



System Manual with QIWI Toolkit for Web-, Control-Panel & Control-Unit Products

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SYSTEM MANUAL WITH QIWI TOOLKIT FOR WEB-, CONTROL-PANEL & CONTROL-UNIT PRODUCTS - USER GUIDE

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Revision History

Revision	Brief Description of Changes	Date of Issue	Author/ Editor
0.A	Initial Issue in English	2019-October-01	GUGMA
0.B	Feature documentation updated	2020-April-03	EHRDA
0.C	Integration of QIWI Toolkit	2021-April-20	LAMRO

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Symbols

The following symbols may be used in this user guide

⚠ DANGER

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury.

⚠ WARNING

WARNING indicates a hazardous situation which, if not avoided, could result in death or serious injury.

NOTICE

NOTICE indicates a property damage message.

⚠ CAUTION

CAUTION indicates a hazardous situation which, if not avoided, may result in minor or moderate injury.



Electric Shock!

This symbol and title warn of hazards due to electrical shocks (> 60 V) when touching products or parts of products. Failure to observe the precautions indicated and/or prescribed by the law may endanger your life/health and/or result in damage to your material.



ESD Sensitive Device!

This symbol and title inform that the electronic boards and their components are sensitive to static electricity. Care must therefore be taken during all handling operations and inspections of this product in order to ensure product integrity at all times.



HOT Surface!

Do NOT touch! Allow to cool before servicing.



Laser!

This symbol inform of the risk of exposure to laser beam and light emitting devices (LEDs) from an electrical device. Eye protection per manufacturer notice shall review before servicing.



This symbol indicates general information about the product and the user guide.

This symbol also indicates detail information about the specific product configuration.



This symbol precedes helpful hints and tips for daily use.

For Your Safety

Your new Kontron product was developed and tested carefully to provide all features necessary to ensure its compliance with electrical safety requirements. It was also designed for a long fault-free life. However, the life expectancy of your product can be drastically reduced by improper treatment during unpacking and installation. Therefore, in the interest of your own safety and of the correct operation of your new Kontron product, you are requested to conform with the following guidelines.

High Voltage Safety Instructions

As a precaution and in case of danger, the power connector must be easily accessible. The power connector is the product's main disconnect device.

⚠ CAUTION

Warning

All operations on this product must be carried out by sufficiently skilled personnel only.

⚠ CAUTION

Electric Shock!

Before installing a non hot-swappable Kontron product into a system always ensure that your mains power is switched off. This also applies to the installation of piggybacks. Serious electrical shock hazards can exist during all installation, repair, and maintenance operations on this product. Therefore, always unplug the power cable and any other cables which provide external voltages before performing any work on this product.

Earth ground connection to vehicle's chassis or a central grounding point shall remain connected. The earth ground cable shall be the last cable to be disconnected or the first cable to be connected when performing installation or removal procedures on this product.

Special Handling and Unpacking Instruction

NOTICE

ESD Sensitive Device!

Electronic boards and their components are sensitive to static electricity. Therefore, care must be taken during all handling operations and inspections of this product, in order to ensure product integrity at all times.

Do not handle this product out of its protective enclosure while it is not used for operational purposes unless it is otherwise protected.

Whenever possible, unpack or pack this product only at EOS/ESD safe work stations. Where a safe work station is not guaranteed, it is important for the user to be electrically discharged before touching the product with his/her hands or tools. This is most easily done by touching a metal part of your system housing.

It is particularly important to observe standard anti-static precautions when changing piggybacks, ROM devices, jumper settings etc. If the product contains batteries for RTC or memory backup, ensure that the product is not placed on conductive surfaces, including anti-static plastics or sponges. They can cause short circuits and damage the batteries or conductive circuits on the product.

Lithium Battery Precautions

If your product is equipped with a lithium battery, take the following precautions when replacing the battery.

⚠ CAUTION

Danger of explosion if the battery is replaced incorrectly.

- ▶ Replace only with same or equivalent battery type recommended by the manufacturer.
 - ▶ Dispose of used batteries according to the manufacturer's instructions.
-

General Instructions on Usage

In order to maintain Kontron's product warranty, this product must not be altered or modified in any way. Changes or modifications to the product, that are not explicitly approved by Kontron and described in this user guide or received from Kontron Support as a special handling instruction, will void your warranty.

This product should only be installed in or connected to systems that fulfill all necessary technical and specific environmental requirements. This also applies to the operational temperature range of the specific board version that must not be exceeded. If batteries are present, their temperature restrictions must be taken into account.

In performing all necessary installation and application operations, only follow the instructions supplied by the present user guide.

Keep all the original packaging material for future storage or warranty shipments. If it is necessary to store or ship the product then re-pack it in the same manner as it was delivered.

Special care is necessary when handling or unpacking the product. See Special Handling and Unpacking Instruction.

Quality and Environmental Management

Kontron aims to deliver reliable high-end products designed and built for quality, and aims to complying with environmental laws, regulations, and other environmentally oriented requirements. For more information regarding Kontron's quality and environmental responsibilities, visit <https://www.kontron.com/about-kontron/corporate-responsibility/quality-management>.

Disposal and Recycling

Kontron's products are manufactured to satisfy environmental protection requirements where possible. Many of the components used are capable of being recycled. Final disposal of this product after its service life must be accomplished in accordance with applicable country, state, or local laws or regulations.

WEEE Compliance

The Waste Electrical and Electronic Equipment (WEEE) Directive aims to:

- ▶ Reduce waste arising from electrical and electronic equipment (EEE)
- ▶ Make producers of EEE responsible for the environmental impact of their products, especially when the product become waste
- ▶ Encourage separate collection and subsequent treatment, reuse, recovery, recycling and sound environmental disposal of EEE
- ▶ Improve the environmental performance of all those involved during the lifecycle of EEE



Environmental protection is a high priority with Kontron.
Kontron follows the WEEE directive
You are encouraged to return our products for proper disposal.

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1/ Introduction

The QIWI Software Toolkit integrated in our products provides the user with a performance-optimized HTML-5 Chromium browser combined with a web configurator with multiple setting options for user-friendly configuration as well as sophisticated additional software functions for the specific needs of industrial users.

This system manual describes the software system configuration options of the integrated QIWI software toolkit for the Web Panel family WP, the Control Panel family CP as well as the Control Unit family CU of Kontron Electronics AG.

The setting options and the menu structure of the system configuration of a device will depend upon the respective device type, (e.g. Web-Panel or Control Panel), the installed software packages (e.g. type of Web browser, CODESYS) and the operating system used. This may therefore differ from the scope of the functions described in this manual.

This system manual is a supplement to the respective hardware manual of the device, which describes the hardware, its installation and safe handling.

NOTICE

Changes to improve the product.

We expressly reserve the right to make changes to improve our products.

1.1. Accessing the System Configuration

The system configuration allows a simple configuration of the device. This can be selected either directly locally on the device in a selection menu during startup or called up via a web browser on an external device that is connected to the device via Ethernet.

The clear menu structure makes it possible to quickly find the numerous setting options such as network settings, URL, display, FTP, IP tables, screensaver, web browser settings, CODESYS settings, passwords, diagnostics, etc.

Default IP addresses for panel access (factory setting):

Ethernet 1: 192.168.1.100 (Subnet: 255.255.255.0)

Ethernet 2: 192.168.1.101 (Subnet: 255.255.255.0)

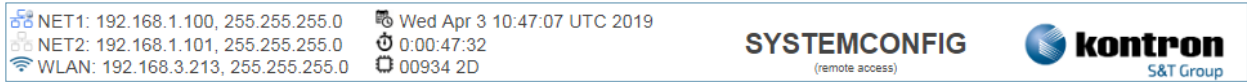
Default passwords (factory setting):

- ▶ User: root
- ▶ Password: root

2/ System configuration

2.1. Header

Figure 1: Header



The header contains the most important information.

Left side:

- ▶ Network addresses of Ethernet 1 (NET1), Ethernet 2 (NET2), WLAN and VPN. A green icon in front of it symbolizes an active network connection.

Center:

- ▶ Current system time
- ▶ Uptime
- ▶ Image version of the used firmware.

2.2. Network

The network address can be assigned dynamically (DHCP) or statically (Fixed-IP). It is unique and identifies the device in the network. The correct setting depends on the network in which the device is integrated.

Figure 2: Network

The screenshot shows the SYSTEMCONFIG web interface for network configuration. At the top, it displays the IP address 'NET1: 10.0.1.102 255.255.255.0', the date and time 'Wed Mar 18 09:09:10 UTC 2020', and system information '00:00:03:58' and '01021 0A'. The SYSTEMCONFIG logo and Kontron S&T Group logo are also visible.

The left sidebar contains a navigation menu with the following items: System, Network (selected), Display, Time Date, Disks, Fonts, Access SystemConfig, Access FTP Server, Firewall (iptables), OpenVPN, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, Package Manager, Security Manager, Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and Wiki/FAQ.

The main content area is titled 'Ethernet' and contains the following settings:

- Hostname: 40099086
- Default Gateway:
 - Gateway: 10.0.1.1
 - Using Device: eth0

Below the Ethernet settings is the 'LAN' section, which includes an 'Add' button and a configuration for the 'eth0' interface:

- eth0:
 - Check Internet Connection:
 - DHCP Enabled:
 - Address: 10.0.1.102
 - Netmask: 255.255.255.0
 - DNS Nameservers: 10.0.1.1

At the bottom of the LAN section is the 'WLAN' section, which includes a 'Mode' dropdown menu set to 'off' and 'Reload' and 'Apply' buttons.

Table 1: Network

Setting	Description	Default
Hostname	Name under which the device is recognized in the network.	4009986
Gateway	Gateway setting	192.168.1.254
Using Device	Assignment of the gateway setting to an interface.	Ethernet 1
Add	Assignment of additional IP addresses to an Ethernet interface.	
DHCP Enabled	Active: Device obtains the IP address from a DHCP server in the network.	Inactive

Setting	Description	Default
	Inactive: Fixed settings are used.	
Check Internet Connection	Checks access to the internet.	
Address	Fixed IP address	Ethernet 1: 192.168.1.100 Ethernet 2: 192.168.1.101
Netmask	Network Mask	255.255.255.0
DNS Nameserver	DNS nameserver setting	192.168.1.12 192.168.1.11
WLAN Mode	WLAN Mode for USB WLAN Adapter Access Point Client Off	Off
WLAN AccessPoint Address	Fixed IP address	
WLAN AccessPoint Netmask	Network Mask	
WLAN Access Point (hostapd.conf)	Local hostapd configuration file on the system („/etc/hostapd.conf“)	
WLAN Access Point DHCP server (dnsmasq.conf)	Local dnsmasq configuration file on the system („/etc/dnsmasq.conf“)	
WLAN Client DHCP Enabled	On: Device obtains the IP address from a DHCP server in the network. Off: Fixed settings are used.	Off
WLAN Client Address	Fixed IP address	
WLAN Client Netmask	Network Mask	
WLAN Client DNS nameservers	DNS nameserver setting	
WLAN Client SSID	SSID of the AccessPoint	
WLAN Client Password	Password of the AccessPoint	
Scan	Search WLAN Network AccessPoint	

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.3. Display

The display and display settings are made under this menu item.

Figure 3: Display

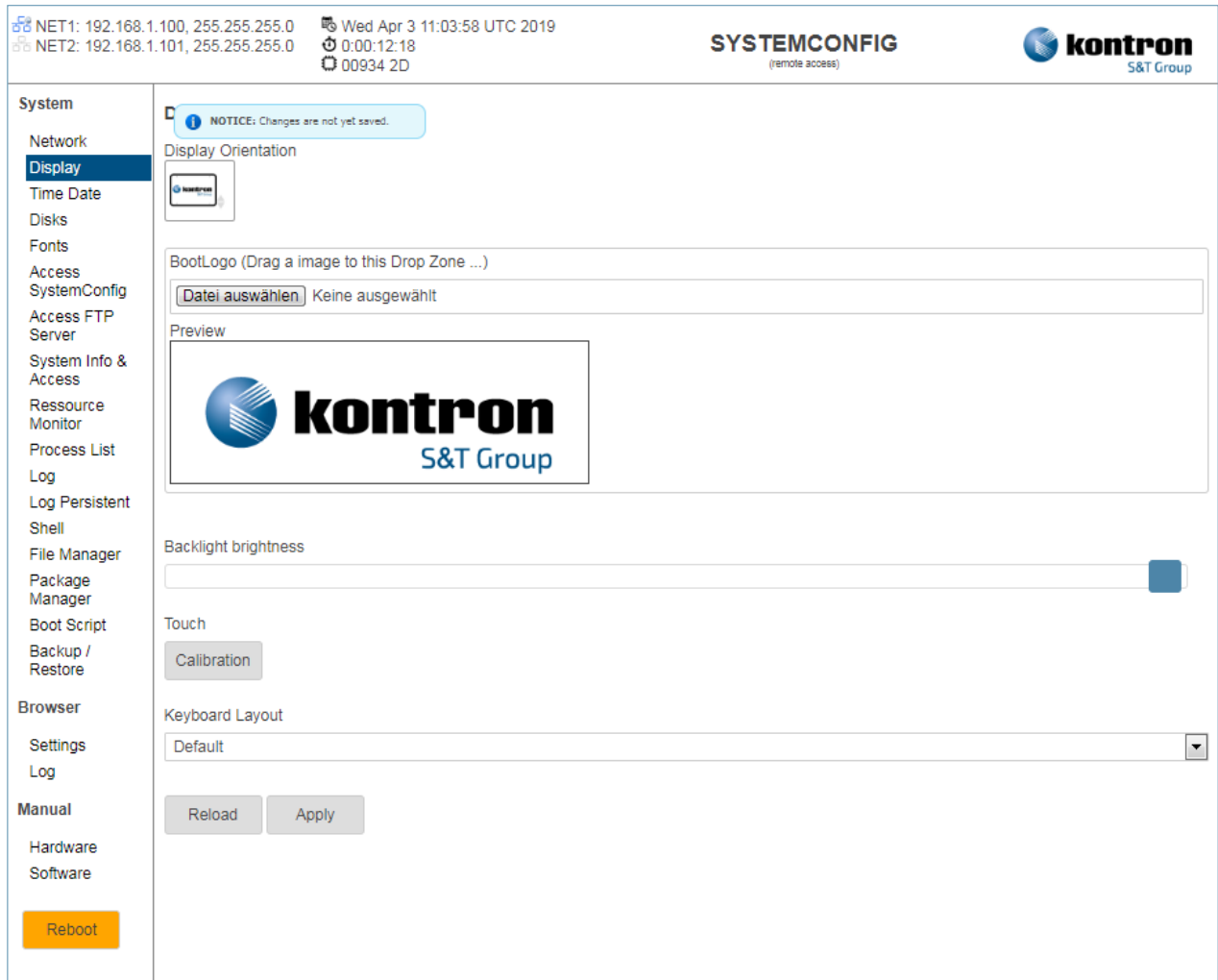


Table 2: Display

Setting	Description	Default
Display Orientation	Portrait or landscape display.	Landscape
BootLogo	Picture shown during the booting process.	Kontron logo
Backlight	The intensity of the backlight when the device is started.	Full backlight
Calibration	Perform touch calibration.	
Keyboard Layout	Layout of a connected USB keyboard	Default (US)

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.4. Time Date

Under this menu item the system time and the system date can be changed.

Figure 4: Time Date

NET1: 192.168.1.100, 255.255.255.0
 NET2: 192.168.1.101, 255.255.255.0
 Wed Apr 3 11:05:12 UTC 2019
 0:00:13:32
 00934 2D

SYSTEMCONFIG
 (remote access)

kontron
 S&T Group

System

Network
 Display
Time Date
 Disks
 Fonts
 Access
 SystemConfig
 Access FTP
 Server
 System Info &
 Access
 Ressource
 Monitor
 Process List
 Log
 Log Persistent
 Shell
 File Manager
 Package
 Manager
 Boot Script
 Backup /
 Restore

Browser

Settings
 Log

Manual

Hardware
 Software

Reboot

Time Date

System Time Date

Local Time (HH:MM:SS)
 11:05:13

Local Date (YYYY-MM-DD)
 2019-04-03

Timezone
 (UTC-00:00) UTC

NTP

NTP Script

```

1 # This is the most basic ntp configuration file
2 # The driftfile must remain in a place specific to this
3 # machine - it records the machine specific clock error
4 driftfile /var/lib/ntp/drift
5 # This should be a server that is close (in IP terms)
6 # to the machine.  Add other servers as required.
7 # Unless you un-comment the line below ntpd will sync
8 # only against the local system clock.
9 #
10 # server time.server.example.com
11 #
12 # Using local hardware clock as fallback
13 # Disable this when using ntpd -q -g -x as ntpdate or it will sync to itself
14 server 127.127.1.0
15 fudge 127.127.1.0 stratum 14
16 # Defining a default security setting
17 restrict default
18

```

Reload Apply

Table 3: Time Date

Setting	Description	Default
Time (HH:MM:SS)	System time (from RTC if available) in format (hours:minutes:seconds)	RTC (if available) or NTP
Date (YYYY-MM-DD)	System date (from RTC if available) in format (year-month-day)	RTC (if available) or NTP
Timezone	Time zone (with summer/winter time changeover)	UTC
NTP Script	Local NTP script on the system ("/etc/ntp.conf")	Default script

The settings can be saved with the Apply button and directly taken over in the system without rebooting (RTC if available) or reloaded with the Reload button.

2.5. Disks

The disc settings define the behavior of connected discs (e.g. USB stick).

Figure 5: Disks

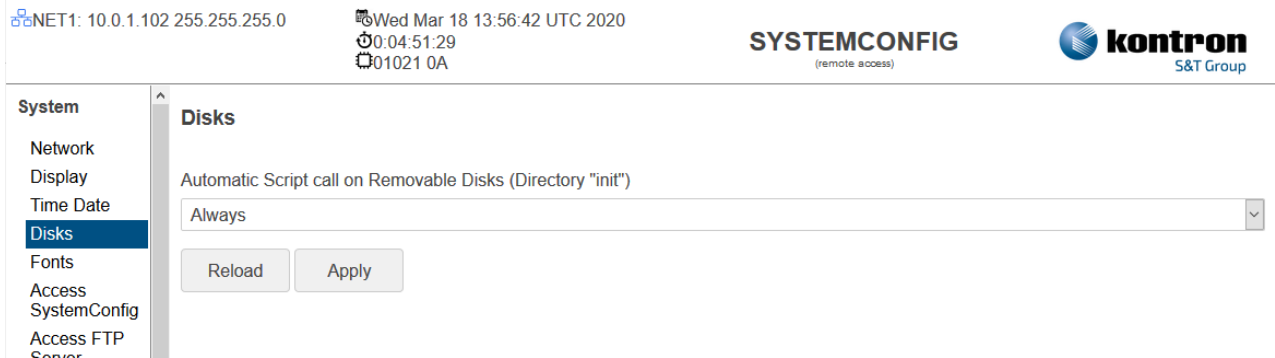


Table 4: Disks

Setting	Description	Default
Automatic Script call on Removable Disks (Directory "init")	<p>Disabled: The disc is automatically mounted in the /run/media/DISKNAME directory. Scripts are not executed</p> <p>Only On Boot: The disc is automatically mounted in the /run/media/DISKNAME directory and all scripts (file extension ".sh" and UNIX format) in the /init subdirectory of the disk are executed while booting the device</p> <p>Always: The disc is automatically mounted in the /run/media/DISKNAME directory and all scripts (file extension ".sh" and UNIX format) in the /init subdirectory of the disk are executed any time.</p>	Always

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.6. Fonts

All installed fonts are listed in the Fonts category. Further fonts can be installed here.

Figure 6: Fonts

The screenshot shows the SYSTEMCONFIG web interface. At the top, there is a status bar with network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), system time (Wed Apr 3 11:07:32 UTC 2019), and a session ID (00934 2D). The SYSTEMCONFIG logo and Kontron S&T Group logo are also present.

The left sidebar contains a navigation menu with the following items: System, Network, Display, Time Date, Disks, **Fonts**, Access, SystemConfig, Access FTP, Server, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, Package Manager, Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and a Reboot button.

The main content area is titled 'Fonts' and has an 'Install Font' section. It features a drop zone for installing new fonts, a search bar, and a table of installed fonts. The table has columns for FILE, NAME, STYLE, and DELETE.

FILE	NAME	STYLE	DELETE
DejaVuSans-Bold.ttf	DejaVu Sans	Bold	Delete
DejaVuSans-BoldOblique.ttf	DejaVu Sans	Bold Oblique	Delete
DejaVuSans-ExtraLight.ttf	DejaVu Sans,DejaVu Sans Light	ExtraLight	Delete
DejaVuSans-Oblique.ttf	DejaVu Sans	Oblique	Delete
DejaVuSans.ttf	DejaVu Sans	Book	Delete
DejaVuSansCondensed-Bold.ttf	DejaVu Sans,DejaVu Sans Condensed	Condensed Bold,Bold	Delete
DejaVuSansCondensed-BoldOblique.ttf	DejaVu Sans,DejaVu Sans Condensed	Condensed Bold Oblique,Bold Oblique	Delete

2.7. Access SystemConfig

Here you can set the access and system settings for the system configuration.

Figure 7: Access SystemConfig

Table 5: Access SystemConfig

Setting	Description	Default
User	User name	root
Password	User password	root
Port	Port	80
Settings Extended Shell Server Enable	Advanced SystemConfiguration's Shell using tttyd Server	Enabled
Settings Extended Shell Server Port	Port of the tttyd server for the extended SystemConfig shell.	7681
Settings Backup/Restore FTP Server	URL for FTP server of the backup/restore function.	Kontron Electronics AG FTP Server
Settings Firmware Show all files	Off: Only the latest image version is listed for the backup/restore function.	Off

Setting	Description	Default
	On: All available files are listed for the backup/restore function.	

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.8. Access FTP Server

With the FTP server on the device any files (e.g. fonts) can be uploaded and downloaded to the device.

Figure 8: Access FTP Server



Table 6: Access FTP Server

Setting	Description	Default
FTP Enabled	FTP server enabled/disabled.	enabled
User	FTP user name	userftp
Password	FTP user password	userftp
Port	FTP port	21
Path	FTP root directory	/

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.9. Printer

A new browser window for the printer configuration is opened under the category Printer.

Figure 9: Printer

The screenshot shows the CUPS 2.0.2 web interface. At the top, there is a navigation bar with links: CUPS.org, Home, Verwaltung, Klassen, Hilfe, Aufträge, and Drucker. Below this, the title 'CUPS 2.0.2' is displayed, followed by the text 'CUPS basiert auf Standards, Open Source Drucksystem entwickelt durch Apple Inc. für OS X* und andere UNIX*-artige Betriebssysteme.' The main content area is divided into three columns: 'CUPS für Benutzer', 'CUPS für Administratoren', and 'CUPS für Entwickler'. On the left side, there is a 'System' menu with items: Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP, Server, Printer (opens new tab), and System Info & Access. The 'Printer (opens new tab)' item is highlighted with a blue background, and a large blue arrow points from it towards the right. At the bottom of the page, there is a footer with the text: 'CUPS und das CUPS Logo sind Warenzeichen der Apple Inc. Copyright © 2007-2015 Apple Inc. Alle Rechte vorbehalten.'

2.10. Firewall (iptables)

The firewall settings are displayed here.

Figure 10: Firewall (iptables)

NET1: 10.0.1.102 255.255.255.0 Wed Mar 18 14:17:54 UTC 2020
0:05:12.41
01021 0A

SYSTEMCONFIG
(remote access)

kontron
S&T Group

System

- Network
- Display
- Time Date
- Disks
- Fonts
- Access
- SystemConfig
- Access FTP Server
- Firewall (iptables)**
- OpenVPN
- System Info & Access
- Ressource Monitor
- Process List
- Log
- Log Persistent

Firewall (iptables)

Enable Routing

Rules

```

1 iptables -P INPUT ACCEPT
2 iptables -P FORWARD ACCEPT
3 iptables -P OUTPUT ACCEPT
4

```

Reload Apply

Table 7: Firewall (iptables)

Setting	Description	Default
Enable Routing	Firewall routing enabled/disabled.	disabled
Rules table	This table contain sets of rules, called chains, that will filter incoming and outgoing data packets.	All three filters IPUT, FORWARD and OUTPUT will allow the packet to pass through (ACCEPT)

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.11. OpenVPN

The OpenVPN settings are displayed here.

Figure 11: OpenVPN

System

Network

Display

Time Date

Disks

Fonts

Access

SystemConfig

Access FTP Server

Firewall (iptables)

OpenVPN

System Info & Access

Ressource Monitor

Process List

Log

Log Persistent

Shell

File Manager

Package Manager

! Security Manager

Boot Script

Backup / Restore

NET1: 10.0.1.102 255.255.255.0

Wed Mar 18 14:44:19 UTC 2020

0:05:39:06

01021 0A

SYSTEMCONFIG
(remote access)

kontron
S&T Group

OpenVPN

Upload external Certificates via FtpServer or FileManager

Enabled

openvpn1.conf

1

Status

Log

Reload Apply

Table 8: OpenVPN

Setting	Description	Default
Enable	Enable OpenVPN .	Off
openvpn1.conf	OpenVPN configuration file entries	empty
Status	OpenVPN status information	empty
Log	OpenVPN log information	empty

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.12. System Info & Access

The system version information is displayed here. In addition, the system access for the Linux operating system can be configured here.

Figure 12: System Info & Access

The screenshot displays the SYSTEMCONFIG web interface. At the top, it shows the IP address (NET1: 10.0.1.102), the date and time (Wed Mar 18 14:50:55 UTC 2020), and the system version (0:05:45:42, 01021 0A). The SYSTEMCONFIG logo and Kontron S&T Group logo are also present.

The left sidebar contains a navigation menu with the following items: System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, Firewall (iptables), OpenVPN, **System Info & Access** (highlighted), Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, Package Manager, Security Manager, Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, Wiki/FAQ, Linux, Browser, and a Reboot button.

The main content area is titled "System" and contains several sections:

- System Info:**
 - OS: Linux
 - Kernel-Version: 4.14.172-kontron+g78d697fc93f9
 - Kernel-Release: #11 SMP Wed Mar 18 07:33:12 UTC 2020
- Bootloader:**
 - Version: U-Boot 2017.03_00935_1H+gb7f238275a (Sep 25 2019 - 13:58:23 +0000)
- CPU:**
 - Processor: Freescale i.MX6 Quad/DualLite (Device Tree)
 - Byte Order: Little Endian
 - CPU(s): 2
 - CPU max MHz: 792.0000
 - CPU min MHz: 396.0000
- Memory:**
 - Total Memory: 1017788 kB
 - Free Memory: 550704 kB
 - Available Memory: 710304 kB
- Device Type:**
 - DTB File: [Dropdown menu]
 - Apply button
- System Password:**
 - User: root
 - Password: [Text input field]
 - Apply button
- System Diagnose:**
 - Execute and Save button

Table 9: System Info & Access

Setting	Description	Default
OS Info	Operating System Information	
Bootloader Info	Bootloader Information	
CPU Info	Processor Information	
Memory Info	Memory Information	
DeviceType	Selectable device type	
System Password User	Linux System User Name ("root")	root
System Password Password	Linux System User Password	root
System Diagnose	Performs a system diagnosis and makes it available for download	

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.13. Resources Monitor

The current states of the hardware resources are displayed here.

Figure 13: Resources Monitor

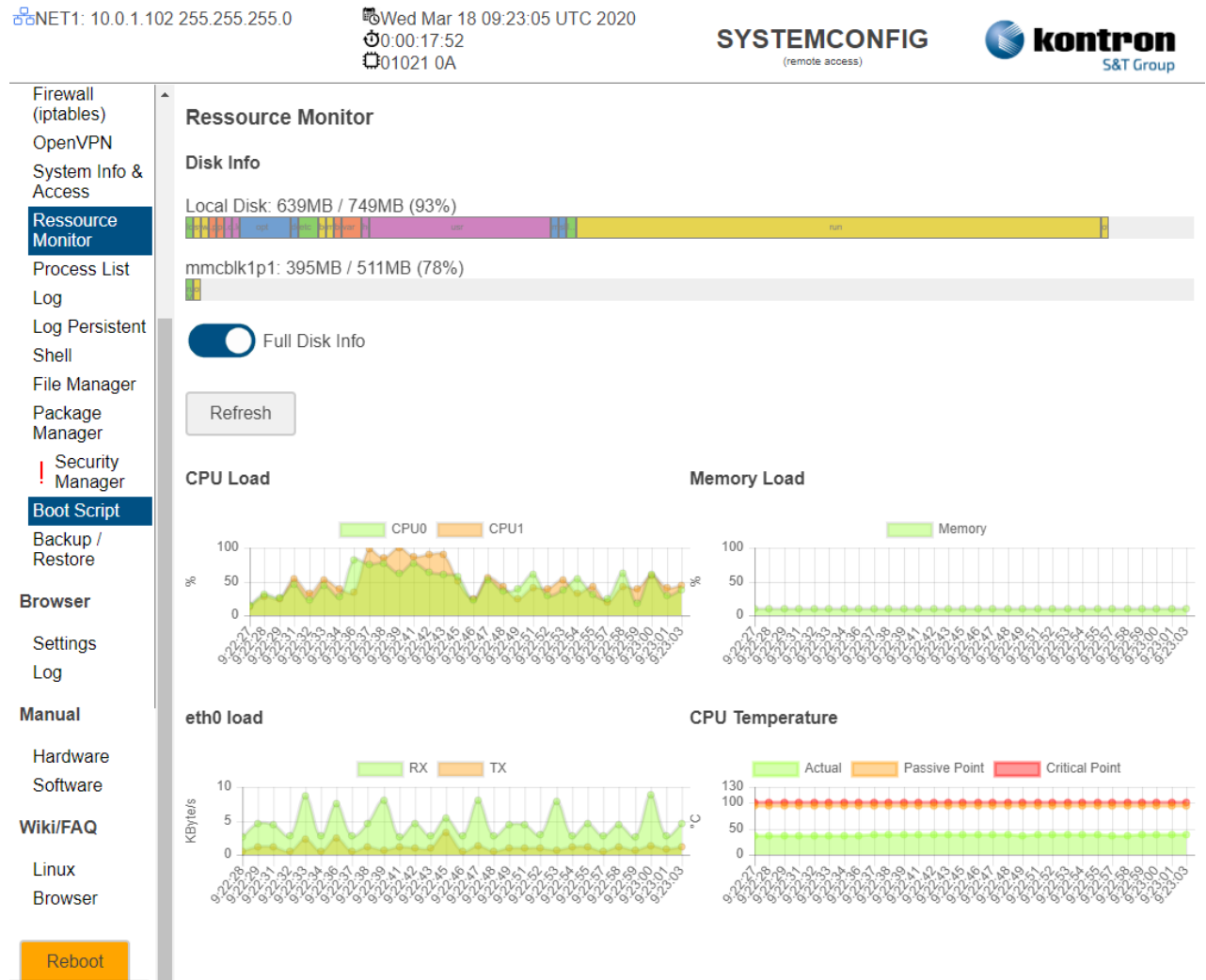


Table 10: Resources Monitor

Setting	Description
Disk Info	Information on all discs in the system
Full Disk Info	Extended information on all discs in the system
Refresh	Updating the Disk Info Display
CPU Load	Processor load
Memory Load	Memory Utilization
eth0 Load	Ethernet 1 Utilization
eth1 Load	Ethernet 2 Utilization
CPU Temperature	CPU temperature curve

2.14. Process List

The detailed information about the running processes is displayed here.

Figure 14: Process List

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
1	ftpuser	20	0	1724	588	532	S	0.0	0.1	0:03.15	init init
2	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.01	kthreadd kthreadd
4	ftpuser	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/0:+ kworker/0:+
6	ftpuser	0	-20	0	0	0	I	0.0	0.0	0:00.00	mm_percpu_+ mm_percpu_+
7	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.59	ksoftirqd/0 ksoftirqd/0
8	ftpuser	20	0	0	0	0	I	0.0	0.0	0:01.77	rcu_sched rcu_sched
9	ftpuser	20	0	0	0	0	I	0.0	0.0	0:00.00	rcu_bh rcu_bh
10	ftpuser	rt	0	0	0	0	S	0.0	0.0	0:00.11	migration/0 migration/0
11	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/0 cpuhp/0
12	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.00	cpuhp/1 cpuhp/1
13	ftpuser	rt	0	0	0	0	S	0.0	0.0	0:00.10	migration/1 migration/1
14	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.36	ksoftirqd/1 ksoftirqd/1
16	ftpuser	0	-20	0	0	0	I	0.0	0.0	0:00.00	kworker/1:+ kworker/1:+
17	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.01	kdevtmpfs kdevtmpfs
19	ftpuser	20	0	0	0	0	S	0.0	0.0	0:00.00	oom_reaper oom_reaper

Table 11: Process List

Setting	Description
Mem:	Current memory utilization
CPU	Current CPU load
Table	Process list: PID: Process-ID USER: User who started the process. PR: Priority scheduling NI: Nice VIRT: VIRT: virtual - all code, data and shared libraries plus pages in swap and pages that are planned but not yet used RES: reserved - the non-"swap" ed physical RAM reserved

Setting	Description
	<p>SHR: shared - memory (also swap) that could be shared with other processes.</p> <p>S: uninterruptible sleep, R = running, S = sleeping, T = with "trace" troubleshooting or stopped, Z = zombie)</p> <p>%CPU: Percentage of elapsed CPU time used by the process.</p> <p>%MEM: Memory - used part of available physical memory</p> <p>TIME+: CPU time used by the process (the + stands for hundredths of a second)</p> <p>COMMAND: Process Name with Arguments</p>

2.15. Log

The current log information is displayed here.

Figure 15: Log

NET1: 192.168.1.100, 255.255.255.0
NET2: 192.168.1.101, 255.255.255.0
Wed Apr 3 11:14:28 UTC 2019
0:00:22:48
00934 2D

SYSTEMCONFIG (remote access) **kontron** S&T Group

Message Log List

Reload

Search:

TIMESTAMP	USER	MESSAGE
Apr 3 10:51:55	40099086	syslog.info syslogd started: BusyBox v1.24.1
Apr 3 10:51:55	40099086	daemon.info ntpd[622]: Listen and drop on 0 v6wildcard [:]:123
Apr 3 10:51:55	40099086	daemon.info ntpd[622]: Listen and drop on 1 v4wildcard 0.0.0.0:123
Apr 3 10:51:55	40099086	user.notice kernel: klogd started: BusyBox v1.24.1 (2019-02-13 15:20:25 UTC)
Apr 3 10:51:55	40099086	user.info kernel: Booting Linux on physical CPU 0x0
Apr 3 10:51:55	40099086	user.notice kernel: Linux version 4.14.104-kontron+g30921fc (oe-user@oe-host) (gcc version 7.3.0 (GCC)) #11 SMP Tue Mar 26 10:09:05 UTC 2019
Apr 3 10:51:55	40099086	user.info kernel: CPU: ARMv7 Processor [412fc09a] revision 10 (ARMv7), cr=10c5387d
Apr 3 10:51:55	40099086	user.info kernel: CPU: PIPT / VIPT nonaliasing data cache, VIPT aliasing instruction cache
Apr 3 10:51:55	40099086	user.info kernel: OF: fdt: Machine model: 11368 Board
Apr 3 10:51:55	40099086	user.info kernel: Memory policy: Data cache writealloc
Apr 3 10:51:55	40099086	user.info kernel: cma: Reserved 64 MiB at 0x4c000000
Apr 3 10:51:55	40099086	user.debug kernel: On node 0 totalpages: 262144
Apr 3 10:51:55	40099086	user.debug kernel: free_area_init_node: node 0, pgdat c0f6f800, node_mem_map ef7f8000
Apr 3 10:51:55	40099086	user.debug kernel: Normal zone: 1536 pages used for memmap
Apr 3 10:51:55	40099086	user.debug kernel: Normal zone: 0 pages reserved
Apr 3 10:51:55	40099086	user.debug kernel: Normal zone: 196608 pages, LIFO batch:31
Apr 3 10:51:55	40099086	user.debug kernel: HighMem zone: 65536 pages, LIFO batch:15
Apr 3 10:51:55	40099086	user.info kernel: percpu: Embedded 16 pages/cpu @ef7b3000 s36328 r8192 d21016 u65536
Apr 3 10:51:55	40099086	user.debug kernel: pcpu-alloc: s36328 r8192 d21016 u65536 alloc=16*4096
Apr 3 10:51:55	40099086	user.debug kernel: pcpu-alloc: [0] 0 [0] 1

2.16. Log Persistent

This menu item is used to configure the settings for "Persistent Logging" to a disc.

Figure 16: Log Persistent

The screenshot shows the SYSTEMCONFIG web interface. At the top, there is a status bar with network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), the date and time (Wed Apr 3 11:15:57 UTC 2019), and system information (0:00:24:17, 00934 2D). The SYSTEMCONFIG logo and Kontron S&T Group logo are also present.

The left sidebar contains a navigation menu with the following items: System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, System Info & Access, Ressource Monitor, Process List, Log, **Log Persistent**, Shell, File Manager, Package Manager, Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and a Reboot button.

The main configuration area for 'Log Persistent' includes:

- A notice: "NOTICE: Changes are not yet saved."
- An 'Enable' toggle switch, which is currently turned on.
- A 'Log Cycle' input field containing '1m'.
- A 'Destination Path' input field containing '/run/media/sda/'.
- An 'Additional Script' text area.
- A 'Files' section with a 'Delete Log-Files' button.
- 'Reload' and 'Apply' buttons.

Table 12: Log Persistent

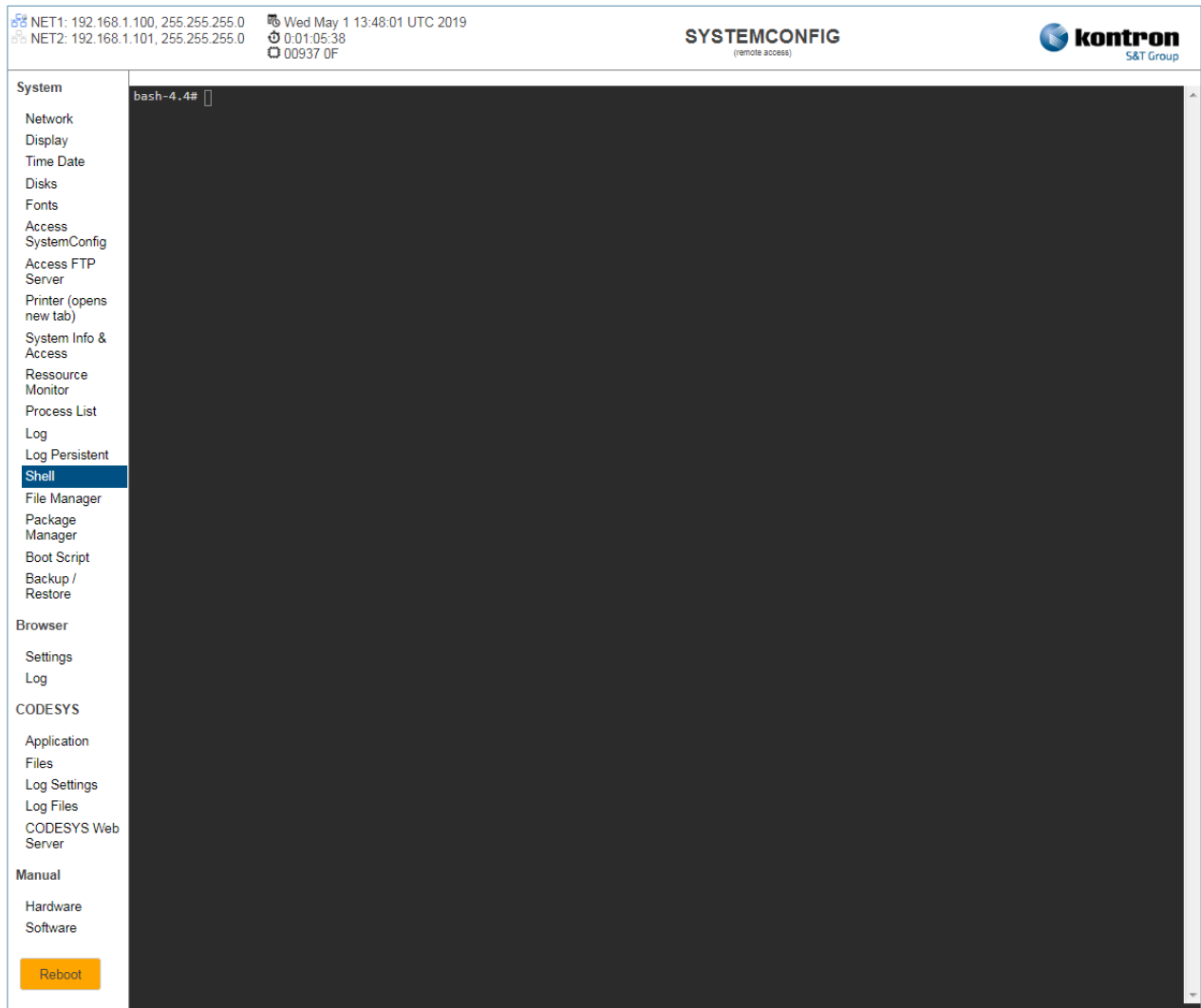
Setting	Description	Default
Enable	Activate/deactivate persistent logging	Off
Log Cycle	Cycle Time in which the log files are stored and the "Additional Script" is called.	1 Minute
Destination Path	Target directory of the log files. The log files are stored zipped with the name of the boot date.	/run/media/sda/ (USB Stick)
Additional Script	Linux script content which is called cyclically.	
Files	Available log files in the target directory are listed and can be downloaded.	
Delete Log-Files	Delete available log files in target directory.	

The settings can be saved with the Apply button and directly applied to the system without rebooting or reloaded with the Reload button.

2.17. Shell

This menu item provides a simple command Console. Commands, which are needed for a constant communication, are not supported (e.g. nano, ps, etc.). If the return of the command is not available within 10s, the command will be aborted.

Figure 17: Shell



2.18. File Manager

A simple File Manager is available under this menu item.

The following functions are available (Download, Upload, Create Directory, Copy, Delete, Search, File Editor, File Preview).

Figure 18: File Manager

The screenshot shows the SYSTEMCONFIG File Manager interface. At the top, it displays network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), the date and time (Wed Apr 3 11:19:13 UTC 2019), and the session ID (00934 2D). The SYSTEMCONFIG logo and Kontron S&T Group logo are also present.

The interface includes a sidebar menu with options like System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent Shell, File Manager (highlighted), Package Manager, Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and a Reboot button.

The main content area shows a 'Home' button and four action buttons: Search, Create Dir, Create File, and Upload. Below these is a table listing files and directories:

Name	Size	Modified	Permissions	Actions
bin	--	Apr 3, 2019 8:12 AM	ftpuser: read+write+exec	delete copy
boot	--	Apr 3, 2019 8:11 AM	ftpuser: read+write+exec	delete copy
.cache	--	Apr 3, 2019 9:28 AM	ftpuser: read+write+exec	delete copy
dev	--	Apr 3, 2019 12:51 PM	ftpuser: read+write+exec	delete copy
etc	--	Apr 3, 2019 12:51 PM	ftpuser: read+write+exec	delete copy
home	--	Apr 3, 2019 8:13 AM	ftpuser: read+write+exec	delete copy
lib	--	Mar 28, 2019 11:10 AM	ftpuser: read+write+exec	delete copy
.local	--	Apr 3, 2019 9:29 AM	ftpuser: read+write+exec	delete copy
media	--	Mar 22, 2019 2:08 PM	ftpuser: read+write+exec	delete copy
mnt	--	Apr 3, 2019 11:58 AM	ftpuser: read+write+exec	delete copy
opt	--	Apr 3, 2019 8:11 AM	ftpuser: read+write+exec	delete copy
.pki	--	Apr 3, 2019 11:59 AM	ftpuser: read+write+exec	delete copy
proc	--	Jan 1, 1970 1:00 AM	ftpuser: read+write+exec	delete copy
run	--	Apr 3, 2019 12:51 PM	ftpuser: read+write+exec	delete copy
sbin	--	Apr 3, 2019 8:12 AM	ftpuser: read+write+exec	delete copy
sys	--	Apr 3, 2019 12:51 PM	ftpuser: read+write+exec	delete copy
tmp	--	Apr 3, 2019 1:15 PM	ftpuser: read+write+exec	delete copy
usr	--	Feb 13, 2019 4:38 PM	ftpuser: read+write+exec	delete copy
var	--	Mar 21, 2019 8:42 AM	ftpuser: read+write+exec	delete copy
www	--	Feb 13, 2019 4:12 PM	ftpuser: read+write+exec	delete copy

2.19. Package Manager

A simple Package Manager is available under this menu item. Installed and available Linux packages are listed (active Internet connection required), which can be installed or uninstalled.

Figure 19: Package Manager

The screenshot displays the SYSTEMCONFIG web interface. At the top, it shows network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), the date and time (Wed Apr 3 11:23:21 UTC 2019), and system status (0:00:31:41, 00934 2D). The SYSTEMCONFIG logo and Kontron S&T Group logo are also present.

The left sidebar menu includes the following items: System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, **Package Manager** (highlighted), Boot Script, Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and a Reboot button.

The main content area is titled 'Package Manager' and contains two sections: 'Installed Packages' and 'Available Packages', each with a '+' icon to its right. A 'Reload' button is located below these sections.

2.20. Security Manager

This menu item is used to check the security of the active system.

Figure 20: Security Manager

NET1: 10.0.1.101, 255.255.255.0 Fri Oct 4 10:21:54 UTC 2019
0:00:11:19
00935 1H

SYSTEMCONFIG
(remote access)

kontron
S&T Group

System

- Network
- Display
- Time Date
- Disks
- Fonts
- Access
- SystemConfig
- Access FTP
- Server
- Firewall (iptables)
- OpenVPN
- System Info & Access
- Ressource Monitor
- Process List
- Log
- Log Persistent
- Shell
- File Manager
- Package Manager
- Security Manager**
- Boot Script
- Backup / Restore

Browser

Security Manager

Search:

State	Module	Info
critical	System	• Default System Password is set.
critical	WebConfig	• Default Password is set.
critical	FtpServer	• Default Password is set.
critical	QtWebbrowser	• SystemConfig Auto Login is enabled.
warning	Firewall	• No Firewall Rules set.
warning	Disks	• Automatic Script Call is enabled.

Showing 1 to 6 of 6 entries

Diagnose

Tools

List Open Ports List Enabled Users

Table 13: Security Manager

Setting	Description	Default
Table	Shows Module Security States (critical, warning, okay) with additional information.	
Diagnose	Starts the Security Diagnose.	
List Open Ports	Shows a list with all opened Ports on the active System.	
List Enabled Users	Shows a list with all active system users	root, userftp

2.21. Boot Script

Under this menu item, a shell script is automatically executed when booting from the OS if it is activated. The content of the shell script is created in the Script Editor.

Figure 21: Boot Script

The screenshot displays the SYSTEMCONFIG web interface. At the top, it shows network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), the date and time (Wed Apr 3 11:25:39 UTC 2019), and system status (0:00:33:59, 00934 2D). The SYSTEMCONFIG logo and Kontron S&T Group logo are also visible.

The main content area is titled "Boot Script" and features a toggle switch labeled "Enable" which is currently turned off. Below the toggle is a large text area labeled "Script" with a line number "1" at the top left. At the bottom of the main area are two buttons: "Reload" and "Apply".

A sidebar on the left contains a menu with the following items: System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, Package Manager, **Boot Script** (highlighted), Backup / Restore, Browser, Settings, Log, Manual, Hardware, Software, and a "Reboot" button at the bottom.

2.22. Backup/Restore

Under this menu item, you can back up or restore the settings of the system and the application or the entire system.

Figure 22: Backup/Restore

The screenshot shows the SYSTEMCONFIG web interface. At the top, there is a header with network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), a date and time (Wed Apr 3 11:29:11 UTC 2019), and a clock (0:00:37:31). The SYSTEMCONFIG logo is in the top right, along with the Kontron S&T Group logo. The left sidebar contains a menu with items like System, Network, Display, Time Date, Disks, Fonts, Access, SystemConfig, Access FTP Server, System Info & Access, Ressource Monitor, Process List, Log, Log Persistent, Shell, File Manager, Package Manager, Boot Script, Backup / Restore (highlighted), Browser, Settings, Log, Manual, Hardware, Software, and a Reboot button. The main content area is titled 'Backup / Restore' and has three sections: 'Export Personal Data and Configuration' with five toggle switches (all turned on) for 'Export Browser Settings', 'Export Fonts', 'Export System Settings (LAN, Display, Disk, VPN, etc)', 'Export SRAM/Retain Data', and 'Export System Users and Passwords (System, FTP, etc.)'. Below these is a 'Destination Drive Export' dropdown menu and two buttons: 'Export Config to Disk' and 'Export Config Download'. The second section is 'Backup Device (Internet Connection necessary)' with a 'Backup Device (Reboot is necessary)' button and a 'Download Backup Tool (009441A) to Client PC' button. The third section is 'Image Update (Internet Connection necessary)' with an 'Update Image (Reboot is necessary)' button and a 'Download Image (009342D) to Client PC' button.

With the function "Export personal data and configuration" the application and/or system settings are copied to an external data carrier (e.g. USB stick) or downloaded to a connected browser client. A script is also created and saved on the data carrier. This script is executed automatically when the data carrier is connected to another device and the settings are imported into that device.

Table 14: Export Personal Data and Configuration

Setting	Description	Default
Export Browser Settings	Export the browser settings to an external disc.	On
Export CODESYS Settings	Export the CODESYS settings and applications to an external disc.	On
Export Fonts	Export the installed fonts to an external disc.	On

Setting	Description	Default
Export System Settings	Export the system settings (LAN, display, disk...) to an external disk.	On
Export SRAM/Retain Data	Export SRAM/Retain data to an external disc.	On
Export System Users and Passwords	Export system users to an external disk.	On
Destination Drive Export	Target disc for export: A selection will be specified as soon as an external disc is available (e.g. USB stick).	

With the **"Backup Device"** function, the entire system is stored on a USB stick or SD card. To complete this procedure, the device must be restarted.

The created backup disk can be used for the recovery of other devices.

The stored data on the external disk can be archived with the Win32 Disk Imager Tool for Windows.

An Internet connection is required for this function.

If no Internet connection is available, a guide for a manual operation will be displayed.

Table 15: Backup Device

Setting	Description	Default
Backup Device	Start the Backup Wizard.	
Download Backup Tool	Download the backup firmware for possible archiving.	

The **"Image Update"** function restores the entire system. In addition a USB stick or SD card is used. In order to complete this process, the device must be restarted.

An Internet connection is required for this function if no FTP server has been set in the local network under the menu item "Access System Config".

If no Internet connection is available, instructions for a manual procedure are displayed.

Table 16: Image Update

Setting	Description	Default
Server Images	List of all files on the server. Is only displayed if "Show all files" is set under menu item "Access System Config".	Off
Update Image	Start the Update Wizard.	
Download Image	Download the firmware for possible archiving.	

See also chapter 4/ System-Backup/-Restore (Live System) for advanced backup/restore functions.

2.23. Browser Settings

Under this menu item, various properties of the HTML-5 Chromium browser integrated in the QIWI Toolkit can be configured, such as the start URL, the appearance and behavior of the browser as well as keyboard and language settings.

Figure 23: Browser Settings

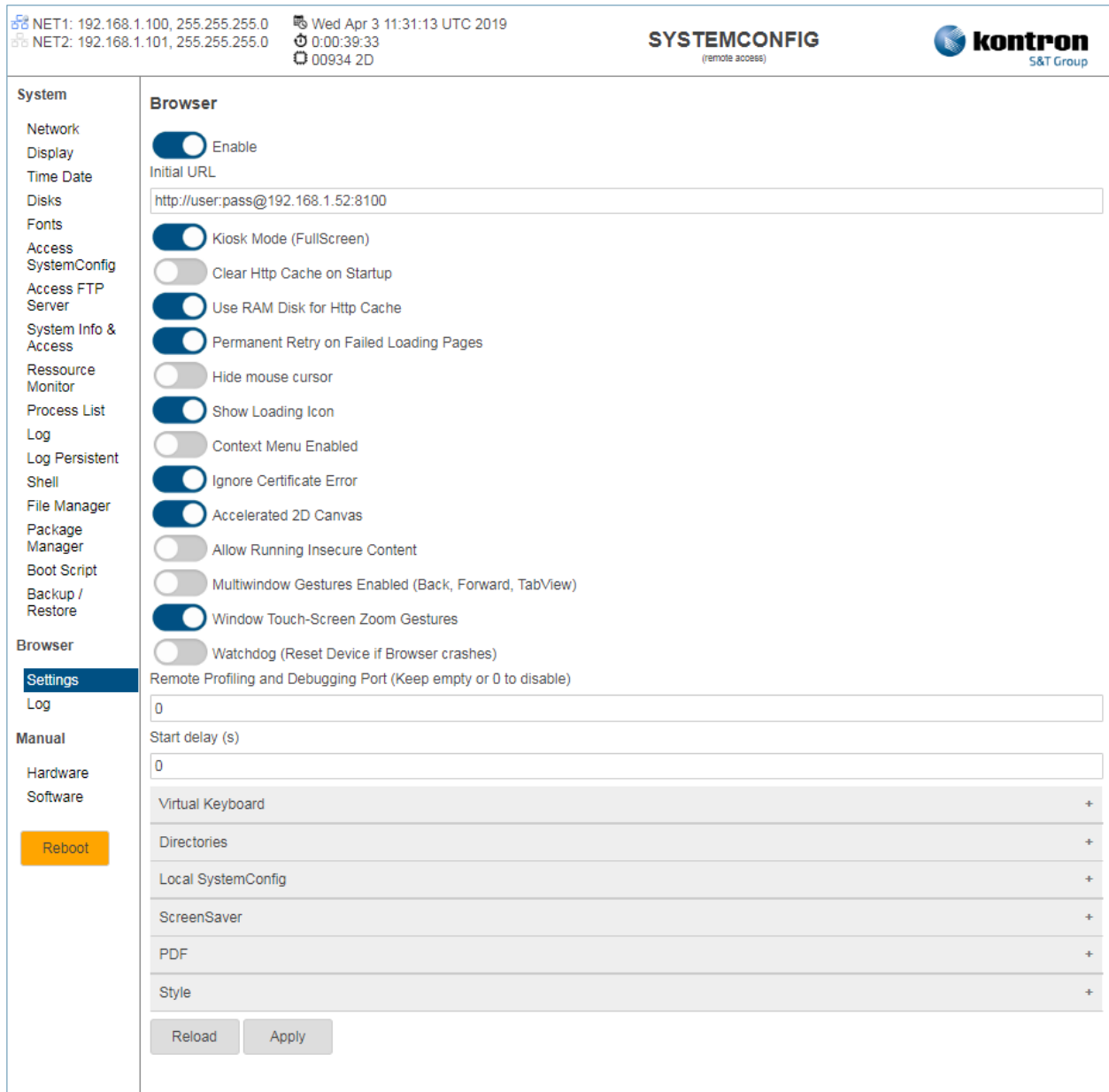


Table 17: General Browser Settings

Setting	Description	Default
Enable	Start browser when booting.	
Initial URL	Start URL which is loaded automatically after booting.	
Kiosk Mode	Active: Browser is displayed Full Screen: Inactive: Navigation list and menus are displayed.	Off

Setting	Description	Default
Clear http Cache on Startup	On: http cache is cleared when booting. Off: http cache is retained.	On
Use RAM Disk for http Cache	On: http cache is located in a RAM disk, so web pages can be loaded faster. Off: http cache is located on the flash.	On
Permanent Retry on Failed Loading Pages	On: If the web page is not accessible, the system automatically tries to reload it after 4 seconds. Off: No repeated loading of the website. This function is only available in KioskMode.	Off
Hide Mouse Cursor	On: Permanent hiding of the mouse pointer. Off: Mouse pointer can be displayed e.g. on a USB mouse.	Off
Show Loading Icon	On: Load icon (e.g. hourglass) is displayed while the browser is loading.	On
Context Menu Enabled	On: Context Menu switched on Off: Context Menu switched off.	Off
Ignore Certificate Error	On: No warning for certificate errors. Off: A warning is issued for certificate errors and must be accepted or ignored.	On
Accelerated 2D Canvas	On: GPU support enabled for HTML5 canvas graphics. Off: GPU support disabled for HTML5 canvas graphics. If graphics are not displayed correctly in the browser, this function must be deactivated. If the CODESYS WebVisu is displayed, this option must be deactivated.	On
Allow Running Insecure Content	On: HTTPS pages allow the execution of JavaScript, CSS, plugins or web sockets from an http URL. Off: For HTTPS pages, the execution of JavaScript, CSS, plugins, or Web sockets is blocked by an http URL.	Off
Multiwindow Gestures Enabled	Additional navigation gestures: Back: Move inwards from the left edge of the screen. Forward: Move inwards from the right edge of the screen. Overview of all open windows: Move inwards from the bottom of the screen. Disabled: MultiWindow gestures deactivated. Back,Forward,TabView: All MultiWindow gestures activated. Back/Forward: Back and Forward MultiWindow gestures activated. TabView: TabView MultiWindow gestures activated.	Disabled
Window Touch-Screen Zoom Features	On: Zooming of the browser activated by gesture. Off: Zooming of the browser via gesture deactivated.	On
Watchdog	On: Browser is monitored. In the event of a crash, the device is restarted. Off: Browser monitoring deactivated.	Off
Remote Profiling and Debugging Port	Remote debugging allows you to debug and analyze the loaded Web page on the device online via a	0

Setting	Description	Default
	computer or mobile device that uses Chrome as its browser. For this the Chrome Browser is used as remote peer with the URL <IP of the device>:<Debugging Port>	
Start delay	Start delay of WebBrowser when booting in seconds	0

Table 18: Virtual Keyboard Settings

Setting	Description	Default
Enabled	Active: Virtual keyboard is displayed at input fields. Inactive: Virtual keyboard deactivated.	Active
Language	Start language setting for the virtual keyboard.	English (Great Britain)
Selectable Language	Selectable languages in the virtual keyboard.	
Style	Virtual Keyboard Style (default, classic)	default
Locale Save By User Enabled	Active: If the user changes the language setting of the Virtual Keyboard, it will be saved as the new start language. Inactive: User changes to the virtual keyboard are not saved.	Off
VirtualKeyboard Width in Pixel	Size of the virtual keyboard, based on the set width. 0=Total width of the screen.	0

Table 19: Directories Settings

Setting	Description	Default
List Removable Disks (Download)	Active: All mounted and removable disk are as a list available. Inactive: Fix Download Directory entry will be used	Off
Fix Download Directory	Directory where a download of a file should be stored (e.g. USB stick: /run/media/sda). If this value is empty, the function is deactivated.	
List Removable Disks (Upload)	Active: All mounted and removable disk are as a list available. Inactive: Fix Upload Directory entry will be used	Off
Fix Upload Directory	Upload directory for files (e.g. USB stick: /run/media/sda). If this value is empty, the function is deactivated.	

Table 20: Local SystemConfig Settings

Setting	Description	Default
Window Delay	Time how long the system configuration is shown on the local device display at startup. If this value is 0, the function is deactivated.	10
AutoLogin	Active: Automatic logon to the system configuration server. (logon for external access) Inactive: User must enter the user password for the system configuration.	

Setting	Description	Default
User	User name for system configuration login.	root
Password	User Password for system configuration login.	root

Table 21: ScreenSaver Settings



Setting	Description	Default
Delay	ScreenSaver will be displayed after this time without user interaction. If this value is 0, the function is deactivated.	0
Reduces Backlight Brightness	If ScreenSaver is active, the backlight is dimmed. Value in percent.	0
ScreenSaver Type	Image: ScreenSaver represents a static image. HTML: ScreenSaver displays an HTML page.	
Logo	Image which is displayed at ScreenSaver.	
HTML Logo	HTML page which is displayed at ScreenSaver.	

Table 22: PDF Settings

Setting	Description	Default
Viewer	OpenInNewWindow: PDF is displayed in a new browser window. Download: PDF will be downloaded as a file.	OpenInNewWindow

Table 23: Style Settings

Setting	Description	Default
AppLogoText	Background text in browser.	Qt WebBrowser
AppLogo	Background image in browser.	

2.24. Browser Log

Under this menu item the browser log information of the QIWI Toolkit can be viewed.

Figure 24: Browser-Log

The screenshot displays the SYSTEMCONFIG web interface. At the top, it shows network information: NET1: 192.168.1.100, 255.255.255.0 and NET2: 192.168.1.101, 255.255.255.0. The date and time are Wed Apr 3 11:36:11 UTC 2019, and the session duration is 0:00:44:31. The system uptime is 00934 2D. The SYSTEMCONFIG logo (remote access) and the Kontron S&T Group logo are also visible.

The left sidebar contains a menu with the following items:

- System
 - Network
 - Display
 - Time Date
 - Disks
 - Fonts
 - Access
 - SystemConfig
 - Access FTP Server
 - System Info & Access
 - Ressource Monitor
 - Process List
 - Log
 - Log Persistent
 - Shell
 - File Manager
 - Package Manager
 - Boot Script
 - Backup / Restore
- Browser
 - Settings
 - Log**
- Manual
 - Hardware
 - Software

At the bottom of the sidebar, there is a "Reboot" button. In the main content area, the "Log" menu item is highlighted, and a "Reload" button is visible below it.

2.25. CODESYS Applications

This menu item is used to configure the settings for the behavior of the CODESYS applications. This menu entry is only available for devices with CODESYS.

Figure 25: CODESYS Applications

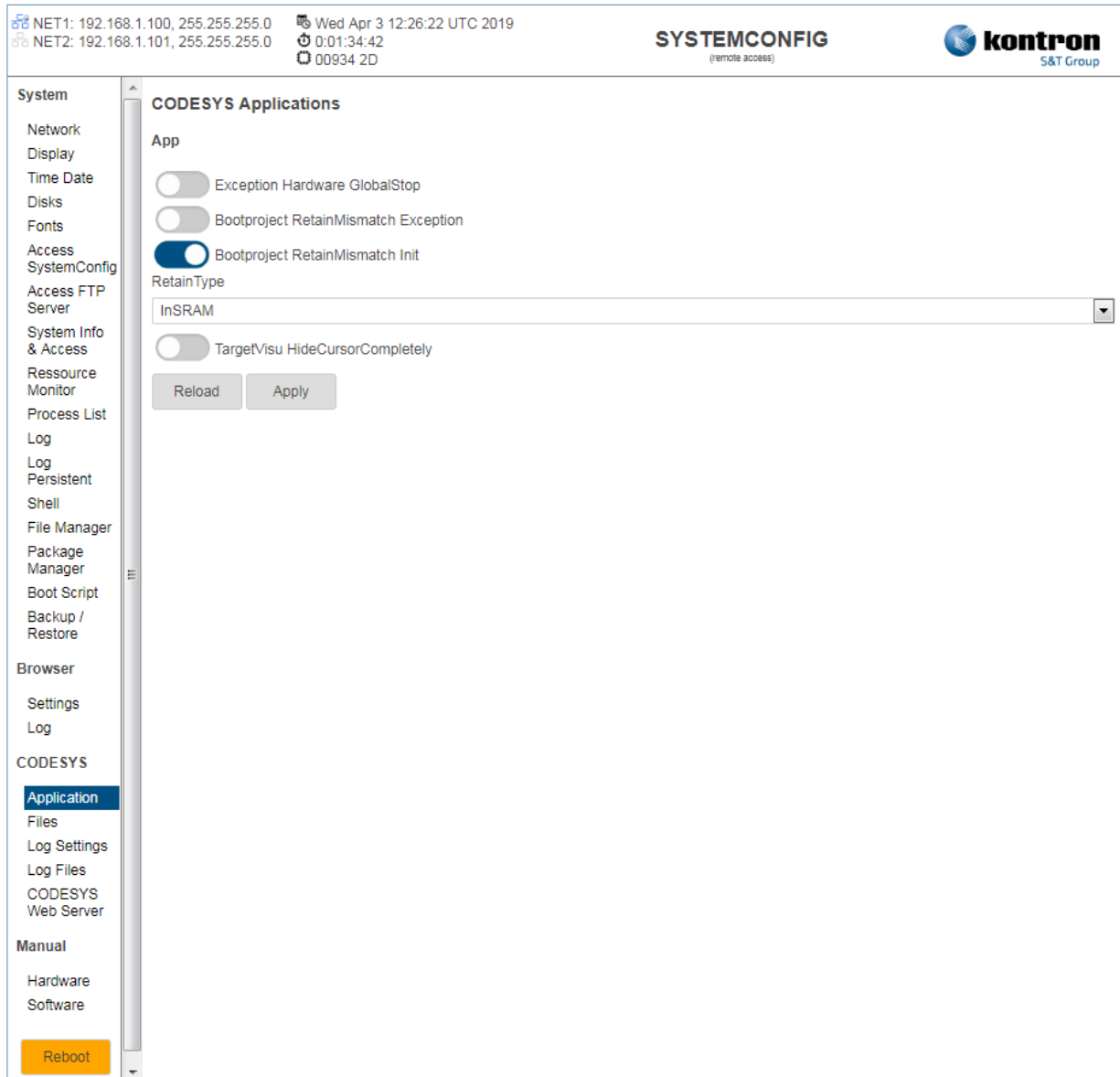


Table 24: CODESYS Applications

Setting	Description	Default
Exception Hardware GlobalStop	Each hardware exception will result in a stop of all applications.	Off
Bootproject RetainMismatch Exception	If the check of the retain variables failed, the boot application is stopped and an exception is triggered.	Off
Bootproject RetainMismatch Init	If the check of the retain variables failed, the retain variables are reinitialized.	On

The settings can be saved with the Apply button or discarded with the Reload button.

When changing the settings, a restart of the device is necessary.

2.26. CODESYS Files

This menu item is used to configure the settings for the storage locations of the CODESYS files. This menu entry is only available for devices with CODESYS.

Figure 26: CODESYS Applications

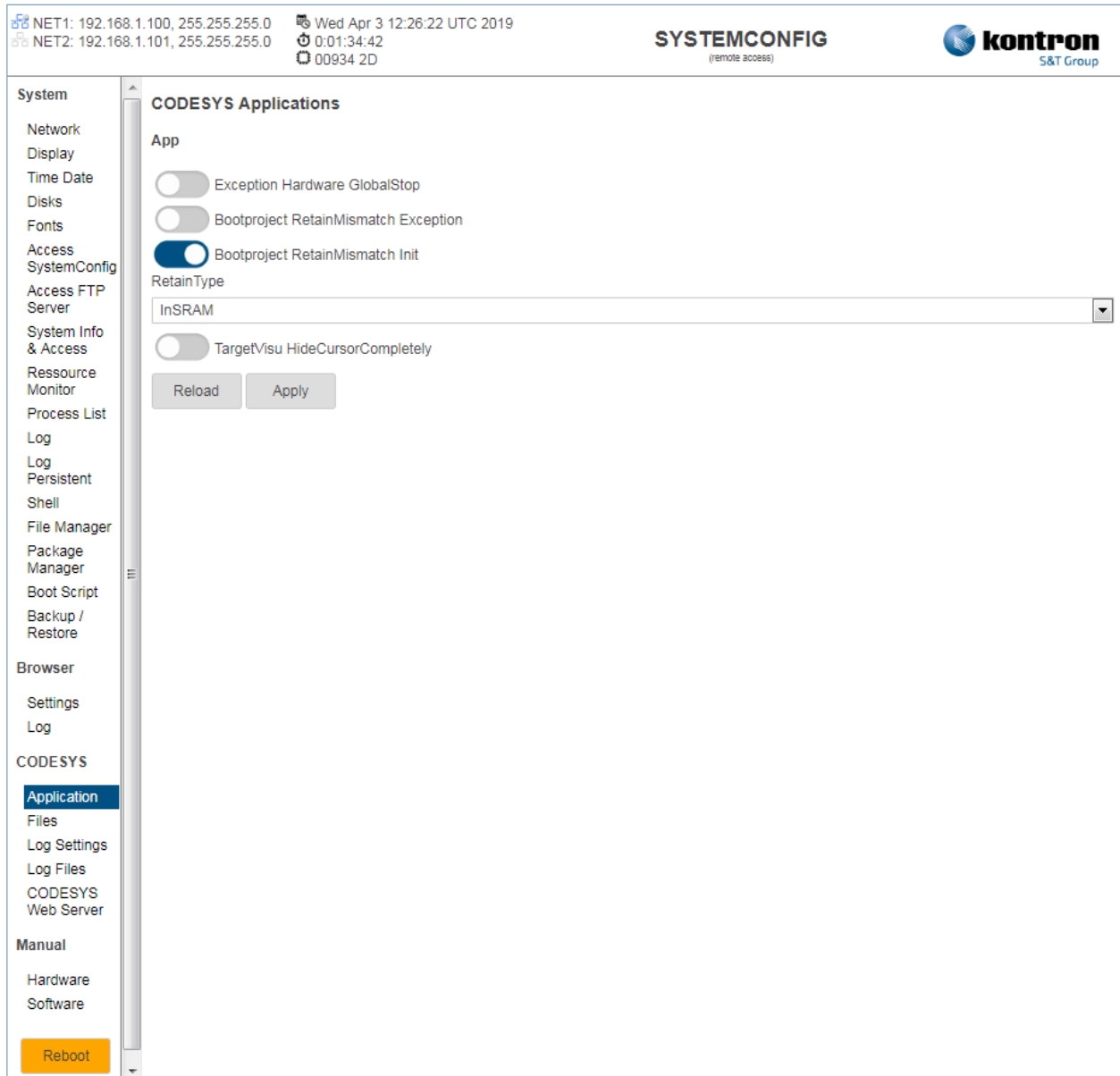


Table 25: CODESYS Files

Setting	Description	Default
PlcLogic	Storage location of the CODESYS main directory.	/opt/codesys/PlcLogic
Alarm	Storage location of the CODESYS alarm files	/opt/codesys/PlcLogic/alarme
Trend	Storage location of the CODESYS Trend files.	/opt/codesys/PlcLogic/trend
CNC	Location of the CODESYS CNC files.	/opt/codesys/PlcLogic/cnc
Persistence	Location of the CODESYS persistent files.	/opt/codesys/PlcLogic/persistence

Setting	Description	Default
Backup	Location of the CODESYS backup files.	

The settings can be saved with the Apply button or discarded with the Reload button.

When changing the settings, a restart of the device is necessary.

2.27. CODESYS Log Settings

The settings for CODESYS logging are made here. This menu entry is only available for devices with CODESYS.

Figure 27: CODESYS Log Settings

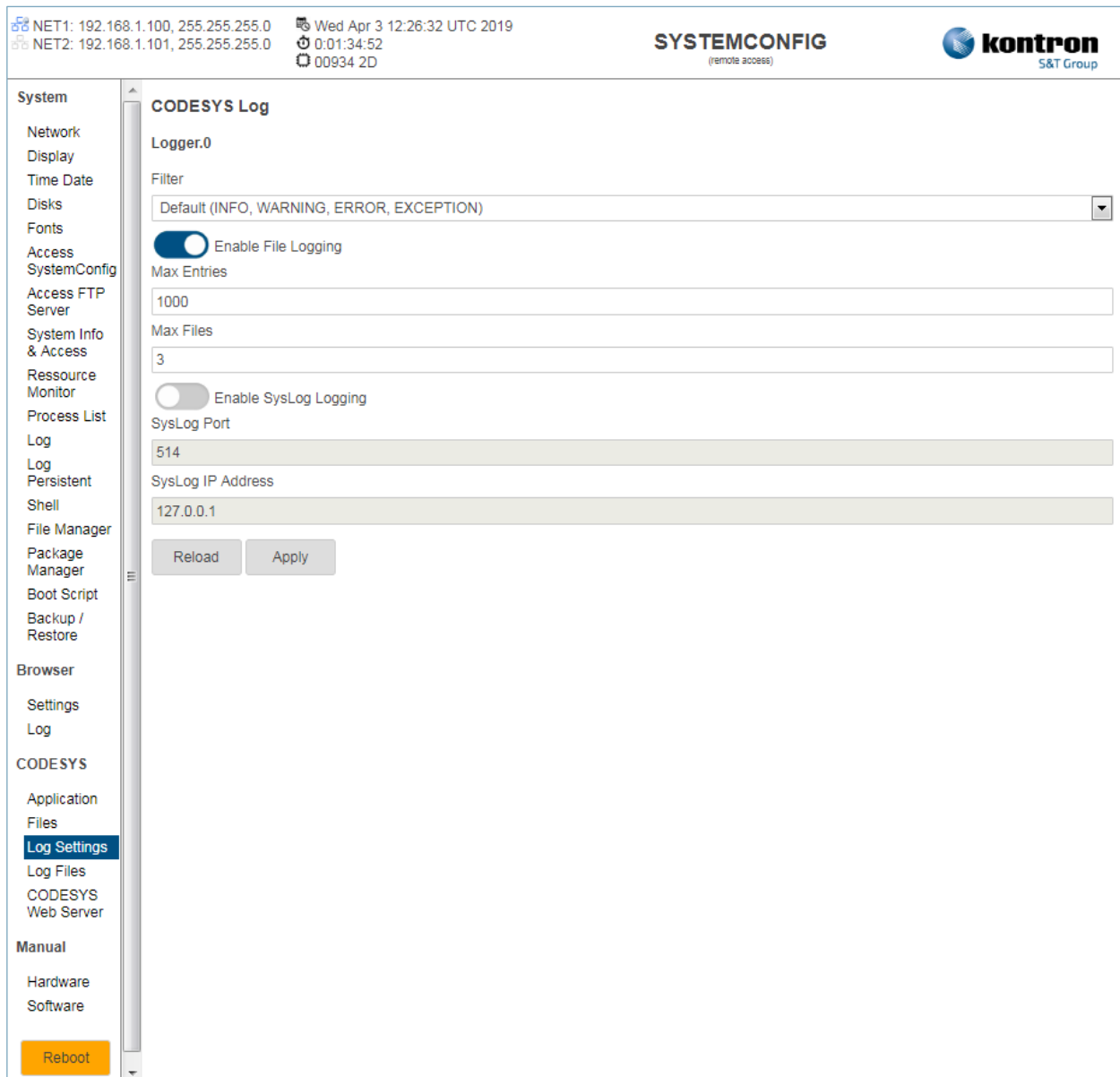


Table 26: CODESYS Log Settings

Setting	Description	Default
Filter	Filtering of stored entries.	Default
Enable File Logging	Storage in files on the Device.	On
Max Entries	Maximum number of entries per file.	1000
Max Files	Maximum number of created files. If the maximum number of files exists, the oldest file is overwritten.	3
Enable SysLog Logging	Send the log entries to a SysLog server.	Off
SysLog Port	Port of the SysLog Server	514
SysLog IP Address	IP of the SysLog Server	127.0.0.1

The settings can be saved with the Apply button or discarded with the Reload button.

When changing the settings, a restart of the device is necessary.

2.28. CODESYS Log Info

This menu item displays the contents of the CODESYS log files. This menu entry is only available for devices with CODESYS.

Figure 28: CODESYS Log Info

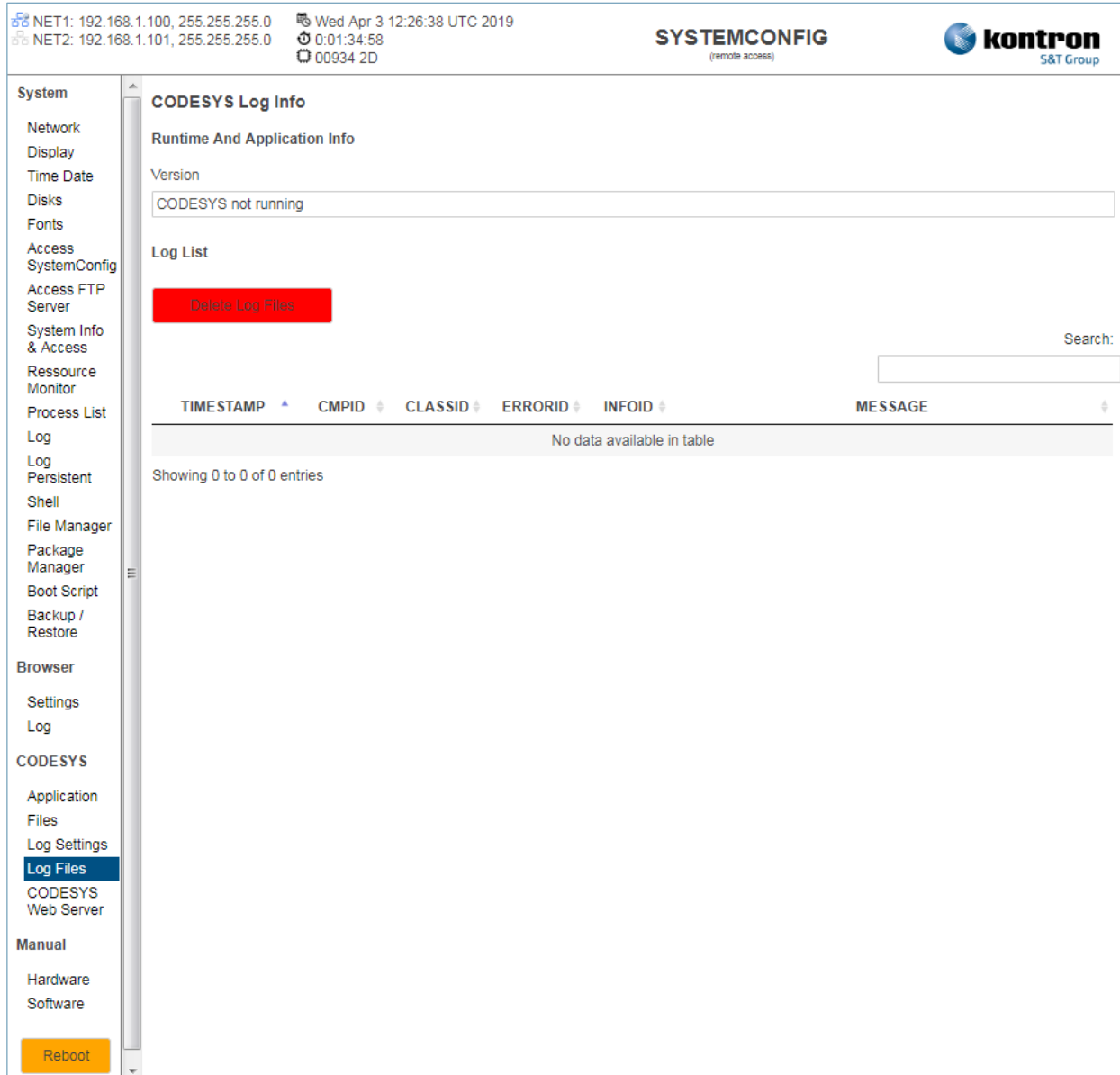


Table 27: CODESYS Log Info

Setting	Description
Version	CODESYS Runtime Version on the Device.
Applications	Active CODESYS application information on the Device.
Log List	Output of the CODESYS log files.
Delete Log Files	Deletion of the CODESYS log files on the Device.

The content of this window is updated cyclically.

2.29. CODESYS WebVisu

Under this menu item the settings for the web server of CODESYS are made. This menu entry is only available for devices with CODESYS.

Figure 29: CODESYS WebVisu

The screenshot shows the 'CODESYS WebVisu' configuration page. At the top, there is a status bar with network information (NET1: 192.168.1.100, 255.255.255.0; NET2: 192.168.1.101, 255.255.255.0), a clock (Wed Apr 3 12:26:42 UTC 2019), and system time (0:01:35:02, 00934 2D). The title bar reads 'SYSTEMCONFIG (remote access)' and the Kontron S&T Group logo is in the top right. The left sidebar has a tree view with categories: System, Browser, and CODESYS. Under 'CODESYS', 'Web Server' is selected. The main content area is titled 'CODESYS WebVisu' and contains the following settings:

- FileUploadDirectory:** An empty text input field with a browse button (...).
- WebServerPortNr:** A text input field containing '8080'.
- WebServerSecurePortNr:** A text input field containing '443'.
- ConnectionType:** A dropdown menu set to 'HTTP_ONLY'.
- StartupType:** A dropdown menu set to 'STARTUP_AND_SHUTDOWN_ONDEMAND'.

At the bottom of the settings area, there are two buttons: 'Reload' and 'Apply'.

Table 28: CODESYS WebVisu

Setting	Description	Default
FileUploadDirectory	Location of the CODESYS Visu files. If this entry is empty, the visu directory in the PlcLogic directory is used.	
WebServerPortNr	Http Port of the WebServer	8080

Setting	Description	Default
WebServerSecurePortNr	Https Port of the WebServer	514
ConnectionType	Used WebServer connection for clients: HTTP_ONLY: only http connections are supported. HTTPS_ONLY: only https connections are supported. HTTP_AND_HTTPS: http and https connections are supported. REDIRECT_HTTP_TO_HTTPS: http requests are redirected to https. If https is used, the CODESYS Security Agent can be used to create a certificate for the web server.	HTTP_ONLY
StartupType	Startup Behavior of the Web Server	STARTUP_ONDEMAND_ AND_NERVER_SHUTDO WN

The settings can be saved with the Apply button or discarded with the Reload button.

2.30. Manual Hardware

This menu item is used to call up the hardware manual for the current device. If an active Internet connection is available, the latest version is loaded from our FTP server, otherwise the version on the device.

2.31. Manual Software

This menu item is used to call up this Software System Manual for the current device. If an active Internet connection is available, the latest version is loaded from our FTP server, otherwise the version on the device.

2.32. Wiki Linux

This menu item is used to call up the online Kontron Linux Wiki for the current device.

<https://wiki.kontron-electronics.at:8444/linux/knowledge-base-linux-home-35291468.html>

2.33. Wiki Browser

This menu item is used to call up the online Kontron Browser Wiki for the current device.

<https://wiki.kontron-electronics.at:8444/chromiumbrowser/knowledge-base-qiwi-home-64094413.html>

2.34. Wiki CODESYS

This menu item is used to call up the online Kontron CODESYS Wiki for the current device.

<https://wiki.kontron-electronics.at:8444/codesysv3/knowledge-base-codesys-v3-home-35291652.html>

3/ System

3.1. System interface

The internal OnBoard debug interface X11 is connected to a FDTI USB chip and connects the boot system and Linux with a console. The interface can be connected with a USB-UART adapter (article no. 45212) and a standard USB-A to USB-mini cable to a PC. The remote station automatically recognizes the interface as RS232. With a terminal application, e.g. TeraTerm or Putty, a connection is established with a baud rate of 115200.

3.2. Remote control or configuration of a device via SSH

Remote maintenance or remote control of the device is possible via an SSH connection. The connection is established with an SSH client application, e.g. TeraTerm or Putty. For this, the network address of the device must be known.

Default IP:

- ▶ Ethernet 1: 192.168.1.100 (Subnet: 255.255.255.0)
- ▶ Ethernet 2: 192.168.1.101 (Subnet: 255.255.255.0)

Default Password:

- ▶ User: root
- ▶ Password: root

3.3. USB-Keyboard

A USB keyboard support with American layout is integrated without further configuration.

3.4. USB-Mouse

A USB mouse support is integrated without further configuration. The mouse pointer appears on the screen as soon as a USB mouse is detected and is removed as soon as the UBS mouse is removed.

3.5. Run Linux scripts automatically

Linux scripts can be automatically executed from a USB stick when booting or while the device is running. With this function, additional files, fonts and Linux packages can be installed or changes to the system can be made.

For this purpose, an "init" directory is created on a USB stick, where all scripts are automatically executed.

The scripts must contain the file extension ".sh" and be saved in UNIX format.

3.6. Configuring the WebBrowser

All WebBrowser settings are located in the file "/opt/qtwebbrowser/settings.ini" on the device. An example configuration can be requested free of charge from Kontron Electronics AG.

3.7. Installing Fonts

Fonts are stored on the device in the directory "/usr/lib/fonts/ttf/".

A sample configuration can be requested free of charge from Kontron Electronics AG.

3.8. Configuring the network

The network settings are located in the file "/etc/network/interfaces" on the device. An example configuration can be requested free of charge from Kontron Electronics AG.

3.9. Memory

3.9.1. USB-Disk/-Stick

For a USB disk or a USB stick, nothing more needs to be configured. When inserting, a subdirectory "sd(X)" is automatically created in the directory "/run/media/" and deleted when removing.

3.9.2. Flash

The complete root directory "/" except the following subdirectories are contained in the Flash:

- ▶ /run/media/
- ▶ /tmp
- ▶ /var/log

3.9.3. SD Card

No further configuration is required for an SD card. A subdirectory "mmcblk(X)" is automatically created in the directory "/run/media/" when the card is inserted and deleted again when it is removed.

4/ System-Backup/-Restore (Live System)

The Backup/Restore function (Live System) allows easy backup and restore of the complete device via USB stick or SD card. With a backup of the system, the devices can be restored to a defined state or cloned.

More information and menu commands can be found in chapter 2.22 Backup/Restore. The precondition for this is an existing Internet connection.

If the device has **no** Internet connection, a system backup/restore (live system) can also be performed manually. In this case without an Internet connection, you can find the instructions for a manual system backup/restore (live system) on our Wiki support page under the following link:

<https://wiki.kontron-electronics.at:8444/linux/backup-restore-38142845.html>

The Live System can also be requested free of charge from Kontron Electronics AG.

5/ Technical Support

For technical support, please contact our support department at the following email address:

▶ E-mail: support@kontron.ch

Appendix A: List of Acronyms

Table 29: List of Acronyms

CP	Control Panel
CU	Control Unit
HMI	Human Machine Interface; Interface between machine and user
RTC	Real Time Clock
Soft-SPS	Programmable logic controller in Software
WP	Web Panel

About Kontron

Kontron is a global leader in Embedded Computing Technology (ECT). As a part of technology group S&T, Kontron offers a combined portfolio of secure hardware, middleware and services for Internet of Things (IoT) and Industry 4.0 applications. With its standard products and tailor-made solutions based on highly reliable state-of-the-art embedded technologies, Kontron provides secure and innovative applications for a variety of industries. As a result, customers benefit from accelerated time-to-market, reduced total cost of ownership, product longevity and the best fully integrated applications overall. For more information, please visit: www.kontron.com



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