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The web based KVM - SWITCHING MANAGER is a software for managing a KVM network. It offers a variety of functions that are helpful in maintaining the network. This manual shows the administration of the KVM - SWITCHING MANAGER WEB as well as some concrete examples to control the KVM network. Information about compatible hardware (switches, Ethernet cables) and installation instructions can be found in the manual of the used kvm-tec KVM extender.

In case of questions or problems in connection with the KVM - SWITCHING MANAGER WEB or any other kvm-tec product, please contact the kvm-tec support team.

E-Mail: support@kvm-tec.com
phone.: +43 2253 81912 33

1.1 SYSTEM REQUIREMENTS

- Windows 7 (64bit) or higher
- 1 GB RAM
- 50 MB free memory
- 1 Gbit separate network interface
2. INSTALLATION

2.0 INSTALLATION

There are two variants of installations! Here you can download the software

2.1 INSTALLATION - 1. VARIANT

Open the KVM_Setup

ACCEPT THE LICENSE AGREEMENT

Accept the License Agreement and click the “Next” button

SELECT DESTINATION LOCATION

Select the Destination Location and click the “Next” button

Now select “Full Installation” and click “Next”
2. INSTALLATION

SELECT SHORTCUT IN THE MENU

In this menu you can change the name for the folder from the Start menu.

READY FOR THE INSTALLATION

Here all informations are displayed again and you can now start with the installation. Press “Install” for this.

The Installation runs automatically

If the Installation is ready, press the “Finish” button and the installation part is done.
2.2 INSTALLATION - 2. VARIANT

Before starting the installation, make sure that port 5000 in the firewall is open and ready for use. This is necessary for the backend to run properly. For the Switching Manager Web we need a web server and a Windows 64-bit machine.

In the first step please unpack the zip-file. This contains both the front- as well as the backend and are stored in the subfolders.
2. INSTALLATION

2.2.2 INSTALLING THE SWITCHING MANAGER WEB BACKEND

In the unpacked folder of the Switchingmanager web there is a folder with the name "switching-manager" with two subfolders - frontend and backend.

Now we open the backend with the "API" file contained in it.

After opening the API file, another window will be opened in which the backend is running.

This window can be minimised.

SCREEN: Application that runs the backend

To host the frontend, the content of the frontend directory is copied to the root directory of the web server. For the rest of the description, we will assume that this directory is C:/web/html.

The front end of the Web Switching Manager is a web application running on an HTTP server instance with Apache or another similar service with a client-server structure.

What is a web server? The main function of a web server is to store, process and serve web pages to clients. It uses the HTTP protocol to deliver the desired web page to the user.

Apache helps establish a connection between a server and the browsers of website visitors (Firefox, Google Chrome, Safari, etc.) while sending files back and forth between them (client-server structure).

In the next steps, we will use an XAMPP server running on Windows 10 for the example. (optional: you can follow this link to get a copy of XAMPP for your computer - free of charge).

To host the frontend, the content of the frontend directory is copied to the root directory of the web server. For the rest of the description, we will assume that this directory is C:/web/html. The web server is now configured so that all requests point to index.html if the path does not exist.
2. INSTALLATION

The files are copied from the frontend and pasted into the "html" folder.

**SCREEN:** The files are copied from the frontend and pasted into the „html“ folder

Next, the web server must be (re)started. After that, enter „localhost:4200“ in the search bar of the browser. If all steps have been carried out correctly, then the login screen should be displayed.

**SCREEN:** Log In Screen
2.3 CONNECTING THE PC TO THE KVM EXTENDER NETWORK

Connect a free 1Gbit network interface of the PC to a network switch within the extender network.
within the Extender network. It is not necessary to configure the network interface within Windows.
To ensure a good connection, a Cat5 or better Ethernet cable is used to connect the PC to the switch.

A Cat5 or better Ethernet cable is recommended.

3. LOG IN

3.1 LOG IN

Open the Switching Manager software once all devices are connected
Your computer with the Manager software installed - 1G (copper or fibre)
Full HD KVM Extender - 1G (copper or fiber)
4K KVM Extender - 10G (copper or fiber)

SCREEN : Login
Default setting
USER: admin
PASSWORD: admin

3.2 SET UP THE NETWORK INTERFACE

In case that multiple network interfaces are available and active on the machine, the Web Switching Manager needs to be appropriately set up to use the desired interface. Choose the appropriate network interface by navigating to the General Settings menu and using drop-down shown in the picture below.
4.0 THE 3 BASIC COMMANDS

The three basic commands in the Switching Manager are Connect, Disconnect and Share. Connect enables a connection between a Local Unit, which receives the displayed image directly from the source (PC, notebook) and a Remote Unit, which is connected to the monitor. Therefore, with the Switching Manager, it is possible to provide the monitor with different video signals without any changes to the hardware. These connections can also be easily disconnected again. In doing so, the video signal is interrupted. With the basic command Sharing, several monitors can be supplied with a video signal.

4.1 CONNECT

To connect two extenders, first select a free local unit by clicking on it. The selected extender is then displayed in light blue. Clicking on the free Remote Unit connects the two.

SCREEN: Selected extender - display in light blue shade
After you have selected the first connection partner, click on the second one. Immediately after selecting the second extender, the connection is established.

Connected units are displayed in dark blue. If the connection is established, the name of the connected Local Unit is displayed below that of the Remote Unit on the Remote page.

SCREEN: two connected KVM extenders

4.2 DISCONNECT

To terminate a connection between two extenders, click the remote to be disconnected.
4. BASIC COMMAND

4.3 SHARING

The video signal from one source can be shared with multiple monitors. A shared connection transmits only the video signal. To share the video of a running connection, select the Local Unit whose image is to be shared, and then click the Remote Unit that is to receive the image.

SCREEN: Videosharing

5. FUNCTIONS

The following chapters describe the selection options and functions of the Switching Manager software.

SCREEN: Menu of functions from the Switching Manager

- Connect
- Extenders (Extender Informations)
- Features
  - Mouse Glide & Switch
  - Multihead Groups
  - Scalable Line
  - Scenario
- Users
- Groups
- System
  - General Settings
  - Export/Import
  - Health Status
- License
  - Software
  - Hardware
- Update
  - Flexline
  - Media4Kconnect
  - UVX
  - MX
- Sign out
5. FUNCTIONS

5.1 CONNECT

Extenders can be connected to each other in this menu and existing connections can be terminated in this menu item.
The extenders can also be searched and sorted by their name.
While the Switching Manager is running, new extenders can be added to the network by reloading the page (Shortcut F5) new extenders can be added to the network. These are updated in the list and new devices will be displayed.

SCREEN: Connect

SCREEN: sort Extender

5.2 EXTENDER INFORMATION

The information of all extenders on the network is displayed and can be can be renamed

SCREEN: Extender Informationen

SCREEN: edit Extender
5.3 FEATURES

In the menu „Features“ you will find:
- Mouse Glide & Switch
- Multihead Groups
- Scalable Line
- Scenarios

5.3.1 FEATURES - MOUSE GLIDE & SWITCH

Mouse-glide & Switch groups can be created, edited and deleted. With the Mouse-glide & Switch feature, up to 16 monitors can be operated from one workstation with one mouse and one keyboard. To create a new Mouse glide & Switch group, click on the „Create MGS Configuration“ button. A new window opens and the desired extenders can now be selected. For Remotes to be displayed, they must be connected to a Local. Now the arrangement of the screens can be done and it can be selected which of the devices takes over the USB control (USB Master). With the USB Master, which receives the USB signals, the mouse and keyboard can be moved.
5. FUNCTIONS

5.3.2 FEATURES - MULTIHEAD GROUPS

The multi-head configuration allows you to control multiple remotes, referred to as heads in this context, and their screens with a single keyboard and mouse connected to a primary local unit.
5.3.3 FEATURES - SCALABLE LINE

Scalable Line

Search Name: 

Name | ID | Product | Scenario
--- | --- | --- | ---
Master | 283000-41488098-98 | KVM funeral | Scenarios

5.3.4 FEATURES - SCENARIOS

Scenarios are used to switch all Extenders, which are defined in a Scenario with the push of a button. A distinction is made between a scenario and a partial scenario.

With a full scenario, all extenders that are in the Switching Manager can be switched, and in a partial scenario selected extenders can be switched.

Scenarios

New Scenario | Scenario Name | Create | Configure Sub Scenario
--- | --- | --- | ---

Search Name: 

ID | Name
--- | ---
5 | Full Scenario

To start a “Full Scenario”, enter the name in the “Scenario Name” field and then press “Create”.

You can start a scenario by pressing the “Play” button or delete it by pressing the “Delete” button.

Sub Scenario

To create a sub-scenario, press the “Configure Sub Scenario” button. Afterwards the following view appears:

Press the “Select Extender” button and add the desired extenders. All extenders, which are not added during the partial scenario, will not be changed afterwards when switching!

In the following view, you can see the extenders that have been selected for a partial scenario. Afterwards you assign a name for the partial scenario and click on “Create”. Now the configuration of the partial scenario is completed.
5. FUNCTIONS

5.4 USER SETTINGS AND USER ROLLS

Users can be created, changed and deleted in the User Settings.

**SCREEN**: User Settings

<table>
<thead>
<tr>
<th>ID</th>
<th>Name</th>
<th>Role</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>admin</td>
<td>UniversalAdmin</td>
</tr>
</tbody>
</table>

There are three different roles among the users. These users have different user rights.

**USER ROLLS**

User

GroupAdmin

UniversalAdmin

5.4.1 USER

The user can connect and disconnect the extenders assigned to his group.

**SCREEN**: View of a profile with „User“ status

5.4.2 GROUP ADMIN

The GroupAdmin has rights to view and change all options except those in the menu item „Groups“. He can also create new users, which are then automatically added to his assigned group. He can only access extenders that are in his group.

**SCREEN**: View of a profile with „GroupAdmin“ role
5.4.3 UNIVERSAL ADMIN

The UniversalAdmin has all rights. He can add new groups and integrate and remove users and extenders in them. He also has all the rights of the other roles. The standard profile with the access data admin/admin has the UniversalAdmin status.

SCREEN: Profile with „UniversalAdmin“ role

5.5 ACTIVE DIRECTORY

The webspinning manager is able to use Active Directory. This makes it possible to log in with your own data within the company.

To activate Active Directory, first log in with the standard admin profile (admin - admin). Make sure that the field „use active directory“ is not ticked.

Then go to the menu item „General Settings“ and enter the Active Directory domain of the company in the input field and save the entry with „Save Changes“. 

SCREEN - active directory log in
In the next step, please log out of the admin profile. After that, the Active Directory is already active. From now on you can log in with the user data of the company. Please make sure that the "use active directory" field is ticked. The first user who logs in through Active Directory is automatically assigned the UniversalAdmin role. Further users logging in through Active Directory will then be assigned the User role. The roles can be customised as desired by each UniversalAdmin. Only profiles of users who have already logged in can be changed by the Admin. It is not possible to change the passwords of users via the switching manager, but only via the Active Directory. If the password is changed, the new password is required.

5.6. GENERAL SETTINGS

In the menu item "System" you will find the General Settings and Export/Import.

All modifiable options that affect the network, as well as the current version of the Switching Manager, are displayed here. To save the changes press the SAVE CHANGES button.

You can set all settings either in the frontend (screen "General Settings"). If you have an older version of the Switching Manager Web, you can also change the following settings in the "settings.x" file.

5.6.1 HEALTH STATUS

A detailed description can be found under point 5.7.8.
5. FUNCTIONS

SCREEN  General Settings

Redundant Manager Address
For a detailed description, refer to section 5.8 Redundant Manager on page 41.

Multicast Start Address
If you do not enter a new address, the following address is stored by default:
224.1.0.0

Multicast End Address
If you do not enter a new address, the following address is stored by default:
224.1.255.255

If you change one of these 3 addresses, a window will appear, where by pressing the button „Ok the changes will be saved.

Afterwards the Switching Manager must be restarted!

5.7. LICENSE

Here you can find all licenses, which can be activated with costs!

The following licenses can be activated later:
- Switching Manager License
- API license
- Redundant License
- Notify Over System License
- Endpoints License
- Admins License
- Health Status License
If you want to unlock a license, please send your order to order@kvm-tec.com

After your order, you will get the unlock code via e-mail. Enter the unlock code and click „Unlock Licences“

In this window you can now read your Mac address, recognize unlocked licenses by the status „Unlocked !“ and unlock new licenses for your Switching Manager via the input fields and the button „Unlock Licenses“.

The Mac address: It is written here, because it is important for the KVM-TEC team in case of a purchase request.

Unlocked !: means that a license is unlocked in the system, except for „Allowed Endpoints“ and „Allowed Admins“, because here you can read the number directly and you can extend it, for a fee.

Unlock Licenses Button: If you have purchased your license or licenses from the KVM-TEC team, after payment processing, you can enter them here in the corresponding field. If you have entered all purchased licenses and press the Unlock Licenses button, the state should jump to „Unlocked !“, except as mentioned for „Allowed Endpoints/Admins“, here the number should increase.

Basically it is strongly recommended that after unlocking licenses, via the „Unlock Licenses“ button, the Switching Manager (API) is restarted to avoid error states. In the case of the Redundancy license, an API restart is mandatory, since this is a massive system change.

5.7.1 SWITCHING MANAGER LICENSE

One license is included by default. When using the redundant Switching Manager, it is necessary that both PCs have the Switching Manager license activated in the backend.

5.7.2 API LICENSE

This license is required to use a new frontend.

5.7.3 REDUNDANT LICENSE

You must have purchased this license to use Switching Manager Web redundantly.

5.7.4 NOTIFY OVER SYSTEM LICENSE

This license is required in combination with the Health Status. If the Health Status reports a warning level, you will immediately receive an e-mail notification.

5.7.5 ENDPOINT LICENSE

With this license, more endpoints can be unlocked.

5.7.6 ADMIN LICENSE

With this license the number of universal admins can be extended. With the purchase of the software an admin license is included.
5. FUNCTIONS

5.7.8 HEALTH STATUS LICENSE

• Explanation of the columns:
  Status: Provides information on the overall health status of the extender.
  Green checkmark stands for everything fits. Yellow triangle with call sign stands for a problem, that does not need to be taken care of immediately. Appears when an Extender has redundant links/power connections and at least one of them is not working or connected. Red symbol (looks like a stop sign), appears when the temperature of an extender is much too high and something must be done immediately to ensure that the device will not break.
  Offl: Device is not discoverable by the manager, no links and or no power.
  °C: The current temperature of the FPGA chip, if the temperature is too high a symbol will be shown here (yellow or red temperature gauge). With offline 0
  Power Supply: Gives info if an extender has 1 or 2 power connectors and which of them is connected or working. In case of offline in gray.
  Link Status: Gives info if an extender has 1 link or is redundant and if both are connected and working.
  Monitor Name: The name of the monitor connected to the remote, for locals it will be written „Local Unit“ and for offline devices it simply says offline. For remotes that do not have monitor connected, it says „Unidentified“.

The Healthstatus has also some tooltips at the single symbols, which give you an info about which link it is or what the status symbol stands for, for example.

5.8 REDUNDANT SWITCHING MANAGER

All redundant managers must have the „Switching Manager License“ and the „Redundancy License“ activated. The „Redundant Manager Address“ must be set to the IP address of the manager in case of redundancy.

Furthermore you have to enter the redundant frontend in the config.json.template file. you can find the file under „KVM Switching Manager\wwwroot\assets“, after that you have to save the file under the name „config.json“ in the same folder.
If you don't use the installer, you can find the file under Frontend\(version)\assets instead (version)\assets and the procedure is the same.

```json
{
    "apiUrl" : "http://localhost:5000",
    "wsUrl" : "ws://localhost:5000/ws",
    "apiUrlSecondary" : "address:port",
    "wsUrlSecondary" : "ws://address:port/ws"
}
```

Picture: file frontend
5. FUNCTIONS

5.9 UPDATE SERVICE

FUNCTION
In this view, all extenders are displayed that are assigned to the Switching manager and for which a firmware update is to be carried out. As a first step, select the device type.

SCREEN Selecting the unit type

To update the units, three steps must be carried out

1. step
Selecting the correct update file In this case, it must be an update file for Flexline. The correct extension of the update files is „.bin“.

2. step
Select the extenders that are to be updated. The selection is made by clicking on the checkboxes.

3. step
Send to Device: the firmware is sent to the selected extenders without interrupting the running operation. (takes a few minutes)
Afterwards, the firmware can be activated with Update Selected and the devices are restarted.
Send and Update: Here the two steps are carried out automatically one after the other. When updating large systems, carrying out the steps separately is advantageous because it makes it easier to plan the time of the interruption.
5. FUNCTIONS

5.10 LOG OUT

The current user is logged out with the Logout button. The user is forwarded to the Log In screen. In the Log In screen, the user can log in again.

SCREEN Log In

SCREEN: The update is installed and can be carried out

SCREEN: the update is now done
If you have any questions about kvm-tec products, please contact us.

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