

Installation and Handling Chromium Browser on CP600 Panels

Activate Chromium Browser as Web Visualization on New CP600 Panel

Introduction

This technical note 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

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

Before you start

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

- **Hardware requirement**

The following equipment should be prepared:



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

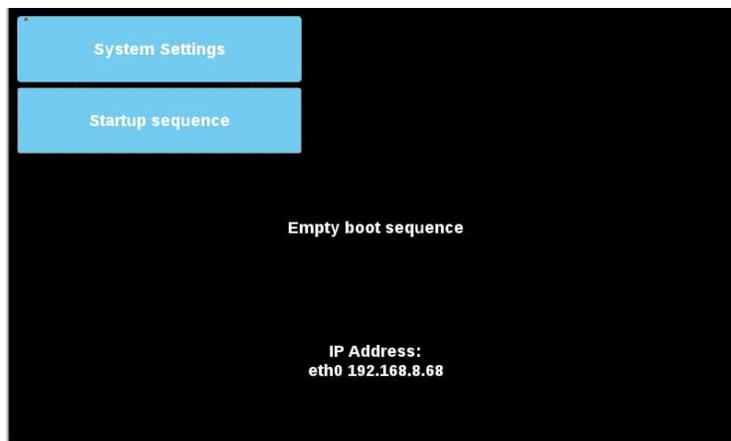
Compatibility

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

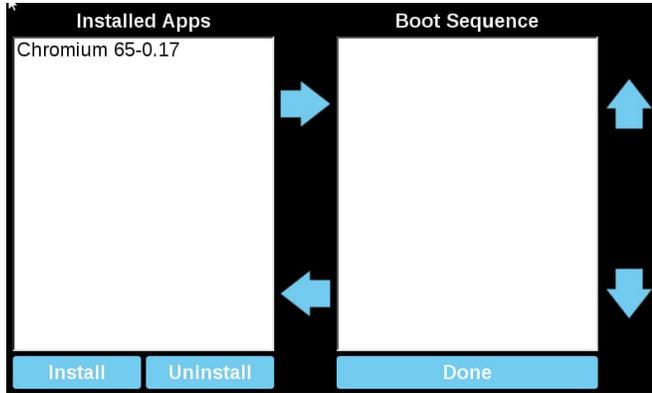
HMI type	BSP version	Hardware version index
CP604(-B)	1.0.307	C1
CP6407	1.0.538	A0
CP6410	1.0.538	A0
CP6415	1.0.538	A0
CP6605	1.0.298	A0
CP6607	1.0.304	A0
CP6610	1.0.304	A0
CP6615	1.0.304	A0
CP6621	1.0.304	A0

Activate Chromium Browser as Web Visualization on New CP600 Panel

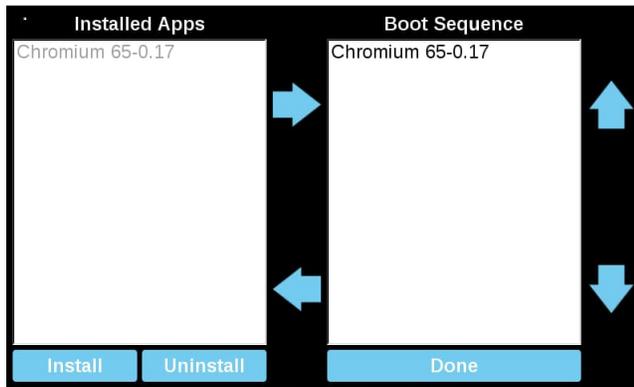
- Click on **Startup sequence** when CP600 HMI is powered on for the first time as shown in the figure below.



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

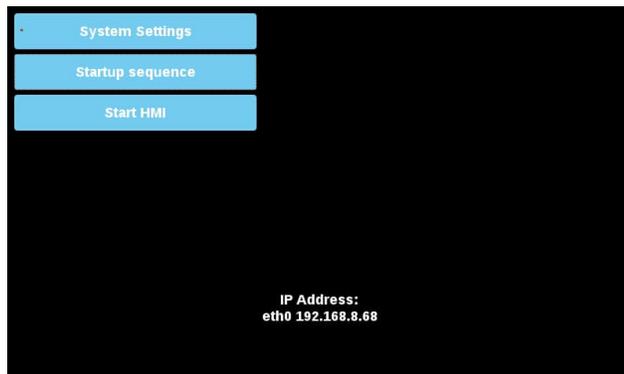


- Select and add Chromium browser to the boot sequence via the arrow keys or via Drag & Drop, and click **Done**



Attention: If both Chromium browser and HMI runtime are added in the boot sequence, the system will not boot up correctly. Make sure that there is always only one app in the boot sequence! If a new app is needed in the boot sequence, remove the existing app from the boot sequence then replace it with new one.

- Click on **Start HMI** to load Chromium browser. The HMI project may load slow depending on the panel model.

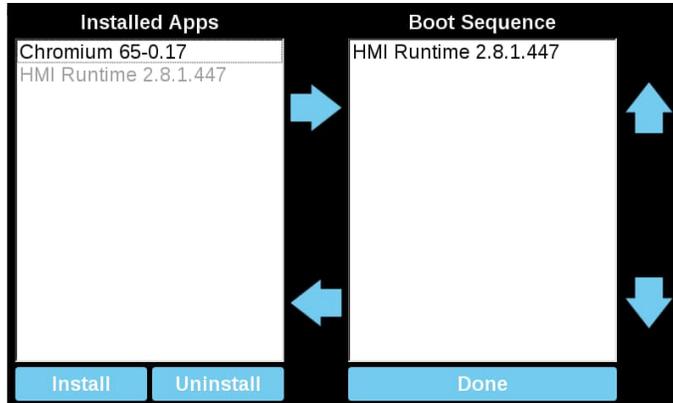


When Chromium browser is first time loaded, a login password is required to come to the setting page. The default **Username/Password** is admin/admin.

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

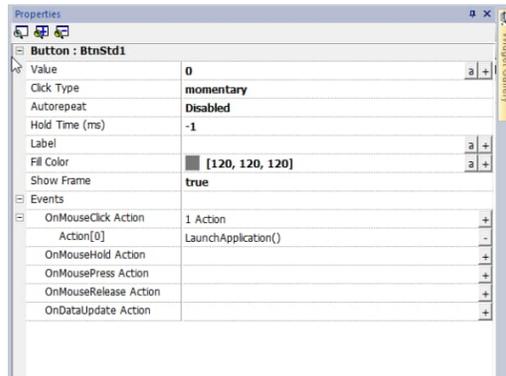
Launch Chromium web browser in HMI Runtime

To activate Chromium browser in HMI runtime, only HMI runtime shall be installed and added in the boot sequence. Chromium browser can be launched via a widget button in the PB610 application, but not in the boot sequence.

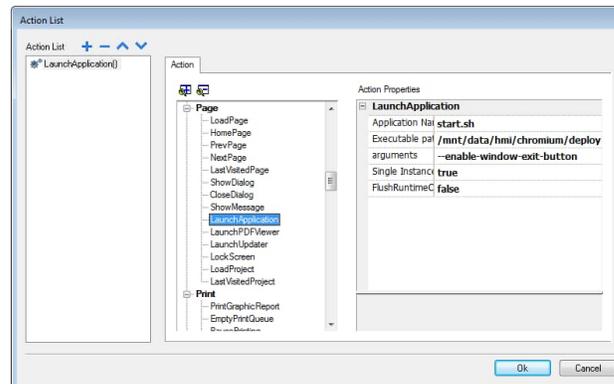


An example shows the steps to launch Chromium browser via a button Widget.

- Select a button from **Widget Gallery**.
- Open the **Events list** from the button **Properties** sheet. Click on the “+” to add a “**OnClickAction**”.



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



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

LaunchApplication

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

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

Note: Chromium will be activated by clicking this **LaunchApplication** 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:

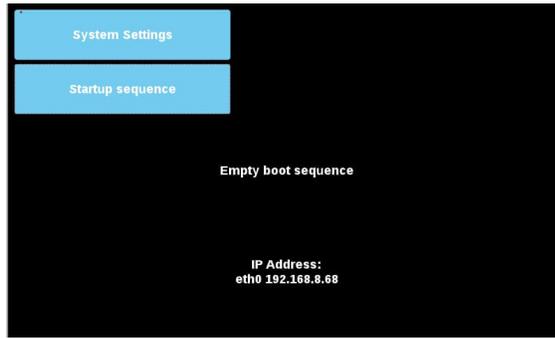
Additional arguments	
--enable-exit-button	Shows the Exit button on the login screen. The button will terminate all chrome processes.
--enable-window-exit-button	Shows the same button as above but now just the browser window is closed. Chrome main process will remain alive and calling start.sh again 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).

Install and Update Chromium Browser

- **Install and Update from USB**

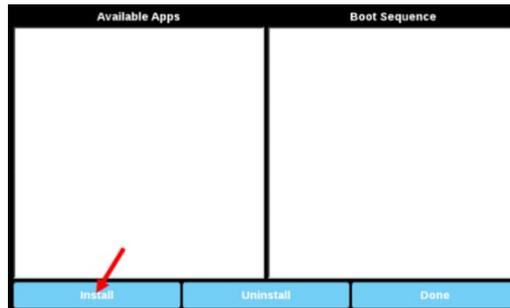
HMI devices are delivered from factory without Runtime, at first power up HMI shows the “Runtime Loader” screen.

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

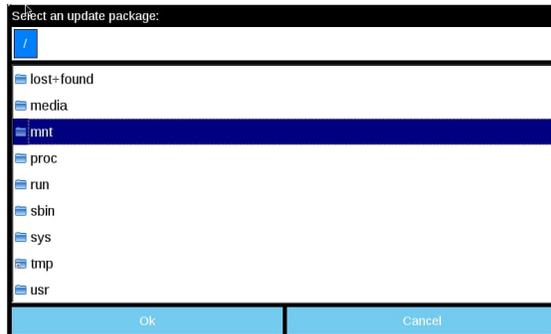


To install the Chromium application, follow this procedure:

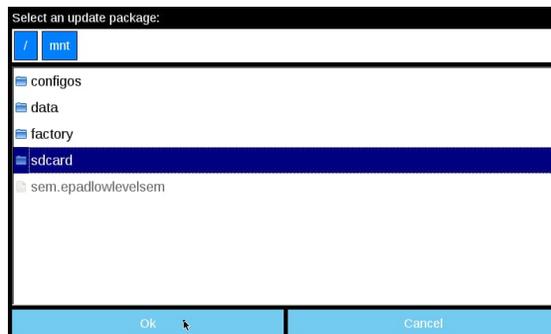
1. Copy the application file (e.g., chromium-un6x-65-0.17.zip) into an empty USB memory stick or SD card.
2. On HMI select **Startup sequence**, then **Install**



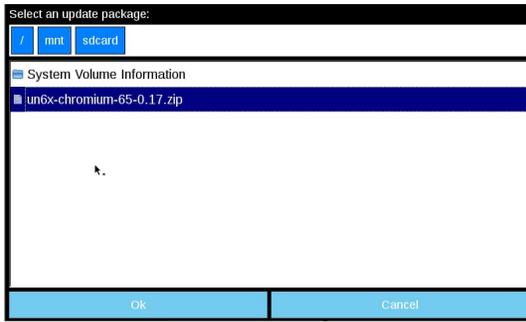
3. Double clicks on **“mnt”** to access this folder



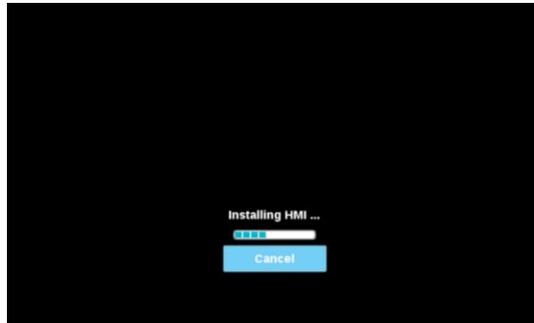
4. Select **“usbmemory”** or **“sdcard”**



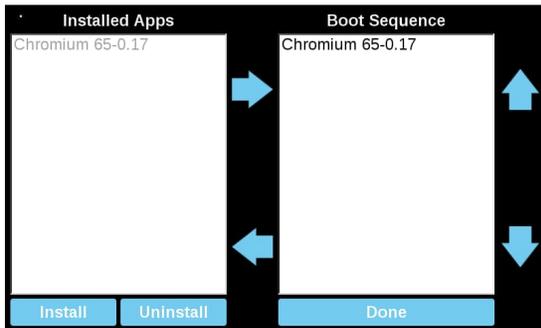
5. Select the Chromium package



6. The runtime installation begins

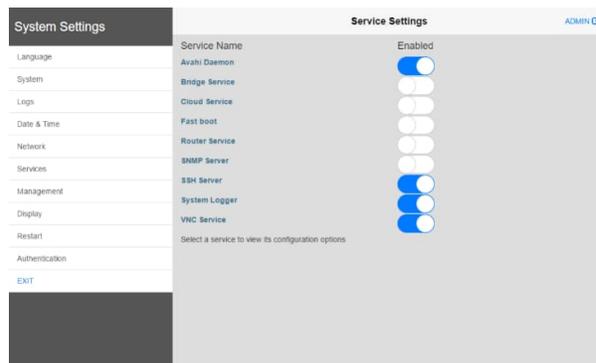


At the end of the installation procedure, Chromium application will be set in Boot Sequence:



Install and Update from Remote Connection

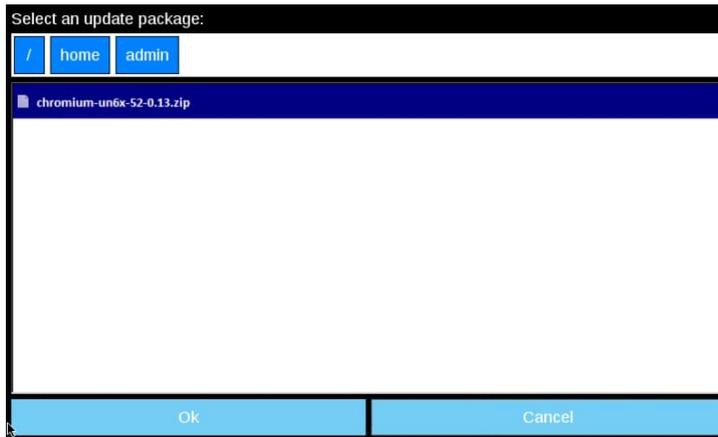
1. Using the System Setting interface of the HMI device from a Web browser be sure the “SSH Server” and the “VNC Service” services are enabled.



- 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.

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.

- Chromium Settings**

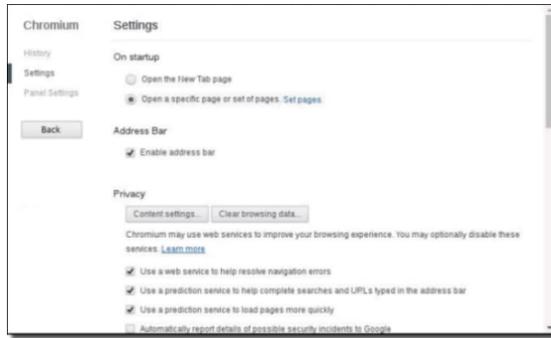
At first start up, the home page loaded from Chromium is the Settings page. Note that a Sign In is required to enter inside the Settings page. Username: admin (default) and Password: admin (default) and can be changed from the HMI System Settings later.

Username

Password

Back Proceed

From the Settings page, all Chromium's parameters are available. It 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.



- Address Bar

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

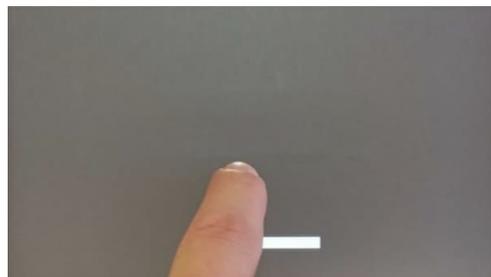


Available commands are:

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

Enter System Settings via tap-tap procedure

Tap-tap procedure consists in a sequence of several touch activations by the finger tapping the touch screen performing during the power-up phase and it 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 seconds more (without touching the screen) to enter Default Mode



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

