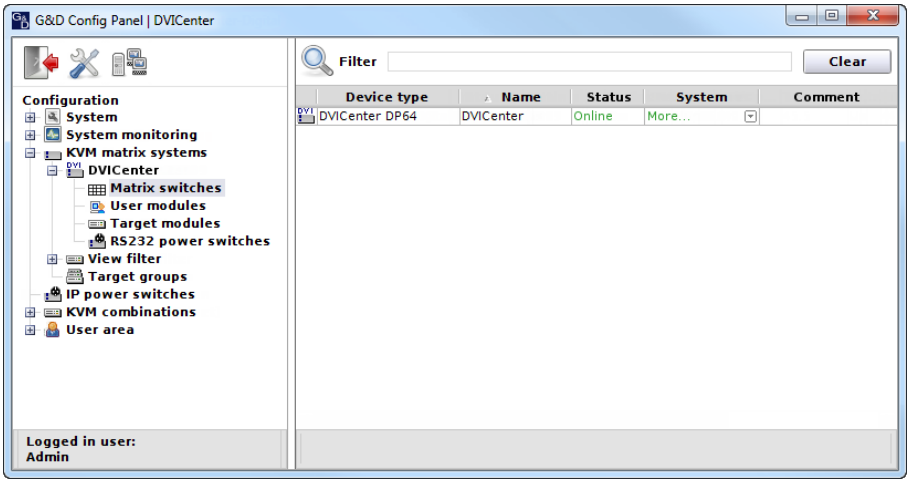
G&D DVICenter



EN

Web Application »Config Panel«

Configuring the matrix switch

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1 Basic functions

The *Config Panel* 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 11).

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
- Easy operation through the drag & drop function
- Monitoring of various system features
- Advanced network functions (netfilter, syslog, …)
- Backup and restore function

System requirements

The *Config Panel* web application is a java application that runs within the Java Virtual Machine (JVM).

The web application uses the *Java Web Start* technology. This technology allows the execution of the Java application, regardless of the settings and the Java compatibility of the web browser.

IMPORTANT: Before the web application can be started via the web browser of a computer, the device, which is used to load the web application has to be connected to the local network (see installation guide).

Now adjust the network settings as described on page 11.

Java Runtime Environment

The web application runs with Java Web Start on *Java Runtime Environment* (JRE). Starting the web application requires the installation version 6 (update 37) or later.

A free download of this version is available at the following website:

http://java.com/en/download/

Configuring the network settings

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

- IP address of *network interface A*: **192.168.0.1**
- IP address of *network interface B*: address obtained using **DHCP**
- 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.

ADVICE: As an alternative to the steps described below, the network interfaces of a matrix switch can also be configured via the on-screen display of a user console.

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 A* 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. Click on **Download Config Panel**.
6. Configure the network interface(s) and the global network settings as described in the paragraph *Network settings* on page 21 f.

> **IMPORTANT:** It is not possible to operate both network interfaces within one subnet!

7. Remove the twisted pair cable connection between computer and device.
8. Implement the device in the local network.

Getting started

This chapter describes how to operate the web application.

NOTE: The following chapters give a detailed overview of all functions and configuration settings.

Starting the web application

The web application uses the *Java Web Start* technology. This technology allows the execution of the Java application, regardless of the settings and the Java compatibility of the web browser.

NOTE: Information regarding the system requirements of the web application are provided on page 11.

How to start the web application:

1. Enter the following URL in the address bar:

   https://[ip address of the device]

NOTE: You can also open the homepage via an http connection (port 80). In this case it is not possible to authenticate the opposite side via certificate.

2. Click on **Download Config Panel**.

Security instructions of the web browser

The device, on which the web application is operated, stores an SSL certificate that enables the user or the web browser to authenticate the opposite site.

IMPORTANT: Replace the certificate that is included in the defaults of the device with an individual certificate, which is related to the device. Information on how to create such a certificate is given on page 31.

User login at the web application

After the certificates are authenticated, the login window opens.

How to log in to the web application:

1. Enter the following data in the login box:

Username:	Enter your username.
Password:	Enter your user account password.
Select language:	Select the language to be displayed on the user interface: ▪ **(Default):** apply default setting ▪ **German** ▪ **English**

2. Click the **Login** button.

IMPORTANT: Change the preset password of the administrator account immediately.

Use the administrator account to log in to the web application and change the password (see page 68).

These are the *preset* access data for the administrator account:

- **Username:** Admin
- **Password:** 4658

Operating the web application

User interface

The user interface of the web application consists of four main sections:

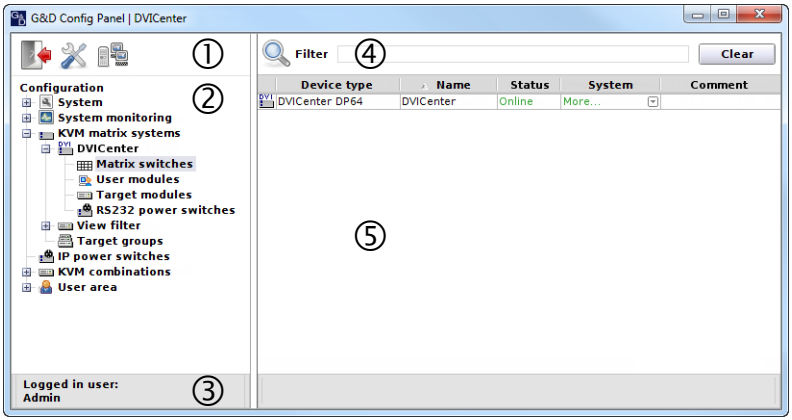


Figure 1: User interface

The different sectors of the user interface perform various tasks. The following table lists the intended use of each sector:

Toolbar ①:	The toolbar allows you to exit the active session and access the basic configuration of the web application. It is also possible to use the third icon for viewing and editing the settings of the Ports.
Tree view ②:	The tree view shows the setting options. Open or close one of the branches by double clicking or clicking the **[+]** or **[-]**. A right mouse click upon **Configuration** or upon an empty space within the structural overview, enables you to **show all** or **hide all** sub-branches . A right mouse click on one of the unfolded or folded away entries of the tree view enables you to **show** or **hide** all sub branches via the context menu.
User name ③:	Name of user logged in to the web application
Filter function ④:	The filter function can be used to limit the elements that are displayed in the main view. Enter a part of the name of the searched element into the text field. Only items that contain this text in the column(s) *Device Type, Name*, *ID*, *Serial number* and/or *Firmware* will be displayed in the main view. The names are not case sensitive during filtering. Click **Delete** to cancel the filtering.
Main view ⑤:	After you selected an element in the tree view ②, the main view displays the superior elements.

ADVICE: In the main view of **KVM matrix system** and **KVM combinations,** you can switch between the *Monitoring* and the *Info mode*.

The main view of the *Monitoring mode* shows the values of the monitored features. The *Info mode* shows important information like the firmware version, or the device's IP and MAC address(es).

Right-click the table, and select **Column view > Monitoring** or **Information** to activate the desired mode.

Frequently used buttons

The user interface uses different buttons to carry out certain functions. The following table provides information on the names and functions of the buttons that are used in many interfaces.

Reload:	Reload window values from the system's database. Changes that have been carried out by the user are overwritten.
OK:	Save your settings. *Afterwards, the window closes.*
Apply:	Save your settings. *The window remains open.*
Cancel:	Cancel your settings and close window.
Print:	Call print interface to select printer, page orientation and further settings. After the settings have been selected, the interface information (e.g., the *cascade information*) can be printed.
Close:	Close windows.

Closing the web application

Use the *Exit* button to close the web application.

IMPORTANT: Always use the *Logout* function to exit your session to protect the web application against unauthorised access.

How to exit the web application:

1. Click the **Exit** button (see figure on the right) to close the web application.

Selecting the default language of the web application

How to change the default language of the web application:

1. In the directory tree, click on **System**.
2. Double-click on **Configuration** in the main view.
3. Click the **System** tab.

4. Use the **Language** entry to select the default language to be displayed to all users of the web application:

   - **German**
   - **English**

5. Click **OK** to save your settings.

Showing the version number of the web application

How to show the version number of the web application:

1. In the directory tree, click on **System > Information**.
2. Double-click on **General**.
3. Click on **Close** to close the window.

Port administration

NOTE: The number of Ports depends in the *DVICenter* variant in use.

The following paragraph explains how to configure the 32 *Ports* of a *DVICenter DP32* .

The *DVICenter DP32* provides 32 *Ports.* These ports are used to connect user modules or target modules.

IMPORTANT: When installing a matrix switch with the current version of the web application, the connected user modules (**CON**) or target modules (**CPU**) are recognized and the ports are auto-configured.

Up to version 1.10 of the web application, the **CON** or **CPU mode** of ports could be manually assigned by the user. After a firmware update to the current version, the web application of a configured matrix switch activates the *Compatibility mode* and applies the user's previous manual configuration.

ADVICE: Click on **Compatibility mode** to switch between *Standard* mode and *Compatibility* mode.

Automatic port mode

In the default settings, the matrix switch autorecognizes the modules connected to the ports and configures the ports accordingly.

IMPORTANT: When connecting a user module or a target modules, the ports are auto-configured. When cascaded (see page 139 ff.) mind the port mode or change it, if necessary.

By cascading the matrix switch, you can increase the number of connected target computers. For this, connect further matrix switches to the configured ports:

- In the default settings, ports **1** through **8** are pre-configured to connect a superior matrix switch (**Up mode**).
- Ports **9** through **32** are pre-configured to connect a sub matrix switch (**Down mode**).

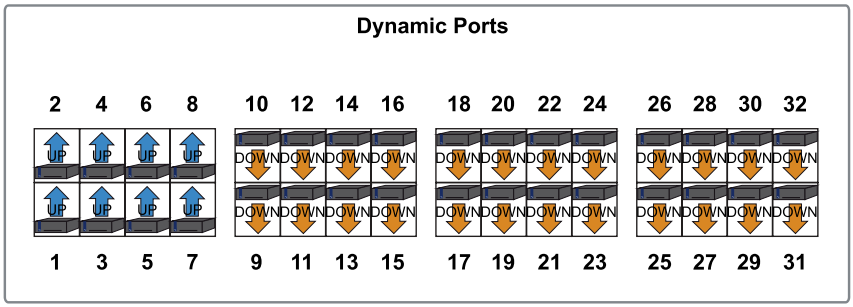


Figure 2: Port settings in default mode
Figure 3:

ADVICE: To facilitate the installation of the KVM switch, you can switch the port LEDs to the port mode (see page 20).

To change the port assignment mind the following instructions:

- Configure all 32 ports either as **Up port** or as **Down port**.
- Configure at least one port as **Up port** and one port as **Down port**.

Compatibility mode

NOTE: Up to version 1.10 of the web application, the **CON** or **CPU mode** of ports could be manually assigned by the user. After a firmware update to the current version, the web application of a configured matrix switch activates the *Compatibility mode* and applies the user's previous manual configuration.

ADVICE: Click on **Compatibility mode** to switch between *Standard mode* and *Compatibility mode*.

In the default settings, ports **1** through **8** are pre-configured to connect user modules. Ports **9** through **32** are pre-configured to connect target modules:

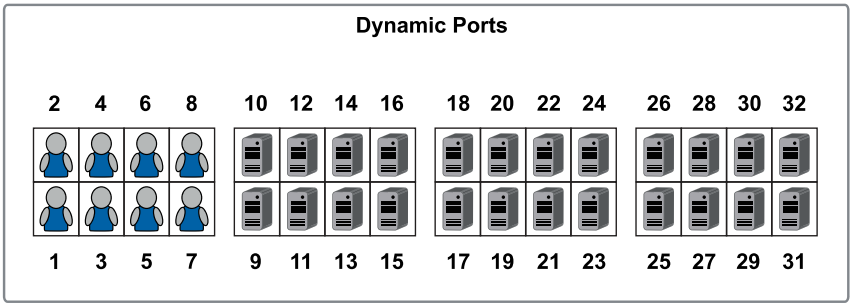


Figure 4: Default port assignment
Figure 5:

> **ADVICE:** To facilitate the installation of the KVM switch, you can switch the port LEDs to the port mode (see page 20).

To change the assignment of Dynamic Ports, mind the following instructions:

- Configure all 32 ports to connect either a user module **(CON)** or a target module **(CPU)**.
- Configure at least one port to connect either a user module **(CON)** or a target module **(CPU)**.

Configuring ports

You can configure the ports according to your preferences. When doing this, mind the instructions described in the previous paragraph.

How to configure a port's mode:

1. Click on the **Port configuration** icon (see figure on the right) in the toolbar of the web application.

> **ADVICE:** The graphic shows the port configuration.
>
> In *Standard mode*, you can switch between **Up mode** and **Down mode** of the ports. In *Compatibility mode* you can change the ports to connect user modules (**CON mode**) and target modules (**CPU mode**).

2. Right-click the port whose mode you want to change. Now, you can select the mode from the context menu.

> **NOTE:** You can select multiple ports with the left mouse key while pressing **Shift** or **Ctrl**.

3. Click **OK** to apply your changes.

> **IMPORTANT:** After changing the port assignment, the matrix switch restarts.

Showing ports modes

1. In the directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch whose port mode you want to show. Now, click on **Port LEDs > Show port types** on the context menu.
3. Now, the port LEDs show the current port mode:

LED	Standard mode	Compatibility mode
Yellow	**Up mode**	Connection of user modules (**CON mode**)
Green	**Down mode**	Connection of target modules (**CPU mode**)

> **NOTE:** While showing the port mode, the Identification LEDs on the device's front and back are blinking.

4. To restore the standard mode, right-click the matrix switch again. Now, click on **Port LEDs > Show status** on the context menu.

Basic configuration of the web application

The tool symbol in the toolbar can be used to access the basic configuration of the web application.

Network settings

The devices with integrated web application are provided with two network interfaces (*Network A* and *Network B*). These network interfaces enable you to integrate the device into up to two separate networks.

IMPORTANT: Please mind the separate instructions regarding *Configuring the network settings* on page 11.

Configuring the network settings

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

- IP address of *network interface A*:
  192.168.0.1
- IP address of *network interface B*:
  address obtained using **DHCP**
- global network settings:
  settings obtained using **DHCP**

Configure the network settings to connect the device to a local network.

How to configure the settings of a network interface:

IMPORTANT: It is not possible to operate both network interfaces within one subnet.

NOTE: According to RFC 3330, the *Link Local* address space 169.254.0.0/16 is reserved for the internal communication between devices. An IP address of this address space cannot be assigned.

1. Click the tools symbol in the toolbar.
2. Click the **Network > Interfaces** tabs.

3. Use **Interface A** or **Interface B** paragraphs to enter the following data:

Operational mode:	Use the pull-down menu to select the operating mode of **Interface A** or **Interface B**: ▪ **Off:** switches off network interface. ▪ **Static:** uses static settings. ▪ **DHCP:** ▪obtains the settings from a DHCP server.**Link aggregation active:** This interface was added to a group of network interfaces. *Use the »Link aggregation« tab to configure the network interfaces.*
IP address:	Only if the *Static* operating mode is selected: Enter the interface IP address.
Netmask:	Only if the *Static* operating mode is selected: Enter the network netmask.
Connection type:	Select if the network interface and the remote station are to negotiate the connection type automatically (**Auto**) or if one of the available types is to be applied.

4. Click **OK** to save the data.

Configuring the global network settings

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

How to configure the global network settings:

1. Click the tools symbol in the toolbar.
2. Click the **Network > Interfaces** tabs.
3. Enter the following data in the **Global network settings** section:

Global preferences:	Use the pull-down menu to select the operating mode: ▪ **Static:** uses static settings. ▪ **DHCP:** obtains the settings from a DHCP server. The following settings are automatically obtained in the *DHCP* operating mode. Inputs are not possible.
Hostname:	Enter the device hostname.
Domain:	Enter the domain the device is to belong to.
Gateway:	Enter the gateway IP address.
DNS Server 1:	Enter the DNS server IP address.
DNS Server 2:	Optionally, enter the IP address of another DNS server.

4. Click **OK** to save your data.

Increasing the reliability of network connections through link aggregation

In the default settings, you can use both network interfaces at the same time to access the web application from two different network segments, for example.

To increase the reliability, the network interfaces can be grouped through *link aggregation*. Only one interface is active within the group. Another interface only becomes active if the active interface fails.

We provide two different modes to monitor the interfaces:

- **MII mode:** The carrier status of the network interface is monitored through the *Media Independent Interface*. This mode only checks the function of the network interface.
- **ARP mode:** The *address resolution protocol* sends requests to an ARP target within the network. The answer of the ARP target confirms both the functionality of the network interface and the proper network connection to the ARP target.

If the ARP target is connected to the network but is temporarily offline, requests cannot be answered. Define multiple ARP targets to receive an answer from at least one target if an ARP target fails.

NOTE: MII and **ARP mode** cannot be combined.

How to configure the settings of grouped network interfaces:

NOTE: According to RFC 3330, the *Link Local* address space 169.254.0.0/16 is reserved for the internal communication between devices. An IP address of this addres space cannot be assigned.

1. Click the tools symbol in the toolbar.
2. Click the **Network > Link aggregation** tab.
3. Enter the following data into the **Network** paragraph:

Name:	Enter a name for the group of network interfaces.
Operational mode:	Choose the operational mode for the grouped network interfaces: ▪ **Off:** disables link aggregation. *Use the »Interfaces« tab to configure the network interfaces.* ▪ **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 if you have selected the *Static* operational mode).
Netmask:	Enter the netmask of the network (only if you have selected the *Static* operational mode).

4. Enter the following data in the **Parameter** paragraph:

Primary slave:	Choose if the data traffic should run via *Network A* (**Interface A**) or *Network B* (**Interface B**). As soon as the selected interface is available, the data traffic is sent via this interface. If you choose the option **None**, the data traffic is sent via any interface. The interface only changes if the active interface is down.
Link monitoring:	Choose if you want the **MII** or **ARP mode** (description see below) to be used to monitor the interface.
MII down delay:	Time delay in milliseconds before a failed network interface is disabled. The value must be a multiple of 100 ms (the MII link monitoring frequency).
MII up delay:	Time delay in milliseconds before a reset network interface is enabled. The value must be a multiple of 100 ms (the MII link monitoring frequency).
ARP interval:	Enter the interval (100 to 10,000 milliseconds) according to which the incoming ARP packets of the network interfaces are to be checked.
ARP validate:	The validation ensures that the ARP packet for a particular network interface is generated by one of the listed ARP targets. Choose if or what incoming ARP packets are to be validated: ▪ **None:** ARP packets are not validated (default). ▪ **Active:** Only the ARP packets of the active network interface are validated. ▪ **Backup:** Only the ARP packets of the inactive network interface are validated. ▪ **All:** The ARP packets of all network interfaces within the group are validated.
ARP target:	The table lists all configured ARP targets. Use the **New**, **Edit,** and **Delete** buttons to administrate the ARP targets.

5. Click **OK** to save your settings.

Reading out the status of the network interfaces

The current status of both network interfaces can be read out via web application.

How to detect the status of the network interfaces:

1. Click the tools symbol in the toolbar.
2. Click the **Network > Link status** tab.
3. The **Interface A** and **Interface B** paragraph provides you with the following data:

Link detected:	connection to network established (**yes**) or interrupted (**no**).
Auto-negotiation:	The transmission speed and the duplex mode have been configured automatically (**yes**) or manually by the administrator (**no**).
Speed:	transmission speed
Duplex:	duplex mode (**full** or **half**)

4. Click **OK** to close the window.

Creating and administrating netfilter rules

In the default settings of the devices, all network computers have access to the *Config Panel* web application (open system access).

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

If you create a netfilter rule, the open system access is deactivated and all incoming data packets are compared to the netfilter rules. The list of the netfilter rules is processed according to the stored order. As soon as a rule applies, it is carried out and the following rules are ignored.

Creating new netfilter rules

How to create new netfilter rules:

1. Click the tools symbol in the toolbar.
2. Click the **Network > Netfilter** tabs.
3. Enter the data described below.

Interface:	Use the pull-down menu to select on which network interfaces the data packets are to be trapped and manipulated: ▪ **All** ▪ **Interface A** ▪ **Interface B** ▪ **[Name of a group of network interfaces]**

Option:	Use the pull-down menu to select how the rule's sender information are to be interpreted: ▪ **Normal:** The rule applies for data packets whose sender information does comply with the indicated IP address or MAC address. ▪ **Inverted:** The rule applies for data packets whose sender information does *not* comply with the indicated IP address or MAC address.
IP address/ Netmask:	Enter the data packet IP address or use the **Netmask** entry to enter 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 *IP address* and/or a *MAC address* can be specified within a rule.
MAC address:	Enter the MAC address to be considered in this filter rule.
	NOTE: The *IP address* and/or a *MAC address* can be specified within a rule.
Filter rule:	▪ **Drop:** Data packets whose sender information comply with the IP address or MAC address are *not* processed. ▪ **Accept:** Data packets whose sender information comply with the IP address or MAC address are processed.
Service:	Select a specific service for which this rule is used exclusively, or choose (**All**)

4. Click **Add** to save the data in a new filter rule.

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

5. Click **OK** to close the window.

NOTE: The new netfilter rule does not apply for active connections. Restart the device to disconnect any active connections. Afterwards, all rules apply.

Editing existing netfilter rules

How to edit an existing netfilter rule:

1. Click the tools symbol in the toolbar.
2. Click the **Network > Netfilter** tabs.
3. Mark the rule to be changed in the list of the existing netfilter rules.

4. The current rule settings are displayed in the upper part of the window. Check and change the data described on the following page.

Interface:	Use the pull-down menu to select on which network interfaces the data packets are to be trapped and manipulated: ▪ **All** ▪ **Interface A** ▪ **Interface B**
Option:	Use the pull-down menu to select how the rule's sender information are to be interpreted: ▪ **Normal:** The rule applies for data packets whose sender information does comply with the indicated IP address or MAC address. ▪ **Inverted:** The rule applies for data packets whose sender information does *not* comply with the indicated IP address or MAC address.
IP address/ Netmask:	Enter the data packet IP address or – using the **Netmask** entry – the address space of the IP addresses. **Examples:** ▪ **192.168.150.187:** for the 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 The *IP address* and/or a *MAC address* can be indicated within a rule.
MAC address:	Enter the MAC address to be considered in this filter rule. **NOTE:** The *IP address* and/or a *MAC address* can be specified within a rule.
Filter rule:	▪ **Drop:** Data packets whose sender information comply with the IP address or MAC address are *not* processed. ▪ **Accept:** Data packets whose sender information comply with the IP address or MAC address are processed.
Service:	Select a specific service for which this rule is used exclusively, or choose (**All**)

5. Click **Change** to save the changed data.
6. Click **OK** to close the window.

NOTE: The changed network rule does not apply for active connections. Restart the device to disconnect any active connections. Afterwards, all rules apply.

Deleting existing netfilter rules

How to delete existing netfilter rules:

1. Click the tools symbol in the toolbar.
2. Click the **Network > Netfilter** tabs.
3. Mark the rule to be deleted in the list of the existing netfilter rules.
4. Click **Remove**.
5. Confirm the confirmation prompt by pressing **Yes** or cancel the process by clicking **No**.
6. Click **OK** to close the window.

Changing the order/priority of existing netfilter rules

The netfilter rules are processed in the order they are stored. If a rule does apply, the respective action is carried out and all following rules are ignored.

IMPORTANT: Please mind the order or priority of the single rules, especially when adding new rules.

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

1. Click the tools symbol in the toolbar.
2. Click the **Network > Netfilter** tabs.
3. Mark the rule whose order/priority is to be changed in the list of the existing netfilter rules.
4. Click the button (*arrow up*) to increase the priority or the button (*arrow down*) to decrease the priority.
5. Click **OK** to close the window.

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

IMPORTANT: Creating an X509 certificate requires the software OpenSSL. If necessary, follow the instructions on the websites mentioned above to install the software.

The following pages give information on creating an X509 certificate.

Special features for complex KVM systems

If you want different devices to communicate within a KVM system, use the identical *Certificate Authority* (see page 29) to create certificates for those devices.

The identical PEM file (see page 32) can also be used for all devices. In this case, all certificate features are identical.

Creating a Certificate Authority

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

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 the 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 during the 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 29).

How to select the SSL certificate you want to use:

IMPORTANT: Selecting and activating another certificate terminates all active sessions of the web application.

1. Click the tools symbol in the toolbar.
2. Click the **Certificate** tab.
3. 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 **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 **Upload and activate** to store and activate the imported certificate for the device.

3. Click **OK** to close the window.

Firmware update

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

IMPORTANT: This function only updates the firmware of the device on which the web application has been started!

How to update the firmware:

1. Open the web application of the device whose firmware you want to update.
2. Click the tools symbol in the toolbar.
3. Click the **Tools > Firmware update** tabs.

4. Enter the storage location and the name of the backup file into the **Path** entry.

IMPORTANT: Use the information provided in the *Device* and *Comment* entries to check if you selected the correct device file.

ADVICE: Use the file dialog to select the location and the name of the update file.

5. Click on **Update now**.
6. Click **OK** to leave the interface.

Restoring the default settings

This function enables the user to restore the default settings of the device on which the web application is operated.

How to restore the default settings:

IMPORTANT: All settings are reset.

1. Click the tools symbol in the toolbar.
2. Click the **Tools > System defaults** tabs.

IMPORTANT: Use the information provided in the *Date* and *Comment* entries to check if you have selected the correct backup file.

3. Enable the option **Reset ports** to reset the port configuration.
4. Disable the **Reset network config** option to maintain the configuration of the network interfaces.
5. Click on **System Defaults** to reset the current configuration.

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. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click on the device. Now click on the **Restart** in the context menu.
3. Confirm the safety request with **Yes.**

Restarting user modules

ADVICE: You can also restart the device using the **tools icon** of the web application. For this, click on **Tools > Restart** to carry out the restart.

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

How to restart user modules via web application:

1. In the directory tree, click on **KVM Matrix systems > [name] > User modules**.
2. Right-click on the device. Now click on **Restart** in the context menu.

Confirm the safety request 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 function 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 55 ff.)

NTP server

The device's time and date settings can either adjust be adjusted manually or automatically by synchronizing the settings with an NTP server (*Network Time Protocol*).

Time sync with an NTP server

How to change the NTP time sync settings:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network** tab.
4. Click the **NTP server** tab and enter the following data:

NTP time sync:	Select the respective entry from the pull-down menu to (de)activate the time sync: ▪ **Disabled** ▪ **Enabled**
NTP server 1:	Enter the IP address of a time server.
NTP server 2:	O*ptionally* enter the IP address of a second time server.
Time zone:	Use the pull-down menu to select the time zone of your location.

5. Click **OK** to close the window.

Setting time and date manually

How to manually set the time and date of the KVM matrix system:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network > NTP server** tabs.
4. If necessary, disable the **NTP time sync** option. Otherwise, you might not be able to set time and date manually.
5. Use the **Time** entry to enter the current time (*hh:mm:ss*).
6. Use the **Date** entry to enter the current time (*DD.MM.YYYY*).

   ADVICE: Click on **Accept local date** to accept the current system date of the computer on which the *Config Panel* web application has been started.

7. Click **OK**.

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
- **1:** Alert
- **2:** Critical
- **3:** Error
- **4:** Warning
- **5:** Note
- **6:** Info
- **7:** Debug

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

Locally logging the syslog messages

How to locally log the syslog messages:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network** tab.
4. Click the **Syslog** tab and enter the following data in the **Syslog local** section:

Syslog server:	Select the respective entry from the pull-down menu to define whether syslog messages are to be sent to a server: ▪ **Disabled** ▪ **Enabled**
Log Level:	Use the pull-down menu to select from which severity code on a log message is to be logged. The selected severity code and all lower severity codes are logged.

If you selected the severity code *2 - Critical*, messages for this code as well as for the severity codes *1 - Alert* and *0 - Emergency* are logged.

5. Click **OK** to close the window.

Sending syslog messages to a server

How to send syslog messages to a server:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network** tab.
4. Click the **Syslog** tab and enter the following data in the **Syslog server 1** or **Syslog server 2** section:

Syslog server:	Select the respective entry from the pull-down menu to define whether syslog messages are to be sent to a server or not: ▪ **Disabled** ▪ **Enabled**
Log Level:	Use the pull-down menu to select from which severity code on a log message is to be logged. The selected severity code and all lower severity codes are logged. If you select severity code *2 - Critical*, messages for this code and for the severity codes *1 - Alert* and *0 - Emergency* are logged.
IP address/ DNS name:	Enter the IP address or the server name to which the syslog messages are to be sent.
Port:	Enter the port – usually 514 – on which the server receives the incoming messages.
Protocol:	Select the protocol – usually UDP – on which the server receives the incoming messages: ▪ **TCP** ▪ **UDP**

5. Click **OK** to close the window.

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 window.

How to view and store the local syslog messages:

1. Click on **System > Information** in the tree view.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Double-click on **Syslog** in the main view.
4. Click the **Fetch syslogs** tab.

   The matrix switch calls the local syslog messages, which are now displayed in the text field.

   > **ADVICE:** If necessary, click **Save** to save these messages in a text file. The opening file window enables you to select the location and a file name.
   >
   > Afterwards, click **Save**.

5. Click **OK** to close the window.

User authentication with directory services

In in-house networks, the user accounts of different users are often administrated by a directory service. The device can access such a directory service and authenticate users against the directory service.

NOTE: If the *Admin* user account cannot be authenticated by the directory service, the user account is authenticated by the device's data base.

The directory service is exclusively used to authenticate a user. The user rights are assigned within a database of the KVM system. The following paragraphs describe the different scenarios:

- **The user account exists within the directory service and the KVM system**
  The user can log in with the password stored in the directory service. After the login, the user is assigned with the rights of the correspondent account in the KVM system.

  NOTE: The password which the user used to log in, is taken over into the database of the KVM system.

- **The user account exists within the directory service, but not within the KVM system**
  A user that has been successfully authenticated against the directory service, but does not have an account of the same name within the database of the KVM system, is assigned with the rights of the *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 in to the KVM system.

- **The user account exists within the KVM system, but not within the directory service**
  If the directory service is available, it reports that the user account does not exist. The access to the KVM system is denied to the user.

  If the server is not available, but the fallback system is active (see below), the user can log in with the password that is stored within the KVM system.

  IMPORTANT: Mind the following safety instructions to prevent a locked or deactivated user from logging in to the system in case the connection to the directory service fails:

  - If a user account is deactivated or deleted in the directory service, this action can also be carried out within the user database of the KVM system.
  - Only activate the fallback system in reasonable exceptional cases.

How to configure the user account authentication:

NOTE: If no directory service is applied, the user accounts are administered by the device.

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now, click the **Configuration** entry in the context menu.
3. Click the **Network > Authentication** tabs and enter the following data:

Auth. Server: Select the **Local** option if the user administration is to be carried out by the KVM system.

If a particular directory service is to be applied, select the respective entry from the pull-down menu:

- **LDAP**
- **Active Directory**
- **Radius**
- **TACACS+**

ADVICE: After the directory service has been selected, collect the settings of the directory service server in the **Server settings**.

Fallback: Activate this option if the local user administration of the KVM system is to be applied in case the directory service is temporarily not available.

IMPORTANT: Mind the following safety instructions to prevent a locked or deactivated user from logging in to the system in case the connection to the directory service fails:

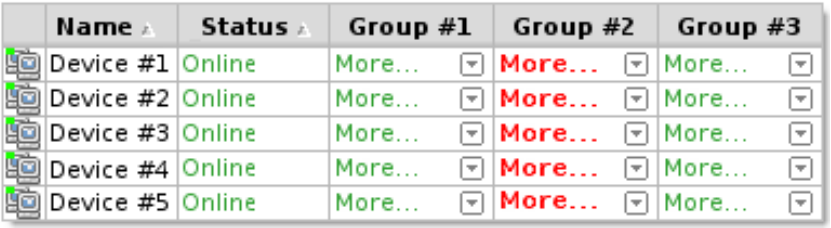
- If a user account is disabled or deleted in the directory service, this action can also be carried out within the user database of the KVM system.
- Only activate the fallback system in reasonable exceptional cases.

4. Click **OK** to close the window.

Monitoring functions

The current monitoring values of all devices within the KVM system can be viewed in the device-specific branches (e.g. *KVM matrix systems*) as well as in the *KVM Combinations* and *Critical Devices* branches of the tree view.

The various information regarding a device can either be displayed in individual values or in monitoring groups, which are sorted according to topic. The following exemplary figure shows the *Status* values and three different monitoring groups:



Name	Status	Group #1	Group #2	Group #3
Device #1	Online	More...	More...	More...
Device #2	Online	More...	More...	More...
Device #3	Online	More...	More...	More...
Device #4	Online	More...	More...	More...
Device #5	Online	More...	More...	More...

Figure 6: Detailed view of an exemplary monitoring table

Individual values (the *Status* value in the figure above) immediately show if the status is correct (green) or deviating from the normal operating value (red). The text in the column also provides information about the current status.

Monitoring groups allow you to group various individual values. The column of a monitoring group shows if all values are within range (*green*) or if at least one value is deviating from the normal operating values (*red*).

Clicking the arrow in the column opens a separate window, which displays the individual values of the group.

Viewing monitoring values

By applying different monitoring sets, the monitoring values are displayed in the different branches of the tree view.

Several branches (e.g. *Critical devices*) provide another view to enable the user to detect critical monitoring values as fast as possible.

Listing values by applying monitoring sets

A monitoring set defines which individual values and groups are to be displayed.

The column, which shows the *individual values,* enables you to read the status and check whether it is deviating from the normal operating values.

Monitoring groups allow you to group various individual values. The column of a monitoring group shows if all values are within range (*green*) or if at least one value is deviating from the normal operating values (*red*).

Clicking the arrow in the column opens a window, which contains detailed information regarding the individual values of the group.

ADVICE: The following pages of this chapter provide detailed information regarding monitoring groups and monitoring sets.

Listing individual values of critical devices

If a device shows a value that deviates from the normal operating values, the device is additionally listed in the *Critical devices* branch. This branch displays all deviating (red) values in tabular form. This way, deviating values can be detected as fast as possible.

NOTE: To be able to find deviant values as fast as possible, monitoring sets are not applied here.

Disabling monitoring values

Any monitoring value can be disabled. After disabling, the monitoring values are no longer shown in the web application.

IMPORTANT: The web application does not show any warnings about disabled values. No SNMP traps are sent regarding these values.

How to enable/disable the monitoring values:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now, click the **Configuration** entry in the context menu.
3. Click the **Monitoring** tab.

Two tables list the monitoring values of the KVM system:

Enabled:	lists all active monitoring values.
Disabled:	lists all inactive monitoring values.

To give you a faster overview, the values are grouped in both columns.

4. Mark the monitoring values to be enabled/disabled.
5. Click the button (*right arrow key*) to disable the monitoring value or (*left arrow key*) for enabling.
6. Click **OK** to save your settings.

Advanced function regarding the administration of critical devices

The *Critical Devices* branch lists the devices that show at least one value that exceeds the normal operating values.

NOTE: A sub-branch is displayed for each device class in the KVM system (e. g. *KVM matrix systems*).

Messages regarding critical statuses of devices

If one value exceeds the normal operating values, the branch is marked red. A blinking message under the main view points to this condition.

ADVICE: If the blinking message appears on your screen, press **Ctrl+Space** to open the *Critical devices* branch.

Click on the blinking message to show the list of the deviating values in a separate window.

Viewing the list of critical devices

How to view the list of critical devices:

1. Click on the **System monitoring > Critical Devices** folders in the tree view.

   The main view lists all affected devices. The critical values are displayed in the table.

> **ADVICE:** Click a sub-branch of the folder in order to only list the devices of a particular device class.

Marking messages from critical devices as read

Many messages require immediate actions from the administrator. Other messages (e.g. the break-down of the redundant power supply), however, point to possibly uncritical conditions.

In such a case, all peculiar values of a device can be marked as read, which causes the following:

- A device whose deviating values have been marked as read shows no blinking status bar.
- The cells, info dialogues and monitoring windows of all "read" devices are highlighted in yellow.
- If a monitoring group contains critical values, which have been marked as read, the column displays *Error*. In addition, the cell is highlighted in yellow.

> **NOTE:** The system only highlights values that have been deviating from the normal operating values at the time the function has been executed. The web application shows if another monitoring value of such a device deviates from the normal operating values.

How to mark the Monitoring messages of a device as read:

1. Click on the **System monitoring > Critical Devices** folders in the tree view.
2. Right-click the desired device. Now click the **Acknowledge** entry of the context menu.

Administrating monitor groups

> **IMPORTANT:** Any recently created monitoring groups are only available in the branch in which they were created.
>
> If a monitoring group was created in a device-specific branch, it is no longer available in the *KVM combinations* branch.

The *Config Panel* web application already provides several default monitoring groups. Those groups can neither be edited nor deleted, but they can be duplicated and individually adjusted to your wishes.

All groups that were preconfigured or created are shown in the monitoring table as long as they are contained in the applied monitoring set (see page 51 ff.):

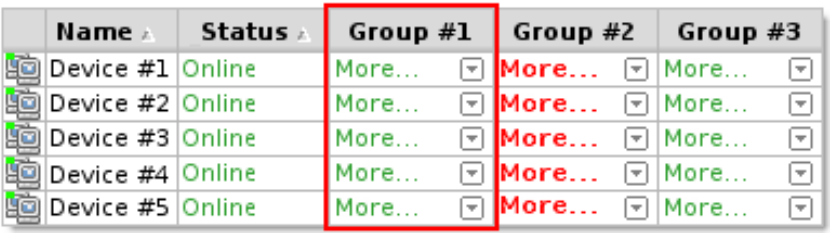


Figure 7: Status of different devices in the »Group #1« monitoring group

ADVICE: Due to the high amount of individual values, it is recommended to display the most important values as individual values and group the rest in groups according to topic.

This provides a quick overview and the values are displayed in a space-saving way.

Adding monitoring groups

How to add a new monitoring group:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring groups** entry in the context menu.
3. Click **New**.
4. Enter the name and an optional comment for the new group.
5. Click **OK** to create the group.

Changing name and/or comment of monitoring groups

How to change the name and/or comment of a monitoring group:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring groups** entry in the context menu.
3. Select the group to be edited and click **Edit**.
4. Change the name and/or the optional comment of the group.
5. Click **OK** to save your settings.

Assigning members to monitoring groups

How to assign members to a monitoring group:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring groups** entry in the context menu.
3. Select the group to be edited and click **Edit**.
4. Click the **Member** tab.

   Now you have the possibility to add members to or delete them from a monitoring group.

   The window consists of two tables, which list the monitoring values of the KVM system:

Unassigned:	lists monitoring values that are *not* assigned to this group
Assigned:	lists monitoring values that are assigned to this group

5. Mark the monitoring value you want to add to or delete from the group.
6. Click (*right arrow*) to add the monitoring value to the group or (*left arrow*) to delete it from the member list.
7. Click **OK** to save your settings.

Duplicating monitoring groups

The *KVM combinations* branch as well as many other device-specific branches contain several default groups. These groups are displayed in light grey.

IMPORTANT: It is *not* possible to edit or delete a default monitoring group.

If you want to create a new group based on an already existing group, simply duplicate the existing group and edit the duplicate.

How to duplicate a monitoring group:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring groups** entry in the context menu.
3. Select the group to be duplicated and click **Edit**.
4. Enter the name and an optional comment for the group.
5. Click **Duplicate** to duplicate the existing group.
6. Edit the new group as described on the previous page or click **Close** to close the window.

Deleting monitoring groups

The *KVM combinations* branch as well as many other device-specific branches contain several default groups. These groups are displayed in light grey.

IMPORTANT: It is *not* possible to edit or delete a default monitoring group.

How to delete a monitoring group:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring groups** entry in the context menu.
3. Select the group to be deleted and click **Delete**.
4. Confirm the confirmation prompt be clicking **Yes** or cancel the task by clicking **No**.
5. Click **Close** to save your settings.

Administrating monitoring sets

A monitoring set defines the individual values and the groups to be displayed in a subfolder of the *KVM combinations* branch or a device-specific branch:

	Name	Status	Group #1	Group #2	Group #3
	Device #1	Online	More...	More...	More...
	Device #2	Online	More...	More...	More...
	Device #3	Online	More...	More...	More...
	Device #4	Online	More...	More...	More...
	Device #5	Online	More...	More...	More...

Figure 8: Status of the individual *Status* value and three groups of a monitoring set

The *Config Panel* web application already provides several default monitoring groups. The groups can neither be edited nor deleted, but they can be duplicated and individually adjusted to your wishes.

It is also possible to create and configure a new group.

IMPORTANT: The created monitoring sets are only displayed in the branch in which they have been created.

If a monitoring set has been created in a device-specific branch, it is no longer displayed in the *KVM combinations* branch!

Adding monitoring sets

How to add a monitoring set:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring set** entry in the context menu.
3. Click **New**.
4. Enter the name and an optional comment for the new set.
5. Click **OK** to create the set.

Changing name and/or comment of monitoring sets

How to change the name and/or comment of a monitoring set:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring sets** entry in the context menu.
3. Select the set to be edited and click **Edit**.
4. Enter the name and an optional comment for the set.
5. Click **OK** to save your settings.

Assigning members to monitoring sets

IMPORTANT: It is important to define your desired monitoring groups (see page 46 ff.) before creating a monitoring set.

How to assign members to a monitoring set:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring sets** entry in the context menu.
3. Select the set to be edited and click **Edit**.
4. Click the **Member** tab.

   Now you have the possibility to add members to or delete them from a monitoring set.

   The entry consists of two tables which list the monitoring values of the KVM system. The values are the divided into the sub categories
   Individual values and *Groups (Columns)*.

NOTE: Click on the **[-]** in the category header to hide the content of this category. Clicking on **[+]** shows the contents.

The different values are either listed in the left or the right-hand table:

Unassigned:	lists monitoring values that are *not* assigned to this set
Assigned:	lists monitoring values that are assigned to this set

5. Mark the monitoring value you want to add to or delete from the group.
6. Click (*right arrow*) to add the monitoring value to the set or (*left arrow*) to delete it from the member list.
7. Click **OK** to save your settings.

Selecting a monitoring set in the folder configuration

After a monitoring set has been created, it can be activated in the configuration of one (or more) folders of the tree view.

How to activate a monitoring set:

1. Right-click a *subfolder* of the *KVM combinations* branch in the tree view.
2. Click the **Configuration** entry in the context menu.
3. Use the **Monitoring set** entry to select the desired set.

> **IMPORTANT:** The created monitoring sets are only displayed in the branch in which they have been created.
>
> If a monitoring set has been created in the *KVM extenders* branch, it is no longer displayed in the *KVM combinations* branch!

4. Click **OK** to activate the selected set.

Duplicating monitoring sets

The *KVM combinations* branch as well as many other device-specific branches contain several default groups. Those groups are displayed in light grey.

> **IMPORTANT:** It is *not* possible to edit or delete those groups.

If you want to create a new set based on an already existing set, simply duplicate the existing set and edit the duplicate.

How to duplicate a monitoring set:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring sets** entry in the context menu.
3. Select the set to be duplicated and click **Edit**.
4. Enter the name and an optional comment for the set.
5. Click **Duplicate** to duplicate the existing set.

6. Edit the new set as described on the previous page or click **Close** to close the window.

Deleting monitoring sets

The *KVM combinations* branch as well as many other device-specific branches contain several default groups. These groups are displayed in light grey.

IMPORTANT: These groups *cannot* be edited or deleted.

How to delete a monitoring set:

1. Right-click the *KVM combinations* branch in the tree view.
2. Click the **Monitoring sets** entry in the context menu.
3. Select the set to be deleted and click **Delete**.
4. Confirm the confirmation prompt be clicking **Yes** or cancel the task by clicking **No**.
5. Click **Close** to save your settings.

Device monitoring 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.

> **NOTE:** An *Agent* is a program, which runs on the monitored device and detects its status. Via SNMP, the detected data are transmitted to the *Network Management System*.

If an *Agent* detects a severe failure within the device, it can send a *Trap* packet to the *Network Management System*. This way, the administrator is directly informed about such occurrences.

Configuring the SNMP agent

How to configure the SNMP agent:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network> SNMP Agent** tabs.
4. Enter the following data in the *Global* paragraph:

Status:	Select the particular entry to either switch the SNMP agent off (**Off**) or on (**Enabled**).
Protocol:	Select the protocol (**TCP** or **UDP**) – normally UDP – via which the SNMP packets are to be transmitted.
Port:	Define the port – normally 161 – on which the *incoming* SNMP packets are to be accepted.
SysContact:	Enter the admin's contact data (e.g. direct dial or email address).
SysName:	Enter the device name.
SysLocation:	Enter the location of the device.

5. If you want to process the packets of the **SNMPv2c** protocol version, enter the following data in the paragraph of the same name:

Access:	Activate the *View* access (**View**) or deny the access (**No**) via *SNMPv2c* 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.x ▪ **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 *Community* which has also been selected in the *Network Management System*.

IMPORTANT: The transfer of the packet password (*Community*) of the *SNMPv2c* protocol version is not encrypted. Therefore, it can be easily tapped!

If required, use the *SNMPv3* protocol version (see below) and a high *Securitiy level* to ensure a secure data transfer.

6. If you want to process the packets of the **SNMPv3** protocol version, enter the following data in the respective paragraph:

Access:	Activate the *View* access (**View**) or deny the access (**No**) via *SNMPv3* 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 *Network Management System*.
Authentication passphrase	Enter the authentication passphrase for the communication with the *Network Management System*.
Security level	Select between one of the following options: ▪ **NoAuthNoPriv:** user authentication and *Privacy* protocol deactivated ▪ **AuthNoPriv:** user authentication activated, *Privacy* protocol deactivated ▪ **AuthPriv:** user authentication and *Privacy* protocol activated
Privacy protocol:	Select the Privacy protocol (**DES** or **AES**) which has been activated in the *Network Management System*.
Privacy passphrase:	Enter the privacy passphrase for secure communication with the *Network Management System*.

Engine ID method:	Select how the **SnmpEngineID** should be assigned: ▪ **Random:** The *SnmpEngineID* is re-assigned with every restart of the device. ▪ **Fix:** The *SnmpEngineID* is the same as the MAC address of the device's network interface. ▪ **User:** The string entered under *Engine ID* is used as *SnmpEngineID*.
Engine ID:	When using the *Engine ID method* **User**, enter a string that is used as *Engine ID*.

7. Click **OK** to save your settings and to leave the window.

Configuring SNMP traps

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

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network > SNMP trap** tabs.
4. Click **Add** or **Edit**.
5. Enter the following data in the **Global** paragraph:

Server:	Enter the IP address of the *Network Management Servers*.
Protocol:	Select the protocol (**TCP** or **UDP**) – normally UDP – via which the SNMP packets are to be transmitted.
Port:	Define the port – normally 162 – on which the *outgoing* SNMP packets are to be accepted.
Retries:	Enter the number of retries to send an *SNMP Inform*.
	NOTE: Inputs are only possible if the *Inform* option has been selected in the *Notification type* entry.
Timeout:	Enter the time (in seconds) after which an *SNMP Inform* is to be sent again if you have received no confirmation.
	NOTE: Inputs are only possible if the *Inform* option has been selected in the *Notification type* entry.

Log level:	Select from which severity level an SNMP trap is to be sent. The selected severity level and all lower severity levels are logged.
	NOTE: If you select the *2 - Critical*, severity level SNMP traps are sent for occurrences from this level and from the *1 - Alarm* and *0 - Emergency* severity levels.
Version:	Select if the traps are to be created and sent according to the *SNMPv2c* (**v2c**) or *SNMPv3* (**v3**) protocol.
Notification type:	Select if the occurrences are sent as *Trap* or *Inform* packet.
	NOTE: *Inform* packets require a confirmation of the *Network Management System*. If this confirmation is not available, the transmission is repeated.

6. If you use the **SNMPv2c** protocol version, use the respective paragraph to enter the same *Community* name as selected in the *Network Management System*.

IMPORTANT: The transfer of the packet password (*Community*) of the *SNMPv2c* protocol version is not encrypted. Therefore, it can be easily tapped!

If required, use the *SNMPv3* protocol version (see below) and a high *Security level* to ensure a secure data transfer.

7. If you decided to use the **SNMPv3** protocol version, use the respective paragraph to enter the following data:

User:	Enter the username for communication with the *Network Management System* an.
Authentication protocol	Select the authentication protocol (**MD5** or **SHA**) which has been activated in the *Network Management System*.
Authentication passphrase	Enter the authentication passphrase for the communication with the *Network Management System*.
Security level	Select between one of the following options: ▪ **NoAuthNoPriv:** deactivated user authentication and *Privacy* protocol ▪ **AuthNoPriv:** activated user authentication, deactivated *Privacy* protocol ▪ **AuthPriv:** activated user authentication and *Privacy* protocol
Privacy protocol:	Select the privacy protocol (**DES** or **AES**) which has been activated in the *Network Management System*.

Privacy passphrase:	Enter the privacy passphrase for secure communication with the *Network Management System*.
Engine ID:	Enter the *Engine ID* of the trap receiver.

8. Click **OK** to save your settings and to leave the window.

How to delete existing traps:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network > SNMP trap** tabs.
4. Select the receiver to be deleted and click **Delete**.
5. Click **OK** to save your settings and to leave the window.

How to generate a test event:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device to be configured. Now click the **Configuration** entry in the context menu.
3. Click the **Network > SNMP trap** tabs.
4. Click on **Generate test event**.
5. Click **OK** to save your settings and to leave the window.

NOTE: If properly configured, the *Trap* message is displayed within your *Network Management System*.

Logbook

The *Logbook* of a device of the KVM system allows you to collect any information.

ADVICE: Write down if you plan on changing the configuration of the device and assign the entry with a status (»Open«).

After these changes have been carried out, assign the »Closed« status to the logbook entry. This way you can refer to the logbook to look up the times at which the changes have been made.

If you want to save the logbooks or edit them with other programs, the logbooks of the different devices can be printed, copied to the clipboard, or exported to a file.

The dialogue entries of the logbook

After the logbook has been called up, the »Logbook configuration« dialog shows an overview of all logbook entries that have been saved so far.

All details regarding the entry are shown by double-clicking.

The »Logbook configuration« window

The *Logbook configuration* window shows a table with all logbook entries that have been made until then.

The table displays the *Subject* and *Status* (»Open« or »Closed«) and the *Date* the entry has been last edited.

NOTE: By default, the table is sorted in descending order according to the contents of the »Status« column. This order is indicated by a small triangle in the column header.

If you want to sort the entries according to the contents of another column, click the header of the desired column. Another click reverses the sort sequence.

The following actions can be carried out in the logbook:

- **New:** create a new logbook entry
- **Edit:** update an existing logbook entry
- **Delete:** delete a logbook entry
- **Print:** print a logbook entry
- **Export:** export the data of the logbook entry to csv file
- **Copy:** copy the details of the logbook entry to the clipboard

Viewing a logbook entry in detail

Double-click a logbook entry to show its details. The overview provides the following information:

Subject:	short description (max. 128 characters) that allows a quick overview in the table and on the print-out
Body:	detailed description (max. 1.024 characters)
Status:	current status (»Open« or »Closed«)
Creator:	user name of the person who created the logbook entry
Created:	date and time the entry has been originally created
Last editor:	user name of the person who last changed the entry
Last edited:	date and time the entry has been last changed

The upper part of the window shows several buttons that provide the following functions:

- **(left arrow):** shows the previous logbook entry (if available)
- **Print:** print logbook entry
- **Export:** export the data of the logbook entry to csv file
- **Copy:** copy the details of the logbook entry to the clipboard
- **(right arrow):** shows the last logbook entry (if available)

NOTE: The functions of the *Print*, *Export* and *Copy* buttons correspond to the entries of the same name in the context menu of the logbook entries.

These functions are described on the following pages.

Basic logbook functions

The basic logbook functions enable you to create new or edit and delete the existing logbook entries.

IMPORTANT: Any device within a KVM system provides a separate logbook.

Creating a new logbook entry

How to create a new logbook entry for a device:

1. Click on the folder that contains the device whose logbook you want to open.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Click on **New**.

4. Enter the **Status** (max. 128 characters) of the logbook entry.

> **ADVICE:** The subject is shown in the overview of the logbook entries and allows a quick overview of the entries.

5. If necessary, use the **Body** entry to change the detailed description (max. 1.024 characters) of the logbook entry.
6. Click **OK** to save the logbook entry.

Changing a logbook entry

How to change the logbook entry of a device:

1. Click on the folder that contains the device whose logbook entry you want to change.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Click the entry to be edited and click on **Edit**.
4. If necessary, change the **Subject** (max. 128 characters) of the logbook entry.

> **ADVICE:** The subject is shown in the overview of the logbook entries and allows a quick overview of the entries.

5. If necessary, use the **Body** entry to change the detailed description (max. 1.024 characters) of the logbook entry.
6. Use the **Status** button to select between the »Open« and »Closed« options.
7. The following information are provided in this dialog:

Creator:	user name of the person that created the logbook entry
Created:	date and time the entry has been originally created
Last editor:	user name of the person that last changed the entry
Last edited:	date and time the entry has been last changed

8. Click **OK** to save the logbook entry.

Deleting a logbook entry

How to delete the logbook entry of a device:

1. Click on the folder that contains the device whose logbook entry you want to delete.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Click the entry to be deleted and click on **Delete**.
4. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Advanced functions

The advanced functions allow you to print or export the logbook entries. The data of a logbook entry can also be copied to the clipboard.

The advanced functions can either be called up via the buttons in the detail dialog of the logbook or the context menu of the »Logbook configuration« dialog.

> **NOTE:** The functions of several logbook entries can only be applied if they have been called up via the context menu.

Printing logbook entries

How to print one or several logbook entries:

1. Click on the folder that contains the device whose logbook entry you want to change.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Mark one or several existing logbook entries.

   > **NOTE:** To select several logbook entries, press the **Ctrl** key and select the different entries by mouse.

4. Right-click one of the marked entries and click on **Print**.
5. Select the **Printer** on which the document is to be printed.

   > **NOTE:** If desired, you can also adjust the headline, the number of copies, the page layout and the frame settings.

6. Click on **Print**.

Exporting logbook entries

Use the export function to export the data of a logbook entry to a CSV file.

This file format is usually used for exchanging data between different programs. A CSV file that has been created with the *Config Panel* web application can be read with all common spreadsheet programs, for example.

NOTE: CSV is short for *Comma-Separated Values.*

How to export one or several logbook entries:

1. Click on the folder that contains the device whose logbook entry you want to change.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Mark one or several existing logbook entries.

   NOTE: To select several logbook entries, press the **Ctrl** key and select the different entries by mouse.

4. Right-click one of the marked entries and click on **Export**.
5. Use the **File Name** section to select the location and the file name of the file to be created.
6. The configuration section offers the following settings:

Column headings:	Select if the column headings (*Subject*, *Body*, …) are to be output in the CSV file. Options: **Yes**, **No**
Delimiter:	Select the desired delimiter between the different data fields in the CSV file. Options: **Tabulator**, **Semicolon**, **Comma**, **Space**

7. Click on **Export**.

Copying the logbook entries

As an alternative to the export function, which creates a CSV file, the copy function can be used to copy logbook entries to the clipboard of the operating system.

The copied data can be pasted to any application that has access to the clipboard.

How to copy one or several logbook entries:

1. Click on the folder that contains the device whose logbook entry you want to change.
2. Right-click on the desired device and click on **Logbook** in the context menu.
3. Mark one or several existing logbook entries.

   NOTE: To select several logbook entries, press the **Ctrl** key and select the different entries by mouse.

4. Right-click one of the marked entries and click on **Copy**.
5. Open a document in the application to which you want to copy the data and press **Ctrl+V**.

Shared editing

The web application enables two users with the respective rights to edit settings at the same time.

For example, if two users simultaneously change the user account settings, the web application informs the other user about these changes:

- A message in purple appears in the upper row of the footer and highlights the other user's changes.
- The changed setting or the menu item in the submenu, which contains this setting, is displayed in green.

The following options are provided to process the collected data:

Discard data:	1. Click on **Reload** to read the current values of the dialogue from the database.
Overwrite all data:	1. Click on **Accept**. 2. Click on **Overwrite all data**.
Only save own changes:	1. Click on **Accept**. 2. Click on **Only save own changes**.

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.

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

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

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

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 *Office* and *TargetConfig* groups.

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, was given directly in the user account.

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

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

Efficient user group administration

User groups enable the creation of a shared right profile for several users with identical rights. Furthermore, the user accounts that are 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 the 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: Creat more groups if the user rights are to be further divided. If, for example, some users of the »*Office*« group are to be provided with the *multi-access* right, a respective user group can be created:

- 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 only set 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 offers the possibility to provide extended rights to a group member.

Administrating user accounts

User accounts enable you to 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 that holds 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 administrates up to 256 user accounts. Any user account is provided with individual login data, rights and user-related settings for the KVM system.

How to create a new user account:

1. Click on **User area > User** in the tree view.
2. Right-click the display range and afterwards the **New** entry in the context menu.
3. Enter the following information within the interface:

Name:	Enter the desired username.
Password:	Enter the user account password.
Repeat password:	Repeat the password.
Clear text:	If necessary, mark this entry to view and control both passwords.
Full name:	If desired, enter the user's full name.
Comment:	If desired, enter a comment regarding the user account.
Enabled:	Click this entry to activate the user account.

If the user account is deactivated, the user is not able to access the KVM system.

4. Click **OK** to save the entered data.

IMPORTANT: After the user account has been created, it is assigned with no rights.

Add the user account to an existing user group or provide it with individual rights (see page 69).

Renaming the user account

How to rename a user account:

1. Click on **User area > User** in the tree view.
2. Right-click the user account to be edited and click the **Configuration** entry in the context menu.
3. Enter the new username in the **Name** entry.
4. *Optional:* Enter the user's full name in the **Full name** entry
5. Click **OK** to save your settings.

Changing the user account password

How to change the user account password:

1. Click on **User area > User**.
2. Right-click the user account to be edited and click the **Configuration** entry in the context menu.
3. Click on **Change password**.
4. Change the following data within the entry mask:

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

5. Click **OK** to save the new password.
6. Click **OK** to save your settings.

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 74
Mouse reset	Reset or reactivate PS/2 mouse	page 87
Multi access	Access type when a target computer is simultaneously accessed	page 84
Personal profile	Change personal user settings	page 165
Push-Get rights	Carry out *Push-Get function*	page 167
Superuser right	Unrestricted access to the configuration of the system	page 73
Target access rights	Access to a target module	page 82
Target config	Configuration of target modules	page 87
Target group access rights	Access to a target group	page 83
Target multi access rights	Access if a target computer is accessed by several users	page 84
Target USB access	Access USB devices for all target computers	page 86
Target (group) USB access rights	Access USB devices for a certain target module or target group	page 86
Target power group rights	Switch power outlets of a target group	page 158
Target power rights	Switch power outlets of a target module	page 157
WebIf login	Login to the *Config Panel* web application	page 74

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. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user group to be edited and click the **Configuration** entry in the context menu.
3. Click the **Members** tab.

   Now you can easily add members to or delete them from any user group.

The window consists of two tables. These tables list the user accounts of the KVM matrix system:

Unassigned:	lists all user accounts that are *not* assigned to this group
Assigned group members:	lists all user accounts that are assigned to this group

4. Mark the user account you want to add to or delete from the group.
5. Click the button (*right arrow*) to add the user account to the group or the button (*left arrow*) to delete it from the list.

Enabling/Disabling a user account

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

How to enable/disable a user account:

1. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user account you want to enable/disable and click the **Configuration** entry in the context menu.
3. Click the **Enabled** entry to enable the user account.

   Disable the entry if you want to lock the access to the system for this user account
4. Click the **OK** button to save your settings.

Deleting a user account

How to delete a user account:

1. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user account you want to delete and click the **Delete** entry in the context menu.
3. Click **OK** to confirm the confirmation prompt.

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. Click on the **User area > User groups** entries in the tree view.
2. Right-click the display range and click the **New** entry in the context menu.
3. Enter the following data in the entry mask:

Name:	Enter the name of the user group.
Enabled:	Activate this entry to enable the user group.
	NOTE: If the user group is disabled, the group rights do *not* apply to the assigned members.
Comment:	If necessary, enter a comment regarding the user group.

4. Click **OK** to save your settings.

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. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user account you want to rename and click the **Configuration** entry in the context menu.
3. Use the **Name** entry to enter the new name of the user group.
4. Click **OK** to save your settings.

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 74
Mouse reset	Reset or reactivate PS/2 mouse	page 87
Multi access	Access type when a target computer is simultaneously accessed	page 84
Personal profile	Change personal user settings	page 165
Push-Get rights	Carry out *Push-Get function*	page 167

Name	Right	Page
Superuser right	Unrestricted access to the configuration of the system	page 73
Target access rights	Access to a target module	page 82
Target config	Configuration of target modules	page 87
Target group access rights	Access to a target group	page 83
Target multi access rights	Access if a target computer is accessed by several users	page 84
Target USB access	Access USB devices for all target computers	page 86
Target (group) USB access rights	Access USB devices for a certain target module or target group	page 86
Target power group rights	Switch power outlets of a target group	page 158
Target power rights	Switch power outlets of a target module	page 157
WebIf login	Login to the *Config Panel* web application	page 74

Administrating user group members

How to administrate user group members:

1. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user group to be edited and click the **Configuration** entry in the context menu.
3. Click the **Members** tab.

   Members can now easily be added to or deleted from the user groups.

   The window consists of two tables. These tables list the user accounts of the KVM system:

Unassigned:	lists all user accounts that are *not* assigned to this group
Assigned group members:	lists all user accounts that are assigned to this group

4. Mark the user account you want to add to or delete from the group.
5. Mark the user account you want to add to or delete from the group. Now click the button (*right arrow*) to add the user account to the group or the button (*left arrow*) to delete it from the list.

(De)activating a user group

How to (de)activate a user group:

1. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user group you want to (de)activate and click the **Configuration** entry in the context menu.
3. Activate the **Enabled** entry to activate the user group.

   If you want to lock the access to the KVM system for members of this user group, deactivate the entry.
4. Click the **OK** button to save your settings.

Deleting a user group

How to delete a user group:

1. Click on the **User area > User groups** entries in the tree view.
2. Right-click the user group you want to delete and click the **Delete** entry in the context menu.
3. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

System rights

Rights for full access (Superuser)

The *Superuser* right enables you to fully access and configure the KVM system.

> **NOTE:** The information about the user rights, which have been assigned before, are still stored when the *Superuser* right is activated. After the *Superuser* right has been withdrawn, the saved rights do apply again.

How to change the *Superuser* right:

1. If you want to change this right of a user account, click the **User area > Users** entries in the tree view.

   For changing the rights for a user group, click the **User area > User groups** entries.
2. Right-click the user account or the user group you want to configure and click the **Configuration** entry in the context menu.
3. Click the **System rights** tab.

4. Use the **Superuser** entry to select between the following options:

Yes:	allows full access to the KVM system and the connected devices
No:	denies full access to the KVM system and the connected devices

5. Click **OK** to save your settings.

Changing the login right to the web application

How to change the login right to the web application:

1. If you want to change this right of a user account, click the **User area > Users** entries in the tree view.

   For changing the rights for a user group, click the **User area > User groups** entries.

2. Right-click the user account or the user group you want to configure and click the **Configuration** entry in the context menu.

3. Click the **System rights** tab.

4. Use the **Web Interface Login** entry to select between the following options:

Yes:	enables access to web application
No:	denies access to web application

5. Click **OK** to save your settings.

Rights to change your own password

How to change the right to change your own password:

1. If you want to change this right of a user account, click the **User area > Users** entries in the tree view.

   For changing the rights for a user group, click the **User area > User groups** entries.

2. Right-click the user account or the user group you want to configure and click the **Configuration** entry in the context menu.

3. Click the **System rights** tab.

4. Use the **Change own password** entry to select between the following options:

Yes:	allows the user to change the user account password
No:	denies the user to change the user account password

5. Click **OK** to save your settings.

The »KVM combinations« folder

The *KVM combinations* folder enables you to group different devices in any folders. Especially in larger system, this folder provides better orientation.

The devices can be grouped according to locations (e. g. server room) or other features (e. g. the operating system of the connected computer).

ADVICE: The devices of *different* classes – e.g. the target modules of a matrix system or an extender – can be grouped within one folder.

Folder administration

The *KVM combinations* folder provides the following system folders:

[Unassigned]:	This folder lists all devices that are not assigned to any KVM combination.
[All devices]:	This folder lists all devices of the KVM system.

NOTE: You cannot delete or rename system folders.

Creating new folders

How to create an empty folder:

1. Right-click on **KVM combination** in the tree view and click on **New folder** in the context menu.

   ADVICE: If you want to create a subfolder, right-click the main directory and click on **New folder**.

2. Use the **Name** entry to enter the desired name.
3. *Optional:* Use the **Comment** entry to enter a comment.
4. Click **OK** to create the folder.

Assigning a device to a folder

NOTE: Each device can be listed in any number of subfolders.

How to group the *connected devices* in a new folder:

1. Click on **KVM combinations > [All devices]** in the tree view.
2. Right-click a connected device and click on **Group connected devices** in the context menu.
3. Use the **Name** entry to enter the desired name.
4. *Optional:* Use the **Comment** entry to enter a comment.
5. Click **OK** to group the devices in the new folder.

How to assign a device to an existing folder:

1. Click on **KVM combinations > [All devices]** in the tree view.
2. Right-click the device to be assigned and click on **Copy device** in the context menu.
3. Open the folder to which the device is to be assigned to.
4. Right-click the main view and click on **Paste device** in the context menu.

Deleting a device from a folder

A device can be deleted from the folder by moving it to the *[Unassigned]* group or by selecting the **Remove from folder** entry in the context menu.

How to cancel a target module's assignment to a folder:

1. Click on **KVM combinations > [All devices]** in the tree view.
2. Open the folder to which the device is assigned to.

   Right-click the device whose assignment you want to delete and click on **Remove from folder** in the context menu.

Renaming a folder

How to rename a folder:

1. Click on **KVM combinations > [All devices]** in the tree view.
2. Right-click the folder to be renamed and click on **Rename folder** in the context menu.
3. Edit the name and press **Enter**.

Deleting a folder

Any created folders can be deleted at any time.

If a folder contains devices while it is deleted, these devices are automatically moved to the *[Unassigned]* group.

> **NOTE:** The system folders *[Unassigned]* and *[All devices]* are administrated by the web application and cannot be deleted.

How to delete a folder:

1. Click on **KVM combinations > [All devices]** in the tree view.
2. Right-click the folder to be deleted and click on **Delete folder** in the context menu.

   > **NOTE:** You can select several folders by pressing **Shift**, **Ctrl** and the left mouse key at the same time.

3. Confirm the security request by clicking **Yes** or cancel the task by clicking **No**.

Advanced functions of the KVM system

Temporarily (de)activating SNMP traps (Maintenance mode)

By activating the maintenance mode, the user is enabled to deactivate SNMP traps (see page 55), e.g. for devices that are occupied for reasons of maintenance.

The status messages are displayed again after the maintenance mode has been deactivated.

(De)activating the maintenance mode

How to (de)activate a device's maintenance mode:

1. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device and click on **Maintenance > On** or **Maintenance > Off** in the context menu.

Viewing a list of devices in maintenance mode

How to display the list of devices in maintenance mode:

1. Click on the **System monitoring > Maintenance** folders in the tree view.

   The main view lists the respective devices.

   ADVICE: The devices in *Maintenance* mode are always displayed in yellow.

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. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device and click on **Identification LED > On** or **Identification LED > Off** in the context menu.

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.

> **NOTE:** To save and restore your configuration, you can go to **System > Tools** in the directory tree or use the **Tools icon**.

How to save the configuration of the KVM system:

1. In the directory tree, click on **System > Tools**.
2. Click **Backup**.
3. Enter the location and the name of the backup file under **Path.**

   > **ADVICE:** Use the file button to select the name and the location of the backup file via the file dialog.

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 directory tree, click on **System > Tools**.
2. Click on **Restore**.
3. Enter the location and the name of the backup file under **Path**.

   > **ADVICE:** Use the file button to select the name and the location of the backup file via the file window.

4. Use the information given under **Creation date** and **Comment** to check if you selected the right backup file.
5. Select the scope of data you want to restore: You can restore either the **network settings** and/or the **Application settings**.

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

6. Click **Restore**.
7. Click **OK** to close the window.

Administration and use of EDID profiles

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

We provide additional profiles for special resolutions.

Importing the EDID profile of a monitor

NOTE: An EDID profile can either be imported from a bin file or directly from a monitor that is connected to the KVM switch.

How to import the EDID profile of a connected monitor:

1. Click on **System > Edid profiles** in the tree view.
2. Right-click in the display area and click on **New** in the context menu.
3. Click on **Learn**.
4. Mark the user module to which the monitor whose EDID information you want to import is connected.

   NOTE: Click the **[+]** icon to display a list of all user modules that are connected to the matrix switch.

5. Click **Ok**.

   NOTE: The **Name** and **Comment** entries are automatically filled out and the contents of the EDID information is displayed.

6. If desired, change the information in the **Name** and/or **Comment** entries.
7. Click **OK** to save your settings.

How to import the EDID profile of a monitor from a file:

1. Click on **System > Edid profiles** in the tree view.
2. Right-click in the display area and click on **New** in the context menu.
3. Click on **Search**.
4. Use the file dialogue to choose the bin file you want to import and click on **Open**.

   NOTE: The **Name** and **Comment** entries are automatically filled out and the contents of the EDID information is displayed.

5. If desired, change the information in the **Name** and/or **Comment** entries.
6. Click **OK** to save your settings.

Exporting a monitor's EDID profile

How to export the EDID profile of a monitor:

1. Click on **System > Edid profiles** in the tree view.
2. In the view area, right-click the EDID profile you want to export.
3. Click on **Save as...** in the `context menu.`
4. In the *Save* dialog, select the location and file name of the file you want to create.
5. Click on **Save**.

Overview of the stored EDID profiles

The **System > Edid profiles** branch of the tree view provides an overview of the EDID profiles that are stored within the KVM system.

Use the context menu the *Add* or *Delete* and *Change* the profiles added by the user.

NOTE: *Add*, *Delete* and *Change* the profiles as described on the previous pages.

NOTE: Information on choosing and enabling an EDID profile for a particular video channel is given on page 76.

Activating the premium functions

After a premium function has been purchased, the user receives 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. Use the tree view to click on **KVM matrix systems > [name] > Matrix switches**.
2. Right-click the device whose *feature key* is to be imported.
3. Click the **Configuration** entry in the context menu.
4. Click the **Features** tab.
5. Click on **Import feature key from file...** and import the feature key (file) via the file interface.

   After the file has been 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.
6. Click **OK** to close the window.

2 Matrix Systems

You can use the *KVM matrix systems* in the directory tree of the web application to configure various settings of the matrix switches and the connected devices.

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 user modules.

Adjusting access and configuration rights

Accessing a target module

> **ADVICE:** We recommend using target groups to help assign all target access rights (see page 71).
>
> This way, it is easier to keep an overview of the KVM matrix system. It also benefits the operating performance within 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 directory tree, click **User area > Users**.

   If you want to change the rights for user groups, click **User area > User groups**.

2. Right-click the user account or the user group you want to configure and click the **Configuration** entry on the context menu.

3. Click the **Matrix systems > Individual Device Rights** tabs.

4. Choose the desired target module in the list on the left side of the window.

   > **ADVICE:** Use the drop-down menu to choose the target module to be displayed in the selection window.

You can choose between the following options:

[All targets]	Lists all target modules within the system
[Unassigned]	Only lists *[Unassigned]* target modules
Search...	After you choose this option, another window opens. Choose the desired *View filter* in the tree to display only the devices which are assigned to this view filter.

5. Use the **Access** entry on the right-hand side of the window to select between the following options:

No:	Denies access to the computer that is connected to the target module
View:	Allows users to view the screen content of the computer that is connected to the target module
Full:	Allows full access to the computer connected to the target module

6. Repeat steps 4 and 5 if you want to change the access rights for other target modules.
7. Click **OK** to save your settings.

Accessing target groups

How to change the target group access right:

1. In the directory tree, click **User area > Users**.

   If you want to change the rights for user groups, click **User area > User groups**.
2. Right-click the user account or the user group you want to configure and click the **Configuration** entry on the context menu.
3. Click the **Matrix systems > Device Group Rights** tabs.
4. Choose the desired target module in the list on the left side of the window.
5. Use the **Access** entry on the right-hand side of the window to select between the following options:

No:	Denies access to a target computer which is already accessed by another user
View:	Screen contents of a target computer that is already accessed by another user can be viewed; inputs are *not* possible
Full:	Allows full access to a target computer that is already accessed by another user

6. Repeat steps 4 and 5 to change the access rights for further target modules.
7. Click **OK** to save your settings.

Access mode if a target computer is accessed by several users

Only one user can access a target computer in the default settings of the KVM matrix system.

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

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

NOTE: The right for simultaneous access depends on the user's effective right (see page 65). The effective right is the highest right that results from the individual right of the user accounts and the rights of the assigned group(s).

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

1. In the directory tree, click **User area > Users**.

   If you want to change the rights for user groups, click **User area > User groups**.

2. Right-click the user account or the user group you want to configure and click the **Configuration** entry on the context menu.

3. Click the **Matrix systems** and **Global Device Rights** tabs.

4. Use the **Multi Access** entry in the **Access Rights** column to choose between the following options:

No:	Denies access to a target computer which is already accessed by another user
View:	Screen contents of a target computer that is already accessed by another user can be viewed; inputs are *not* possible
Full:	Allows full access to a target computer that is already accessed by another user

5. Click **OK** to save your settings.

How to change the rights to access a *certain* target module or group at the same time:

NOTE: Several users are only allowed to access the target at the same time if the user account or the user group hold the *general access rights* (see page 82 f.) for the target computer!

1. In the directory tree, click **User area > User**.

   If you want to change the right for user groups, click **User area > User groups**.

2. Right-click the user account or user group you want to configure and click **Configuration** on the context menu.

3. Click the **Matrix systems** tab.

4. If you want to change the access rigths for a certain target module, click on **Individual Group Rights**.
   If the rights should apply for a target group, click on **Device Group Rights.**

5. Choose your desired target module or target group from the list on the left side.

   ADVICE: Use the drop-down menu to choose the target modules to be displayed in the selection screen:
   - **[All targets]:** Lists all target modules within the system
   - **[Unassigned]:** Only lists *[Unassigned]* target modules
   - **Search...** After you have chosen this option, a new window opens. Choose the desired *View filter* in the tree to display only the devices which are assigned to this view filter.

6. Use the **Multi access rights** entry on the right-hand side of the window to choose between the following options:

No:	Denies access to a target computer (of a group) which is already accessed by another user
View:	Screen contents of a target computer (of a group) that is already accessed by another user can be viewed; inputs are *not* possible
Full:	Allows full access to a target computer (of a group) that is already accessed by another user

7. Click **Ok** to save you settings.

Access to USB devices

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

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

The right to access USB devices of a certain target computer can be denied either globally (for all target computers a user or a user group can access) *or* for certain target computers or groups.

NOTE: The access right depends on the user's effective right (see page 65). The effective right is the highest right that results from the individual right of user accounts and the rights of assigned group(s).

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

1. In the directory tree, click **User area > User**.

   If you want to change the right for user groups, click **User area > User groups**.

2. Right-click the user account or user group you want to configure and click **Configuration** on the context menu.

3. Click the tabs **Matrix systems** and **Global device rights**.

4. Under **Access rights > Access to USB devices**, choose between the following options:

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

5. Click **Ok** to save you settings.

How to change the right to access USB devices for *a certain* target module or target group:

NOTE: You can configure and apply access to USB devices if the user account or the user group are assigned with *general access rights* (see page 82 f.) for the target computer.

1. In the directory tree, click **User area > User**.

   If you want to change the right for user groups, click **User area > User groups**.

2. Right-click the user account or user group you want to configure and click **Configuration** on the context menu.

3. Click the **Matrix systems** tab.

4. If you want to change the access rights for a certain target module, click on **Individual Group Rights**. If the rights should apply for a target group, click on **Device Group Rights.**

5. Choose the target module or the target group in from the list on the left-hand side.

> **IMPORTANT:** The right to access USB devices is configured for the target module, which provides the main KVM channel of the channel group. The USB channel is assigned to the same channel group.

> **ADVICE:** Use the drop-down menu to choose the target modules to be displayed in the selection screen:
> - **[All targets]:** Lists all target modules of the system
> - **[Unassigned]:** Only lists *[Unassigned]* target modules
> - **Search...** Choosing this option opens a new window. Choose the desired *View filter* in the directory tree to display only the devices which are assigned to this view filter.

6. Under **USB access during grouping** on the right-hand side, you can choose between the following options:

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

7. Click **Ok** to save you settings.

Changing the rights to configure the target modules

How to change the rights to view and edit the configuration of the target modules:

1. In the directory tree, click **User area > User**.

   If you want to change the rights for user groups, click **User area > User groups**.

2. Double-click the user account or the user group you want to configure.
3. Click the **Matrix systems > Global Device Rights** tabs.
4. Use the **Target config** entry to choose between the following options:

Yes:	Allows the user to view and edit the target module config
No:	Denies the user to view and edit the target module config

5. Click **OK** to save your settings.

Changing the rights to reset or reactivate a PS/2 mouse

Compared to USB mouses, PS/2 mouses do not support hot plug technology. You can therefore insert the PS/2 plug during operation, but it may be possible that the computer does not detect the input device.

In order to activate or reset the PS/2 mouse, the matrix system can be used to send a special command to the computer connected to the target module.

How to change the rights to reset or reactivate the PS/2 mouse:

1. In the directory tree, click **User area > User**.

   If you want to change the rights for user groups, click **User area > User groups**.

2. Right-click the user account or the user group you want to configure and click **Configuration** on the context menu.

3. Click **Matrix systems > Global Device Rights**.

4. Use the **Mouse reset** entry to choose between the following options:

Yes:	Allows the user to reset or reactivate the PS/2 mouse interface of a target computer
No:	Denies the user to reset or reactivate the PS/2 mouse interface of a target computer

5. Press **OK** to save your settings.

Basic configuration of target modules

Renaming target modules

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

How to rename target modules:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.

2. Right-click the target module and click **Configuration** on the context menu.

3. Enter the name of the target module into the **Name** entry.

4. Press **OK** to save your settings.

Changing comments of target modules

In addition to the target module name, the list field of the web application also displays a comment regarding this target module.

ADVICE: Use the comment to write down the location of the target module down, for example.

How to change comments of target modules:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.

2. Right-click the target module and click **Configuration** on the context menu.

3. Enter any comment into the **Comment** entry.

4. Press **OK** to save your settings.

Deleting target modules from the KVM matrix system

If the KVM matrix system is not able to detect a target module, which already had been connected to the system, the device is considered inactive. Delete the list entry of the target module manually if you want the device to be permanently remove from the system.

NOTE: Only switched-off target modules can be deleted.

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

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

Copying the target module config settings

If a target module of the KVM matrix system is replaced by another 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.

IMPORTANT: After this task is carried out, the target module whose settings you want to copy is deleted from the KVM matrix system.

How to copy target module config settings:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. Right-click the new target module and click the **Move to...** entry on the context menu.

   A new window shows a list of all inactive or deleted target modules.
3. Choose the target module whose configuration settings you want to copy.
4. Click **OK** to copy the configuration settings.

Settings for special hardware

Selecting the USB keyboard mode

NOTE: This setting can only be edited with USB versions of the target modules.

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 (see page 91).

As an alternative to the specific USB keyboard modes, you can use the **Generic HID** 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 HID** mode supports many common HID devices. However, the operation of any particular HID devices in **Generic HID** mode cannot be guaranteed.

IMPORTANT: 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 (see page 104).

▪ **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**.

With *Apple* or *Sun Keyboards*, you can apply special keymodes to use the special keys of these keyboards.

The following table lists the supported USB keyboards:

INPUT DEVICE	SETTING
PC keyboard with additional multimedia keys	‣ PC Multimedia
PC keyboard with standard keyboard layout	‣ PC Standard
Apple Keyboard with numeric keypad (A1243)	‣ Apple A1243
Sun Keyboard (German keyboard layout)	‣ SUN German
Sun Keyboard (American keyboard layout)	‣ SUN US

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

INPUT DEVICE	SETTING
HP 2310t	‣ HP 2310t
iiyama T1931	‣ iiyama T1931
NOTTROT N170 KGE	‣ NOTTROT N170 KGE
Wacom Cintiq 21UX	‣ Wacom Cintiq 21UX
Wacom Intuos3	‣ Wacom Intuos3
Wacom Intuos4 S	‣ Wacom Intuos4 L
Wacom Intuos4 M	‣ Wacom Intuos4 M
Wacom Intuos4 L	‣ Wacom Intuos4 S
Wacom Intuos4 XL	‣ Wacom Intuos4 XL
Wacom Intuos5 S	‣ Wacom Intuos5 S
Wacom Intuos5 M	‣ Wacom Intuos5 M
Wacom Intuos5 L	‣ Wacom Intuos5 L

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

INPUT DEVICE	SETTING
Any USB device	‣ Generic HID

IMPORTANT: The **Generic HID** mode supports many common HID devices. However, the operation of any particular HID devices in **Generic HID** mode cannot be guaranteed.

IMPORTANT: To use a generic HID device, you need to activate the **Generic HID** support of the user module to which the USB device is connected to (see page 104).

- **Controller:** With **ShuttlePRO v2** multimedia controllers, you can operate audio and video programs. You can use a special USB keymode to operate computers connected to the target module using the controller:

INPUT DEVICE	SETTING
Contour ShuttlePRO v2	‣ Contour SP2

- **LK463 compatible keyboard:** You can connect an LK463 compatible keyboard to the user modules of the KVM matrix system. The order of the 108 keys of these keyboards is the same as the OpenVMS keyboard layout.

A special USB keyboard mode guarantees that the keypress of a special key on this keyboard is forwarded to the target computer:

INPUT DEVICE	SETTING
LK463 compatible keyboard	‣ LK463

How to select a USB keyboard mode:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. Right-click the target module you want to configure and click on **Configuration** on the context menu.
3. Select a setting under **USB HID Mode** (see table on page 90):

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

4. Click **OK** to save your settings.

IMPORTANT: After changing the keyboard layout of *Sun Keyboards*, Sun computers require a reboot.

How to use the special function of Sun keyboards on a standard keyboard:

> **IMPORTANT:** You can use the emulation of »Solaris Shortcut Keys« in the **SUN German** and **SUN US** keyboard mode only.

If the target module is provided with a *Sun Keyboard*, you can use *Solaris Shortcut Keys* after enabling their support.

When using a standard keyboard, you can perform these functions by using the key combinations listed below:

KEY COMBINATIONS	»SOLARIS SHORTCUT KEY« OF SUN KEYBOARDS
Ctrl+Alt+F2	Again
Ctrl+Alt+F3	Props
Ctrl+Alt+F4	Undo
Ctrl+Alt+F5	Front
Ctrl+Alt+F6	Copy
Ctrl+Alt+F7	Open
Ctrl+Alt+F8	Paste
Ctrl+Alt+F9	Find
Ctrl+Alt+F10	Cur
Ctrl+Alt+F11	Help
Ctrl+Alt+F12	Mute
Ctrl+Alt+NUM+	Loud
Ctrl+Alt+NUM-	Quiet
Ctrl+Alt+NUM*	Compose
Ctrl+Alt+Pause	Shutdown
Pause+A	Stop

Support for servers of IBM's RS/6000 series

> **NOTE:** This setting can only be edited with PS/2 versions of the target modules.

Enable the support for UNIX servers of IBM's RS/6000 series if the target computer is such a server.

How to (de)activate the special support for servers of IBM's RS/6000 series:

1. In the directory tree, click **KVM matrix systems > [Name] > DVI-CPUs**.
2. Right-click the target module you want to configure and click the **Configuration** entry on the context menu.

3. Use the **IBM RS/6000 support** entry to choose between the following options:

yes:	Support for servers of IBM's RS/6000 series is activated
no:	Support for servers of IBM's RS/6000 series is deactivated

4. Click **OK** to save your settings.

Defining the EDID profile to be used

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

The EDID profile of the monitor, which is connected to the user 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 are optimised for the majority of available 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 (see page 80) and activate the configuration of the target module afterwards.

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

1. In the directory tree, click **KVM Matrixsystems > [Name] > Target modules**.
2. Right-click the target module you want to configure and click on **Configuration** on the context menu.
3. Use the **EDID** entry to select between the standard profile (**Device specific default profile**) or another profile from the list.

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

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

4. Click **OK** to save your settings.

Reducing the colour depth of the image data to be transmitted

In the default settings of a target module, the central module transmits the image information with a maximum colour depth of 24 bit to the user module.

Using a high resolution and displaying moving images can result in the user module "skipping" several images.

In such cases, reduce the colour depth if the image data to 18 bits, which reduces the data volume to be transmitted.

NOTE: Depending on the image contents, reducing the colour depth may result in slight colour grades.

How to change the colour depth of the image data you want to transmit:

1. In the directory tree, click **KVM Matrixsystems > [Name] > Target modules**.
2. Right-click the target module you want to configure and click on **Configuration** on the context menu.
3. Use the **Colour depth** entry of the *Target module configuration* paragraph to choose between the following options:

24 Bit:	transmits the image data with a maximum colour depth of 24 bits
18 Bit:	reduces the colour depth of image data to 18 bits

4. Click **OK** to save your settings.

Enhanced functions

Enabling/disabling the keyboard signal

By default, the signals of mouse and keyboard connected to the user module are transmitted to the target module.

The settings of the target module let you enable or disable the transmisison of the keyboard signal.

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

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. Right-click the target module you want to configure and click on **Configuration** on the context menu.
3. Under **Keyboard support**, select one of the following options:

Enabled:	Keyboard signals are transmitted to the target module (*default*)
Disabled:	Keyboard signals are *not* transmitted to the target module.

4. Click **OK** to save your changes.

Configuring default actions after a user logon

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

The configuration setting **Default execution** allows you to define a target module that is automatically accessed after the user logs on, *or* a script that runs automatically.

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

1. In the dircetory tree, click on **User area > User**.
2. Right-click on the user account you want to edit and click on **Configuration** in the context menu.

3. Click on **Matrixsystems > Personal Profile > Matrix switch**.
4. Under **Default execution**, select the option **Default target**.
5. Click on the tab **Default target**.
6. In the column **Default target**, check the box of the target to be auto-accessed.
7. Click on **OK** to save your settings.

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

1. In the dircetory tree, click on **User area > User**.
2. Right-click on the user account you want to edit and click on **Configuration** in the context menu.
3. Click on **Matrixsystems > Personal Profile > Matrix switch**.
4. Under **Default execution**, select the option **Default script/Script group**.
5. Click on the tab **Default script**.
6. In the column **Default script** check the box of the script to be auto-executed.
7. Click on **OK** to save your settings.

How to disable the configured default action:

1. In the dircetory tree, click on **User area > User**.
2. Right-click on the user account you want to edit and click on **Configuration** in the context menu.
3. Click on **Matrixsystems > Personal Profile > Matrix switch**.
4. Under **Default execution**, select the option **None**.
5. Click on **OK** to save your settings.

Remembering the last target module

Enable the **Remember last target** function in your personal profile to remember the target module the user last accessed even after the logout. After the next login, the user automatically accesses the last target module.

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

IMPORTANT: When enabling the **Remember last target** function, the user's configured standard targer is ignored.

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

1. In the dircetory tree, click on **User area > User**.
2. Right-click on the user account you want to edit and click on **Configuration** in the context menu.
3. Click on **Matrixsystems > Personal Profile > Matrixswitch**.
4. Under **Remember last target** you can select between the following options:

On:	After the login, you access the remembered target module.
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 **OK** to save your settings.

»Multiuser« display

If several users are accessing a target computer (Multiuser mode), the *»Multiuser«* information can be activated. This way, all accessing users are provided with the information that at least one other user is currently accessing the 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 the »Multiuser« information *for the entire system*:

1. In the directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click the **Configuration** entry on the context menu.
3. Use the **Multiuser display** entry in the **Configuration** column to choose between the following options:

Yes:	Enables the »Multiuser« display
No:	Disables the »Multiuser« display

4. Click **OK** to save your settings.

How to (de)activate the »Multiuser« information for a particular *user account*:

1. In the directory tree, click **User area > User**.
2. Right-click the user account you want to configure and click the **Configuration** entry on the context menu.

3. Click the **Matrix system > Personal Profile > Matrix switch** tabs and use the **Multiuser display** entry to choose between the following options:

system:	global system settings do apply (see above)
on:	displays »Multiuser« information
off:	does *not* display »Multiuser« information

4. Click **OK** to save your settings.

Showing the status information of a target module

With the context menu of a target module you can call an interface with various status information of the target module. In addition to the name and the storage location, information regarding the firmware version is displayed.

How to show the status information of a target module:

1. In the directory tree, click **KVM Matrix systems > [Name] > Target modules**.
2. Right-click the target module whose status information you want to view and click the **Information** entry on the context menu.
3. This interface provides the following information:

Name:	target module name
Device ID:	physical ID of the target module
Status:	current status (*on* or *off*) of the target modules
Class:	Device class
Comment:	user comment regarding the target module
Matrixswitch:	Name of the matrix switch the module is connected to
Port:	Port of the matrix switch the module is connected to
Firmware name:	firmware name
Firmware revision:	firmware version
Serial number:	Serial number of the module

4. Click **Close** to close the window.

Showing information about the connection

The connection information is the active connection between a user and a target module. The different cable lengths between two modules of the KVM matrixswitch are listed separately. This list does not only display the ports used for the cable connection but also the medium and the transmittable signals.

How to view the information regarding the connection:

1. In the directory tree, click **KVM Matrix systems > [Name] > Target modules**.
2. Right-click the target module and click on **Active connection** on the context menu.
3. The list displays the following information about the different cable lines between two modules of the KVM matrix switches:

   - Name and ports of two connected modules
   - Medium of the cable connection
   - Information regarding the transmittable signals: [K]eyboard, [V]ideo, [M]ouse, and [A]udio

4. Click **Close** to close the window.

Viewing the cascade information

The cascade information provides you with an overview of the physical connections of the KVM matrix system. In addition to the master device, the connected slave devices as well as the user modules and target modules are displayed.

The cascade information also displays the physical device ID, the connection port at the KVM matrix system and the status.

How to view the cascade information:

1. In the directory tree, click **KVM Matrix systems > Name > Target modules**.
2. Right-click the target module and click the **Cascade info** entry on the context menu to view the cascade tree directory:

   NOTE: The context menu of the matrix switch with which you call the cascade information is highlighted in red.

3. The cascade information provides the following information:

   - Name, port and status of the connected user modules
   - Name, port and status of the connected target modules
   - Name and ports of slave devices

4. Click **Close** to close the cascade view.

Rebooting a target module

This function reboots a target module. Before rebooting, you will be prompted for confirmation to prevent an accidental reboot.

How to reboot a target module using the web application:

1. In the directory tree, click on **KVM Matrix systems > [Name] > Target modules**.
2. Right-click on the desired device and select the option **Reboot** from the conext menu.
3. Confirm the confirmation prompt with **Yes**.

Updating the firmware of target modules

You can use the web application to update the firmware of target modules.

How to update the firmware of target modules:

1. In the directory tree, click **KVM matrix systems > [name] > Target modules**.

   ADVICE: Right-click the table and select **Column view > Information** to show the module's firmware version.

2. Mark the user modules you want to update in the main view.

   IMPORTANT: Only mark target modules for which the update file to be selected in the following has been designed for!

   ADVICE: Keep the **Ctrl** key pressed to select several devices from the list.

3. Right-click one of the marked devices and select **Update** on the context menu.
4. Use the **Update type** entry to define whether the selected devices are to be updated one after the other (**sequential**) or at the same time (**parallel**).
5. Click **Search** and use the file dialog to select the location and the name of the update file.
6. Click **Start update**.

   NOTE: The **System monitoring > Update failed** directory provides the protocols of *failed* updates.

User consoles

The target computers connected to the system are operated at the user consoles of the KVM matrix system.

Operating modes of user consoles

Depending on the intended use of the user console, the console's operating mode can be selected from the following options:

Standard operating mode

NOTE: This operating mode is preset in the default.

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.

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

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

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, you can only make entries at the on-screen display.

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

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

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 user console simultaneously to the video console.

Selecting the user console's operating mode

How to select the user console's operating mode:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user console you want to configure and click the **Configuration** entry on the context menu.
3. Click on the **General** tab.
4. Use the **Operating mode** entry to select between the following options:

Standard:	Standard operating mode
Open Access:	Open access operating mode
Video:	Video operating mode

> **NOTE:** Selecting the *Open Access* or *Video* options activates further submenus to configure the access rights.
>
> These settings are explained in the chapter *Changing the user account rights* on page 69 ff.

5. Press **F2** to save your settings.

Basic configuration of user consoles

Changing names or comments of user consoles

How to change names or comments of user console:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the console you want to configure and click **Configuration** on the context menu.
3. Click on the **General** tab.
4. Use the **Name** entry to rename the user console.
5. Use the **Comment** entry to change or collect comments about the user console.
6. Click **OK** to save your settings.

Enabling or disabling user consoles

If you want to deny a user console access to the KVM matrix system, the user console can be deactivated.

> **NOTE:** If the user console is disabled, the monitor displays the message »*This console has been disabled*«. It is therefore not possible to call the on-screen display or the login box.
>
> If a user is accessing this user console, access is *immediately* withdrawn.

How to enable or disable user console:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user console you want to configure and click **Configuration** on the context menu.
3. Click on the **General** tab
4. Use the **Enabled** entry to select between the following options:

Enabled:	User console is enabled
Disabled:	User console is disabled

5. Click **OK** to save your settings.

Enabling or disabling startup while missing keyboard

By default, user modules start without a keyboard. After the startup, the console monitor shows the OSD of the matrix switch. Ooperating the OSD, however, requires a keyboard.

As an alternative, the user module can inerrupt startup by showing a message regarding the missing keyboard. Once you connect a keyboard to the user module, the startup process continues.

How to enable/disable the startup of a user module without a keyboard:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user module you want to configure and click **Configuration** on the context menu.
3. Click the **General** tab
4. Under **Keyboard required**, you can choose between the following options:

Yes:	User module can be started only when a keyboard is connected.
No:	User module can be started without a keyboard (default).

5. Click **OK** to save your settings.

Copying console config settings

If a user console of the KVM matrix system is replaced by another device, the previous config settings can be copied to the new device.

Afterwards the new device can be immediately operated.

> **IMPORTANT:** After the settings of a user console have been copied, the use console is deleted from the KVM matrix system.

How to copy user console config settings:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules**.
2. Right-click the new console and click on **Move to...** on the context menu.

   A new window provides a list with all inactive or deleted user consoles.
3. Select the user console whose configuration settings you want to copy.
4. Click **OK** to copy the configuration settings.

Deleting user consoles from the KVM matrix system

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

Delete the list entry of the console that is to be permanently removed from the system.

> **NOTE:** Only administrators and users with the *Superuser* right can delete inactive user consoles.

How to delete user consoles that are switched off or disconnected from the system:

1. Click on **KVM Matrix systems > [Name] > User modules** in the tree view.
2. Right-click the user console you want to delete and click **Delete** on the context menu.
3. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Settings for special hardware

Adjusting the scancode set of a PS/2 keyboard

If a key is pressed on the PS/2 keyboard, the keyboard processor sends a data packet that is called scan code. The two common scan code sets (sets 2 and 3) contain different scan codes.

The KVM switch interprets all inputs of the PS/2 keyboard with scan code set 2.

If the pipe ("|") cannot be entered or if the arrow keys of the keyboard do not work as expected, it is recommended to switch to scan code set 3.

How to select the scancode set of the PS/2 keyboard:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user console you want to configure. Now click on **Configuration** on the context menu.
3. Click on the **General** tab
4. Use the **Scancode Set** entry to select between the following options:

Set 2:	Enables scancode set 2
Set 3:	Enables scancode set 3

5. Click **OK** to save your settings.
6. Restart the user console to apply your changes.

Enabling the support for special PS/2 keyboards

How to enable the support for a special PS/2 keyboard:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules** .
2. Right-click the user console you want to configure. Now click on **Configuration** on the context menu.
3. Click the **General** tab
4. Use the **Enh. Keyboard** entry to select between the following options:

Default:	Standard keyboard
PixelPower Clarity (blue):	Special »*PixelPower Clarity (blue)*« keyboard
PixelPower Rapid Action:	Special »*PixelPower Rapid Action*« keyboard
SKIDATA1:	Special »*SKIDATA1*« keyboard

5. Click **OK** to save your settings.

Support of any USB device

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

IMPORTANT: The **Generic HID** mode supports many common HID devices. However, the operation of any particular HID devices in **Generic HID** mode cannot be guaranteed.

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

USB composite devies 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 the *Multi User* mode, the generic HID device is available at the first active user module. Once this user module logs off and another user module logs in, the generic HID device of the other user module is available.

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

1. In the directory tree, click **KVM matrix systems > [Name] > User modules** .
2. Right-click the user module you want to configure. Now click on **Configuration** on the context menu.
3. Click on the **General** tab.
4. Under **Generic HID**, you can choose between the following options:

Disabled:	You can connect either a USB keyboard or a USB mouse to the top **Keyb./Mouse** interfaceof the user module.
Enabled:	The data from any USB device connected to the top **Keyb./Mouse** interface is transmitted to the active target module.

IMPORTANT: To use the generic HID device, enable the USB HID mode **Generic HID** of the target modules you want to access (see page 89).

5. Click **OK** to save your settings.

Reinitialising USB input devices

After connecting a USB keyboard or mouse to the KVM extender, 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 directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user module you want to configure. Now click on **Configuration** on the context menu.
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 (recommended setting).
All devices:	All USB devices are regularly reinitialised.
Only faulty devices:	The status of USB devices is monitored. If the communication with a USB devices is interrupted, the device is reinitialised.

5. Click **OK** to save your changes.

Advanced functions

Setting the automatic user logout

A user console can be configured so 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 directory tree, click **KVM matrix systems > [Name] > User modules** .
2. Right-click the user console you want to configure. Now, click on **Configuration** on the context menu.
3. Click on the **General** tab.
4. Use the **Auto logout (minutes)** entry to set the time (**1** to **99** minutes) for the automatic logout.

> **NOTE:** The value »0« disables the automatic user logout.

5. Click **OK** to save your settings.

Automatically disconnecting the access to target modules

User consoles can be configured in a way that the active access to a target module is automatically disconnected after the 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, which is displayed on the right-hand side, is shown on the screen of the user console.

```
CON-Admin
Not connected
```

How to automatically disconnect the access to a target module:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules**.
2. Right-click the user console you want to configure. Now click on **Configuration** on the context menu.
3. Click on the **General** tab.
4. Use the **Auto disconnect (min)** entry to set the time (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.

5. Click **OK** to save your settings.

Adjusting the logoff procedure of user modules of the »DVI-CON-2« series

You can connect user modules of the **DVI-CON-2** series to up to two digital matrix switches of the *ControlCenter-Digital* or the *DVICenter* series.

The button on the front panel of the user module or configured key combinations (select keys) let you switch between the connected matrix switches.

In the defaults of the matrix switches, the existing connection between the first and the second matrix switch is disconnected via logout during a switching operation while the connection to the second matrix switch is established. Due to the logout users are required to logon again after each switching operation.

In the settings of the matrix switches connected to the user module you can adjust that the connection is not disconnected via logout when switching but that it should be held. If you switch back to the matrix switch at a later point, you can continue work without having to log on again.

IMPORTANT: Activating this option can pose a security risk since other users can switch your session at this user module without having to log on again!

How to adjust the logoff procedure of user modules of the »DVI-CON-2« series:

IMPORTANT: Adjust this setting separately for both matrix switches connected to the user module.

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.
2. Right-click the user module you want to configure. Now click on **Configuration** on the context menu.
3. Click on the **General** tab.

4. Under **Stay connected to the matrix** you can choose between the following options:

No:	When switching to the second channel of the user module, the existing connection is disconnected via logout (*default*).
Yes:	When switching to the second channel of the user module, the existing connection is held. If you switch back to the matrix switch at a later point, you can continue work without having to log on again

5. Click **OK** to save your settings.

Channel auto-switching for user modules of the »DVI-CON-2« series

You can connect user modules of the **DVI-CON-2** series to up to two digital matrix switches of the *ControlCenter-Digital*, the *ControlCenter-Compact* or the *DVICenter* series.

The buttons on the front panel of the user module or configured key combinations (select keys) let you switch between the connected matrix switches.

You can configure the matrix switch to automatically switch to the other channel when a connection is lost on the channel selected by the user.

ADVICE: For example, you can use this function to automatically switch to a redundant matrix switch when a connection is terminated.

How to configure the channel auto-switching for user modules of the »DVI-CON-2« series:

IMPORTANT: Change this setting separately for both matrix switches connected to the user module.

1. In the directory tree, click on **KVM matrix systems > [Name] > User modules**.
2. Right-click on the user module you want to configure. Now click on **Configuration** in the context menu.
3. Click on the **General** tab.
4. Under **Channel auto-switching** you can choose between the following options:

Never:	The channel accessed by the user is maintained in case of a disconnection (*default*).
On error if device available:	If a connection is terminated, the device auto-switches to the other channel if this channel has an active connection.
Always on error:	If a connection is terminated, the device auto-switches to the other channel regardless of the conenction status of the other channel.

5. Click on **OK** to save your settings.

Viewing the status information of user modules

On the context menu of user modules you can call an interface with various status information of the user module. This interface displays the name and also information regarding the firmware version.

How to view the status information of user modules:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules**.
2. Right-click the user console and click on **Information** on the context menu.
3. The interface, which now opens, provides the following information:

Name:	User module name
Device ID:	Physical ID of the user module
Status:	Current status (**on** or **off**) of the user module
Comment:	User comment about the target module
Firmware name:	Firmware name
Firmware revision:	Firmware version

4. Click **Close** to close this interface.

Remembering the username in the login box

If the same user often works at a certain user console, his 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 directory tree, click **KVM matrix systems > [Name] > User modules** .
2. Right-click the user console you want to configure. Now, click **Configuration** on the context menu.
3. Click on the **General** tab.
4. Use the **Remember last user** entry to select between the following options:

yes:	the system remembers the last user
no:	the system does not remember the last user

5. Click **OK** to save your settings.

Setting the hold time for the screensaver

The screensaver deactivates the screen display at the user console 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 directory tree, click **KVM matrix systems > [Name] > User modules** .
2. Right-click the user console you want to configure. Now click on **Configuration** on the context menu.
3. Click on the **General** tab.
4. Use the **Screensaver (min)** entry to set the holding time (**1** to **99** minutes) for activating the screensaver.

   NOTE: The value »0« deactivates the screensaver of the user console.

5. Click **OK** to save your settings.

Enabling or disabling DDC/CI support

Most of the target and user modules supported by the *DVICenter* 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 user modules shows which modules (after an update to the latest firmware) support DDC/CI.

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

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

1. In the directory tree, click on **KVM matrix systems > [Name] > Matrix switches**.
2. In the view area, right-click on the master matrix switch. Now click on **Configuration** in the context menu.

3. Under **DDC/CI support** you can choose between the following options:

Disabled:	The transmission of DDC/CI signals is disabled (default).
Target > monitor:	The transmission of DDC/CI signals is carried out exclusively from the target to the monitor.
Bidirectional:	The transmission of DDC/CI signals is carried out by bidirectionally.

4. Click on **OK** to save your settings.

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

1. In the directory tree, click on **KVM matrix systems > [Name] > User modules**.
2. Right-click on the user module you want to configure. Now click on **Configuration** in the context menu.
3. Under **DDC/CI support** you can choose between the following options:

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 the target to the monitor
Bidirectional:	The transmission of DDC/CI signals is carried out by bidirectionally.

4. Click on **OK** to save your settings.

Viewing the cascade information

The cascade information provides you with an overview of the physical connections of the KVM matrix system. In addition to the master device, the connected slave devices, user consoles, and target modules.

The cascade information also displays the physical device ID, the connection port at the KVM matrix system, and the status.

How to view the cascade information:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules**.
2. Right-click on the desired user console. Now click on the **Cascade information** entry on the context menu to view the cascade tree directory:

   NOTE: The user console, via whose context menu the cascade information has been called, is highlighted in red.

3. The cascade information provides the following information:

   - Name, port and status of the connected user consoles
   - Name, port and status of the connected target modules
   - Name and ports of slave devices

4. Click **Close** to close the cascade view.

Restarting user modules

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

How to restart user modules via web application:

1. In the directory tree, click **KVM Matrix systems > [Name] > User modules**.
2. Right-click the device. Now click **Restart** on the context menu.
3. Confirm the safety request with **Yes.**

Updating the firmware of user consoles

You can use the web application to update the firmware of user consoles.

How to update the firmware of user consoles:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules**.

   ADVICE: Right-click the table and select **Column view > Information** to show the module's firmware version.

2. Mark the user modules to be updated in the main view.

   IMPORTANT: Only mark user consoles for which the update file to be selected in the following has been designed for!

   ADVICE: Keep the **Ctrl** key pressed to select several devices from the list.

3. Right-click one of the marked devices and select **Update** on the context menu.
4. Use the **Update type** entry to define whether the selected devices are to be updated one after the other (**sequential**) or at the same time (**parallel**).
5. Click **Search** and use the file dialog to select the location and the name of the update file.
6. Click **Start update**.

   NOTE: The **System monitoring > Update failed** directory provides the protocols of *failed* updates.

Target groups and view filters

Difference between target groups and view filters

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

Intended use of target groups

The creation of target groups enables the administrator to quickly assign the rights of a user or a user group for all target modules within a group.

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

Intended use of view filters

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

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

Administrating target groups

The »New Targets« target group

By default, the *New digital 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 82) of either the user account or the user group.

Creating a new target group

How to create a new target group:

1. Click on **KVM Matrix systems > Target groups** in the tree view.
2. Right-click the display range. Now click on **New > Digital target group** or **Analog target group** on the context menu.
3. Use the **Name** entry to name the target group.
4. *Optional:* Use the **Comment** entry to change or enter any comment regarding the matrix switch.
5. Click **OK** to save your settings.

NOTE: The rights for this target group can be assigned when the device group rights (see page 71) of either the user account or the user group are changed.

Changing the name or comment of a target group

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

1. Click on **KVM Matrix systems > Target groups** in the tree view.
2. Right-click the target group to be edited. Now click on the **Configuration** entry in the context menu.
3. Use the **Name** entry to name the target group.
4. *Optional:* Use the **Comment** entry to change or enter a comment regarding the matrix switch.
5. Click **OK** to save your settings.

Administrating target group members

NOTE: Up to 20 target modules can be assigned to each target group of the KVM matrix system.

How to administrate the members of a target group:

1. Click on **KVM Matrix systems > Target groups** in the tree view.
2. Right-click the target group to be configured. Now click on the **Configuration** entry in the context menu.
3. Click the **Members** tab to add members to or delete them from the target group.

The dialog consists of two tables that list the target modules of the KVM matrix system:

Unassigned:	lists the target modules that are *not* assigned to this group
Assigned group members:	lists the target modules that are assigned to this group

4. Use the drop-down menu to select the type of target modules to be displayed. You can select between the following options:

[All targets]	lists all target modules of the system.
[Unassigned]	only lists the target modules of the *[Unassigned]* view.
Search...	After this option has been selected, another window opens. Select the desired *View filter* in the tree view to display only the therein contained devices.

5. Mark the target module you want to add to or delete from the group.
6. Now, click the button (*right arrow*) to add the target module to the group or the button (*left arrow*) to delete it.
7. Click **OK** to save your changes.

Deleting a target group

How to delete a target group:

1. Click on **KVM Matrix systems > Target groups** in the tree view.
2. Right-click the target group to be deleted. Now, click on the **Delete** entry in the context menu.
3. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Administrating view filters

Creating a new view filter

How to create a new view filter:

1. Click on **KVM Matrix systems > View filter** in the tree view. Now click on **New folder** entry in the context menu.
2. Use the **Name** entry to enter a name.
3. *Optional:* Use the **Comment** entry to enter a comment.
4. Click **OK** to save your inputs.

> **NOTE:** The folders can be interlaced in any way.

Assigning a target module to a view filter

Directly after a new target module is connected to the KVM matrix system, it is assigned to the *[Unassigned]* group. By assigning the target module to another group, the existing assignment is cancelled.

How to assign a view filter to a target module:

1. Click the **KVM Matrix systems > View filter** entries in the tree view.
2. Click the folder of the view filter to which the target module is assigned to.

   > **NOTE:** The *[All targets]* folder lists all target modules within the system.

3. Right-click the target module to be assigned and click on **Copy device**.
4. Open the folder to which the target module is to be assigned to.
5. Right-click the main view and click **Paste device** in the context menu.

Cancelling a target module's assignment to a view filter

The assignment can be cancelled by moving the target module to the *[Unassigned]* folder or by selecting the **Remove from folder** entry in the context menu.

How to cancel a target module's assignment to a view filter:

1. Click the **KVM Matrix systems > View filter** entries in the tree view.
2. Click the folder of the view filter to which the target module is currently assigned to.

   > **NOTE:** The *[All targets]* folder lists all target modules within the system.

3. Right-click the target module whose assignment you want to delete. Now click on **Remove from folder** in the context menu.

   The target computer is now moved to the *[Unassigned]* group.

Renaming a view filter

How to rename a view filter:

1. Click the **KVM Matrix systems > View filter** entries in the tree view.
2. Right-click the view filter you want to rename and click **Rename folder** in the context menu.
3. Edit the name and press **Enter**.

Deleting a view filter

The created view filter can be deleted at any time. The target modules assigned to this view filter are automatically moved to the *[Unassigned]* folder.

> **NOTE:** The *[Unassigned]* and *[All targets]* view filters are administrated by the web application and therefore cannot be deleted.

How to delete a view filter:

1. Click the **KVM Matrix systems > View filter** entries in the tree view.
2. Right-click the view filter you want to delete. Now click **Delete folder** in the context menu.
3. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Accessing the target modules via select keys

After the select key modifier(s) and a select key set have been adjusted and a select key set has been activated in the user account, the target module can be accessed with key combinations.

Changing the select key modifier or the valid keys

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

In combination with the 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 the valid keys for the select keys.

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

1. Click on the **KVM Matrix systems > [Name] > Matrix switches** entries in the tree view.
2. Right-click the master matrix switch and click the **Configuration** entry in the context menu.
3. Select at least one of the listed modifiers in the **Select key modifier** entry by marking the respective entry:

▪ **Ctrl**	▪ **Win**
▪ **Alt**	▪ **Shift**
▪ **Alt Gr**	

4. Use the **Valid keys** entry to select one of the following options:

Only numbers:	*only numerical keys* are interpreted as select keys when pressed in combination with the select key modifier
Only characters:	*only alphabetic keys* are interpreted as select keys when pressed in combination with the select key modifier
Numbers and characters:	*alphabetical and numerical keys* 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 **OK** to save your settings.

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.

A select key set can be used to define the select key sets for the target modules you would like to access.

NOTE: Global select key sets are displayed in the personal profile of all users of the KVM matrix system.

Creating a select key set

How to create a select key set:

1. Click on the **KVM Matrix systems > [Name] > Matrix switches** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Click on the **[+]** button in the *Select key set* entry and enter the following data:

Name:	Enter the name of the select key set.
Comment:	Enter a comment regarding the select key set.
Global:	Mark this entry if you want the select key set in the personal profile to be available for all users of the KVM matrix system.

5. Click **OK** to save your settings.

Changing name, comment or global allocation of a select key set

How to change the name, comment and/or *Global* setting of a select key set:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Select key set** entry to select the select key set to be activated and click **Change.**

5. Change the desired data of the select key set:

Name:	Enter the name of the select key set.
Comment:	Enter any comment regarding the select key set.
Global:	Mark this entry if you want the select key set in the personal profile to be available for all users of the KVM matrix system.

6. Click **OK** to save your settings.

Defining select keys for the target modules

NOTE: Global select key sets can only be edited by users with activated *Superuser* right (see page 73).

Without this right, only the select keys, which are assigned to the target modules, can be viewed.

How to define the select keys for target modules:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Select key set** entry to choose the select key set to be edited and click **Edit.**
5. Click the **Assigned targets** tab.
6. Use the drop down menu to select the type of target modules to be displayed in the select window. The following options are available:

[All targets]	displays all target modules within the KVM matrix system
[Not assigned]	only displays the target modules that are *[Not assigned]* to the view filter
Search...	This option opens another window. Select the desired view filter in the tree view to display only the herein contained devices in the select window.

7. Use the **Keys** column to select the device whose select key you want to change and then enter the desired character(s).
8. Click **OK** to save your changes.

Assigning a select key set to a user account

By assigning a select key set to a user account, the select keys defined in a set are interpreted and the particular target module is accessed.

How to assign a select key set to a user account or cancel the existing assignment:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Select key set** entry to choose the select key set to be activated.
5. Click **OK** to save your settings.

Deleting a select key set

NOTE: Only users with the *Superuser* right (see page 73) are allowed to delete a global select key set.

How to delete a select key set:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Select key set** entry to choose the select key set to be deleted and click **Delete**.
5. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Automatically or manually switching the target modules

Auto scanning all target modules (Autoscan)

The *Autoscan* function successively accesses all target modules that are mentioned in the active scancode set and available to the user.

The *Scantime* setting (see page 123) enables you to define how long a 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 *Autoscan* function is active, the keyboard and mouse inputs are transmitted to the currently accessed target module.

During your inputs, the *Autoscan* function stops and continues after you finished your inputs.

Applying the *Autoscan* function

Requirements for using this function:

- *Creating a scanmode set* (see page 126)
- *Assigning a scanmode set to a user account* (see page 128)

Configuring the scantime of the *Autoscan* function

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

Select a time span between 1 and 99 seconds to define how long the target module is to be accessed.

How to change the scantime:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Scantime** entry to enter a time span between **1** and **99** seconds.
5. Click **OK** to save your settings.

Auto scanning all active target modules (Autoskip)

The *Autoskip* function successively accesses any target module that is included into the active scancode set and available to the user.

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

The *Scantime* setting (see page 123) 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 imputs and continues after all inputs are finished.

Applying the *Autoskip* function

Requirements for using this function:

- *Creating a scanmode set* (see page 126)
- *Assigning a scanmode set to a user account* (see page 128)

Configuring the scantime of the *Autoskip* function

By default, each target module is accessed for five seconds. After that, the target module gets disconnected and the next target module is accessed.

Select a time span between 1 and 99 seconds in order to define how long the target module is to be accessed.

How to change the scantime:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Scantime** entry to enter a duration between **1** and **99** seconds.
5. Click **OK** to save your settings.

Scanning the target modules manually (Stepscan)

By pressing a key, the *Stepscan* function successively accesses all target modules that are indicated in the scanmode set and approved for the user.

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 126)
- *Assigning a scanmode set to a user account* (see page 128)
- *Configuring keys to scan the targets manually* (see page 125)

Configuring keys to scan the targets manually

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

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

How to select the keys for using the *Stepscan* function:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Stepkeys** entry to select between the following options:

Up/Down:	arrow keys *Up* and *Down*
PgUp/PgDn:	*page↑* and *page↓* keys
Num Up/Down:	arrow keys *Up* and *Down* of the numeric keypad
Num PgUp/PgDn:	*page↑* and *page↓* keys of the numeric keypad
Num +/-	*plus* and *minus* keys of the numeric keypad

5. Click **OK** to save your changes.

Administrating scanmode sets

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

The select key sets allow you to define the computers to be accessed when performing the *Autoscan*, *Autoskip* or *Stepscan* function.

NOTE: The global scanmode sets are displayed in the *Personal Profile* menu of all users of the matrix system.

Creating a scanmode set

How to create a scanmode set:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **[+]** button in the **Scanmode set** row to collect the following data:

Name:	Enter the name of the scanmode set.
Comment:	Enter a comment regarding the sscanmode set.
Global:	Mark this entry if you want the scanmode set in the *Personal Profile* to be available for all users of the KVM matrix system.

5. Click **OK** to save your settings.

Changing a scanmode set's name, comment or global assignment

How to change a scamode set's name, comment and/or *Global* setting:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Select the scanmode set to be edited in the *Scanmode set* row and click **Change.**
5. If required, change the following data:

Name:	Enter the name of the scanmode set.
Comment:	Enter any comment regarding the scanmode set.
Global:	Mark this entry if you want the scanmode set in the *Personal Profile* to be available for all users of the KVM matrix system.

6. Click **OK** to save your settings.

Assigning the target modules to a scanmode set

NOTE: Global scanmode sets can only be edited by users with activated *Superuser* right (see page 73).

Without this right, only the assigned target modules can be viewed.

How to define the select keys for target modules:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Select the scanmode set to be edited in the *Scanmode set* row and click **Edit.**
5. Click the **Member** tab.

6. Use the drop down menu to select the type of target modules to be displayed in the select window. The following options are available:

[All targets]	Displays all target modules within the system.
[Not assigned]	Only displays the target module that are *[Not assigned]* to the view filter.
Search...	This option opens another window. Select the desired *View filter* in the tree view to only display the herein contained devices in the select window.

7. The interface consists of two tables that list the user accounts of the KVM matrix system:

Not assigned	Lists the target modules that are *not* assigned to the scan-mode set
Assigned targets	Lists the target modules that are assigned to the scanmode set

8. Mark the target module you want to add to or delete from the scanmode set.
9. Click the button (*right arrow*) to add the target module to the scanmode set or the button (*left arrow*) to delete it from the scanmode set.
10. Click **OK** to save your changes.

Assigning a scanmode set to a user account

By assigning a scanmode set to a user account, the target modules selected in the set are accessed when performing the *Autoscan*, *Autoskip* or *Stepscan* function.

How to assign a scanmode set to the user account or cancel the existing assignment:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Select the scanmode set to be activated in the **Scanmode set** entry.
5. Click **OK** to save your settings.

Deleting a scanmode set

NOTE: Only users with activated *Superuser* right (see page 73) can delete a global scanmode set.

How to delete a scanmode set:

1. Click on the **User area > User** entries in the tree view.
2. Right-click on the user account to be configured and click **Configuration** in the context menu.
3. Click the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Use the **Scanmode Set** entry in the *Matrix switch user configuration* to select the scanmode set to be deleted and click the **Delete.**
5. Confirm the confirmation prompt by clicking **Yes** or cancel this process by clicking **No**.

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 at all user consoles.

Configuration

Many of the on-screen display's basic functions can be adjusted to your demands.

You can define the hotkey as well as the position and font size of the on-screen display.

Any settings that can be adjusted to your needs are described on the following pages.

Changing the hotkey to call the OSD

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

NOTE: In the default, the hotkey **Ctrl** is preset.

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. Click on **KVM Matrix systems > [Name] > Matrix switches** in the tree view.
2. Right-click the display range of the master matrix switch and click the **Configuration** entry in the context menu.
3. Select at least one of the listed modifiers in the **Hotkey modifier** entry by marking the entry:

   - **Ctrl**
   - **Alt**
   - **Alt Gr**
   - **Win**
   - **Shift**

4. Use the **Hotkey scancode** entry to select one of the following options:

Num	*Num* key
Pause	*Pause* key
Insert	*Insert* key
Delete	*Delete* key
Home	*Home* key
End	*End* key
PgUp	*Page Up* key
PgDn	*Page Down* key
Space	*Space* key

5. Click **OK** to save your settings.

Opening the on-screen display via double keypress

In addition to opening the on-screen display (OSD) via hotkey (see above), you can open the OSD by pressing a previously selected key twice (**Ctrl**, **Alt**, **Alt Gr**, **Win**, **Shift** or **Print**).

How to enable/disable opening the on-screen display via double keypress:

1. In the directory tree, click on **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click **Configuration** on the context menu.
3. Under **OSD via double keypress,** select one of the following options:

Off	The OSD can be opened only by pressing the hotkey.
Ctrl, **Alt**, **Alt Gr**, **Win**, **Shift** or **Print**	The OSD can also be opened by pressing the selected key twice.

4. Click **OK** to save your settings.

Automatic closing of the OSD after inactivity

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

The period of inactivity can be defined by entering a value between **5** and **99** seconds.

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

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

1. In the tree directory, click on **User area > User**.
2. Right-click on the user account you want to edit. Now click on **Configuration** in the context menu.

3. Click on the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Close OSD when inactive for [s]** you can define a time span between **5** and **99** sekonds.
5. Click on **OK** to save your settings.

Adjusting the transparency of the OSD

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's transparency in the personal profile of a user.

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

1. In the tree directory, click on **User area > User**.
2. Right-click on the user account you want to edit. Now click on **Configuration** in the context menu.
3. Click on the **Matrix systems > Personal Profile > Matrix switch** tabs.
4. Under **OSD Transparency**,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

5. Click on **OK** to save your settings.

Adjusting the information display

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 settings of the information display:

1. In the directory tree, click on **User area > User**.
2. Right-click the user account you want to edit. Now click on **Configuration** on the context menu.
3. Click on **Matrix systems > Personal Profile > Matrix switch**.

4. Under **Display mode**, select between the following options:

Temp:	Show temporary information display (5 seconds)
Perm:	Permanent information display
Off:	Disable information display

5. Click **OK** to save your settings.

Changing the colour of the information display

By default, information displays (like when accessing a target module) are shownin light green. In their peronal profiles, users can change the colour of the information display.

How to change the colour of the information display:

1. In the directory tree, click on **User area > User**.
2. Right-click the user account to be edited. Now click on **Configuration** on the context menu.
3. Click on **Matrix systems > Personal profile > Matrix switch**.
4. Under **Display color,** you can choose between the following options:

Light green:	Show information display in light greendefault)
Black, dark red, dark yellow, dark blue, purple dark turquoise, silver, yellow, blue, fuchsia, light turquoise or **white**	Show information display in the selected colour

5. Click **OK** to save your settings.

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 the view filter, the display of the target modules can be filtered.

If you want to activate a certain view filter directly after accessing the *Select* menu, you can configure the user account accordingly.

NOTE: The preset view filter is applied directly after your login at the matrix system.

By applying the 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 directory tree, click on **User area > User**.
2. Right-click the user account you want to edit and click on **Configuration** in the context menu.
3. Click on **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Def. view filter,** you can select between the following options:

ALL:	Displays all target modules
LAST:	The view filter that was used by the last user is applied when the *Select* menu is called in the OSD.
View filter name:	The selected view filter is applied if the *Select* menu is called in the OSD.

5. Click **OK** to save your settings.

IMPORTANT: When the *LAST* option has been selected and the user account is shared by two persons at the same time, the view filter of the last active person is stored.

Selecting the mode for OSD synchronisation

If both the synchronisation signal and the colour information are transmitted through one cable, the on-screen display is displayed in a slightly deviating, palish colour.

In this case you can select several synchronisation modes for the graphics signal of the target computer.

How to select a mode for the OSD synchronisation:

1. Click on **KVM Matrix systems > [Name] > Target modules**.
2. Right-click the target module and click **Configuration** on the context menu.
3. Under **RGB synchronisation for OSD** in the *Target module configuration* paragraph, you can select one of the following options:

Standard:	RGB mode for OSD sync is active
Green:	RGsB mode for OSD sync is active
All:	RsGsBs mode for OSD sync is active

4. Click **OK** to save your settings.

Selecting a keyboard layout for OSD entries

If the characters entered at 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 user console keyboard:

1. Click on **KVM Matrix systems > [Name] > User modules**.
2. Right-click the console to be configured and click **Configuration** on the context menu.
3. Use the **Keyboard layout** entry under *User console config* to select one of the following options:

   - **German**
   - **English (US)**
   - **English (UK)**
   - **French**
   - **Spanish**
   - **Lat. American**
   - **Portuguese**

4. Click **OK** to save your settings.

Operating the on-screen display by mouse

In the default settings of the KVM matrix system, the on-screen display (OSD) can only be called with a configured key combination.

If a Microsoft »IntelliMouse Explorer« or another compatible mouse with five keys is connected to the user console, you can call the on-screen display through the mouse keys four and five at the side of the mouse

How to enable/disablethe mouse support to operate the on-screen display:

1. Click on **KVM Matrix systems > [Name] > User modules**.
2. Right-click the console to be configured. Now, click the **Configuration** button on the context menu.

3. Use the **OSD by Mouse** entry under *User console config* to select one of the following options:

Yes:	Opens the OSD via mouse key 4 and 5 of a compatible mouse
No:	Disables the possibility to call the OSD by mouse

4. Click **OK** to save your settings.

Enabling/disabling the on-screen display

This function defines if the users at the user module are enabled to activate the on-screen display or if they are only allowed use select keys for the switching.

How to enable/disable the on-screen display:

1. Click on **KVM Matrix systems > [Name] > User modules**.
2. Right-click the console to be configured. Now, click the **Configuration** button on the context menu.
3. Use the **OSD blocked** entry under *User console config* to select one of the following options:

Yes:	On-screen display blocked
No:	On-screen display available

4. Click **OK** to save your settings.

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 user modules. However, you can also individually set the OSD resolution for each user module.

How to adjust the OSD resolution of the entire system:

1. Click on **KVM Matrix systems > [Name] > User modules**.
2. Right-click the console you want to configure. Now click the **Configuration** button on the context menu.

3. Under **OSD resolution,** select one of the following options:

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 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

4. Click **OK** to save your settings.

How to adjust the OSD resolution of a particular user module:

1. Click on **KVM Matrix systems > [Name] > User modules**.
2. Right-click the console you want to configure. Now click the **Configuration** button on the context menu.
3. Under **OSD resolution**, select one of the following options:

System:	Use systemwide (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. (*default*).
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

4. Click OK to save your settings.

Video tuning

When a user console accesses an analogue target module for the first time via bridging, a video profile is automatically created for this connection.

This video profile stores information about the different cable parameters. This information ensures that the video image is displayed perfectly at the user console.

The video profile can be recalculated at any time or manually adjusted by the user.

NOTE: Changing the cable length between a console and the matrix switch or between the target module and the matrix switch has an influence on the image quality.

When the cabling has been changed, it is recommended to carry out the automatic video tuning (see below).

Deleting the existing video profile has the effect that the video tuning is automatically performed when a user console accesses a target module for the first time (after the profile has been deleted).

Rights administration

Changing the right to configure video profiles

How to change the right to configure the video profiles:

1. If you want to change this right of a user account, click the **User area > Users** entry in the tree view.

   In case of a user group, click the entries **User area > User groups**.

2. Right-click the user account or the user group you want to configure. Now, click the **Configuration** entry in the context menu.

3. Click the **Matrix systems > Global device rights** tab.

4. Use the **Video Configuration** entry to select one of the following options:

yes:	allows configuration of video profiles.
no:	denies configuration of video profiles.

5. Click **OK** to save your settings.

Special functions for cascaded KVM matrix systems

Cascading increases the number of target computers that can be connected to the KVM matrix system. For this, several matrix switches are integrated into the system.

The configuration settings for a KVM matrix switch are described in this chapter.

Basic functions

Changing names or comments of matrix switches

How to change names or comments of matrix switches:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Rename the matrix switch under **Name**.
4. *Optional:* Use the **Comment** entry to change or enter a comment regarding the matrix switch.
5. Click **OK** to save your settings.

Deleting slave matrix switches from the system

If the KVM matrix system is not able to detect a matrix switch, which was already connected to the system, the device is considered inactive.

Delete the list entry of matrix switches you want to permanently remove from the system.

NOTE: Only administrators and users with the *Superuser* right can delete inactive matrix switches.

How to delete inactive or disconnected matrix switches:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to delete and click **Delete** on the context menu.
3. Confirm the confirmation prompt by pressing **Yes** or cancel the process by pressing **No**.

Configuration settings

Defining the cascade mode of a matrix switch

In a cascaded KVM matrix system, the single matrix switches auto detect if they have been installed as master or as slave device within the cascaded system.

NOTE: Applying the *Auto* setting in the cascade mode may change the matrix switch's operating mode if the devices' cabling has been accidentally changed.

To avoid this, the operating mode of each matrix switch can be separately adjusted.

IMPORTANT: The settings regarding the cascade mode are to be carried out in the web application of the matrix switch whose setting you want to change.

How to change the cascade mode of matrix switches:

1. In the directory tree, click **KVM Matrix systems > Name > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **General** tab.
4. Use the **Cascade mode** entry to select between the following options:

Auto:	The matrix switch decides whether it is operating in the master or slave mode.
Master:	In this operating mode, only user consoles can be connected to the *Console* ports. The names of the connected target modules can be edited. The edited names are automatically updated at the slave devices within the cascade.
Slave:	In this operating mode, the connected target modules cannot be renamed. The target modules are automatically named by the master device.

5. Click **OK** to save your settings.

Forwarding target names to slave matrix switches

Within a cascaded KVM matrix system, the target module names from the superior matrix switch are forwarded to the connected matrix switch(es). This way, the target modules named identically within the system.

If you want to define different target module names within the different matrix switches of the cascaded system, deactivate the *Forward target names* function.

IMPORTANT: Deactivating the function to forward target names in the *first level* of the matrix switch only affects the directly connected matrix switches of the *second level*.

If the *third level* also includes slave matrix switches, this function has to be deactivated in the matrix switches of the second level!

How to enable or disable forwarding target names to slave matrix switches:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the user module you want to configure. Now click **Configuration** on the context menu.
3. Click the **General** tab.
4. Use the **Forward target names** entry to select between the following options:

On:	The target module names are forwarded from the superior matrix switch to the connected matrix switch(es).
Off:	The target module names are not forwarded from the superior matrix switch to the connected matrix switch(es).

5. Click **OK** to save your settings.

Viewing the status information of matrix switches

The context menu of matrix switches enables you to call an interface, which provides various status information of the device. Besides technical data, the name, the status and the MAC address are displayed.

How to view the status information of matrix switches:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the desired matrix switch. Now click **Information** on the context menu.

3. The display lists the following information:

Name:	Matrix switch name
Device ID:	Physical ID of the matrix switch
Status:	Current status (**On** or **Off**) of the matrix switch
Comment:	User comments about the matrix switch
CPU hardware revision:	Hardware revision of the matrix switch
Console ports:	Number of console ports at the matrix switch
FPGA revision:	Revision of the FPGA module
Firmware name:	Firmware name
Firmware revision:	Firmware version
MAC address A:	MAC address of *network interface A*
MAC address B:	MAC address of *network interface B*
Serial number:	Serial number of the matrix switch
Target ports:	Number of target ports at the matrix switch

4. Click **OK** to leave the interface.

Viewing cascade information

The cascade information provides you with an overview of the physical connections of the KVM matrix system. In addition to the master device, the connected slave devices as well as the user modules and target modules are displayed.

The cascade information also displays the physical device ID, the connection port at the KVM matrix system and the status.

How to view the cascade information:

1. In the directory tree, click **KVM Matrix systems > Name > Matrix switches**.
2. Right-click the desired matrix switch. Now, click on **Cascade information** to view the cascade tree directory.

> **NOTE:** The user console, via whose context menu the cascade information has been called, is highlighted in red.

3. The cascade information (see figure above) provides the following information:

- Name, port and status of the connected user modules
- Name, port and status of the connected target modules
- Name and ports of slave devices

4. Click **Close** to close the window.

Copying config settings of matrix switches

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 directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the new matrix switch. Now click **Move to...** on the context menu.

   A new window now lists all inactive matrix switches.
3. Select the matrix switch whose configuration settings you want to copy.
4. Click **OK** to copy the config settings.

Expanding switchable signals

You can expand a computer's or a console's switchable signals either through *channel grouping* or *stacking*.

EXAMPLE: To transmit a second video signal and a USB 2.0 signal of the same computer, in addition to the **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 the **DVI-CON** user module, connect the **DVI-CON-Video** (second video channel) and a **U2-CPU** module (USB2.0/RS232) to the console, the aforementioned computer is accessing.

With the *DVICenter*, you can switch various computer modules of *one* computer or various user modules of *one* console at the same time.

To expand the switchable signals, you can use two different ways of connection:

- **Channel grouping:** In the *Config Panel* 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 accessed computer. If you switch to another computer after pressing 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 accessed computer.

- **Stacking:** In *Stacking* mode, you can switch multiple matrix switches at the same time. Connect multiple matrix switches to the **Bus** ports. Connect an *additional* satellite matrix switch for each additional user module of *one* console.

Expanding the system through channel grouping

The web application lets you assign up to seven additional video channels and one USB 2.0 or RS 232 channel to the KVM channel of the console.

You can assign up to seven additional video channels to the KVM channel of the computer, too. In addition, you can create a **pool** of four devices for the USB 2.0/RS 232 channel.

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 *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 user 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 directory tree, click **KVM matrix systems > [Name] > User modules** or **Target modules**.
2. Right-click a user or computer module that is not assigned to a *channel group*.
3. On the context menu, click **Channel grouping**.

   The chosen module is assigned to the first KVM channel and is shown in the **Assigned** column. The left 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 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 a **pool** of four devices for the USB 2.0/ RS 232 channel.

   NOTE: All channels of a channel group are switched at the same time.

4. In the left column (**Unassigned**), click on the module you want to add. In the right column (**Assigned**), 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 (*arrow down*) or (*arrow up*). The chosen channel is moved up or down.

5. Click (*arrow right*) to assign the module to the chosen channel.
6. Repeat steps 4 and 5 to add another module to the *channel group*.
7. Click **OK** to save the new *channel group*.

   NOTE: The user module and the computer modules of the channel group are marked with a *plus* sign in the list of modules.

   Click the *plus* sign to view the list of modules.

Adding or deleting modules from a channel group

How to add modules to or delete them from a channel group:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules** or **Target modules**.
2. Right-click a user module or a computer module that is already assigned to the channel group to which you want to add another module to orfrom which you want to delete a module.
3. On the context menu, click **Channel grouping**.

   The display shows the current configuration. The left 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 a **pool** of four devices for the USB 2.0/ RS 232 channel.

4. Add more modules to or delete them from the *channel group*:

Adding modules:	▪ In the left column (**Unassigned**), click the module you want to add. In the right column (**Assigned**) click the channel to which you want to add the module to. ▪ Click (*arrow right*) to assign the module to the chosen channel.
Deleting modules:	▪ In the right column (**Assigned**), click the module you want to delete from the *channel group*. ▪ Click (*arrow left*) to delete the module's assignment.

5. Click **OK** to save the new *channel group*.

> **NOTE:** The user and computer modules included in the channel group are marked with a *plus* sign in the list of modules.
>
> Click the *plus* sign to view the list of modules.

Deleting a channel group

How to delete a multichannel configuration:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules** or **Target modules**.
2. Right-click a user or computer module you want to delete from a *channel group*.

3. On the context menu, click **Channel group**.

   The current configuration is shown.

   NOTE: The web application deletes a channel group if it does not contain any other channels than KVM channel 1.

4. In the right column (**Assigned**), click a module that is assigned to one of the 2 to 8 channels or to the USB/RS232 channel.

   Click (*arrow left*) to delete the module's assignment.

5. Repeat step 4 to delete the assignment of other modules.

6. Click **OK** if only one module is left assigned to KVM channel 1.

   The *channel group* is deleted.

Displaying an overview of channel groups

The overview of channel groups lists all grouped modules within the KVM system.

How to display an overview of all channel groups:

1. In the directory tree, click **KVM matrix systems > [Name] > User modules** or **Target modules**.

2. Right-click a module and click **Channel grouping overview** on the context menu.

3. Now the overview of channel groups is displayed.

   The overview lists the names of modules which are the leading KVM channels of the groups. Click the *Plus* icon next to such a module to view the modules belonging to the group.

   NOTE: The module that is highlighted in red is the module on which you opened the overview.

   In addition to module names, name and port of the connected matrix switch, the channel number within the group and the module ID are displayed.

   Click **Close** to close the window.

Expanding the system through stacking

In *Stacking* mode, you can switch multiple matrix switches at the same time.

For this, connect the matrix switches via **Bus** ports and assign them with continuous bus addresses.

Each stacking matrix switch consists of a matrix switch that provides the **KVM Main Channel**. You can add up to 9 satellite matrix switches to the matrix switch. The satellites can be used either as **Video Follower Channel** or as **USB/RS232 Main Channel**.

IMPORTANT: Within a channel, you can only use compatible target and user modules:

Video Follower Channel: User and target modules of the *DVI-CON* or *DVI-CPU* series

USB/RS232 Main Channel: User and target modules of the *U2-CON* or *U2-CPU* series

NOTE: Connect the user modules of *one* console to the same port numbers of the different channels.

The same applies for the different target modules of *one* computer.

When using three matrix switches, for example, you can transmit a second video signal and USB 2.0 signals in addition to the standard signals of a user module (video signal and keyboard and mouse signals):

Matrix switch	User module	Signals
Matrix switch 1 (Primary)	DVI-CON	DVI, PS/2, USB
Matrix switch 2 (Satellite 1)	DVI-CON-Video	DVI
Matrix switch 3 (Satellite 2)	U2-R-CON	USB 2.0, RS232

Adjusting the bus address of matrix switches

The primary matrix switch automatically makes the stack matrix switches access the same port that the user accesses at the primary matrix switch.

This requires the correct setting of the bus address in the individual matrix switches.

How to change the bus address of a matrix switch:

1. Click on **KVM Matrix systems > [Name] > Matrix switches** in the tree view.
2. Right-click the matrix switch and click the **Configuration** entry on the context menu.
3. Choose **System** and press **Enter**.
4. Choose **Bus address** and select one of the following options:

primary:	The central module is operated by the user. It switches the satellite matrix switches automatically.
satellite 1 … 9:	Assign the addresses continuously to the individual stacking matrix switches.

5. Press **OK** to close the window.

Replicating the database of a KVM matrix switch

Certain target modules can be connected to two separate KVM matrix switches.

In such cases it is useful to replicate the database of a matrix switch (*Master*) to the other matrix switch (*Destination*). The following paragraphs list the configuration settings of the master matrix switch that can be replicated to one or several destinations.

Overview of the data to be replicated

The web application defines the scope of data to be replicated. In the following, the data to be replicated are listed according to topic.

Matrix switch

The following configuration settings are copied from the master device to a destination:

▪ Hotkey modifier	▪ Hotkey
▪ Select key modifier	▪ Permitted select keys
▪ Multiuser display	▪ Forwarding of target names
▪ RS232 mode	▪ RS232 bit rate

Tradeswitch function

The following configuration settings are copied if the tradeswitch function is enabled on both the master device and the destination:

▪ Tradeswitch key modifier	▪ Permitted tradeswitch keys
▪ Settings for CrossDisplay Switching	

Target modules

The following data and settings of target modules are transmitted for all target modules that are connected to both master device and destination:

▪ Name	▪ Comment
▪ Configuration settings	

NOTE: If the destination already contains a local target with the same name, it is renamed to »Name (local)«.

Target groups

The following data and settings of the target groups are copied from the master device to a destination:

- Name
- Comment

NOTE: Only target modules that are connected to the destination are listed as members in the target group of the destination.

Global scan sets

The following data and settings of the global scan sets are copied from the master device to a destination:

- Name
- Comment

NOTE: Only target modules that are connected to the destination are listed as members in the scan set of the destination.

IMPORTANT: If the destination already contains a local scan set with the same name, it is renamed to »Name (<user name>)«.

Global select key sets

The following data and settings of the global select key sets are copied from the master device to a destination:

- Name
- Comment

NOTE: Only target modules that are connected to the destination are listed as members in the select key set of the destination.

IMPORTANT: If the destination already contains a local select key set with the same name, it is renamed to »Name (<user name>)«.

Replicating the database

IMPORTANT: The user account from which you accessed the web application of the master matrix switch is automatically used to log in to the destinations.

Please make sure that the user account exists on all destinations and holds the superuser right!

How to replicate the database:

1. Click **System > Tools** in the tree view.
2. Double-click **Replicate data**.

   The **Replicate database** window lists the installed destinations to which the database of the master matrix switch is replicated.

   NOTE: When establishing the connection to the devices, a symbol with a red dot is displayed next to the destinations.

   If the connection has been established, the device symbol and device name are shown in brackets.

3. Under **Port configuration**, you can define if you want to replicate the port configuration on the source devices.

   NOTE: If the number of ports differs between source device and target device, the corresponding settings are not replicated.

4. *Optional:* Add or delete a destination or change its address settings if required (see page 152).
5. Click **Continue**.

   The configuration settings are subsequently copied to the different devices. All status information are displayed and updated during the replication.

   IMPORTANT: A message alerts you about any problems that might occur during the replication of target groups, global scan sets and/or global select key sets.

   Please choose between the following options:

   - **All on this matrix switch:** overwrite all existing target data of this type (target groups, global scan sets or global select key sets) on this device
   - **All on all matrix switches:** overwrite all existing target data of this type on all devices
   - **Yes:** overwrite target data
   - **No:** skip target data

6. Click **Close**.

Adding a destination

How to add a new destination:

1. Click **System** in the tree.
2. Right-click **System** and click **Replicate database** in the context menu.
3. Click **Add**.
4. Enter the desired **IP address** or **DNS name**.
5. Add more destinations (steps 2 through 5) if necessary.
6. Click **Ok**.

Changing the address settings of a destination

How to change the IP address or DNS name of a destination:

1. Click **System** in the tree.
2. Right-click **System** and click **Replicate database** in the context menu.
3. Mark the device whose address settings you want to change.
4. Click **Change**.
5. Enter the desired **IP address** or **DNS name**.
6. Click **Ok**.

Deleting a destination

How to delete a destination:

1. Click **System** in the tree.
2. Right-click **System** and click **Replicate database** in the context menu.
3. Mark the device to be deleted.
4. Click **Delete**.
5. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Power switches

By integrating an RS232 power switch **G&D Hardboot CCX** or a compatible IP power switch remote power switch (**ePowerSwitch 1G R2**, **4M+ R2** and **8M+ R2**) into the KVM matrix system, you can use the system to enable or disable the power supply of devices.

For this, one or several power outlets are assigned to a target module. Afterwards, the outlets can be switched via the *Operation* menu of the console OSD.

Basic configuration of RS232 power switches

After installing the RS232 power switch **G&D Hardboot CCX** as described in the separate manual, the KVM matrix system auto-detects the latest connected RS232 power switch.

Changing name and comment of an RS232 power switch

How to change name and comment of an RS232 power switch:

1. In the tree directory, click on **KVM matrix systems > [Name] > RS232 power switches**.
2. Right-click on the RS232 power switch you want to configure and click on **Configuration** in the context menu.
3. Click on the tab **General**.
4. If desired, change the name of the RS232 power switch under **Name**.
5. Change or enter any comment about the power switch under **Comment**.
6. Click on **OK** to save your settings.

Deleting an RS232 power switch from the KVM matrix system

If the KVM matrix system is not able to detect an RS232 power switch that has already been connected to the system, the system assumes that the device is powered off.

If you want to permanently delete an RS232 power switch from the system, delete the device manually from the list of RS232 power switches.

NOTE: Only powered off RS232 power switches can be deleted.

How to delete a powered off RS232 power switches:

1. In the tree directory, click on **KVM matrix systems > [Name] > RS232 power switches**.
2. Right-click on the RS232 power switch you want to configure and click on **Delete** in the context menu.
3. Confirm the security prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Viewing the status information of RS232 power switches

The context menu of an RS232 power switch lets you open a window showing various status information.

How to view the status information of RS232 power switches:

1. In the tree directory, click on **KVM matrix systems > [Name] > RS232 power switches**.
2. Right-click on the RS232 power switch you want to configure and click on **Information** in the context menu.
3. A window showing the following information opens:

Name:	Name of the RS232 power switch
Status:	Current status (*online* or *offline*) of the RS232 power switch
Comment:	User comment about the RS232 power switch
Name:	Name of the matrix switch to which the RS232 power switch is connected
Device ID:	Device ID of the matrix switch to which the RS232 power switch is connected
Class:	Device class of the matrix switch to which the RS232 power switch is connected

NOTE: The paragraph *Power outlets* shows a list of all channels of the RS232 power switch. The table also shows, among other things, which target module is assigned to a channel.

4. Click on **Close** to close the window.

Basic configuration of IP power switches

Adding an IP power switch to a KVM system

How to add a KVM power switch to a KVM system:

1. In the tree directory, click on **IP power switches**.
2. Right-click on in the display window.
3. Select **New** from the contect menu and click on the name of the IP power switch you want to add.
4. Enter the name of the IP power switch under **Name**.
5. Enter any comment about the IP power switch under **Comment**.
6. Click on **OK** to save your settings.

Changing name and comment of an IP power switch

How to change name and comment of an IP power switch:

1. In the tree directory, click on **IP power switches**.
2. Right-click on the IP power switch you want to configure and click on **Configuration** in the context menu.
3. If desired, change the name of the IP power switch under **Name**.
4. Change or enter any comment about the IP power switch under **Comment**.
5. Click on **OK** to save your settings.

Configuring an IP power switch

Controlling the IP power switch via the matrix switch requires you to enter the IP address and the access data of the *Hidden Page Account* (see installation guide of the power switch) of the IP power switch.

How to configure an IP power switch:

1. In the tree directory, click on **IP Power switches**.
2. Right-click on the IP power switch you want to configure and click on **Configuration** in the context menu.
3. Fill in all boxes under **Configuration of the power switch**.
4. Click on **OK** to save your settings.

Deleting an IP power switch

If the KVM system is not able to detect an IP power switch that has already been connected to the system, the system assumes that the device is powered off.

If you want to permanently delete an IP power switch from the system, delete the device manually from the list of IP power switches.

NOTE: Only *powered off* IP power switches can be deleted.

How to delete a powered off IP power switch:

1. In the tree directory, click on **IP Power switches**.
2. Right-click on the IP power switch you want to delete and click on **Delete device** in the context menu.
3. Confirm the security prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Viewing the status information of an IP power switch

The context menu of an IP power switch lets you open a window showing various status information.

How to view the status information of an IP power switch:

1. In the tree directory, click on **IP Power switches**.
2. Right-click on the desired IP power switch and click on **Information** in the context menu.
3. A window opens and shows you the following information:

Name:	Name of the IP power switch
Status:	Current status (*online* or *offline*) of the IP power switch
Comment:	User comment about the IP power switch

NOTE: The paragraph *Power outlets* shows a list of all channels of the IP power switch. The table also shows, among other things, which target module is assigned to a channel.

4. Click on **Close** to close the window.

Assigning a power switch power outlet to a target module

If the system is equipped with at least on power switch, you can assign one or several power outlets to a target module.

The assigned power outlets can be switched via the *Operation* menu of the console OSD.

How to change the assignment of power switch outlets of target modules:

1. In the tree directory, click on **KVM Matrix systems > [Name] > Target modules**.
2. Right-click on the target module and click on **Assign power outlet…** in the context menu.

   A new window provides a list of all available and already assigned power switch power outlets. Here, you can assign power outlets to the target module or delete existing assignments.

   The dialogue consists of two tables, which list the power switch power outlets of the KVM matrix system:

Available power outlet(s):	Lists the power outlets that are *not* assigned to this target module
Assigned power outlet(s):	Lists the power outlets that are assigned to this target module

3. Mark the outlet you want to assign to the target module or whose assignment you want to delete.
4. Click on the button (*right arrow*) to assign this outlet or the button (*left arrow*) to delete the assignment.

Rights administration

Rights to switch the power outlets of a target module

How to change the rights to switch the power outlets assigned to a target module:

1. To change this right, click on **User area > Users** in the tree directory.

   If you want to change this right for a user group, click on **User area > User groups**.
2. Right-click on the user account or the user group you want to configure and select **Configuration** from the context menu.
3. Now click on **Matrix systems > Individual device rights**.
4. Select the desired target module in the list field on the left-hand side.

   Use the drop-down menu to select the target module to be displayed in the selection window.

Select between the following options:

[All targets]	Lists all target modules of the system.
[Unassigned]	Only lists *[Unassigned]* target modules
Search...	After this option has been selected, another window opens. Select the desired *View filter* in the tree directory to display only the devices this list contains.

5. Under **Target Power** you can select between the following options:

yes:	Allow the switching of the power outlets that are assigned to the selected target module.
no:	Deny the switching of the power outlets that are assigned to the selected target module.

6. Click on **OK** to save your settings.

Rights to switch the power outlets of a target group

How to change the right to switch the power outlet(s) assigned to the target modules of the group:

1. To change this right, click on **User area > Users** in the tree directory.

   If you want to change this right for a user group, click on **User area > User groups**.

2. Right-click on the user account or the user group you want to configure and select **Configuration** from the context menu.
3. Now click on **Matrix system > Device group rights**.
4. Select the desired target module in the list field on the left-hand side.
5. Under **Target Power**, you can select between the following options:

yes:	Allow the switching of the power outlets that are assigned to the target modules of the selected group.
no:	Deny the switching of the power outlets that are assigned to the target modules of the selected group.

6. Click on **OK** to save your settings.

Advanced functions of the KVM matrix switch

Use of the GPIO function

NOTE: The GPIO function can be used with compatible user modules from firmware version 1.6.002 or higher or with compatible target modules from firmware version 1.6.001 or higher.

The GPIO function (general purpose input/output) provides you with programmable inputs and outputs for general purposes.

After activating the GPIO function in the configuration of a compatible user or target module, two lines of the PS/2 keyboard and the PS/2 mouse interface can be used to receive signals (**Input**) or to give them out (**Output**).

NOTE: The PS/2 interfaces can be operated in either standard (keyboard/mouse) *or* GPIO mode.

For user modules, the TS-LED (if available) can be configured to visualize the status of *one* GPIO line.

Configuring the GPIO function of a user module

How to configure the GPIO function of a user module:

1. In the directory tree, click on **KVM matrix system > [Name] > User modules**.
2. Righ-click the user module you want to configure and click on **Configuration** in the context menu.
3. Click on the tab **GPIO**.
4. If you want to use the GPIO lines of the PS/2 *keyboard* connector, adjust the following settings under **GPIO on Keyboard connector**.

   IMPORTANT: Lines **K1** and **K2** are connected via the PS/2 *keyboard* connector.

   If you want to use the GPIO lines of the PS/2 *mouse* connector, adjust the following settings also under **GPIO on Mouse Connector**.

   IMPORTANT: Lines **M3** and **M4** are connected via the PS/2 *mouse* connector.
5. In the field **Enabled** select either **No** or **Yes**.

6. Enter the following data under **K1**, **K2**, **M3** and/or **M4**:

Operational mode:	By selecting the corresponding entry in the pull-down menu, you determine whether the line receives (**Input**) or outputs (**Output**) signals.
Polarity:	Select the polarity of the line: ▪ **Negative** ▪ **Positive**
Display:	Define whether texts (see below) about the status of the line are to be displayed as information display (**Enabled**) or not (**Disabled**).
Active display text:	Define the text to be displayed as information overlay when the line is active.
Active display color:	Define the text color of the information overlay when the line is active.
Inactive display text:	Define the text to be displayed as an information overlay when the line is inactive.
Inactive display color:	Define the text color of the information overlay when the line is inactive.

7. Click on **OK** to close the window.

Configuring the GPIO function of a target module

How to configure the GPIO function of a target module:

1. In the directory tree, click on **KVM matrix system > [Name] > User modules**.
2. Righ-click the target module you want to configure and click on **Configuration** in the context menu.
3. Click on the tab **GPIO**.
4. If you want to use the GPIO lines of the PS/2 *keyboard* connector, adjust the following settings under **GPIO on Keyboard connector**.

   IMPORTANT: Lines **K1** and **K2** are connected via the PS/2 *keyboard* connector.

   If you want to use the GPIO lines of the PS/2 *mouse* connector, adjust the following settings also under **GPIO on Mouse Connector**.

   IMPORTANT: Lines **M3** and **M4** are connected via the PS/2 *mouse* connector.

5. In the field **Enabled** select either **No** or **Yes**.

6. Enter the following data under **K1**, **K2**, **M3** and/or **M4**:

Operational mode:	By selecting the corresponding entry in the pull-down menu, you determine whether the line receives (**Input**) or outputs (**Output**) signals.
Polarity:	Select the polarity of the line: ▪ **Negative** ▪ **Positive**
Display:	Define whether texts (see below) about the status of the line are to be displayed as information display (**Enabled**) or not (**Disabled**).
Active display text:	Define the text to be displayed as information overlay when the line is active.
Active display color:	Define the text color of the information overlay when the line is active.
Inactive display text:	Define the text to be displayed as an information overlay when the line is inactive.
Inactive display color:	Define the text color of the information overlay when the line is inactive.

7. Click on **OK** to close the window.

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 directory tree, click **KVM Matrix systems > [name] > Matrix switches**.
2. Right-click the device. Now click the **Restart** on the context menu.

Confirm the safety request with **Yes.**

NOTE: You can also restart the device using the **tools icon** of the web application. For this, click **Tools > Restart** to carry out the restart.

Adjusting the RS232 mode and the baud rate of the service port

The RS232 interface of the matrix switch can be used for different applications. In addition to controlling a powerswitch, the interface can be used by the customer support team for service diagnoses.

Depending on the interface application, the interface mode and, if necessary, the baud rate have to be selected.

How to change the mode and/or the baud rate of the RS232 interface:

1. Click on the **KVM Matrix systems > [Name] > Matrix switches** entries in the tree view.
2. Right-click the master matrix switch. Now click the **Configuration** entry in the context menu.
3. Use the **RS232 mode** entry to select between the following options:

G&D Hardboot:	control of the Powerswitch (G&D Hardboot).
Debug:	diagnose mode (for support team)

4. Use the **RS232 baud rate** entry to select between the following options:

9600
19200
38400
57600
115200

NOTE: Depending on the interface operating mode, the baud rate is possibly preset.

5. Click **OK** to close the window.

Copying config settings of matrix switches

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 directory tree, click on **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click on the new matrix switch. Now click on **Get config from ...** in the context menu.

   A new window now lists all inactive matrix switches.
3. Select the matrix switch whose configuration settings you want to copy.

Click on **OK** to copy the config settings.

Freeze mode

When the cable conenction between the target module and the user 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 user module before the loss of connection. This image is displayed until the connection is reestablished.

> **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 user modules. In addition, you can set the freeze mode individually for each user module.

How to configure the freeze mode for the entire system:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click **Configuration** on the context menu.
3. Select one of the options under **Freeze mode**:

Disabled:	Shows no image when connection is lost (default).
Enabled:	Shows last image when connection is lost.

4. If the freeze mode is enabled, enable one or both options under **Freeze visualization**:

Frame:	Shows a coloured frame when connectionis lost.
OSD:	Shows the note Frozen and the time past since the loss of connection.

5. Click **OK** to save your settings.

How to configure the freeze mode individually for a user module:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click **Configuration** on the context menu.
3. Select one of the options under **Freeze mode**:

System:	Apply setting to the entire system (see above).
Disabled:	Shows no image when connection is lost (default).
Enabled:	Shows last image when connection is lost.

4. When the freeze mode is explicitly enabled for this user module, enable one or both options under **Freeze visualization:**

Frame:	Shows a coloured frame when connectionis lost.
OSD:	Shows the note Frozen and the time past since the loss of connection.

5. Click **OK** to save your settings.

Changing push event key modifiers and valid keymodes

NOTE: This function is available only after activating the additional **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:

- the string entered by the suer,
- the console's 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 valid keymodes:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click **Configuration** on the context menu.
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. Under **Valid push event keys**, select one of the following options:

Only numbers:	*only numerical keys* are forwarded as part of a push event when pressing the push event key modifier
Only characters:	*only alphabetic keys* are forwarded as part of a push event when pressing the push event key modifier
Numbers and characters:	*Numerical and alphabetical keys* 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 **OK** to save your settings.

Rights administration

Right to change the personal profile

How to change the right to change the personal profile:

1. Click on the **User area > Users** entries in the tree view to change this right.

   If you want to change this right for a user group, click on **User area > User groups**.

2. Right-click the user account or the user group you want to configure and click the **Configuration** entry in the context menu.
3. Click the **Matrix systems > Global device rights** tabs.
4. Use the **Edit personal profile** entry in the *Access rights* paragraph to select between the following options:

Yes:	allows to view and edit own user profile
No:	denies to view and edit own user profile

5. Click **OK** to save your settings.

Optional functions

The functional range of the KVM system can be expanded by purchasing additional functions.

Name	Function	Description
Push-Get function	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 user console.	page 102
IP-Control-API	Use the C++ class library supplied with this function to access the KVM matrix system over a TCP/IP connection.	page 105
Tradeswitch function	The Tradeswitch function optimises the operation of user modules that monitor several computers over several monitors. Instead of connecting keyboard and mouse to each monitor, the Tradeswitch function provides a central keyboard/mouse for all operating tasks of the user console.	page 108

Push-Get function (option)

NOTE: The functions and settings described in this chapter are only available if the *Push-Get function* has been purchased.

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 user console.

This way, you can exchange and edit display contents.

The addressed user console can be a standard console or a large screen projection, for example.

Changing the right for carrying out 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. Click the **User area > Users** entries to change this right for a user account.

   If you want to change this right for a user group, click on **User area > User groups**.

2. Right-click the user account or the user group you want to configure. Now, click on **Configuration**.
3. Click the **Matrix systems > Individual device rights** tabs.
4. Select the **Consoles** option in the drop-down menu.
5. Choose the desired user module in the list field.
6. Use the **Push-Get** entry to select one of the following options:

yes:	enables the usage of the *Push-Get* function
no:	denies the usage of the *Push-Get* function

7. Click **OK** to save your settings.

Setting push get keys

After you adjust the push-get key modifier(s) and a push/get key set and activate the push-get key set in the user account, you can use key combinations on the console keyboard to move screen contents.

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 directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch and click **Configuration** on the context menu.
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:	*Only numerical keys* are interpreted as push-get keys when pressed in combination with the push get key modifier
Only characters:	*Only alphabetic keys* are interpreted as push-get keys when pressed in combination with the push get key modifier
Numbers and characters:	*alphabetical and numerical keys* 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 **OK** to save your settings.

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 user modules to move the screen content of a console.

NOTE: Global push get key sets are displayed in the personal profile of all users of the KVM matrix system.

Creating push get key sets

How to create push get key sets:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the user account you want to configure and click **Configuration** on the context menu.
3. Click the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under *Push get key set* in the paragraph *Matrix switch user configuration*, click the **[+]** button and enter the following data:

Name:	Enter the name of the push get key set.
Comment:	If desired, enter a comment about the push get key set.
Global:	Mark this entry if you want the push get key set to be available in the personal profile of all users of the KVM matrix system.

5. Click **OK** to save your settings.

Changing name, comment or global allocation

How to change the name, comment and/or the *Global* setting of push get key sets:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the user account you want to configure and click **Configuration** on the context menu.
3. Click the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Push get key set** in the paragraph *Matrix switch user configuration*, select the push get key set you want to edit and click **Edit**.
5. Edit the desired data of the push get key set:

Name:	Enter the name of the push get key set.
Comment:	If desired, enter a comment about the push get key set.
Global:	Mark this entry if you want the push get key set to be available in the personal profile of all users of the KVM matrix system.

6. Click **OK** to save your settings.

Defining push get keys for user modules

NOTE: Global push get key sets can only be edited by users with activated *Superuser* rights (see page 73).

Without this right, only push get keys assigned to the user modules can be viewed.

How to define push get keys for user modules:

1. In the directory tree, click on **User area > User**.
2. Right-click the user account you want to configure and click **Configuration** on the context menu.
3. Click the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Push get key set** in the paragraph *Matrix switch user configuration*, select the push-get key set you want to edit and click **Edit**.
5. Click the tab **Assigned consoles**.
6. Click the column **Key combinations** of the device whose push-get key you want to change and enter the desired character(s).
7. Click **OK** to save your settings.

Assigning push get key sets to user accounts

By assigning a push get key set to a user account, the push get keys of the set are evaluated for entries at the console and the screen content of the console can be moved between monitors.

How to assign a push get key set to a user account or cancel an existing assignment:

1. In the directory tree, click on **User area > User**.
2. Right-click the user account you want to configure and click **Configuration** on the context menu.
3. Click the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Push get key set** in the paragraph *Matrix switch user configuration*, select the push-get key set you want to activate.
5. Click **OK** to save your settings.

Deleting push get key sets

NOTE: Global push get key sets can only be deleted by users with activated *Superuser* rights (see page 73).

How to delete a push get key set:

1. In the directory tree, click on **User area > User**.
2. Right-click the user account you want to configure and click **Configuration** on the context menu.
3. Click the tabs **Matrix systems > Personal Profile > Matrix switch**.
4. Under **Push get key set** in the paragraph *Matrix switch user configuration*, select the push-get key set you want to delete and click **Delete**.
5. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

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>
    <connect>
        <DviConsole>0x22222222</DviConsole>      <!-- ID of the user module -->
        <DviCpu>0x33333333</DviCpu>              <!-- ID of the target module -->
        <CloseDialogs/>                          <!-- Close OSD after connect
    </connect>
</root>
```

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* manual.

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* manual).

The scripts stored in the matrix system can be executed via the on-screen display of the KVM matrix system.

Creating, editing and deleting scripts

IMPORTANT: Only users with assigned **Superuser** rights are able to create, edit and delete scripts in the web application.

Creating a new script

How to create a new script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the display window and select **New** from the context menu.

3. Enter the following data into the dialogue box:

Name:	Enter the script name.
Matrix switch:	Select the matrix switch for which you want to create the script. *This setting is available only within a matrix grid.*
Comment:	If desired, enter any comment about the script.

4. Click on **OK** to save your settings.

Changing the script name

How to change the script name:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Enter the script name under **Name**.
4. Click on **OK** to save your settings.

Enabling or disabling a script

IMPORTANT: Disabled scripts cannot be executed and are not shown in the script menu.

How to enable or disable a script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Mark the check box **Enabled** to activate the script.

   Uncheck the check box to deactivate the script.
4. Click on **OK** to save your settings.

Changing the comment of a script

How to change the comment of a script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Enter a comment under **Comment**.
4. Click on **OK** to save your settings.

Changing the XML document of a script

The script commands are stored in an XML document. Each XML document can contain one or several commands.

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* manual.

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* manual).

How to change the XML document of a script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Enter the contents of the XML document under **Text** or edit the XML document that you have already saved.
4. Click on **OK** to save your settings.

Changing the owner of a script

A script can be executed by users who are the *owner* of the script or if they are assigned with rights to execute the script.

NOTE: Only scripts *without* owners can be added to script groups.

How to change the owner of a script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Click on the tab **Owner**.
4. Mark the *Owner* check box of the user account that owns the script.

   Uncheck the *Owner* check box if only users assigned with the required rights to execute scripts should be able to execute the script.
5. Click on **OK** to save your settings.

Changing the availability of a script

If a script is not assigned to any user module, the script is shown in all user module whose users are assigned with the right to execute the script.

If the script is assigned to one or several user modules, the script is shown only at the assigned user module(s) if their users are assigned with the right to execute the script.

How to change the availability of a script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.
3. Click on the tab **Availability**.
4. Mark the *Availability* check box(es) of the user modules that have access to the script.

   Uncheck the active *Availability* check box(es) to show the script on all user modules.
5. Click on **OK** to save your settings.

Executing a script on another matrix switch

When you created a script you defined on which matrix switch the script is to be executed.

The script configuration lets you define that the script is to be executed on one or two other matrix switch(es). This requires that the premium function **IP-Control-API** is also activated on the target matrix switch(es).

How to define an alternative target matrix switch:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the script you want to edit and select **Configuration** from the context menu.

3. Click on the tab **Target matrix**.
4. Enter the following data:

IP address/ DNS name 1:	Enter the IP address or the DNS name of the *first* target matrix switch.
IP address/ DNS name 2:	Optionally, Enter the IP address or the DNS name of the *second* target matrix switch.
Port:	Enter the port of the configured accesses for the text-based control of both target matrix switches.

NOTE: Click on **Delete** if you want to execute the script exclusively on the matrix switch you selected while creating the script.

5. Click on **OK** to save your settings.

Joining or grouping scripts

Existing scripts can be either joined or grouped. these two options differentiate as follows:

- **Join:** The XML documents of the scripts selected are copied a new script in the order in which they were selected. You can edit the XML document in the new script.
- **Group:** After you created a group, add the already existing scripts of the group. When executing a script group the individual scripts belonging to this group are executed subsequently.

  Individual scripts can still be executed separately. Changes within these scripts have an effect when executing the script group.

Joining scripts

How to join existing scripts to a new script:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. In the display window, mark the existing script you want to join.

ADVICE: Press the **Ctrl** key to select several scripts from the list.

3. Right-click on one of the marked scripts and select **Join** from the context menu.
4. Enter the following data:

Name:	Enter the script name.
Matrix switch:	Select the matrix switch for which you want to create the script. *This setting is available only within a matrix grid.*
Comment:	If desired, enter any comment about the script.

5. If desired, you can change the order of the scripts you want to join. Mark a script and click on (*arrow up*) or (*arrow down*). The selected script is moved either up or down.
6. Click on **OK** to save your settings.

Grouping scripts

How to create a new script group:

1. In the directory tree, click on **KVM matrix system > [Name] > Scripts**.
2. Right-click on the display window and select **New** from the context menu.
3. Enter the following data:

Name:	Enter the name of the script group.
Matrix switch:	Select the matrix switch for which you want to create the script group. *This setting is available only within a matrix grid.*
Comment:	If desired, enter any comment about the script group.

4. Click on **OK** to create the script group.

How to manage the members of a user group:

1. In the directory tree, click on **KVM matrix system > [Name] > Script groups**.
2. Right-click on the script group you want to edit and select **Configuration** from the context menu.

3. Click on the tab **Members**.

   Here, you can add scripts to or delete them from the script group.

   The dialogue consists of two tables which list the scripts of the KVM system:

Not assigned:	Shows scripts that are *not* assigned to this group.
Assigned group members:	Shows scripts that are assigned to this group.

4. Mark the script you want to add to or delete from the group.
5. Click on (*arrow right*) to add the script to the group or on (*arrow left*) to delete the script from the member list.
6. If desired, you can change the order of the scripts within the group. Mark a script and click on (*arrow up*) or (*arrow down*). The selected script is moved either up or down.
7. Click on **OK** to save the settings of the script group.

Changing the availability of a script group

If a script group is not assigned to any user module, the script group is shown in all user module whose users are assigned with the right to execute the script group.

If the script group is assigned to one or several user modules, the script group is shown only at the assigned user module(s) if their users are assigned with the right to execute the script group.

How to change the owner of a script group:

1. In the directory tree, click on **KVM matrix system > [Name] > Script groups**.
2. Right-click on the script group you want to edit and select **Configuration** from the context menu.
3. Click on the tab **Availability**.
4. Mark the *Availability* check box(es) of the user modules that have access to the script group.

   Uncheck the active *Availability* check box(es) to show the script group on all user modules.
5. Click on **OK** to save your settings.

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 65).

Defining the right to execute a script

How to change the right to execute a particular script:

1. In the directory tree, click on **User area > User**.

   In case of a user group, click on **User area > User groups**.

2. Right-click on the user account or the user group you want to configure and select **Configuration** from the context menu.
3. Click on the tab **Matrix systems**.
4. Click on the tab **Scripting rights**.
5. Select the desired script 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.

7. Click on **OK** to save your settings.

Defining the right to execute a script group

How to change the right to execute a particular script group:

1. In the directory tree, click on **User area > User**.

   In case of a user group, click on **User area > User groups**.

2. Right-click on the user account or the user group you want to configure and select **Configuration** from the context menu.
3. Click on the tab **Matrix systems**.
4. Click on the tab **Scripting group rights**.
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.

7. Click on **OK** to save your settings.

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.

More information:

- *Changing the script key modifier and the valid keys* on page 180
- *Defining script keys for certain scripts* on page 183
- *Assigning a script key set to a user account* on page 183

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 directory tree, click on **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click on the master matrix switch and select **Configuration** from the context menu.
3. Select at least one of the modifiers listed under **Script key modifier** by marking the respective entry:

▪ **Ctrl**	▪ **Win**
▪ **Alt**	▪ **Shift**
▪ **Alt Gr**	

4. Under **Valid keys,** select one of the following options:

Only numbers:	*only numerical keys* are interpreted as script keys when pressed in combination with the script key modifier
Only characters:	*only alphabetic keys* are interpreted as script keys when pressed in combination with the script key modifier
Numbers and characters:	*alphabetical and numerical keys* are interpreted as script keys when pressed in combination with the script key modifier

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 displayed in the personal profile of all users of the KVM matrix system.

How to create a script key set:

1. In the directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.

4. Under **Script key set,** click on the **[+]** button and enter the following data:

Name:	Enter the name of the script key set.
Comment:	Enter a comment regarding the script key set.
Global:	Mark this entry if you want the script key set in the personal profile to be available for all users of the KVM matrix system.

5. Click on **OK** to save your settings.

How to change the name, comment and/or *Global* setting of a script key set:

1. In the directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Go to **Script key set** under *Matrix switch user config* to select the script key set you want to edit and click on **Edit**.
5. Change the desired data of the script key set:

Name:	Enter the name of the script key set.
Comment:	Enter any comment regarding the script key set.
Global:	Mark this entry if you want the script key set in the personal profile to be available for all users of the KVM matrix system.

6. Click on **OK** to save your settings.

How to delete a script key set:

NOTE: Global script key sets can only be deleted by users with activated *Superuser* rights (see page 73).

1. In the directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Go to **Script key set** under *Matrix switch user config* to select the script key set you want to delete and click on **Delete**.
5. Confirm the security prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Defining script keys for certain scripts

NOTE: Global script key sets can only be edited by users with activated *Superuser* rights (see page 73).

Without this right, you can view only the script keys assigned to the script.

How to define the script keys of the script:

1. In the directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Go to **Script key set** under *Matrix switch user config* to select the script key set you want to edit and click on **Edit**.
5. Click on the tab **Assigned scripts**.
6. Click on the column **Keys** of the script whose script keys you want to change and enter the desired character(s).
7. Click on **OK** to save your settings.

Assigning a script key set to a user account

By assigning a script key set to a user account, the script keys defined in the set are evaluated and the script is executed.

How to assign a script key set to a user account or cancel the existing assignment:

1. In the directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Go to **Script key set** under *Matrix switch user config* and select the script key set you want to activate.
5. Click on **OK** to save your settings.

OSD settings of 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 directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Select one of the following options under **Default Selection Dialog**:

Select:	The *Select* menu is shown after you open the OSD.
Scripting:	The *Script* menu is shown after you open the OSD.

5. Click on **OK** to save your settings.

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 directory tree, click on **User area > User**.
2. In the display window, right-click on the user account you want to configure and select **Configuration** from the context menu.
3. Click on the tabs **Matrix systems > Personal profile > Matrix switch**.
4. Under **Select Dialog Replace Sensitivity**, adjust the sensitivity of the switching threshold by entering a value between **1** and **10**.

> **NOTE:** To deactivate the switching between menus by mouse, enter **0**.

5. Click on **OK** to save your settings.

IP-Control-API (option)

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 user module
- **Logout User:** user logout at user module
- **Connect CPU:** accesses target module with user module

  NOTE: This function can only be carried out if a user with *ViewOnly* or *FullAccess* rights is logged in at the user module, or the console is an *OpenAccess* console that provides those rights.

- **Disconnect CPU:** disconnects active access
- **Get Connections:** queries connection data of »occupied« user modules
- **Get DVICenter:** queries known matrix switches
- **Get CPUs:** queries known target modules
- **Get Consoles:** queries known user 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 user module or target module.

Configuring accesses 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 directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the device you want to configure and click **Configuration** on the context menu.
3. Click on **Network> Remote Control**.
4. To create a new access, click **Add**.
   To adit an existing access, click **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** to transmit date 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.

6. Click **OK** to save your settings and to close the window.

Tradeswitch function (option)

NOTE: The functions and settings described in this chapter are only available, if the purchased *Tradeswitch* function has been activated.

The Tradeswitch function optimises the operation of user modules that monitor several computers over several monitors.

Instead of connecting keyboard and mouse to each monitor, the Tradeswitch function provides a central keyboard/mouse for all operating tasks of the user module.

In order to enable this, up to eight user modules of a KVM matrix system are arranged into groups, which form the multi-monitor console.

Each user module within a group is provided with a monitor, but only one of the group's user modules is provided with keyboard and mouse. By using a hotkey, the user is now able to switch these two input devices to each monitor. Now, each computer of the group can be operated.

Further information:

- *Creating Tradeswitch workplaces* on page 188
- *Assigning devices to Tradeswitch workplaces* on page 191
- *Defining the master workplace of Tradeswitch workplaces* on page 192
- *Changing Tradeswitch keys and valid keys* on page 189
- *Enabling or disabling startup while missing keyboard* on page 102

Basic configuration

Creating Tradeswitch workplaces

How to create new Tradeswitch workplaces:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **Workplaces** tab.

   IMPORTANT: The **Workplaces** tab only becomes active after the Tradeswitch keys and the valid keys (see page 164) are defined.

4. Click **Add**.
5. Use the **Name** entry to enter the workplace name.
6. *Optional:* Use the **Comment** entry to enter a comment about the workplace.
7. Click **OK** to leave the interface.

Changing names and comments of Tradeswitch workplaces

How to change names and comments of Tradeswitch workplaces:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **Workplaces** tab.
4. Select the Tradeswitch workplace you want to edit and click **Change**.
5. Use the **Name** entry to enter the workplace name.
6. *Optional:* Use the **Comment** entry to enter a comment regarding the workplace.
7. Click **OK** to leave the interface.

Deleting Tradeswitch workplaces

How to delete Tradeswitch workplaces:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **Workplaces** tab.
4. Select the Tradeswitch workplace you want to delete and click **Delete.**
5. Confirm the confirmation prompt by clicking **Yes** or cancel the process by clicking **No**.

Changing Tradeswitch keys and valid keys

The Tradeswitch keys enable you to switch the keyboard and mouse signals from one user module to another one or to a target computer by pressing a key combination.

In the *Tradeswitch function* section of the *Configuration* menu, several user modules and/or target computers can be grouped into a workplace. You can define the keys to be pressed in order to switch the keyboard and mouse signals to a particular user module or target computer.

In addition to defining the Tradeswitch key modifier, you can also define the valid keys for the Tradeswitch keys.

How to change Tradeswitch key modifiers or valid keys:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the master matrix switch. Now click **Configuration** on the context menu.
3. Select *at least* one of the listed select key modifiers in the **Tradeswitch key modifier** row by marking the entry.

- **Ctrl**
- **Alt**
- **Alt Gr**
- **Win**
- **Shift**

4. Use the **Valid keys** row to select one of the following options:

Only numbers:	*only numerical keys* are interpreted as select keys when pressed in combination with the select key modifier
Only characters:	*only alphabetic keys* are interpreted as select keys when pressed in combination with the select key modifier
Numbers and characters:	*alphabetical and numerical keys* 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.

5. Click **OK** to save your settings.

Detailed configuration of Tradeswitch workplaces

Assigning devices to Tradeswitch workplaces

ADVICE: Giving the targets self-explanatory names that refer to the function or the location of the device simplifies the configuration of the Tradeswitch workplace.

Detailed information on how to rename the target modules can be found on page 88.

How to assign target or user modules to the Tradeswitch workplace:

IMPORTANT: Any computers that are locally connected to the *DVI-CON-s* or *UCON-Audio-s* user modules cannot be operated through the Tradeswitch function if these user modules are added as slave devices to the Tradeswitch workplace.

If these workplaces are master workplaces (see page 192), the local devices can be operated without any restrictions.

1. In the directory tree, click **KVM Matrix systems > [Name] > Targets**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **Workplaces** tab.
4. Select the Tradeswitch workplace you want to edit and click **Change.**
5. Click the **Assigned workplace members** tab.
6. Use the drop down menu to select the type of devices to be displayed in the select window.

   Choose between the following options:

[All targets]	Displays all target modules within the system
[Unassigned]	Displays the target module that are *[Not assigned]* to the view filter
Workplaces	Displays all user modules within the system
Search...	Selecting this option opens another window. Select the desired *View filter* in the tree view.

7. Use the **Key combination** column to select the device whose Tradeswitch key you want to change and enter the desired character(s).
8. Repeat step 7 if you want to change the Tradeswitch key of another device.
9. Click **OK** to save your changes.

Defining the master workplace of Tradeswitch workplaces

ADVICE: By giving the targets self-explanatory names that connect to the function or the location of the device, the configuration of the Tradeswitch workplace is highly simplified.

Detailed information on how to rename the target modules can is given on page 88.

Within a Tradeswitch workplace a workplace has to be defined to which keyboard and mouse are connected. This master workplace also provides information on accessing users.

How to define a master workplace of Tradeswitch workplaces:

1. In the directory tree, click **KVM Matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch you want to configure. Now click **Configuration** on the context menu.
3. Click the **Workplaces** tab.
4. Select the Tradeswitch workplace you want to edit and click **Change.**
5. Click the **Assigned workplace members** tab.
6. Use the drop down menu to select the type of devices to be displayed in the selection window.

   Choose between the following options:

[All targets]	All target modules within the system
[Unassigned]	Target modules that are *[Not assigned]* to the view filter
Workplaces	All user modules within the system
Search...	This option opens another window. Select the desired *View filter* in the tree view to only display the herein contained devices in the select window.

7. Select the entry in the **Master** column of the device that is to serve as master workplace.
8. Click **OK** to save your changes.

Enhanced functions

Enabling or disabling the Tradeswitching information display

If you purchased the *Tradeswitch function*, the messages »*Forwarding to...*« (at the master workplace) or »*Forwarded*« (at the target workplace) can be displayed at the monitor.

How to enable or disable the Tradeswitching information display:

1. In the directory tree, click **KVM Matrix systems > [Name] > Consoles**.
2. Right-click the user module you want to configure. Now click the **Configuration** entry on the context menu.
3. Click the **General** tab.
4. Use the **Display Tradeswitching** entry to select between the following options:

Yes:	Enables information display
No:	Disables information display

5. Click **OK** to save your changes.

CrossDisplay Switching

With **CrossDisplay Switching** (**CDS**), you can use the mouse to switch between the modules of a Tradeswitch configuration (see page 188 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«

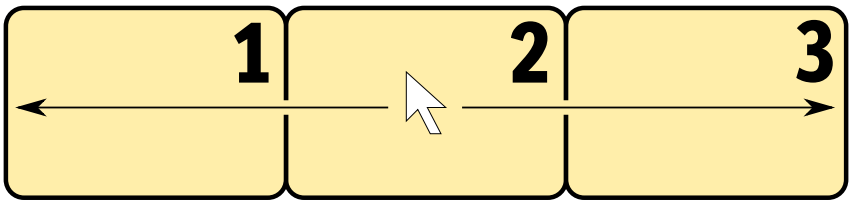


Figure 1: Exemplary order of three monitors

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 215).

NOTE: You can define the monitor order in the web application (see page 200).

Requirements for »CrossDisplay Switching«

Using *CrossDisplay Switching* requires the following:

- Enabled premium **Tradeswitch** function (see page 188).
- Established and configured *Tradeswitch configuration* (Workplace) (see page 188).
- Enabled *CrossDisplay Switching* (see page 199).
- Order of console monitors saved in the web application (see page 200).

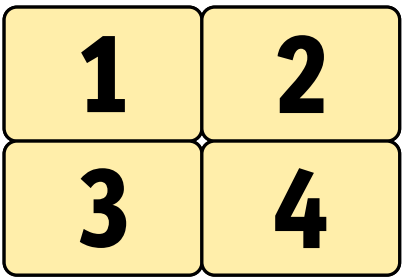
IMPORTANT: Only USB target modules connected to the target computer by USB cables support *CrossDisplay Switching*.

Order and proportions of monitors

Figure 1 shows three monitors placed in a row.

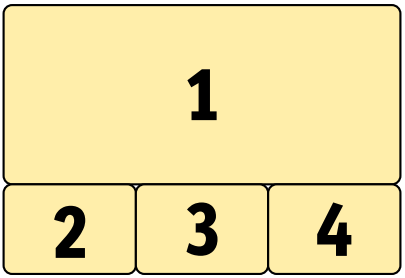
In addition to monitors placed next to each other, any combinations are supported. Even the monitors' proportions can vary. The following table shows some examples and describes special features.

NOTE: In the web application you can save the order and proportions of your monitors according to how they are placed on the desk.



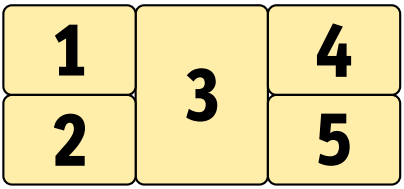
In addition to switching to a monitor placed on the left or the right side of the active monitor, you can also switch to monitors placed above or below the active monitor:

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).



If the monitors are placed as shown on the left, it is important to mind the exact *vertical* 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 monitor 4.



If the monitors are placed as shown on the left, it is important to mind the exact *horizontal* 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 monitors 2 or 5.

Including multi-head monitors

NOTE: A description on how to create CDS multihead groups is given on page 206. 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 144 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:

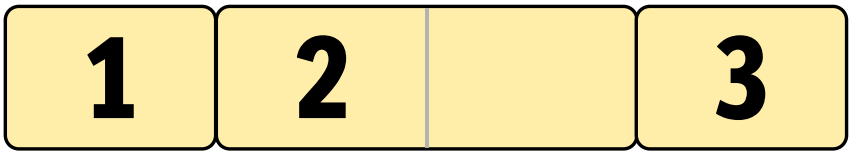


Figure 2: Two monitors of a multi-head computer between other monitors

NOTE: Install the driverr **G&D CDS Multi-Monitor Support** if you cannot move the cursor across both monitors of a multi-head computer.

You can download the driver from **www.gdsys.de** under **Downloads > Drivers**.

The »CrossDisplay Switching« tab

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.

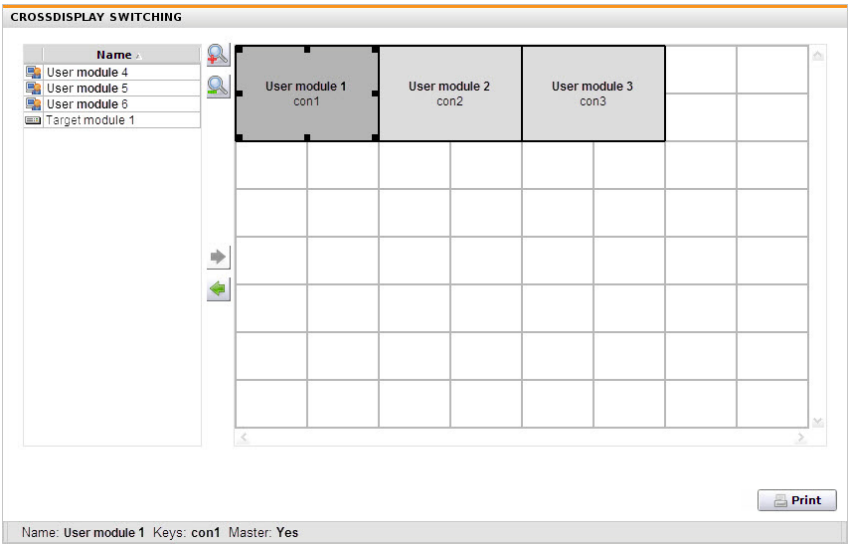


Figure 3: The tab »CrossDisplay Switching«

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 user modules that are assigned to the TradeSwitch console and *not* placed in the workspace.

Click (*right arrow*) to move the selected module to the display range.

ADVICE: You can also drag and drop the modules by mouse or use the module's context menu 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 to change the rectangles' height and width.

Figure 3 shows the handles as small black boxes framing **User module 1**.

Click (*left arrow*) to remove the selected rectangle from the workspace.

> **ADVICE:** You can also drag and drop the modules by mouse or use the module's context menu to remove the rectangle from the workspace.

The workspace's standard zoom level shows 8×8 units. However, you can adjust the size of the workspace:

- Press (*zoom in*) or the hotkey **Ctrl+[+]** to maximize the workspace. The maximum zoom level shows a workspace of 4×4 units.
- Press (*zoom out*) or the hotkey **Ctrl+[-]** to minimize the workspace. In the minimum zoom level, the workspace is displayed as 32×32 units (default setting).
- You can reset the standard zoom level by pressing **Ctrl+0**.

> **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 32×32 units as required.

Status bar

The status bar at the *lower edge* of the window informs you about the following features of the selected module:

- *Name* of user module or target module
- Assigned *Tradeswitch key*
- *Master* status of user modules

> **NOTE:** The master user module of the Tradeswitch console displays **Yes**. Every other module displays **No**.

Configuration

IMPORTANT: Before you can configure the *CrossDisplay Switching* feature, you need to enable the premium **Tradeswitch** function (see page 188) and create a *Tradeswitch configuration* (see page 188).

Enabling »CrossDisplay Switching«

If you want to use the *CrossDisplay Switching* feature, we recommend enabling the feature for the entire system. The feature applies for all target modules that use the settings for the entire system (standard).

You can override the systemwide 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 settings of target modules on which you want to use the feature.

How to change the system settings of the »CrossDisplay Switching« feature:

1. In the directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch, and click **Configuration** on the context menu.
3. Click the **General** tab.
4. Under **CrossDisplay Switching**, you can choose between the following options:

Disabled:	*CrossDisplay Switching* is disabled for the entire system.
Enabled:	*CrossDisplay Switching* is enabled 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 **OK**.

How the change »CrossDisplay Switching« settings of target modules:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. In the display range, right-click the target module you want to configure, and click **Configuration** on the context menu.

3. Under **CrossDisplay Switching**, you can choose between the following options:

System:	The matrix switch settings are applied to the entire system (see above).
Disabled:	*CrossDisplay Switching* is disabled for this target module. The system settings are ignored.
Enabled:	*CrossDisplay Switching* is enabled for this target module. The system settings are ignored.

4. Click **OK**.

Saving order and proportions of monitors

You can only switch to the next monitor if you provide information about the monitors' order and proportions.

NOTE: Only after these information are provided in the web application and comply with the order and proportions of the monitors placed at the desk, you can place the mouse exactly to switch to the desired monitor.

How to save order and proportions of monitors:

1. In the directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch, and click **Configuration** on the context menu.
3. Click the **Workplaces** tab.
4. In the list, double-click the *Workplace* you want to configure.
5. Click the **CrossDisplay Switching** tab.

NOTE: The different elements of this tab are described on page 197.

6. Adjust the monitors as described on the following pages until the workspace resembles the monitors at your desk.
7. Click **OK**.

How to add monitors to the workspace:

1. In the *left column*, select a target or user module.

   ADVICE: You can select multiple modules by pressing **Shift** or **Ctrl** while moving the mouse.

2. Click (*left arrow*).

   ADVICE: You can also drag and drop monitors by mouse or use the rectangle's context menu.

   In the workspace, each added module is displayed as grey rectangle (2×2 units) with a black frame and is placed at an available position.

   The rectangle symbolises the module monitor at 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.

   ADVICE: You can select multiple monitors by pressing **Shift** or **Ctrl** while moving the mouse.

2. Click (*left arrow*).

   ADVICE: You can also drag and drop monitors by mouse or use the rectangle's context menu.

   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 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.

How to adjust the proportions among monitors:

> **NOTE:** You need to adjust the monitor proportions exactly 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.

4. Repeat steps 2 and 3 with the other handles.

Adjusting the general mouse speed

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 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 directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch and click **Configuration** on the context menu.
3. Click the **General** tab.
4. Move the **Mouse speed** controller to the desired value.
5. Click **OK**.

How to change the mouse speed of target modules:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. In the display range, right-click the target module you want to configure and click **Configuration** on the context menu.
3. Under **CrossDisplay Switching** you can choose between the following options:

a. If you want to apply the system settings of the mouse speed to the target module, enable the **System** option under **Mouse speed**.

b. If you want to set an individual mouse speed, disable the **System** option and set the controller to the desired value.

4. Click **OK**.

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 switching between channels via CDS, 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 user modules use the systemwide setting. However, you can also individually define the mouse position for each CDS user module.

How to change the system setting of the mouse position:

1. In the directory tree, click **KVM matrix systems > [Name] > Matrix switches**.
2. Right-click the matrix switch, and click **Configuration** on the context menu.
3. Click the **General** tab.
4. Under **CDS mouse positioning**, 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 (*default*).
On:	According to the **CDS mouse hide** setting the mouse cursor is positioned so that it is barely visible. Only during *multi-user access*, the cursor remains at the position at which the switching to the next monitor takes place.
On+Multi:	According to the **CDS mouse hide** setting, even during *multi-user access*, the mouse cursor is positioned so that it is barely visible.

ADVICE: You can activate or deactivate 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 under **CDS mouse hideout**:

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.

ADVICE: You can activate or deactivate this function for particular modules independently from the selected system setting (see below).

6. Click **OK**.

How to change the mouse position of a particular target module:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. In the display range, right-click the target module you want to configure and click **Configuration** on the context menu.
3. Under **CDS mouse positioning**, 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 hide** setting the mouse cursor is positioned so that it is barely visible. Only during *multi-user access*, the cursor remains at the position at which the switching to the next monitor takes place.
On+Multi:	According to the **CDS mouse hide** setting, even during *multi-user access*, the mouse cursor is positioned so that it is barely visible.

4. With activated *CDS mouse positioning* you can select between the following options under **CDS mouse hideout**:

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.

5. Click **OK**.

Correcting horizontal and vertical mouse speed

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.

How to adjust the *CrossDisplay* resolution of a target module:

1. In the directory tree, click **KVM matrix systems > [Name] > Target modules**.
2. In the display range, right-click the target module you want to configure and click **Configuration** on the context menu.
3. Disable the Auto option under **CrossDisplay resolution**.
4. Enter the vertical and horizontal resolution in the input boxes.
5. Click **OK**.

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 user module is included in several Workplaces (Tradeswitch configurations). Two or more input devices from different Workplaces access the user module.
No CDS: Console not found	The user 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 199 ff.).
No CDS: No TradeSwitch modifier	The Tradeswitch key modifier is not defined. Enable a modifier as described on page 189.
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 support CrossDisplay Switching. Contact our support team for more information.
No CDS: USB missing on target	Only USB target modules connected to the target computer by USB cables support CrossDisplay Switching. Check the variant of the target module and the computer's connection to the module.
No CDS: View only mode	The user has restricted rights on the accessed computer. The user has »View only« rights and can make no inputs. CrossDisplay Switching is not possible.

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)*:

- Up to firmware version 1.1, the matrix switch supported only **CDS with channel groups** in multihead environments.

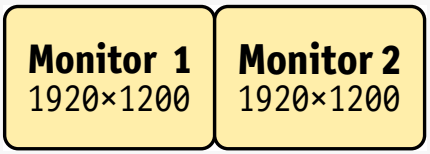
  In this mode, the matrix switch can display an additional video channel (added via channel group) of a computer with multiple graphics outputs only on monitors of user modules that also have a compatible channel group

  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.

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:

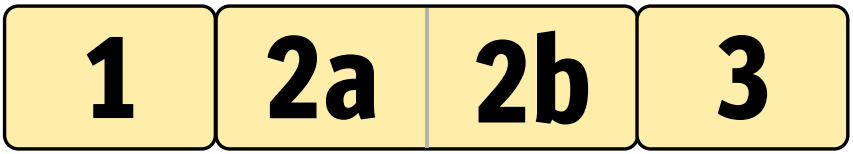


You can use a target module **DVI-U-CPU-MC2**, for example, to connect the computer to the matrix switch.

CDS with channel groups

The chapter *Implementation of multihead monitors* (see page 196) 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.

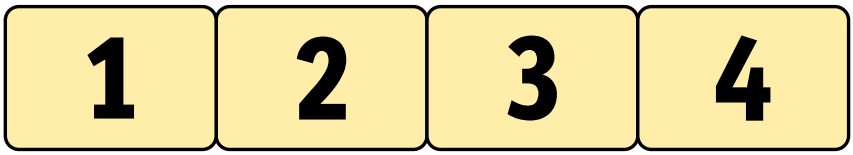
When moving the mouse cursor to the right-hand margin of monitor **2a**, the matrix switch detects with the help of the CDS configuration that the next monitor **2b** is connected to another graphics output of the already accessed computer. Therefore, a switching does *not* take place and the mouse cursor 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 (see page 213).

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 81).
- Established and configured *Tradeswitch configuration* (Workplace) (see page 188).
- Enabled *CrossDisplay Switching* (see page 195).
- The channels of multihead computers must not be part of channel groups (see page 144). 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 196).
>
> 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 195).
- 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 user 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 user module.
>
> Afterwards, you can operate the additional video channels like an independent channel.

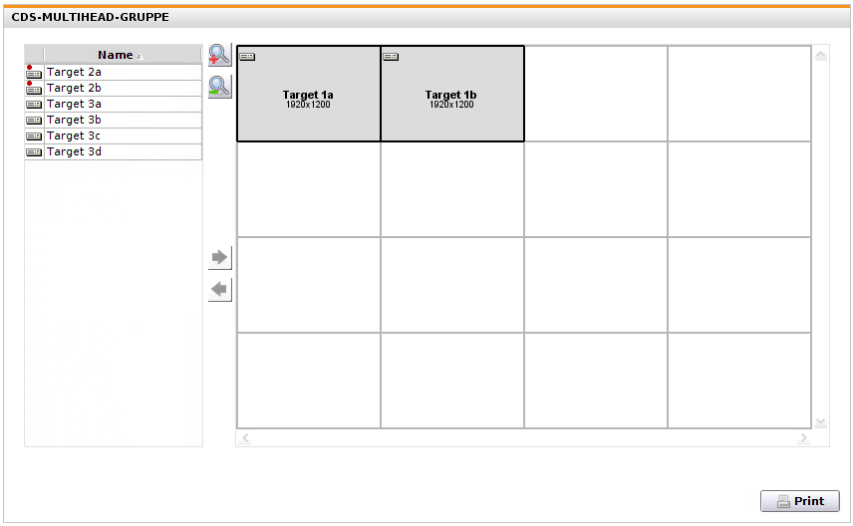
The »Member configuration« tab

During basic CDS configuration you already defined order and size ratio of the monitors belonging to the CDS workplace (see page 195).

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 206). 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.

Listing target modules

The *left-hand side* lists all target modules that are not part of a CDS multihead group.

By clicking on the icon (*right arrow*), you can move the highlighted module into the display range.

ADVICE: You can also use »drag and drop« mouse operations or the module's context menu to move modules to the display range.

Workplace

The workplace on the *right-hand side* shows the display ranges of the video channels of the 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 into horizontal or vertical order or in blocks. Blocks must be put together into complete quadrangles. L-shaped arrangements are *not* supported.

IMPORTANT: The display range entered in the workplace must reflect the computer's *entire* display range!

Click on the icon (*left arrow*) to delete the selected rectangle from the workplace.

ADVICE: You can also use »drag and drop« mouse operations or the module's context menu 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 (*zoom in*) or press **Ctrl+[+]** to make the workspace bigger. At maximum zoom level, the workspace is displayed in units of 2×2.
- Click on (*zoom out*) or press **Ctrl+[-]** to make the workspace smaller. At minimum zoom level, the workspace is displayed in units of 16×16 (default).
- You can reset the default zoom level by pressing **Ctrl+0**.

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.

Group administration

Creating a new CDS multihead group

How to create a new CDS multihead group:

1. In the directory tree, click on **KVM matrix systems > CDS multihead groups**.
2. Right-click the display range and click on **New** on the context menu.
3. Under **Name**, you can enter the name of the group.
4. *Optional:* Under **Comment**, you can change or enter a comment about the group.
5. Click **OK** to save your settings.

Changing name or comment of CDS multihead groups

How to change the name or comment of a CDS multihead group:

1. In the directory tree, click on **KVM matrix systems > CDS multihead groups**.
2. Right-click the group you want to edit, and click **Configuration** on the context menu.
3. Under **Name**, you can change the name of the group.
4. *Optional:* Under **Comment**, you can change or enter a comment about the group.
5. Click **OK** to save your settings.

Deleting CDS multihead groups

How to delete a CDS multihead group:

1. In the directory tree, click on **KVM matrix systems > CDS multihead groups**.
2. Right-click the group you want to delete, and click **Delete** on the context menu.
3. Confirm the security prompt by clicking on **Yes** or cancel the process by clicking on **No**.

Member configuration

IMPORTANT: Make sure to fulfil the requirements regarding the configuration and use of CDS multihead groups listed on page 209 .

IMPORTANT: Plan the configuration and set-up of *CDS multihead groups* carefully. Incomplete or incorrect configuration settings can be the reason why you can not use CDS to switch to the desired computer.

Saving order and resolutions of display ranges

Arrange the display ranges of the graphics cards installed in multihead computers in the same way 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 into complete quadrangles. L-shaped arrangements are *not* supported.

How to save the order and resolution of display ranges:

1. In the directory tree, click on **KVM matrix systems > CDS multihead groups**.
2. Right-click the matrix switch, and click **Configuration** on the context menu.
3. Click on the **Member configuration** tab.

NOTE: The different elements of this tab are described on page 210.

4. Carry out one or multiple operations described on the following page until the the arrangement in the workplace complies with the computer's graphics settings.
5. Click **OK**.

How to add a display range within the workspace:

1. Mark a target module on the *left side*.

ADVICE: Press **Shift** or **Ctrl** to select multiple modules at the same time.

2. Click the (*right arrow*) icon.

> **ADVICE:** You can also use »drag and drop« mouse operations or the rectangles's context menu.

Every new display range of a target module is displayed as a grey rectangle (1 × 1 unit) with a black frame. The display range is placed on a free space.

The name of the target module and the resolution of its display range are shown within the rectangle.

How to remove a display range from the workspace:

1. On the right-hand side of the workplace, select the rectangle that symbolizes the display range you want to delete..

> **ADVICE:** Press **Shift** or **Ctrl** to select multiple display ranges at the same time.

2. Click the (*left arrow*) icon.

> **ADVICE:** You can also use »drag and drop« mouse operations or the rectangles's context menu.

The module list on the *left-hand side* shows an entry for each deleted rectangle.

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 that symbolizes 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.

How to adjust the resolution of a display range:

1. Right-click the rectangle indicating the display range whose resolution you want to change.
2. Click on **Resolution** on the context menu.
3. Enter the resolution of the display range.
4. Click **OK**.

Adjusting the mouse mode for drag and drop operations

By default, CDS does not take place when pressing a mouse key while moving the mouse to the edge of the active monitor.

We provide specific mouse modes allowing drag and drop operations for Windows and Linux operating systems.

How to select the desired mouse mode:

1. In the directory tree, click on **KVM matrix systems > CDS multihead groups**.
2. Right-click the matrix switch, and click **Configuration** on the context menu.
3. Select one of the options listed under **CDS mouse mode**:

Standard:	CDS does not take place when pressing a mouse key while moving the mouse to the edge of the active monitor.
Windows:	Under *Windows* operating systems CDS takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.
Linux:	Under *Linux* operating systems CDS takes place even when pressing a mouse key while moving the mouse to the edge of the active monitor.

4. Click **OK**.

Connecting analogue matrix switches (Bridging)

As of firmware version 1.7.000 of the digital matrix switch **DVICenter**, you can integrate analogue matrix switches of the **CATCenter NEO** series into the KVM matrix system.

Operation

Using a **VGA-CPU** target module, the digital matrix switch **DVICenter** establishes a connection to one of the **UCON** user modules connected to the analogue matrix switch **CATCenter NEO**.

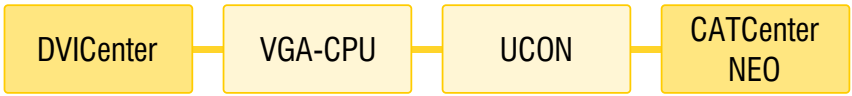


Figure 1: Connection of a digital and an analogue matrix switch

The target module **VGA-CPU** is directly connected to the signal line of the user module **UCON**. The matrix switches communicate over a TCP/IP connection.

EXAMPLE: A user uses the OSD of the digital matrix switch **DVICenter** to access the target **NEO-Target** connected to the analogue matrix switch **CATCenter NEO.**

- Over the TCP/IP connection, the digital matrix switch **DVICenter** transmits the switching command to the analogue matrix switch **NEO**.
- The digital matrix switch **DVICenter** switches the user to the target module **VGA-CPU** of the *Bridge* line.
- The analogue matrix switch **NEO** switches the computer ti the user module **UCON** of the *Bridge* line.

The digital matrix switch can use every established *Bridge* line to switch to any target module of the analogue matrix switch.

The target modules of the analogue matrix switch are listed in the OSD and in the web application of the digital matrix switch. Here, they can be configured (see page 82 ff.) and grouped (see page 144 ff.).

Requirements

You can use a console connected to the digital matrix switch to access a target module connected to the analogue matrix switch if the following requirements are met:

1. The matrix switches and the modules of the *Bridge* line are placed in the correct order (see figure 1) and are properly connected.
2. The **VGA-CPU** target module is connected to a port operated in *Down mode* (see *Port administration* on page 17).
3. Both matrix switches are connected to the same TCP/IP network.
4. Set the system time of both matrix switches correctly, or use an NTP server for automatic time adjustment (see page 36 f.).
5. The premium function **IP-Control-API** is enabled for the analogue matrix switch **CATCenter NEO**.
6. The *Bridge* mode of the target module **VGA-CPU** is configured (see page 217).

Particularities

- *Bridge* lines can be connected only to the digital *Master* matrix switch of the KVM system.
- Target modules (**CATpro2**) of an analogue matrix switch *cannot* be used for the Tradeswitch function (see page 188 ff.).

Configuration

The *Bridge* mode of a **VGA-CPU** target module is enabled by entering the device ID of the connected **UCON** user module and the IP address of the analogue matrix switch **CATCenter NEO**.

IMPORTANT: When used in *Bridge* mode, the user module **UCON** automatically switches to *Open Access* mode (see *Open Access operating mode* on page 100).

At this user module, access is *not* protected through authentication!

Enabling the Bridge mode of a target module

How to enable the Bridge mode of a target module:

1. In the directory tree, click **KVM matrix system > [Name] > Target modules**.

   NOTE: After the *Bridge* mode of a target module is enabled, the module is listed in the directory tree under **KVM matrix system > [Name] > Bridge modules**.

   NOTE: Bridge modules are not listed in the OSD of the matrix switch.

2. Right-click the Bridge module (**VGA-CPU**) you want to configure and click **Configuration** on the context menu.

3. Click the **Bridge mode** tab.
4. Enter the following data:

UCON-ID:	Enter the device ID of the user module used for the Bridge line. The web application of the analogue matrix switch lists the device ID under **KVM matrix system > [Name] > User modules**.
NEO IP address:	Enter the IP address of the analogue matrix switch **CATCenter NEO**.

5. Click **OK** to save your settings. Now the Bridge mode is enabled.

Disabling the Bridge mode of a target module

How to disable the Bridge mode of a target module:

1. In the directory tree, click **KVM matrix system > [Name] > Bridge module**.
2. Right-click the Bridge module (**VGA-CPU**) you want to configure and click **Configuration** on the context menu.
3. Click the **Bridge mode** tab.
4. Click **Reset** to reset the Bridge mode settings.
5. Click **OK** to save your settings. Now, the Bridge mode is disabled..

NOTE: After the *Bridge* mode of a target module is disabled, the module is listed in the directory tree under **KVM matrix system > [Name] > Target modules**.

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The manual is constantly updated and available on our website.

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