

G&D ControlCenter-IP-XS

EN Web Application»Config Panel« Configuring the matrix switch



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Version 1.00 – 17/02/2022 Config Panel 21 version: 1.5.001

Guntermann & Drunck GmbH Obere Leimbach 9 57074 Siegen

Germany

Phone +49 (0) 271 23872-0 Fax +49 (0) 271 23872-120

www.gdsys.de sales@gdsys.de

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1 Basic functions

The *ConfigPanel* web application provides a graphical user interface to configure the matrix switches of the KVM system. The application can be operated from any supported web browser (see page 10).

ADVICE: The web application can be used in the entire network independently from the locations of the devices and consoles connected to the KVM system.

Thanks to its enhanced functions, the graphical user interface provides the following features for easy operation:

- Clearly arranged user interface
- Monitoring of various system features
- Advanced network functions (netfilter, syslog, ...)
- Backup and restore function

System requirements

IMPORTANT: Before starting the web application via web browser, connect the device from which you want to load the web application to the local network (see installation instructions).

If not already done, adjust the network settings as described on page 11.

The web application *ConfigPanel* has been successfully tested with the following web browsers:

- Apple Safari 15.2
- Google Chrome 98
- Microsoft Edge 98
- Mozilla Firefox 97

Supported operating systems

- Microsoft Windows
- macOS
- Linux
- Android
- iOS

Recommended resolutions

- A minimum resolution of 1280 × 800 pixels is recommended.
- The web application is optimized to display the content in landscape mode.
- Portrait mode is supported. In this mode, not all contents may be visible.

Initial configuration of the network settings

NOTE: In the defaults, the following settings are pre-selected:

- IP address of network interface A: 192.168.0.1
- Global network settings: settings obtained using DHCP

To access the web application, the network settings of the device on which the web application is operated need to be configured.

How to configure the network settings before integrating the device into the local network:

- 1. Use a category 5 (or better) twisted pair cable to connect the network interface of any computer to the device's *Network* interface.
- 2. Ensure that the IP address of the computer's network interface is part of the subnet to which the device's IP address belongs to.

NOTE: Use the IP address 192.168.0.100, for example.

- 3. Switch on the device.
- 4. Start the computer's web browser and enter 192.168.0.1 in the address bar.
- 5. Configure the network interface(s) and the global network settings as described in the paragraph *Network settings* on page 21 f.
- 6. Remove the twisted pair cable connection between computer and device.
- 7. Implement the device in the local network.

Activating the integrated DHCP server

If required, you can activate the DHCP server integrated in the matrix switch. The DHCP server is *deactivated* by default.

The DHCP server provides basic functionalities for the automatic integration of clients (this also includes the computer and user modules) into a network.

IMPORTANT: Activation and use of the integrated DHCP server *is not* possible when using the **MatrixGuard** function of the matrix switch!

Overview of the assigned IP addresses

If you have already activated the integrated DHCP server, the wizard starts with the overview of the assigned IP addresses.

The table lists the MAC address of each client and the assigned IP address.

Step 1: Select device

IMPORTANT: The integrated DHCP server may only be activated on *one* matrix switch of a matrix system.

NOTE: This step is automatically skipped if a matrix switch is operated standalone.

- Click the matrix switch on which the integrated DHCP server is to be activated.
- Click Save and continue.

Step 2: Configure DHCP server

Configure the DHCP server in this step according to your requirements.

How to configure the DHCP server:

1. Enable or disable the DHCP server:

Enable DHCP server:	Switch the slider to the right (enabled) to enable the DHCP server.
	Switch the slider to the left (disabled) to disable the DHCP server.

2. If the DHCP server is enabled, you can configure the following settings::

IP address range from:	Enter the first IP address to be assigned by the DHCP server.
IP address range to:	Enter the last IP address to be assigned by the DHCP server.
Netmask:	Specify the netmask of the network.
Lease time:	Enter the amount of time in minutes that a client is allowed to keep the assigned IP address.
Gateway:	Specify the IP address of the gateway (optional).

3. Click Save and continue.

Step 3: Configuration completed

- The wizard confirms the successful setup of the DHCP server.
- Click Finish.

Getting started

This chapter introduces you to the basic operation of the web application.

NOTE: For a detailed explanation of the functions and configuration settings, refer to the following chapters of this manual.

Starting the web application

NOTE: Information on the system requirements of the web application can be found on page 10.

How to start the web application

1. Enter the following URL in the address line:

https://[IP address of the device]

2. Enter the following data in the login mask:

Username:	Enter a username.
Password:	Enter a password for your user account.

IMPORTANT: Change the administrator account's default password.

To do this, log into the web application with the administrator account and then change the password (see page 54).

The *default* access data to the administrator account are:

- Username: Admin
- Password: see *login* information on the label on the bottom of the device
- 3. Click on Login.
- 4. Click on the Config Panel 21 icon.

NOTE: As an alternative to the **Config Panel 21** you can open the **EasyControl** (see page 187) tool after login, if you have activated the **IP-Control-API** feature for a fee.

Operating the web application

User interface

The user interface of the web application consists of several areas:

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Tools	Home / Matrix systems	
දරිුදි System	IP matrix	0
Configuration		
ුස් Matrix systems 🗸 🗸	Search X	
နို ccip-xs 🗸	□ Name ▲ Device type	Monitoring overview
MTX Matrix <	CCIP-XS C ControlCenter-IP-XS	ОК
Console modules	4	
Coru Target modules	_	
Target groups		
Users		
ంం User groups		
Advanced features	Add end devices Service tools -	{⑦ Configuration II Delete

Figure 1: User interface of the web application

The different areas of the user interface serve different tasks. The following table lists the purpose of each area:

Menu ①:	In the menu the different functions of the web application are summarised in various topics.
Breadcrumb navigation ②:	The breadcrumb navigation shows you the path to the currently opened dialog.
	To quickly return to a higher-level dialog, you can click on it in the breadcrumb navigation.
Filter function ③:	You can use the filter function to narrow down the items displayed in the main view.
	In the text box, enter part of the name of the element you want to find. Only elements that contain this text in one of the <i>displayed</i> columns are displayed in the main view. The names are not case-sensitive during filtering.
	To delete the filter, click on the [X] icon.
Main view ④:	After selecting a topic in the menu, the contents of this topic are displayed here.

Shortcuts (5):	Language selection: The language identifier (for example EN for <i>English</i>) shows the currently active language in the web application.
	To switch the language, click the language identifier. This opens a submenu that shows the supported languages and the corresponding identifiers.
	Switch the language by clicking on the desired language.
	User: A click on the user icon opens a submenu:
	 The name of the active user is displayed in the submenu. Click on <i>User</i> to access the user settings of the active user. Click on <i>Logout</i> to exit the active session.
	Monitoring status: This icon shows you at a glance whether all monitoring values are within the normal range (green icon) or if at least one monitoring value is outside the nor- mal range (yellow or red icon).
	The <i>Monitoring status</i> icon always takes the colour of the <i>most critical</i> monitoring value
	If the icon is displayed in yellow or red, you can access the <i>Active alarms</i> dialog by clicking on the icon.
Buttons ©:	Depending on the dialog shown, different buttons are dis- played in this area.

Frequently used buttons

The user interface uses various buttons to perform operations. The following table informs you about the names and functions of the buttons used in many dialog masks:

Configuration:	Show configuration settings of the selected element (device, user,)
Service tools:	If you select a device in the main view, you can use the service tools to perform certain tasks (for example, update, backup, show syslog).
Save:	Saving of the entered data. The opened dialog is still displayed.
Cancel:	The data you have entered will be discarded and the dialog will be closed.
Close:	The entered data is cached and the dialog is closed.
	Only after clicking on Save or Cancel the data is permanently stored or discarded.

Configuring table columns

You can adapt the table columns to be displayed under **Matrix systems** and **Users** to your requirements.

By default, the columns *Name*, *Device type*, *Comment* and *Monitoring overview* are shown under **Matrix systems**:

IP r	IP matrix ⑦				
Search X		*			
	Name •	-	Device type	Monitoring overview	•
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Figure 2: Table columns (selection) of a matrix switch

NOTE: Click the chain icon in the **Name** column to display grouped devices as a unit or list each device individually.

How to change the columns to be displayed:

NOTE: The Name column is *always* shown as the first column of the table.

1. Click on the gears icon (•) above the table.

Table configuration				?
Columns:	Status	\$	Add column	$\odot \boxed{\otimes}$
Dev	ice type	Comment	Monitorin	g overview
	×			× 🔺

Figure 3: Table configuration

- 2. To add a column, select it from the **Columns** drop-down box and click on **Add column**.
- 3. To delete a column, click on the red button (\blacksquare) below the column header.
- Click on the green check mark (
 to save your settings or klick on the red Discard button (

How to change the column order:

NOTE: The **Name** column is *always* shown as the first column of the table.

- 1. Click on the gears icon above the table.
- 2. To move a column to the left, click on the **arrow left** icon () of this column.
- 3. To move a column to the right, click on the **arrow right** icon () of this column.
- 4. Click on the green **check mark** (()) to save your settings or click on the red **Discard** button ().

How to reset the table configuration to the default settings

- 1. Click on the Table configuration reset icon (
) above the table.
- 2. Confirm the security prompt by clicking on Yes.

Selecting the language of the web application

The specified system language is assigned to all user accounts by default. If required, you can permanently assign a (different) language to each user account.

NOTE: All language settings apply to both the web application and the OSD of the device.

If the OSD does *not* support the selected language, the OSD will be displayed in English.

How to set the system language:

- 1. Click System on the menu.
- 2. Click System language.
- 3. Select the desired language.
- 4. Click Save.

How to set the language of a specific user account:

- 1. On the menu, click Users.
- 2. Click the user account you want to configure, and then click Configuration.
- 3. Click the KVM matrix systems tab, and then click the Personal profile area selection.
- 4. In the Language field, choose between the following options:

System:	Use the system language (see above).
[Selection]	Use the selected language.

5. Click Save

Closing the web application

Use the Close button to end the active session of the web application.

IMPORTANT: To protect the web application against unauthorised access, always use the *Logout* function after finishing your work with the web application.

How to close the web application:

1. Click on the user icon at the top right.

2. Click on **Logout** to exit the active session.

Showing the version number of the web application

How to show the version number of the web application:

- 1. In the menu, click on **Information**.
- 2. The General tab provides you with information about the *ConfigPanel* version.

Basic configuration of the web application

Network settings

The device provides one network interface. The network interface lets you integrate a device into one network.

IMPORTANT: Note the separate instructions about the *Initial configuration of the network settings* on page 11.

Configuring the network interface

To connect the device to a local network, you need to configure the settings of the network.

NOTE: These are the default settings:

- IP address of network interface A: 192.168.0.1
- Global network settings: Obtain settings via DHCP

How to configure the settings of a network interface:

NOTE: The *Link Local* address space 169.254.0.0/16 is reserved for internal communication between devices in accordance with RFC 3330. It is not possible to assign an IP address of this address space.

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph Interfaces.
- 5. Enter the following values under Interface A :

Operating mode:	Select the operational mode of Interface A :
	 Off: Disable network interface. Static: A static IP address is assigned. DHCP: •Obtain IP address from a DHCP server:
IP address:	Enter the IP address of the interface (only when operating mode <i>Static</i> is selected).
Netmask:	Enter the netmask of the network (only when operating mode <i>Static</i> is selected).

Configuring global network settings

Even in complex networks global network settings ensure that the web application is available from all subnetworks.

How to configure global network settings:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Now go to Global settings.
- 5. Enter the following values:

0	perating mode:	Select the operating mode:
		• Static: Use static settings.
		• DHCP: Obtain settings from a DHCP server.
	When selectin matically. It is	g the <i>DHCP</i> mode, the following settings are applied auto- not possible to enter any vlaues.
H	ostname:	Enter the device's hostname.
D	omain:	Enter the domain to which the device should belong.
G	ateway:	Enter the gateway's IP address.
D	NS server 1:	Enter the IP address of the DNS server.
D	NS server 2:	Optionally, enter the IP address of another DNS server.

1. In the menu, click on Matrix systems > [Name] > Matrix.

Reading out the status of the network interface

The current status of the network interface can be read out in the web application.

How to detect the status of the network interface:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab **Information**.
- 4. Go to the paragraph Link status.
- 5. The paragraph **Interface A** include the following values:

Link detected:	Connection to the network established (yes) or disconnected (no).
Auto-negotiation:	Both the transmission speed and the duplex method have been configured automatically (yes) or manually by the administrator (no) .
Speed:	Transmission speed
Duplex:	Duplex mode (full or half)

Creating and administrating netfilter rules

By default, all network computers have access to the web application *ConfigPanel* (open system access).

NOTE: The open system access allows unrestricted connections via ports 80/TCP (HTTP), 443/TCP (HTTPS) and 161/UDP (SNMP).

Once a netfilter rule has been created, open system access is disabled and all incoming data packets are compared with the netfilter rules. The list of netfilter rules is processed in the stored order. As soon as a rule applies, the corresponding action is executed and the following rules are ignored.

Creating new netfilter rules

How to create a new netfilter rule:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **Netfilter**.
- 5. Enter the following values:

Interface:	In the pull-down menu, select on which network interfaces the data packets are to be intercepted and manipulated: All Interface A
Option:	 In the pull-down menu, select how to interpret the sender information of the rule: Normal: The rule applies to data packets whose sender information corresponds to the IP address or MAC address specified in the rule. Inverted: The rule applies to data packets whose sender information does <i>not</i> correspond to the IP address or MAC address specified in the rule.

IP address/ Netmask:	Enter the IP address of the data packets or - by using the Net-mask field - the address space of the IP addresses.	
	Examples: • 192.168.150.187: for IP address 192.168.150.187 • 192.168.150.0/24: IP addresses of section 192.168.150.x • 192.168.0.0/16: IP addresses of section 192.168.x.x • 192.0.0.0/8: IP addresses of section 192.x.x.x • 0.0.0.0/0: all IP addresses	
NOTE: The <i>IP address</i> and/or a <i>MAC address</i> can be specified within a rule.		
MAC address:	Enter the MAC address to be considered in this filter rule.	
NOTE: The <i>IP address</i> and/or a <i>MAC address</i> can be specified within a rule.		
Filter rule:	 Drop: Data packets whose sender information matches the IP address or MAC address are not processed. Accept: Data packets whose sender information matches the IP address or MAC address are processed. 	
Service:	Select a specific service for which this rule is used exclusively, or choose (All).	

6. Click on **Add** to save the values in a new filter rule.

The new filter rule is added to the end of the list of existing filter rules.

7. Click on Save.

NOTE: The new nefilter rule is not applied to active connections. Restart the device if you want to disconnect the active connections and then apply all the rules..

Editing existing netfilter rules

How to edit an existing netfilter rule:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **Netfilter**.

- 5. In the list of existing netfilter rules, select the rule you want to change.
- 6. The current rule settings are displayed in the upper part of the dialog. Check and change the following settings.

Interface:	In the pull-down menu, select on which network interfaces the data packets are to be intercepted and manipulated: All Interface A	
Option:	In the pull-down menu, select how to interpret the sender information of the rule:	
	 Normal: The rule applies to data packets whose sender information corresponds to the IP address or MAC address specified in the rule. 	
	• Inverted: The rule applies to data packets whose sender information does <i>not</i> correspond to the IP address or MAC address specified in the rule.	
IP address/ Netmask::	Enter the IP address of the data packets or - by using the Net-mask field - the address space of the IP addresses.	
	Examples: • 192.168.150.187: for IP address 192.168.150.187 • 192.168.150.0/24: IP addresses of section 192.168.150.x • 192.168.0.0/16: IP addresses of section 192.168.x.x	
	 192.0.0.0/8: IP addresses of section 192.x.x.x 0.0.0.0/0: all IP addresses 	
NOTE: The <i>IP address</i> and/or a <i>MAC address</i> can be specified within a rule.		
MAC address:	Enter the MAC address to be considered in this filter rule.	
NOTE: The <i>IP address</i> and/or a <i>MAC address</i> can be specified within a rule.		
Filter rule:	 Drop: Data packets whose sender information matches the IP address or MAC address are not processed. Accept: Data packets whose sender information matches the IP address or MAC address are processed. 	
Service:	Select a specific service for which this rule is used exclusively, or choose (All).	

- 7. Click on Apply to save your settings.
- 8. Click on Save.

NOTE: The new nefilter rule is not applied to active connections. Restart the device if you want to disconnect the active connections and then apply all the rules..

Deleting existing netfilter rules

How to delete existing netfilter rules:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **Netfilter**.
- 5. In the list of existing netfilter rules, select the rule you want to delete.
- 6. Click on Delete.
- 7. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.
- 8. Click on Save.

Changing the order or priority of existing netfilter rules

The list of netfilter rules is processed in the stored order. As soon as a rule applies, the corresponding action is executed and the following rules are ignored.

IMPORTANT: Pay attention to the order or priority of the individual rules, especially when adding new rules.

How to change the order or priority of existing netfilter rules:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph Netfilter.
- 5. In the list of existing netfilter rules, select the rule whose order/priority you want to change.
- 6. Click the button **Arrow up** to increase the priority or the button **Arrow down** to decrease the priority.
- 7. Click on Save.

Creating an SSL certificate

Use the free implementation of the SSL/TLS protocol *OpenSSL* to create an SSL certificate.

The following websites provide detailed information about operating OpenSSL:

- OpenSSL project: https://www.openssl.org/
- Win32 OpenSSL: http://www.slproweb.com/products/Win32OpenSSL.html

IMPORTANT: Creating an SSL certificate requires the software OpenSSL. If necessary, follow the instructions on the websites mentioned above to install the software.

The instructions on the following pages explain how to create an SSL certificate.

Special features for complex KVM systems

If different G&D devices are to communicate with each other within a KVM system, the identical *Certificate Authority* (see page 28) must be used when creating certificates for these devices.

Alternatively, the identical PEM file (see page 31) can also be used for all devices. In this case, all characteristics of the certificates are identical.

Creating a Certificate Authority

A *Certificate Authority* enables the owner to create digital certificates (e. g. for a matrix switch.

How to create a key for the Certificate Authority:

IMPORTANT: The following steps describe how to create keys that are not coded. If necessary, read the OpenSSL manual to learn how to create a coded key.

1. Enter the following command into the command prompt and press Enter:

openssl genrsa -out ca.key 4096

2. OpenSSL creates the key and stores it in a file named *ca.key*.

How to create the Certificate Authority:

1. Enter the following command into the command prompt and press Enter:

openssl req -new -x509 -days 3650 -key ca.key -out ca.crt

2. Now, OpenSSL queries the data to be integrated into the certificate.

The following table shows the different fields and an exemplary entry:

Field	Example
Country Name (2 letter code)	DE
State or Province Name	NRW
Locality Name (e.g., city)	Siegen
Organization Name (e.g., company)	Guntermann & Drunck GmbH
Organizational Unit Name (e.g., section)	
Common Name (e.g., YOUR name)	Guntermann & Drunck GmbH
Email Address	

IMPORTANT: The device's IP address must not be entered under Common Name.

Enter the data you want to state, and confirm each entry by pressing Enter.

3. OpenSSL creates the key and stores it in a file named *ca.crt*.

IMPORTANT: Distribute the certificate *ca.crt* to the web browsers using the web application. The certificate checks the validity and the trust of the certificate stored in the device.

Creating any certificate

How to create a key for the certificate to be created:

IMPORTANT: The following steps describe how to create keys that are not coded. If necessary, read the OpenSSL manual to learn how to create a coded key.

1. Enter the following command into the command prompt and press Enter:

openssl genrsa -out server.key 4096

2. OpenSSL creates the key and stores it in a file named server.key.

How to create the certificate request:

1. Enter the following command into the command prompt and press Enter:

openssl req -new -key server.key -out server.csr

2. Now, OpenSSL queries the data to be integrated into the certificate.

The following table shows the different fields and an exemplary entry:

Field	Example
Country Name (2 letter code)	DE
State or Province Name	NRW
Locality Name (e.g., city)	Siegen
Organization Name (e.g., company)	Guntermann & Drunck GmbH
Organizational Unit Name (e.g., section)	
Common Name (e.g., YOUR name)	192.168.0.10
Email Address	

IMPORTANT: Enter the IP address of the device on which the certificate is to be installed into the row *Common Name*.

Enter the data you want to state, and confirm each entry by pressing Enter.

- 3. If desired, the *Challenge Password* can be defined. This password is needed if you have lost the secret key and the certificate needs to be recalled.
- 4. Now, the certificate is created and stored in a file named server.csr.

Creating and signing an X509 certificate

1. Enter the following command into the command prompt and press Enter:

openssl x509 -req -days 3650 -in server.csr -CA ca.crt -CAkey ca.key -set_serial 01 -out server.crt

2. OpenSSL creates the certificate and stores it in a file named server.crt.

Creating a PEM file

NOTE: The *.pem* file contains the following three components:

- server certificate
- private server key
- certificate of the certification authority

If these three components are available separately, enter them successively to the *Clear text* entry before updating the certificate stored in the device.

1. Enter the following command(s) into the prompt and press Enter:

```
a. Linux
```

cat server.crt > gdcd.pem cat server.key >> gdcd.pem cat ca.crt >> gdcd.pem

b. Windows

copy server.crt + server.key + ca.crt gdcd.pem

2. The *gdcd.pem* file is created while copying. It contains the created certificate and its key as well as the *Certificate Authority*.

Selecting an SSL certificate

By default, each G&D device with integrated web application stores at least one SSL certificate. The certificate has two functions:

• The connection between web browser and web application can be established via an SSL-secured connection. In this case, the SSL certificate allows the user to authenticate the opposite side.

If the device's IP address does not match the IP address stored in the certificate, the web browser sends a warning message.

ADVICE: You can import a user certificate so that the device's IP address matches the IP address stored in the certificate.

• The communication between G&D devices within a system is secured via the devices' certificates.

IMPORTANT: Communication between devices is possible only if all devices within a KVM system use certificates of the same *Certificate Authority* (see page 28).

How to select the SSL certificate you want to use:

IMPORTANT: After activating *another* certificate, close the currently active »Config Panel« sessions and start new sessions.

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph Certificate.
- 5. Select the certificate you want to use:

G&D certificate #1: This certificate is enabled for *new* devices. **ADVICE:** Older devices do *not* support **certificate #1**. In this case use certificate #2 or a user certificate within the KVM system. G&D certificate #2: This certificate is supported by all G&D devices with integrated web application. User certificate: Select this option if you want to use a certificate purchased from a certificate authority or if you want to use a user certificate. Now you can import and upload the certificate: 1. Click on **Import certificate from file** and use the file dialog to select the .pem file you want to import. You can also copy the plain text of the server certificate, the server's private key and the certificate of the certificate authority to the text box. 2. Click on **Upload and activate** to store and activate the imported certificate for the device.

Firmware update

The firmware of each device of the KVM system can be updated via the web application.

Firmware update of a single device

IMPORTANT: This function only updates the firmware of the device on which the web application was started.

How to execute a firmware update of a single device:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to update.
- 3. Open the menu Service tools and select the entry Firmware update.
- 4. Click on Supply firmware image files.

NOTE: If the firmware file is already available in the internal storage, you can skip this step.

Select the firmware file on your local disk and click on **Open**.

NOTE: Multiple selection of firmware files is possible by simultaneously pressing the Shift or Ctrl key and the left mouse button.

The firmware file is transferred to the internal storage and can then be selected for the update.

- 5. Select the firmware files to be used from the internal storage and click on Continue.
- 6. Select the **Intended version** of the devices if you selected more than one firmware files for one device.
- 7. Move the Update slider to the right (green) in the rows of all devices to be updated.
- 8. Click on Start update.

Firmware update of multiple KVM system devices

How to execute a firmware update of multiple KVM system devices:

- 1. In the menu, click on System.
- 2. Click on System update.
- 3. Select the devices whose firmware you want to update and click Firmware update.

4. Click on Supply firmware image files.

NOTE: If the firmware file is already in the internal storage, you can skip this step.

Select the firmware file on your local disk and click Open.

NOTE: Multiple selection of firmware files is possible by simultaneously pressing the Shift or Ctrl key and the left mouse button.

The firmware file is transferred to the internal storage and can then be selected for the update.

- 5. Select the firmware files to be used from the internal storage and click Continue.
- 6. Select the **Intended version** of the devices if you selected more than one firmware files for one device.
- 7. Move the Update slider to the right (green) in the rows of all devices to be updated.
- 8. Click on Start update.

NOTE: In order to ensure the transfer of updates to the end devices for larger data volumes, the end devices are updated in groups as required.

Restoring the system defaults

With this function, the system defaults of the device on which the web application is operated can be restored.

How to restore the system defaults:

- 1. In the menu, click on **System**.
- 2. Click on System defaults.
- 3. Select the scope of the recovery:

Reset all settings:	Reset all settings of the device.
Reset only local network settings:	Reset only local network settings.
Reset only KVM application settings:	Reset all settings except the local network settings.

4. Click on Set system defaults.
Restarting the device

This function restarts the device. Before restarting, you will be prompted for confirmation to prevent an accidental restart.

How to restart the device using the web application:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the desired device.
- 3. Open the menu Service tools and select the entry Restart.
- 4. Confirm the confirmation prompt with Yes.

Network functions of the devices

The different devices within the KVM system (e.g. KVM extenders and KVM matrix switches) provide separate network functions.

The following functions can be configured for each device within the KVM system:

- Authentication against directory services (LDAP, Active Directory, RADIUS, TACACS+)
- Time synchronisation via NTP server
- Forwarding of log messages to syslog servers
- Monitoring and control of computers and network devices via Simple Network Management Protocol (see page 46 ff.)

NTP server

The date and time of a device can be set either automatically by time synchronization with an NTP server (*Network Time Protocol*) or manually.

Time sync with an NTP server

How to change the NTP time sync settings:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph NTP server and enter the following values:

NTP time sync:	By selecting the corresponding entry in the pull-down menu, you can enable or disable the the time synchronization:DisabledEnabled		
NTP server 1:	Enter the IP address of a time server.		
NTP server 2:	Optionally enter the IP address of a second time server.		
Time zone:	Use the pull-down menu to select the time zone of your location.		

Manual setting of time and date

How to manually set the time and date of the device:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab **Network**.
- 4. Go to the paragraph NTP server.

IMPORTANT: If necessary, disable the **NTP time sync** option. Otherwise, you might not be able to set time and date manually.

- 5. Go to the entry **Time** under **Time/date** to enter the current time (*hh:mm:ss*).
- 6. Go to the entry Date under Time/date to enter the current time (DD.MM.YYYY).

ADVICE: Click on **Accept local date** to copy the current system date of the computer on which the web application was opened to the *Time* and *Date* fields.

Logging syslog messages

The syslog protocol is used to transmit log messages in networks. The log messages are transmitted to a syslog server that logs the log messages of many devices in the computer network.

Among other things, eight different severity codes have been defined to classify the log messages:

• 0: Emergency	• 3 : Error	• 6: Info
• 1: Alert	• 4: Warning	 7: Debug
• 2: Critical	• 5 : Note	

The web application enables you to configure whether the syslog messages are to be locally logged or sent to up to two syslog servers.

Local logging of syslog messages

How to locally log syslog messages:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **Syslog** enter the following data under **Syslog local**:

Syslog local:		By selecting the corresponding entry in the pull-down menu, you can enable or disable the local logging of syslog messa- ges: • Disabled • Enabled
Log level:		In this pull-down menu, select the severity from which a log message is to be logged.
		The selected severity and all lower severity levels are logged.
If you select the severity 2 - Critical, n severity levels 1 - Alert and 0 - Emerger		e severity 2 - Critical, messages for this code as well as for the 1 - Alert and 0 - Emergency are logged.

Sending syslog messages to a server

How to send syslog messages to a server:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab **Network**.
- 4. Go to the paragraph **Syslog** and enter the following values under **Syslog server 1** or **Syslog server 2**:

Syslog server:	By selecting the corresponding entry in the pull-down menu, you can enable or disable the sending of syslog messages to a server:	
	DisabledEnabled	
Log level:	In this pull-down menu, select the severity level from which a log message is to be logged.	
	The selected severity level and all lower severity levels are logged.	
If you select the se severity levels <i>1</i> - <i>A</i>	verity 2 - Critical, messages for this code as well as for the lert and 0 - Emergency are logged.	
IP address/ DNS name:	Enter the IP address or name of the server to which the syslog messages are to be sent.	
Port:	onter the port - usually 514 - on which the syslog serve ccepts incoming messages.	
Protocol:	Select the protocol - usually UDP - on which the syslog server accepts incoming messages: • TCP • UDP	

Viewing and saving local syslog messages

If the function to log the local syslog messages is activated, these syslog messages can be viewed and, if necessary, stored in the information dailog.

How to view and store local syslog messages:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure.
- 3. Open the menu Service untility and select the entry Syslog.
- 4. Click on Retrieve syslog.

The local syslog messages are now retrieved and displayed in the text field.

ADVICE: Click on Save syslog to save the messages in a text file.

5. Click on the red [X] to close the window.

User authentication with directory services

In internal corporate networks, user accounts are often managed centrally by a directory service. The device can access such a directory service and authenticate users against the directory service.

NOTE: If the directory service fails to authenticate the user account *Admin*, the user account is authenticated against the database of the device.

The directory service is used exclusively to authenticate a user. Rights are granted by the database of the KVM system. The following paragraphs describe the different scenarios:

The user account exists in the directory service and in the KVM system

The user can log on with the password stored in the directory service. After a successful login, the rights of the account with the same name are assigned to the user in the KVM system.

NOTE: The password with which the user has successfully logged on is transferred to the database of the KVM system.

• The user account exists in the directory service, but not in the KVM system

A user who has been successfully authenticated against the directory service but does not have an account of the same name in the KVM system's database will be granted the rights of a *RemoteAuth* user.

If required, change the rights of this particular user account to set the rights for users without a user account.

ADVICE: Deactivate the *RemoteAuth* user to prevent users without user accounts to log on to the KVM system.

• The user account exists in the KVM system, but not in the directory service

If the directory service is available, it reports that the user account does not exist. Access to the KVM system is denied to the user.

If the server is not available but the fallback mechanism (see page 40) is activated, the user can log on with the password stored in the KVM system.

IMPORTANT: In order to prevent the logon of a user locked or deactivated in the directory service when the connection to the directory service fails, please observe the following security rules:

- If a user account is deactivated or deleted in the directory service, this action must also be carried out in the user database of the KVM system!
- Activate the fallback mechanism only in exceptional cases.

How to configure the authentication of user accounts:

NOTE: If no directory service is used, the user accounts are managed by the device.

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **Authentication**.

5. Enter the following values under Authentication server:

Auth. Server:	Select the Local option if the user administration is to be carried out by the KVM system.	
	If you want to use a certain directory service, select the corresponding entry from the pull-down menu:	
	 LDAP Active Directory Radius TACACS + 	
ADVICE: After tory service service	selecting a directory service, enter the settings of the directory in the <i>Server Settings</i> section of the dialog box.	
Fallback:	Activate this option if you want to use the local user administration of the KVM system if the directory service is temporarily unavailable.	
IMPORTANT: In the director please observe	n order to prevent the logon of a user locked or deactivated y service when the connection to the directory service fails, the following security rules:	
 If a user according action must Activate the	ount is deactivated or deleted in the directory service, this also be carried out in the user database of the KVM system! fallback mechanism only in exceptional cases.	

Monitoring functions

Under **Matrix systems** and **System monitoring** you can view the monitoring values of any devices connected to the KVM system.

The following exemplary figure shows the monitoring values *Status*, *Main power* and *Temperature* of a device:

IP matrix (?)						
Search X						
	Name 🗕	•	Status	Main power	Temperature	•
	CCIP-XS ()		Online	On	40.5 °C	

Figure 4: Detailed view of an exemplary monitoring table

The values configured for the table view (see *Configuring table columns* on page 17) are listed in the table.

You can see immediately from the colour whether the status is correct (green) or critical (red). The text displayed in the column also provides information about the current status.

Viewing all monitoring values

You can see the list of all monitoring values under Matrix systems.

How to show a list of all monitoring values:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Monitoring.

The displayed table contains a list of all available monitoring values.

Enabling/disabling monitoring values

You can switch each monitoring value on and off *separately* or you can switch all monitoring values on or off *together*.

Deactivated monitoring values are not displayed in the web application.

IMPORTANT: The web application does *not* give any warnings about deactivated monitoring values and does also *not* send any SNMP traps for these values.

How to enable/disable an *individual* monitoring value:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the KVM switch you want to configure and then click on Configuration.
- 3. Click on the tab **Monitoring**.
- 4. Turn the slider in the column **Enabled** of the desired monitoring value to the right (enabled) or to the left (disabled).
- 5. Click on Save.

How to enable/disable all monitoring values:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the KVM switch you want to configure and then click on Configuration.
- 3. Click on the tab **Monitoring**.
- 4. Mark or unmark the **Enabled** checkbox in the column header to switch all values on or off.
- 5. Click on Save.

Advanced features for managing critical devices

The **Monitoring status** icon (see *User interface* on page 15) shows you at a glance whether all monitoring values are within the normal range (green icon) or if at least one monitoring value is outside the normal range (yellow or red icon).

The Monitoring status icon always takes the colour of the most critical monitoring value

Displaying the list of critical monitoring values

If the **Monitoring status** icon is displayed in yellow or red, you can access the **Active alarms** dialog by clicking on the icon.

The Active alarms dialog shows any critical values.

Acknowledging the alarm of a critical device

Many alarm messages require immediate action by the administrator. Other alarms (for example, the failure of the redundant power supply), on the other hand, indicate possibly uncritical circumstances.

In such a case, you can acknowledge the alarm message of a value. The value is thus downgraded from **Alarm** (red) to **Warning** (yellow).

How to acknowledge the monitoring message of a device:

- 1. Click on the red Monitoring status icon at the top right.
- 2. Select the alarm you want to acknowledge.
- 3. Click on Acknowledge.

Monitoring devices via SNMP

The *Simple Network Management Protocol* (SNMP) is used to monitor and control computers and network devices.

Practical use of the SNMP protocol

A *Network Management System* (NMS) is used to monitor and control computers and network devices. The system queries and collects data from the *agents* of the monitored devices.

IMPORTANT: Chinese and Cyrillic characters are not supported by many network management systems.

Therefore, make sure that the passwords you use do not contain such characters!

NOTE: An *agent* is a program that runs on the monitored device and determines its status. The determined data is transmitted to the *Network Management System* via SNMP.

If an *agent* detects a serious event on the device, it can automatically send a *trap* packet to the *Network Management System*. This ensures that the administrator is informed about the event at short notice.

Configuring an SNMP agent

How to configure an SNMP agent:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Go to the paragraph **SNMP agent**.

5. Enter the following values under Global:

Status:	Select the particular entry to either switch the SNMP agent off (Off) or on (Enabled).	
Protocol:	Select the protocol (TCP or UDP) – usually UDP – to be used to transmit the SNMP packets.	
Port:	Define the port – usually 161 – on which the <i>incoming</i> SNMP packets are to be accepted.	
SysContact:	Enter the admin's contact data (e.g. direct dial or e-mail address).	
SysName:	Enter the device name.	
SysLocation:	Enter the location of the device.	

6. If you want to process packets of protocol version **SNMPv2c**, enter the data listed on the following page in the section with the same name.

Access:	Activate read access (View), write access (Full) or deny access (No) via the <i>SNMPv2c</i> protocol.		
Source:	Enter the IP address or the address space of the addresses of incoming SNMP packets.		
 Examples: 192.168.150.187: Only IP address 192.168.150.187 192.168.150.0/24: IP addresses of space 192.168.150. 192.168.0.0/16: IP addresses of space 192.168.x.x 192.0.0.0/8: IP addresses of space 192.x.x.x 			
Read-only community:	Enter the name of the <i>Community</i> which has also been selected in the <i>Network Management System</i> .		

IMPORTANT: The password (*Community*) of the packages of protocol version *SNMPv2c* is transmitted unencrypted and can therefore be easily tapped.

If necessary, use the protocol version *SNMPv3* (see below) and a high *security level* to ensure secure data transmission.

7. If you want to process packets of protocol version **SNMPv3c**, enter the data in the section with the same name:

Access:	Activate read access (View), write access (Full) or deny access (No) via the <i>SNMPv3c</i> protocol.
User:	Enter the username for the communication with the Network Management System.
Authentication protocol:	Select the authentication protocol (MD5 or SHA) which has been activated in the <i>Network Management System</i> .
Authentication passphrase:	Enter the authentication passphrase for the communication with the <i>Network Management System</i> .
Security level:	Select one of the following options:
	 NoAuthNoPriv: user authentication and <i>Privacy</i> protocol deactivated AuthNoPriv: user authentication activated, <i>Privacy</i> proto-
	col deactivatedAuthPriv: user authentication and <i>Privacy</i> protocol activated
Privacy protocol:	Select the privacy protocol (DES or AES) which has been activated in the <i>Network Management System</i> .
Privacy passphrase:	Enter the privacy passphrase for secure communication with the <i>Network Management System</i> .
Engine ID method:	Select how the SnmpEngineID should be assigned:
	• Random: The <i>SnmpEngineID</i> is re-assigned with every restart of the device.
	• Fix: The <i>SnmpEngineID</i> is the same as the MAC address of the device's network interface.
	• User : The string entered under <i>Engine ID</i> is used as <i>SnmpEngineID</i> .
Engine ID:	When using the <i>Engine ID method</i> User , enter the string that is used as <i>Engine ID</i> .

Configuring SNMP traps

How to add a new trap or edit an existing trap:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the tab Network.
- 3. Go to the paragraph **SNMP trap**.
- 4. Click on Add or on Edit.
- 5. Enter the followng values under **Global**:

Server:		Enter the IP address of the Network Management Server.	
Protocol:		Select the protocol (TCP or UDP) – usually UDP – to be use to transmit the SNMP packets.	
P	ort:	Enter the port – usually 162 – on which <i>outgoing</i> SNMP packets are transmitted.	
R	etries:	Enter the number of retries to send an SNMP Inform.	
	NOTE: Inputs a <i>tion type</i> field.	re only possible if the Inform option is selected in the Notifica-	
Ti	meout:	Enter the timeout (in seconds) after which an <i>SNMP Inform</i> will be resent if no confirmation is received.	
NOTE: Inputs a Notification type		are only possible if the <i>Inform</i> option is selected in the field	
L	og level:	Select the severity of an event from which an SNMP trap is to be sent.	
		The selected severity and all lower severity levels are logged.	
	NOTE: If you events of this <i>1 - Alert</i> and <i>0 -</i>	select the severity 2-Critical, SNMP traps will be sent for severity level as well as for events of the severity levels <i>Emergency</i> .	
V	ersion:	Select if the traps are to be created and sent according to the <i>SNMPv2c</i> (v2c) or <i>SNMPv3</i> (v3) protocol.	
Ν	otification type:	Select if events are sent as Trap or Inform packet.	
	NOTE: <i>Inform</i> p <i>tem</i> . If this cont	ackets require a confirmation of the <i>Network Management Sys</i> - firmation is not available, transmission is repeated.	

6. If you selected protocol version **SNMPv2c** in the last step, enter the name of the *Community*, which was also selected in the *Network Management System*.

IMPORTANT: The password (*Community*) of the packages of protocol version *SNMPv2c* is transmitted unencrypted and can therefore be easily tapped.

If necessary, use the protocol version *SNMPv3* (see below) and a high *security level* to ensure secure data transmission.

7. If you selected protocol version **SNMPv3** in step 5, enter the following data in the section with the same name:

Username:	Enter the username for the communication with the <i>Network Management System</i> .	
Authentication protocol:	Select the authentication protocol (MD5 or SHA) which has been activated in the <i>Network Management System</i> .	
Authentication passphrase:	Enter the authentication passphrase for secure communica- tion with the <i>Network Management System</i> .	
Security level:	Select one of the following options:	
	 NoAuthNoPriv: user authentication and <i>Privacy</i> protocol deactivated 	
	• AuthNoPriv: user authentication activated, <i>Privacy</i> proto- col deactivated	
	• AuthPriv: user authentication and <i>Privacy</i> protocol activated	
Privacy protocol:	Select the privacy protocol (DES or AES) which has been activated in the <i>Network Management System</i> .	
Privacy passphrase:	Enter the privacy passphrase for secure communication with the <i>Network Management System</i> .	
Engine ID:	Enter the <i>Engine ID</i> of the trap receiver.	

8. Click on Save.

How to delete an existing trap:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the tab Network.
- 3. Go to the paragraph SNMP trap.
- 4. In the row of the receiver you want to delete, click on Delete.
- 5. Click on Save.

Users and groups

Efficient rights administration

The web application administrates up to 256 user accounts as well as the same amount of user groups. Any user within the system can be a member of up to 20 groups.

User accounts and user groups can be provided with different rights to operate the system.

ADVICE: Rights administration can be carried out almost completely through user groups. Therefore, user groups and the assigned rights have to be planned and implemented beforehand.

This way, user rights can be changed quickly and efficiently.

The effective right

The effective right determines the right for a particular operation.

IMPORTANT: The effective right is the maximum right, which consists of the user account's individual right and the rights of the assigned group(s).

EXAMPLE: The user JDoe is member of the groups Office and TargetConfig.

The following table shows the user account rights, the rights of the assigned groups and the resulting effective right:

Right	User JDoe	Group Office	Group TargetConfig	Effective right
Target config	No	No	Yes	Yes
Change own password	No	Yes	No	Yes
Target access	Full	View	No	Full

The settings of the *Target config* and *Change own password* rights result from the rights assigned to the user groups. The *Target access* right which, in this case, enables full access, is given directly in the user account.

The dialogue windows of the web application additionally display the effective right for every setting.

ADVICE: Click on the **Details** button to get a list of the groups and rights assigned to the user account.

Efficient user group administration

User groups let you create a shared right profile for multiple users with identical rights. Furthermore, any user accounts included in the member list can be grouped and therefore no longer have to be individually configured. This facilitates the rights administration within the matrix system.

If the rights administration takes place within user groups, the user profile only stores general data and user-related settings (key combinations, language settings, ...).

When initiating the matrix system, it is recommended to create different groups for users with different rights (e.g. »*Office*« and »*IT*«) and assign the respective user accounts to these groups.

EXAMPLE: Create more groups if you want to divide the user rights even further. If, for example, you want to provide some users of the *»Office«* group with the *multi-access* right, you can create a user group for these users:

- Create a user group (e. g., »Office_MultiAccess«) with identical settings for the »Office« group. The multi-access right is set to full. Assign the respective user accounts to this group.
- Create a user group (e. g., »MultiAccess«) and set only the multi-access right to Yes. In
 addition to the »Office« group, also assign the respective user accounts to this
 group.

In both cases, the user is provided with the *full* effective right for *multi-access*.

ADVICE: The user profile lets you provide extended rights to a group member.

Administrating user accounts

User accounts let you define individual rights for every user. The personal profile also provides the possibility to define several user-related settings.

IMPORTANT: The administrator and any user assigned with the *Superuser* right are permitted to create and delete user accounts and edit rights and user-related settings.

Creating a new user account

The web application manages up to 256 user accounts. Each user account has individual login data, rights and user-specific settings for the KVM system.

How to create a new user account:

- 1. In the menu, click on **User**.
- 2. Click on Add user.
- 3. Enter the following values in the dialog box:

Name:	Enter the username.
Password:	Enter the user account password.
Confirm password:	Repeat the password.
Clear text:	If necessary, mark this entry to view and check both passwords.
Full name:	If desired, enter the user's full name.
Comment:	If desired, enter a comment regarding the user account.
Enabled:	Mark this checkbox to activate the user account.
NOTE: If the user a KVM system.	account is deactivated, the user is not able to access the

4. Click on Save.

IMPORTANT: After the user account has been created, it does not have any rights within the KVM system.

Renaming a user account

How to change the name of a user account:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Enter the username under Name.

- 4. Optional: Enter the user's full name under Full name
- 5. Click on Save.

Changing the password of a user account

How to change the password of a user account:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Change the following values in the dialog box:

New password:	Enter the new password.
Confirm password:	Repeat the new password.
Clear text:	Mark this entry to view and check both entered passwords.

Changing the user account rights

Any user account can be assigned with different rights.

The following table lists the different user rights. Further information on the rights can be found on the indicated pages.

Name	Right	Page
Change own password	Change own password	page 61
Multi access	Access type when a target computer is simultaneously accessed	page 67
Change personal profile	Change personal user settings	page 140
Push-Get rights	Carry out Push-Get function	page 143
Superuser right	Unrestricted access to the configuration of the system	page 60
Target access rights	Access rights to a target module	page 65
Target config	Configuration of target modules	page 71
Target group access rights	Access to a target group	page 66
Target multi access rights	Access if a target computer is accessed by several users	page 67
Access to USB devices	Access USB devices for all modules	page 69
Config Panel Login	Login to the ConfigPanel web application	page 60
EasyControl Login	Access to EasyControl tool	page 61
Confirm monitoring alert	Confirmation of a monitoring alarm	page 61

Changing a user account's group membership

NOTE: Any user within the system can be a member of up to 20 user groups.

How to change a user account's group membership:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on Configuration.
- 3. Click on the Membership tab.
- 4. In the **Members** column, turn the slider of the group to which you want to add the user to the right (enabled).

ADVICE: If necessary, use the *Search* field to limit the number of user groups to be displayed in the selection window.

5. In the **Members** column, turn the slider of the group from which the user is to be removed to the left in the (disabled).

ADVICE: If necessary, use the *Search* field to limit the number of user groups to be displayed in the selection window.

6. Click on Save.

Enabling or disabling a user account

IMPORTANT: If a user account is disabled, the user has no access to the KVM system.

How to enable or disable a user account:

- 1. In the menu, click on User.
- 2. Click on the user account you want to configure and then click on Configuration.
- 3. Mark the check box **Enabled** to activate the user account.

If you want to block access to the system with this user account, unmark the checkbox.

Deleting a user account

How to delete a user account:

- 1. In the menu, click on User.
- 2. Click on the user account you want to delete and then click on Delete.
- 3. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Administrating user groups

User groups enable the user to create a common rights profile for several users with the same rights and to add user accounts as members of this group.

This way, the rights of these user accounts do not have to be individually configured, which facilitates the rights administration within the KVM system.

NOTE: The administrator and any user with the *Superuser* right are authorised to create and delete user groups as well as edit the rights and the member list.

Creating a new user group

The user can create up to 256 user groups within the system.

How to create a new user group:

- 1. In the menu, click on **User groups**.
- 2. Click on Add user group.
- 3. Enter the following values in the dialog box:

Name:	Enter the username.
Comment:	If desired, enter a comment regarding the user account.
Enabled:	Mark this checkbox to activate the user account.
NOTE: If the user group is disabled, the group rights do <i>not</i> apply to the assigned members.	

4. Click on Save.

IMPORTANT: Directly after the new user group has been created, it contains no rights within the system

Renaming a user group

How to rename a user group:

- 1. In the menu, click on **User groups**.
- 2. Click on the user group you want to configure and then click on Configuration.
- 3. Enter the group name under Name.
- 4. Click on Save.

Changing the user group rights

The various user groups can be assigned with different rights.

The following table lists the different user rights. Further information about the rights is given on the indicated pages.

Name	Right	Page
Change own password	Change own password	page 61
Multi access	Access type when a target computer is simultaneously accessed	page 67
Change personal profile	Change personal user settings	page 140
Push-Get rights	Carry out Push-Get function	page 143
Superuser right	Unrestricted access to the configuration of the system	page 60
Target access rights	Access rights to a target module	page 65
Target config	Configuration of target modules	page 71
Target group access rights	Access to a target group	page 66
Target multi access rights	Access if a target computer is accessed by several users	page 67
Access to USB devices	Access USB devices for all modules	page 69
Config Panel Login	Login to the ConfigPanel web application	page 60
EasyControl Login	Access to EasyControl tool	page 61
Confirm monitoring alert	Confirmation of a monitoring alarm	page 61

Administrating user group members

How to administrate user group members:

- 1. In the menu, click on **User groups**.
- 2. Click on the user group you want to configure and then click on Configuration.
- 3. Click on the Members tab.
- 4. In the **Members** column, click on the slider of the users you want to add to the group (enabled).

ADVICE: If necessary, use the *Search* field to limit the number of users to be displayed in the selection window.

5. In the **Members** column, click on the slider of the users you want to delete from the group (disabled).

ADVICE: If necessary, use the *Search* field to limit the number of users to be displayed in the selection window.

6. Click on Save.

(De)activating a user group

How to (de)activate a user group:

- 1. In the menu, click on **User groups**.
- 2. Click on the user group you want to configure and then click on **Configuration**.
- 3. Activate the **Enabled** checkbox to activate the user group.

If you want to lock the access to the KVM system for members of this user group, deactivate the checkbox.

4. Click on Save.

Deleting a user group

How to delete a user group:

- 1. In the menu, click on **User groups**.
- 2. Click on the user group you want to delete and then click on Delete.
- 3. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking No.

System rights

Rights for unrestricted access to the system (Superuser)

The *Superuser* right allows a user unrestricted access to the configuration of the KVM system.

NOTE: The information about the user's previously assigned rights remains stored when the *Superuser* right is activated and is reactivated when the right is revoked.

How to assign a user account with unrestricted access to the system:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **System rights**.
- 4. Under Superuser right, select between the following options:

Yes:	Allow full access to the KVM system and the connected devices
No:	Deny full access to the KVM system and the connected devices

5. Click on Save.

Changing the login right to the web application

How to change the login right to the web application:

- 1. In the menu, click on **Users** or **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **System rights.**
- 4. Under Config Panel Login, select between the following options:

Yes: Allow access to web application

No: Deny access to web application

Rights to access the EasyControl tool

How to change the rights to access the *EasyControl* tool:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **System rights.**
- 4. Under EasyControl Login, select between the following options:

Yes: Allow access to the *EasyControl* tool

No: Deny access to the *EasyControl* tool

5. Click on Save.

Rights to change your own password

How to change the right to change your own password:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **System rights**.
- 4. Under Change own password, select between the following options:

Yes:	Allow users to change their own password
No:	Deny users the right to change their own password

5. Click on Save.

Authorization to confirm a monitoring alarm

How to change the authorization to confirm a monitoring alarm:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab System rights.
- 4. Under Confirm monitoring alert, select between the following options:

Yes:	Confirmation of monitoring alarms allowed
No:	Confirmation of monitoring alarms denied

Authorisation to execute the »Replace device« function

If a computer or a target module is replaced by new device, the previous config settings can be copied to the new device. After the config settings have been copied to the new device, it can be operated immediately.

In the default settings, the authorisation to execute the function (see page 84) is limited to the administrator and all users with activated superuser rights.

If desired, the authorization can be granted to other users.

How to change the right to change your own password:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems**.
- 4. Go to the Global device rights section.
- 5. Under Permission to replace device, select between the following options:

Yes:	Allow users to execute the function
No:	Deny users to execute the function

Advanced functions of the KVM system

Identifying a device by activating the Identification LED

Some devices provide an Identification LED on the front panel.

Use the web application to switch the device LEDs on or off in order to identify the devices in a rack, for example.

How to (de)activate the Identification LED of a device:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure.
- 3. Open the menu Service tools and select the entry Ident LED.
- 4. Click on LED on or LED off.
- 5. Click on the red [X] to close the window.

Saving and restoring the data of the KVM system

The backup function lets you save your configurations. You can reset your configurations with the restore function.

How to save the configuration of the KVM system:

- 1. In the menu, click on **System**.
- 2. Click on Backup & restore.
- 3. Click the Backup tab.
- 4. Optional: Enter a Password to secure the backup file or a Comment.
- 5. Select the scope of data you want to back up: You can back up either the **network** settings and/or the Application settings.
- 6. Click Backup.

How to restore the configuration of the KVM system:

- 1. In the menu, click on **System**.
- 2. Click on Backup & restore.
- 3. Click on **Restore** tab.
- 4. Click Select file and open a previously created backup file.
- 5. Use the information given under **Creation date** and **Comment** to check if you selected the right backup file.
- 6. Select the scope of data you want to restore: You can restore either the **network set**tings and/or the **Application settings**.

NOTE: If one of these options cannot be selected, the data for this option was not stored.

7. Click Restore.

Activating premium functions

With every purchase of a premium function, you receive a feature key. This file contains a key to activate the purchased function(s).

The premium function(s) is/are activated by importing this key to the web application.

How to import a feature key to activate the purchased function(s):

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure.
- 3. Open the menu Service tools and select the entry Features.
- 4. Click on **Import feature key from file...** and import the feature key (file) via the file interface.

After the file is loaded, the clear text of the feature key is displayed in the text field.

NOTE: The clear text of the feature key can also be copied into the text field.

2 Matrix system

In the *Matrix systems* menu of the web application, you can configure various settings of the matrix switches and the devices connected.

The following pages provide a detailed description of these settings.

Target modules

Target modules connect target computers to the KVM matrix system and can be accessed with console modules.

Adjusting access and configuration rights

Access rights to a target module

ADVICE: We recommend using target groups to help assign all target access rights (see page 111).

This makes it easier to keep an overview of the KVM matrix system. It also benefits the operating performance of the system's on-screen display.

In order to execute particular user settings which deviate from existing target groups, you can assign users with individual access rights in addition to group rights.

How to change target access rights:

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Individual rights** in the selection area on the right-hand side.
- 4. In the **Individual target rights** field, you can select the desired target module on the lefthand side.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

5. In the **Access** field on the right-hand side of the dialogue, you can select between the following options:

Yes:	Allow full access to the computer connected to the target module.
No:	Deny access to the computer connected to the target module.
View:	View screen contents of the computer connected to the tar- get module

- 6. Repeat steps 5 and 6 if you want to change the access rights for other target modules.
- 7. Click on Save.

Access rights to a target group

How to change the target group access rights:

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Device group rights** in the selection area on the right-hand side.
- 4. In the **Device group rights** field, you can select the desired target group on the lefthand side.

ADVICE: If necessary, use the *Search* field to limit the number of target groups to be displayed in the selection window.

5. In the **Access** field on the right-hand side of the dialogue, you can select between the following options:

Yes:	Allow full access to the target modules of the group.
No:	Deny access the target modules of the group.
View:	View screen contents of a target module of a group

- 6. Repeat steps 5 and 6 if you want to change the access rights for other target modules.
- 7. Click on Save.

Access mode for simultaneous access to target computers

In the default settings of the KVM matrix system only one user can access a target computer.

This restriction can be lifted by changing the »multi access rights« for a user account or a user group.

After being assigned with *multi access rights*, a user or a user group can access target computers even if they are already accessed by another user. All accessing consoles are able to operate the target computer.

You can either change the global settings to allow multiple users to access a target computer at the same time (for all target computers to which a user or a user group has access) *or* you can change the rights for particular target computers or target groups only.

NOTE: The right for simultaneous access to target modules depends on the user's effective right (see page 51). The effective right is the highest right and results from the individual right of a user account and the rights of the assigned group(s).

How to change the rights to access *all* target computers at the same time as another user:

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Global device rights** in the selection area on the right-hand side.
- 4. Select one of the options given under Multi access:

Yes:	Allow access to a target computer already accessed by another user
No:	Deny access to a target computer already accessed by another user
View:	View screen contents of a target computer already accessed by another user. Inputs are not possible.

How to change the rights to access a *particular* target module at the same time as another user:

NOTE: Multi access rights can be configured and used only if a user or a user group is assigned with the required rights to access the target computer (see page 65).

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Individual rights** in the selection area on the right-hand side.
- 4. In the **Individual target rights** field, you can select the desired target module on the lefthand side.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

5. Select one of the options given under Multi access on the right-hand side:

Yes:	Allow access to a target computer already accessed by another user
No:	Deny access to a target computer already accessed by another user
View:	View screen contents of a target computer already accessed by another user; inputs are not possible

6. Click on Save.

How to change the rights to access *a particular* target group at the same time as another user:

NOTE: Multi access rights can be configured and used only if a user or a user group is assigned with the required rights to access the target computer (see page 65).

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Device group rights** in the selection area on the right-hand side.

4. In the **Device group rights** field, you can select the desired target group on the lefthand side.

ADVICE: If necessary, use the *Search* field to limit the number of target groups to be displayed in the selection window.

5. Select one of the options given under Multi access on the right-hand side:

Yes:	Allow access to a target computer of a target group already accessed by another user
No:	Allow access to a target computer of a target group already accessed by another user
View:	View screen contents of a target computer of the target group already accessed by another user; inputs are not possible

6. Click on Save.

Access to USB devices

In the defaults of the matrix system, users have access to the USB devices of a channel group.

If required, this right can be denied by changing the right »Access to USB devices« of a user account or a user group.

You can either deny users the right to access USB devices of a particular target computer globally (for all target computers to which a user or a user group has access) *or* you can change the rights for particular target computers or target groups only.

NOTE: The access right depends on the user's effective right (see page 51). The effective right is the highest right and results from the individual right of a user account and the rights of the assigned group(s).

How to change the right to access USB devices for *all* target computers:

- 1. In the menu, click on Users or on User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Global device rights** in the selection area on the right-hand side.

4. Select one of the options given in the **Access to USB devices** field:

Yes:	Allow access to USB devices.
No:	Deny access to USB devices.

5. Click on Save.

How to change USB access rights for *a particular* target module:

NOTE: USB access rights can be configured and used only if a user or a user group is assigned with the required rights to access the target computer (see page 65).

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Individual rights** in the selection area on the right-hand side.
- In the Individual target rights field, you can select the desired target module on the lefthand side.

IMPORTANT: Configure USB access rights for the target module that provides the main KVM channel of the channel group. The USB channel is assigned to the same channel group.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

5. Select one of the options given in the Access to USB devices field:

Yes:	Allow access to USB devices.
No:	Deny access to USB devices.

6. Click on Save to save your settings.

How to change the right to access USB devices for *a particular* target group:

NOTE: USB access rights can be configured and used only if a user or a user group is assigned with the required rights to access the target computer (see page 65).

- 1. In the menu, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Device group rights** in the selection area on the right-hand side.
- 4. In the **Device group rights** field, you can select the desired target group on the lefthand side.

IMPORTANT: Configure USB access rights for the target module that provides the main KVM channel of the channel group. The USB channel is assigned to the same channel group.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

5. Select one of the options given in the Access to USB devices field:

Yes:	Allow access to USB devices of target group.
No:	Deny access to USB devices of target group.

6. Click on Save.

Rights to configure target modules

How to change the right to view and edit the configuration a target module:

- 1. In the menu, click on Users or on User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Global device rights** in the selection area on the right-hand side.

4. Select one of the options given under Target configuration:

Yes:	Allow user or user group to view and edit the device configu- ration.
No:	Deny user or user group to view and edit the device configura- tion.

5. Click on Save.

Basic configuration of target modules

Changing the name of a target module

During the start-up of the KVM matrix system any target modules are named automatically.

How to change the name of a target module:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on **Configuration**.
- 3. Enter the name of the target module in the Name field of the Device section.
- 4. Click on Save.

Changing the comment of a target module

The list field of the web application displays the name of a target module as well as the comment entered.

ADVICE: For example, use the comment field to note where the target module is placed.

How to change the name of a target module in the Configuration menu:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on **Configuration**.
- 3. Enter any comment in the **Comment** field of the *Device* section.
- 4. Click on Save.

Deleting a target module from a KVM matrix system

If the system is not able to find a target module that has previously been integrated in the KVM system, the system assumes that the device is switched off. If a target module has been permanently removed from the system, you can manually delete it from the list of target modules.

NOTE: You can delete only target modules that are switched off.

How to delete a target module that is switched off or disconnected from the system:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to delete and then click on Delete.
- 3. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Copying configuration settings to a new target module

If a target module of the KVM matrix system is replaced by another device, you can copy the configuration settings of the device to be replaced to the new device. After you copied the configuration settings to the new device, you can operate it immediately.

IMPORTANT: The target module whose settings you copy to a new device will then be deleted from the KVM matrix system.

How to copy configuration settings to a new target module:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the *new* device.
- 3. Open the Service tools menu and select the item Replace device.
- 4. Select the device whose configuration settings you want to copy.
- 5. Click on Save.

Copying the configuration settings of a target module

You can copy the configuration settings **General**, **KVM connection**, **Channels**, **GPIO** (if supported by the device) and/or **Monitoring**) of a target module to the settings of one or multiple other target modules.

NOTE: The name of and the comment about the target module are not copied.

How to copy the configuration settings of a target module:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module whose configuration you want to copy.
- 3. Click on Service tools and then click on Copy configuration.
- 4. In the upper area, you can select which settings of the target module you want to copy (General, KVM connection, Channels, GPI0 and/or Monitoring).
- 5. In the lower area, select the target modules to which you want to copy the data.
- 6. Click on Copy configuration.

Settings for special hardware

(De)Activating an USB keyboard mode the »Generic USB« mode

USB target modules support different USB input devices. You can use the special features of a USB input device after selecting the specific USB keyboard mode.

As an alternative to the specific USB keyboard modes, you can also use the **generic USB** mode. In this mode, the data from the USB devices connected to the top **Keyb**./ **Mouse** interface is transmitted to the active target module.

IMPORTANT: The **generic USB** mode supports USB mass storage devices and many available HID device. However, being able to operate particular USB device in generic USB mode can not be guaranteed.

IMPORTANT: When connecting a USB hub or a USB composite device, which contains multiple USB devices, only one of the connected HID devices can be used in **generic USB** mode.

• **USB keyboards:** In addition to the keys of standard keyboard layouts, the default USB keymode **PC** Multimedia supports several multimedia keys like Loud and Quiet.

When using *Apple* keyboards, special keyboard modes let you use the special keys of these keyboards.

The following table lists the supported USB keyboards:

INPUT DEVICE	SETTING	
PC keyboard with standard keyboard layout	PC Standard:	
PC keyboard with additional multimedia keys	 Multimedia 	
Apple keyboard with numeric keypad (A1243)	Apple A1243	

• **Displays and tablets:** You can operate computers connected to the target module with one of the supported *displays* or *tablets*:

INPUT DEVICE	SETTING
HP 2310tk	→ HP 2310t
iiyama T1931	→ iiyama T1931
iiyama TF2415	∙ iiyama TF2415
NOTTROT N170 KGE	NOTTROT N170 KGE
Wacom Cintiq 21UX	• Wacom Cintiq 21US
Wacom Intuos3	 Wacom Intuos 3
Wacom Intuos4 S	 Wacom Intuos 4 S
Wacom Intuos4 M	 Wacom Intuos 4 M
Wacom Intuos4 L	 Wacom Intuos 4 L
Wacom Intuos4 XL	 Wacom Intuos 4 XL
Wacom Intuos5 S	 Wacom Intuos 5 S
Wacom Intuos5 M	 Wacom Intuos 5 M
Wacom Intuos5 L	 Wacom Intuos 5 L
Wacom Intuos Pro L	• Wacom Intuos Pro L

• Generic-USB mode: In this mode, data of the USB device connected to the top Keyb./ Mouse socket of the user module is transmitted to the target module without being altered.

INPUT DEVICE	SETTING
any USB mass storage or USB HID device	 Generic USB

IMPORTANT: The **generic USB** mode supports many available USB mass storage devices and HID devices. However, being able to operate particular device in generic USB mode can not be guaranteed.

• **Controller:** The **ShuttlePRO v2** multimedia controller is used to control various audio and video programs. With a special USB keyboard mode, you can use the controller to operate the computer connected to the target module:

INPUT DEVICE	SETTING
Contour ShuttlePRO v2	 Contour Shuttle Pro 2

• LK463-compatible keyboard: You can connect an LK463-compatible keyboard to the user module. The arrangement of the 108 keys of such keyboards corresponds to the OpenVMS keyboard layout.

A special USB keyboard mode ensures that the pressing of a special key on this keyboard is transmitted to the target computer:

INPUT DEVICE	SETTING
LK463-compatible keyboard	• LK463

How to select a USB keyboard mode:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on **Configuration**.
- 3. Select the desired option in the **USB HID mode** field of the *Configuration* paragraph (see table on page 74):.

NOTE: Update the firmware of both the matrix switch and the console module if the web application does not show all keyboard modes.

4. Click on Save.

Adjusting the operating mode of the RS232 interface

In the default setting of the console module, you can connect any RS232-compatible device to the *optional* RS232 interface of the console module. The RS232 data stream is transmitted unchanged to the target module.

Fro transmitting RS422 signals, you can use two **G&D RS232-422 adapters**. Each of the adapters converts the RS232 interface of the console module and the target module into **RS422** interfaces.

IMPORTANT: If you want to transmit **R\$422** signals, in addition to using adapters, you also need to change the operating mode of the *R\$232* interfaces of both the console *and* the target module.

How to set the operating mode of the RS232 interface:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on **Configuration**.
- 3. Click on the tab General.

4. Select one of the options of the **Serial communication** field under the paragraph **Configuration**:

RS232:	The data stream of an RS232 device is transmitted from the target module to the console module (<i>default setting</i>).
RS422:	The data stream of an RS422 device is transmitted from the target module to the console module via separately available G&D RS232-422 adapters.

5. Click on Save.

Defining the EDID profile to be used

The EDID information (*Extended Display Identification Data*) of a monitor inform the graphics card of the connected computer about various technical features of the device.

The EDID profile of the monitor connected to the console module is not available at the target module. Therefore, the target module transmits a standard profile to the computer. The EDID information of this profile is optimised for most graphics cards.

We provide additional profiles for special resolutions.

ADVICE: In some cases it is recommended to read out the EDID profile of the console monitor and activate the configuration of the target module afterwards.

How to choose the EDID profile to be transmitted to the computer:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on Configuration.
- 3. In the **EDID profile** field of the *Configuration* section, you can select either the default profile (**Device specific default profile**) or another profile from the list.

NOTE: The names of G&D profiles provide information on the profile's resolution and refresh rate.

For example, the profile **GUD DVI1024D4 060 1280×1024/60** is provided for a resolution of 1280×1024 pixels at a 60 Hz refresh rate.

Reducing the colour depth of image data to be transmitted

By default, the target module transmits image information with a maximum colour depth of 24 bit to the console module.

When using a high image resolution and displaying moving images, it may happen in exceptional cases that some images are "skipped" on the console module.

In this case, reduce the colour depth of the image data to be transmitted to 18 bit. This can reduce the data volume to be transmitted.

NOTE: Depending on the content of the image, slight colour gradations may occur when reducing the colour depth.

How to reduce the colour depth of image data to be transmitted:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on Configuration.
- 3. In the **Colour depth** field of the *Configuration* section, you can select one of the following options:

24 Bit: Transmit image data with a maximum colour depth of 24 bits.

18 Bit: Reduce colour depth of image data to 18 bits.

4. Click on Save.

Advanced features

Sending a key combination after disconnecting all users

Use the **Key Macros** function to send a key combination to the computer connected to the target module after having disconnected all users.

NOTE: For example, send the key combination Win+L to lock a Windows computer after disconnecting all users.

How to configure a key macro:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on Configuration.

3. Under Key-Macros, select one of the following options:

Send a key combina- tion after disconnec- ting all users:	Enable or disable the Key Macro function.
Key combination:	Select up to three of the listed keys that are sent to the computer together as a key combination.

4. Click on Save.

Enabling/disabling the keyboard signal

In the default settings, the signals of keyboard and mouse connected to the console are transmitted to a target module.

In the settings of the target module, you can enable or disable the transmission of the keyboard signal.

How to enable/disable the transmission of the keyboard signal:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on Configuration.
- 3. In the **Keyboard activated** field of the *Configuration* section, select one of the following options:

Enabled:	Transmit keyboard signals to the target module of this channel (<i>default</i>).
Disabled:	Do not transmit keyboard signals to the target module.

4. Click on Save.

Configuring default actions after a user logon

After a user has logged on to a console module, the OSD usually opens on the screen of said console module.

The configuration setting **Default execution** allows you to define a target module that is automatically accessed after a user logs on. As an alternative, you can also define a script that runs automatically.

How to select a default target that is automatically executed after a user logon:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on **Configuration**.

- 3. Click on the tab **KVM matrix systems** and click on **Personal profile** in the selection area on the right-hand side.
- 4. In the Default execution field, select the option Default target.
- 5. Scroll down to the **Default target** area.
- 6. Click on the slider of the desired default target in the column Default target (enabled).

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

7. Click on Save.

How to select a default script or a script group that is automatically executed after a user logon:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on Configuration.
- 3. Click on the tab **KVM matrix systems** and click on **Personal profile** in the selection area on the right-hand side.
- 4. In the Default execution field, select the option Default script/script group.
- 5. Scroll down to Default script/script group.
- 6. Click on the slider of the desired default script/script group in the column **Default** script/script group.

ADVICE: If necessary, use the *Search* field to limit the number of scripts and groups to be displayed in the selection window.

7. Click on Save.

How to disable the configured default action:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on Configuration.
- 3. Click on the tab **KVM matrix systems** and click on **Personal profile** in the selection area on the right-hand side.
- 4. In the Default execution field, select the option None.
- 5. Click on Save.

Remembering the last target module

Enable the **Remember last target** function in your personal profile to remember the target module you accessed before logging out of the system. After the next login, you will automatically be switched to this target module.

NOTE: Turning off the console module on which the user is logged in is treated like a logout.

IMPORTANT: If the **Remember last target** function is activated, the user's configured default target is ignored.

How to enable/disable automatic access to the last accessed target module:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Personal profile** in the selection area on the right-hand side.
- 4. Select one of the options given under Remember last target:

On: After the login, you switch to the target module that you accessed last.

Off: After the login, you access the configured default target.

If you did not configure a default target, the **Select** menu opens (default).

5. Click on Save.

Multiuser information

If multiple users are accessing a target computer (multiuser mode), *multiuser* information can be activated. This way, all users accessing a target computer are provided with the information that *at least* one other user is currently accessing the same target computer.

NOTE: The setting to display this information is usually configured for the entire system and individually for each user account.

Both options are described on this page.

How to enable or disable »multiuser« information for the entire system:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select one of the options given under Multiuser display:

On:	Enables the display of <i>multiuser</i> information
Off:	Disables the display of multiuser information

4. Click on Save.

How to enable or disable the display of *multiuser* information for a *particular* user account:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the tab **KVM matrix systems** and click on **Personal profile** in the selection area on the right-hand side.
- 4. Select one of the options given under Multiuser OSD info:

Off:	Do not display multiuser information
On:	Display multiuser information
System:	Apply global system settings (see above)

5. Click on Save.

Viewing status information of a target module

How to view the status information of a target module:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to configure and then click on Configuration.
- 3. Click on the tab Information.
- 4. The following information is displayed in the dialog box that opens now:

Name:	Name of target module
Device ID:	Physical ID of target module
Status:	Current status (On or Off) of target module
Class:	Device class

Firmware name:	Firmware name
Firmware rev.:	Firmware version
Hardware rev.:	Hardware version
IP address ⊤ransmission:	IP address of Transmission interface
MAC Transmission:	MAC address of Transmission interface
Serial number:	Serial number of the module
-	
Matrix switch:	Name of the matrix switch to which the module is connected

5. Click on Close.

Viewing the active connections of a target module

How to view the active connections of a target module:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the desired target module and then click on **Service tools > Active connections**.

A table informs you about all components (such as console module, matrix switch and target module) included in the active connection.

You can also view the medium (CAT/fibre) and the connected user.

3. Click on Close.

Restarting a target module

Use this function to restart a target module. Before restarting you will be prompted for confirmation to prevent an accidental restart.

How to restart a target module using the web application:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to restart.
- 3. Open the Service tools menu and select the item Restart.
- 4. Confirm the security prompt by clicking on Yes.

Updating the firmware of target modules

You can update the firmware of target modules comfortably via web application.

How to update the firmware of target modules:

- 1. In the menu, click on Matrix systems > [Name] > Target modules.
- 2. Click on the target module you want to update.
- 3. Click on Service tools and then click on Firmware update.
- 4. Click on Supply firmware image files.

NOTE: If the firmware file is already stored in the internal device memory, you can skip this step.

Select the firmware file on your local data carrier and click on Open.

NOTE: Press the Shift key to select multiple firmware files using the left mouse key.

The firmware file is transferred to the internal device memory and can then be selected for the update.

- 5. Select the firmware files to be used from the internal device memory and click on **Continue**.
- 6. If required, select the **Target version** of the devices if you have selected several firmware files for one device in step 5.
- 7. Click on the **Update** slider of all devices you want to update.
- 8. Click Run update.

Remote gateways and remote targets

The target modules of the **RemoteAccess-CPU** series let you integrate virtual machines into a digital matrix switch. You can access these virtual machines via network.

NOTE: To establish a network connection to virtual machines, you can use the **SSH**, **VNC** or **RDP** protocol.

Like other targets, the virtual machines connected via these target modules are integrated into the OSD and the operating concept of the matrix switch:

As usual, you connect to a virtual machine (*remote target*) via the Select menu in the OSD and can also use functions such as *push-get*, *multi-user access* or *CrossDisplay-Switching* with these virtual machines.

The instructions and functions provided in the chapter *Target modules* from page 65 also apply for remote targets (apart from marked exceptions).

To connect a *remote target*, you need to configure the *remote gateway* and the different *remote targets*.

NOTE: The following terms are important to distinguish in connection with remote targets:

• **Remote gateway:** Each connected target module of the **RemoteAccess-CPU** series is listed under *Remote Gateways* in the web application.

Remote gateways establish a connection between a KVM matrix system and virtual machines

• **Remote targets:** Configured virtual machines are called remote targets within a KVM matrix system. They are listed under *Remote targets* in the web application

• **Remote pools:** A remote pool groups all remote targets that are accessible via the remote gateways included in the pool.

NOTE: You can adjust the mouse speed of a *remote target*. Further information on this topic are provided on page 173 of this manual and in the separate OSD manual.

Configuring remote gateways

Changing the name of a remote gateway

How to change the name of a remote gateway:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the remote gateway you want to configure and then click onConfiguration.
- 3. Enter the name of the remote gateway in the Name field of the Device section.
- 4. Click on Save.

Changing the comment of a remote gateway

The list field of the web application displays the name of a remote gateway as well as the comment entered.

How to change the comment of a remote gateway:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the remote gateway you want to configure and then click on **Configuration**.
- 3. Enter any comment in the **Comment** field of the *Device* section.
- 4. Click on Save.

Configuring the network interface

The device provides a network interface. This interface is used to connect to one of the virtual machines and allows direct access to the web application.

By default, the following settings of the Network interface are preselected:

- IP address of the *Network* interface: Obtain address via DHCP (Fallback: IP address:192.168.0.1)
- Global network settings: Obtain settings via DHCP

How to configure the settings of a network interface:

NOTE: The *Link Local* address space 169.254.0.0.0/16 is reserved for internal communication between devices according to RFC 3330. It is not possible to assign an IP address of this address space!

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Enter the following values under Interface A:

Operating mode:	Select the operating mode of Interface A :
	Static: A static IP address is assigned.DHCP: Obtain IP address from a DHCP server.
IP address:	Enter the IP address of the interface if the operating mode <i>Static</i> is selected.
Netmask:	Enter the netmask of the network if the operating mode <i>Static</i> is selected.

5. Click on Save.

Configuring global network settings

Global network settings ensure that the web application is accessible from all subnetworks, even in complex networks.

How to configure global network settings:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network.
- 4. Select the section Global settings.

5. Enter the following values:

Operating mode: Enter the desired operating mode:	
	• Static: Use of static settings.
	• DHCP : Obtain settings from a DHCP server.
In the <i>DHCP</i> of cally. Entries a	perating mode the following settings are obtained automati- re not possible.
Hostname:	Enter the hostname of the device.
Domain:	Enter the domain to which the device should belong.
Gateway:	Enter the IP address of the gateway.
DNS server 1:	Enter the IP address of the DNS server.
DNS server 2:	Optionally, enter the IP address of another DNS server.

6. Click on Save.

Assigning a remote pool

A *remote pool* groups all remote targets that are accessible via the existing remote gateways included in the pool.

All *remote targets* and *remote gateways* are automatically assigned to the default pool. If you want to limit the accessibility, you can do so at any time by assigning a pool that you have defined.

How to change the pool assignment of a remote gateway:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab **Remote pool**.
- 4. In the **Assigned** column, click on the slider of the pool (enabled) to which you

NOTE: Each remote gateway belongs to exactly one remote pool.

If you don't select a *specific* pool, the remote gateway automatically belongs to the default pool.

want to assign the remote gateway.

Viewing monitoring values

You can see the list of all monitoring values under Remote gateways.

How to open the list containing all monitoring values:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab **Monitoring**.

The displayed table contains a list of all available monitoring values.

4. Click on Save.

NOTE: Chapter *Monitoring functions* from page 43 provides more information on how to configure monitoring values.

Viewing status information of a remote gateway

How to view the status information of a remote gateway:

- 1. In the menu, click on Matrix systems > [Name] > Remote gateways.
- 2. Click on the remote gateway you want to configure and then click on **Configuration**.
- 3. Click on the tab Information.

4. The following information is displayed in the dialog box that opens now:

Name:	Name of the remote gateway
Device ID:	Physical ID of the remote gateway
Status:	Current status (<i>online</i> or <i>offline</i>) of the remote gateway
Class:	Device class
Firmware name:	Firmware name
	Eimmene energien
FILIIIwale lev	Filliwale version
Hardware rev.:	Hardware version
IP address A:	IP address of the network interface
MAC A:	MAC address of the network interface
Serial number:	Serial number of the module
Matrix switch:	Name of the matrix switch to which the module is
	connected
Port:	Port of the matrix switch to which the module is connected

5. Click on Close.

Configuring remote targets

Changing the name of a remote target

How to change the name of a remote target:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Enter the name of the remote target in the Name field of the *Device* section.
- 4. Click on Save.

Changing the comment of a remote target

The list field of the web application displays the name of a remote target as well as the comment entered.

How to change the comment of a remote target:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Enter any comment in the **Comment** field of the *Device* section.
- 4. Click on Save.

Saving the resolution of a virtual machine

To make sure the video signal from the virtual machine is displayed correctly on the console modules, you need to provide information about the resolution set in the virtual machine.

How to save the resolution set in a virtual machine in the KVM matrix system:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Select the resolution set in the virtual machine in the **Resolution** field on the *General* tab:

1024x768/60Hz/VESA DMT	
1280x1024/60Hz/VESA DMT	
1680x1050/60Hz/VESA CVT	
1600x1200/60Hz/VESA DMT	
1920x1200/60Hz/VESA CVT-RB	
2048x2160/30Hz/CEA-861-F	
2560x1440/60Hz/VESA CVT-RB	
2560x1600/60Hz/VESA CVT-RB	
3840x2160/30Hz/VESA CVT-RB	
3840x2160/30Hz/CEA-861-F	

Reducing the colour depth of the image data to be transmitted

By default, a remote target transmits image information with a maximum colour depth of 24 bit to the console module.

When using a high image resolution and displaying moving images, it may happen in exceptional cases that some images are "skipped" on the console module.

In this case, reduce the colour depth of the image data to be transmitted to 18 bit. This can reduce the data volume to be transmitted.

NOTE: Depending on the content of the image, slight colour gradations may occur when reducing the colour depth.

How to reduce the colour depth of image data to be transmitted:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. In the **Colour depth** field of the *Configuration* section, select one of the following options:

24 Bit: Transmit image data with a maximum colour depth of 24 bits.

18 Bit: Reduce colour depth of image data to 18 bits.

4. Click on Save.

Holding a connection

IMPORTANT: Activating this option may pose a security risk, since reconnecting to the remote target *within the holding period* does not require a new login!

In the default setting of the matrix switch, the existing connection is disconnected when switching from a *remote target* to a *classic target* or to a remote target of another pool. The connection to the classic target is then established.

You can also hold the connection to the remote target for a specified period of time (1 to 10 minutes) or **permanently**. Within this time span, you can quickly continue the existing connection by reconnecting to the console module.

NOTE: When connecting to another remote target of the same pool, the existing connection cannot be maintained, since only one connection via a remote gateway is possible at any time.

How to set the hold period of a connection:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Set the holding period in the **Hold connection** field of the *Configuration* paragraph between **1** and **10** minutes or **permanently**.

You can also disable the hold function (No).

4. Click on Save.

Defining the connection parameters for a remote target

How to configure the basic connection parameters for a remote target:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Click on the tab **Connection**.
- 4. Enter the following values:

IP address/DNS name:	Enter the IP address or name of the virtual machine.
Protocol:	Select the protocol used to connect the virtual machine: SSH VNC RDP Streaming
Port:	Enter the port to be used to connect to the terminal server.

5. When selecting the **RDP** protocol, additionally enter the following information:

Remote FX optimisation:	Enable Remote FX optimisation if supported by the RDP server.
	You can enable RemoteFX optimisation specifically for static images (Image) of a common desktop environment or for moving images (Video).

6. When selecting the **VNC** protocol, additionally enter the following information:

Quality:	Select a quality level between 0 (low) and 9 (high).
Compression:	Select a compression level between 0 (fast) and 9 (best).
Cursor highlighting:	After enabling the function, the local cursor (circle) of the <i>RemoteAccess-CPU</i> is displayed in addition to the cursor of the virtual machine.

7. When selecting the **Streaming** protocol, additionally enter the following information:

Audio delay:	Set the delay in the range from -2500 to 2500 ms.
RTSP transport protocol:	Select the TCP or UDP protocol.

8. Click on Save.

Saving login data

To automatically log on a user after connecting to the virtual machine, you can save the login data in the web application.

How to save the login data of a virtual machine:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Click on the tab **Connection**.
- 4. Enter the following values:

Save login data:	Enable or disable this function
Username	Enter the username of the user to log on.
Password	Enter the password of the user to log on.

NOTE: Depending on the configuration of the virtual machine, it is sometimes necessary to enter both username *and* password; sometimes you only need to enter the password!

Assigning a remote pool

A *remote pool* groups all remote targets that are accessible via the existing remote gateways included in the pool.

All *remote targets* and *remote gateways* are automatically assigned to the default pool. If you want to limit the accessibility, you can do so at any time by assigning a pool that you have defined.

How to change the pool assignment of a remote target:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Click on the tab Remote pool.
- 4. In the Assigned column, click on the slider of the pool (enabled) to which you

NOTE: Each remote target belongs to exactly one remote pool.

If you don't select a *specific* pool, the remote target automatically belongs to the default pool.

want to assign the remote target.

5. Click on Save.

Viewing monitoring values

You can see the list of all monitoring values under Remote targets.

How to open the list containing all monitoring values:

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Click on the tab **Monitoring**.

The displayed table contains a list of all available monitoring values.

4. Click on Save.

NOTE: The chapter *Monitoring functions* from page 43 provides more information on how to configure monitoring values.

Viewing status information of a remote target

How to view the status information of a remote target

- 1. In the menu, click on Matrix systems > Remote targets.
- 2. Click on the remote target you want to configure and then click on **Configuration**.
- 3. Click on the tab **Information**.
- 4. The following information is displayed in the dialog box that opens now:

Name:	Name of the remote gateway
Device ID:	Physical ID of the remote gateway
Status:	Current status (online or offline) of the remote gateway
Class:	Device class

5. Click on Close.

Console modules

The target computers connected to the system are operated via the console modules of the KVM matrix system.

Operating modes of console modules

Depending on the intended use of the console module, you can select the console's operating mode from the following options:

Standard operating mode

NOTE: The standard operating mode is the default operating mode.

The standard operating mode only permits the access to the KVM matrix system after you have entered your username and your password.

The user rights can be individually adjusted in the settings of the user accounts.

Open access operating mode

The access to the KVM matrix system is not password-protected.

You can configure the same access rights for this console as you can configure for a user account.

IMPORTANT: For the configuration of access rights, a user account is created for each console with activated *Open Access* mode.

The user account of an Open Access console applies to all users at this console module.

ADVICE: The user accounts of the *Open Access* consoles are marked with a lock symbol.

The color of the lock indicates whether the corresponding console is currently operating in *Open Access* mode (green) or not (gray).

Video operating mode

A video console (only possible when combined with the optional *Push-get function*) is especially suited when used with a projector since mouse and keyboard do not have to be connected.

If the video console is provided with mouse and keyboard, entires can be made on the on-screen display only. You can configure the same access rights for this console as you can configure for a user account.

IMPORTANT: The configured access rights apply for *all* users at this console module.

NOTE: A video console is not displayed.

As a result, an accessing video console is not highlighted to other accessing users. A user without *multiuser* rights can therefore access the console module simultaneously to the video console.

Selecting the console module's operating mode

How to select the console module's operating mode:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **Operating mode** field, you can select between the following options:

Standard:	Standard operating mode
Open access console:	Open access operating mode
Video:	Video operating mode

NOTE: Selecting the *Open Access* or *Video* options activates further submenus to configure the access rights.

Basic configuration of console modules

Changing names or comments of console modules

How to change names or comments of console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the Name field, you can rename the console module.
- 5. In the **Comment** field, you can change or enter comments about the console module.
- 6. Click on Save.

Enabling or disabling console modules

You can disable a console module if you want to deny its access to the KVM matrix system.

NOTE: If the console module is disabled, the monitor displays the message *»This console has been disabled*«. It is therefore not possible to open the on-screen display or the login box.

If a user is accessing this console module, access is *immediately* withdrawn.

How to enable or disable console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab
- 4. In the **Enabled** field, you can choose between the following options:

Enabled:	Console module is enabled.
Disabled:	Console module is disabled.

Copying configuration settings to a new console module

If a console module of the KVM matrix system is replaced by another device, you can copy the configuration settings of the device to be replaced to the new device.

After you copied the configuration settings to the new device, you can operate it immediately.

IMPORTANT: The console module whose settings you copied to a new device will be deleted from the KVM matrix system.

How to copy configuration settings to a new console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the *new* device.
- 3. Open the Service tools menu and select the item Replace device.
- 4. Select the device whose configuration settings you want to copy.
- 5. Click on Save.

Copying the configuration settings of a console module

You can copy the configuration settings **General**, **KVM connection**, **Channels**, **GPIO** (if supported by the device) and/or **Monitoring** of a console module to the settings of one or multiple other console modules.

NOTE: The name of and the comment about the console module are not copied.

How to copy the configuration settings of a console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module whose configuration you want to copy.
- 3. Click on Service tools and then click on Copy configuration.
- 4. In the upper area, you can select which settings of the console module you want to copy (General, KVM connection, Channels and/or Monitoring).
- 5. In the lower area, select the console modules to which you want to copy the data.
- 6. Click on Copy configuration.

Deleting console modules from the KVM matrix system

If the KVM matrix system is not able to detect a console module that already has been connected to the system, the console is considered inactive.

Manually delete the console you want to permanently remove from the system from the list of console modules.

NOTE: Only administrators and users with the *superuser* right can delete inactive console modules.

How to delete console modules that are switched off or disconnected from the system:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to delete and click on Delete.
- 3. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Settings for special hardware

Support of any USB devices

In **Generic HID** mode, data from the USB devices connected to the top **Keyb**/Mouse interface is transmitted to the active target module.

NOTE: When the **Generic HID** mode is enabled, it is *not possible* to operate the OSD with a keyboard connected to the top **Keyb**./**Mouse** interface.

In **Generic HID** mode, you can connect USB hubs or USB composite devices to the top **Keyb**./**Mouse** interface of the console module.

USB composite devices are USB devices that are connected to a computer via *one* USB cable, but consist of separate HID devices (e.g. keyboard/mouse or touchpad/ mouse).

When connecting a USB hub or a USB composite device containing multiple USB devices, only the first of the connected HID devices can be used in the **Generic HID** mode. The OSD informs you if other HID devices of the composite device or the hub are detected.

NOTE: In *multiuser* mode, the generic HID device is available on the first active console module. Once this console module logs off and another console module logs in, the generic HID device of the other console module is available.

How to enable/disable the generic HID mode of the console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.

4. In the Generic HID field, you can select between the following options:

Disabled:	You can connect either a USB keyboard or a USB mouse to the top Keyb ./ Mouse interface of the console module.
Enabled:	Data from any USB device connected to the top Keyb ./ Mouse interface is transmitted to the active target module.

IMPORTANT: To use a generic HID device, enable the USB HID mode **Generic HID** of the target modules you want to access (see page 74).

5. Click on Save.

Reinitialising USB input devices

After connecting a USB keyboard or mouse to the console module, the input devices are initialised and can be used immediately.

Some USB input devices require a reinitialisation of the USB connection. Enable the automatic reinitialisation of USB devices if a USB keyboard or mouse does not respond to your inputs during operation.

How to enable/disable the reinitialisation of USB devices:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. Under USB Auto Refresh, you can choose between the following options:

Off:	The connected USB input devices do not need to be reinitialised.
All devices:	All USB devices are regularly reinitialised.
Only faulty devices:	The status of USB devices is monitored. If the communica- tion with a USB devices is interrupted, the device is reini- tialised (<i>recommended setting</i>).

Advanced functions

Automatic user logout

Console modules can be configured in a way that the access to the target module is automatically disconnected after a user has been inactive for a certain amount of time. This way, the inactive user is automatically logged out of the KVM matrix system.

How to set the automatic user logout:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **Auto logout (minutes)** field, you can set the time (between **1** to **99** minutes) for the automatic logout.

NOTE: Entering the value »0« disables the automatic user logout.

5. Click on Save.

Automatically disconnecting access to target modules

Console modules can be configured in a way that the active access to a target module is automatically disconnected after a user has been inactive for a certain amount of time.

If the OSD is opened at the moment of disconnection, it remains on the screen even after it has been automatically disconnected.

If the OSD is closed at the moment of disconnection, the message displayed on the right-hand side is shown on the screen of the console module.

How to automatically disconnect the access to a target module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **Auto disconnect (minutes)** field, you can set the time (between **1** to **99** minutes) for automatically disconnecting the access to a target module.

NOTE: The value 0 disables the automatic disconnection when a target module is accessed.

Viewing status information of console modules

How to view the status information of console modules:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the **Information** tab.
- 4. Now you are provided with the following information:

Name:	Name of console module
Device ID:	Physical ID of console module
Status:	Current status (on or off) of console module
Klasse:	Device class
Firmware name:	Firmware name
Firmware rev:	Firmware version
Hardware rev.:	Hardware version
IP address Transmission:	IP address of the Transmission interface
MAC Transmission:	MAC address of the Transmission interface
Serial number:	Serial number of module
Matrix switch:	Name of matrix switch to which the module is connected.

5. Click on Close.

Remembering a username in the login box

If the same users often works at a certain console module, their login can be used as default in the login box of the KVM matrix system.

After a user has logged out of the system, the login mask automatically remembers the username of the last active user.

How to remember the username in the login mask:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **Remember last user** field, you can select between the following options:

Yes:The system remembers the last user.No:The system does not remember the last user.

5. Click on Save.

Setting the hold time for the screensaver

The screensaver deactivates the screen display at the console module after the user has been inactive for an amount of time you can adjust.

NOTE: This setting operates independently from the screensaver settings of the target computer.

How to set the hold time of the screensaver:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **Screensaver (minutes)** field, you can set the holding time (**1** to **99** minutes) for activating the screensaver.

NOTE: Entering the value 0 disables the screensaver of the console module.
Enabling or disabling DDC/CI support

Most of the target and console modules supported by the *ControlCenter-IP-XS* system are ready to support monitors with **DDC/CI** functionality.

After the function has been activated, the DDC/CI information is *transparently* forwarded to the monitor in order to support as many monitors as possible. However, we *cannot* guarantee the support for all monitors.

NOTE: The paragraph *Technical data* of the manuals of the target and console modules shows the modules (after an update to the latest firmware) supporting DDC/CI.

You can set the **DDC/CI** support for the entire system. The system-wide setting is used by all console modules. In addition, you can define these settings for each console module individually.

How to configure the sytem-wide setting of the DDC/CI support:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **DDC/CI** field, you can select between the following options:

Disabled:	Disable transmission of DDC/CI signals (default).
Target > monitor:	Carry out transmission of DDC/CI signals exclusively from target to monitor.
Bidirectional:	Carry out transmission of DDC/CI signals bidirectionally.

5. Click on Save.

How to configure the individual settings of the DDC/CI support of a console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.

System:	Use system-wide setting (see above).
Disabled:	The transmission of DDC/CI signals is disabled (default).
Target > monitor:	The transmission of DDC/CI signals is carried out exclusively from target to monitor
Bidirectional:	The transmission of DDC/CI signals is carried out by bidirectionally.

4. In the DDC/Cl field, you can select between the following options:

5. Click on Save.

Adjusting the operating mode of the RS232 interface

In the default setting of the console module, you can connect any RS232-compatible device to the *optional* RS232 interface of the console module. The RS232 data stream is transmitted unchanged to the target module.

Fro transmitting RS422 signals, you can use two **G&D RS232-422 adapters**. Each of the adapters converts the RS232 interface of the console module and the target module into **RS422** interfaces.

IMPORTANT: If you want to transmit **R\$422** signals, in addition to using adapters, you also need to change the operating mode of the *R\$232* interfaces of both the console *and* the target module.

How to set the operating mode of the RS232 interface:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.
- 4. Select one of the options of the **Serial communication** field under the paragraph **Con-***figuration*:

RS232:	The data stream of an RS232 device is transmitted from the target module to the console module (<i>default setting</i>).
RS422:	The data stream of an RS422 device is transmitted from the target module to the console module via separately available G&D RS232-422 adapters.

Viewing the active connections of a console module

How to view the active connections of a console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the desired console module and then click on Service tools > Active connections.

A table informs you about all components (such as console module, matrix switch and target module) included in the active connection.

You can also view the medium (CAT/fibre) and the connected user.

3. Click on Close.

Restarting a console module

This function enables you to restart the console module. Before restarting the device you are requested to confirm your action to prevent accidental restarts.

How to restart a console module via web application:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to restart.
- 3. Click on Service tools and then click on Restart.
- 4. Confirm the security prompt with Yes.

Updating the firmware of a console module

You can use the web application to update the firmware of a console module.

How to update the firmware of a console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to update.
- 3. Click on Service tools and then click on Firmware update.
- 4. Click on Supply firmware image files.

ADVICE: If the firmware file is already stored in the internal device memory, you can skip this step.

Select the firmware file on your local data carrier and click on Open.

ADVICE: Press the **Shift** key to select multiple firmware files using the left mouse key.

The firmware file is transferred to the internal device memory and can then be selected for the update.

- 5. Select the firmware files to be used from the internal device memory and click on **Continue**.
- 6. If required, select the **Target version** of the devices if you have selected several firmware files for one device in step 5.
- 7. Click on the **Update** slider of all devices you want to update.
- 8. Click on Run update.

Target groups and view filters

Difference between target groups and view filters

Target modules of the KVM matrix system can be arranged in target groups and view filters.

Intended use of target groups

Creating target groups enables administrators to quickly assign the rights of a user or a user group to all target modules within a group.

NOTE: The different target modules can be members of *multiple* target groups.

Intended use of view filters

View filters enable users of a KVM matrix system to organise the different target modules into OSD views. Especially in large KVM matrix systems, creating view filters provides better orientation in the OSD.

You can group target modules according to their location (e.g. the server room) or other features (e.g. to the operating system of the connected computer).

Administrating target groups

The »New Targets« target group

By default, the *New IP targets* target group is created in the KVM matrix system. This group automatically contains all target modules as soon as they are first connected to the KVM matrix system. For this, the computer connected to the module has to be switched on.

If you want to provide a user or a user group with particular rights to all recently connected target modules, change the device group rights (see page 65) of either the user account or the user group.

Creating a new target group

How to create a new target group:

- 1. In the menu, click on Target groups.
- 2. Click on Add target group and select the type of group you want to add.
- 3. In the Name field, you can enter the name of the target group.
- 4. *Optional:* In the **Comment** field, you can enter a comment about the target group.
- 5. Click on Save.

NOTE: You can assign the rights for this target group by changing the device group rights (see page 66) of either the user account or the user group.

Changing the name or comment of a target group

How to change the name or comment of a target group:

- 1. In the menu, click on Target groups.
- 2. Click on the target group you want to configure and then click on Configuration.
- 3. In the Name field, you can change the name of the target group.
- 4. *Optional:* In the **Comment** field, you can enter or change a comment about the target group.
- 5. Click on Save.

Administrating target group members

NOTE: You can assign up to 20 target modules to each target group of the KVM matrix system.

How to administrate the members of a target group:

- 1. In the menu, click on Target groups.
- 2. Click on the target group you want to configure and then click on Configuration.
- 3. Click on the Members tab.
- 4. In the **Members** column, click on the slider of the target modules you want to add to the group (enabled).

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

5. In the **Members** column, click on the slider of the target modules you want to delete from the group (disabled).

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed in the selection window.

6. Click on Save.

Deleting a target group

How to delete a target group:

- 1. In the menu, click on Target groups.
- 2. Click on the target group you want to delete and then click on Delete.
- 3. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Administrating view filters

To administrate view filters, you can use the **View filter** wizard provided in the menu **Advanced features**.

The wizard shows you how to set up, configure and assign a view filter to one or more user accounts.

How to start the »View filter« wizard:

- 1. In the menu, click on **Advanced features**.
- 2. Click on View filter and then click on Configuration.
- 3. Follow the instructions of the wizard.

Creating a new view filter

How to create a new view filter:

- 1. Start the View filter wizard (see page 113 f.).
- 2. In Step 1 of the wizard, click on Add.
- 3. In the Name field, you can enter a name.
- 4. Optional: In the **Comment** field, you can enter a comment.
- 5. Click on Save.

Changing the name of a view filter

How to change the name of a view filter:

- 1. Start the View filter wizard (see page 113 f.).
- 2. In **Step 1** of the wizard, click on the view filter you want to edit and then click on **Edit**.
- 3. Edit the name of and/or the comment about the view filter.
- 4. Click on Save.

Deleting a view filter

How to delete a view filter:

- 1. Start the View filter wizard (see page 113 f.).
- 2. In **Step 1** of the wizard, click on the view filter you want to delete and then click on **Delete**
- 3. Confirm the confirmation prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Adding a target module to a view filter

How to add a view filter to a target module:

- 1. Start the View filter wizard (see page 113 f.).
- 2. In **Step 1** of the wizard, click on the view filter you want to edit and then click on **Edit**.
- 3. In **Step 2**, click on the slider (in the **Show devices** column) of the target modules you want to add to the view filter.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed selection window.

NOTE: To *simultaneously* assign all target modules to a view filter, mark the check box in the header of the **Show devices** column.

Deleting a target module from a view filter

How to add a view filter to a target module:

- 1. Start the View filter wizard (see page 113 f.).
- 2. In **Step 1** of the wizard, click on the view filter you want to edit and then click on **Edit**.
- 3. In **Step 2**, click on the slider (in the **Show devices** column) of the target modules you want to delete from the view filter.

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed selection window.

NOTE: To *simultaneously* delete all displayed target modules from the view filter, mark the check box in the header of the **Show devices** column.

Assigning a view filter as default in the OSD

- 1. Start the View filter wizard (see page 113 f.).
- 2. In **Step 1** of the wizard, click on the view filter you want to edit and then click on **Edit**.
- 3. In Step 2, assign one or multiple target module(s) to the view filter.
- 4. In **Step 3**, click on the slider (in the **Use as default in OSD** column) of the user accounts that will use the view filter as default in the OSD (enabled).

ADVICE: If necessary, use the *Search* field to limit the number of target modules to be displayed selection window.

NOTE: To *simultaneously* set a view filter as default for all displayed user accounts, mark the check box in the header of the **Use as default in OSD** column.

Accessing target modules via select keys

After you adjust select key modifier(s) and a select key set and activate the select key set in the user account, you can press key combinations on the console keyboard to access target modules.

Changing select key modifier or valid key type

Select keys enable you to quickly access a particular target computer with a key combination. For this, you can create *select key sets* in the KVM matrix system.

In combination with a select key modifier, a select key set defines the key combination to be pressed to access a particular target computer.

In addition to the select key modifier, you are also enabled to define valid keys for the select keys.

How to change the select key modifier or the valid keys:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select *at least* one of the listed modifiers under **Select key modifier** in the *Configuration* paragraph by marking the respective entry:

- Ctrl	• Win
- Alt	Shift
Alt Gr	

4. In the Valid keys field, you can select one of the following options:

Only numbers:	<i>Only numerical keys</i> are interpreted as select keys when pressed in combination with the select key modifier
Only characters:	<i>Only alphabetic keys</i> are interpreted as select keys when pressed in combination with the select key modifier
Numbers and characters:	<i>Alphabetical and numerical keys</i> are interpreted as select keys when pressed in combination with the select key modifier

IMPORTANT: The selected valid keys and the select key modifier are *no longer* provided as key combinations to the operating system and the applications on the target computer.

5. Click on Save.

Administrating select key sets

The KVM matrix system allows you to create 20 global select key sets or ten individual select key sets for each user.

Within a select key set, you can define select keys for target modules you want to access.

```
NOTE: Global select key sets are available for all users of the KVM matrix system.
```

You can administrate select key sets comfortably with a wizard. Click on the menu **Advanced features** and select the entry **Select keys**. Click on **Configuration** to start the wizard.

The following paragraphs briefly summarise the wizard's configuration options.

Step 1: Select a matrix switch

• Select the matrix switch on which you want to store the configuration of the select key set.

NOTE: After you selected a matrix switch, you will see the current configuration of the **select key modifier** and the **valid select keys** (see above). If required, you can change these settings directly in this menu.

Step 2: Select a user

Select a user account for which the configured select keys will be available.
 When selecting the entry Available for all (global), you create a global select key set that will be available for all users.

Step 3: Select key sets

Select the select key set you want to configure.
 Click on the buttons Add, Edit or Delete to add a new select key set or to edit or delete an existing set.

• Click on the slider **Activate select key set for current user** if you want to activate the set for the user selected in step 2.

IMPORTANT: If you have selected the table entry **Available for all (global)** in step 2, clicking on the slider activates the set for all users.

NOTE: Only by assigning a select key set to a user account, the select keys defined in the set are accepted as inputs on the console and switching to the corresponding target module takes place.

Step 4: Configure a select key set

• Enter the desired key combinations for the target modules.

TIPP: In the line **Return to last target** you can define a key combination for switching to the target that was switched on last.

Automatic or manual switching between target modules

Auto scanning all target modules (Autoscan)

The *Autoscan* function successively accesses all target modules that are included in the active scan mode set and available to users.

The *Scantime* setting (see page 119) enables you to define how long you want to switch to a target module.

When switching to a target module, the workplace name, the name of the currently accessed target module, and a note regarding the *Autoscan* function are displayed.

NOTE: If the *Autoscan* function is active, keyboard and mouse inputs are transmitted to the currently accessed target module.

During inputs, the Autoscan function stops and continues after the inputs are finished.

Applying the Autoscan function

Requirements for using this function:

- Creating a scanmode set (see page 122 ff.)
- Assigning a scanmode set to a user account (see page 122 ff.)

Configuring the scantime of the Autoscan function

By default, a target module is accessed for five seconds before the connection is disconnected and the next target module is accessed.

Select a time span between 1 and 99 seconds to define how long you want to switch to a target module.

How to change the scantime:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the tab Matrix systems and then go to Personal Profile.
- 4. In the **Scantime** field, enter a time span between **1** and **99** seconds.
- 5. Click on Save.

Auto scanning all active target modules (Autoskip)

The *Autoskip* function successively switches to target modules that are included in the active scancode set and available to users.

The connected computer must be active to carry out this function.

The *Scantime* setting (see page 119) enables you to define how long each target module is to be accessed.

When accessing the target modules, the workplace name, the name of the currently accessed target module, and a note regarding the *Autoscan* function are displayed.

NOTE: If the *Autoskip* function is activated, all keyboard and mouse inputs are transmitted to the currently accessed target module.

The *Autoskip* function stops during the user's inputs and continues after all inputs are finished.

Applying the Autoskip function

Requirements for using this function:

- Creating a scanmode set (see page 122 ff.)
- Assigning a scanmode set to a user account (see page 122 ff.)

Configuring the scantime of the Autoskip function

By default, a target module is accessed for five seconds before the connection is disconnected and the next target module is accessed.

Select a time span between 1 and 99 seconds to define how long you want to switch to a target module.

How to change the scantime:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the Matrix systems tab and then go to Personal Profile.
- 4. In the **Scantime** field, enter a time span between **1** and **99** seconds.
- 5. Click on Save.

Scanning target modules manually (Stepscan)

By pressing a key, the *Stepscan* function successively switches to all target modules that are included in the scan mode set and available to users.

When accessing the target modules, the workplace name, the name of the currently accessed target module and a note regarding the *Stepscan* function are displayed.

Starting and stopping the Stepscan function

Requirements for using this function:

- Creating a scanmode set (see page 122 ff.)
- Assigning a scanmode set to a user account (see page 122 ff.)
- Configuring keys to scan the targets manually (see page 122 ff.)

Configuring keys to manually scan targets

By pressing a key, the *Stepscan* function successively switches to all target modules that are available to users.

You can select different keys to access the next (default: Up) or the previous (default: Down) target module.

How to select keys for using the Stepscan function:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the KVM matrix systems tab and then go to Personal Profile.
- 4. In the **Step keys** field, you can select between the following options:

Up/Down:	Arrow keys Up and Down
PgUp/PgDn:	Page 1 and page 1 keys
Num Up/Down:	Arrow keys Up and Down of the numeric keypad
Num PgUp/PgDn:	Page <i>t</i> and page <i>t</i> keys of the numeric keypad
Num +/-	Plus and minus keys of the numeric keypad

Administrating scan mode sets

The matrix system enables you to create 20 global select key sets or ten individual scan mode sets for each user.

Scan mode sets allow you to define the computers to be accessed when executing the *Autoscan*, *Autoskip* or *Stepscan* function.

NOTE: Global scan mode sets are available for all users of the KVM matrix system.

You can administrate scan mode sets comfortably with a wizard. Click on the menu **Advanced features** and select the entry **Scan mode sets**. Click on **Configuration** to start the wizard.

The following paragraphs briefly summarise the wizard's configuration options.

Step 1: Select a user

• Select a user account for which the configured scan mode keys will be available. When selecting the entry **Available for all (global)**, you create a global scan mode set that will be available for all users.

Step 2: Scan mode sets

- Select the scan mode set you want to configure.
 Click on the buttons Add, Edit or Delete to add a new scan mode set or to edit or delete an existing set.
- Click on the slider Activate scan mode set for current user if you want to activate the set for the user selected in step 2.

IMPORTANT: If you have selected the table entry **Available for all (global)** in step 2, clicking on the slider activates the set for all users.

NOTE: Only by assigning a scan mode set to a user account, the target modules defined in the set are considered when executing the *Autoscan*, *Autoskip* or *Stepscan* function.

Step 3: Configure scan mode set

 Click on the slider Add device of all target modules you want to include in the automatic switching process.

NOTE: Enable the option **Add device** in the column header to add all target modules to a set.

Configuring the on-screen display (OSD)

The on-screen display of the KVM matrix system enables the user to operate and configure the system. By default, the on-screen display is provided on all console modules.

Configuration

Most basic functions of the on-screen display can be adjusted to your demands.

You can define a hotkey to open the OSD as well as the position and font size of the onscreen display.

Any adjustable settings are described on the following pages.

Changing the hotkey to open the OSD

The hotkey to open the on-screen display (OSD) is used on all consoles connected to the KVM matrix system. This hotkey enables you to open the OSD in order to operate and configure the system.

NOTE: The hotkey **Ctrl** is the default hotkey.

The hotkey consists of at least one hotkey modifier key and an additional hotkey, which you can freely select.

Both the Ctrl hotkey modifier key and the Num hotkey can be configured by the user.

How to change the hotkey to call the on-screen display:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select at least one of the modifiers listed under Hotkey modifier:
 - Ctrl
 Alt
 Alt Gr
 Win
 Shift

Pause	Pause key
Insert	Insert key
Delete	Delete keye
Home	Home key
PgUp	Page up key
PgDown	Page down key
Num	Num key
End	End key
Space	Space key

4. In the **Hotkey** field, select one of the following options:

5. Click on Save.

Opening the on-screen display via double keypress

Instead of opening the on-screen display (OSD) with the key combination Hotkey+Num, you can define a key to press twice to open the OSD.

How to define the key to open the OSD via double keypress:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select one of the following options under **OSD via double keypress**:

Off:	Open OSD via double keypress disabled (default)
Ctrl:	Open OSD via double keypress of Ctrl key
Alt:	Open OSD via double keypress of Alt key
Alt Gr:	Open OSD via double keypress of Alt Gr key
Win:	Open OSD via double keypress of Win key
Shift:	Open OSD via double keypress of Shift key
Print:	Open OSD via double keypress of Print key
Cursor-Left:	Open OSD via double keypress of Cursor-Left key
Cursor-Right:	Open OSD via double keypress of Cursor-Right key
Cursor-Up:	Open OSD via double keypress of Cursor-Up key
Cursor-Down:	Open OSD via double keypress of Cursor-Down key

Automatic closing of the OSD after inactivity

If desired, you can set the OSD to close automatically after a period of inactivity.

Define this period by entering a value between 5 and 99 seconds.

NOTE: To disable the function, enter the value **0**.

How to change a period of inactivity after which the OSD closes:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to edit and then click on Configuration.
- 3. Click on the tab KVM matrix systems and then go to Personal Profile.
- 4. In the **Timeout of OSD sessions** field, you can define a time span between **5** and **99** seconds.
- 5. Click on Save.

Adjusting the OSD transparency

In the default settings, the screen content under the OSD is semi-visible. The screen content shines through the part that is covered by the OSD.

You can either adjust or turn off the OSD transparency in the personal profile of a user.

How to adjust the on-screen display's transperency:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to edit and then click on Configuration.
- 3. Click on the tab KVM matrix systems and then go to Personal Profile.
- 4. In the **OSD transparency** field, you can select between the following options:

High:	Screen content almost completely visible	
Average:	Screen content semi-visible (default)	
Low:	Screen content slightly visible	
Off:	Screen content is covered	

Adjusting the information display

NOTE: You can set the information display separately for targets with view rights and all other targets.

When switching to a target module, a temporary information display (5 seconds) opens. The display informs you about the console name, the name of the currently accessed target module and provides further information.

The information display can also be permanently displayed or deactivated. The selected setting is assigned to your user account and stored in your *Personal Profile*.

ADVICE: When active, the temporary information can be recalled by pressing Ctrl+Caps Lock.

How to change the general settings of the information display:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to edit and then click on Configuration.
- 3. Click on the tab KVM matrix systems and then go to Personal Profile.
- 4. In the Show OSD info field, you can select between the following options:

5 seconds:	Temporary information display
Perm:	Permanent information display
Off:	Deactivate information display

5. Click on Save.

How to change the general settings of the information display for targets with view right:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to edit and then click on Configuration.
- 3. Click on the tab KVM matrix systems and then go to Personal Profile.

4. In the **Show OSD info for targets with view rights** field, you can select between the following options:

Use regular OSD info:	Using the general setting of the information display (see above)
5 seconds:	Temporary information display
Perm:	Permanent information display
Off:	Deactivate information display

5. Click on Save.

Changing the colour of the information display

By default, information displays (like when accessing a target module) are shown in light green. In their personal profiles, users can change the colour of the information display.

How to change the colour of the information display:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to edit and then click on Configuration.
- 3. Click on the tab KVM matrix systems and then go to Personal Profile.
- 4. In the **Colour of OSD info** field, you can select between the following options:

Light green:	Show information display in light green (default)
Black, dark red, dark yellow, dark blue, purple dark tur- quoise, silver, yellow, blue, fuchsia, light turquoise or white	Show information display in the selected colour

5. Click on Save.

Defining a standard view filter

After the user login, the *Select* menu is displayed. The default setting of the *Select* menu displays all target modules. By applying a view filter, you can filter the target modules to be displayed.

If you want to activate a certain view filter directly after accessing the *Select* menu, you can configure the user account accordingly.

NOTE: The default view filter is applied directly after you log in on the matrix system. By applying this view filter, you can change the default and therefore activate another filter.

How to select a standard view filter for the Select menu:

- 1. In the menu, click on Advanced features.
- 2. Click on a view filter and then click on Configuration.
- 3. In step 1, select the desired view filter and click on Save and continue.
- 4. In **step 2**, select the target modules you want to include in the OSD view filter and click on **Save and continue**.
- 5. In step 3, select the users who should use this view filter as default and click on Save and continue.

Selecting a keyboard layout for OSD entries

If the characters entered on the console keyboard deviate from the characters displayed on the on-screen display, the selected keyboard layout does not fit the keyboard.

In this case, please ascertain which keyboard layout does apply to the connected keyboard and select the layout in the console settings.

How to select the keyboard layout for the console keyboard:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration
- 3. Click on the **General** tab.

4. In the Keyboard layout field, you can select one of the following options:

 German 		
 English (US) 		
 English (UK) 		
French		
 Spanish 		
Lat. American		
 Portuguese 		
 Swedish 		

5. Click on Save.

Operating the on-screen display by mouse

In the default settings of the KVM matrix system, the on-screen display (OSD) can only be opened with a configured key combination.

If a Microsoft »IntelliMouse Explorer« or another compatible mouse with five keys is connected to the console module, you can open the on-screen display with mouse keys four and five on the side of the mouse.

How to enable/disable mouse support to operate the on-screen display:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. In the **OSD by Mouse** field in the paragraph *OSD configuration*, select one of the following options:

On:Open OSD with mouse key 4 and 5 of a compatible mouse.Off:Disable the possibility to open the OSD by mouse.

4. Click on Save.

Enabling/disabling the on-screen display

This function defines if users of a console module can activate the on-screen display or if they can use only select keys to switch between channels.

How to (de)activate the on-screen display:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Under **OSD blocked** in the paragraph *OSD configuration*, select one of the following options:

No:	On-screen display and displaying of info messages available
OSD menu:	On-screen display blocked; displaying of info messages available
OSD menu + OSD info:	On-screen display and displaying of info messages blocked.

4. Click on Save.

Adjusting the OSD resolution

In the defaults of the matrix switch the OSD is displayed on the console monitor in a resolution of 1024×768 pixels if the monitor does support this resolution. If the monitor does not support this resolution, a resolution of 640×480 pixels is used.

You can also set the OSD resolution for the entire system (see table below). Adjusting the resolution for the entire system includes all console modules. However, you can also individually set the OSD resolution for each console module.

How to adjust the OSD resolution of the entire system:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on **Configuration**.

- Auto:If supported by the monitor, the OSD is displayed in a resolution of 1024 × 768 pixels.If the monitor does not support this resolution, a resolution of 640 × 480 pixels is used. (*default*).640×480:OSD is displayed in a resolution of 640 × 480 pixels720×400:OSD is displayed in a resolution of 720 × 400 pixels1024×768:OSD is displayed in a resolution of 1024 × 768 pixels
- 3. In the **OSD resolution** field, select one of the following options:

4. Click on Save.

How to adjust the OSD resolution of a particular console module:

- 1. In the menu, click on Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. In the **OSD resolution** field of the paragraph *OSD configuration*, select one of the following options:

System:	Use system-wide (see above) setting (default).
Auto:	If supported by the monitor, the OSD is displayed in a resolution of 1024×768 pixels.
	If the monitor does not support this resolution, a resolution of 640×480 pixels is used. (<i>default</i>).
640×480:	OSD is displayed in a resolution of 640×480 pixels
720×400:	OSD is displayed in a resolution of 720×400 pixels
1024×768:	OSD is displayed in a resolution of 1024×768 pixels

Expanding switchable signals

You can expand the switchable signals of a computer or a console through *channel* grouping

EXAMPLE: To transmit a second video signal and a USB 2.0 signal of the same computer, in addition to a **DVI-CPU** computer module, connect a second **DVI-CPU** module (second video channel) and a **U2-CPU** module (USB2.0/RS232) to the computer.

In addition to a **DVI-CON** console module, connect a **DVI-CON-Video** (second video channel) and a **U2-CPU** module (USB2.0/RS232) to the console the aforementioned computer is accessing.

With the *ControlCenter-IP-XS*, you can switch various computer modules of *one* computer or various console modules of *one* console at the same time.

To expand the signals to be switched you can use two different ways of connection:

In the *ConfigPanel* web application, you can assign the KVM channel of a computer or console with up to seven additional video channels and a USB or RS232 channel.

NOTE: Only in this mode, you can hold the USB signal using the OSD's **Operation** menu at the currently active computer. If you switch to another computer after executing the *hold function*, the USB signal remains on the computer that you accessed first.

After disabling the *hold function* on the **Operation** menu, the USB signal switches to the currently active computer.

Expanding the system through channel grouping

The web application lets you assign up to seven additional video channels, one USB 2.0 or RS 232 channel and four multi channels to the KVM channel of the console.

You can also assign up to seven additional video channels to the KVM channel of the computer. In addition, you can create **pools** of four devices for the USB 2.0/RS 232 channel and for each of the four multi-channels.

NOTE: Within the channel groups of the console a USB 2.0/RS 232 channel or a multi-channel represent one single device. For computers such a channel represents a group of up to four devices.

By using pools, you can grant up to four users the right to access the USB 2.0/ RS 232 channel and the four multi-channels *at the same time*. For this, the matrix switch selects an available device from the pool after switching.

Assigning multiple channels to a console or computer creates a *channel group*.

NOTE: The OSD does *not* show any console or computer modules that you added as additional channels to the channel group.

Creating a new channel group

How to create a new channel group:

- 1. In the menu, click on Matrix systems > [Name] > Console modules or Target modules.
- 2. Click on a console or a target module that is not assigned to a *channel group*.
- 3. Click on Channel grouping.

The selected module is assigned to the first KVM channel and is shown in the **Device group** column. The right column (**Unassigned**) lists the matrix switch modules you can add to the new channel group.

NOTE: You can assign up to seven additional video channels, one USB or RS232 channel and four multi channels to a console's KVM channel.

You can assign up to seven additional video channels to the KVM channel of the computer, too. In addition, you can create **pools** of four devices for the USB 2.0/RS 232 channel and for each of the four multi-channels (see page 132).

NOTE: All channels of a channel group are switched at the same time.

4. In the right column (**Unassigned**), click on the module you want to add. In the left column (**Device group**), click on the channel you want to add the module to.

NOTE: To change the order of already added channels, mark a channel and click on <u>▲</u> (*arrow down*) or <u>▲</u> (*arrow up*). The chosen channel is moved up or down.

- 5. Click on 🔌 (*arrow left*) to assign the module to the chosen channel.
- 6. Repeat steps 4 and 5 to add another module to the *channel group*.
- 7. Click on Save.

Adding or deleting modules from a channel group

How to add modules to or delete them from a channel group:

- 1. In the menu, click on Matrix systems > [Name] > Console modules or Target modules.
- 2. Click on a console module or a target module that is already assigned to the channel group to which you want to add another module or from which you want to delete a module.
- 3. Click on Channel grouping.

Now you can see the current configuration. The right column (**Not assigned**) lists the matrix switch modules you can add to the channel group.

NOTE: You can assign up to seven additional video channels and a USB or RS232 channel to a console's KVM channel.

You can assign up to seven additional video channels to the KVM channel of the computer, too. In addition, you can create **pools** of four devices for the USB 2.0/RS 232 channel and for each of the four multi-channels (see page 132).

4. Add more modules to or delete them from the *channel group*:

Adding modules:	 In the right column (Unassigned), click on the module you want to add. In the left column (Device group), click on the channel to which you want to add the module. Click on (arrow left) to assign the module to the selected channel.
Deleting modules:	 In the right column (Assigned), click on the module you want to delete from the <i>channel group</i>. Click on (arrow right) to delete the module's assignment.

Deleting a channel group

How to delete a multichannel configuration:

- 1. In the menu, click on Matrix systems > [Name] > Console modules or Target modules.
- 2. Click on a console module or a target module already assigned to the *channel group* you want to delete.
- 3. Click on **Channel group** to see the current configuration.

NOTE: The web application deletes a channel group if it does not contain any other channels than KVM channel 1.

4. In the left column (**Device group**), click on a module that is assigned to one of the 2 to 8 channels or to the USB/RS232 channel.

Click on *▶* (*arrow right*) to delete the module's assignment.

- 5. Repeat step 4 to delete the assignment of other modules.
- 6. As soon as only one module is assigned to KVM channel 1, click on Save.

The *channel group* is deleted.

Advanced functions of the KVM matrix switch

Copying the config settings of a matrix switch

You can copy the **General**, **KVM connection**, **Monitoring** and/or **Tradeswitch/CDS** configuration settings of one matrix switch to the settings of one or more other matrix switches.

NOTE: The name and the comment of a matrix switch are not copied.

How to copy matrix switch config settings:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch whose configuration you want to copy.
- 3. Open the menu Service tools and select the entry Copy configuration.
- 4. In the upper area, select which tabs (General, KVM connection, Monitoring and/or Tradeswitch/CDS) of the matrix switch should be copied.
- 5. In the lower area select the matrix switch(es) to which you want to copy the data.
- 6. Click on Copy configuration.

Viewing/exporting the port overview of the matrix switch

The port overview lists all matrix switch ports. It also lists the connected end devices and additional information (for example, device type and target port).

How to open the port overview of a matrix switch:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the desired matrix switch and then click on Service tools > Port overview.

ADVICE: Click on **Export** to export the table contents to a **csv** file.

Restarting the matrix switch

This function enables you to restart the matrix switch. Before restarting the device you are requested to confirm your action to prevent accidental restarts.

How to restart the matrix switch via web application:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch you want to restart.
- 3. Click on Service tools and select the entry Restart.
- 4. Confirm the confirmation prompt by clicking on Yes.

Copying config settings to a new matrix switch

If a matrix switch of the KVM matrix system is replaced by another device, the settings of the old device can be copied to the new one.

After the config settings have been copied, the new device is immediately ready for operation.

IMPORTANT: The matrix switch whose settings are copied is afterwards deleted from the KVM matrix system.

How to copy configuration settings of matrix switches:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the *new* device.
- 3. Click on Service tools and select the entry Replace device.
- 4. Select the device whose configuration settings you want to copy.
- 5. Click on Save.

Freeze mode

When the cable connection between the target module and the console module is lost during operation, the console monitor no longer shows an image in the default settings of the KVM matrix system.

Enable the freeze mode if you want to display the last image received at the console module before the loss of connection. This image is displayed until the connection is re-established.

ADVICE: To emphasize the lost connection, the image last received is either highlighted by a coloured frame and/or the note **Frozen** and the time past since the loss of connection.

You can set the freeze mode for the entire system, too. The setting for the entire system applies to all console modules. In addition, you can set the freeze mode individually for each console module.

How to configure the freeze mode for the entire system:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch you want to configure and then click on Configuration.
- 3. Select one of the options given under Freeze mode:

Off:	Display no image on disconnection (default).
On OSD timer + frame:	Show a coloured frame in case of a disconnection and the message <i>Frozen</i> and the time past since the loss of connection.
On OSD timer:	Show the message <i>Frozen</i> and the time past since the loss of connection.
On Frame:	Show coloured frame in case of a disconnection.

4. Click on Save.

How to configure the freeze mode individually for a console module:

- 1. In the directory tree, click on Matrix systems > [Name] > Console modules.
- 2. Select a console module and then click on **Configuration**.

3. Select one of the options given under Freeze mode:

System:	Apply setting (see above) to the entire system (<i>default</i>).	
Off:	Display no image on disconnection.	
On OSD timer + frame:	Show a coloured frame in case of a disconnection and the message <i>Frozen</i> and the time past since the loss of connection.	
On OSD timer:	Show the message <i>Frozen</i> and the time past since the loss of connection.	
On Frame:	Show coloured frame in case of a disconnection.	

4. Click on Save.

Changing push event key modifiers and valid keymodes

 ${\bf NOTE:}$ This function is available only after activating the additional ${\bf IP-Control-API}$ function.

Push event keys let users at consoles trigger push events via XML control.

The triggered push event contains the following information:

- String entered by a user,
- Console name and device ID,
- Name and device ID of the target switched to the console.

You can trigger a push event by pushing and holding the push event key modifier and entering a valid string (see entry **Valid push event keys)**.

How to change push event key modifiers or the valid keymode:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Select the master matrix switch and then click on Configuration.

3. Under **Configuration**, go to **Push event key modifier** and select *at least* one modifier key by ticking the control box:

Ctrl	• Win	
= Alt	 Shift 	
 Alt Gr 		

4. In the Valid push event keys field, select one of the following options:

Only numbers:	<i>Only numerical keys</i> are forwarded as part of a push event when pressing the push event key modifier
Only characters:	<i>Only alphabetic keys</i> are forwarded as part of a push event when pressing the push event key modifier
Numbers and characters:	<i>Numerical and alphabetical keys</i> are forwarded as part of a push event when pressing the push event key modifier

IMPORTANT: The target computer's operating system and its application programs are not able to use the selected keymode as hotkey when it is combined with the selected select key modifier(s),.

5. Click on Save.

Rights administration

Right to change the personal profile

How to change the right to change the personal profile:

- 1. In the menu, click on **Users** or **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab KVM matrix systems and then go to Global device rights.
- 4. In the Edit personal profile field, you can select one of the following options:

Yes:	Allow users to view and edit own user profile
No:	Deny users to view and edit own user profile

Optional functions

The functional range of the KVM system can be expanded by purchasing additional functions.

Name	Function	Description
Push-Get func- tion	The Push-Get function enables you to push the image to or get the image from any computer connected to the KVM matrix system to the display of another console module.	page 142
IP-Control-API	Use the C++ class library supplied with this function to access the KVM matrix system over a TCP/IP connection.	page 145
Tradeswitch function	The <i>Tradeswitch</i> function optimises the operation of console modules that monitor several computers over several monitors.	page 158
	Instead of connecting keyboard and mouse to each monitor, the <i>Tradeswitch</i> function provides a central keyboard/mouse for all operating tasks of the console module.	

Push-get function (optional)

NOTE: The functions and settings described in this chapter are only available after you purchased and activated the *Push-get function*.

The Push-get function enables you to push an image to or get an image from any computer connected to the KVM matrix system to the display of another console module.

This way, you can exchange and edit display contents.

The addressed console module can be a standard console or a large screen projection, for example.

Changing the right to execute the Push-get function

IMPORTANT: This setting is only available if the additional *Push-get function* has been activated.

How to change the right for using the *Push-get* function:

- 1. In the menu, click on Users or User groups.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab Matrix systems and go to Individual rights.
- 4. Select the desired console module on the left side of the list field of the paragraph **Individual device rights**.

ADVICE: If necessary, use the *Search* field to limit the number of console modules to be displayed in the selection window.

5. In the **Push-Get** field on the right side, you can select between the following options:

Yes:Allow use of *Push-get* functionNo:Deny use of *Push-get* function

6. Click on Save.

Changing push-get key modifiers and valid keys

Push-get keys let you move screen contents from or to a console by using key combinations. For this, you can create *Push-get key sets* in the matrix system.

In combination with a defined push-get key modifier a push-get key set defines the key combination to be pressed for moving screen contents.
In addition to the push-get key modifier you can also define valid keys to be used as push-get keys.

How to change push-get key modifiers or valid keys:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select at least one of the listed modifiers under **Push get key modifier** by marking the respective entry:

 Ctrl 	• Win
 Alt 	 Shift
 Alt Gr 	

4. Under Valid push-get keys, you can select one of the following options:

Only numbers:	<i>Only numerical keys</i> are interpreted as push-get keys when pressed in combination with the push get key modifier
Only characters:	<i>Only alphabetic keys</i> are interpreted as push-get keys when pressed in combination with the push get key modifier
Numbers and characters:	<i>Aphabetical and numerical keys</i> are interpreted as push-get keys when pressed in combination with the push get key modifier

IMPORTANT: The selected valid keys and the push-get key modifier are *no longer* provided as key combinations to the operating system and the applications on the target computer.

5. Click on Save.

Administrating push-get key sets

The KVM matrix system allows you to create 20 global push-get key sets or ten individual push-get sets for each user.

Within push-get key sets you can define push-get keys for selected console modules to move the screen content of a console.

NOTE: Global push-get key sets are available for all users of the KVM matrix system.

You can administrate push-get key sets comfortably with a wizard. Click on the menu **Advanced features** and select the entry **Push-get keys**. Click on **Configuration** to start the wizard.

The following paragraphs briefly summarise the wizard's configuration options.

Step 1: Select a matrix switch

• Select a matrix switch on which you want to store the configuration of the pushget keys.

NOTE: After you selected a matrix switch, you will see the current configuration of the **Push-get key modifier** and the **valid push-get keys** (see above). If required, you can change these settings directly in this menu.

Step 2: Select a user

Select a user account for which the configured push-get keys are available.
 When selecting the entry Available for all (global), you create a global push-get key set that will be available for all users.

Step 3: Select push-get key set

- Select the push-get key set you want to configure.
 Click on the buttons Add, Edit or Delete to add a new select key set or to edit or delete an existing set.
- Click on the slider**Activate push-get key for current user** if you want to activate the set for the user selected in step 2.

IMPORTANT: If you have selected the table entry **Available for all (global)** in step 2, click on the slider to activate the set for all users.

NOTE: Only when a push get-key set is assigned to a user account, the push get-keys defined in the set are evaluated when entries are made at the console.

Step 4: Configure push-get key set

• Enter te desired key combinations for the target modules.

IP-Control-API (optional)

After the *»IP-Control-API«* function has been activated, the supplied C++ class library can be used to control the KVM matrix system over a TCP/IP connection.

A touchscreen or a custom software can be integrated into the KVM matrix system. Use the self-developed touchscreen software or the custom software to access the *Application Programming Interface* of the class library.

The *Application Programming Interface* (API) enables you to execute the functions of the KVM matrix system that are listed at the bottom of this page.

ADVICE: As an alternative to programming own software solutions, the provided command line tool can be called out of script files, for example.

C++class library functions

The C++ class library provides the following functions:

- Logon User: user logon at console module
- Logout User: user logout at console module
- Connect CPU: accesses target module with console module
- Disconnect CPU: disconnects active access
- Get Connections: queries connection data of »occupied« console modules
- Get MatrixSwitch: queries known matrix switches
- Get CPUs: queries known target modules
- Get Consoles: queries known console modules
- Redirection: redirects keyboard and mouse data

NOTE: Only after you have purchased the additional »Tradeswitching« function, you are enabled to forward keyboard and mouse data to another console module or target module.

Configuring access for text-based control

Use the web application *Config Panel* to configure the service for text-based control. In the web application, you can define »remote control« accesses and their settings.

IMPORTANT: Text-based control is only possible with these accesses.

How to create a new access or edit existing accesses:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the device you want to configure and then click on Configuration.
- 3. Click on the tab Network and go to Remote Control.
- 4. To create a new access, click on Add. To adit an existing access, click on Edit.
- 5. Enter or edit the following data:

Access:	Select the protocol (TCP) or (UPD) you want to use for text- based communication.
Port:	Enter the port you want to use for text-based communication.
Status:	Select if the access is enabled or disabled .
Encryption:	The following types of encryption are supported:
	 Unencrypted: Select None to transmit the data without encryption (default). Partly encrypted: Select Password: CBC-3DES, to transmit only login passwords with encryption. Encrypted: Select CBC-3DES or TLS to transmit the data entirely encrypted.
Key:	After enabling an encryption method, enter the key.
	Some encryption modes require an additional initialisation vector. If necessary, enter the key followed by a colon (:) and the initialisation vector.
	With TLS encryption <i>enabled</i> , you can additionally enable Certificate authentication after uploading a certificate (in the <i>Remote Control</i> section of the <i>Network</i> tab).

Scripting function

IMPORTANT: Using the scripting function requires the purchase and activation of the premium function **IP-Control-API**.

The scripting function lets you create, manage and execute scripts.

A script is an XML document that contains one or more commands carried out by the matrix switch.

EXEMPLARY SCRIPT TO ESTABLISH A CONNECTION

```
<?xml version="1.0" encoding="utf-8"?>
<root>
<DviConsole>0x2222222</DviConsole>
<DviCpu>0x3333333</DviCpu>
<CloseDialogs/>
</connect>
</root>
```

<!-- ID of the console module --> <!-- ID of the target module --> <!-- Close OSD after connect

The structure of a valid XML document and any possible commands as well as their syntax are described in the chapter *XML control of the matrix switch* of the separate *Configuration and Operation Guide*.

ADVICE: Use the OSD of the matrix system to save the switching condition of a user console/multiple user consoles or of the entire system in a script (see chapter *Scripting function* of the separate *Configuration and Operation Guidel*).

The scripts stored in the matrix system can be executed via the on-screen display of the KVM matrix system.

Configuring scripts

Step 1: Select a matrix switch

• Select the matrix switch for which you want to configure scripts.

Step 2: Select the option »Scripts«

• Select the option **Scripts** to create, edit or merge individual scripts to control the matrix switch.

Steps 3 and 4: Create, edit, merge or delete scripts

NOTE: Script commands are stored in an XML document. Each XML document can contain one or more commands.

The structure of a valid XML document as well as possible commands and their syntax are described in the chapter *XML control of a matrix switch* in the separate *Configuration and Operation Guide*.

ADVICE: In the OSD of the matrix system you can save the switching condition of a console/multiple consoles or of the entire system in a script (see chapter *Scripting function* of the separate *Configuration and Operation* manual).

IMPORTANT: Only users with assigned **Superuser** rights are able to create, edit and delete scripts in the web application.

How to create a new script:

- 1. Click on Add script.
- 2. Enter the following data into the dialogue box:

Name:	Enter the desired script name.
Enabled:	Enable or disable the execution <i>and</i> display of the script in the Script menu.
Execution delay:	After calling the script, you can delay its execution by up to 999 seconds. Enter the desired delay time in seconds.
Comment:	If desired, enter a comment about the script.
XML code:	Enter the XML code using script commands.

3. Click on Save.

How to edit an existing script:

- 1. Select the script you want to edit and click on Edit.
- 2. Enter or update the following data into the dialogue box:

Name:	Enter the desired script name.
Enabled:	Enable or disable the execution <i>and</i> display of the script in the Script menu.
Execution delay:	After calling the script, you can delay its execution by up to 999 seconds. Enter the desired delay time in seconds.
Comment:	If desired, enter a comment about the script.
XML code:	Enter the XML code using script commands.

How to delete an existing script:

- 1. Select the script you want to delete and click on **Delete**.
- 2. Confirm the security prompt by clicking on Yes.

How to merge existing scripts into a new script:

1. Select the existing scripts you want to merge.

ADVICE: Press the **Ctr**l key to select several scripts from the list.

- 2. Click on Merge.
- 3. Enter the following data:

Name:	Enter the desired script name.
Comment:	If desired, enter a comment about the script.

4. If desired, you can change the order of the scripts you want to merge. Mark a script and click on (*arrow up*) or (*arrow down*). The selected script is moved either up or down.

NOTE: The XML documents of the selected scripts are copied to a new script in the selected order. In the new script, you can edit the XML document (created from the individual scripts) as required.

5. Click on Save.

Step 5: Define owner

A script can be executed by users who are the *owner* of the script or are assigned with rights to execute the script.

NOTE: Only scripts without owners can be added to script groups.

• Activate the **Owner** slider in the line of the user to be entered as the owner of the script.

Step 6: Script availability

If a script is *not* assigned to a console module, it is shown on all console modules whose users are assigned with the right to execute the script.

If the script is assigned to one or several console modules, it is shown only at the *assigned* console module(s) if their users are assigned with the right to execute the script.

• Activate the **Available** slider in the row of the consoles on which to show the script.

NOTE: Use the **Available** option in the column header to move the sliders of all console modules.

NOTE: Use the slider in the **EasyControl** line to control the availability of the script in the **EasyControl** tool.

ADVICE: Do not activate any slider if you want the script to be available on all console modules.

Step 7: Target matrix switch

In the script configuration, you can specify whether the script is to be executed locally on the matrix switch selected in step 1 *or* on one or two *other* matrix switches.

NOTE: Prerequisite for the execution on up to two other matrix switches is that the additional **IP-Control-API** function is also activated on the target matrix switch(s).

- Enable the **Execute on this device** slider *or* enter the IP address and port of one or two other matrix switches.
- Activate the **Ignore device response** slider if the device response should not be evaluated.

Configuring script groups

Step 1: Select a matrix switch

• Select the matrix switch for which you want to configure script groups.

Step 2: Select the option »Scripts groups«

• Select the option **Scripts groups** to organise several existing scripts in a script group.

Steps 3 and 4: Creating, editing or deleting script groups

How to create a new script group:

- 1. Click on Add script group.
- 2. Enter the following data into the dialogue box:

Name:	Enter the desired name of the script group.
Enabled:	Enable or disable the execution <i>and</i> display of the script group in the script menu.
Execution delay:	After calling the script group, you can delay its execution by up to 999 seconds. Enter the desired delay time in seconds.
Comment:	If desired, enter a comment about the script group.

3. Click on Save.

How to edit an existing script group:

- 1. Select the script group you want to edit and click on Edit.
- 2. Enter or update the following data into the dialogue box:

Name:	Enter the desired name of the script group.
Enabled:	Enable or disable the execution <i>and</i> display of the script group in the script menu.
Execution delay:	After calling the script group, you can delay its execution by up to 999 seconds. Enter the desired delay time in seconds.
Comment:	If desired, enter a comment about the script group.

3. Click on Save.

How to delete an existing script group:

- 1. Select the script group you want to delete and click on Delete.
- 2. Confirm the security prompt by clicking on Yes.

Step 5: Adding scripts to or deleting them from a group

The dialog lists all scripts of the matrix switch to which no owner has been assigned.

- Click on the Add slider on the row of the scripts you want to add to the group.
- Disable the Add slider on the row of the scripts you want to delete from the group.

NOTE: Use the Add option in the column header to move the sliders of all scripts.

Step 6: Changing the order within a script group

If desired, you can change the order of the scripts within a group. Mark a script and click on ▲ (*arrow up*) or ▲ (*arrow down*). The selected script is moved either up or down.

Step 7: Script group availability

• Click on the **Available** slider in the row of the consoles on which to show the script group.

NOTE: Use the **Available** option in the column header to move the sliders of all console modules.

ADVICE: Do not activate any slider if you want the script to be available on all console modules.

Assigning rights to execute scripts and script groups

NOTE: Users always have the right to execute and delete their own scripts (**Owner**). This option does not require any additional rights.

Executing a script that is not assigned to your own user account requires the right to execute this script. The same applies for script groups.

The **right to execute scripts** can be assigned in the settings of a user account. You can also manage this right via user groups (see *Efficient rights administration* on page 51).

Defining the right to execute a script

How to change the right to execute a particular script:

- 1. In the men, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab KVM matrix systems and then go to Script rights.
- 4. In the list field of the **Script rights** paragraph, select the desired script from the list on the left-hand side.

ADVICE: If necessary, use the *Search* box to limit the scripts that appear in the selection window.

5. In the **Execution** field on the right-hand side, select one of the following options:

Yes:	Allow the execution of the script.
No:	Deny the execution of the script.

6. Click on Save.

Defining the right to execute a script group

How to change the right to execute a particular script group:

- 1. In the men, click on **Users** or on **User groups**.
- 2. Click on the user account or the user group you want to configure and then click on **Configuration**.
- 3. Click on the tab KVM matrix systems and then go to Script group rights.
- 4. In the list field of the **Script group rights** paragraph, select the desired script group from the list on the left-hand side.

ADVICE: If necessary, use the *Search* box to limit the script groups that appear in the selection window.

- 5. Select the desired script group from the list on the left-hand side.
- 6. Under **Execution**, select one of the following options:

Yes:	Allows the execution of the script group.
No:	Denies the execution of the script group.

Assigning and configuring script keys

After the script key modifier(s) and a script key set have been adjusted and a script key set has been activated in the user account, a script can be executed by pressing key combinations on the console keyboard.

Using script keys at user modules

Opening the on-screen display is not necessary for using script keys to execute scripts. Hence, scripts can be executed much faster if you know the script keys required for the execution.

How to use script keys to execute a script via OSD:

1. Press the script key modifier key(s) defined in the matrix system and the script key assigned to the script.

EXAMPLE:

- Script key modifier keys: Win + Shift
- Script key for script: 1

Press and hold the keys Win+Shift while pressing script key 1. The scrip is executed when releasing the keys.

Changing the script key modifier and the valid keys

Script keys let you execute scripts quickly with the help of hotkeys. For this, you can create *script key sets* in the matrix system.

Together with a defined script key modifier, a script key set defines the hotkey to be pressed to execute a script.

In addition to defining the script key modifier, you can also define keys to be used as script keys.

How to change the script key modifier or the valid keys:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Select at least one of the modifiers listed in the **Script key modifier** field by marking the respective entry:

- Ctrl	• Win
- Alt	Shift
- Alt Gr	

4. In the **Valid keys** field, select one of the following options:

Only numbers:	<i>only numerical keys</i> are interpreted as script keys when pressed in combination with the script key modifier
Only characters:	<i>only alphabetic keys</i> are interpreted as script keys when pressed in combination with the script key modifier
Numbers and characters:	<i>alphabetical and numerical keys</i> are interpreted as script keys when pressed in combination with the script key modi- fier

IMPORTANT: The selected valid keys and the script key modifier(s) are *no longer* provided as key combinations to the operating system and the applications installed on the target computer.

5. Click on **OK** to save your settings.

Administrating script key sets

The KVM matrix system lets you create 20 global script key sets or ten additional, individual script key sets for each user.

Within script key sets you can define individual script keys to execute individual scrips.

NOTE: Global script key sets are available to all users of the KVM matrix system.

You can administrate script key sets comfortably with a wizard. Click on the menu **Advanced features** and select the entry **Script keys**. Click on **Configuration** to start the wizard.

The following paragraphs briefly summarise the wizard's configuration options.

Step 1: Select a matrix switch

• Select the matrix switch on which you want to store the configuration of the script key set.

NOTE: After you selected a matrix switch, you will see the current configuration of the **script key modifier** and the **valid select keys** (see above). If required, you can change these settings directly in this menu.

Step 2: Select a user

• Select a user account for which the configured script keys are available. When selecting the entry **Available for all (global)**, you create a global script key set that will be available to all users.

Step 3: Select key sets

- Select the script key set you want to configure.
 Click on the buttons Add, Edit or Delete to add a new script key set or to edit or delete an existing set.
- Click on the slider Activate script key set for current user if you want to activate the set for the user selected in step 2.

IMPORTANT: If you have selected the table entry **Available for all (global)** in step 2, clicking on the slider activates the set for all users.

NOTE: Only by assigning a script key set to a user account, the script keys defined in the set are accepted as inputs and execute the assigned script.

Step 4: Configure a script key set

• Enter the desired key combinations to execute scripts or script groups.

OSD settings fo the Scripting function

Editing the default menu mode

In the defaults, after accessing the OSD at a user module, you can select a computer via the *Select* menu. If desired, you can use your personal profile to define that the *Script* menu is shown directly after you open the OSD.

ADVICE: Independent of the default setting, you can always use the hotkey **Ctrl+X** to switch between *Select* menu and *Script* menu.

How to edit the default menu mode:

- 1. In the menu, click on **Users**.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the tabs KVM matrix systems and then go to Personal profile.

4. In the **Default OSD menu** field, select one of the following options:

Select:	The Select menu is shown after you open the OSD.
Script:	The Script menu is shown after you open the OSD.

5. Click on Save.

Switching threshold to switch the menu mode by mouse

In addition to switching the menu mode via the hotkey Ctrl+X you can also use the mouse to switch between menu modes.

ADVICE: After the activation of the switching of the menu mode by mouse, you can move the mouse to the left or to the right to switch between the two modes in the *Select* menu and in the *Script* menu.

IMPORTANT: Switching the menu mode by mouse is *not* possible if the entry is not available in the *Select* menu or in the *Script* menu!

How to activate/deactivate the switching threshold and/or adjust its sensitivity:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on Configuration.
- 3. Click on the tabs KVM matrix systems and then go to Personal profile.
- 4. In the Select/script menu mouse switching field, select one of the following options:

Off:	Mouse switching of the OSD menu mode deactivated (default)
Sensitivity 1:	lowest sensitivity level for mouse switching of the OSD menu mode
Sensitivity 10:	maximum sensitivity level for mouse switching of the OSD menu mode
Sensitivity 2-8:	further sensitivity levels for mouse switching of the OSD menu mode

Tradeswitch function (optional)

NOTE: The functions and settings described in this chapter are only available if the premium *Tradeswitch* function is activated.

The Tradeswitch function optimises the operation of console modules monitoring multiple computers over multiple monitors.

Instead of connecting keyboard and mouse to each monitor, the Tradeswitch function provides a central keyboard/mouse for all operating tasks of the console module.

In order to enable this, multiple modules of a KVM matrix system are arranged into groups. Each console module within a group is provided with a monitor, but only one of the group's console modules is provided with keyboard and mouse.

By using a hotkey, users are now able to switch the two input devices to each monitor. Now each computer of the group can be operated.

Changing tradeswitch key and valid key type

Tradeswitch keys allow you to switch the keyboard and mouse signals of a console module to another console module or target computer by entering a key combination.

You can group any console modules and/or target computers into a workplace and individually define the keys to be pressed to switch the keyboard and mouse signals to a specific console module or target computer.

In addition to the tradeswitch key modifier, you can also define the valid key type for tradeswitch keys.

How to change tradeswitch key modifier or valid tradeswitch keys:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on **Configuration**.
- 3. In the **Tradeswitch key modifier** field, select *at least* one of the listed key modifiers by checking the respective box.

- Ctrl		
- Alt		
Alt Gr		
- Win		
- Shift		

4. In the Valid tradeswitch keys field, select one of the following options:

Only numbers:	<i>Only numerical keys</i> are interpreted as select keys when pressed in combination with the select key modifier
Only characters:	<i>Only alphabetic keys</i> are interpreted as select keys when pressed in combination with the select key modifier
Numbers and characters:	<i>Alphabetical and numerical keys</i> are interpreted as select keys when pressed in combination with the select key modifier

IMPORTANT: The selected keymode and tradeswitch key modifier(s) are *no longer* provided as key combinations to the operating system and the applications on the target computer.

Customizing the appearance of the tradeswitch frame

You can set the display duration of the tradeswitch frame as well as its appearance (color settings, transparency effect and frame width) system-wide.

Each user of the matrix system can use his or her personal profile to change the system-wide default by making an individual adjustment.

How to change the system-wide appearance of the tradeswitch frame:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the master matrix switch and then click on Configuration.
- 3. Customize the settings in the **Tradeswitch frame configuration** section to suit your needs:

Temporary display time:	Set the temporary display duration of the tradeswitch frame between 0.0 (off) and 10.0 seconds.
Colour settings:	Select the brightness and colour of the tradeswitch frame.
Transparency effect:	Select the transparency effect (normal or high) of the Tradeswitch frame.
Frame width:	Select the frame width (normal to quadruple) of the Trade- switch frame.

4. Click on Save.

How to change the appearance of the tradeswitch frame for a *specific* user account:

- 1. In the menu, click on Users.
- 2. Click on the user account you want to configure and then click on **Configuration**.
- 3. Click on the tabs KVM matrix systems and then go to Personal profile.
- 4. Enable the **Personal tradeswitch frame display** option.

Customize the settings in the Tradeswitch frame configuration section to suit your needs:

Temporary display time:	Set the temporary display duration of the tradeswitch frame between 0.0 (off) and 10.0 seconds.
Colour settings:	Select the brightness and colour of the tradeswitch frame.
Transparency effect:	Select the transparency effect (normal or high) of the Tradeswitch frame.
Frame width:	Select the frame width (normal to quadruple) of the Trade- switch frame.

6. Click on Save.

Administrating tradeswitch workplaces

You can comfortably manage the tradeswitch workplaces with a wizard. Click on the Advanced features menu and select Tradeswitch function/Cross-Display Switching. To start the wizard, click Configuration.

The following sections briefly summarize the configuration options of the wizard.

Step 1: Select a matrix switch

• Select the matrix switch on which you want to store the configuration of the tradeswitch workplace.

NOTE: After you selected a matrix switch, you will see the current configuration of the »Tradeswitch« function and »CrossDisplay-Switching« (see above). If required, you can change these settings directly in this menu.

Step 2: Select a tradeswitch workplace

• Select a tradeswitch workplace you want to configure.

Click on **Add**, **Edit** or **Delete** to create a new tradeswitch workplace or edit or delete existing ones.

Step 3: Configure key combinations and tradeswitch master

- Entering a key combination to switch the monitor adds a module to the tradeswitch workplace.
- Delete an already entered key combination to delete a module from the tradeswitch workplace.
- Click on the slider **Tradeswitch master** slider in the row of the module whose keyboard and mouse are used to operate the tradeswitch workplace.

Advanced functions

Switch Tradeswitch visualization on/off

If you purchased the *Tradeswitch function*, the messages *»Forwarding to…«* (on the master workplace) or *»Forwarded«* (on the target workplace) can be displayed at the monitor.

Additionally (or alternatively) you can activate a blue frame that permanently or temporarily marks the monitor of the module connected via tradeswitch function.

How to enable or disable the Tradeswitching information display:

- 1. In the menu, click on KVM Matrix systems > [Name] > Console modules.
- 2. Click on the console module you want to configure and then click on Configuration.
- 3. Click on the General tab.

4. Under **Tradeswitch visualization**, you can select between the following options:

No:	Disable Tradeswitch visualization
Yes OSD:	The message »Forwarding to« (at the master workstation) or »Forwarded« (at the destination workstation) is displayed on the screen.
Yes Frame temporary:	A blue frame temporarily (0.5 seconds) marks the monitor of the module connected via tradeswitch function.
Yes Frame:	A blue frame permanently marks the monitor of the module connected via tradeswitch function.
Yes OSD+Frame temporary:	The message »Forwarding to« (at the master workstation) or »Forwarded« (at the destination workstation) is temporarily (0.5 seconds) displayed on the screen.
	In addition, a blue frame temporarily marks the monitor of the module connected via tradeswitch function.
Yes OSD+Frame:	The message »Forwarding to« (at the master workstation) or »Forwarded« (at the destination workstation) is permanently displayed on the screen.
	In addition, a blue frame permanently marks the monitor of the module connected via tradeswitch function.

CrossDisplay-Switching

With **CrossDisplay-Switching (CDS)**, you can use the mouse to switch between the modules of a Tradeswitch configuration (see page 158 ff.).

IMPORTANT: Depending on operating system and mouse driver, there might be some restrictions:

- Under *Mac OS*, the mouse might jitter at the edge of the screen.
- Under *Linux* there might be some problems when placing and moving the mouse.

NOTE: It is possible that mouse gestures used by some programs (like Firefox) to run functions cannot be applied.

Using »CrossDisplay-Switching«



Figure 1: Exemplary order of three monitors

How to use CrossDisplay-Switching to switch to another module:

Move the cursor to the edge of an active monitor placed next to another monitor.

The matrix switch switches to the module of the next monitor and positions the cursor. You will barely realize the switching between computers.

EXAMPLE: If you move the cursor to the right edge of **Monitor 2**, the matrix switch switches to the module connected to **Monitor 3**.

If you move the cursor to the left edge of Monitor 2, the matrix switch switches to the module connected to Monitor 1.

If you reach the outer edges (left edge of **Monitor 1** or right edge of **Monitor 3**) *CrossDisplay-Switching does not* take place.

If you hold a mouse key while moving the mouse, switching cannot be carried out. However, you can still drag and drop objects.

ADVICE: When using multi head groups, you can enable specific mouse modes that allow drag and drop operations when working with Windows and Linux operating systems (see page 183).

NOTE: You can define the monitor order in the web application (see page 183).

Requirements for »CrossDisplay-Switching«

Using CrossDisplay-Switching requires the following:

- Enabled premium **Tradeswitch** function (see page 158).
- Established and configured *Tradeswitch configuration* (see page 161).
- Enabled CrossDisplay-Switching (see page 169).
- Order of console monitors saved in the web application (see page 165).

IMPORTANT: Only USB target modules connected to the target computer by USB cables support *CrossDisplay-Switching*.

Order and proportions of monitors

Figure 1 shows three monitors placed in a row.

In addition to monitors placed next to each other, any combinations are supported. Even the monitors' proportions can vary. The following table shows some examples and describes special features.

NOTE: In the web application you can save the order and proportions of your monitors according to how they are placed on the desk.

1 2 3 4	In addition to switching to a monitor placed on the left or the right side of the active monitor, you can also switch to monitors placed above or below the active monitor: Move the cursor to one of the edges between monitors 1 and 3 or 2 and 4 to switch from an upper monitor to a lower monitor (or vice versa).
1 2 3 4	 If the monitors are placed as shown on the left, it is important to mind the exact <i>vertical</i> cursor position when reaching the lower edge of Monitor 1: In the first third you can switch to monitor 2. In the second third you can switch to monitor 3. In the last third you can switch to
1 3 4 2 3 5	 monitor 4. If the monitors are placed as shown on the left, it is important to mind the exact <i>horizontal</i> cursor position when reaching the left or right edge of Monitor 3: In the upper half you can switch to monitors 1 or 4. In the lower half you can switch to

Implementing multi-head monitors

NOTE: A description on how to create CDS multihead groups is given on page 177. For *CDS with multihead groups*, the individual channels are not managed, configured and switched as group, but individually in the KVM matrix system.

Matrix systems support computers whose desktop is displayed on multiple monitors (see page 132 ff.). These computers are called *multi-head computers*.

By default, the monitor of a multi-head computer is displayed in the standard monitor size. However, you can change the size (monitor 2 in the example below) to the proportions of the other monitors:



Figure 2: Two monitors of a multi-head computer between other monitors

NOTE: Install the driver **G&D CDS Multi-Monitor Support** if you cannot move the cursor across the two monitors of a multi-head computer.

You can download the driver from **www.gdsys.de** under **Downloads > Drivers**.

The »CrossDisplay-Switching« view

In the web application, you can save the order and proportions of console monitors. Based on these information, the matrix switch switches to the desired monitor if you move the cursor to the edge of a monitor.



Figure 3: The view »CrossDisplay-Switching«

The tab is divided into four parts. The following paragraphs provide detailed information about each part.

List of modules

The *left column* lists all target and console modules that are assigned to the tradeswitch workplace and *not* yet placed in the workspace.

Click on **Add** to move the selected module to the display range.

ADVICE: You can also drag and drop the modules by mouse to move the module to the display range.

Workspace

The *right column* (in the following called *workspace*) shows monitors of modules you can switch by using *CrossDisplay-Switching*.

Monitors are displayed as rectangles. Both the module name and the assigned tradeswitch key are displayed in the rectangle. You can use the handles and the **Size** buttons underneath the grid to change the rectangles' height and width.

NOTE: Figure 3 shows the handles as small black boxes on the frame of **Console** module 1.

Click on **Remove** to remove the selected rectangle from the workspace.

ADVICE: You can also use »drag and drop« mouse operations to delete rectangles from the workspace.

The workspace's standard zoom level shows 20×15 units. However, you can adjust the size of the workspace:

- Press Q (*zoom in*) to maximize the workspace. The maximum zoom level shows a workspace of 4×3 units.
- Press Q (*zoom out*) to minimize the workspace. In the minimum zoom level, the workspace is displayed as 38×28 units (default setting).

NOTE: The maximum size of the workspace is adjusted dynamically if you drag an element beyond the available workspace.

You can increase the original size of 20×15 units as required.

Basic configuration

IMPORTANT: Before you can configure the *CrossDisplay-Switching* feature, you need to enable the premium **Tradeswitch** function (see page 158) and create a *Tradeswitch configuration* (see page 161).

Enabling »CrossDisplay-Switching«

If you want to use the *CrossDisplay-Switching* function, we recommend that you activate the function for the entire system. This affects all target modules that use the system-wide setting (default).

You can override the system-wide settings for each target module and enable or disable *CrossDisplay-Switching* for certain target modules only.

ADVICE: You can also disable the system settings and enable *CrossDisplay-Switching* only in the settings of target modules on which you want to use the function.

How to change the system settings »CrossDisplay-Switching«:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **CrossDisplay-Switching** field, you can select between the following options:

Disabled: Disable *CrossDisplay-Switching* for the entire system.

Enabled: Enable *CrossDisplay-Switching* for the entire system.

ADVICE: You can enable or disable *CrossDisplay-Switching* for certain modules independently of the selected system settings (see below).

5. Click on Save.

Adjusting the general mouse speed

If *CrossDisplay-Switching* is enabled, the mouse speed is not controlled by the operating system of the target computer, but by the matrix switch.

If the cursor on the monitor of the target computer moves too fast or too slow, you can adjust the speed in the matrix switch.

You can adjust the mouse speed for the entire system or for one target module only.

How to change the system settings of the mouse speed:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch and then click on Configuration.

- 3. Click on the General tab.
- 4. Move the **Mouse speed** slider to the desired value.
- 5. Click on Save.

CDS mouse positioning

When moving the mouse cursor to an edge of the active monitor with a second monitor placed next to the active monitor, the mouse cursor remains at the position at which the switching to the module of the second monitor takes place.

NOTE: When using CDS to switch betweens monitors, a mouse cursor may be visible on several monitors.

In addition, when leaving the monitor, the matrix switch can position the mouse cursor so that it is barely visible. For this, you can use the settings **Right** and **Bottom**.

You can define this setting for the entire system. By default, all CDS console modules use the system-wide setting. However, you can also individually define the mouse position for each CDS console module.

How to change the system setting of the mouse position:

- 1. In the menu, click on Matrix systems > [Name] > Matrix.
- 2. Click on the matrix switch and then click on Configuration.
- 3. Click on the General tab.
- 4. In the **CDS mouse positioning** field, you can select between the following options:

Off:	The mouse cursor remains at the position at which the switching to the module of the next monitor takes place (<i>default</i>).
On:	According to the CDS mouse hideout setting the mouse cursor is positioned so that it is barely visible.
	Only during <i>multi-user access</i> , the cursor remains at the position at which the switching to the next monitor takes place.
On (multi access:	According to the CDS mouse hideout setting, even during <i>multi-user access</i> , the mouse cursor is positioned so that it is barely visible.

ADVICE: You can enable or disable this function for particular modules independently from the selected system setting (see below).

5. With activated CDS mouse positioning, you can select between the following options in the **CDS mouse hideout** field:

Right:	The mouse cursor is placed on the right edge of the monitor so that it is barely visible.
Bottom:	The mouse cursor is placed on the bottom edge of the monitor so that it is barely visible.

6. Click on Save.

Configuring CrossDisplay-Switching

You can configure the »CrossDisplay-Switching« function comfortably with a wizard. Click on the menu **Advanced features** and select the entry **Tradeswitch/CrossDisplay-Switching**. Click on **Configuration** to start the wizard..

NOTE: Steps 1 through 4 (see page 161 ff.) of the wizard show you how to create a tradeswitch workplace.

NOTE: A tradeswitch workplace is a basic requirement to set up the »CrossDisplay-Switching« function.

Step 5: Position displays

How to add monitors to the workspace:

- 1. In the *left column*, select a target module or a console module.
- 2. Click on the Add icon.

ADVICE: You can also drag and drop monitors by mouse.

In the workspace, each added module is displayed as a grey rectangle $(4 \times 3 \text{ units})$ with a black frame and is placed on a free position.

The rectangle symbolises the monitor of the module placed on your desk. The name of the connected module and the assigned tradeswitch key are displayed in the rectangle.

How to remove monitors from the workspace:

- 1. In the *right column*, select the rectangle of the monitor you want to remove.
- 2. Click on the Remove icon.

ADVICE: You can also drag and drop monitors by mouse.

Each removed module monitor is added to the list of modules in the left column.

How to move monitors within the workspace:

IMPORTANT: Exact switching is only possible if the monitors shown in the web application are placed in the same order as on your desk.

NOTE: Spaces between the monitors in the workspace are skipped during *CrossDisplay-Switching*.

- 1. Move the mouse over the rectangle of the monitor you want to move.
- 2. Press and hold the **left mouse key** while dragging the rectangle to the desired position.

If the frame of the rectangle turns red while dragging it, the current position is (partly) occupied and therefore the rectangle cannot be placed there.

Drag the handle beyond the right or left edge if the workspace is too small for the monitor size you want to adjust. The workspace maximizes automatically.

3. Release the left mouse key when a green frame is displayed.

ADVICE: For finetuning and as an alternative to mouse operations, you can use the **Position** buttons below the grid after clicking a rectangle.

How to adjust proportions among monitors:

NOTE: Adjust the monitor proportions exactly to be able to position the mouse precisely and switch between monitors.

The monitor resolution is not important for this step.

1. Click on the rectangle of the monitor for which you want to change the size.

On each of the rectangle's corners and in the middle between the two corners you can see adjustment handles (small black squares).

2. Click one of the handles and hold the **left mouse key** while dragging the handle to the desired position.

If the frame of the rectangle turns red while dragging it, the position is (partly) occupied and therefore the rectangle cannot be placed there.

Drag the handle beyond the right or left edge if the workspace is too small for the monitor size you want to adjust. The workspace maximizes automatically.

3. Release the left mouse key after a green frame is displayed.

ADVICE: For finetuning and as an alternative using a mouse, you can use the **Position** buttons below the grid after clicking on a rectangle.

4. If required, repeat steps 2 and 3 with the other handles of the rectangle.

Step 6: Configure CDS settings of target modules

How the change »CrossDisplay Switching« settings of target modules:

- 1. Click on the target module you want to configure and then click on Edit.
- 2. In the CrossDisplay-Switching field, you can select between the following options:

System:	The matrix switch settings are applied to the entire system (see above).
Disabled:	<i>CrossDisplay-Switching</i> is disabled for this target module. The system settings are ignored.
Enabled:	<i>CrossDisplay-Switching</i> is enabled for this target module. The system settings are ignored.

How to change the mouse speed of target modules:

- 1. Click on the target module you want to configure and then click on Edit.
- 2. In the **CDS mouse speed** field, you can select between the following options:
 - a. If you want to apply the system settings of the mouse speed to the target module, enable the option **System**.
 - b. If you want to set an individual mouse speed, disable the **System** option and set the desired value.
- 3. Click on Save.

How to adjust the CrossDisplay resolution of a target module:

NOTE: With active *CrossDisplay-Switching*, the mouse speed is not controlled by the operating system of the target computer but by the matrix switch.

If the cursor speed changes between horizontal and vertical mouse movements, the monitor resolution could not be auto detected.

In such cases, a resolution of 1680×1050 pixels applies. If the monitor's resolution differs from this resolution, the mouse moves as described above.

In this case, you can adjust the monitor resolution manually.

- 1. Click on the target module you want to configure and then click on Edit.
- 2. Disable the Auto option in the CDS resolution field.
- 3. Enter the vertical and horizontal resolution in the input boxes.
- 4. Click on Save.

How to change the mouse position of a particular target module:

- 1. Click on the target module you want to configure and then click on Edit.
- 2. In the **CDS mouse positioning** field, you can select between the following options:

System:	Use systemwide (see above) setting (default).
Off:	The mouse cursor remains at the position at which the switching to the module of the next monitor takes place.
On:	According to the CDS mouse hideout setting the mouse cursor is positioned so that it is barely visible.
	Only during <i>multi-user access</i> , the cursor remains at the position at which the switching to the next monitor takes place.
On+Multi:	According to the CDS mouse hideout setting, even during <i>multi-user access</i> , the mouse cursor is positioned so that it is barely visible.

3. With activated CDS mouse positioning, you can select between the following options in the **CDS mouse hideout** field::

Right:	The mouse cursor is placed at the right edge of the monitor so that it is barely visible.
Bottom:	The mouse cursor is placed at the bottom edge of the monitor so that it is barely visible.

Messages

In some cases CrossDisplay-Switching cannot be used.

In such cases, a message is displayed. The messages have the following meaning:

Message	Meaning
No CDS: Console multiaccess mode	The console module is included in several Workplaces (Tradeswitch configurations). Two or more input devices from different Workplaces access the console module.
No CDS: Console not found	The console module does not (no longer) exist in the matrix switch database.
No CDS: Disabled	CrossDisplay-Switching is disabled for the currently accessed target module. Check the settings in the target module and the settings for the entire system (see page 169 ff.).
No CDS: No TradeSwitch modifier	The Tradeswitch key modifier is not defined. Enable a modifier as described on page 158.
No CDS: Target not found	The target module does not (or no longer) exist in the matrix switch database.
No CDS: Target not supported	The target module or the installed firmware does not sup- port CrossDisplay-Switching. Contact our support team for more information.

CDS multihead groups

CDS multihead groups let you create a CDS workplace. You can switch *any* video channel to the monitors of this workplace.

The video channel can be either the (only) video channel of a computer with one graphics output only or a *given* video channel of a computer with multiple graphics outputs.

The configuration settings of a CDS multihead group provide the matrix switch with the resolutions and order of connected video channels belonging to one display range of a computer. These information allow flexible switching via CDS.

IMPORTANT: If two different users operate two different targets of a CDS multihead group at the same time, the mouse jumps between the affected video channels of both users.

Differences between CDS modes

CDS multihead groups expand the functional range of CrossDisplay-Switching (CDS):

• In **CDS with channel grouping** mode, the matrix switch can display an additional video channel (added via channel group) of a computer with multiple graphics outputs only on monitors of console modules that also have a compatible channel group

Showing the *first* video channel of another target on an *additional* monitor of a channel group is not possible.

• **CDS with multihead groups** lets you display on *every* monitor either the (only) video channel of a computer with one graphics output or a *given* video channel of a computer with multiple graphics outputs.

IMPORTANT: In **CDS with channel grouping** mode, connect each target module within the group to the target computer using a USB cable.

Example of use

The following example shows the difference between the two CDS modes:

EXAMPLE: A display range of 3840×1200 pixels is defined in the graphics settings of a computer. The computer uses two video channels with 1920×1200 pixels each to transmit the display range to two monitors.



CDS with channel groups

The chapter *Implementation of multihead monitors* (see page 166) describes how to implement multihead computers with channel groups into the CDS configuration.

In the CDS configuration, the *combined* size of the monitors belonging to a channel group (monitors **2a** and **2b** in the example below) is adjusted so that their size ratio fits the other monitors:



IMPORTANT: Only monitor *2b* of the CDS workplace can display the *second* video channel of a multihead computer!

It is *not* possible to display the first video channel of a target on this monitor.

At the CDS workplace, when moving the mouse cursor to the right-hand margin of monitor **1**, the matrix switch switches to monitor **2a** and places the cursor in a way that you barely realise the changing between the cursors of both computers.

When moving the mouse cursor to the right-hand margin of monitor **2a**, the matrix switch detects with the help of the CDS configuration that the next monitor **2b** is connected to another graphics output of the already accessed computer. Therefore, a switching does *not* take place and the mouse cursor is *not* positioned.

When switching a computer with only one video channel to monitor **2a**, you need to drag the mouse through the unused display range of monitor **2b** before using CDS switching to switch to monitor **3**.

NOTE: This type of CDS configuration is recommended when you always switch multihead computers to particular monitors of the CDS workplace (**2a** and **2b** in the example).
CDS with mulithead groups

CDS with multihead groups allows you to display the individual video channels of multihead computers on any monitor of the CDS workplace.



You can switch the two display ranges of the multihead computer mentioned in the example above to monitors 1 and 2, monitors 2 and 3 or monitors 3 and 4.

NOTE: For *CDS with multihead groups*, instead of being grouped, individual channels are managed, configured and switched within the KVM matrix system.

You can switch *any* video channel to *each* monitor of the CDS workplace. The channel can be either the (only) video channel of a computer with one graphics output or a *given* video channel of a computer with multiple graphics outputs.

NOTE: CDS with multihead groups requires additional configuration settings.

According to the configuration of the CDS multi head group, the matrix switch detects the order of the devices and the resolution of each channel. This way, switching via CDS takes place reliably at the margins of the display range.

Requirements

- Enabled premium **Tradeswitch** function (see page 158).
- Established and configured Tradeswitch configuration (see page 161 ff.).
- Enabled CrossDisplay-Switching (see page 169).
- The channels of multihead computers must not be part of channel groups (see page 132). If necessary, delete the channel groups of the target modules you want to configure.

IMPORTANT: Channel groups are required to implement multihead computers as described in the chapter *Implementation of multihead monitors* (see page 166).

Both CDS operating modes can be used at the same time in a KVM matrix system. However, you can use only one operating mode per computer and per CDS workplace.

- Order and size ratio of the monitors at the CDS workplace are saved in the web application (see page 167).
- The target modules used at the individual video channels of a computer are all individually connected to the computer via USB.

ADVICE: When using MC console modules, you can use the temporary logon (see OSD *Operation Menu*) and the rights given to your user account to log on to each additional channel of the console module.

Afterwards, you can operate the additional video channels like an independent channel.

The »Member configuration« view

During basic CDS configuration you already defined order and size ratio of the monitors belonging to the CDS workplace (see page 167).

When configuring CDS multihead groups, you first reproduce the computer's display ranges and then enter their resolutions.

IMPORTANT: The configuration of CDS multihead groups *must* comply with the configuration of the computer's graphics settings!

The following screenshot shows two adjoining video channels (1920×1200 each) of a multihead computer (see example on page 177). The combined display range of the *CDS multihead group* has a resolution of 3840×1200 pixels.



The tab is divided into two parts The following paragraphs provide a detailed description of these parts.

List of target modules

The table on the *left-hand side* lists all target modules that are not part of a CDS multihead group.

By clicking on **Add** you can move the highlighted module into the display range.

ADVICE: You can also use »drag and drop« mouse operations to move modules to the display range.

Workspace

The workspace on the *right-hand side* shows the display ranges of video channels of multihead computers. Each display range is transmitted by a separate target module.

The display ranges are displayed as rectangles. The name of the target module and the resolution of its display range is displayed inside of the rectangle.

You can arrange the individual display ranges in horizontal or vertical order or in blocks. Blocks must be put together to form complete quadrangles. L-shaped arrangements are *not* supported.

IMPORTANT: The display range entered in the workspace must reflect the computer's *entire* display range.

Click on **Remove** to delete the selected rectangle from the workspace.

ADVICE: You can also use »drag and drop« mouse operations to delete rectangles from the workspace.

At default zoom level, the workplace is displayed in units of 4×4 . You can adjust the size of the display range:

- Click on (*coom in*) to maximize the workspace. At maximum zoom level, the workspace is displayed in units of 2×2.
- Click on (*coom out*) to minimize the workspacer. At minimum zoom level, the workspace is displayed in units of 20×20 (default).

NOTE: The maximum size of the workspace adjusts dynamically when you move an element over the available workspace.

You can expand the default size of 16×16 units as far as you wish.

Configuring CDS multihead groups

You can configure the CDS multihead groups comfortably with a wizard. Click on the menu Advanced features and select the entry Tradeswitch/CrossDisplay-Switching. Click on Configuration to start the wizard.

NOTE: Steps 1 through 4 (see page 161 ff.) of the wizard show you how to create a tradeswitch workplace.

NOTE: Steps 5 and 6 (see page 171 ff.) of the wizard show you how to set up the CrossDisplay-Switching function.

Step 7: Administrate CDS multihead groups

How to create a new CDS multihead group:

- 1. Click on Add.
- 2. In the Name field, you can enter the name of the group.
- 3. *Optional:* In the **Comment** field, you can enter a comment about the group.
- 4. Select one of the options listed in the **CDS mouse mode** field:

NOTE: By default, when reaching one of the edges of the active monitor, switching does not take place if a mouse button is pressed while moving the mouse.

When working with Windows and Linux operating systems, you can enable specific mouse modes that allow drag and drop operations.

Standard:	When reaching one of the edges of the active monitor, switching does not take place if a mouse button is pressed while moving the mouse.
Windows:	Under <i>Windows</i> operating systems switching takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.
Linux:	Under <i>Linux</i> operating systems switching takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.

5. Click on Save.

How to change the settings of a CDS multihead group:

- 1. Click on the group you want to configure and then click on Edit.
- 2. In the Name field, you can change the name of the group.

- 3. *Optional:* In the **Comment** field, you can change or enter a comment about the group.
- 4. Select one of the options listed in the **CDS mouse mode** field:

NOTE: By default, when reaching one of the edges of the active monitor, switching does not take place if a mouse button is pressed while moving the mouse.

When working with Windows and Linux operating systems, you can enable specific mouse modes that allow drag and drop operations.

Standard:	When reaching one of the edges of the active monitor, switching does not take place if a mouse button is pressed while moving the mouse.
Windows:	Under <i>Windows</i> operating systems switching takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.
Linux:	Under <i>Linux</i> operating systems switching takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.

5. Click on Save.

How to delete a CDS multihead group:

- 1. Click on the group you want to delete and then click on Delete.
- 2. Confirm the security prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Step 8: Configure CDS multihead groups

Saving order and resolutions of workspaces

Arrange the display ranges of the graphics cards installed in the multihead computer as they are displayed in the computer's graphics configuration.

IMPORTANT: You can arrange the individual display ranges into horizontal or vertical order or in blocks. Blocks must be put together to form complete quadrangles. L-shaped arrangements are *not* supported.

How to add a workspace to the display range:

- 1. Select a target module from the *left column*.
- 2. Click on Add.

ADVICE: You can also drag and drop target modules by mouse.

In the workspace, each added target module is displayed as a grey rectangle $(1 \times 1 \text{ units})$ with a black frame and is placed on a free position.

The name of the target module and the resolution of its display range are displayed inside the rectangle.

How to remove a display range from the workspace:

- 1. On the right-hand side of the workspace, select the rectangle symbolizing the display range you want to delete.
- 2. Click on Remove.

ADVICE: You can also drag and drop display ranges by mouse.

How to move a display range within the workspace:

IMPORTANT: Exact switching is possible only if the monitor arrangement stored in the web application complies with the arrangement at the workstation.

NOTE: Empty spaces between display ranges are not valid.

- 1. Move the mouse over the rectangle symbolizing the display range you want to move.
- 2. Press and hold the **left mouse key** while dragging the rectangle to the desired position within the workspace.

If the frame of the rectangular turns red while dragging it, the position is already occupied and therefore not valid.

Drag the over the right or the bottom frame if the workspace is too small for the desired position. This way, the workspace becomes automatically larger.

3. Release the left mouse key when a green frame is displayed.

ADVICE: as an alternative to using a mouse, you can use the **Position** buttons below the grid after clicking on a rectangle.

How to adjust the resolution of a display range:

- 1. In the table on the left, enter the **resolutions** of the target modules of the CDS multihead group.
- 2. Click on Save and continue.

EasyControl

You can use the **EasyControl** tool integrated in the web application to connect a console module to a specific target module or to execute an existing script or script group.

After activating the *fee required* **IP-Control-API** feature, all users who assigned with the right to access the tool (see page 61) can use it.

Starting the »EasyControl« tool

How to start the tool:

1. Enter the following URL in the address line:

https://[IP address of the device]

2. Enter the following data in the login mask:

Username:	Enter a username.
Password:	Enter a password for your user account.

- 3. Click on Login.
- 4. Click on the **EasyControl** icon.

Establishing and disconnecting a connection

Use the tool in **Connection** mode to connect a console module to a target module.

G& AND	KVM 5 RIGHT.	G&D Easy	/Control			EN			
	Connection			Script					
	Console 1 Connected to Target 1			Target 1 1 console connect	ed				
	Console 2	Discon	inect						
	Console 3			Target 3	Target 3				
					r				
						¢ 🗍			

The left column lists the console modules on which you are logged in at the moment.

NOTE: The following console modules are *not* listed here:

- Grouped console modules (except main channel 1),
- CON modules of U2-, U2+ or U2-LAN variants.

ADVICE: You can use scripts (see below) to log on to other console modules without having to log on to the OSD.

The *right* column lists all **target modules** you can access according to the access rights assigned to your account.

NOTE: The following target modules are *not* listed here:

- Grouped target modules (except main channel 1),
- CPU modules of U2-, U2+ or U2-LAN variants,
- Digital CPU modules that are used as a connection to an analogue matrix switch
 (via bridge function)

(via bridge function).

If a console or target module has an active connection to a remote terminal, a short note indicates this condition in the list:

- **Console modules:** Connected to [*name of target module*]
- Target modules: [x] console(s) connected

Switching functions

How to connect a console module and a target module:

- 1. Click on Connection.
- 2. *Successively* click the buttons of the console module and the target module which you want to connect with each other.

NOTE: The last clicked button is displayed as *marked*. Click anywhere outside of the button or on the button to cancel the mark.

The two devices connected via mouse click remain marked until the next click is made.

How to disconnect a console module from a target module:

- 1. Click on the button of the *console module* you want to disconnect from a target module.
- 2. Click on Disconnect.

How to show the remote station of the connected target module:

1. Click on the button of the *console module* or *target module* whose remote station you want to show.

The selected module and the module connected to it are now marked in the lists.

Hiding modules on the user interface

How to show or hide console or target modules from the list:

1. Click on the gears icon at the bottom right (🔁).

Each entry in the list of the console or target modules contains the slider Hide device.

2. Activate the sliders of modules you want to hide from the list.

Deactivate the sliders of modules you want to show on the list.

3. Click the gears icon again (🔅).

Executing scripts

Use the tool in **Script** mode to execute an existing script or script group.

Each page of the user interface contains 12 buttons. Each of these buttons can be assigned a script or a script group.

G& AND KVM FEELS RIGHT.	G	&D EasyControl			EN
	Connection		Script		
Configure button		Configure button		Configure button	
Configure button		Configure button		Configure button	
Configure button		Configure button		Configure button	
Configure button		Configure button		Configure button	
All notifications Only errors	Add Delete «	1 2 3 »	Skin 1 Ski	n 2 Skin 3 Bright Dark	-

To be able to call a script or a script group using the tool, the following requirements must be met:

- The user logged in to EasyControl is assigned the right to execute a script or script groups.
- In the settings of the script or the script group the use in EasyControl is permitted.

IMPORTANT: When opening the script view of the tool for the first time, no buttons are configured yet.

You can only execute scripts or script groups after you have configured the buttons.

Configuring the interface

How to assign a script or a script group to an unconfigured button:

IMPORTANT: Unconfigured buttons are only visible in the configuration view. These buttons are not visible in the user view.

1. Click on the gears icon at the bottom right (C).

All available buttons are displayed in the middle of the view.

NOTE: Buttons that have already been configured show the name of the assigned script or script group.

Unconfigured buttons are marked with **Configure**.

- 2. Click on an unconfigured button marked with Configure.
- 3. Select the script or script group you want to execute using this button.

How to assign a colour to a configured button:

1. Click on the gears icon at the bottom right (🐼).

All available buttons are displayed in the middle of the view.

NOTE: Buttons that have already been configured show the name of the assigned script or script group.

Unconfigured buttons are marked with **Configure**.

- 2. Click on a configured button.
- 3. Select the desired colour of this button.

How to add a page to or delete it from the view:

- 1. Click on the gears icon at the bottom right $(\textcircled{\bullet})$.
- 2. Click on Add in the middle of the footer to add another empty page.

Click on **Delete** to delete the currently displayed page.

NOTE: Only empty pages can be deleted.

How to delete the configuration of a configured button:

- 1. Click on the gears icon at the bottom right (C).
- 2. Click on the [X] in the upper right corner of a configured button.

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Operating the user interface

How to execute a script or a script group:

1. Click on Script.

All configured buttons are displayed in the middle of the view.

- 2. If necessary, use the page selection in the middle of the footer to select the page containing the desired button.
- 3. Click on the desired button.

General configuration settings

All notifications	Only errors	Skin 1 Skin 2 Skin 3 Bright Dark 🔯 🗧	
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Showing all notifications or only errors

- 1. Click on the gears icon at the bottom right ().
- 2. Select one of the given options:

All notifications:	Show all status and error notifications
Only errors:	Show only error notifications

3. Click the gears icon again (🔅).

Changing the colour scheme of the tool

NOTE: The selected colour scheme is saved in the user settings of the active user. When using the tool the next time, the previously selected colour scheme is applied.

How to change the colour scheme:

- 1. Click on the gears icon at the bottom right (
- 2. Click on the button of the colour scheme you want to use (Skin 1, Skin 2 or Skin 3).
- 3. Each colour scheme is available in a variant for light and dark working environments. Select the desired variant:

Bright: Apply variant for bright surroundings

Dark: Apply variant for dark surroundings

4. Click the gears icon again (🔅).

Closing the tool

How to close the tool:

1. Click on the **Exit** () icon at the bottom right.

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Hauptsitz | Headquarter

Guntermann & Drunck GmbH Systementwicklung

Obere Leimbach 9 | D-57074 Siegen | Phone +49 271 23872-0 sales@gdsys.com | www.gdsys.com US-Büro | US-Office

G&D North America Inc.

4001 W. Alemada Avenue | Suite 100, Burbank, CA 91505 | Phone +1-818-748-3383 sales.us@gdsys.com | www.gdsys.com