

APPLICATION NOTE

# CHROMIUM BROWSER ON CP600 HMIS INSTALLATION & HANDLING



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# 1 Introduction

## 1.1 Scope of the document

The quick start guide describes the steps to activate the Chromium Browser as Web Visualization. In addition, some further topics, like Launch Chromium Browser out of Panel Builder will be covered as well.

This document is applicable to below models:

CP610(-B)	10.1" Control Panel, TFT graphical display, touchscreen, 1024 x 600 pixel
CP6407	7" Control Panel, TFT graphical display, touchscreen, 800 x 480 pixel
CP6410	10.4" Control Panel, TFT graphical display, touchscreen, 800 x 600 pixel
CP6415	15" Control Panel, TFT graphical display, touchscreen, 1024 x 768 pixel
CP6605	5" Control Panel, TFT graphical display, multi-touchscreen, 800 x 480 pixel
CP6607	7" Control Panel, TFT graphical display, multi-touchscreen, 800 x 480 pixel
CP6610	10.1" Control Panel, TFT graphical display, multi-touchscreen, 1280 x 800 pixel
CP6615	15.6" Control Panel, TFT graphical display, multi-touchscreen, 1366 x 768 pixel
CP6621	21.5" Control Panel, TFT graphical display, multi-touchscreen, 1920 x 1080 pixel

## 1.2 Compatibility

The application example explained in this document has been used with the below engineering system versions. They should also work with other versions, nevertheless some small adaptations may be necessary, for future versions.

- CP600
- Panel Builder 600

## 1.3 Safety guide

The manual contains safety standards that must be respected for the personal safety and to avoid damage.

Indications of attention are divided into three levels of severity:

**DANGER:** Indicates a failure to observe safety rules and such failure may cause death or serious injuries.

**ATTENTION:** Indicates a failure to observe safety rules and that deficiency may cause damage.

**CAUTION:** Indicates a failure to observe safety rules and that deficiency may cause defects to the equipment or inconsistencies.

## 2 Before you start

Before you start, please read the relevant installation instructions and quick start guides referring to the panel you use.

### 2.1 Hardware connection

Before you start, following equipment should be prepared:



1. HMI (CP600-eCo/CP600-2<sup>nd</sup> Gen/CP600-Pro)
2. Computer with Windows OS
3. 24V DC power supply
4. Ethernet cable

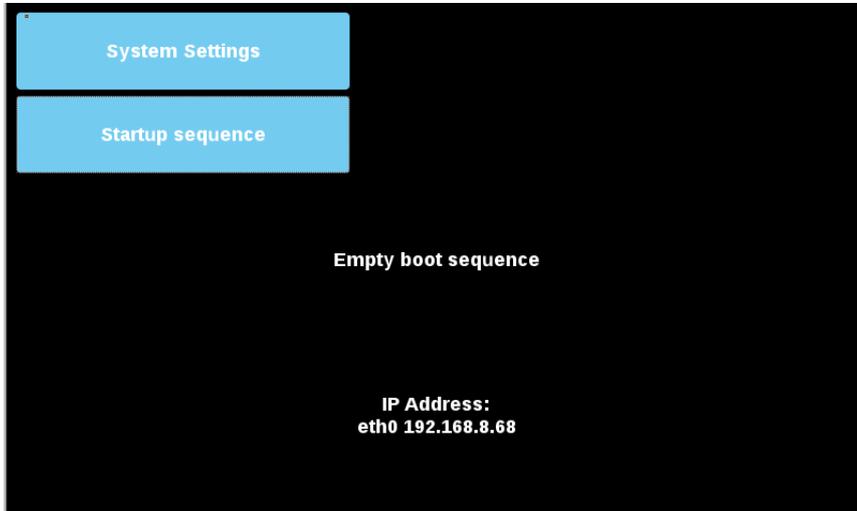
### 2.2 Compatibility

**Attention:** Chromium browser is only compatible with below versions or newer

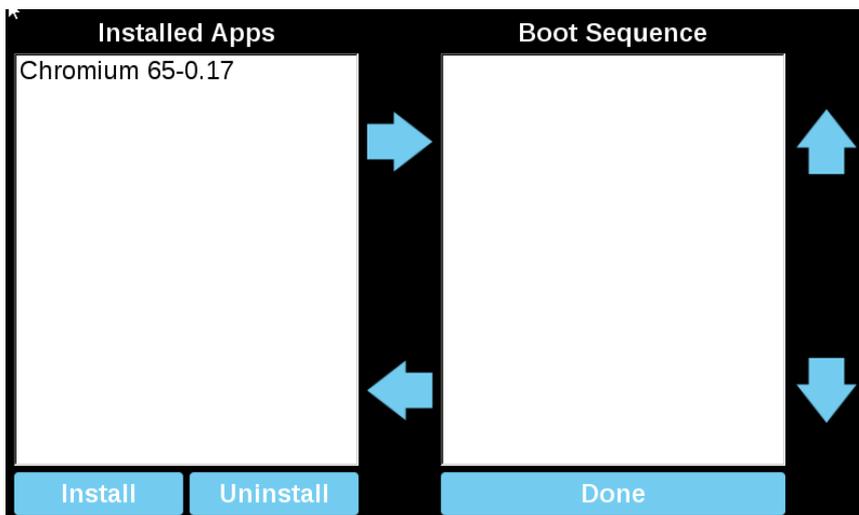
HMI type	BSP version	Hardware version index
CP604(-B)	1.0.307	C1
CP6407	1.0.538	A0
CP6410	1.0.538	A0
CP6415	1.0.538	A0
CP6605	1.0.298	A0
CP6607	1.0.304	A0
CP6610	1.0.304	A0
CP6615	1.0.304	A0
CP6621	1.0.304	A0

### 3 Activate Chromium browser as web visualization on a brand-new HMI

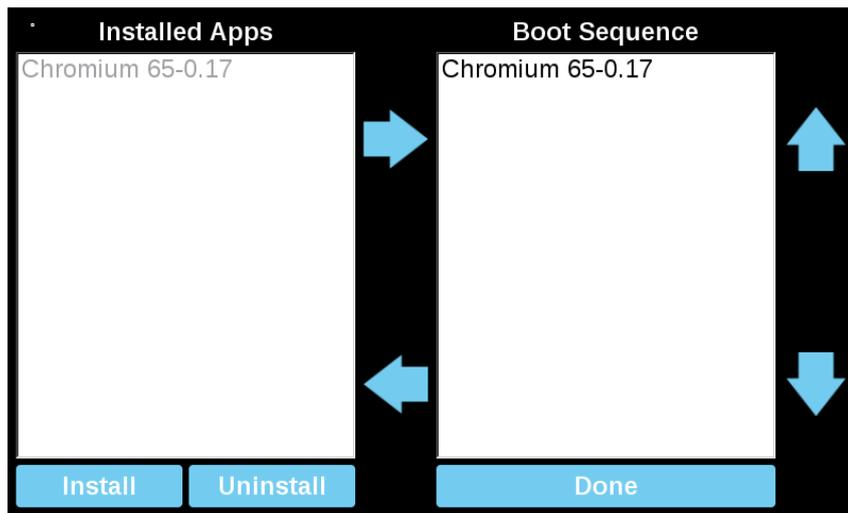
Click on **Startup sequence** when CP600 HMI is powered on for the first time as shown in the figure below.



Chromium web browser is pre-installed on every compatible HMI.

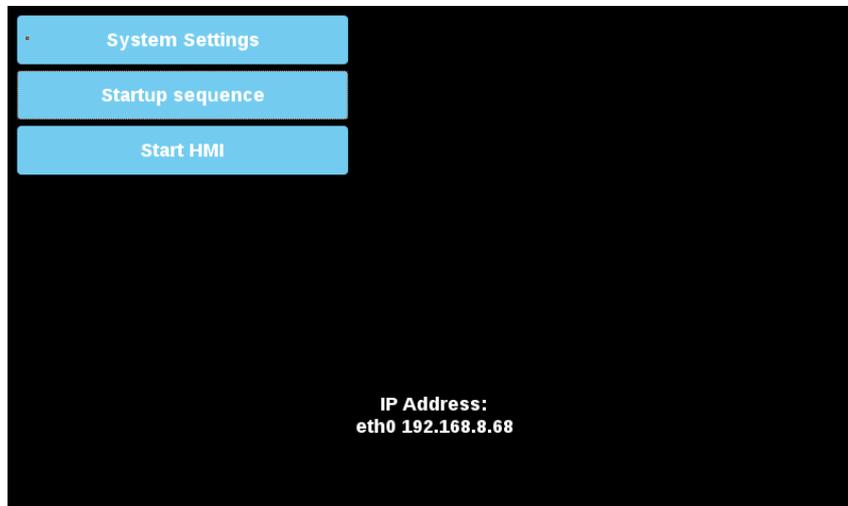


Select and add Chromium browser to the boot sequence via the arrow keys or via Drag & Drop, and click **Done**



**ATTENTION:** It will create conflicts, if Chromium browser and HMI runtime both are added in the boot sequence. Please make sure that there is always only one app in the boot sequence. If a new app is needed in the boot sequence, please first remove the existing app from the boot sequence. See [Chapter 4](#), if Chromium browser and HMI runtime are both needed.

Click on **Start HMI** to load Chromium browser. Loading HMI may take some time, depending on the HMI model.



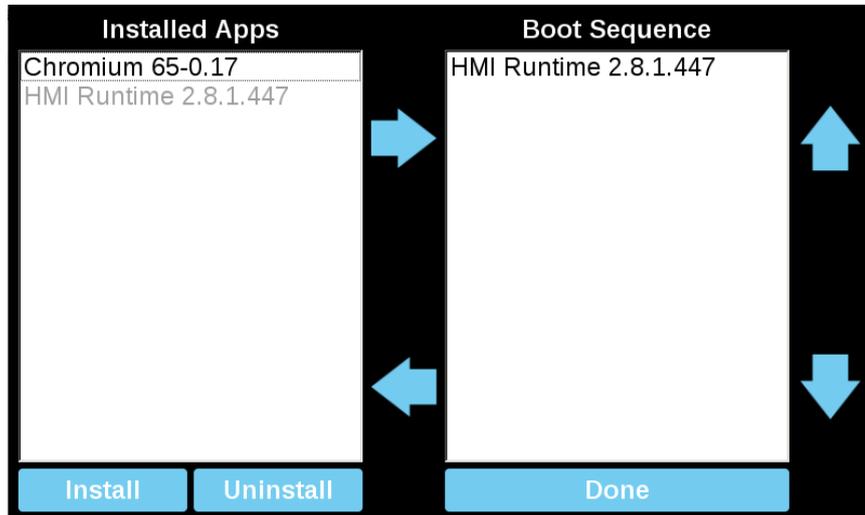
When Chromium browser is first time loaded, a login password is required to come to the setting page. The default **Username/Password** is admin/admin.

**ATTENTION:** It is mandatory to enable the address bar in the setting page of Chromium browser.

## 4 Launch Chromium web browser in HMI runtime

To activate Chromium browser in HMI runtime, only HMI runtime shall be installed and added in the boot sequence.

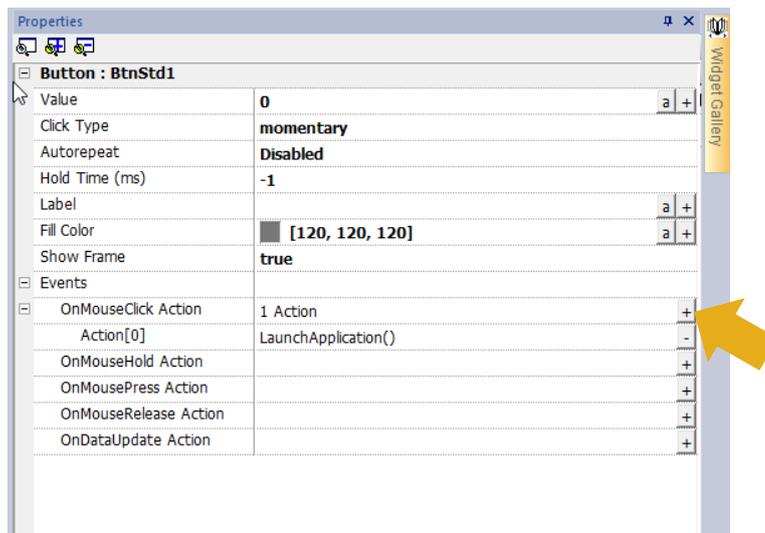
Chromium browser shall be launched via a widget e.g. a button in the PB610 application, but not in the boot sequence.



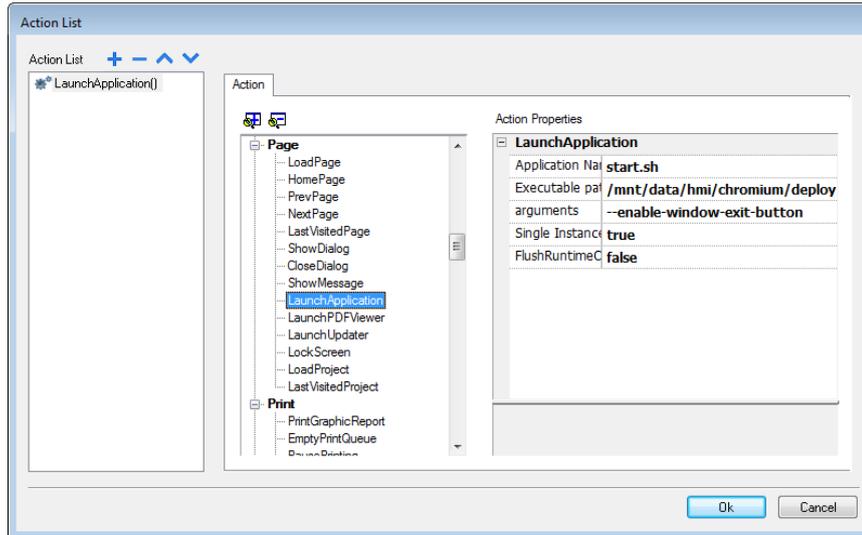
Below example shows the steps to launch Chromium browser via a button clicking.

Select a button from **Widget Gallery**.

Open the **Events list** from the button **Properties** sheet. Click on the “+” to add a “OnMouse-Click Action”.



Click on **LaunchApplication** under the action group **Page**.



Edit the **Action Properties** of **LaunchApplication** as shown in the table below

<b>LaunchApplication</b>	
Application Name	<b>start.sh</b>
Executable path	<b>/mnt/data/hmi/chromium/deploy</b>
Arguments	<b>--enable-window-exit-button</b>
Single Instance	<b>true</b>
FlushRuntimeCache	<b>false</b>

Click **Ok** and download the project to HMI.

Chromium will then be activated by clicking the button on HMI. Launch of chromium browser during power up of the panel first time takes significant longer than the second launch during operation, depending on the HMI model.

These are the available arguments:

<b>Additional arguments</b>	
<b>--enable-exit-button</b>	Shows the Exit button on the login screen. The button will terminate all chrome processes.
<b>--enable-window-exit-button</b>	Shows the same button as above but now just the browser window is closed. Chrome main process will remain alive and calling start.sh again will just open a new window which should be faster. However changing command line flags will no more override those used the first time, a different URL can still be specified in the command.

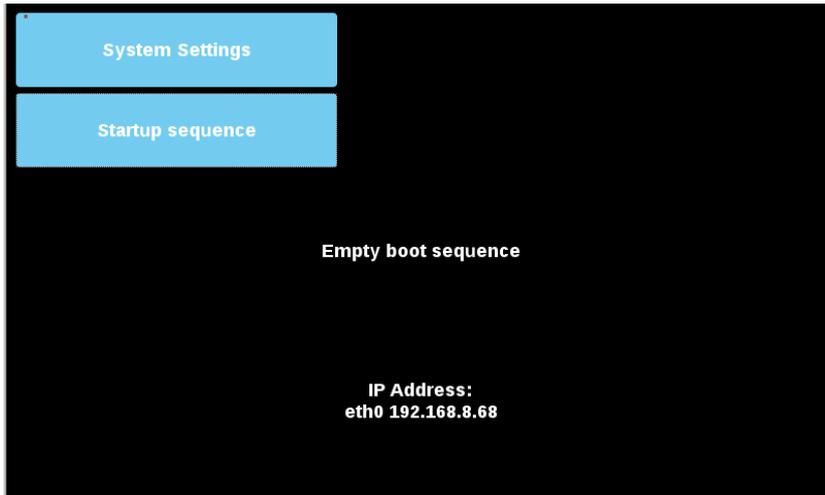
--open-options-after-num-retries=<n>	Modify after how many retries on load error the login page is opened (default is 4). A value <1 will disable the feature.
--retries-on-error-timeout=<n>	Time in seconds between retries. Minimum accepted value is 5 (default is 8).

# 5 Install and Update Chromium Browser

## 5.1 Install and Update from USB

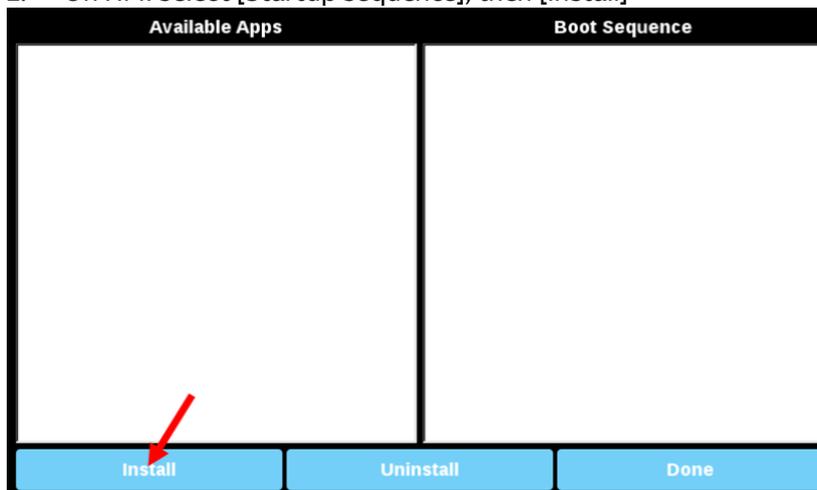
HMI devices are delivered from factory without Runtime, at first power up HMI shows the “Runtime Loader” screen.

**Note:** File systems supported are FAT16/32 and Linux Ext2, Ext3 and Ext4.

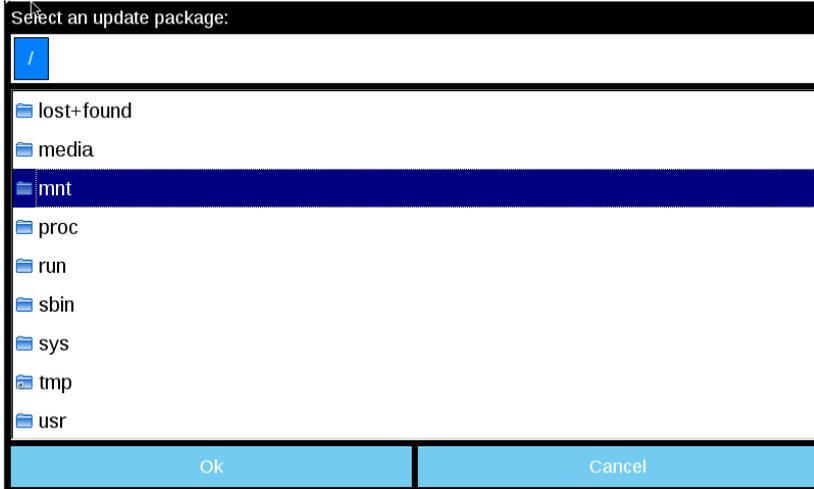


To install the Chromium application, follow this procedure:

1. Copy the application file (e.g. chromium-un6x-65-0.17.zip) into an empty USB memory stick or empty SD card.
2. On HMI select [Startup sequence], then [Install]



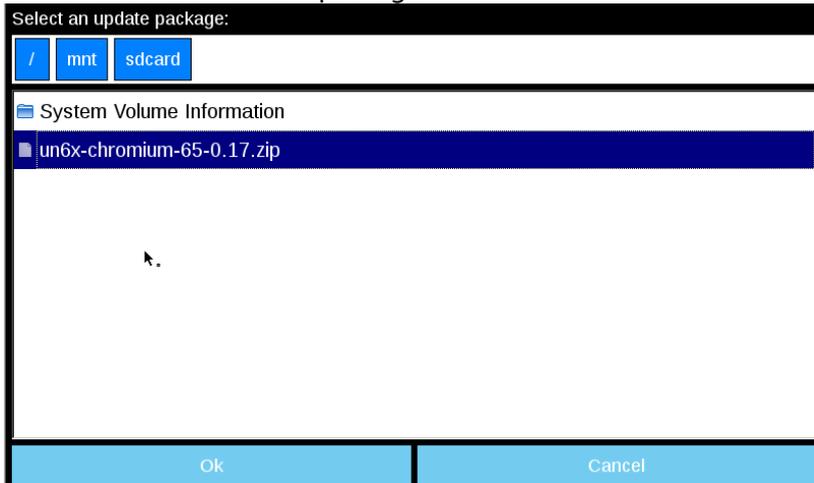
3. Double click on “mnt” to access this folder



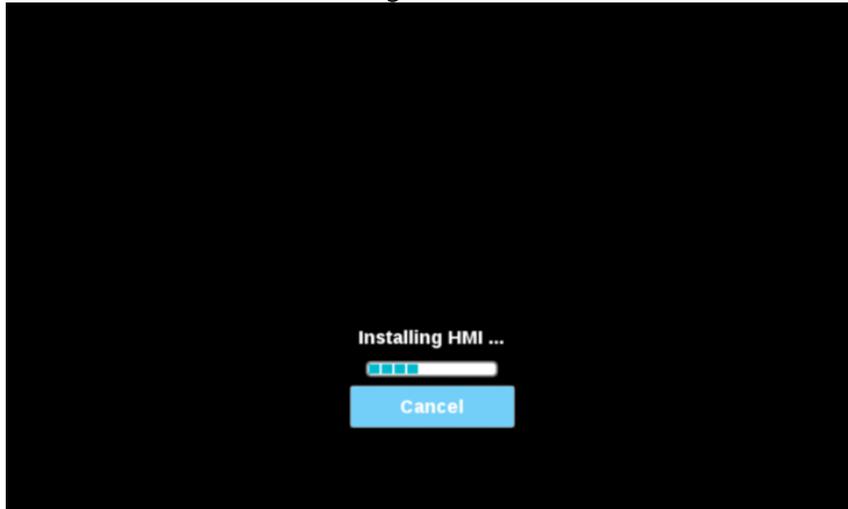
4. Select “usbmemory” or “sdcard”



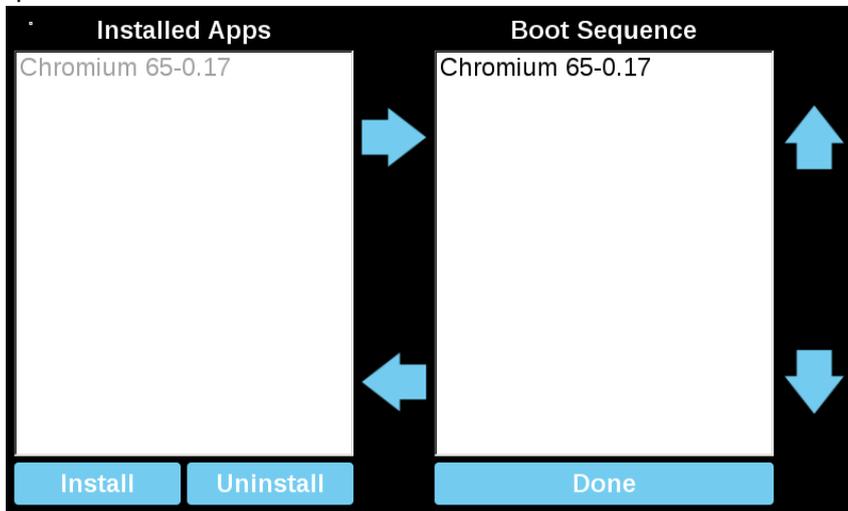
5. Select the Chromium package



6. The runtime installation begins

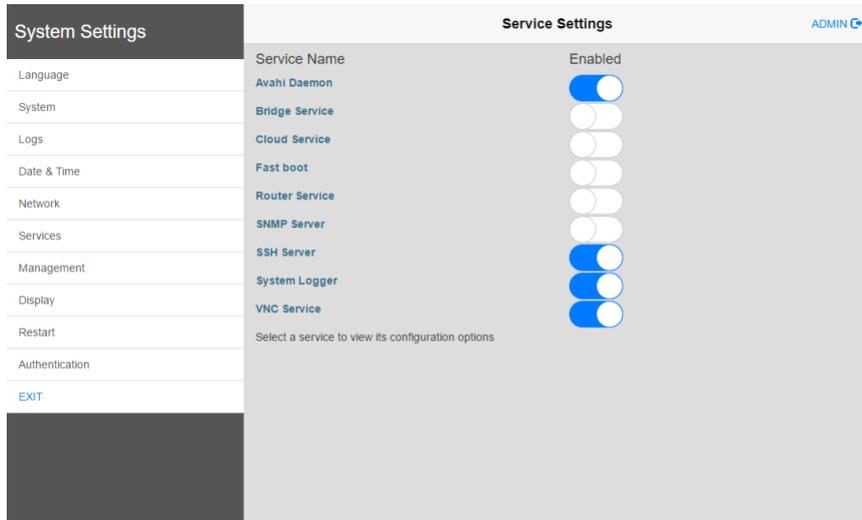


At the end of the installation procedure, Chromium application will be set in Boot Sequence:



## 5.2 Install and Update from Remote

- Using the System Setting interface of the HMI device from a Web browser be sure the “SSH Server” and the “VNC Service” services are enabled.



- If there are some applications already installed inside the HMI device, use the System Setting interface to remove all (Management->Data->Clear)
- Use an SFTP application (e.g. FileZilla) to log into HMI device and upload the package of the Chromium application somewhere (e.g. inside /home/admin folder)

Filename	Filesize	Filetype	Last modified	Permissions	Owner/Group
..					
.bashrc	505	BASHRC File	15/03/2017 20:52:30	-rwxr-xr-x	admin admin
.profile	152	PROFILE File	15/03/2017 20:52:30	-rwxr-xr-x	admin admin
chromium-un6x-52-0.13.zip	55.217.049	zip Archive	13/06/2017 14:04:05	-rw-r--r--	admin admin

- Get access at the display of the remote HMI device using a VNC client. Then click on [Start Sequence] button and install the package previous upload through the SFTP client.



- Use the SFTP connection to log into HMI device and remove the package previously uploaded.

## 6 Chromium Browser

Chromium is an HTML 5 web browser, based on the open-source web browser project started by Google, that can be installed on the HMI devices based on Linux platform. The application will be installed as full screen standalone application.

### 6.1 Settings

At the first start up the home page loaded from Chromium is the Settings page. Note that a Sign-In is required to enter inside the Settings page. Username and Password are the same as the HMI device (default admin, admin) and can be changed from the HMI System Settings.

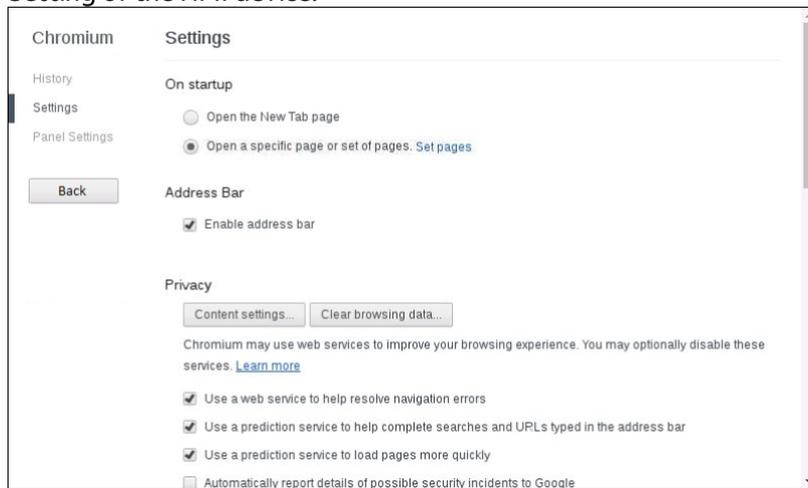
**Username**

**Password**

**Back** **Proceed**

From the Settings page all Chromium's parameters are available, in particular is possible define the home page that will load when the HMI start (HMI need a reboot to switch to new page).

The "Panel Setting" command, available inside the menu on the left area, will open the System Setting of the HMI device.



When the Address Bar is not available, the Chromium Settings page can be opened by touching the top left edge of the display for few seconds.



## 6.2 Address Bar

When enabled, the Address Bar can be opened/closed using the tab in the middle of the top area of the display.



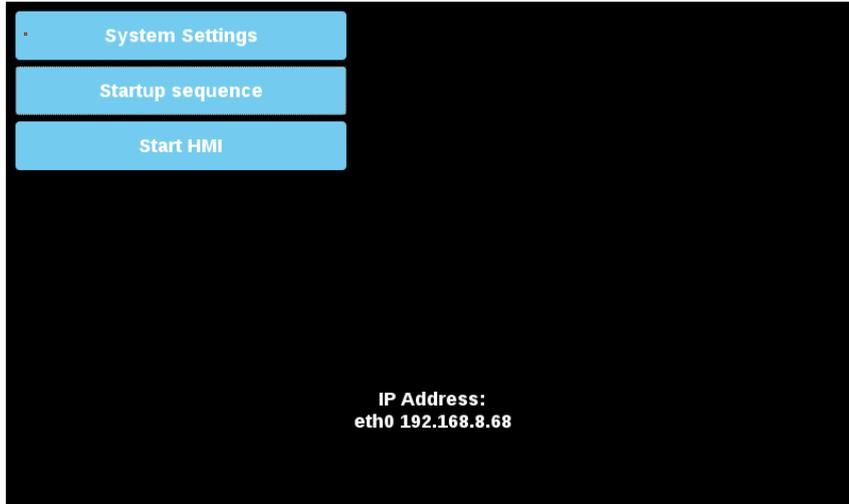
Available commands are:

- Page Reload
- Bookmark List
- URL Address
- Add Bookmark
- Open Setting Page

## 7 Deactivate Chromium browser

If the Chromium browser is activated in the boot sequence, but should be removed, follow these steps to deactivate it:

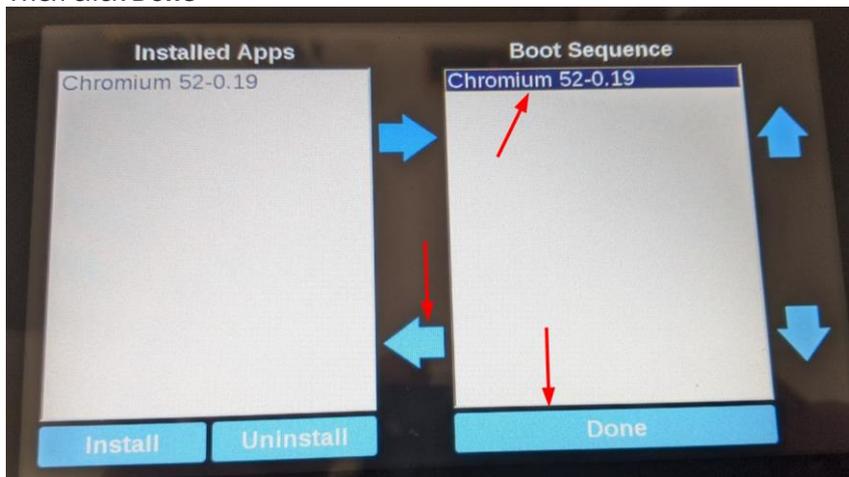
1. Reboot the HMI in Tap-Tap mode.  
See chapter 8 “Enter System Settings via tap-tap procedure” how to do that.
2. Click on the **Startup sequence**



3. Select **Chromium** in the right Boot Sequence list.

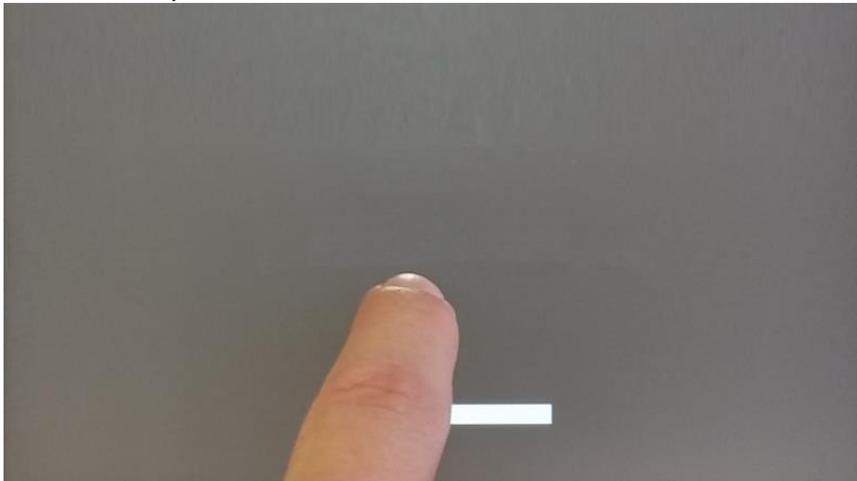
Use the lower arrow key in the middle, or Drag & Drop to remove the Chromium from the Boot Sequence list.

Then click **Done**



## 8 Enter System Settings via tap-tap procedure

Tap-tap consists in a sequence of several touch activations by simple means of the finger tapping the touch screen performed during the power-up phase and started immediately after the HMI is powered on.



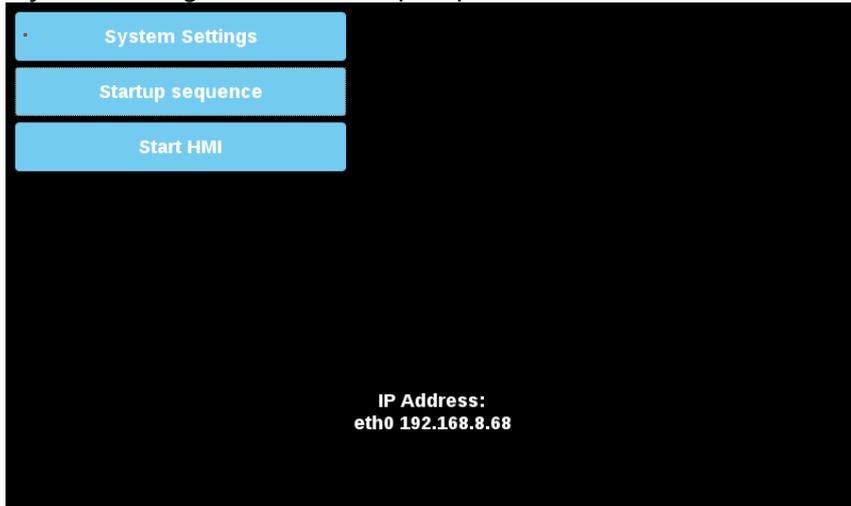
When “tap-tap detected” message appears on the top of the screen. Wait for 5 seconds (without touching the screen) to enter System Settings sub menu



Wait for 5 more seconds (without touching the screen) to enter Default Mode



"System Setting" and the "Startup sequence" buttons will be available





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