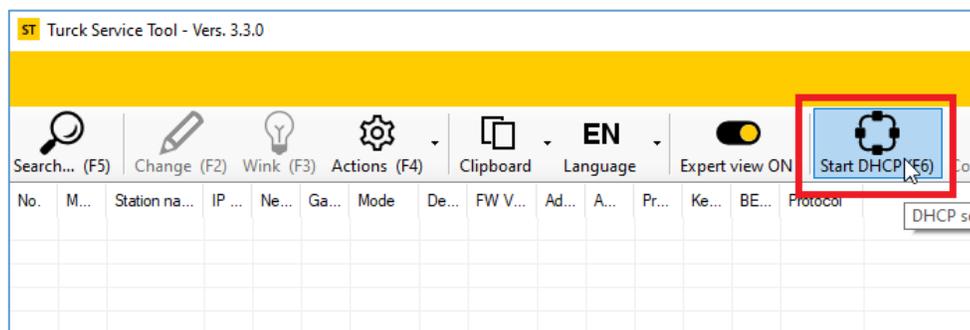
The Turck Service Tool has a simple DHCP server; using it is covered below.

1. Open the Turck Service Tool. If you do not have it, download it for free [here](#).

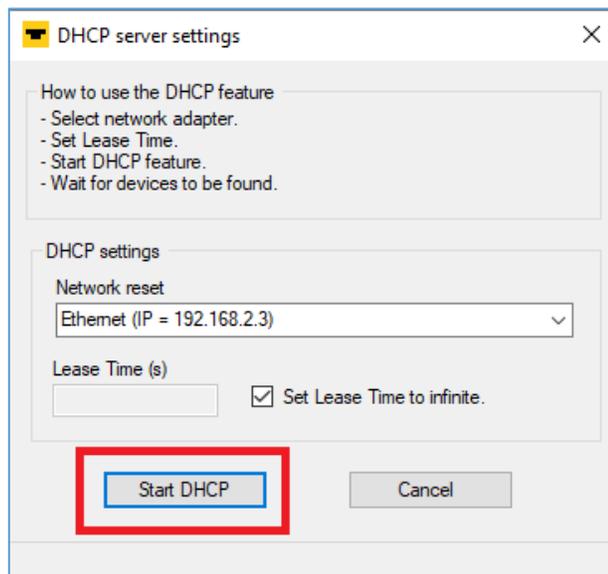
- By default, the Turck Service Tool is set to German. To change to English, click the **DE** button and select **EN**



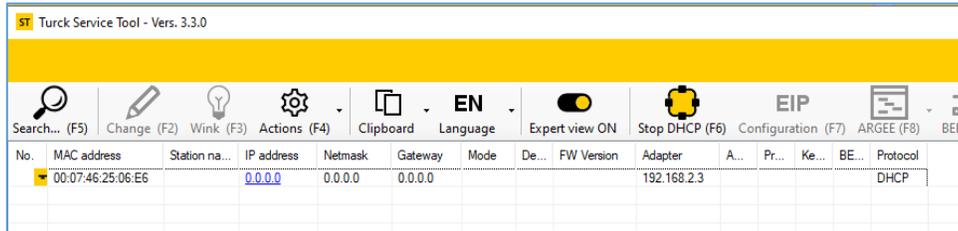
- Connect your TX device to your computer.
- Turn on your TX device and wait for it to boot.
- Click **Start DHCP**



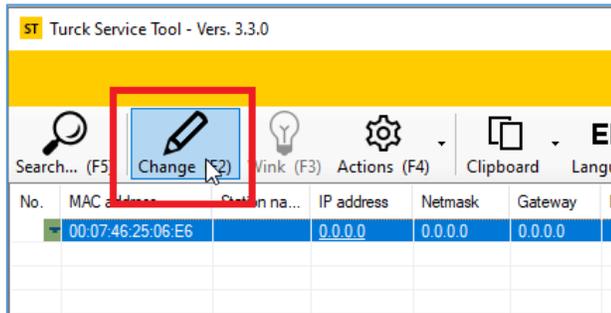
- A dialog box will appear. Ensure that you have the correct Ethernet adapter selected. If desired, set a lease time, and click **Start DHCP**



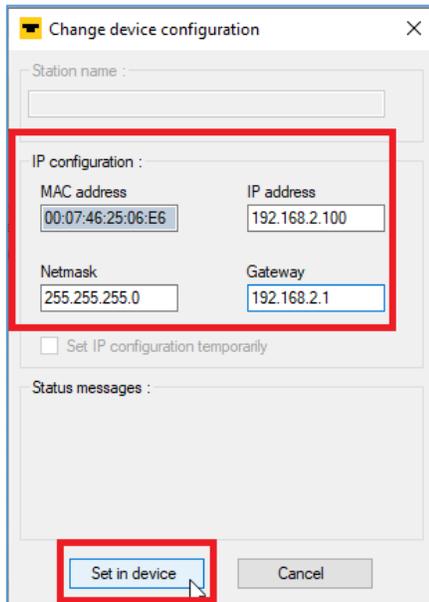
- Cycle power to the TX device.
- After it has finished rebooting, you will be able to find it in the Turck Service Tool.



- Select your TX device, and click **Change**



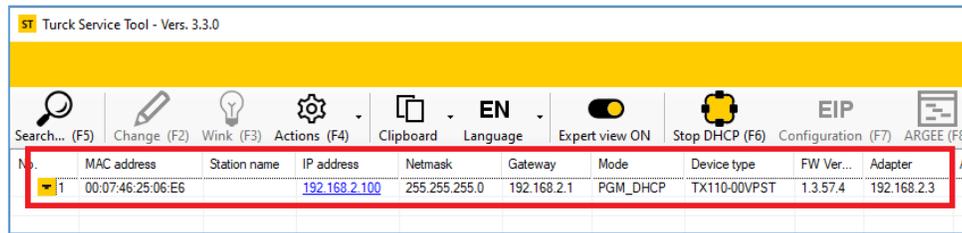
- A dialog box will appear. Fill in the desired IP Configuration values, and click **Set in device**



- Click **Search** in the Turck Service Tool.



12. After a few seconds, your TX device will appear with the IP address you have assigned to it.

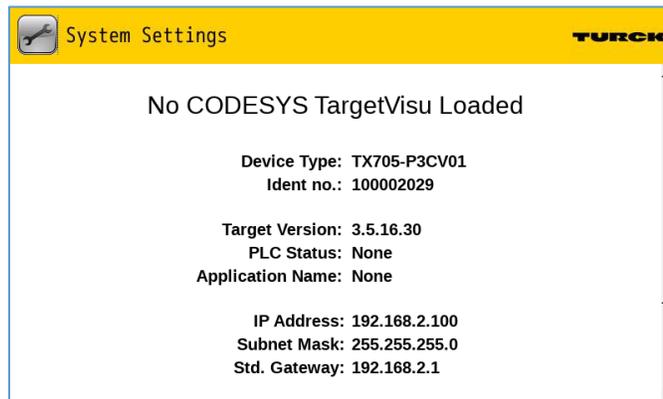


13. Click **Stop DHCP** once you are done assigning IP addresses.

### 7.2.3 Static IP via Touchscreen

This method will work with any TX device that has a touchscreen. The first step is to get to the System Settings page.

- If your TX device is showing the “No Codesys TargetVisu Loaded” page, tap the wrench in the upper left corner of the screen.



- If your TX device is showing a user-created visualization of some kind, you must either use the webserver ([section 7.2.4](#), requires you to already have a static IP address) or go into tap-tap mode (see [section 7.3.1](#) for help) and tap **System Settings**. Enter administrator-level credentials if prompted.

Now that you are viewing the System Settings page, the process of assigning an IP address is continued from [step two of the following section \(section 7.2.4\)](#).

## 7.2.4 Static IP via Webservice

This method will work with any TX device that already has a known IP address.



### NOTE

For devices without a touchscreen, you must first assign an IP address using one of the first two methods outlined in [sections 7.2.1 or 7.2.2](#), then return to this section.

1. Access your device's webservice. If you are unsure how to do this or require assistance, see [section 7.4.2](#) of the appendix.
2. Tap or click the **Network** tab that is shown on the left

The screenshot shows the 'System Settings' application. The left sidebar contains a list of settings: Localisation, System, Logs, Date & Time, Network, Security, Applications, and Services. The 'Network' option is highlighted with a red box and a hand cursor. The main content area is titled 'Network' and includes 'General Settings' (Hostname: HMI-06e6, Avahi Hostname: HMI-06e6.local), 'Network Interfaces' (a table with columns: Name, Label, MAC, DHCP, Address, Netmask, Gateway, Bridged; row: eth0, WAN, 00:07:46:25:06:e6, Enabled, 192.168.2.100, 255.255.255.0, 192.168.2.1), and 'DNS' (Restore button).

3. Tap or click the **EDIT** button in the upper right

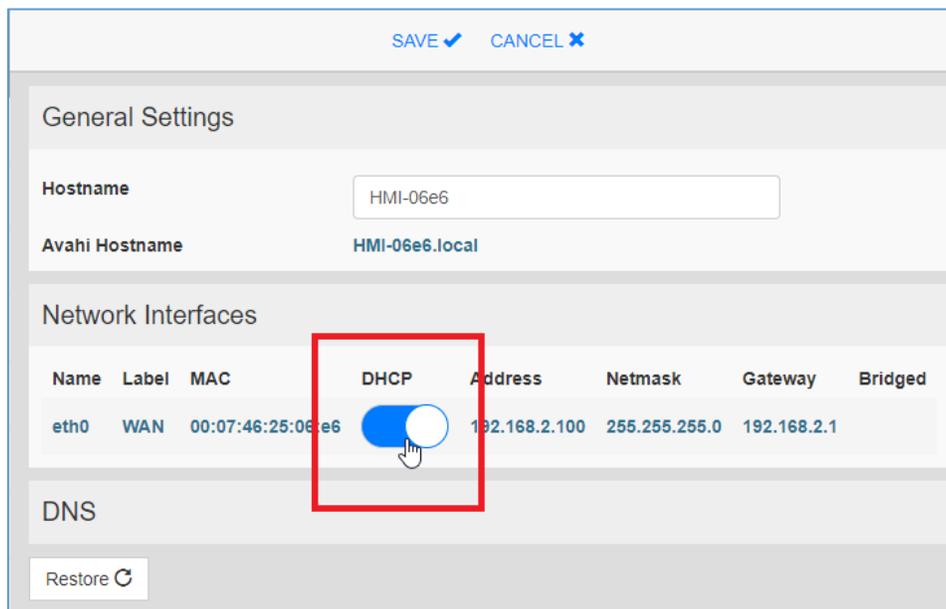
This screenshot is identical to the previous one, but the 'EDIT' button (a blue square with a white pencil icon) in the top right corner of the 'Network' header is highlighted with a red box and a hand cursor.



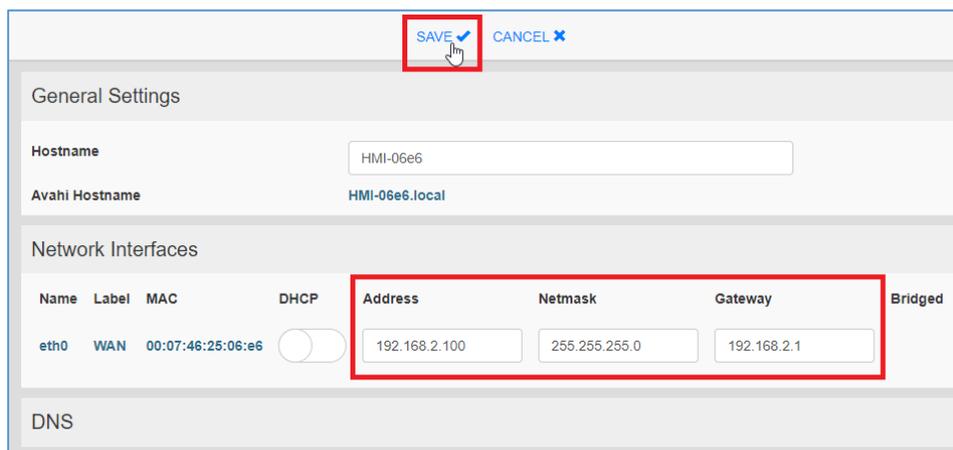
### NOTE

The TX100 used in this demonstration only has one Ethernet port. Many other models have more than one, but the process is the same.

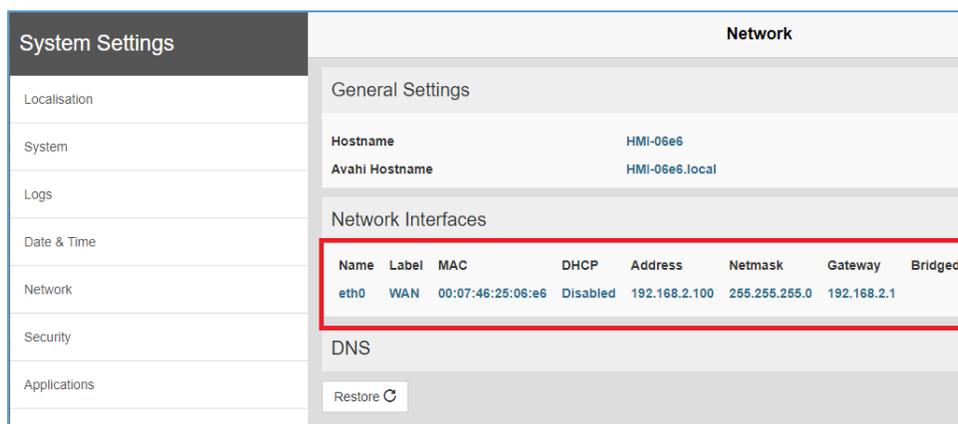
4. Tap or click the **DHCP** slider to turn it off.



5. Fill in the required information, then tap or click **SAVE**.

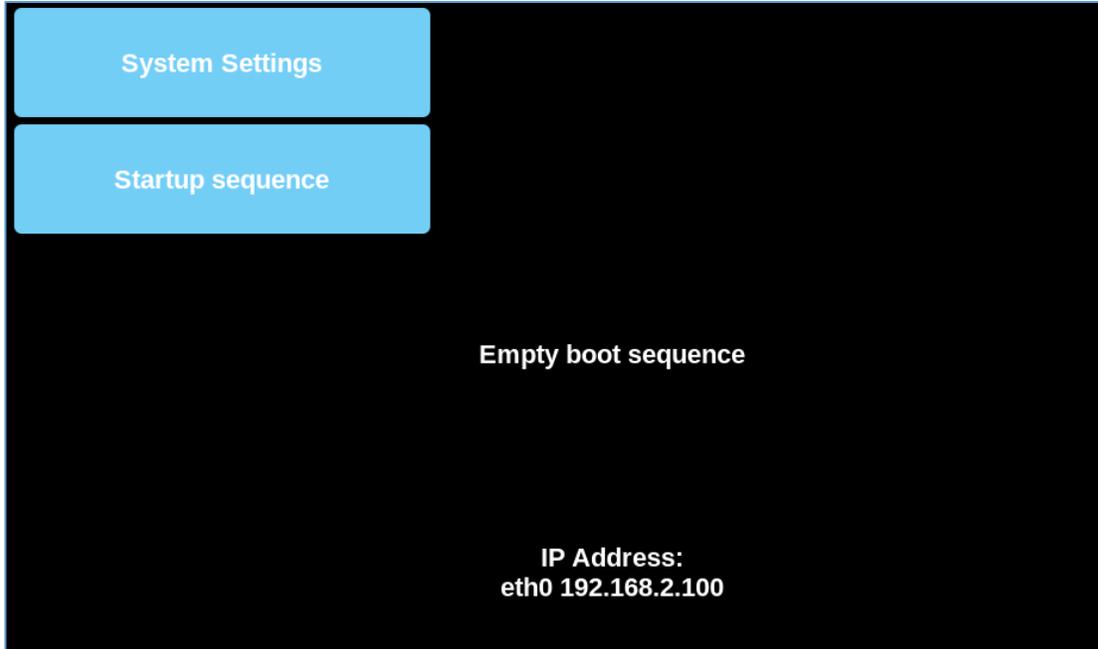


6. After about ten seconds, the Network page will show the updated configuration.



## 7.3 Accessing the TX Device's System Setup Screen

The System Setup screen allows you to access **System Settings** (also accessible [via webservice](#)) and **Startup Sequence** (also accessible [via "Applications" tab in webservice](#) for devices running BSP 1.0.691 or higher). To find out what BSP version your TX device is running, see [section 7.6](#) in the appendix.



### 7.3.1 Via "Tap-Tap" Mode

This will only work for device that have a touchscreen. For TX devices that do not, you will have to use VNC, which is covered in [the next section \(section 7.3.2\)](#).

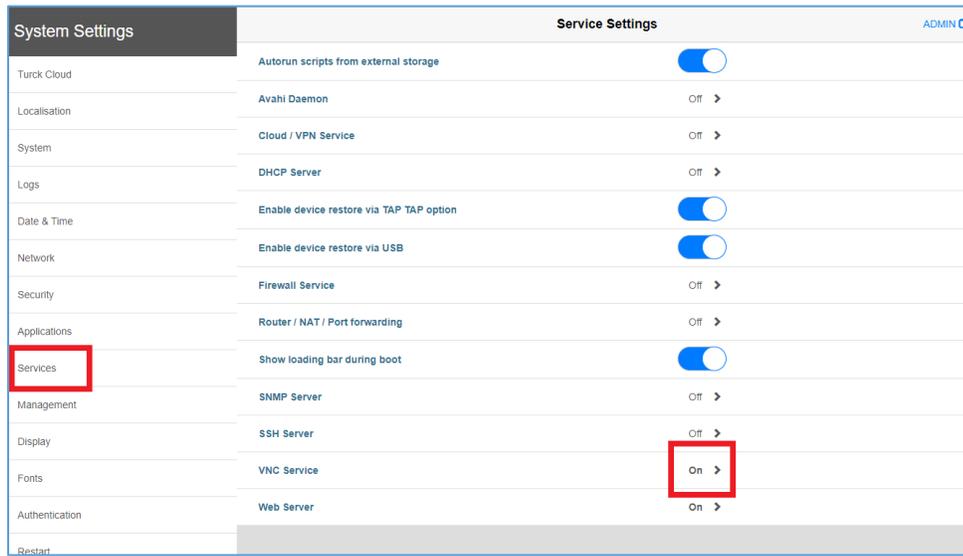
1. Cycle power on the TX device, and repeatedly tap the screen as it boots until a menu appears on the top of the screen.
2. "System settings" is selected by default. There will be a counter. Let the counter expire.
3. A second menu will appear at the top of the screen with "Default mode" selected. There will be a counter. Again, let the counter expire.
4. You are now looking at the System Setup screen. From here, you can access the System Settings or Startup Sequence screen.

### 7.3.2 Via VNC

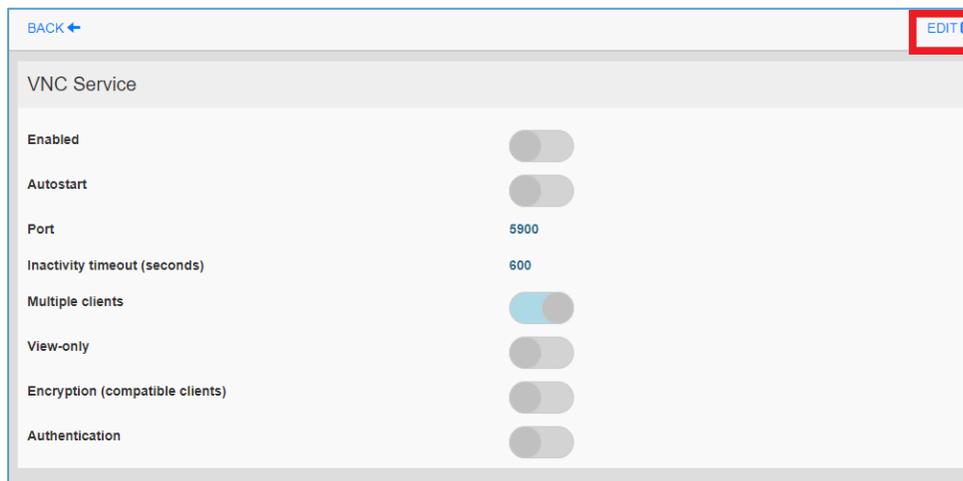
This is optional for any TX devices that have a touchscreen, but required for any TX devices that do not.

1. Assign a static IP address to your computer and an IP address to your TX device. They must be on the same subnet. For help, see [section 7.1](#) and [section 7.2](#), respectively.
2. Access the System Settings screen, either through the webservice or through tap-tap mode if your TX device has a touchscreen. For help, see [section 7.4](#) in the appendix.

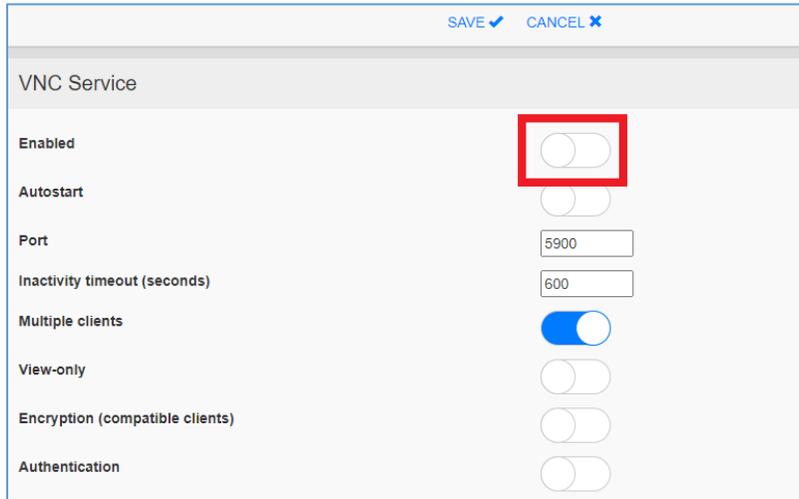
3. Click or tap **Services**, then **VNC Service**



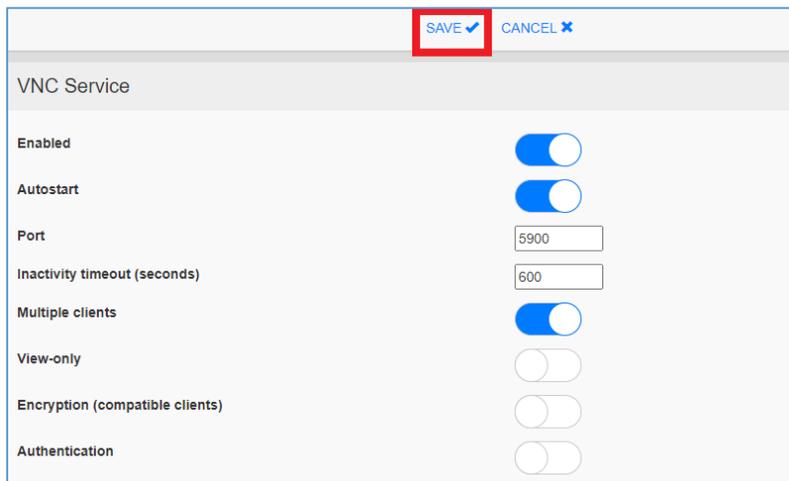
4. Click or tap **Edit** in the upper right corner



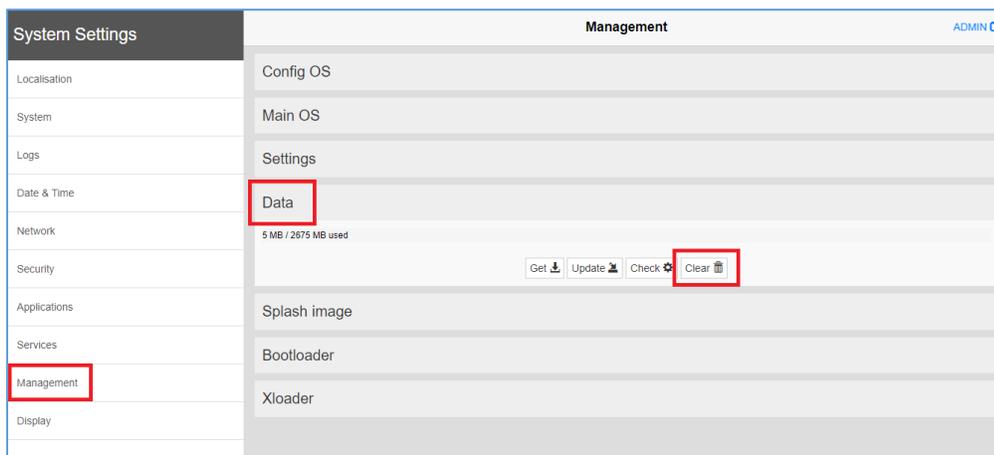
- Click or tap the **Enabled** switch



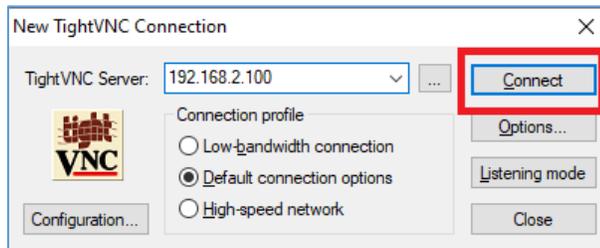
- Click or tap **Save**



- If your TX device is running a Codesys or TX VisuPro project, or if you are not sure if it is, go to **Management** → **Data** → **Clear**, and click or tap **OK** in the popups that appear. If there are no projects on your TX device, then disregard this step.



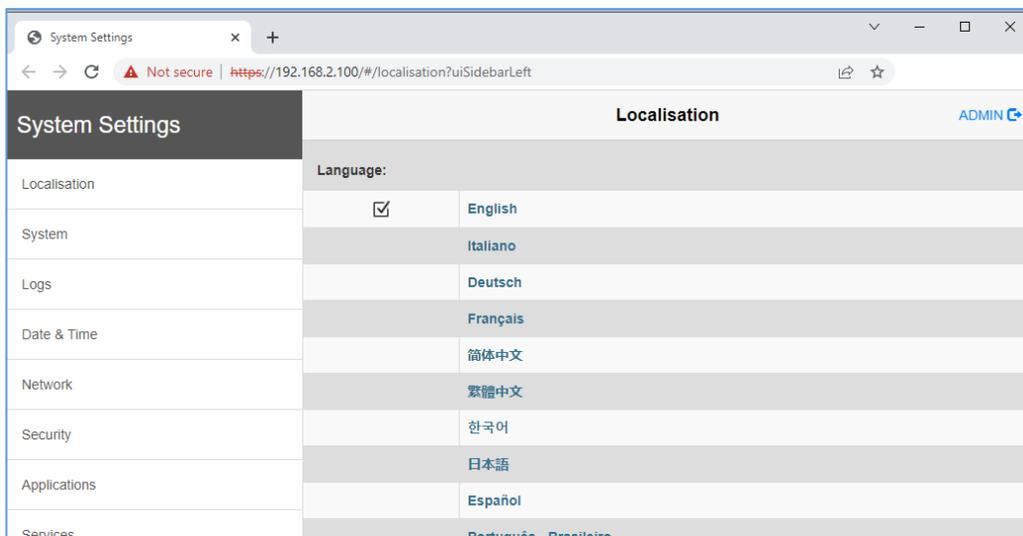
8. Open a VNC client. No third-party software is endorsed by Turck, but VNC Viewer or TightVNC are popular third-party VNC clients.
9. Type in your TX device's IP address into the VNC client, and click connect. The VNC client's default settings usually do not require modification.



10. You are now looking at the System Setup screen via VNC. From here, you can access the System Settings or Startup Sequence screen.

## 7.4 Accessing the TX Device's System Settings

The System Settings screen is where nearly all your TX device's settings are changed. It can be accessed in a couple different ways, which are covered below.

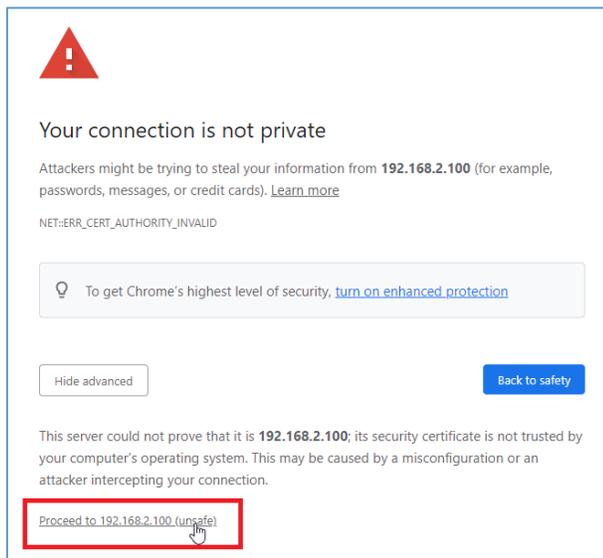
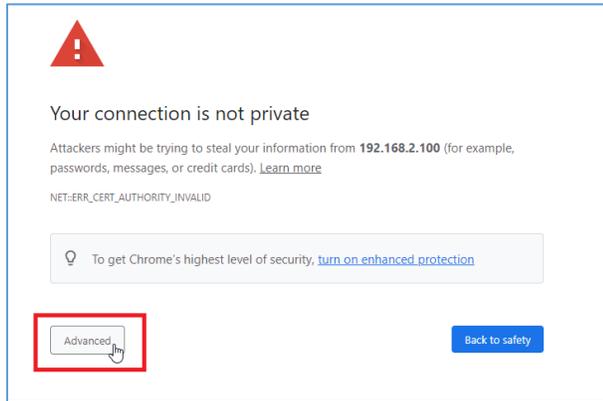


### 7.4.1 Via the System Setup Screen

This is as simple as selecting **System Settings** button in the upper right of the System Setup screen. Instructions on accessing that screen via touchscreen or VNC are found in [section 7.3](#) of the appendix.

## 7.4.2 Via the TX Device's Webserver

1. Assign a static IP address to your computer and an IP address to your TX device. They must be on the same subnet. For help, see [section 7.1](#) and [section 7.2](#), respectively.
2. Type in **https://xxx.xxx.xxx.xxx** into a web browser where **xxx.xxx.xxx.xxx** is the IP address of your TX Device, and press **Enter**.
  - a. If that produces an error or shows you something other than the System Settings screen, type in **https://xxx.xxx.xxx.xxx/machine\_config** where **xxx.xxx.xxx.xxx** is the IP address of your TX Device, and press **Enter**.
3. There is a chance that your browser will deem the TX device's webserver as a potentially dangerous connection. If that happens, do what you have to in order to allow it. The pictures below show what is required in Google Chrome.



4. Enter administrator-level credentials if prompted.
5. You are now looking at System Settings in the webserver.

## 7.5 Change Codesys Runtime Contained Within TX VisuPro Runtime

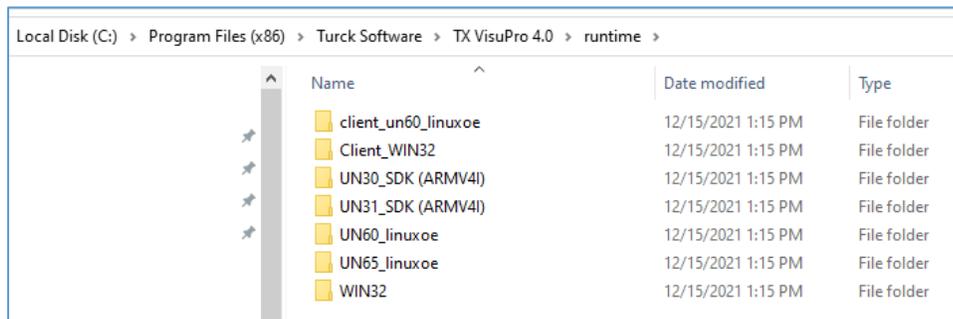
It is rarely necessary and highly discouraged to change the Codesys runtime version that is contained within the TX VisuPro runtime, but that process is outlined below. Note that using a different Codesys runtime version than the one that came with the TX VisuPro IDE installation is not guaranteed to work.



### ATTENTION!

The desired Codesys runtime must come from a different installation (i.e. a previous version) of the TX VisuPro IDE.

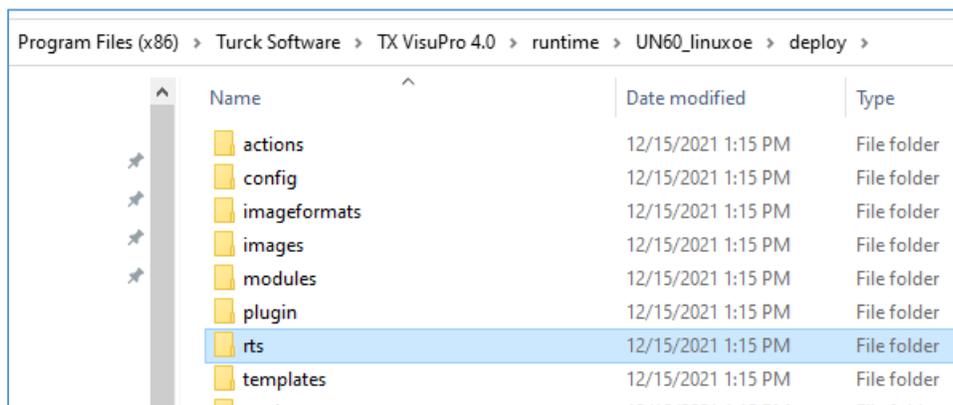
1. Navigate to the “runtime” folder in the install location of your previous version of the TX VisuPro IDE whose Codesys runtime you are going to use.



2. Every TX device is put into a certain “UN” category as defined by its processor. Find your TX device’s UN category by looking at the first characters of the signature found under the TX device’s **System Settings → Management → Config OS**



3. Now that you know your TX device’s UN category, navigate to the corresponding subfolder in the “runtime” folder, then navigate to the “deploy” subfolder.



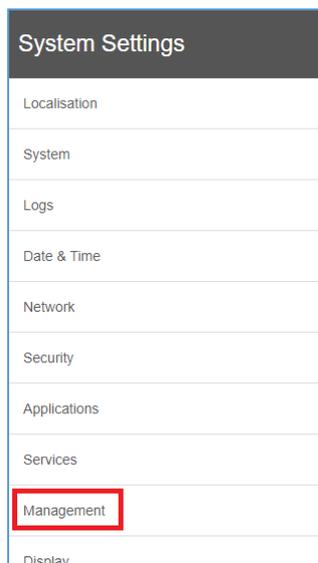
4. Select the rts folder, and press **Ctrl+C**
5. In case you need this folder in the future, create a new folder somewhere on your computer, and press **Ctrl+V**, pasting the rts folder there.
6. Navigate to the corresponding “deploy” folder in your current installation of TX VisuPro IDE.
7. Press **Ctrl+V**, overwriting the existing rts folder with the old one.

You have now successfully changed the Codesys runtime that will be contained within the TX VisuPro runtime. To push it to your TX device, you will need to delete the existing TX VisuPro runtime on your TX device and reinstall it. See [section 6.3](#) for help on this.

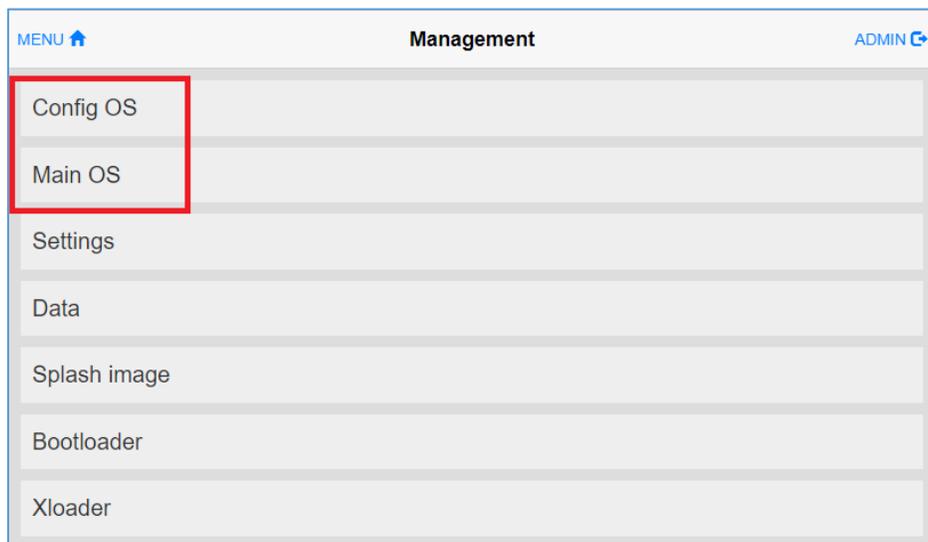
## 7.6 Identifying BSP Version Installed on Your TX Device

Recall that BSP stands for “Board Support Package,” i.e. the version of MainOS and Config OS your TX device has installed. Newer features, like the ability to install applications via the webserver or tighter cybersecurity, may require a newer BSP version. The steps below show you how to check your BSP version.

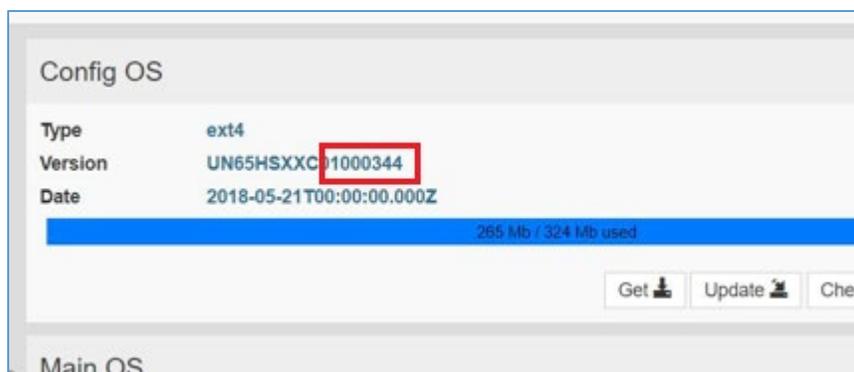
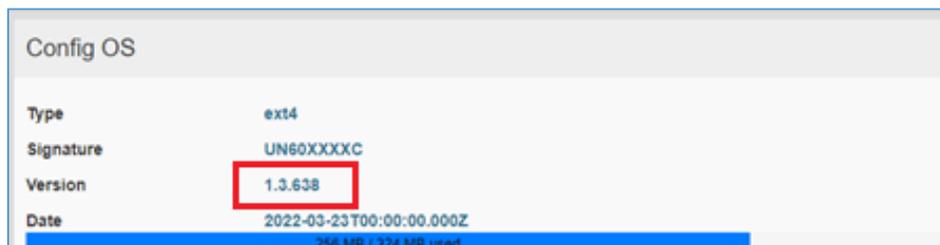
1. Navigate to the System Settings screen using any method. If you are unsure how to do this or are having difficulties, see [section 7.4](#) of the appendix.
2. Click or tap **Management**.



- Click or tap Main OS and Config OS to expand them.



- The version is displayed in those expanded tabs. In the examples below, the BSP version for the top picture is **1.3.638**, and **1.0.344** for the bottom picture.



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