User's manual

BARCO WALL CONTROL MANAGER

R5990102

Barco Wall Control Manager, Current Version

Title: BARCO WALL CONTROL MANAGER – User's Manual
ID-no.: R5990102
Revision: 01
Date: November-2007

	main issue	update
chapter 1		
chapter 2		
chapter 3	add	
chapter 4	add	
chapter 5	add	
chapter 6	add	
chapter 7	add	
chapter 8		

new: The corresponding chapters are new or completely revised.
corr.: Passages of the corresponding chapter were corrected; see modification bars.
add.: Passages of the corresponding chapter were added; see modification bars.

Document History

Modifications, which result in a new version, are indicated by a vertical bar.

Trademarks

Brand and product names mentioned in this manual may be trademarks, registered trademarks or copyrights of their respective holders. All brand and product names mentioned in this manual serve as comments or examples and are not to be understood as advertising for the products or their manufacturers.

Copyright © 2007 by BARCO

Copyright © 2007 by BARCO

Guarantee and Compensation

BARCO provides a guarantee relating to perfect manufacturing as part of the legally stipulated terms of guarantee. On receipt, the purchaser must immediately inspect all delivered goods for damage incurred during transport, as well as for material and manufacturing faults. BARCO must be informed immediately in writing of any complaints.

The period of guarantee begins on the date of transfer of risks, in the case of special systems and software on the date of commissioning, at the latest 30 days after the transfer of risks. In the event of justified notice of complaint, BARCO can repair the fault or provide a replacement at its own discretion within an appropriate period. If this measure proves to be impossible or unsuccessful, the purchaser can demand a reduction in the purchase price or cancellation of the contract (redhibition). All other claims, in particular those relating to compensation for direct or indirect damage, and also damage attributed to the operation of software as well as to other services provided by BARCO, being a component of the system or independent services, will be deemed invalid provided the damage is not proven to be attributed to the absence of properties guaranteed in writing or due to the intent or gross negligence on the part of BARCO.

If the purchaser or a third party carries out modifications or repairs on good delivered by BARCO, or if the goods are handled incorrectly, in particular if the systems are commissioned or operated incorrectly or if, after the transfer of risks, the goods are subject to influences not agreed upon in the contract, all guarantee claims of the purchaser will be rendered invalid. Not included in the guarantee coverage are system failures which are attributed to programs or special electronic circuitry provided by the purchaser, e. g. interfaces. Normal wear as well as normal maintenance are not subject to the guarantee provided by BARCO either.

The environmental conditions as well as the servicing and maintenance regulations specified in this manual must be complied with by the customer.

Revision sheet

To:

- **BARCO Control Rooms GmbH**
  An der Rossweid 5, D-76229 Karlsruhe
  Phone: +49-721-6201-0, Fax: +49-721-6201-298
  E-mail: docu.de.bcd@barco.com, Web: www.barcocontrolrooms.com

From: _____

Date: _____

Please correct the following points in this documentation (**R5990102**):

page	wrong	correct

Contents

1 Introduction

This chapter explains the structure of the manual itself and the used typographic styles and symbols. Safety information is provided concerning the operation of computer systems from Barco.

1.1 How this manual is organized

- **Introduction**
  This section explains the structure of the manual itself and the used typographic styles and symbols.
- **Network integration**
  This section gives a short introduction how to integrate Barco Wall Control Manager in a sub net.
- **Installation**
  This section lists the system requirements and informs how to setup the Barco Wall Control Manager software and the spectrometer.
- **Working with Barco Wall Control Manager**
  This section explains how to create a wall in the client application, how to adjust a video wall, how to get information about health, actions, events and properties of the system.
- **User interface of Barco Wall Control Manager Client**
  This section explains the user interface of the client software.
- **Troubleshooting**
  This section gives useful hints and informs about the hotline.
- **Reference**
  This section lists and shortly explains the commands of Barco Wall Control Manager.

1.2 Styles and Symbols

The typographic styles and the symbols used in this document have the following meaning:

Bold	Labels, menus and buttons are printed in **Bold** font.
Condensed	Links to both other chapters of this manual and to sites in the Internet are printed condensed. In the on-line version of this manual all hyperlinks appear teal.
`Courier`	Names of files and parts from programs are printed in the `Courier` font.
`Courier bold`	Inputs you are supposed to do from the keyboard are printed in **`Courier bold`** font.

The sheet icon indicates additional notes.

Next to this icon you find further information.

This arrow marks tips.

Next to this icon you find important notes.

2 Network integration

The Barco Wall Control Manager software is a client/server application to control and monitor video walls of the OV-D2 series. The workstation where Barco Wall Control Manager service is running and the projection modules of the video wall have to be in the same sub net.

The following section summarizes the prerequisites with regards network integration.

These steps do no require the Barco Wall Control Manager Software.

2.1 How to integrate a workstation into a sub net with dynamic IP address management

Every PC in a network requires a unique IP address. In case the IP addresses are managed by a DHCP server, the IP address is automatically assigned as soon as a PC is connected to the sub net. No further actions are required.

2.2 How to integrate a workstation into a sub net with static IP address management

Please note: this procedure only requires a Windows PC connected to the sub net of the video wall. No Barco Wall Control Manager software required!

Every PC in a network requires a unique IP address. If there is no DHCP server (e.g. the video wall and the Barco Wall Control Manager server(s) and client(s) are in a own sub net), the network interface cards are configured with a static IP address. The local IT administrator knows the range of valid IP addresses and the related subnet mask and gateway information.

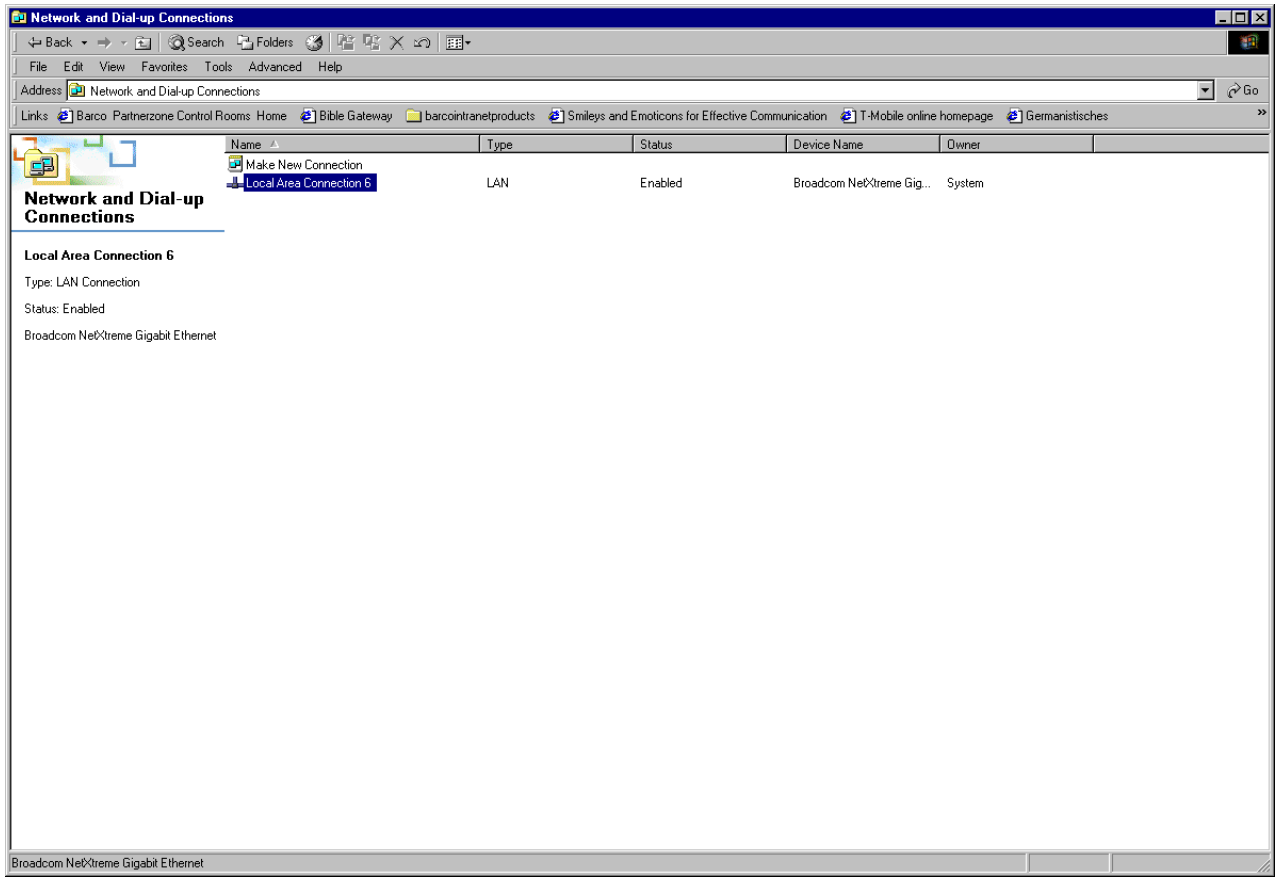
Please contact the local IT administrator for a valid IP address!

When the network information is known, thePCs for Barco Wall Control Manager have to be configured.

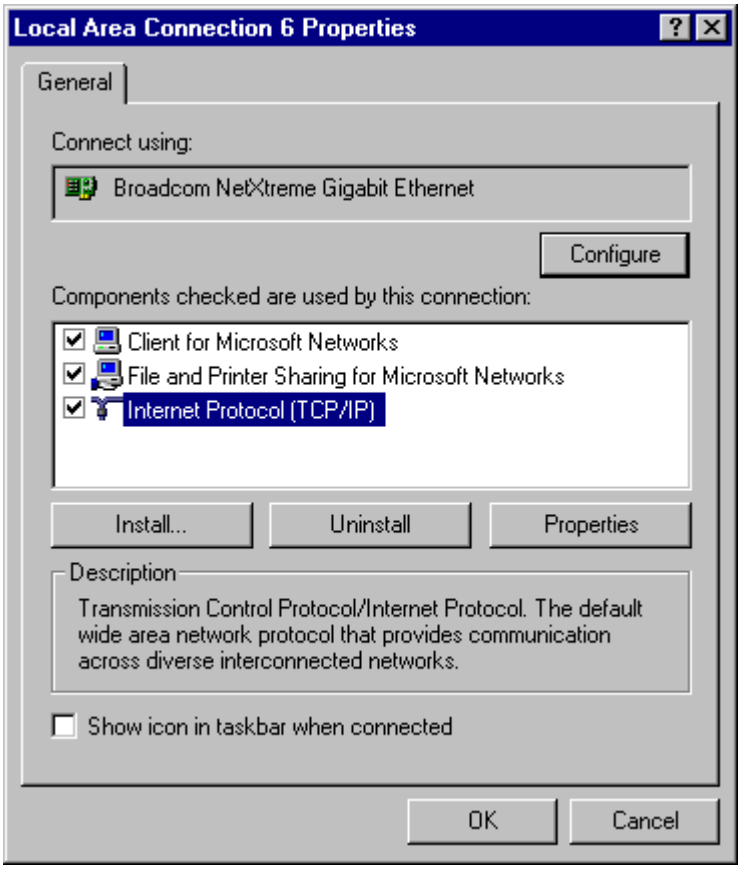
Connect a PC to the sub net via a network cable.

Make sure that the PC is running.

In case your PC is based on WindowsXP, select **Start|Control Panel|Network connections**.



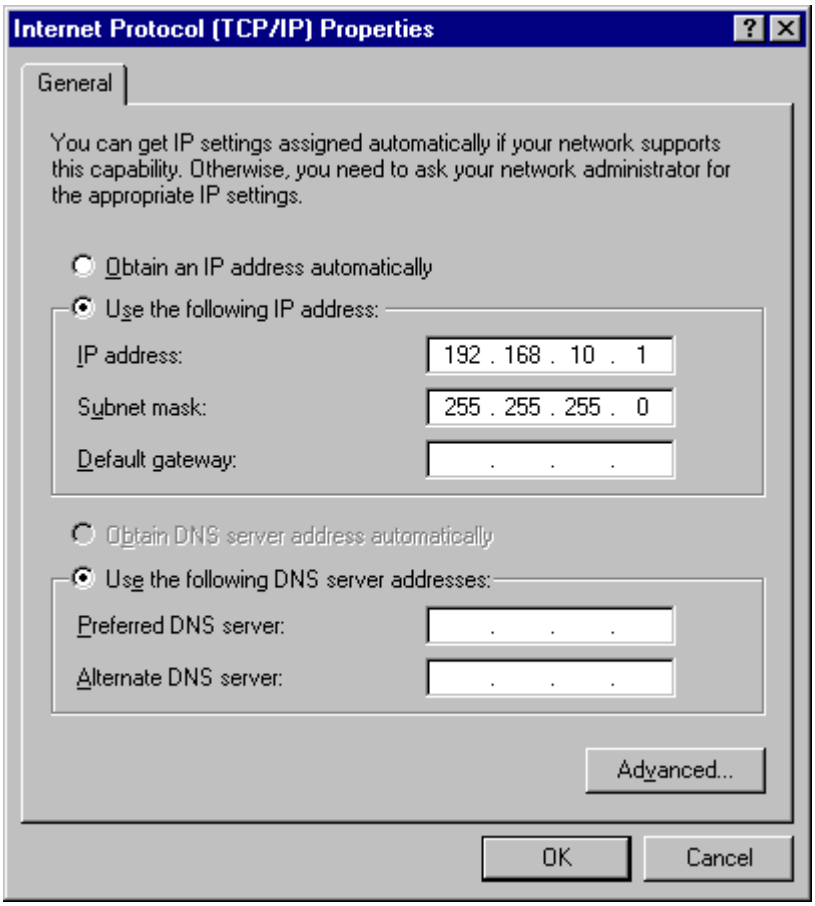
Right-click on the entry **Local Area Connection**, and then select **Internet Protocol (TCP/IP)**.



Click on **Properties**.

Enter the IP address information as received from the local IT administrator

(In the example below the IP address is 192.168.10.1. and the sub net mask 255.255.255.0)



Now the machine is properly connected to the sub net and can communicate with all other devices in this sub net (OV-D2 projection modules, Barco Wall Control Manager server(s) and Barco Wall Control Manager clients).

2.3 How to see the IP addresses of all projectors in the subnet

Please note: this procedure only requires a Windows PC connected to the sub net of the video wall. No Barco Wall Control Manager software required!

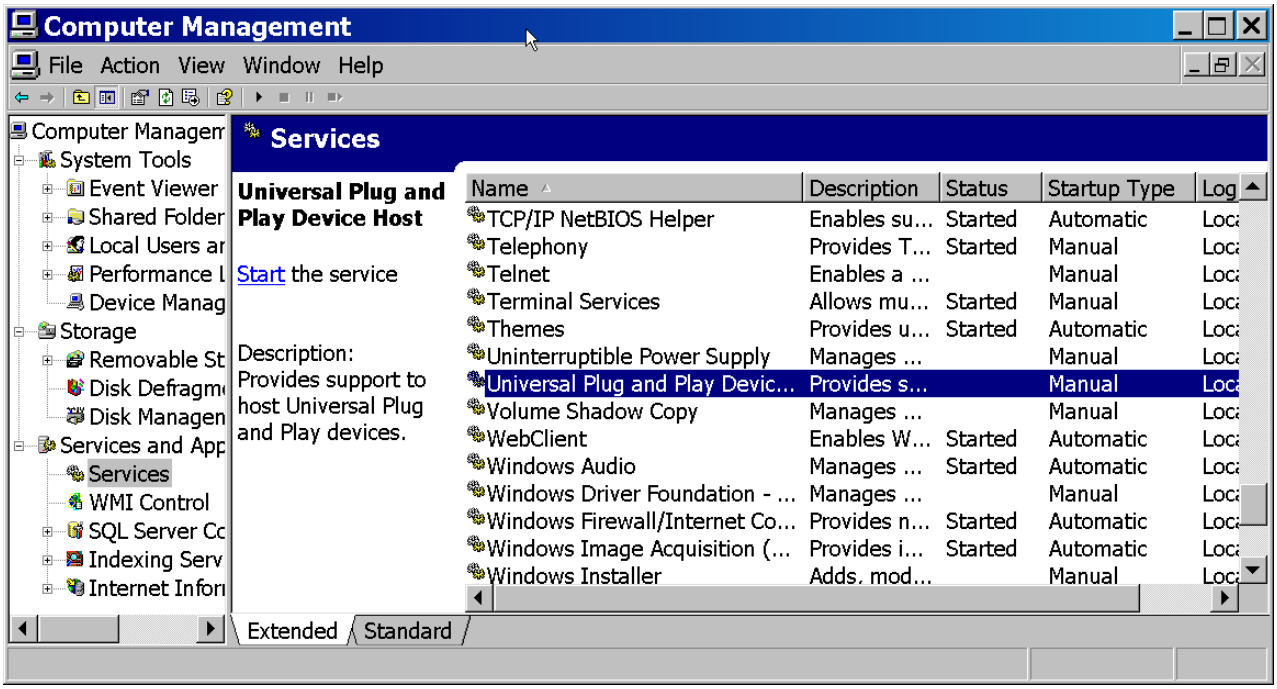
Universal Plug and Play (UPnP) is an architecture in Windows XP that supports peer-to-peer Plug and Play functionality for network devices. The UPnP specification is designed to simplify device and network service installation and management. UPnP performs device and service discovery and control through driverless, standards-based protocol mechanisms. Universal Plug and Play devices can automatically configure network addressing, announce their presence on a network subnet, and permit the exchange of device and service descriptions. A Windows XP-based computer can act as a UPnP control point to discover and control the devices through a Web or program interface.

You can install Universal Plug and Play support in Windows XP by using the **Add or Remove Programs** tool in **Control Panel**. If Universal Plug and Play support is installed, when a Universal Plug and Play device is added to the network, the Windows-based computer acts as a control point for that device, and notification is provided on the taskbar that a new device is available.

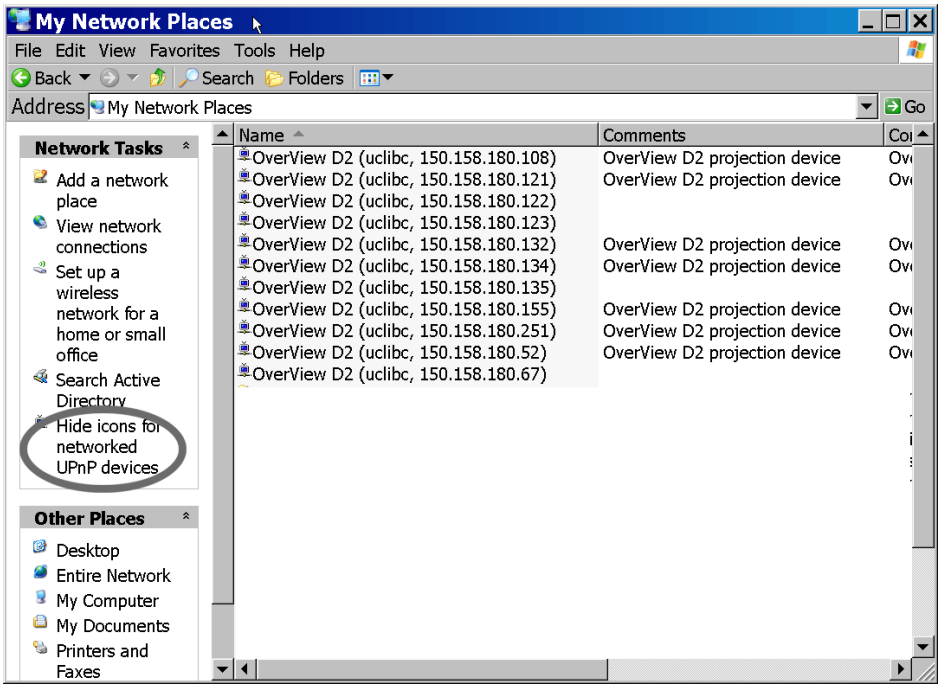
UpnP uses the ports 1900 and 5000 which have to be opened. Due to the open ports there is a security risk on your PC.

On a Windows PC where the Universal Plug and Play Device Host is running you can see projection modules of OV-D2 series in **Windows Explorer, My Network Places** if **Show icon for UPnP devices for networked devices** is selected (if asked, confirm to open the Windows firewall port settings).

To start the **Universal Plug and Play Device Host service**, right click on **My Computer** and select **Manage** from the context menu. Select **Services**, and then navigate to **Universal Plug and Play Device Host service**. Right click on the entry and select **Start**.



Right click on **My Network Places** and select **Properties**. On the left side of the window, in the section **Other Places** select **My Network Places**. Now the section **Network Tasks** provides the option **Show/Hide icons for networked UpnP devices**.

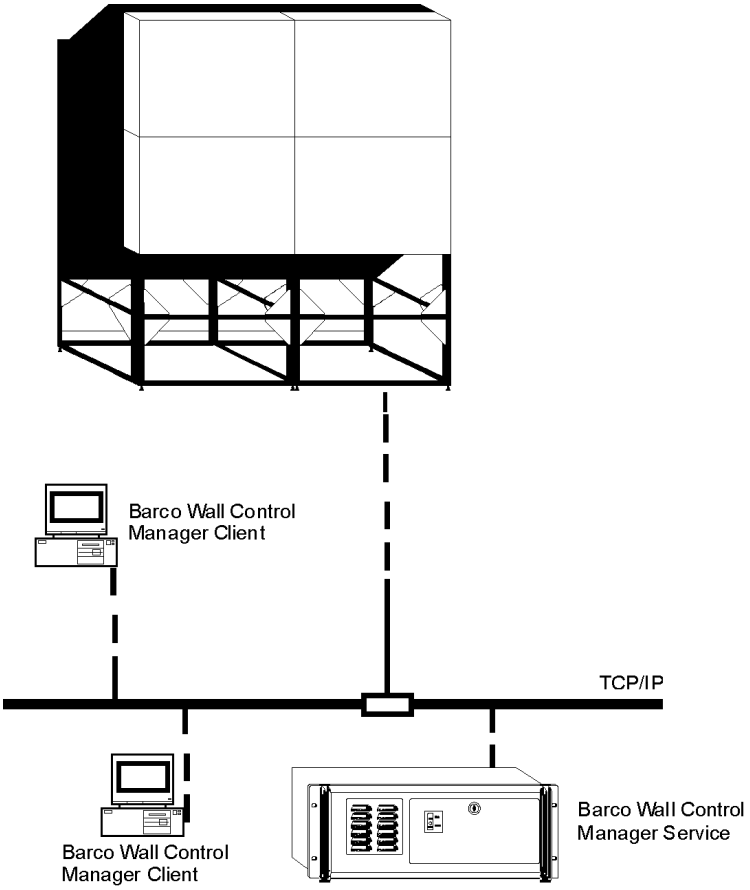


3 Installation

3.1 General

Barco Wall Control Manager Software is a client/server application communicating via LAN to the projection modules of the OV-D2 series..

The projection modules of the OV-D2 series thus can be controlled and monitored by any PC in the network where the Barco Wall Control Manager Client software is installed. In case the projection modules and Barco Wall Control manager client are in different subnets, these subnets have to be connected by a router.



The video wall as well as the workstation where Barco Wall Control Manager Service is installed have to be in the same sub net.

Workstations of Barco Wall Control Manager Client can be in a different network sub net provided there is router connecting these two sub nets.

The following table lists possible scenarios:

Number of video walls	Barco Wall Control Manager servers	Barco Wall Control Manager clients
1	1	1 (probably running on the same machine as the service)
1	1	many
many	1	1 (probably running on the same machine as the service)
many	1	many
many	many	1
many	many	many

Although many Barco Wall Control Manager servers running might be quite unlikely, this is possible: The application ensures that one video wall at one time can be controlled by one Barco Wall Control Manager service only.

Barco Wall Control Manager can only take control on a OV-D2 video wall if no other Barco Wall Control Manager is actively connected to this display wall.

3.2 System requirements

- Minimum: PC with at least PIII, 1.6 GHz, 512 MB, hard disk 120 MB, ethernet port.
  For server installation recommended: PIV, 2 GHz, 1 GB.
  It is recommended to install the server on a dedicated PC and not on the display wall controller.
  For client installation recommended: PIII, 1.6 GHz, 512 MB
- Windows XP Professional Service Pack 2 or later
- Internet Explorer 6.0 SP1 or later

The setup of Barco Wall Control Manager automatically installs the required JRE. This JRE can only be used by Barco Wall Control Manager.

For color adjustment with a spectrometer also the spectrometer and all related files are required, cf. Installation of the spectrometer.

3.3 Best practice

It is recommended to first read the readme file located on the CD-ROM!

You need administrative privileges to install the Barco Wall Control Manager software.
In addition the desktop resolution should be at least XGA (1024x768), and the color depth set to 24bit!

For color adjustment, a color bitmap is used. In case the color depth of the desktop is only 16 bit, the colors of this bitmap will never match the color impression of the projection module thus making it impossible to adjust the projection modules in color!

3.4 Used ports

Per default, Barco Wall Control Manager uses the following port:

Application	ports
Barco Wall Control Manager	TCP/IP port 6064

With Windows XP SP2, the firewall is activated and all ports are closed! Make sure to open the used ports!

In case the service should use a different port, adjust the port after the installation of Barco Wall Control Manager service. Navigate to the folder C:\Program Files\Barco Wall Control Manager. Use e.g. notepad to edit the file **WallService2.properties**. Modify the entry WallServicePort to the desired port.

3.5 Setup

The machine Barco Wall Control Manager software has to be installed needs to be in the same sub net as the video wall! In case there is a DHCP server managing the IP address of this sub net, no further actions are required.

In case the IP addresses in this sub net are static, please ask the network administrator for an IP address for the workstations to install Barco Wall Control Manager software. In this case you have to manually configure the workstation to this IP address, cf. How to integrate a workstation into a sub net with static IP address management

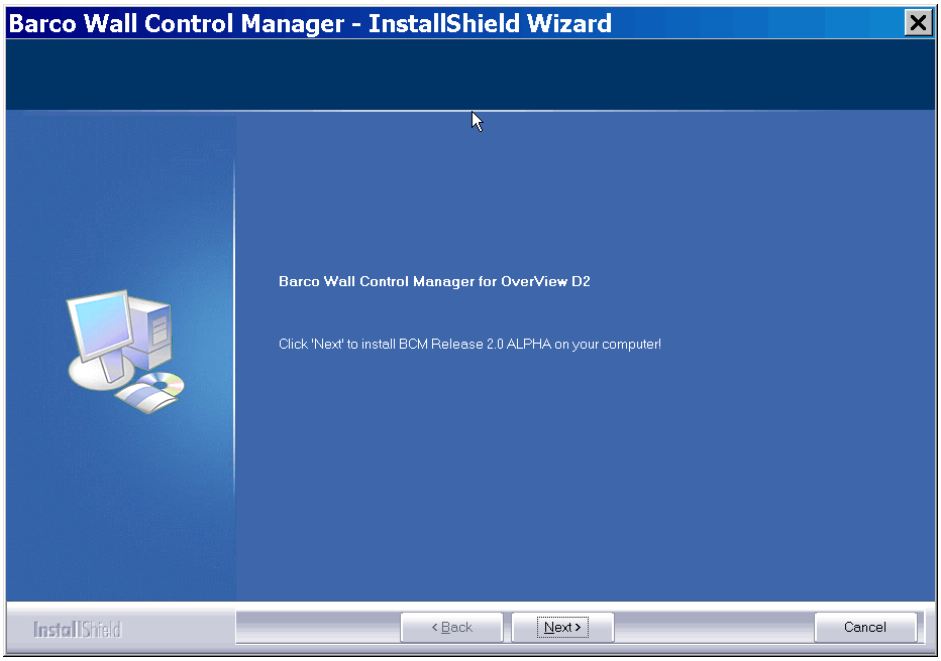
3.5.1 Installation of Barco Wall Control Manager service

You need administrative privileges to install the software.

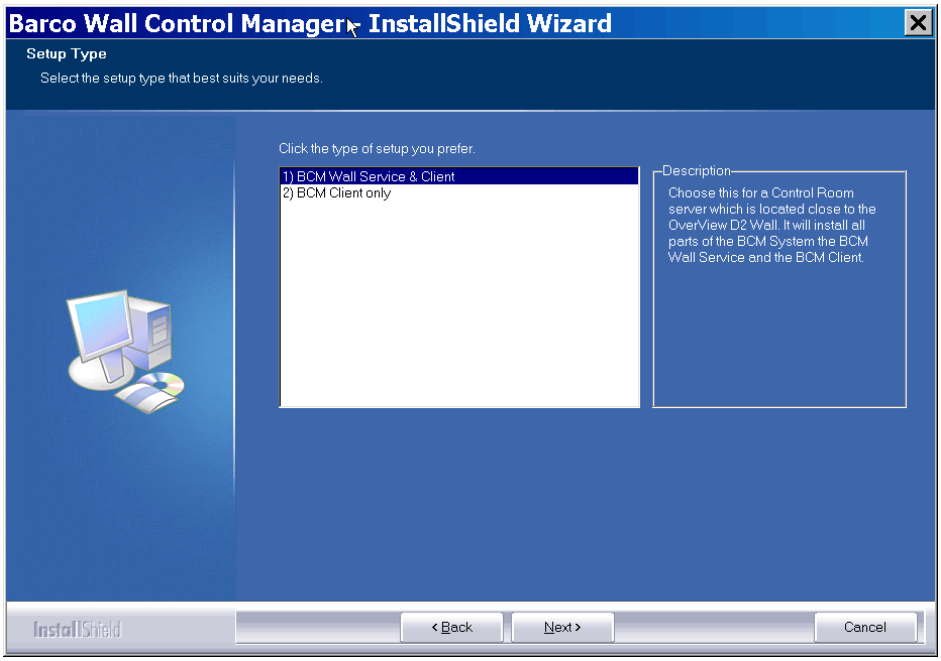
When installing Barco Wall Control Manager, clicking on setup.exe will first de-install any older version.

Subsequently you have to run setup.exe again.

Place the CD into the CD drive and run **setup.exe**. The Install Shield Wizard will guide you through the installation process. Follow the displayed instructions.



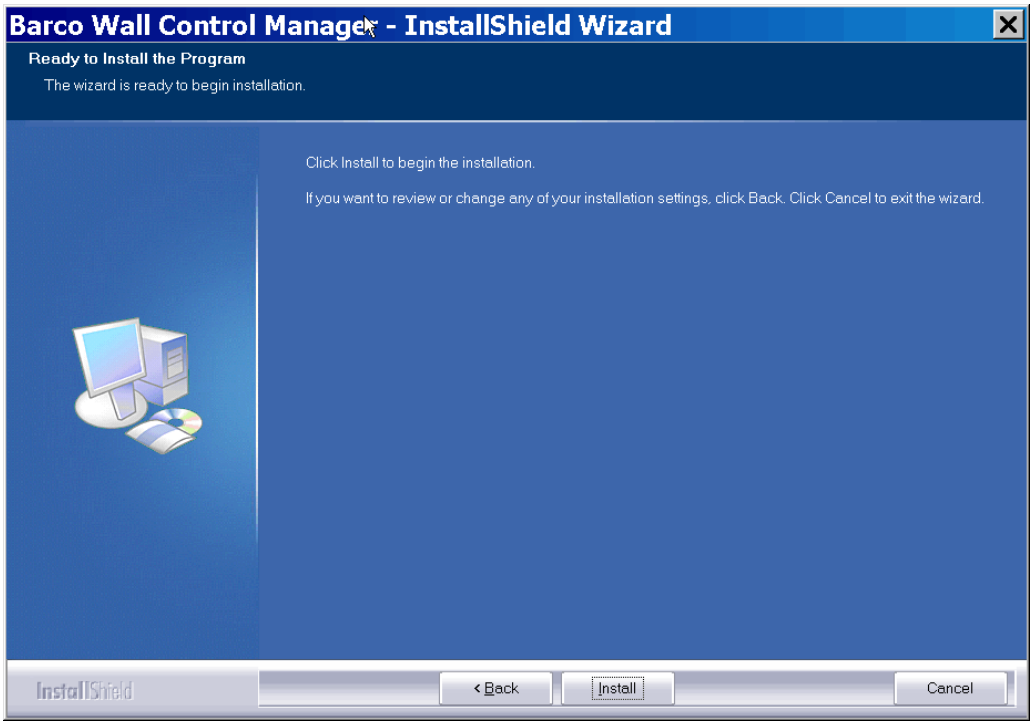
When you have accepted the End User Licence Agreement, the type of installation (Service+Client, Client only) can be selected.

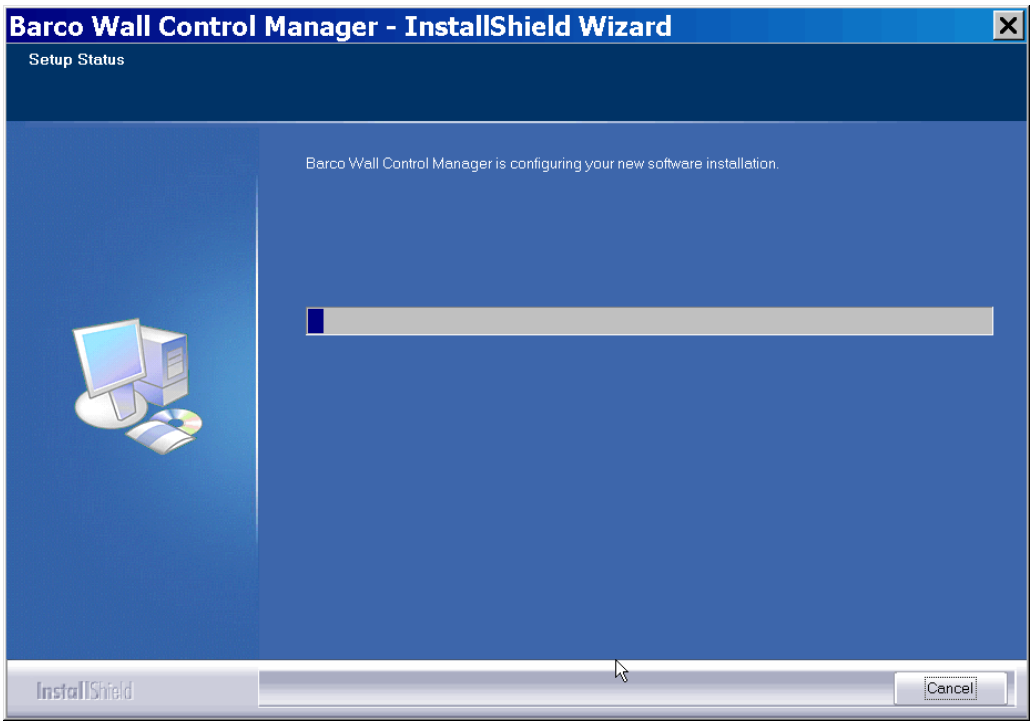


Option	Description
BCM Wall Service & Client	Installation of the server (Barco Wall Service 2) and client components the required libraries, logging utility, Java Runtime Environment (JRE) etc.
BCM Client only	Installation of the client components, the required libraries, Java Runtime Environment (JRE) etc.

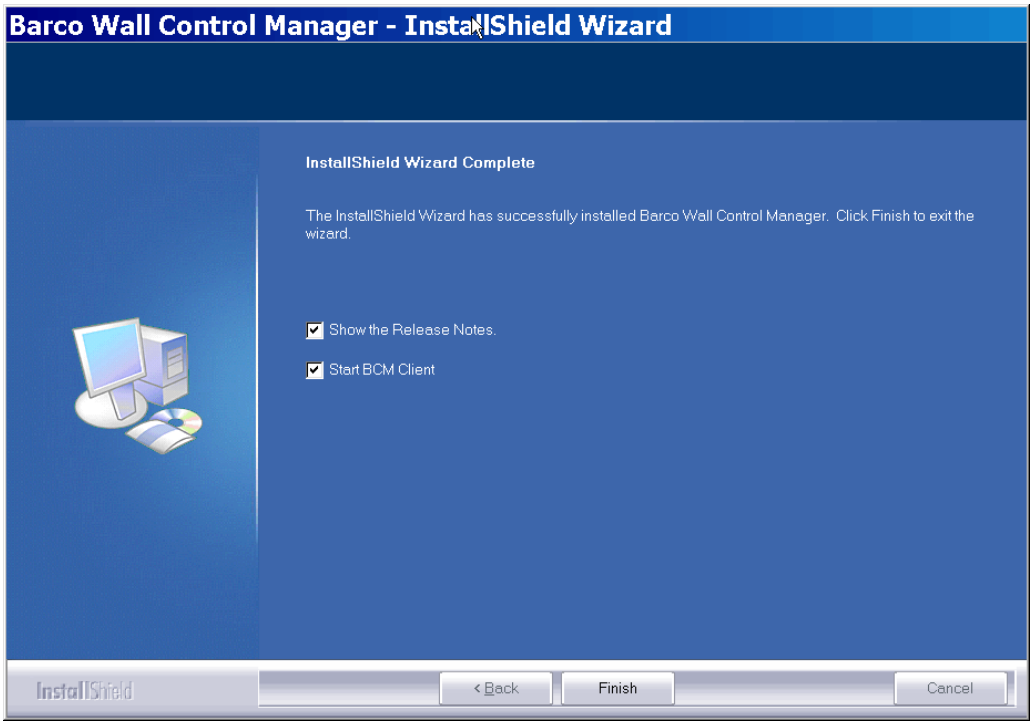
Select the desired installation.

After confirmation of the installation path or selecting a new one, the software will be installed when clicking on the **Install** button.





At the end of the installation procedure you can immediately launch the application.



If selected, clicking the **Finish** button will show the release notes and start the Barco Wall Control Manager client application.

You can always launch the Barco Wall Control Manager Client application using the shortcut Start|All Programs|Barco Wall Control Manager|BCM Client start.

The Barco Wall Control Manger service (Barco Wall Service 2) automatically starts when booting the machine. You can stop and re-start it manually using the shortcut mentioned.

Like for all services the status and the settings are accessible via the context menu of My Computer.

Right-click on **My Computer**. Select **Manage**. Select **Services**. Navigate to **Barco Wall Service 2** and adjusts its settings.

Installation of Barco Wall Control Manager Service creates the following shortcuts:

- Start|All Programs|Barco Wall Control Manager|Release Notes
- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Show Service Console
- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Show Tray Icon
- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Start Service
- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Stop Service
- Start|All Programs|Barco Wall Control Manager|BCM Client Start
- Start|All Programs|Barco Wall Control Manager|Show Client Console
- Start|All Programs|Barco Wall Control Manager|User's Manual

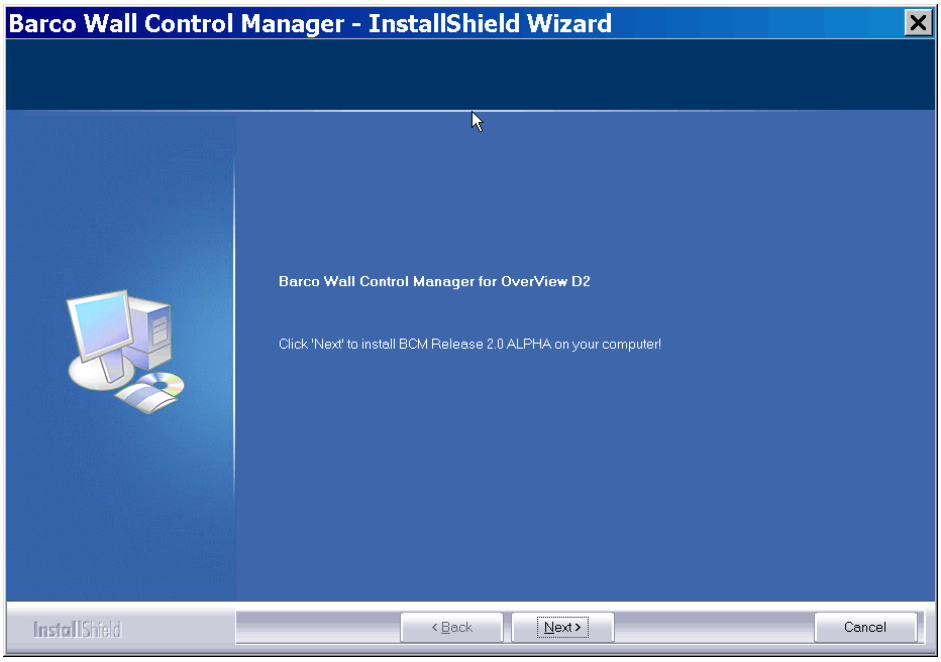
3.5.2 Installation of Barco Wall Control Manager Client

You need administrative privileges to install the software.

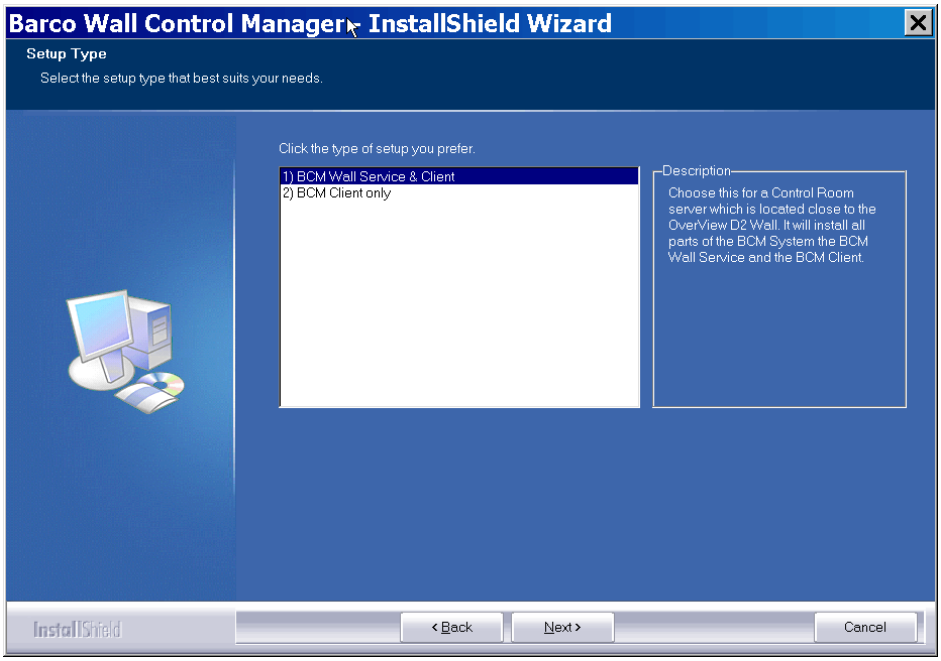
When installing Barco Wall Control Manager, clicking on setup.exe will first de-install any older version.

Subsequently you have to run setup.exe again.

Place the CD into the CD drive and run **setup.exe**. The Install Shield Wizard will guide you through the installation process. Follow the displayed instructions.



When you have accepted the End User Licence Agreement, the type of installation (Service+Client, Client only) can be selected.

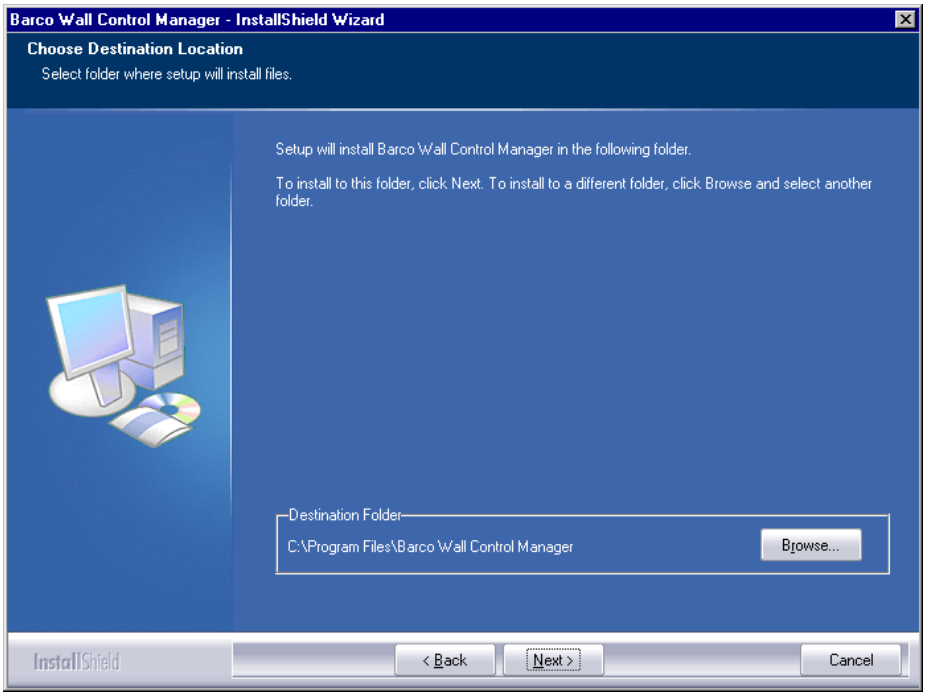


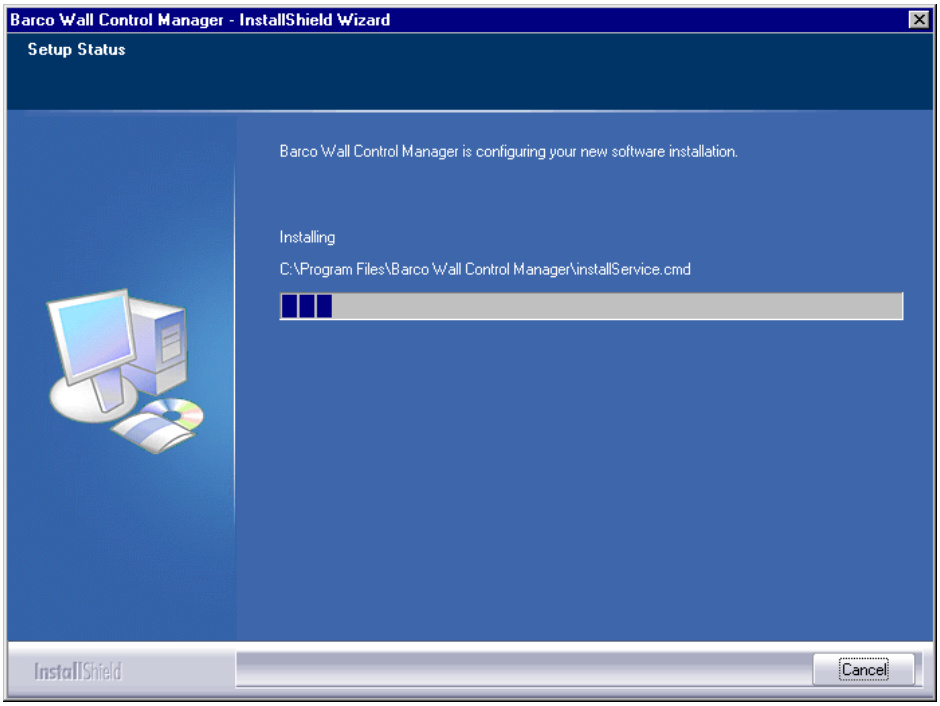
Option	Description
BCM Wall Service & Client	Installation of the server (Barco Wall Service 2) and client components the required libraries, logging utility, Java Runtime Environment (JRE) etc.
BCM Client only	Installation of the client components, the required libraries, Java Run-time Environment (JRE) etc.

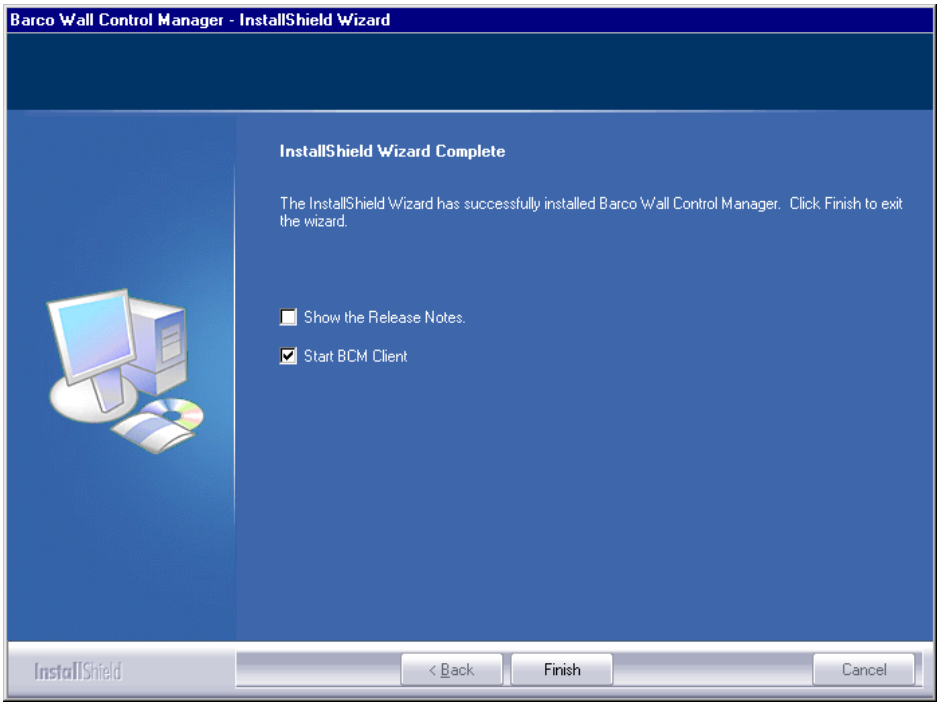
Select the desired installation.

After confirmation of the installation path or selecting a new one, the software will be installed when clicking on the **Install** button.

After confirmation of the installation path or selecting a new one, the software will be installed when clicking on the Install button.


Barco Wall Control Manager - InstallShield Wizard
Choose Destination Location
Select folder where setup will install files.
Setup will install Barco Wall Control Manager in the following folder.
To install to this folder, click Next. To install to a different folder, click Browse and select another folder.
Destination Folder
C:\Program Files\Barco Wall Control Manager
Browse...
InstallShield
< Back
Next >
Cancel


Barco Wall Control Manager - InstallShield Wizard
Setup Status
Barco Wall Control Manager is configuring your new software installation.
Installing
C:\Program Files\Barco Wall Control Manager\installService.cmd
InstallShield
Cancel



If selected, clicking the **Finish** button will show the release notes and start the Barco Wall Control Manager client application.

You can always launch the Barco Wall Control Manager Client application using the shortcut Start|All Programs|Barco Wall Control Manager|BCM Client start.

If you decide to immediately start the Barco Wall Control Manager client a dialog is displayed to create the wall, cf. How to create a wall in Barco Wall Control Manager client. Fill in the required information. The application starts, and the wall is shown as a tab in the workspace and as an entry in the tree below the node **localhost** (node of the Barco Wall Control Manager Server).

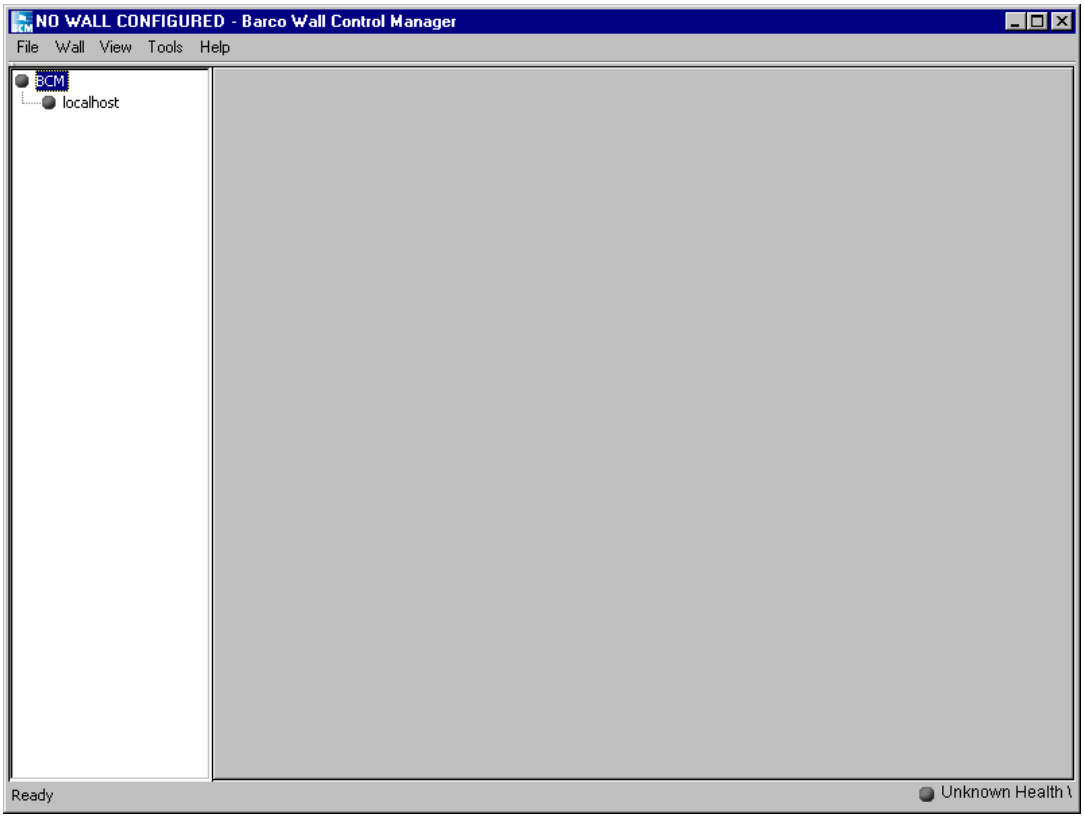
There is no need to explicitly establish a connection with Barco Wall Control server running on the same machine. The Barco Wall Control Manager client is automatically connected to the server localhost.

Installation of Barco Wall Control Manager Service creates the following shortcuts:

- Start|All Programs|Barco Wall Control Manager|BCM Client Start
- Start|All Programs|Barco Wall Control Manager|Release Notes
- Start|All Programs|Barco Wall Control Manager|Show Client Console
- Start|All Programs|Barco Wall Control Manager|User's Manual

3.5.2.1 Configuration of Barco Wall Control Manager Client

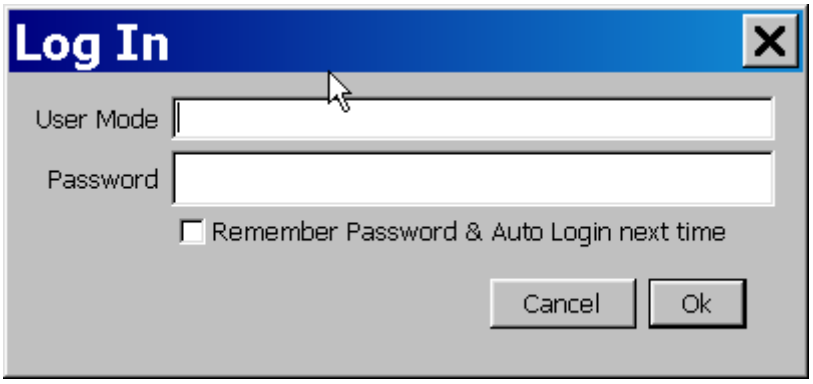
Launching the Barco Wall Control Manager Client for the first time on a client-only machine will indicate in the caption of the window that no wall has been configured yet.



Since with client-only installations no Barco Wall Control Manager Service is running on the machine, the node localhost is disabled.

To establish a connection with a Barco Wall Control Manager server you first have to log in (required minimum level = 2).

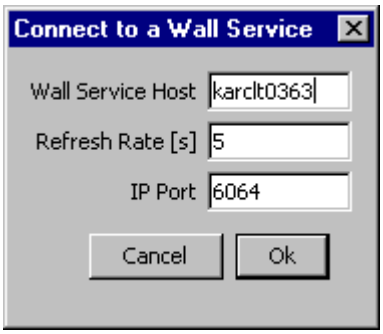
Select **Wall | Log In** and enter your credentials.



Depending on the skills, users can log in as
Operator (level 1)
Service (level 2)
Admin (level 3)

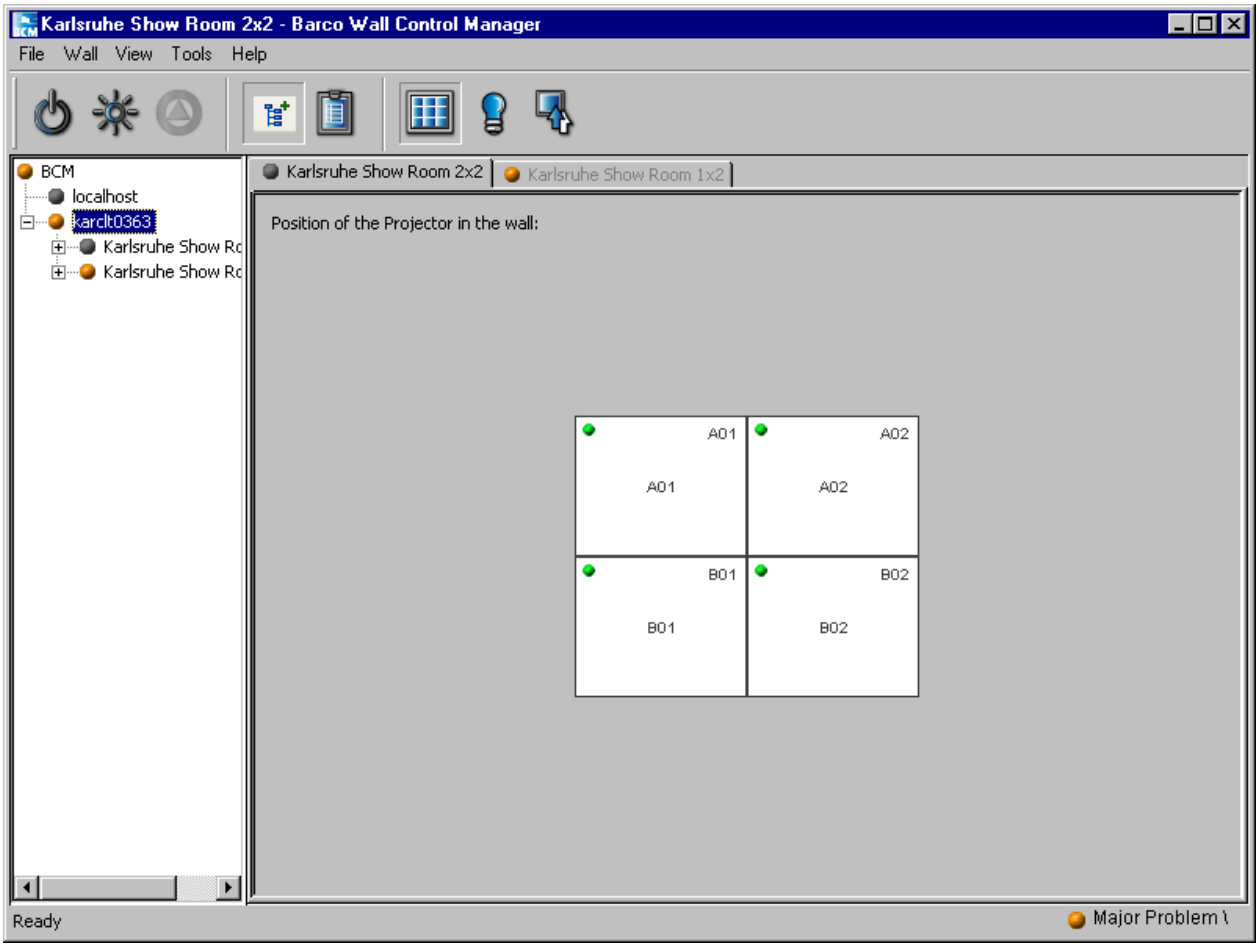
Subsequently select **Wall | Connect to...**

The following dialog opens where you have to indicate the machine the Barco Wall Control Manager service is running:



In case a different IP port has been defined in the file WallService2.properties on the server machine, make sure to adjust the IP port accordingly.

Close the dialog with **OK**. The Barco Wall Control Manager Server will be added as a node in the tree, with all walls controlled by this service listed below.



Now you can start working with the Barco Wall Control Manager Client.

3.5.3 Installation of the spectrometer

The initial adjustment of a video wall is based on measurements with a spectrometer. This spectrometer has to be installed separately.

On your OV-D2 CD-ROM you find next to the Barco Wall Control Manager software als CAST software (CAST is the abbreviation for Color Adjustment Service Tool).

You have to install CAST Rel. 2.3in order to use the spectrometer. For the spectrometer USB4000 you also have to install Java Runtime Environment. This is also on the CD-ROM.

Please refer to the manual provided in the CAST folder on the OV-D2 CD-ROM to learn about the installation procedure.

The spectrometer cannot use the JRE installed by Barco Wall Control Manager software. To use the USB4000, make sure that JRE 1.5 or JRE 1.6 is installed on your PC.

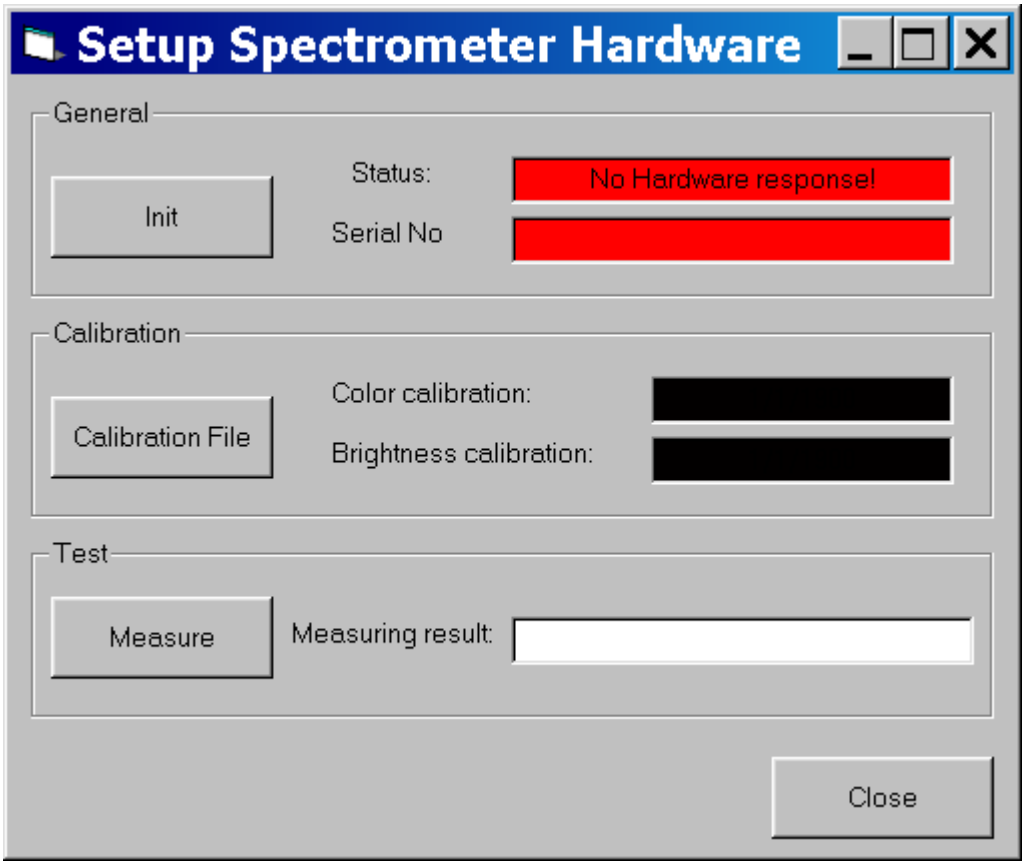
3.5.3.1 Spectrometer setup

The spectrometer setup is done in the Barco Wall Control Manager client application.

Log in with credentials of level 3.

Select **Tools|Spectrometer Setup.**

The following dialog pops up:



In case there is no hardware response, make sure that the spectrometer is plugged into an USB interface of your PC. Click on **Init**: the Barco Wall Control Manager client will check for devices connected to its USB ports and then read the serial number of the spectrometer.

In case the Barco Wall Control Manager shows **No Hardware response**, it is not sufficient to (re-)plug the spectrometer. It is mandatory to click on **Init** to introduce the device to Barco Wall Control Manager.

If required, click on **Calibration File** and browse to a valid calibration file. The calibration dates stored in the calibration file will be shown in the fields of color calibration and brightness calibration, respectively. It is recommended that the spectrometer is re-calibrated every year. Please check if the date shown for color calibration and brightness calibration is still valid or rather outdated.

Measure allows testing the spectrometer. The command triggers measuring the color locations of e.g. a monitor or a projection module. If the spectrometer works as expected, the measurement results will show values of color locations u', v'

4 Working with the Barco Wall Control Manager

The Barco Wall Control Manager software is a server/client application to control and operate OV-D2 video walls. The server has no user interface.

It is via the user interface of the client application that commands are sent to the server which addresses the respective projection module(s).

The user interface is tailored to the skills of the user. Provided the required privileges are sufficient, it offers virtually all commands and functions for all use cases.

The following section will show some use cases. The selection of course is not complete but only a sample. You will by yourself find additional situations where and how to use the software.

You will always need to be logged in! Ask your Barco Customer Support engineer to get valid credentials.

4.1 How to find the position of a projection module with Barco Wall Control Manager Client

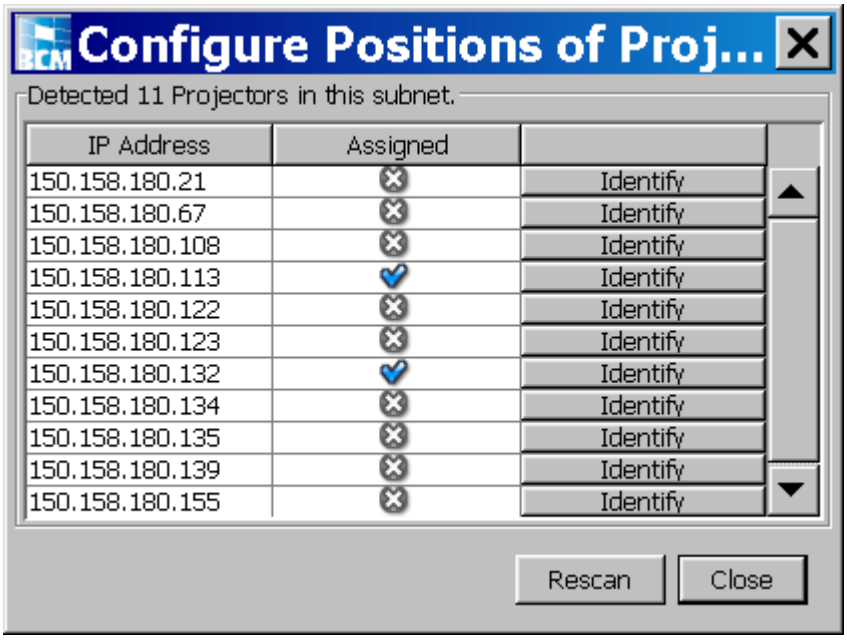
Please note: this procedure requires a Windows PC connected to the sub net of the video wall. Barco Wall Control Manager Client is already installed on the PC, and connected to Barco Wall Control Manager server controlling the video wall. When operating the client you need to see the video wall.

Log in to the Barco Wall Control Client application with level 3 or higher.

Select **Wall | Device Addressing | Drag&Drop config**.

A dialog opens listing the IP addresses of all OV-D2 projection modules the Barco Wall Control Manager has found in the sub net.

Click on the button **Identify**: the projection module with the IP address listed in the same row as the button you actually clicked will show a white background with a blue-bordered centered square.



4.2 How to create a wall in Barco Wall Control Manager client

Please note: this procedure requires a Windows PC connected to the sub net of the video wall where Barco Wall Control Manager Client is already installed. When operating the client you need to see the video wall only if you don't know the IP address assigned to a projection module in the video wall.

To operate the Barco Wall Control Manager client properly the software has to know the size of the wall and the IP addresses of the projection modules in the wall.

To create a wall, you need to know this information, e.g. a drawing like introduced in the previous chapter.

Like with all actions to be performed via Barco Wall Control Manager you first have to get authorization.
Click on **File | Log In**

Enter your credentials. The credentials have to be of level 3 or higher.

To administer a video wall in the Barco Wall Control Manager client (e.g. to add a wall, to rename a wall, to delete a wall) you have to be logged in with level 3 or higher.

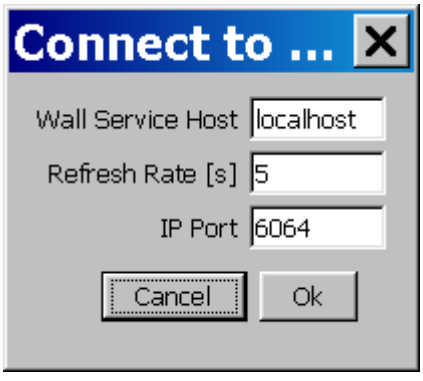
After you have successfully logged in, the menus are populated with all available commands and functions. The set of commands and functions depends on the level of the credentials.

In the tree view you see the Barco Wall Control Manager services the client is connected to. In case the service is running on the same machine there is a node **localhost**.

In case the Barco Wall Control Manager service is running on a different machine, you first have to connect to this service.

Select **File | Connect to..,**

A dialog opens where you have to indicate the IP address (or name) of the machine of the Barco Wall Control Manager server and the port you want to use for communication. In this dialog also the refresh rate is set.



Enter the required information and close the dialog with **OK**.

Now this server is added as a node in the tree.

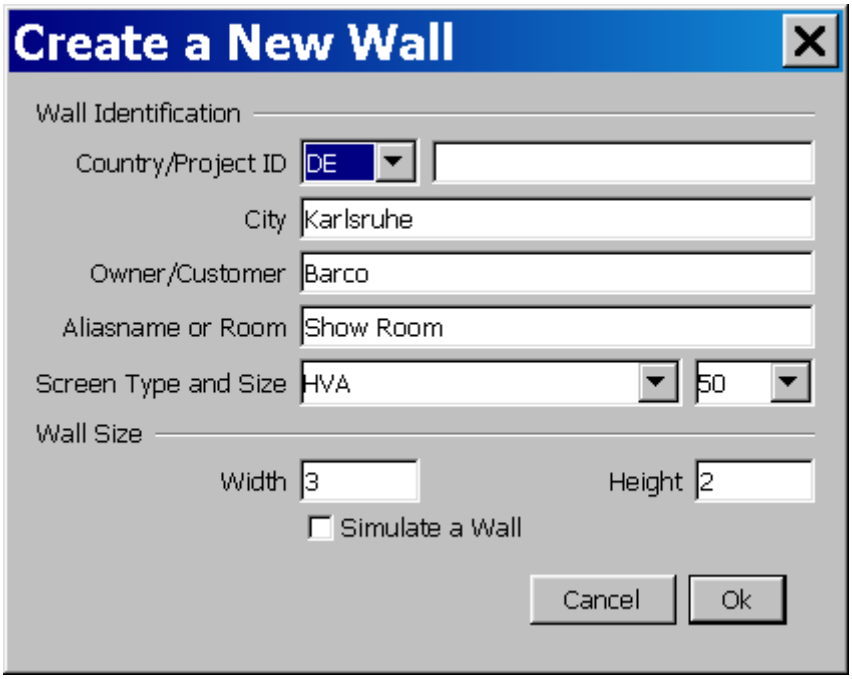
A video wall physically controlled by this Barco Wall Control Manager server will be shown in the tree view of Barco Wall Control Manager client as an enty below the node of the server.

In the tree view, select the node of Barco Wall Control Manager server controlling the video wall you want to create in Barco Wall Control Manager client.

Select **Wall | Add**

A dialog opens where you enter he size of the video wall (**Width**: projection modules in horizontal direction, **Height**: projection modules in vertical direction), the (userfriendly) name of the video wall (**Aliasname or Room**), customer name and location (**City**) etc.

Select the **country** from the list box. If the **project ID** is known, please enter it in the field next to the country.



Screen type and **screen** size can be selected from the respective list boxes.

Click on **OK** to confirm your entries and to close the dialog.

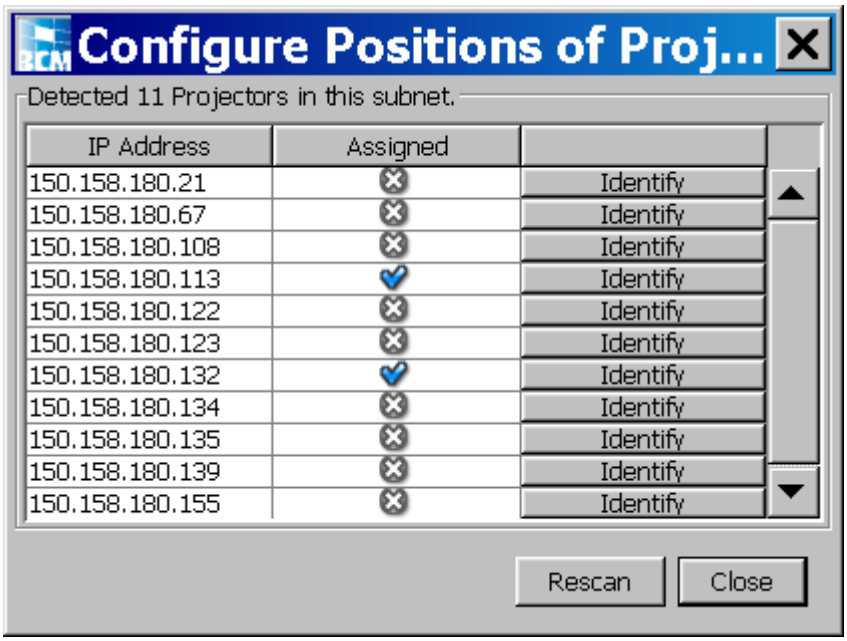
Now this wall has been added as a tab page in the work space of the Barco Wall Control Manager Client and also as an entry in the tree view below the respective Barco Wall Control Manager server.

In the workspace you see the grid of the video wall. The positions match the positions of you drawing. Now you have to assign the respective IP addresses.

Select **Wall | Device Addressing | Drag&Drop Config**

This command triggers the Barco Wall Control Manager client to scan the sub net for OV-D2 projection modules. It lists all found IP addresses in a window, and indicates if these IP addresses are already used (assigned) by a wall created in Barco Wall Control Manager client.

In case the IP addresses are already assigned, they get a blue tick and are blocked (i.e. they cannot be assigned to your newly created wall unless they get unassigned).

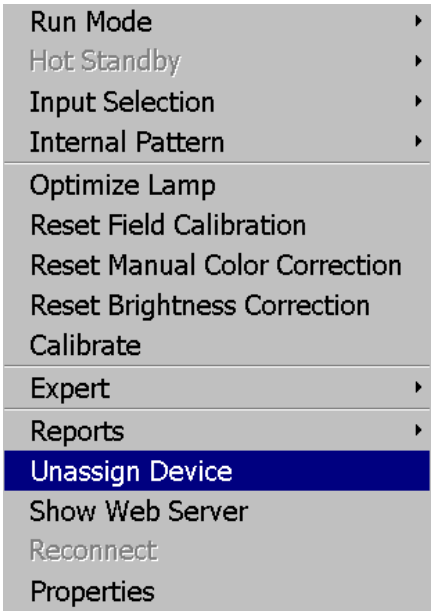


We assume that the video wall you want to control is not already controlled by another Barco Wall Control Manager server. Thus all the IP addresses of the projection modules are unassigned.

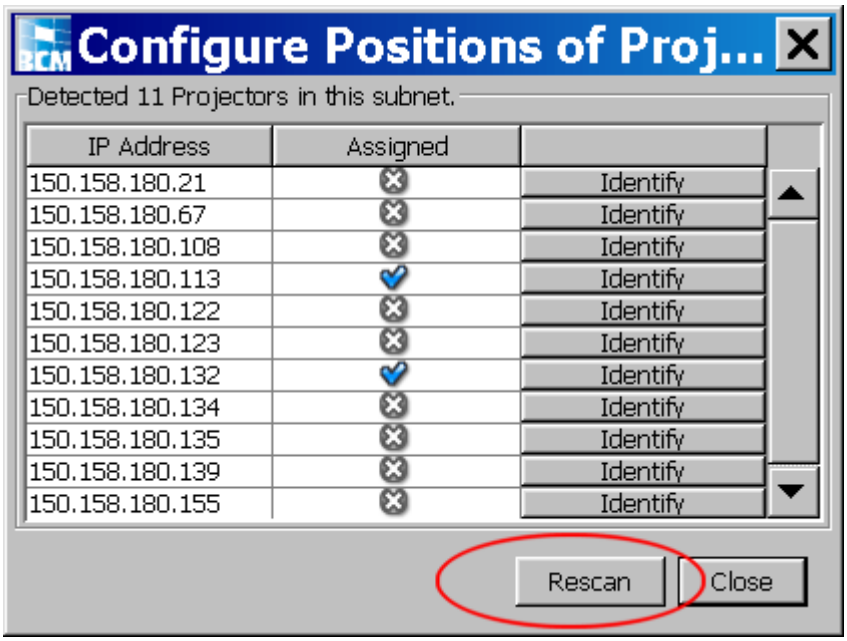
Select one of the IP address. Without releasing the mouse button, drag it into the respective cell in the grid and relesae the mouse button: Now the IP address has been assigned to the respective projection module. Use your drawing for proper assignment! Take care not to mix up the position and the IP addresses.

If you do not have a drawing showing the IP addresses assigned to the projection modules use the Identify button to find where to drag&drop the IP address.
Of course you need to see the video wall in order to find out which projection module displays the white background with the blue-bordered centered square.

In case you erratically assigned an IP address, right-click on the respective projection module in the grid. From the context menu, select **Unassign Device**. This will remove the IP address from the projection module of the wall in the Barco Wall Control Manager.



It is recommended then to **rescan** the network in order to update the information of the Barco Wall Control Manager Client about free and assigned IP addresses.



Proceed until all cells in the grid of the Barco Wall Control Manager Client workspace have been assigned an IP address.

There is no cross-check of the actual video wall and the representation of the video wall in the grid of Barco Wall Control Manager Client.

It is up to you to create the wall in the Barco Wall Control Manager Client application correctly!

Controlling a projection module will always address the projection module with the IP address assigned in the grid, no matter if the position in the video wall matches the position in the grid!

4.3 Adjusting a video wall

Every projection module has its native color and brightness. Combining multiple projection modules in a video wall will thus show differences in color and brightness across the wall.

A video wall controlled by Barco Wall Control Manager however features a homogeneous color and brightness distribution over time and across the entire wall. All differences of the individual projector as well as all drifts due aging processes are under control and compensated.

There are two pre-requisites:

- the video wall has to be calibrated
- Sense6 has to be enabled.

4.3.1 Calibration

Calibration is only recommended if the active lamps of the projection modules in the video wall have a runtime not exceeding 24 hours!

Color and brightness adjustment is based on an active feedback loop and on a comparison of the nominal and actual color and brightness values. Whereas the actual values are continuously read by the system, the nominal values as the reference point have to be given as input. This is done during calibration.

4.3.1.1 Calibration with a spectrometer

It is mandatory that the spectrometer has been properly installed, cf. How to install the spectrometer **and connected to the PC the Barco Wall Control Manager Client is installed on.**

Of course the PC has to be next to the video wall in order to perform the measurement.

For device aided calibration, credentials of level 3 or higher are required.

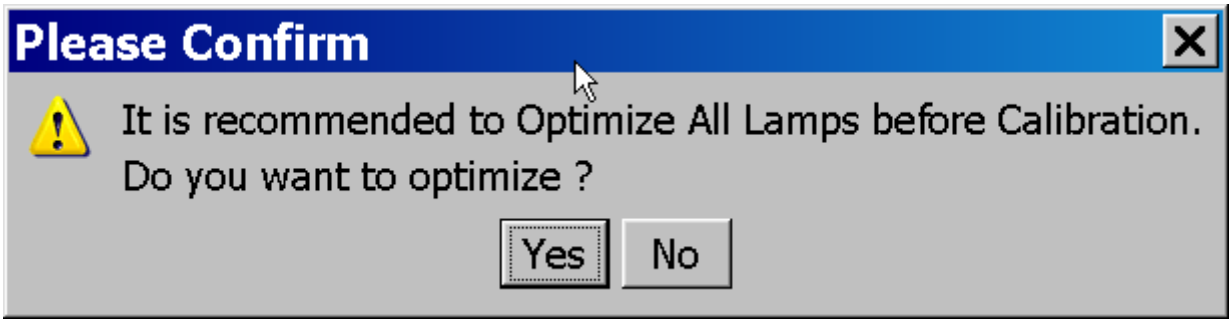
Log In with the required credentials.

To speed up performance during calibration it is recommended to disable Auto Save (Wall | Auto Save | Disabled).
After calibration has been completed, Auto Save should be enabled again.

Select **Wall | Calibrate**

The Barco Wall Control Manager informs that it will select all projection modules for the calibration procedure.

Before the calibrating procedure is actually started, the position of the lamps should be optimized.

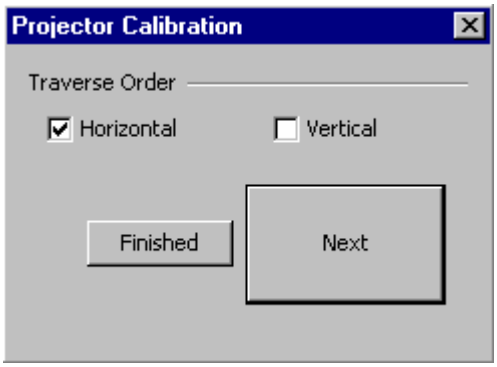


Optimization is done exclusively on the active lamps! The backup lamps are not optimized (also not in hot standby operating mode!)

It is recommended to do the optimization! Independent from the size of the video wall it can be assumed that it won't last longer than 3 minutes. Watch the hour glass!

A dialog is displayed where you can define your preferred measurement direction (horizontal or vertical). Measurement will always start at the most left projection module of the top row (seen from front). If horizontal is selected, after the first projection module the following projection module in the top row is measured, and so on. When the last projection module of the top row has been measured, the projection module measured next will be the last projection module of the second row etc. The measurement sequence is thus optimized for short distances between the individual measurements.

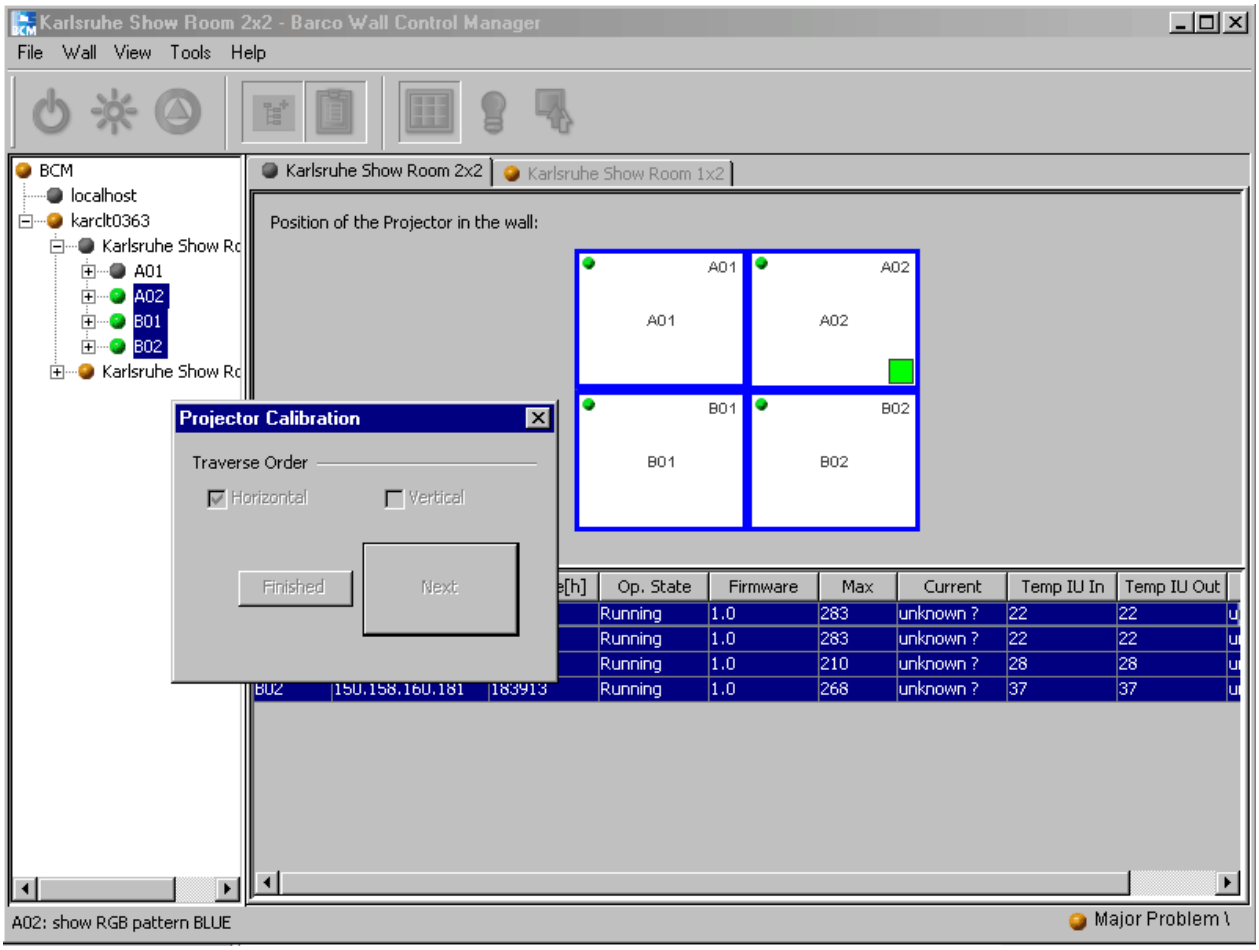
If vertical is selected, measurement goes from top to bottom in the first column, and then from bottom to top in the second column etc.



To start the measurement procedure, click **Next**. The first projection module will display its **Identify** pattern, i.e. a white background with a blue-bordered centered square.

Press the spectrometer in the center of this square.

Again click **Next** to measure the data for white, red, green and blue. Always the respective color is applied to the projection module. In the Barco Wall Control Client workspace the currently applied color is displayed in a little square at the bottom in the grid.

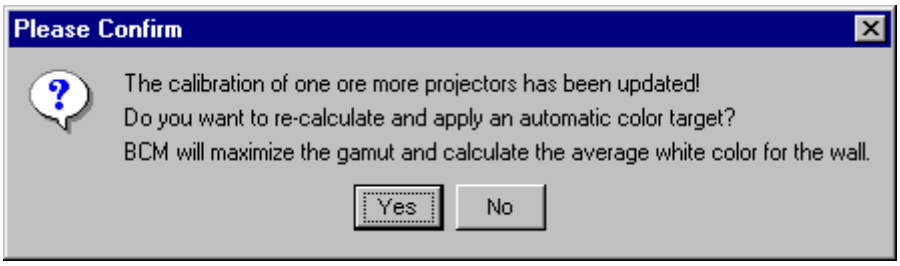


When white, red, green and blue have been measured, the next projection module in the measurement sequence displays the **Identify** pattern, and the **Next** button gets enabled again.

Press the spectrometer in the center of this square. Subsequently click on **Next** to start the measurement. Proceed until all projection modules have been measured.

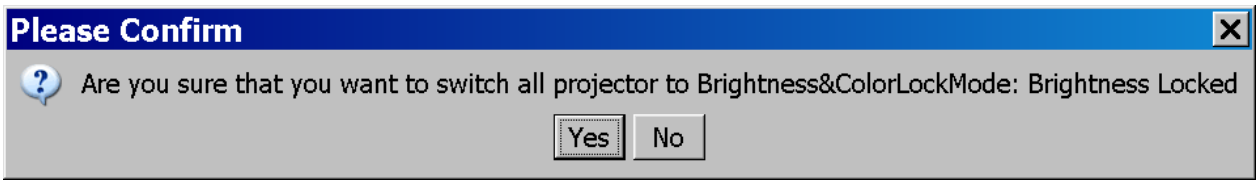
Click on **Finished**.

The calibration of the projectors is finished. The system is now able to (re)calculate and apply an automatic color target.



Click on **Yes** to apply the target to the video wall.

Subsequently the projection modules are switched to the best available Coler&Brightness mode: in case of a valid license file they are switched to **Sense6**, otherwise to **Brightness Locked**.



Click on **OK**.

The calibration data is stored in the projector. Thus after an initial calibration of a projection module all color and brightness adjustment algorithms and the feedback loop works without a spectrometer.

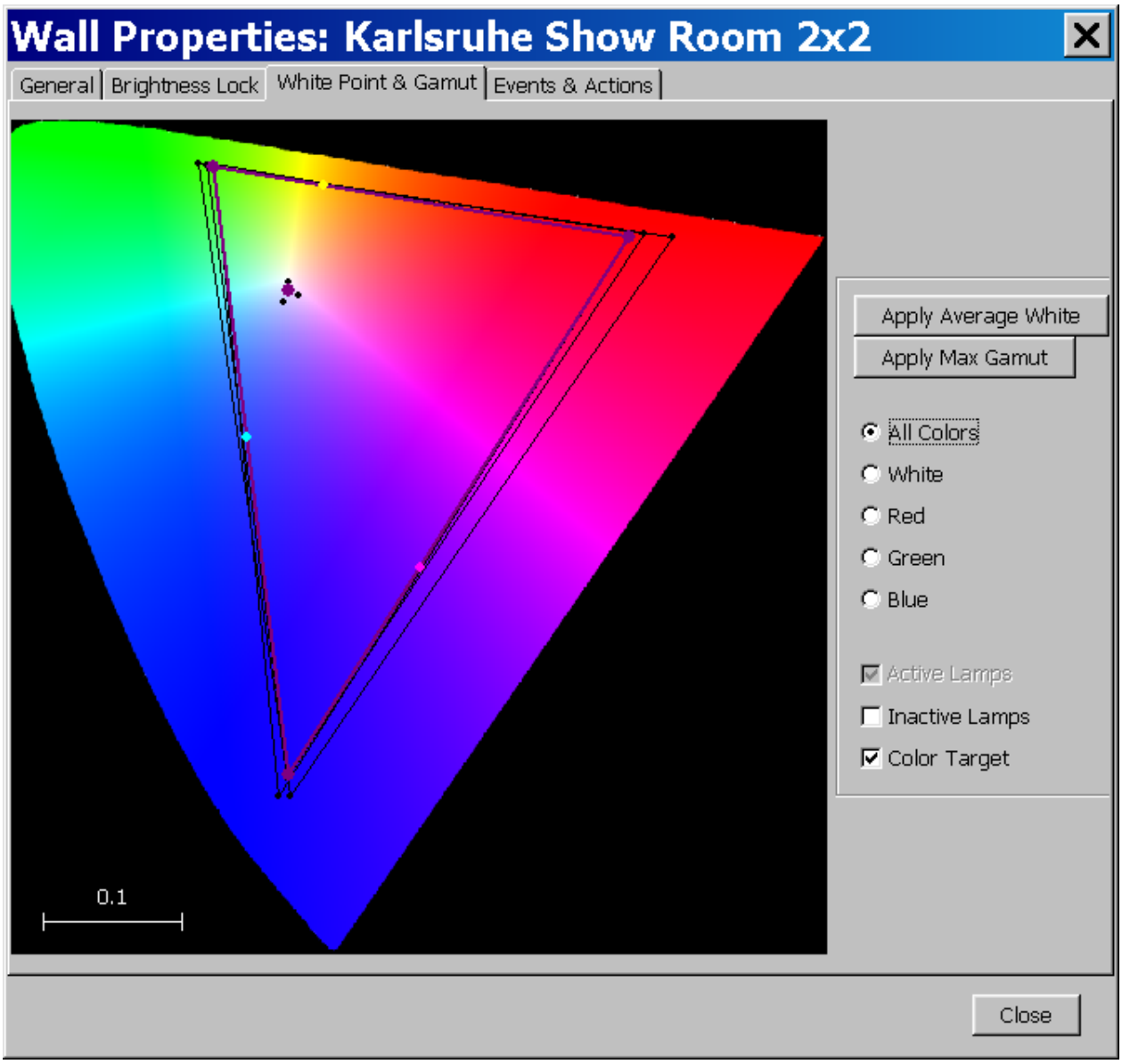
Thus calibrated projectors can be e.g. moved to another video wall, or controlled by a different Barco Wall Control Manager server without the need of a spectrometer.

It will be sufficient to calculate and then apply the Auto Target.

Recalibration of a projection unit due to shift in the sensor is recommended when replacing a lamp! Right-click on the respective projection module in the grid. From the context menu, select **Calibrate**. This command will first perform lamp optimization and then usethe spectral data stored in the lamp to recalibrate the system.

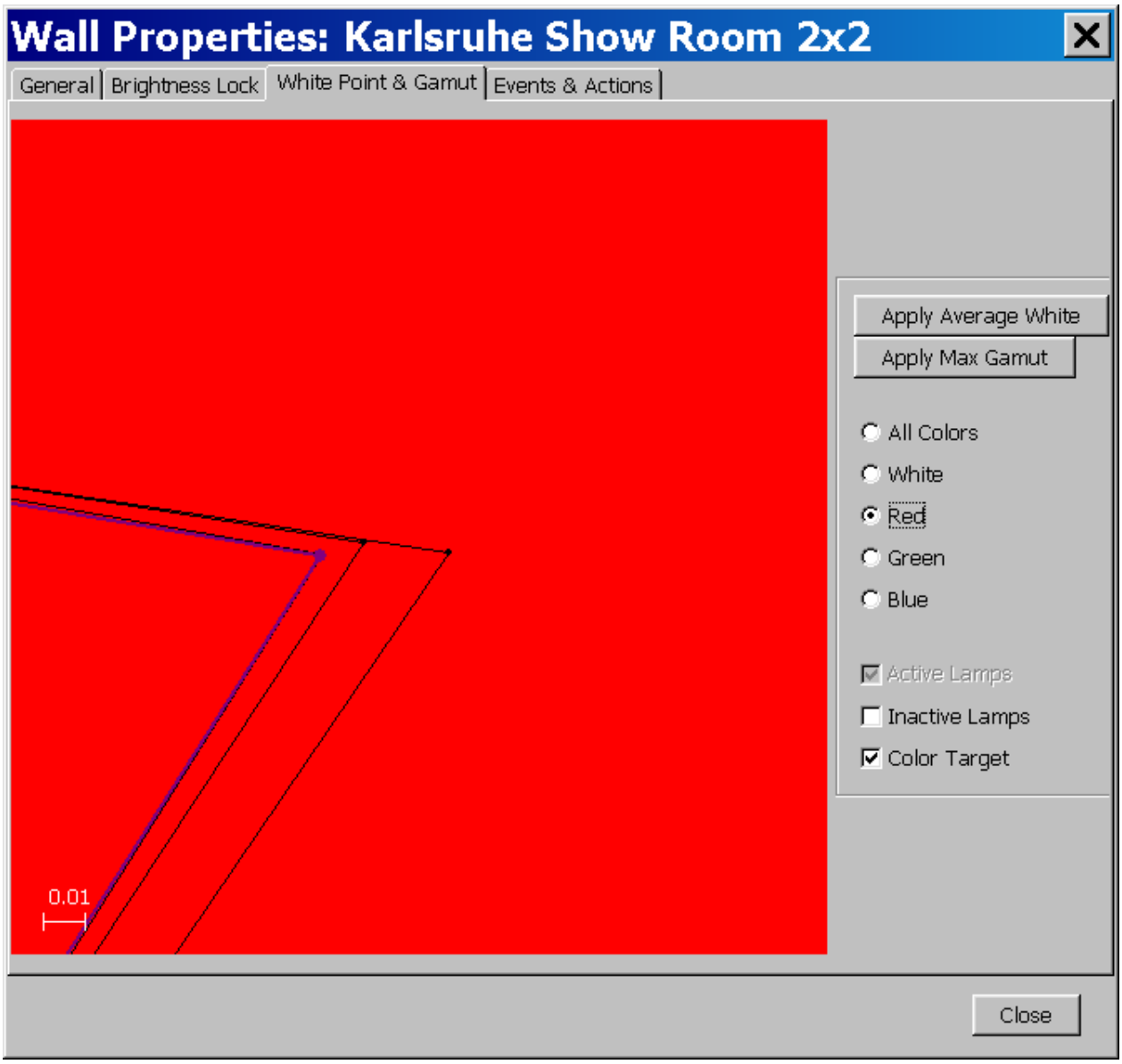
The Auto Target and the color locations of all projectors are visualized on a tab of the wall property page.

Select **Wall | Properties**, and activate White Point & Gamut.



If **Color Target** is checked, the auto target locations (the color location which can be reached by every projector) for white, red, green, and blue are indicated by purple dots.

In the bitmap the spectral range to be displayed can be selected. In case e.g. **Red** is selected the bitmap is zoomed to the red range:



Apply Average White and **Apply Max Gamut** define the color corrections to be applied to the individual projection modules.

In case of average white, all projection modules are set to feature the target color for white, red, green and blue. The triangle span by the common red, green, and blue corners then is inside all triangles and is thus minimized with respect to the triangle area.

The triangle area is called gamut. Applying max. gamut thus sets the common color locations for red, green, and blue to span the max. possible triangle while ensuring that the difference between a color reached by a projector and the color location defined by max. gamut is smaller than to be noticed by the human eye.

Run the video wall with the customer application.

Click on the respective buttons to see the effect.

Select the setting which best suits you needs.

4.3.2 Brightness Lock

OV-D2 projection modules are designed with the possibility of brightness regulation: due to a dimmer brightness can be adjusted in the range from 100% to 35%.

With 100% all light of the lamp is coupled into the illuminating optics. The related brightness value differs for all lamps in a video wall.

To adjust a video wall to a common brightness all lamps must be set to the same target. Thus it is always the darkest lamp which defines the max. brightness of a video wall.

To reduce eye stain the video wall might be operated at a lower brightness. The min. brightness which is possible for all lamps is given by the brightest lamp.

Due to aging processes of the lamps the maximum brightness and the minimum brightness are not constant over time but subject to change.

It is within the maximum brightness and the minimum brightness a video wall can be operated with perfect brightness uniformity.

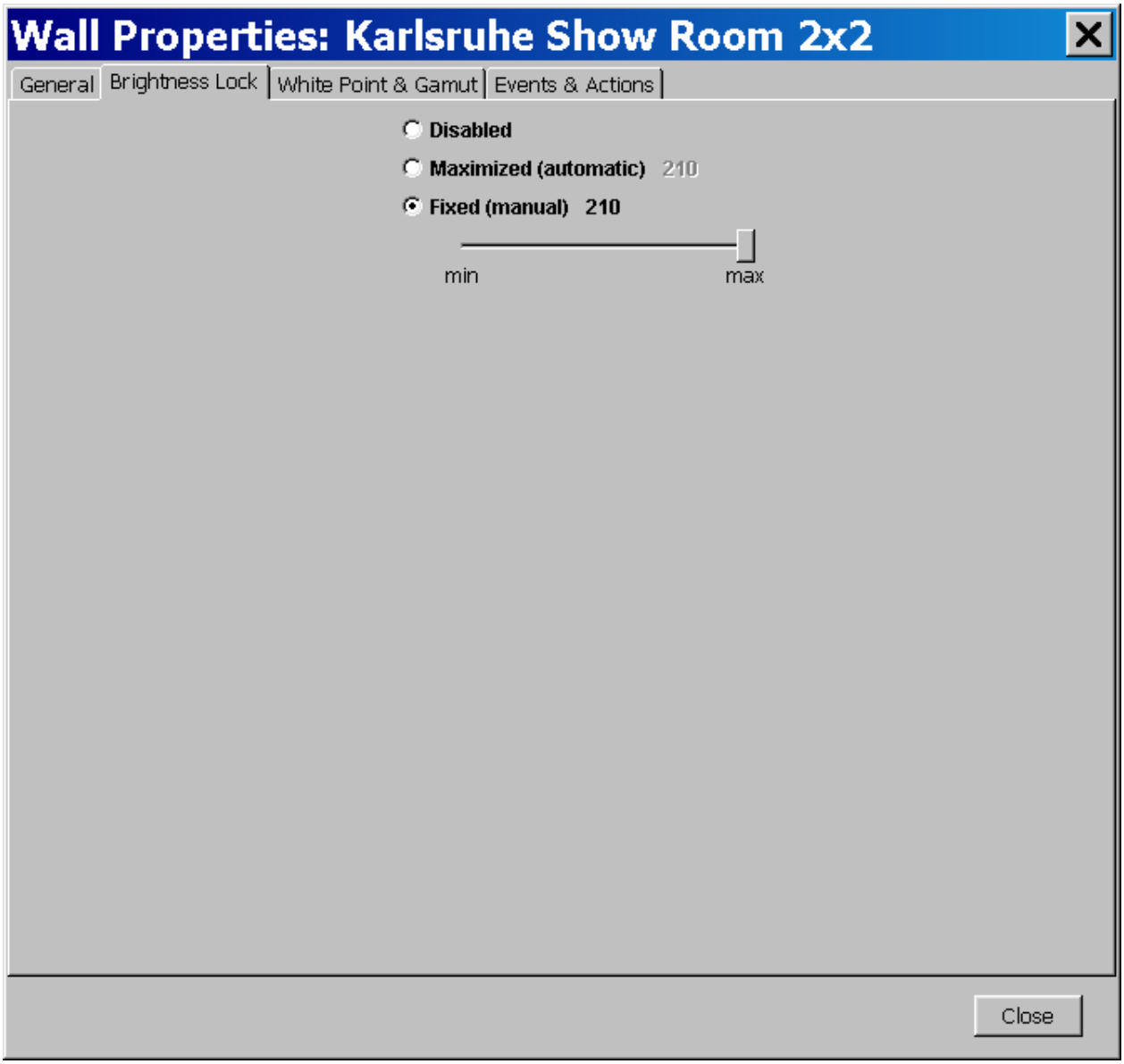
The minimum value and the maximum value refers to the currently active lamps only!

The actual value of this brightness can be fixed to a nominal value. This value is constant over time, however after a certain time there might be some lamps which can no longer reach this value and thus the video wall will show some inhomogeneities in brightness uniformity.

If the fixed value is set with reasonable distance to the maximum value the risk of inhomogeneities is minimized.

It is also possible to always run the video wall at maximum brightness. This value changes over time (i.e. it decreases due to lamp aging), but the adjustment algorithm always ensures that all lamps can reach this value.

Open the wall property page and activate the tab **Brightness Lock** to set the desired behavior (**Wall|Properties|Brightness Lock**)



Next to the option the respective brightness values (lx) are indicated.

Whereas the brightness mode Maximized is linked to a dynamic targets (in case of lamp aging the target will be adjusted automatically) represents the brightness mode Fixed a static target which might no longer be reached in case the lamps show reduced brightness due to aging processes. Then Brightness Lock will be disabled.

When changing the value for **Fixed**, changes will be applied to the display wall as soon as the slider bar has been released.

If **Fixed** is selected, and a value is set which is above the value indicated as the max. brightness or below the value indicated for the minimal brightness, the video wall cannot be adjusted to feature homogeneous brightness. The representative of the projection module in the grid show different gray color to indicate the different brightness level of the projection modules, and on the **Brightness Lock** dialog the option **Disabled** is selected..

The health status will then indicate a minor problem (yellow). Use **File|Alarms** to view the distance of the target of those projector which cannot be adjusted to the target. Use the slider bar on the **Brightness Lock** dialog to set a value reachable by all projection modules.

4.3.3 Calculate Auto Target

This command requires credentials of level 3 or higher.

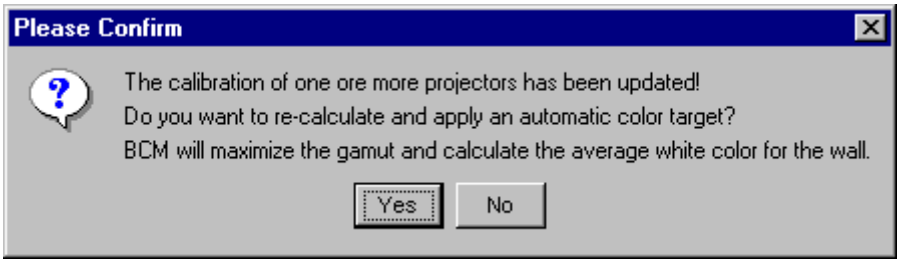
After the initial calibration of a projection module the respective data is stored in the projector and can be accessed by the Barco Wall Control Manager server.

In case a projector has to be replaced in a video wall, and in case the new projector has been calibrated once in its life, the color and brightness adjustment of the display wall does not require a measurement procedure but simply to calculate and apply a new Auto Target.

Use this command also if the video wall will be controlled by a different Barco Wall Control Manager server which has no been the one the video wall has been connected to during calibration.

Select Wall | Calculate Auto Target

A dialog pops up which requires confirmation.



Click on **Yes** to apply the new Auto Target to the entire wall. All projection modules will be adjusted to match this target.

4.3.4 Manual color adjustment

Manual color adjustment requires that the projection module has already been calibrated.

In addition the brightness has to be set to Fixed (Wall | Properties | Brightness Lock).

The Color&Brightness mode must not be uncalibrated!

The active lamp of projection module has to burn stable (>2minutes after being switched on).

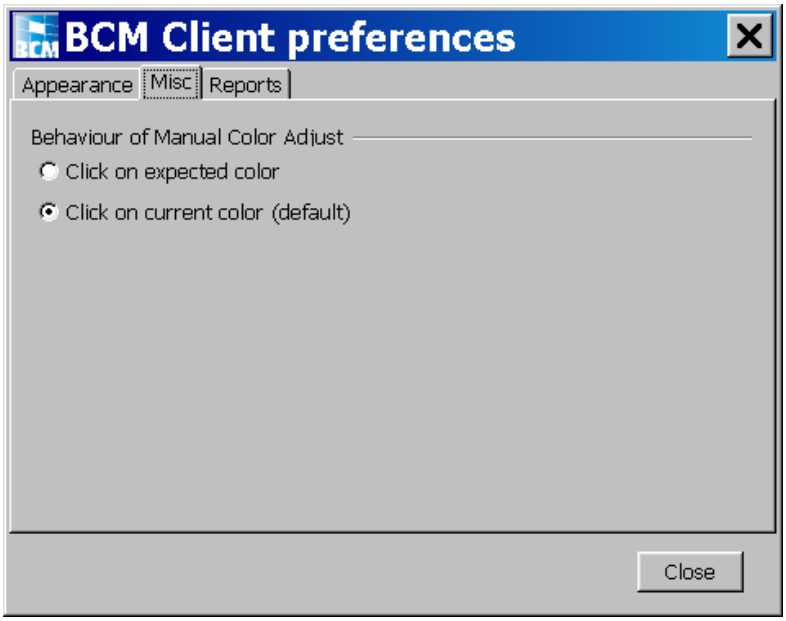
Manual color adjustment requires credentials of level 2 or higher.

In principle it is possible to adjust the entire video wall manually without an initial automatic adjustment by means of a spectrometer (cf. Manual calibration)

Standard use of manual color adjustment however should be restricted to fine-tuning of a projection module.

Check if the above mentioned preconditions are fulfilled.

During manual color adjustment you have to give input to the Barco Wall Control Manager by indicating a color in a bitmap. The system has to know how to interpret the input. This setting is done on **Tools|Preferences|Misc**.



Select your preferred way of working.

Subsequently select the desired projection module in the grid.

Right-click on the projection module to open its context menu.

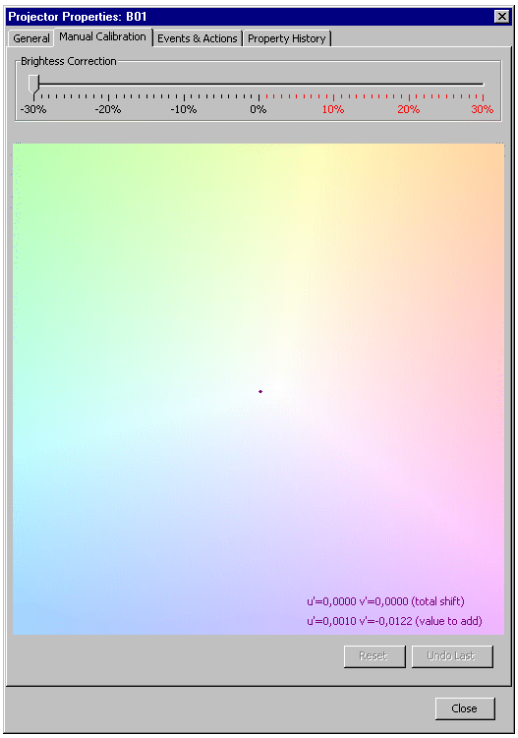
Select **Properties**.

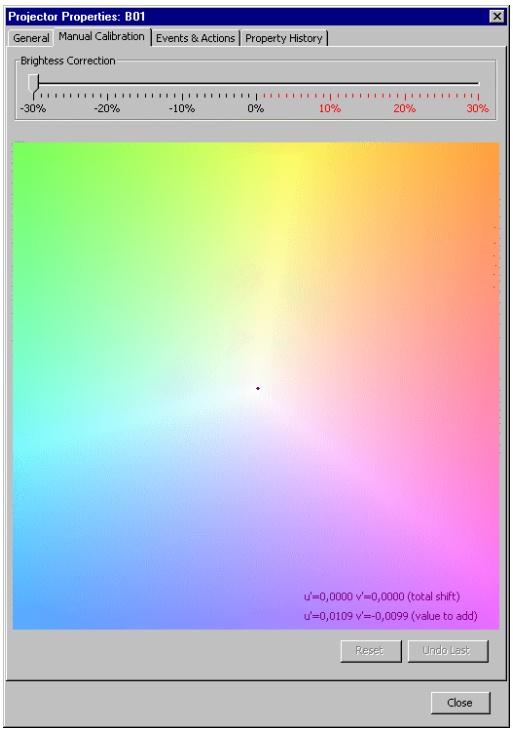
Navigate to the tab **Manual Calibration.**

In this tab a bitmap is displayed.

The color intensity of this bitmap can be modified using the mouse wheel! Adjust the intensity to "saturated" colors (right picture).

If the colors of the bitmap look rather pale, it is difficult to do the manual adjustment, since even small color differences in the pale bitmap then result in very big color differences on the projection module.





In the bitmap the current color location is indicated by a purple dot.

The desired color can be calculated by the system using two different inputs:

- you tell the system the color you want to have (**Tools|Preferences|Misc|Click on expected color**)
- you tell the system how you think the current color looks like (**Tools|Preferences|Misc|Click on current color**)

Which method has to be applied i.e. how the system has to interprete your action is selected in Tools|Preferences|Misc

When you move in the color bitmap the signed distance of the color location in relation to the purple dot is indicated. It depends on your way of working if it is negative or positive.

In the following it is assumed that you click on the current color (default setting).

In the bitmap, double-click on the color which represents the color impression you have from the projection module. Barco Wall Control Manager will calculate the required correction and shift the color accordingly.

If the result is fine, close the dialog.

To undo all manual adjustment, click on **Reset**.

To undo the last adjustment step, click on **Undo Last.**

Double-Clicking in the bitmap will create a grey dot indicating the new color location. Double-click on this grey dot to align it with the purple dot, i.e. to undo the modifications.

Use the slider bar to adjust brightness.

Color and brightness are not independent! Changing a color location will effect the brightness of the projection module and vice versa.

However these dependencies are

4.3.5 Color&Brightness mode

Leaving production, all projection systems are uncalibrated and feature their individual brightness and color spectrum. The colors are defined by the optical components, by means of a dimmer the brightness can be set relative between 35% and 100%.

Within a video wall, it is not recommended to operate the projection systems with their native characteristics. However all correction algorithms for adjusting the systems to a common brightness and color targets are based on the uncalibrated properties.

Therefore when calibrating a video wall, it has to be set into the uncalibrated mode.

4.3.5.1 Brightness Locked

This operating mode features locked brightness and a static color correction. The color gamut is set to a fixed target which can be reached by every projection system in the video wall. Brightness is set to an absolute brightness value (this target has been determined and set taking into account all projection systems). The sensor is used to read the actual brightness, the control loop adjusts the dimmer accordingly to always reach this target.

4.3.5.2 Sense6

This operating mode requires a valid license file!

Sense6 locks the projection systems of a video wall to a common brightness and color location constant over time and across the entire video wall.

The sensor reads the color and brightness values. An active feedback loop adjusts the current values of all projection systems to the target values of the video wall. Thus aging of lamps has no longer impact on the uniformity of a video wall.

This functionality requires a valid license file on the Barco Wall Control Manager server, cf. How to activate licensed features. Contact Barco to get a license file!

4.4 How to activate licensed features

Projection modules of OV-D2 series require a valid license file to operate the video wall in hot standby, to scale a source, to run the lamps with 132W, to activate Sense6 (color&brightness lock mode).

If no valid license file can be found, the respective commands and functions in the Barco Wall Control Manager and in the wall are disabled.

Without a valid license file, the commands are also not available in the web server.

The license file will be provided by Barco Customer Support if one or multiple licensed features have been ordered in a project.

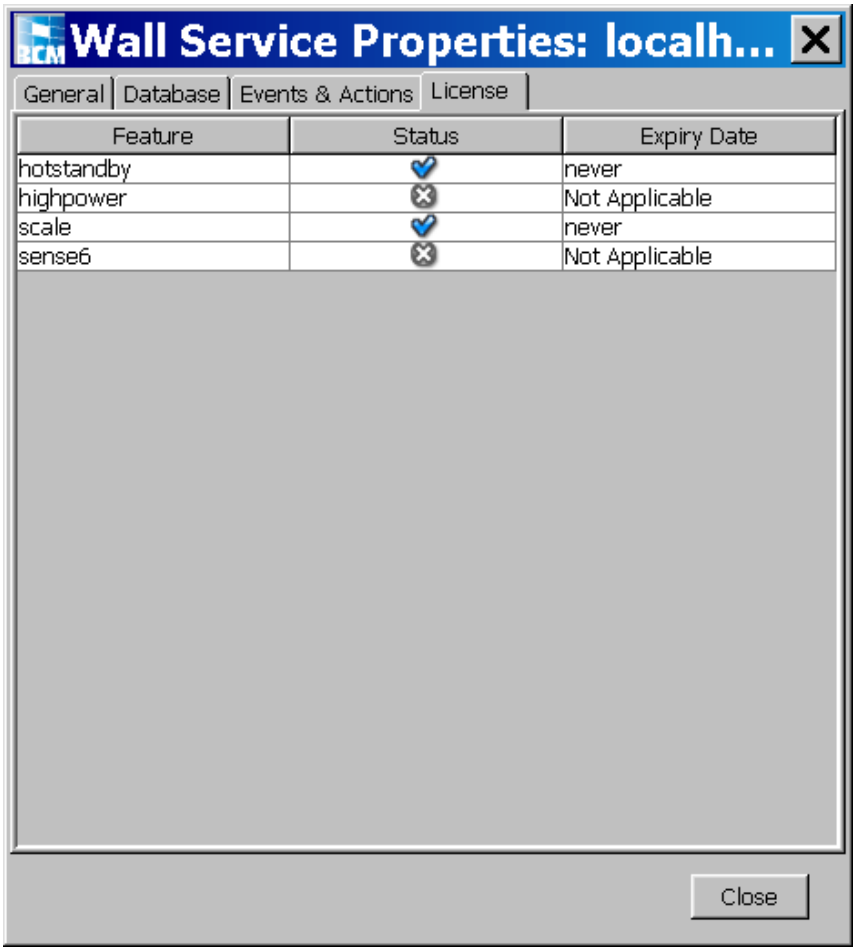
The file has to be stored on the Barco Wall Control Manager server in the folder

C:\Program Files\blm\exec

The Barco Wall Service 2 has to be re-started to activate the licenses.

As soon as Barco Wall Control Manager server is running again the respective commands get enabled in the Barco Wall Control Manager client connected to this server.

The available licenses are listed on the Licens tab of the property page of Barco Wall Control Manager server. To open this dialog, right-click on the node of the Barco Wall Control Manager server in the tree and select **Properties** from the context menu. Navigate to and activate **License**.



4.5 Reports

Provided the logging options have not been disabled, the Barco Wall Control Manager server stores all events and actions and the health status of all lamps and projectors of a video wall.

The data is stored in a database on the server.

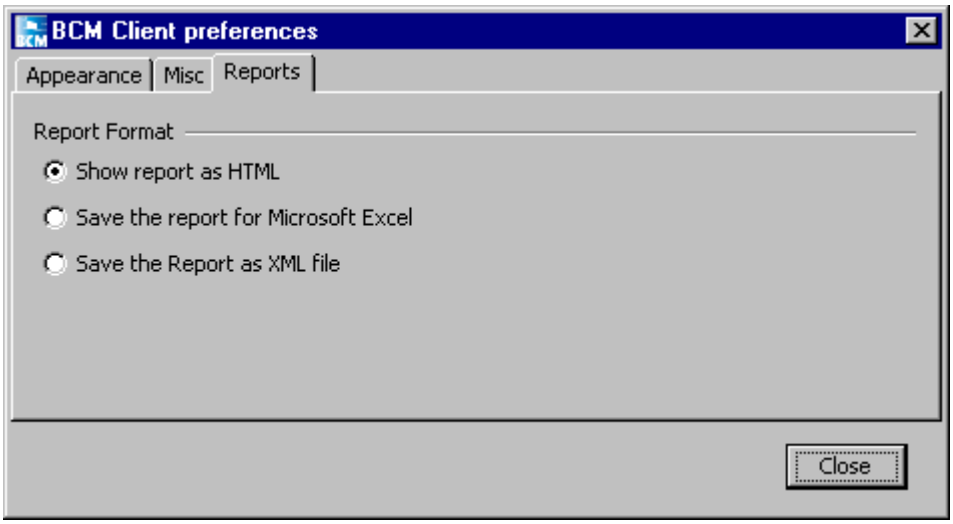
However it is possible to generate reports of the records on any Barco Wall Control Manager client in the sub net.

The reports always refer to the wall which is currently selected (active) in the Barco Wall Manager client.

The following reports can be created:

Wall State Report, Lamp Change Event Report, Health Event Report, Operation State Report, Removed Lamp Report, All Events Report.

The file format of the report can be selected in **Tools|Preferences|Reports**.



4.6 Alarms

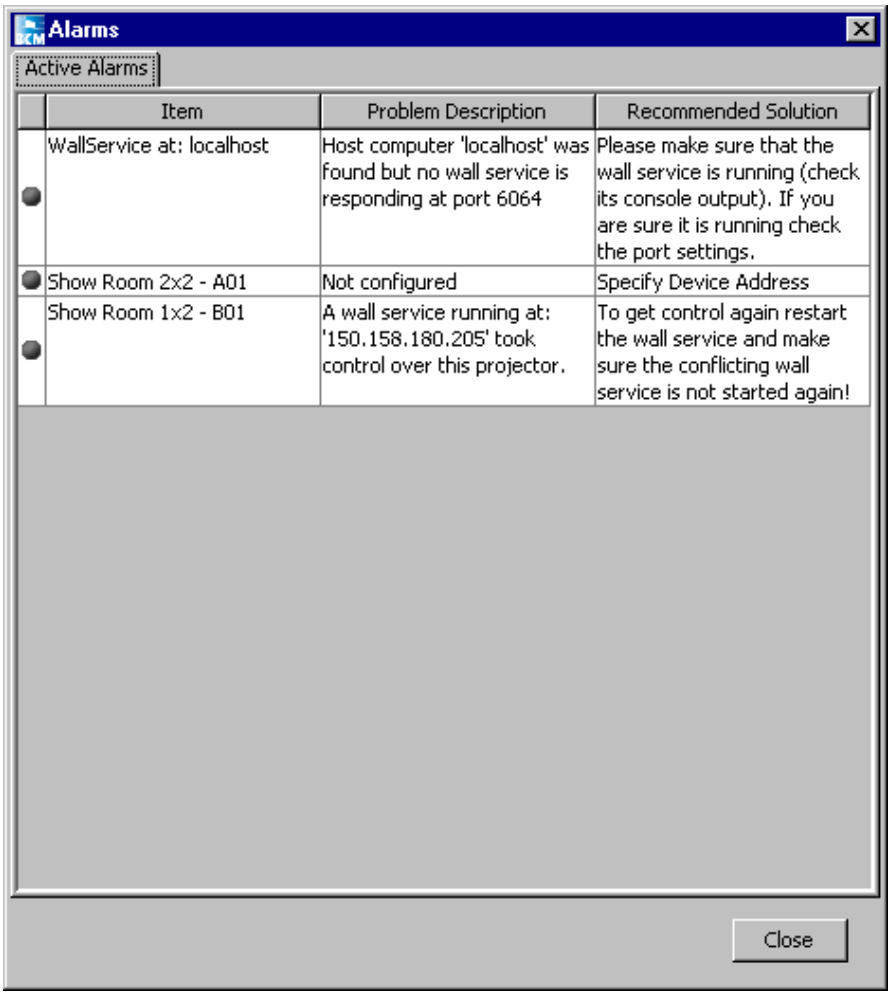
Barco Wall Control Manager continuously checks the health of the projection modules. The health status is indicated by colored dot.

Color	**Description**
Green	Perfect health, no error
Yellow	Minor error
Orange	Major error
Red	Critical error

Health indicators can be found on the wall in the tree, on the tab of a wall, on individual projection modules, lamps and inputs, and in the status bar.

Click on a health indicator to open the Alarms dialog or select **File|Alarms**.

A list with alarms is displayed, their occurrence and description as well as first steps to solve the problem.



4.7 Property pages

The Barco Wall Control Manager server, a video wall controlled by Barco Wall Control Manager, each projection module of a video wall and each lamp of a projection module have a property page. There a different methods to display the property page of an item. However you can always display the property page via right-click on the respective entry in the tree.

The property pages allow checking and modifying item specific properties.

4.7.1 Barco Wall Control Manager server

The Barco Wall Control Manager server has no user interface. As default the service is started when the workstation is booted and of course stopped when the workstation shuts down. It can be manually started and stopped using the shortcuts created during installation

- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Start Service
- Start|All Programs|Barco Wall Control Manager|BCM Wall Service|Stop Service

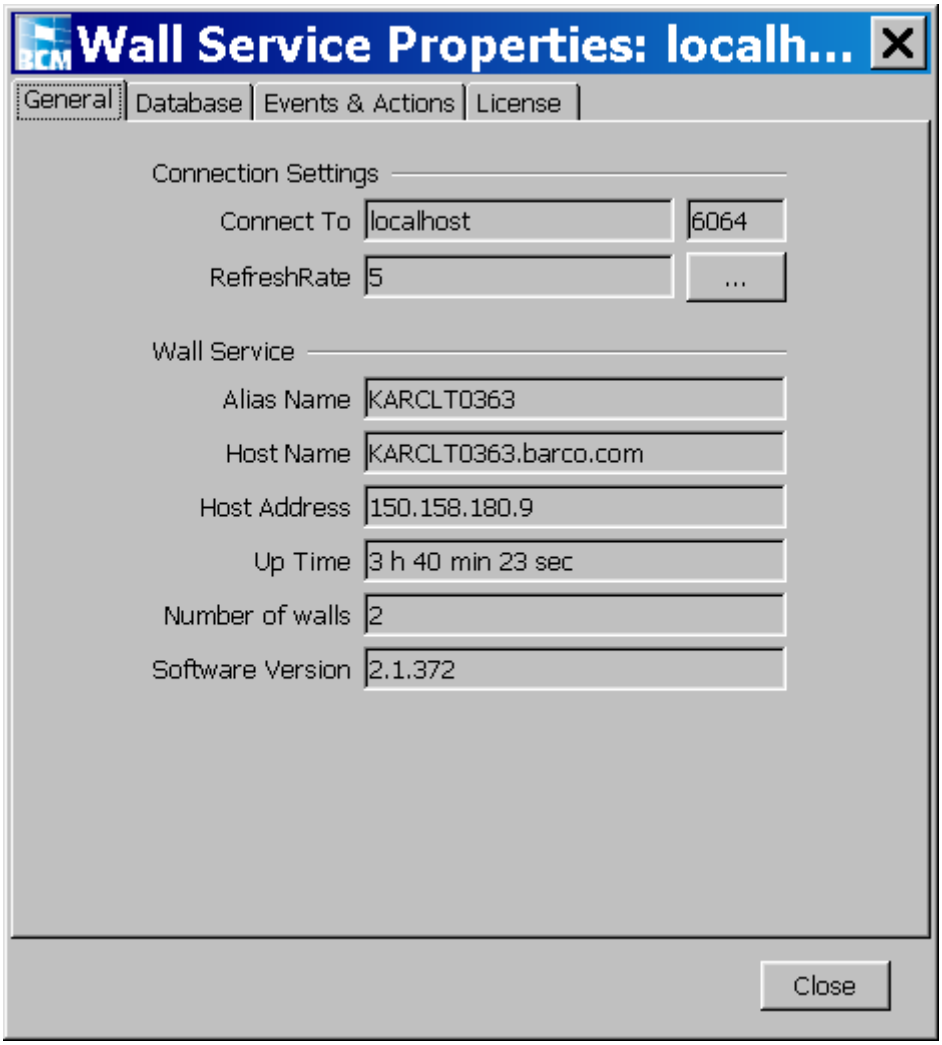
The properties of Barco Wall Control Manager server are managed on its property page.

To open the property page, right-click on the node of the Barco Wall Control Manager in the tree of Barco Wall Control Manager client and select **Properties**.

(In case you installed the tray icon on the server machine, you may also right-click on the tray icon and select **Properties**)

The property page has 4 tabs, General, Database, Events&Actions, License.

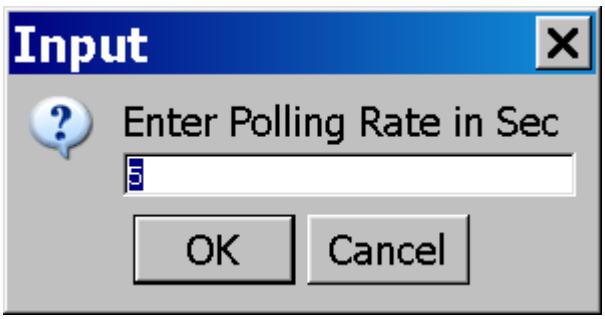
4.7.1.1 General



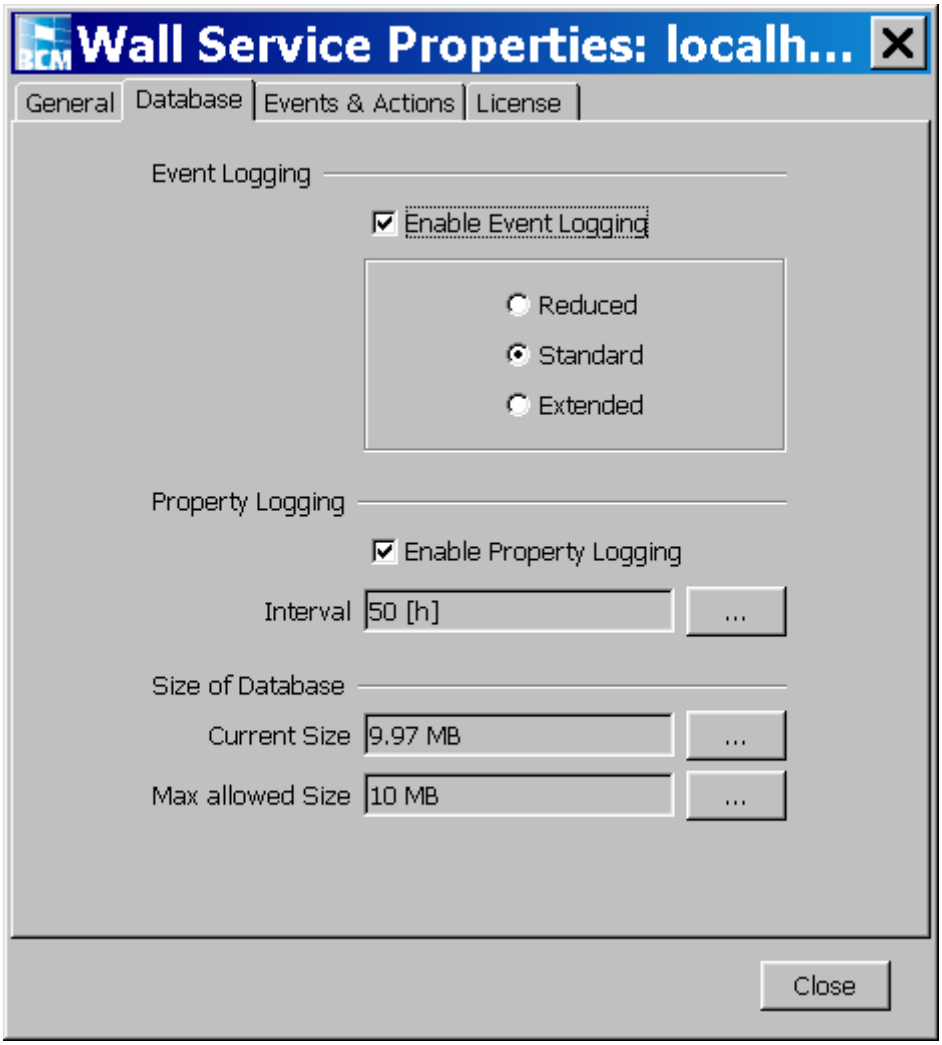
On this tab information about the machine the server is running is given (name, IP address, Up time) as well as the number of walls controlled by this server. The software version of the Barco Wall Service 2 is also indicated.

The refresh rate sets the time interval for the Barco Wall Control Manager client to ask the Barco Wall Control Manager server for information. 'The more frequent the updating the bigger the load on the system.

To modify the refresh rate click on the button next to the current setting. A dialog opens where you can enter the new refresh rate. Apply your setting with **OK**.

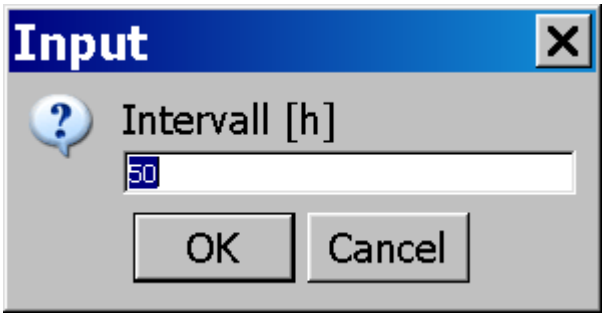


4.7.1.2 Database

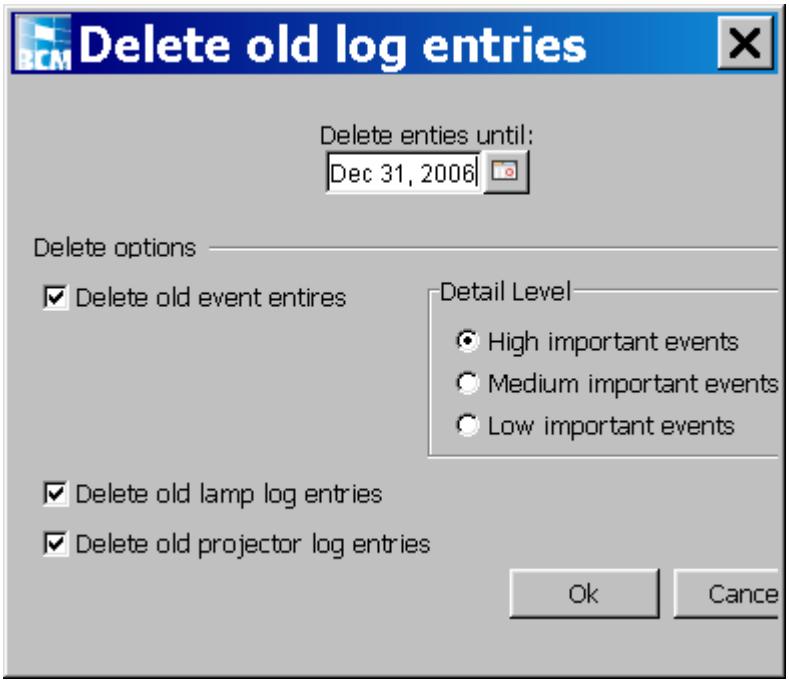


On this tab all database related settings are listed and can be changed. Event Logging (e.g. changing the active lamp) can be enabled and disabled; if enabled the type of event logging can be set. Extended will store all details and consume a lot of memory.

The properties (e.g. temperature, color location..) can also be logged and the respective interval defined.



The results of the logging are stored in a database which max. allowed size can be defined. The current size is indicated and can be changed by deleting older entries.



Lamp log entries (color, brightness..) and projector log entries(temperatures, up time..) are entries of properties. If the respective checkboxes are selected all of them will be completely deleted for the period before the selected date.

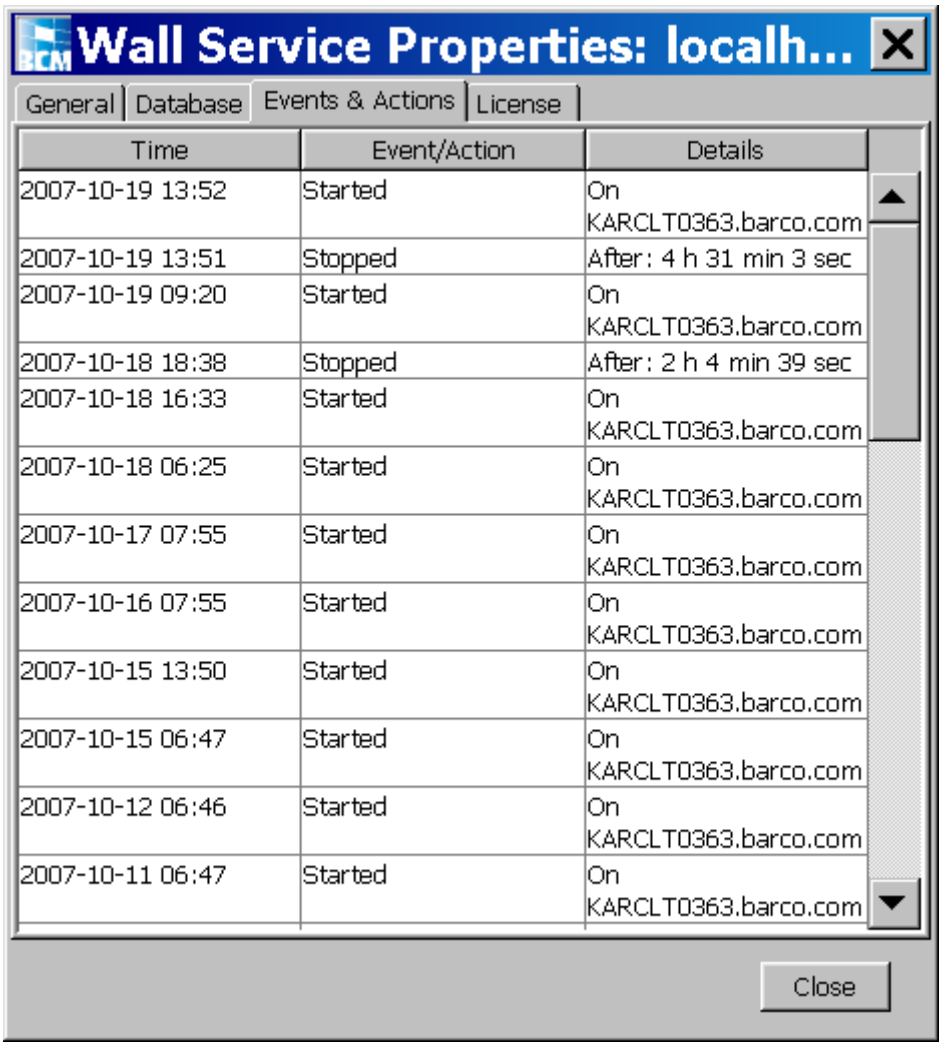
Event entries are categorized into high important, medium important and low important events. Due to this categorization a further refinement of the events to be deleted can be made.

Before deleting entries of the database it might be recommended to generate the reports (e.g. lamp change event report, health event report) and to save them on a disk as kind of backup.

There is no need for a backup of properties: in case they are fine, no report is required. In case their value is out of the allowed range this will included in the health event report.

4.7.1.3 Events&Actions

On this tab all events and actions concerning the Barco Wall Control server are listed, e.g. when the service is stopped, or started.

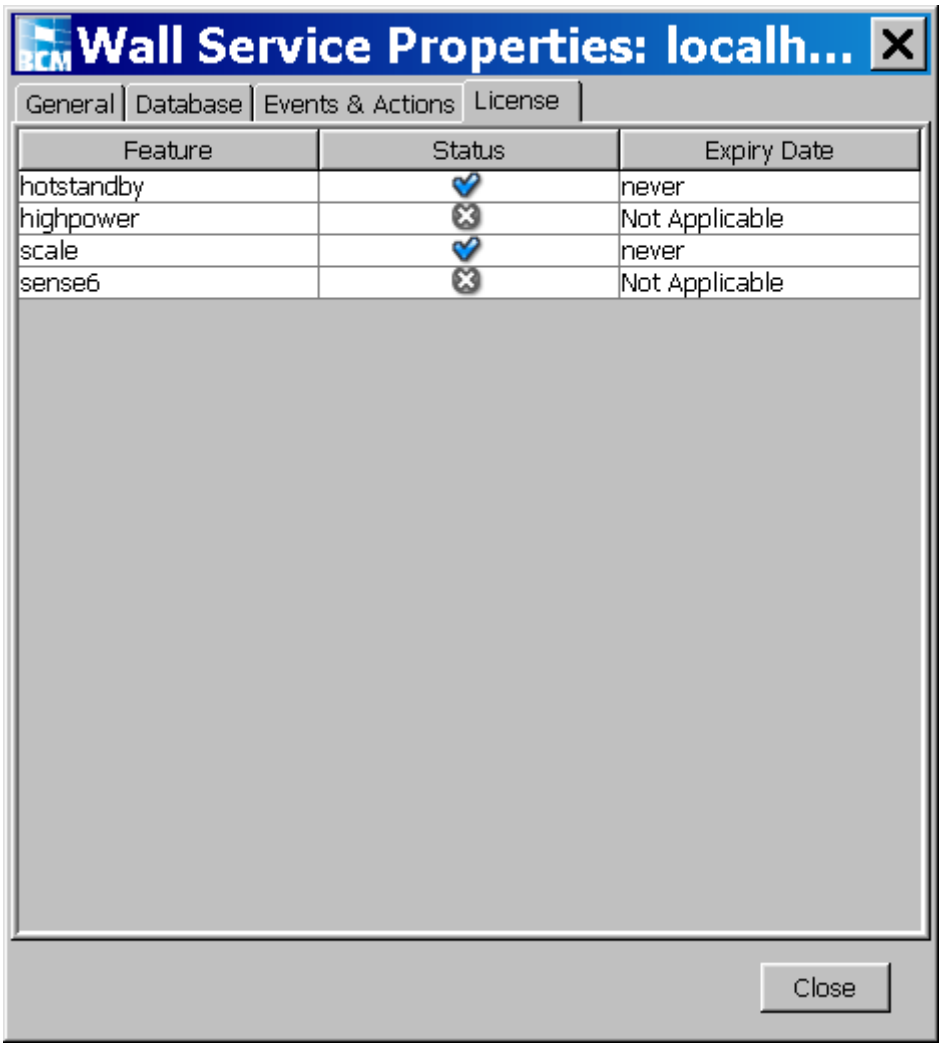


4.7.1.4 License

With video walls of the OV-D2 series there are several features which require a valid license: running a video wall in hot standby mode (hotstandby), running it with 132W lamps (highpower), using the scaling functionality (scale), and Sense6.

On the License tab these features are listed. In case there is a valid license for this feature, its status shows a tick and the expiry date is indicated.

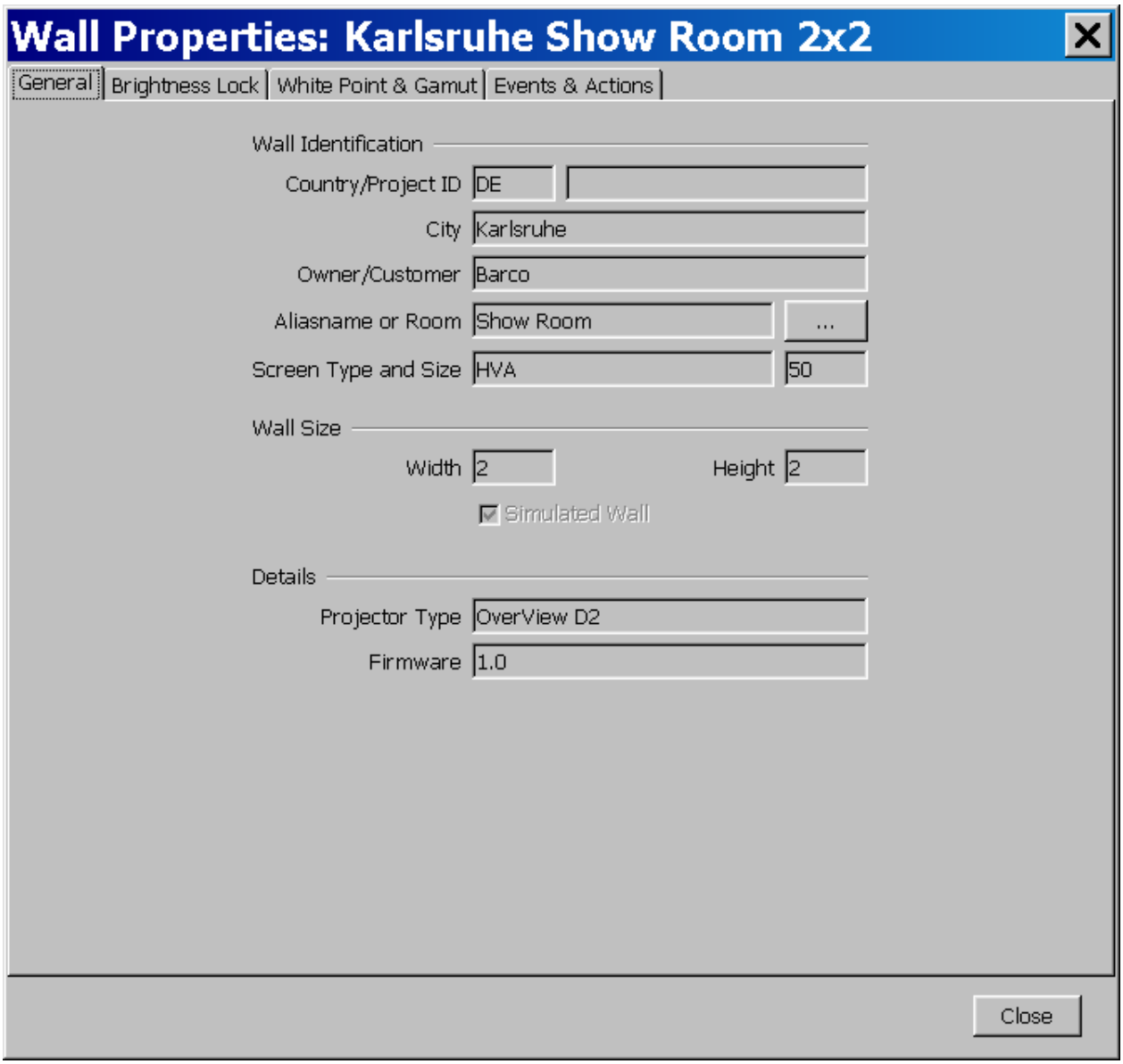
In case this feature is not licensed, its status shows a cross, and naturally expiry date is not applicable..



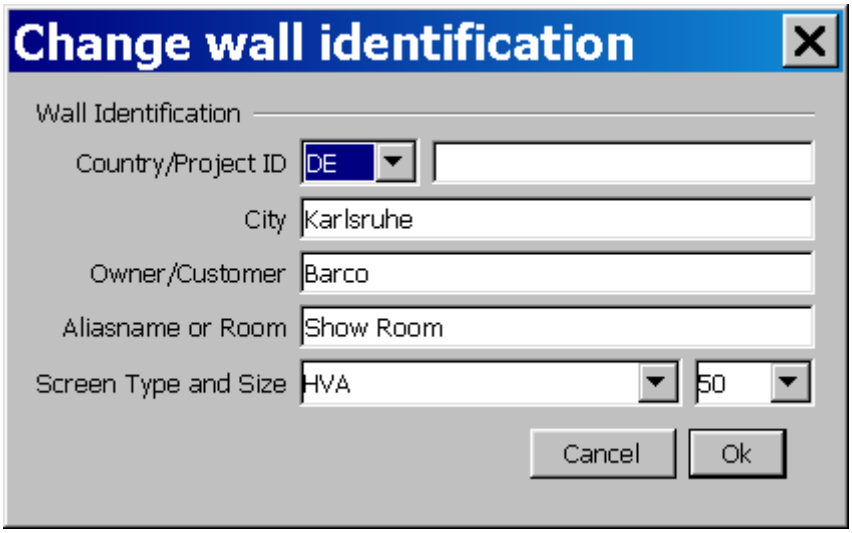
4.7.2 Wall properties

The wall property page has 4 tabs: General, Brightness Lock, White Point & Gamut, Events&Actions.

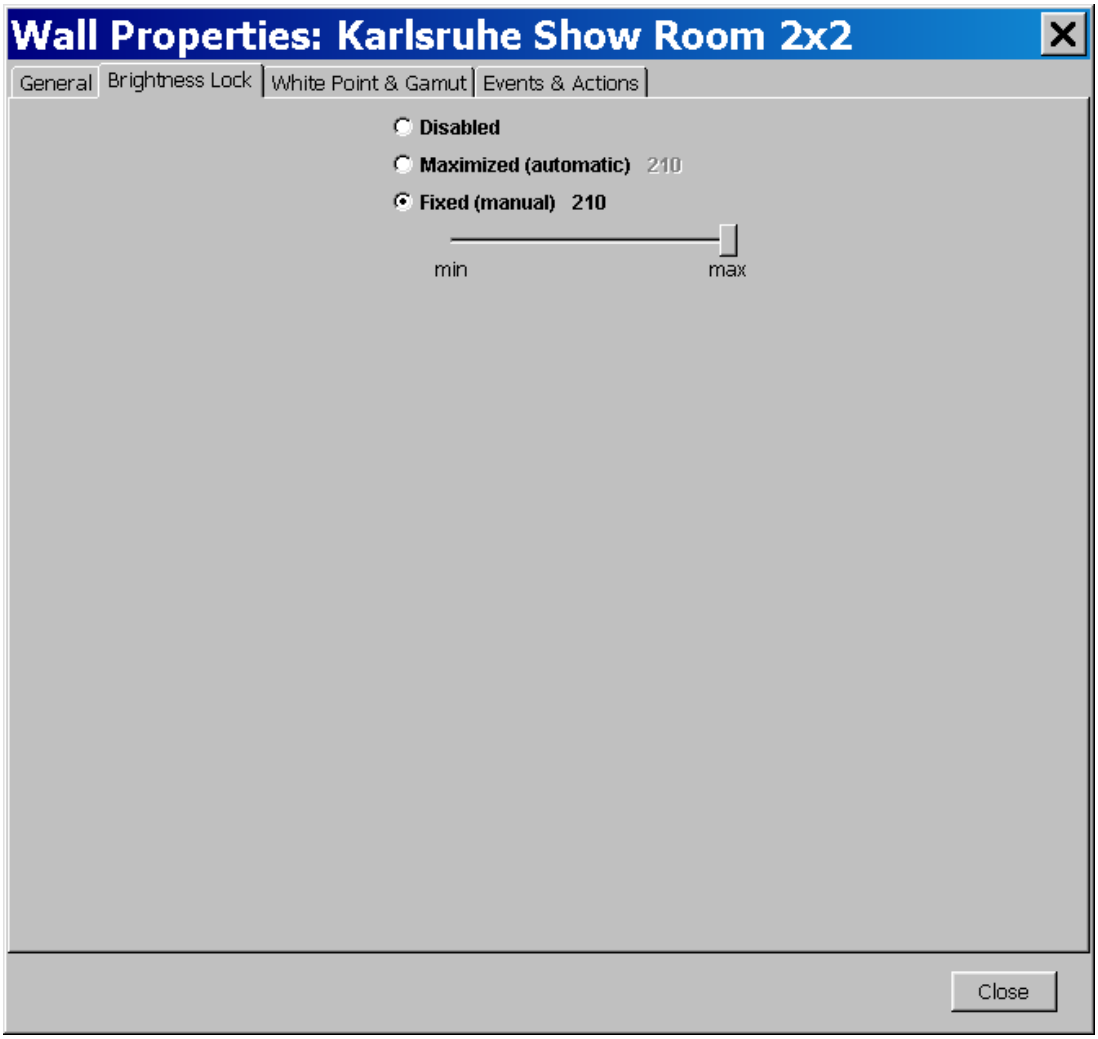
4.7.2.1 General



On the **General** tab administrative information about the video wall is given. Except for the size of the wall, all entries can be edited via the button next to **Aliasname or Room**.

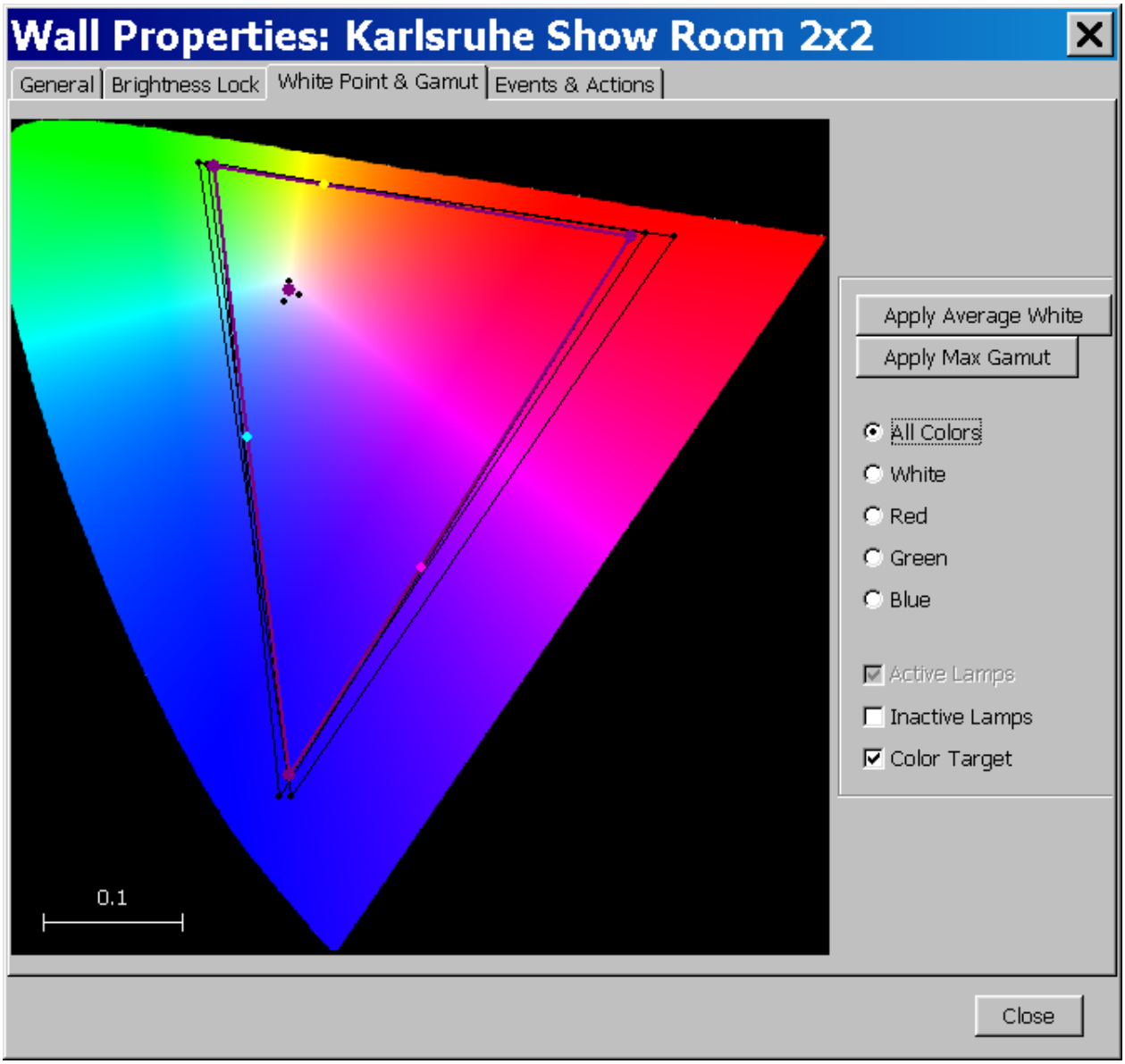


4.7.2.2 Brightness Lock



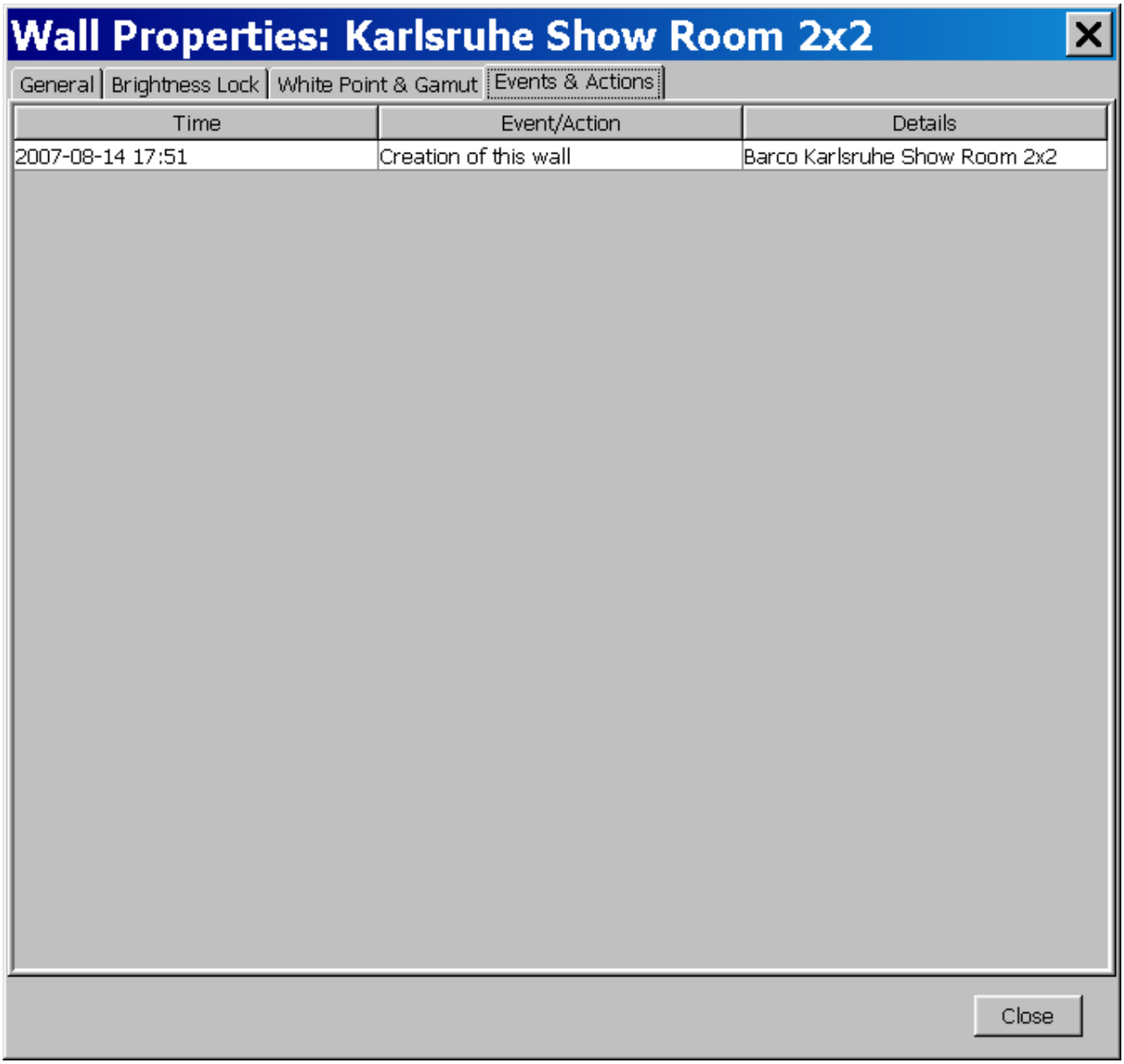
On this tab the brightness can be set to a fixed target or to a dynamic target. The value of the fixed target can be set. In case the wall hat not been calibrated yet **Brightness Lock** is disabled. Please refer also the chapter Adjusting a video wall, Brightness Lock.

4.7.2.3 White Point & Gamut



On this tab a calibrated video wall can be set to average white or to maximized gamut. The color locations of the primary colors and white as well as the respective target color locations are displayed. Please rerfer also to the chapter Adjusting a video wall, Calibration with a spectrometer.

4.7.2.4 Events & Actions

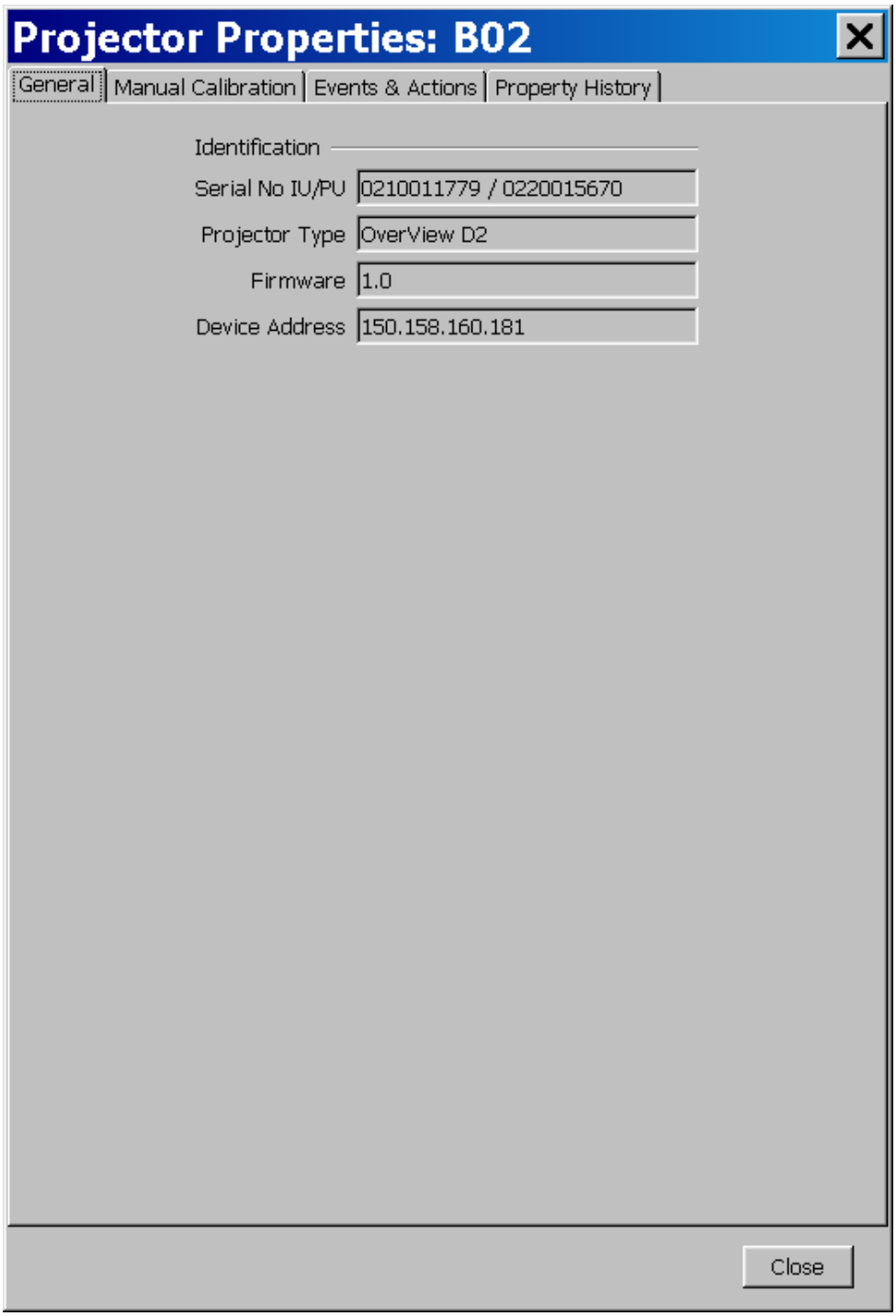


On this tab the events and actions related to the video wall are listed.

4.7.3 Projector properties

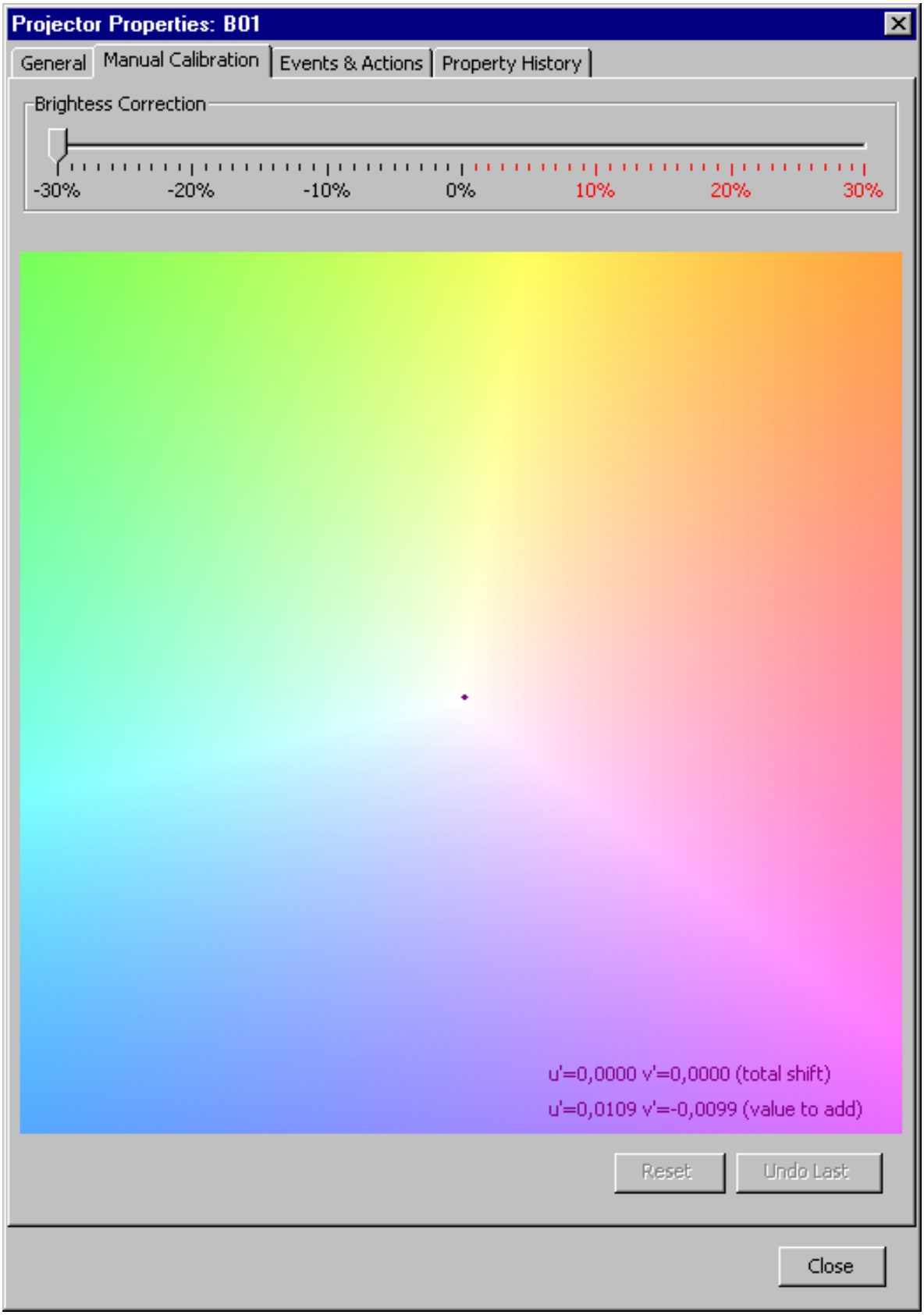
The properties of an individual projector are summarized on the projector property page which has 4 tab: General, Manual Calibration, Events&Actions, Property History..

4.7.3.1 General



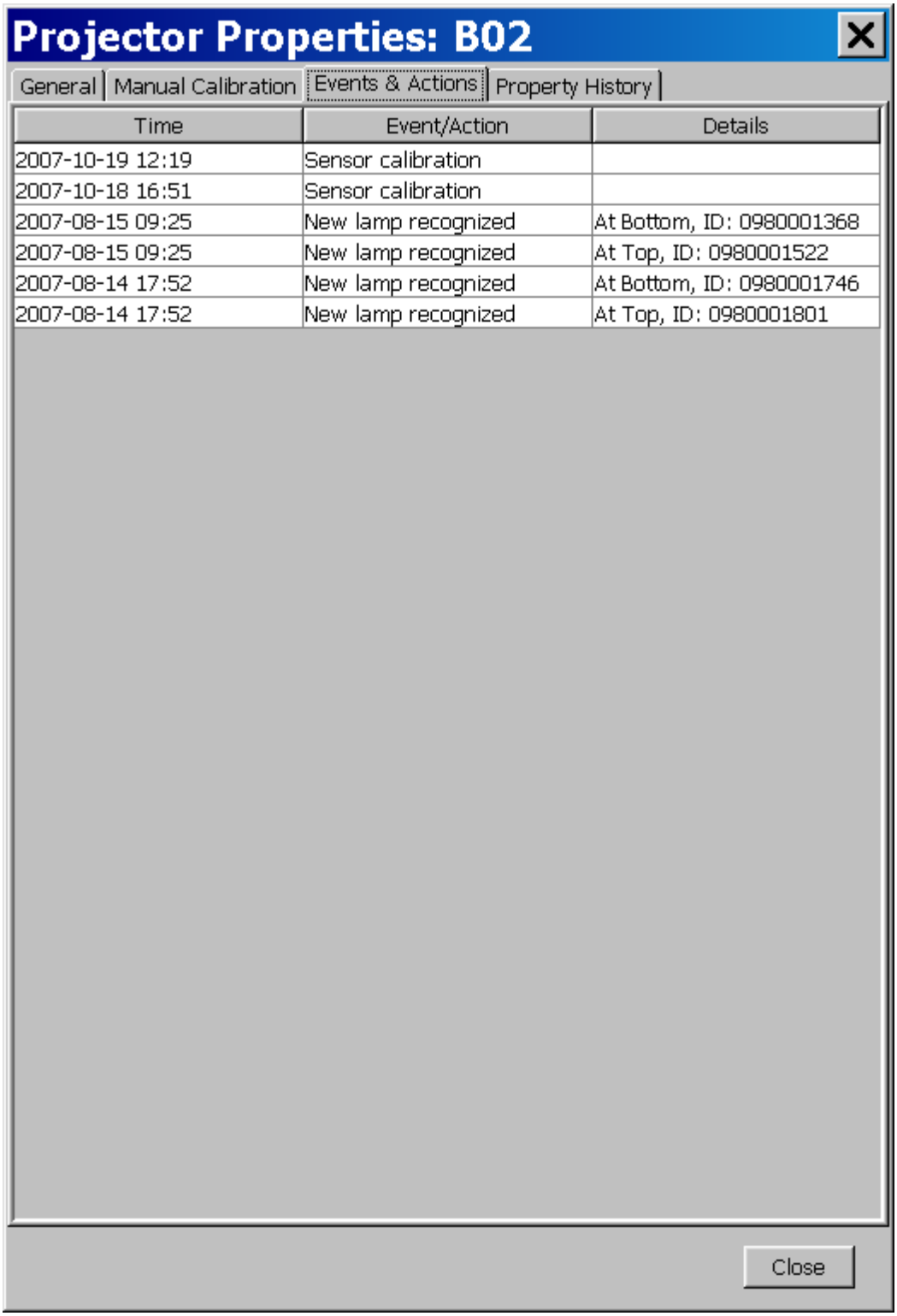
On the **General** page the serial numbers of the illumination unit and the projection unit are listed as well as the model name of the projection system. Firmware version and the IP address of the device are also indicated.

4.7.3.2 Manual Calibration



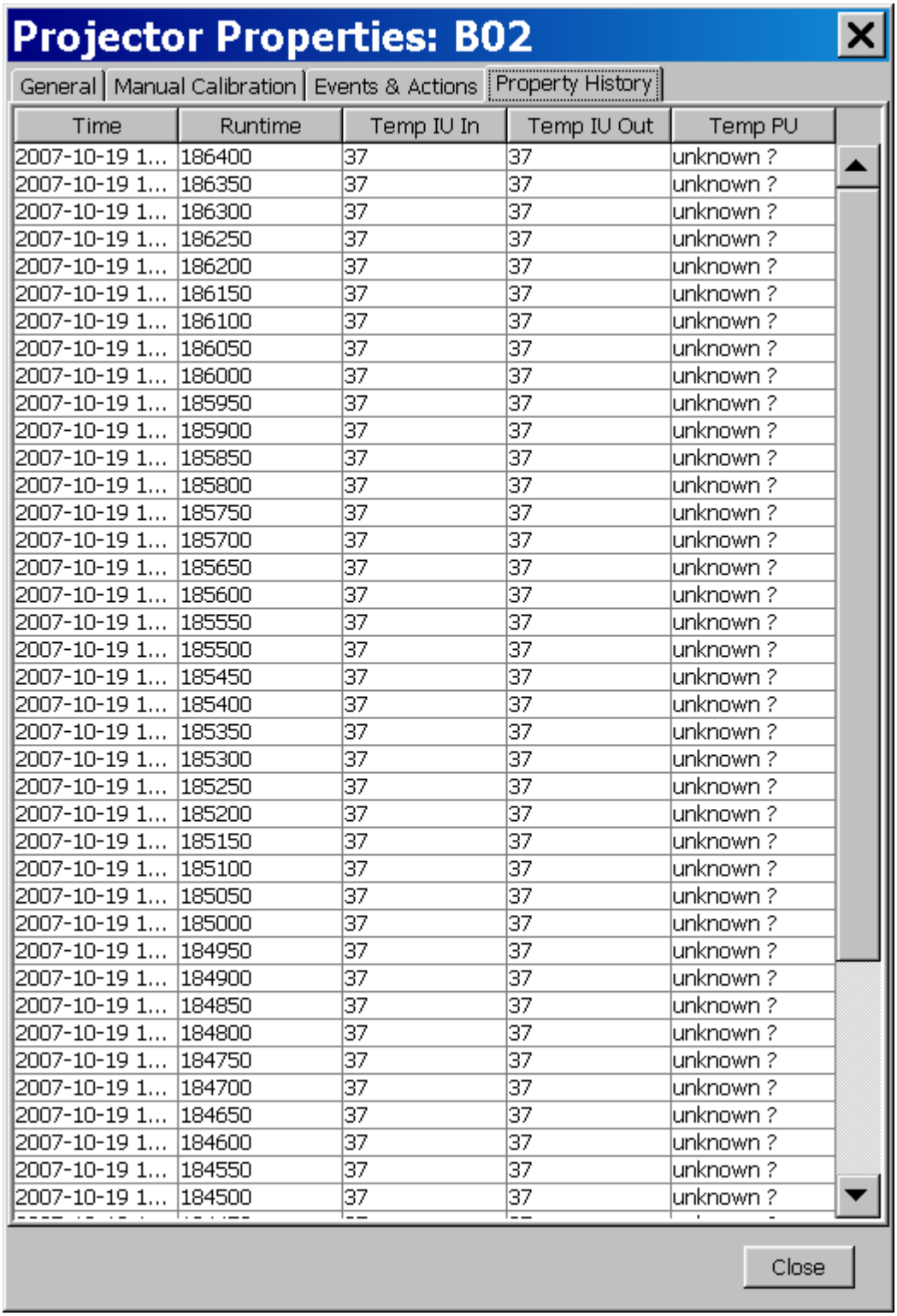
On this tab manual fine tuning of color and brightness can be done. Please refer to the section Adjusting a video wall, Manual color adjustment

4.7.3.3 Events & Actions



On this tab the projector related events and actions are listed. Of course the list only shows records which are included in the server database. In case entries are removed from the server database, they are also no longer in the Events&Actions tab.

4.7.3.4 Property History



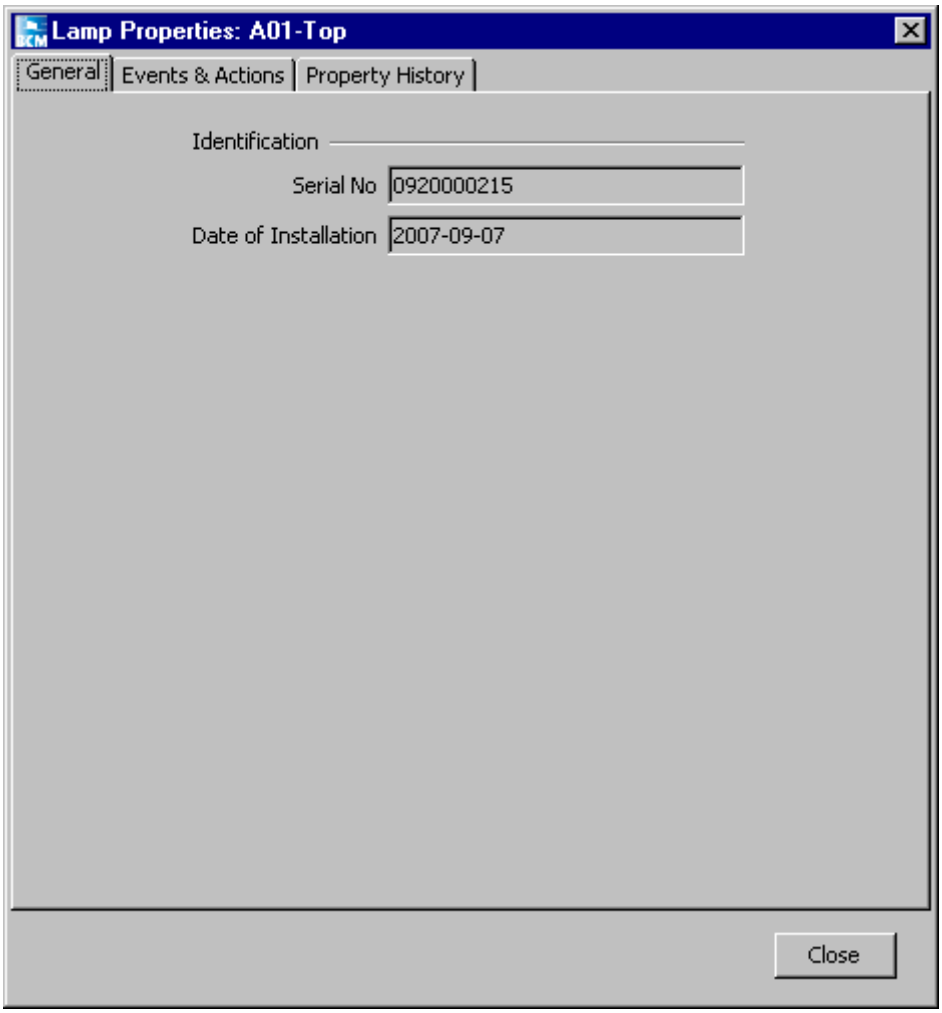
Time	Runtime	Temp IU In	Temp IU Out	Temp PU
2007-10-19 1...	186400	37	37	unknown ?
2007-10-19 1...	186350	37	37	unknown ?
2007-10-19 1...	186300	37	37	unknown ?
2007-10-19 1...	186250	37	37	unknown ?
2007-10-19 1...	186200	37	37	unknown ?
2007-10-19 1...	186150	37	37	unknown ?
2007-10-19 1...	186100	37	37	unknown ?
2007-10-19 1...	186050	37	37	unknown ?
2007-10-19 1...	186000	37	37	unknown ?
2007-10-19 1...	185950	37	37	unknown ?
2007-10-19 1...	185900	37	37	unknown ?
2007-10-19 1...	185850	37	37	unknown ?
2007-10-19 1...	185800	37	37	unknown ?
2007-10-19 1...	185750	37	37	unknown ?
2007-10-19 1...	185700	37	37	unknown ?
2007-10-19 1...	185650	37	37	unknown ?
2007-10-19 1...	185600	37	37	unknown ?
2007-10-19 1...	185550	37	37	unknown ?
2007-10-19 1...	185500	37	37	unknown ?
2007-10-19 1...	185450	37	37	unknown ?
2007-10-19 1...	185400	37	37	unknown ?
2007-10-19 1...	185350	37	37	unknown ?
2007-10-19 1...	185300	37	37	unknown ?
2007-10-19 1...	185250	37	37	unknown ?
2007-10-19 1...	185200	37	37	unknown ?
2007-10-19 1...	185150	37	37	unknown ?
2007-10-19 1...	185100	37	37	unknown ?
2007-10-19 1...	185050	37	37	unknown ?
2007-10-19 1...	185000	37	37	unknown ?
2007-10-19 1...	184950	37	37	unknown ?
2007-10-19 1...	184900	37	37	unknown ?
2007-10-19 1...	184850	37	37	unknown ?
2007-10-19 1...	184800	37	37	unknown ?
2007-10-19 1...	184750	37	37	unknown ?
2007-10-19 1...	184700	37	37	unknown ?
2007-10-19 1...	184650	37	37	unknown ?
2007-10-19 1...	184600	37	37	unknown ?
2007-10-19 1...	184550	37	37	unknown ?
2007-10-19 1...	184500	37	37	unknown ?

On this tab the history of the properties is listed. Of course the list only shows records which are included in the server database. In case entries are removed from the server database, they are also no longer in the history tab.

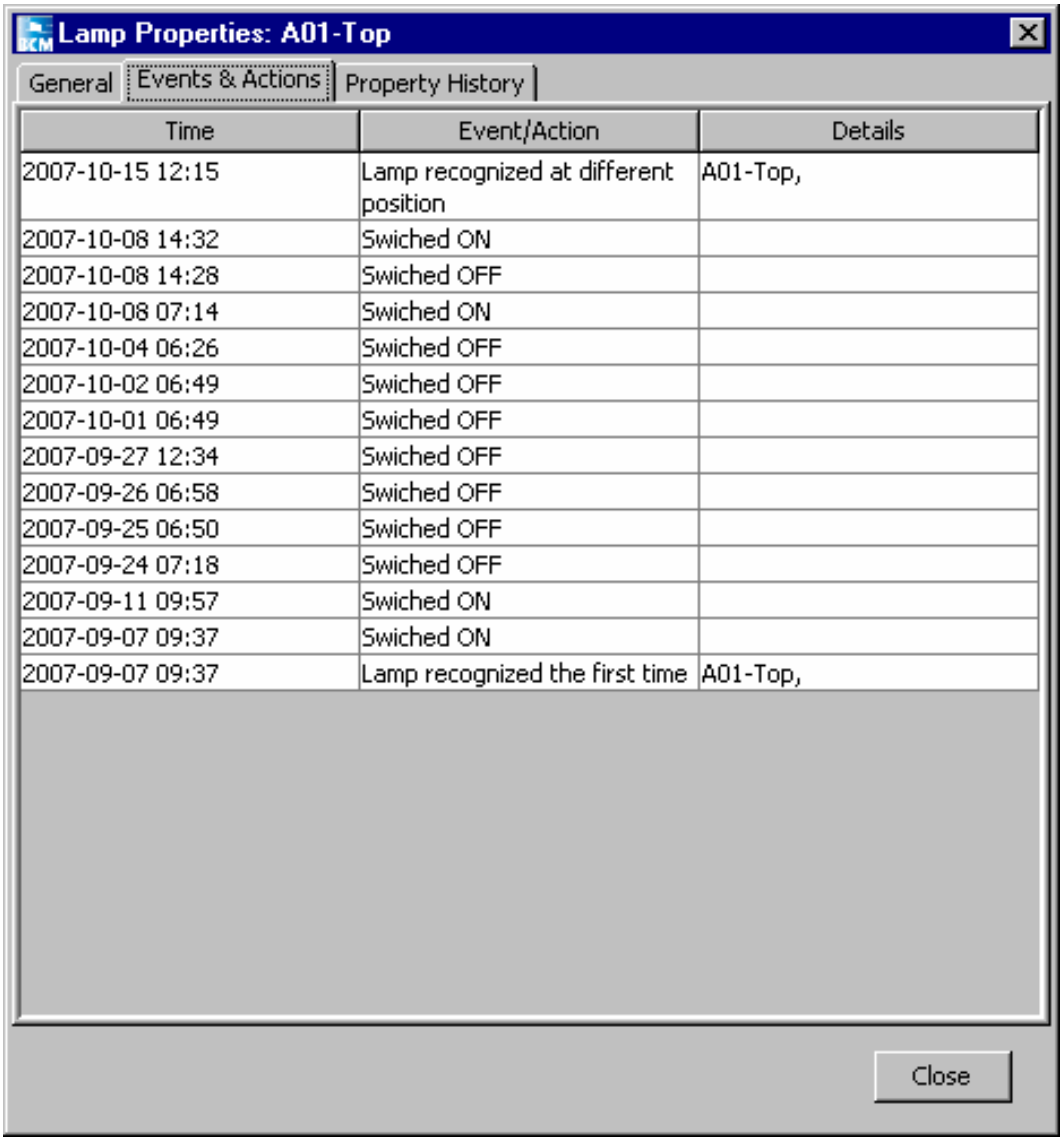
4.7.4 Lamp Properties

The lamp property page has 3 tabs: General, Events&Actions, Property History

4.7.4.1 General



On this tab the serial number of the lamp is listed and its installation date.



On this tab all lamp related events & actions are listed. Of course the list only shows records which are included in the server database. In case entries are removed from the server database, they are also no longer in the Events & Actions tab.

4.7.4.2 Property History

On this tab the history of the lamp properties is listed. Of course the list only shows records which are included in the server database. In case entries are removed from the server database, they are also no longer in the property history tab.

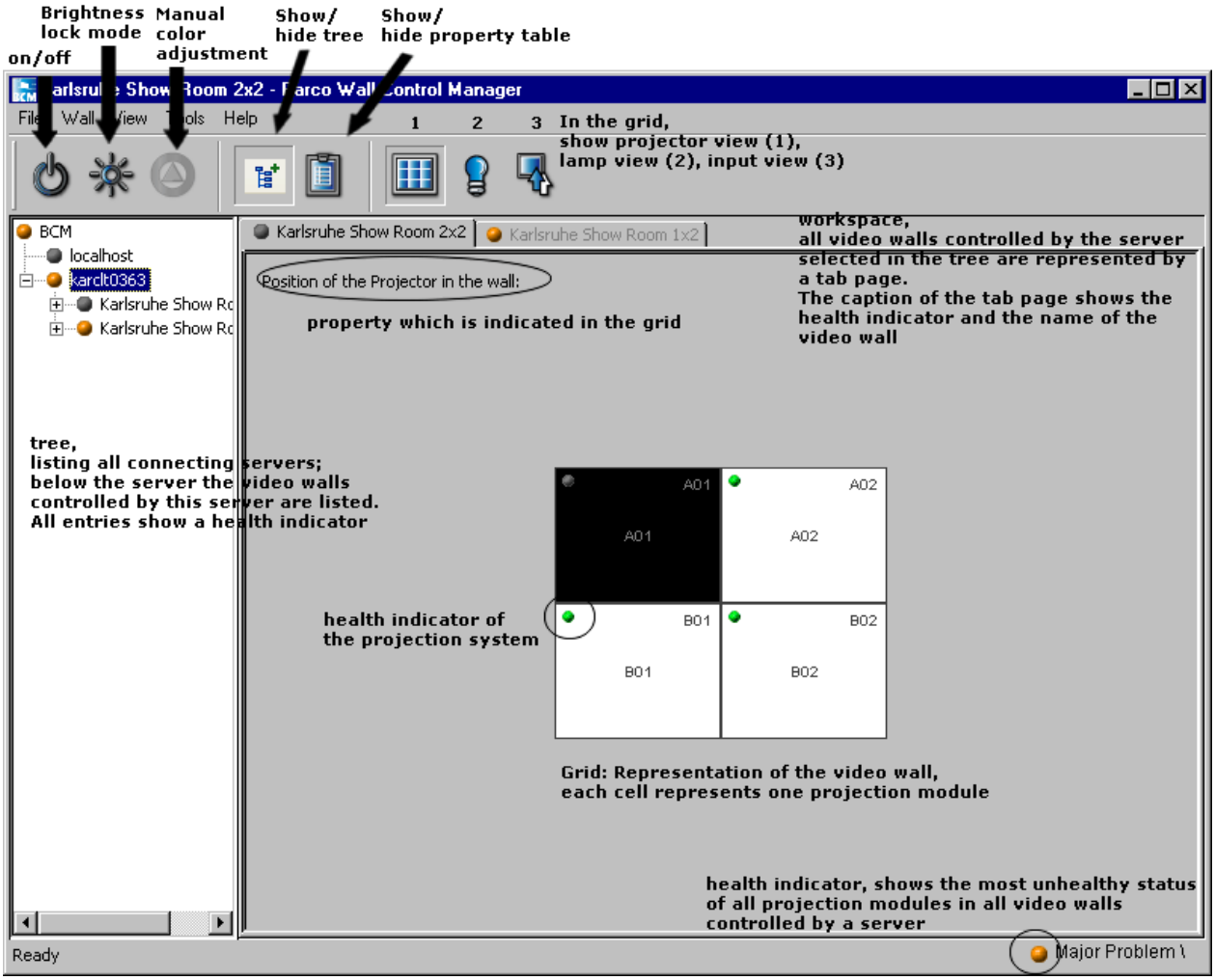
5 User interface of Barco Wall Control Manager client

The user interface of the Barco Wall Control Manager client application is a window with a menu bar and a tool bar. Depending if the tree is shown or not, the window has two or one pane. The status bar shows valuable information referring to the currently selected Barco Wall Control Manager server.

The menus are adjusted according the skills and privileges of the user. (The user level required to access a command is noted in the reference section.)

Without valid credentials, no actions can be performed to manipulate the video wall.

The following picture shortly introduces the user interface. This is the user interface as shown for users with level 2 or higher.



5.1 Menu bar

The menu bar comprises the menus File, Wall, View, Tools, and Help.

The **File** menu offers the commands for logging in, connecting to a Barco Wall Control Manager server, logging off, displaying the list of alarms and to exit the application.

The **Wall** menu offers the commands to manage and administrate video walls (add, delete, rename, device addressing), to control the projection systems (running, standby, auto save), to select the active input and the behavior on signal loss (input selection), to select the operating mode (hot standby, cold standby) and the active lamps, as well as all commands related to color and brightness.

It is always the entire video wall which is addressed by a command.

The menu items not only serve for sending a command but also indicate the status: if e.g. all projection modules of the entire video wall display the source connected to DVI IN1, this input (Channel 1) is marked with a black dot.

A black dot preceding a command indicates that the related setting is currently applied on all projection modules of the entire wall.

The **View** menu defines what is shown in the grid: the projection system (projector view), the lamps (lamp view), or the inputs (input view). Depending on this selection, the cell shows the property of one item (projector view) or of two items (lamp view, input view).

In addition the tree and the property table can be shown or hidden.

Each of the commands in the View menu has got a button in the tool bar.

The **Tools** menu allows selecting preferences and to setup the spectrometer.

Check and set the preferences for manual color adjustment and for the format of the report!

The **Help** menu allows showing the console of the Barco Wall Control Manager server and Barco Wall Control Manager client, gives access to the report of the Barco Wall Control Manager server, provides a link to the user's manual and informs about the version of the application (About)

Please refer to the reference section to learn about all menus and commands.

5.2 Tool bar

The tool bar offers a button to switch the entire video wall on or off, to set the brightness, to do manual color adjustment on one projection module, and to perform all commands of the **View** menu.

Icon	Description
	Switches the entire video wall on or off (i. e. all projector running or in standby)
	Sets the brightness for the entire video wall
	Gives access to manual color and brightness adjustment
	Shows or hides the tree (left pane of the window) o
	Shows or hides the property table (in the workspace, below the grid)
	Shows grid with projector view
	Shows grid with lamp view
	Shows grid with input view

Please refer to the reference section to learn about all menus and commands.

5.3 Tree

The tree lists all Barco Wall Control Manager servers the Barco Wall Control Manager client is connected to. Every server is represented by a node in the tree. The walls controlled by this server are listed below this node. If the wall entry can be expanded to see all projection modules. A projection module entry can be expanded to see the top lamp and the bottom lamp (T, B)

Every entry shows also a health indicator.

With the server, this is the “most unhealthy” status of all projection modules of all video walls.

With a video wall, this is the “most unhealthy” status of all projection modules of this video wall.

With a projection module, it is its actual health status.

With a lamp, it is ts actual health status.

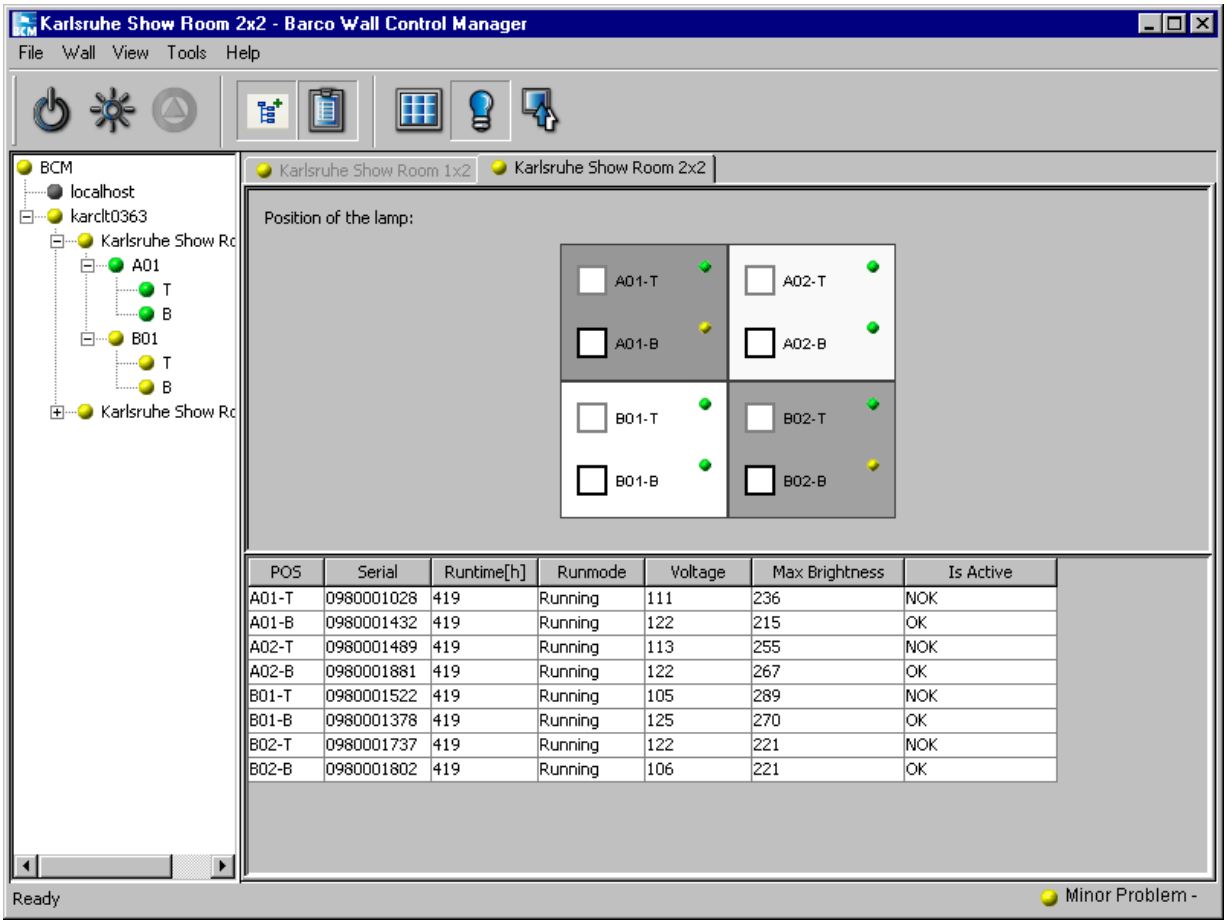
The health indicator of the server is also displayed in the status bar.

A health indicator can be green (no problem), yellow (minor problem), orange (major problem), or red (critical problem).

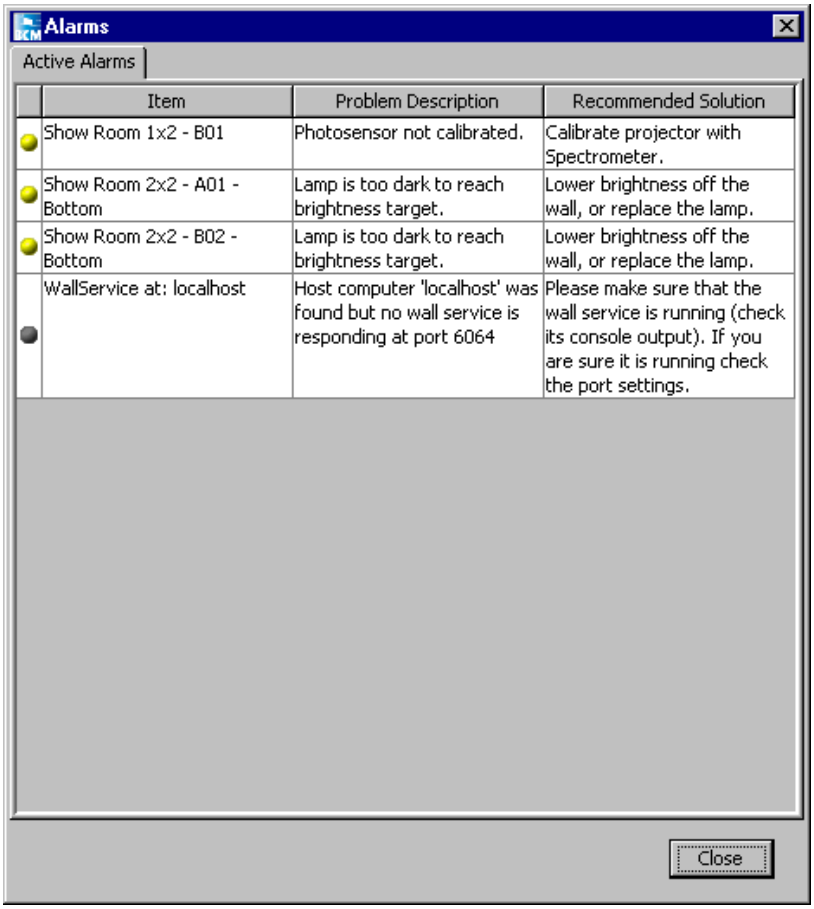
Click on the health indicator to get the respective alarm list where all related systems are listed together with their health status. In case of a problem also a solution is shown.

The Alarm information is also accessible via File | Alarms or when double-clicking into the cell in the grid.

The example below shows a configuration with a major problem and the related **Alarms** information. The black cell in the grid refers to a unknown device. Advise is given to specify the IP address.



POS	Serial	Runtime[h]	Runmode	Voltage	Max Brightness	Is Active
A01-T	0980001028	419	Running	111	236	NOK
A01-B	0980001432	419	Running	122	215	OK
A02-T	0980001489	419	Running	113	255	NOK
A02-B	0980001881	419	Running	122	267	OK
B01-T	0980001522	419	Running	105	289	NOK
B01-B	0980001378	419	Running	125	270	OK
B02-T	0980001737	419	Running	122	221	NOK
B02-B	0980001802	419	Running	106	221	OK

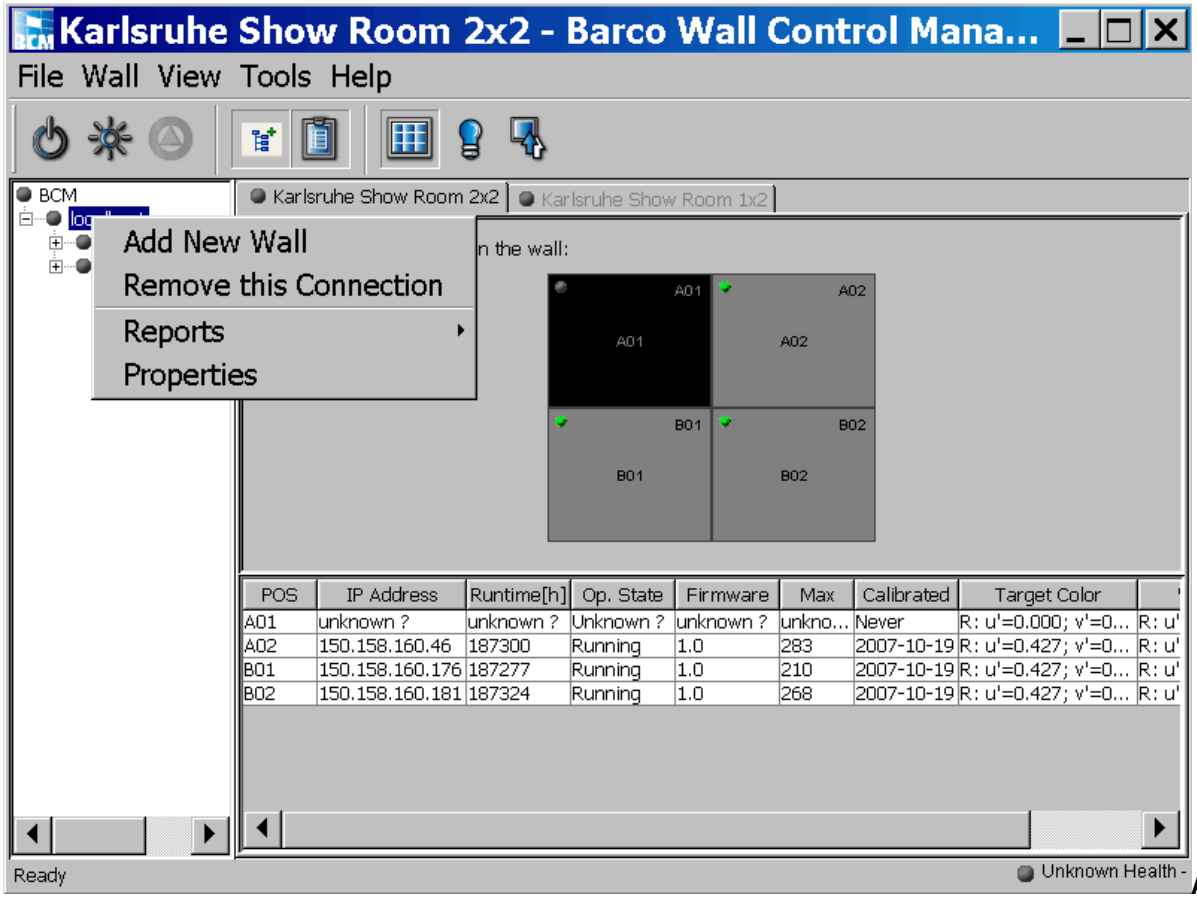


5.3.1 Tree context menu

Right-click on a node in the tree: a context menu opens.

Root node BCM: the context menu comprises the commands **Connect to**... and **Alarms**. These commands correspond to the respective commands in the **File** menu.

Server node: The context menu comprises the entries **Add New Wall**, **Remove this connection**, **Reports**, and **Properties**.



Add New Wall corresponds to **Wall | Add**

Remove this connection will disconnect the Barco Wall Control Manager client from this server.

Reports allows to select one of **Wall State Report**, **Lamp Change Event Report**, **Health Event Report**, **Operation State Report, Removed Lamp Report**, **All Events Report**.

The report will include data of all walls controlled by this Barco Wall Control Manager server (the Report command via Wall | Report will only include the currently active wall).

The reports will show the file format as defined in Tools|Preferences|Reports and be saved on C:\Documents and Settings\user\.bcm\reports.

Properties allows editing the settings of Barco Wall Control Manager server.

The context menu of a wall shows the commands of the Wall menu.

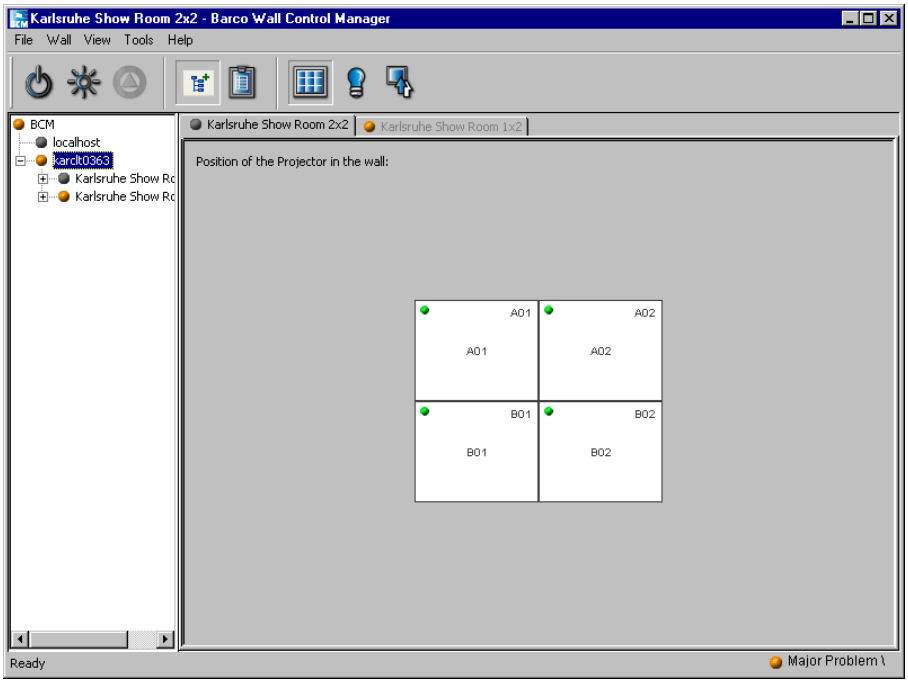
The context menu of a projection module and the context menu of a lamp are the same in the tree as in the grid. Please refer to the respective sections in Projector View, Context menu and Lamp View, Context menu.

5.4 Projector View

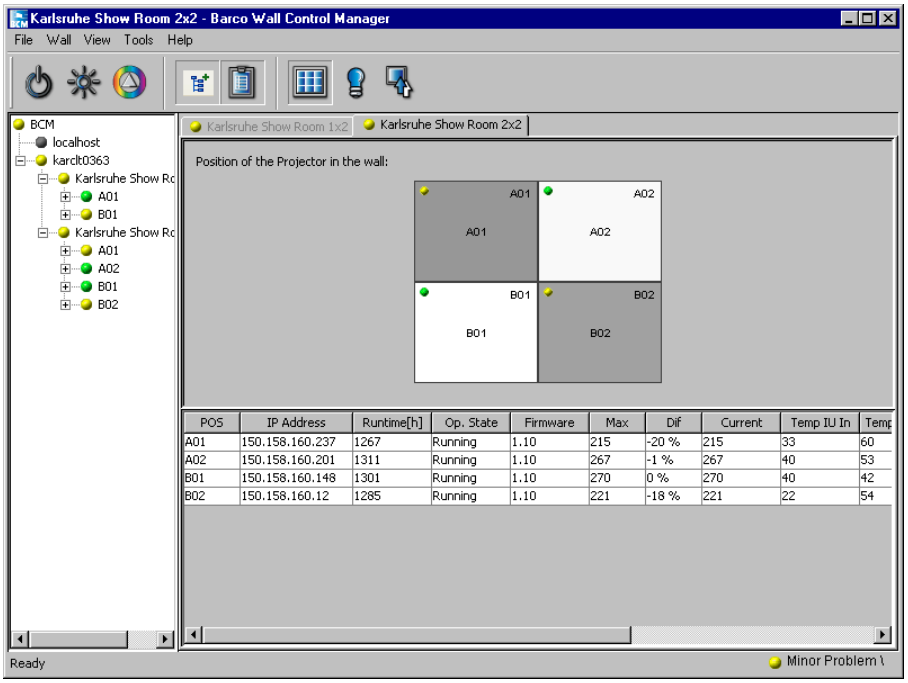
In this view each projection module of a video wall is represented by a cell. The health status of the projection modules is indicated in the top left corner, the position of the projection module is indicated in the top right corner. The top row is indicated by A, the second row by B and so on. Numbering always starts with 01 on the left.

The color of the cell visualizes the brightness of the projection module; if the cell is black the projection module can not be addressed by the Barco Wall Control Manager (e.g. the IP address has not been assigned, the projector has been disconnected from the mains ...).

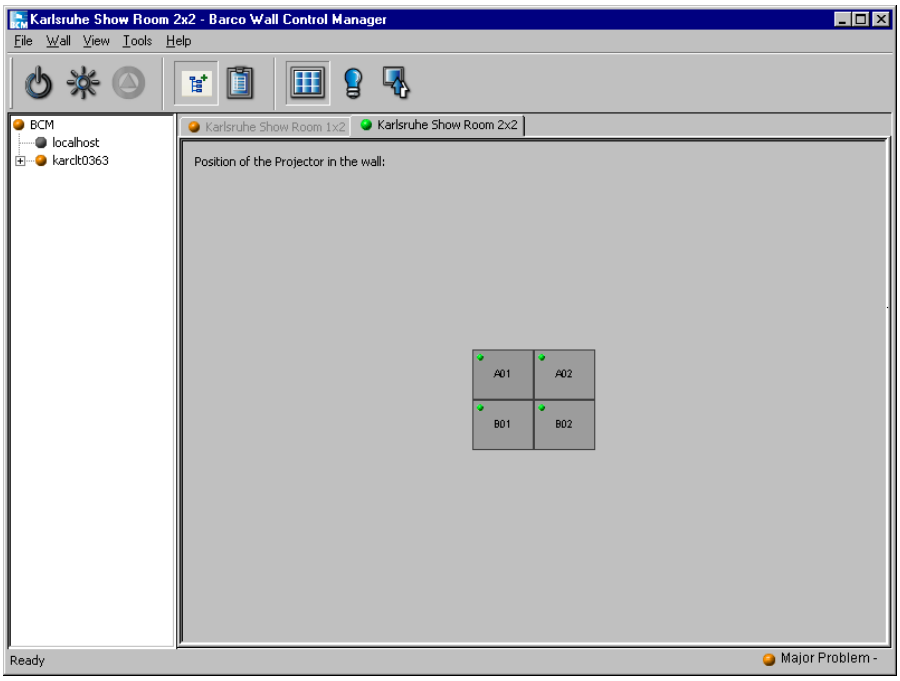
If all cells in the grid are displayed in the same color you see at a glance that the video wall features homogeneous brightness.



In case the projection modules feature different brightness the grid might look like this:



To also see big walls at a glance without the need for scrolling, select Tools|Preferences|Appearance. In the Grid Size section, select Small.



Within the grid a projector property is indicated, e.g. the projector state (running/standby), or the firmware, or the IP address.

Precondition is that the respective property is listed in the property table.

Display the property table.

Right-click on the caption of the column of this property, and then select **Show this column on Projector View**.

You might alternatively also press **STRG** and then left click on the caption of the column.

If the desired property is not listed yet in the property table, right-click on the caption of any column and select the desired property out of the list.

5.4.1 Context menu

Since every cell represents a projection system, this cell allows sending commands to the respective projection module via its context menu:

- Select the cell
- Right-click to open the context menu
- From the context menu, select the desired command.

Using the shift key it is possible to select multiple cells (and thus to address simultaneously multiple projection modules).

The commands available in the context address a selected group of projection modules.

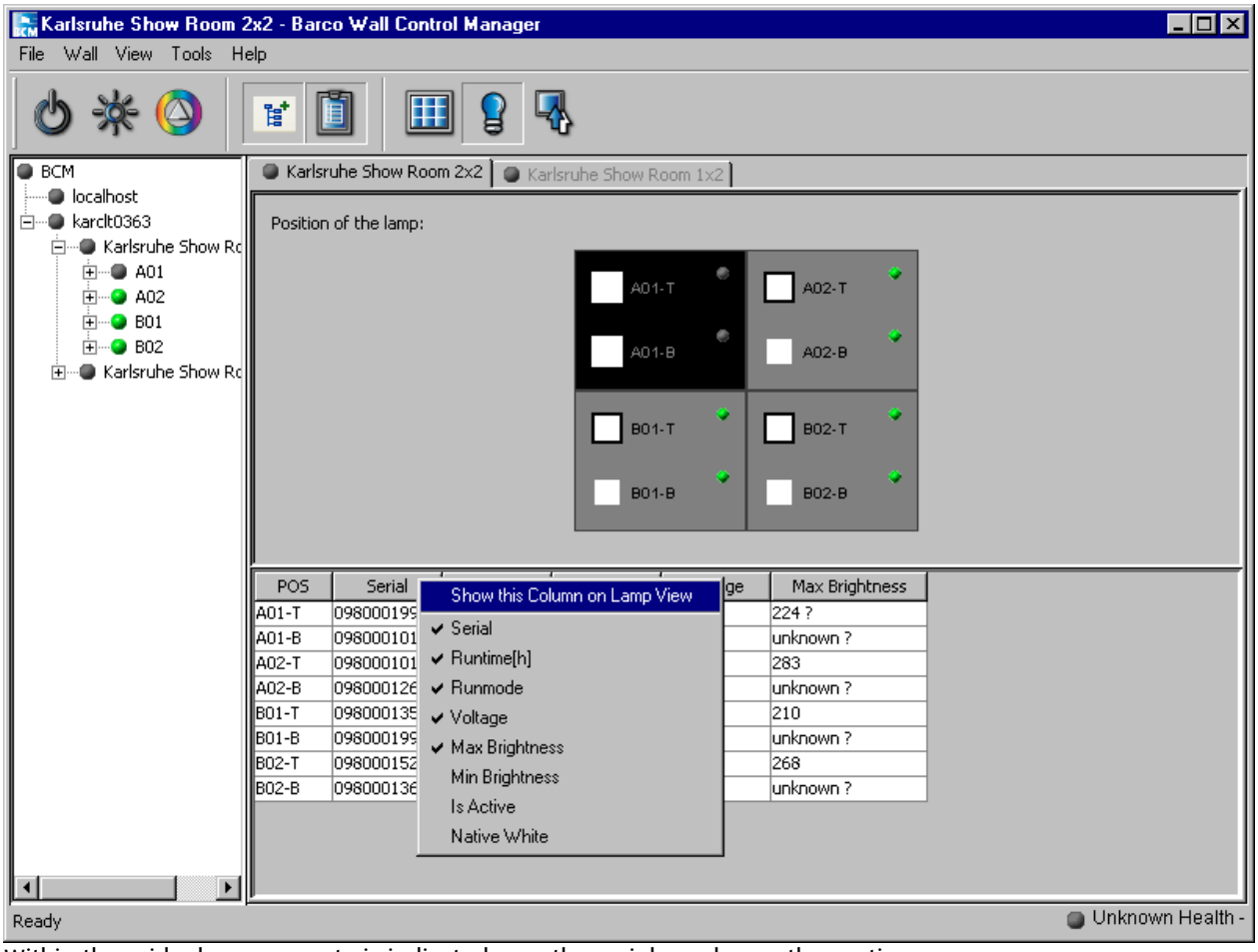
The commands available in the Wall menu address all projection modules of the video wall.

Please refer to the Reference section **to learn about the commands.**

5.5 Lamp View

In this view each cell in the grid visualizes the top lamp and the bottom lamp by means of a square. The name of the lamp includes the position of the respective projection module in the wall as well as T for top lamp and B for bottom lamp, respectively. The health status of the lamps is displayed next to its name.

The square representing the active lamp has a black border.



Within the grid a lamp property is indicated, e.g. the serial number or the runtime.

Precondition is that the respective property is listed in the property table.

Display the property table.

Right-click on the caption of the column of this property, and then select **Show this column on Lamp View**.

You might alternatively also press **STRG** and then left click on the caption of the column.

If the desired property is not listed yet in the property table, right-click on the caption of any column and select the desired property out of the list.

5.5.1 Context menu

Since every cell represents a projection system, this cell allows sending commands to the respective projection module and its lamps via its context menu:

- Select the cell
- Right-click to open the context menu
- From the context menu, select the desired command.

Using the shift key it is possible to select multiple cells (and thus to address simultaneously multiple projection modules).

The commands available in the context address a selected group of projection modules. The commands available in the Wall menu address all projection modules of the video wall. Please refer to the Reference section **to learn about the commands.**

5.6 Input View

In this view he grid shows two rectangles, the left one represents channel 1 (DVI IN1), the right one represents channel 2 (DVI IN2). The selected behavior on signal loss is also indicated..

Green dots within the rectangles show that the sources are connected. A missing source is indicated by a red dot.

The currently selected source is shown with a bold black border.

The property table of **Input View** is the one for **Projector View**. Since all input related information is already displayed in Input View (selected input, behavior on signal loss..) no other or additional property can be selected to be displayed.

5.6.1 Context menu

Since every cell represents a projection system, this cell allows sending commands to the respective projection module and its inputs via its context menu:

- Select the cell
- Right-click to open the context menu
- From the context menu, select the desired command.

Using the shift key it is possible to select multiple cells (and thus to address simultaneously multiple projection modules).

The commands available in the context address a selected group of projection modules.

The commands available in the Wall menu address all projection modules of the video wall.

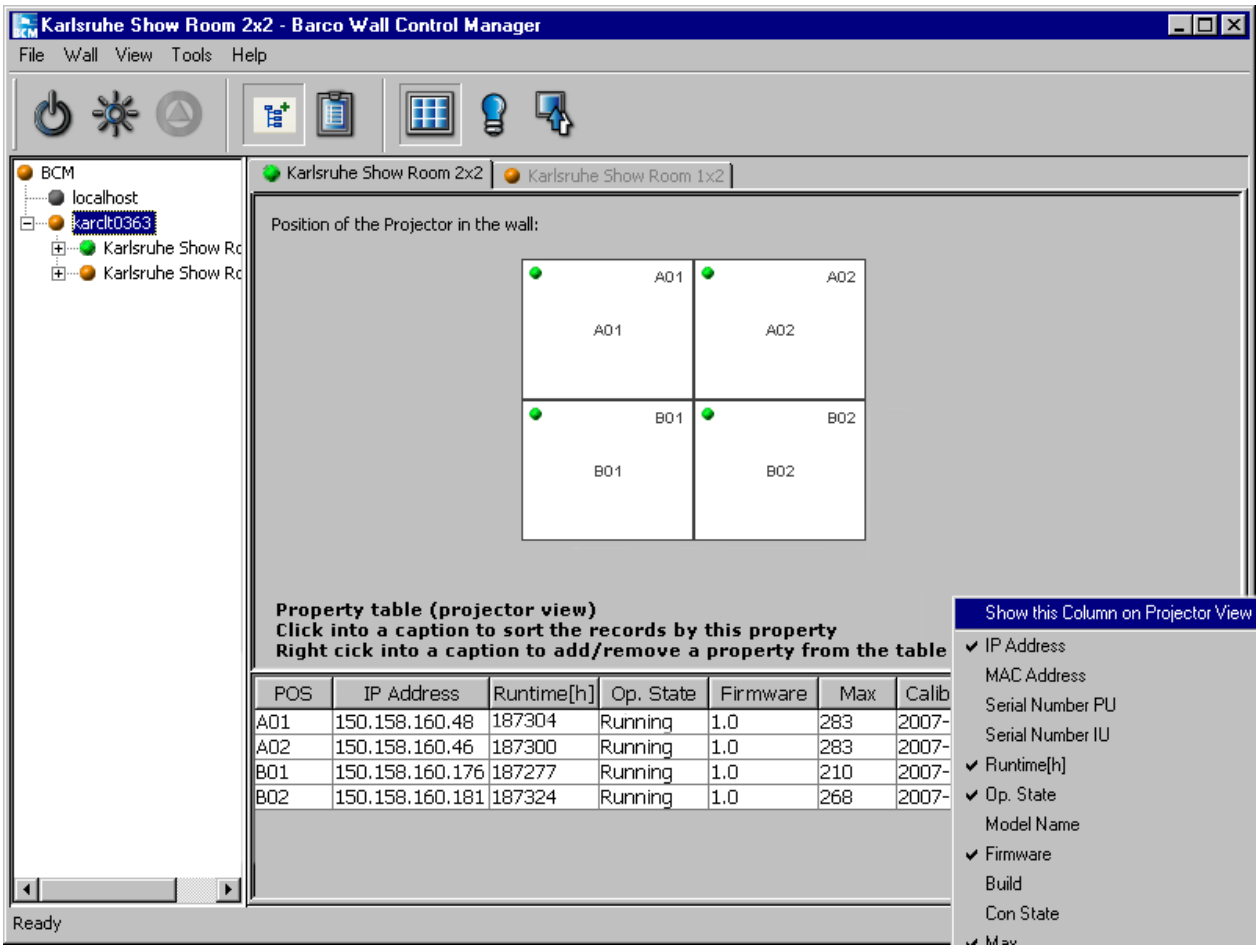
Please refer to the Reference section **to learn about the commands.**

5.7 Property table

The property tables can be shown or hidden via the command View | Property table or via the respective button in the tool bar.

The properties which are shown depend on the view (projector view, lamp view) and can be selected. Right-click on a caption of the property table. A list is displayed where the already shown properties are indicated by a tick. Select or unselect the desired property to show it in the table.

The context menu will be closed as soon as one option has been checked/unchecked and need to be reopened again for further modifications.



Depending on your credentials, you are entitled to se the following properties.

Projector View	description	Level (min)
IP Address	IP address of the projection unit's network interface card	3
MAC Address	MAC address of the projection unit's network interface card	2
Serial Number PU	Serial number of the projection unit	2
Serial Number IU	Serial number of the illumination unit	2
Runtime(h)	Runtime of the projection unit	2
Op. State	Operation state of the projection unit (running, standby)	2
Model Name	Device name (OV-D2)	3
Firmeware	Firmware release	3
Build	Firmware built	3
Con State	Connection status	3
Max	Max. reachable brightness (lux)	2
Current	Current brightness	2
Relative	Brightness correction (%)	2
Target	Color location of white of the auto target	2
Temp IU In	Temperature of illumination unit at air input	2
Temp IU Out	Temperature of illumination unit at air output	2
Temp PU	Temperature in the projection unit	2
HotStby	Lamp operation mode is hot standby	2
Active Lamp	Lamp which illuminates the optic (top lamp or bottom lamp)	2
Input Mode	Behavior on signal loss: Manual, Auto Preference, Auto Switch	2
Active Input	Channel the source which image is currently displayed is connected to	2
Selected Input	Preferred input	2
Calibrated	Date of calibration	2
Natvie Colors CIE1976	Color locations are described in the CIE 1976 color space (u, v)	2
Native Colors CIE1931	Color locations are described in the CIE 1931 color space (x, y)	2
Target Color	Target color (= wall target in case of average white)	2
Wall Target	Wall target (= target color in case of average white)	2
Bright Shift	Shift of brightness of white	2
White Shift xy	Shift of color location of white in x,y color space	2
White Shift uv	Shift of color location of white in u,v color space	2
Test Pattern	Applied test pattern (if a test pattern is applied)	2
B&C Mode	Color & Brightness mode	2
AutoSave	Auto save enabled/disabled	2

Lamp view column	Description	Level (min)
Serial	Serial number of lamp	2
Runtime(h)	Runtime of active lamp	2
Runmode	Lamp operation mode (hot standby, cold standby)	2
Voltage	Lamp voltage	2
Max Brightness	Max. reachable brightness (dimmer at 100%)	2
Native White	Native color location of white	2

6 Troubleshooting

When getting familiar with the Barco Wall Control Manager you may encounter some of the problems mentioned below.

6.1 User levels

The set of commands available in Barco Wall Control Manager depends on the skills of the user. Without the required authorization a menu entry is not visible

The following table lists some actions required during standard operation of a video wall and the required minimum level which allows performing the task.

Task	**Min. level**
Administration of a video wall	
Add a new wall	3
Delete a wall	3
Rename a wall	3
Assign an IP address	3
Connect to a remote Barco Wall Control Manager server	2
Color&Brightness adjustment	
Setup of spectrometer	3
Calibration of a video wall	3
Color & brightness mode	3
Sense6 (license required!)	3
Calculate Auto Target	3
Projector	
Switch on/off (running / standby)	1
Auto Save (enabled/disabled)	2
Manual calibration (fine tuning of color and brightness)	3
Lamp	
Optimize lamps	1
Activate top / bottom lamp	1
Switch to hot standby (license required!)	1
Retry	1
Input	
Select Channel 1 / Channel 2	1
Select behavior on signal loss (Manual, Auto Preference, Auto Switch)	1
Apply Test pattern	1
View	
Projector view	1
Lamp view	1
Input view	1

Task	Min. level
Property table	2
Tree	1
Reports and console	
All types of wall reports	1
Server report	2
Client console	2
Server console	2
Preferences	
Select report format	1
Long/short wall caption	1
Spectrometer setup	3

6.2 Big walls

Video walls which comprises a lot of projection modules can be visualized in a grid with small cellls in order to allow seeing the representation of the video wall at one glance, without the need of scrolling.

Select **Tools|Preferences|Appearance**. In the Grid Size section, select **Small**.

6.3 Property pages are disabled or don't show an entry

The information displayed as well as the functionalities to be accessed via the property pages depend on the skills of the user. Log In with highe credentials.

6.4 Commands are disabled

Commands are only visible if the user is authorized to perform the respective action.

A visible command which is disabled refers to a licensed feature of which the license file is missing.

If this feature is required, contact Barco to get a valid license file.

6.5 Calibration

Calibration is only possible when the lamps burn stable (i.e.. after 2 minutes of switching on a lamp or changing the active lamp in cold standby mode)

Calibration is only recommended if the lamps don't exceed a runtime of 24 hours.

To speed up calibration, disable Auto Save.(**Wall | Auto Save | disabled)**

Manual calibration of a projection module is only possible after an initial calibration of the wall.

Manual calibration is not possible if the **Brightness Lock** mode is set to maximized (automatic) since then the automatic adjustment done by the system will always interfere with the manual adjustment.

6.6 Uniformity of the video wall no longer perfect

The sensor used for the active feedback loop is subject to drift over time. It is recommended to recalibrate it once a year. For recalibration a new lamp (runtime < 24 hours) is required.

Select the new lamp to be the active lamp. Right-click on the projection module. From the context menu, select **Calibrate**.

6.7 Lamp error

Lamp errors might occur due to voltage fluctuations, i.e. actually the lamp is not really broken. Before changing a lamp it is therefore recommended to try to ignite the lamp again. Right-click on the failed lamp. From its context menu, select **Retry Failed.**

6.8 Check the position of a projection module in the video wall (without Barco Wall Control Manager software)

Please note: this procedure only requires a Windows PC connected to the sub net of the video wall. No Barco Wall Control Manager software required!

Although all projection modules of OV-D2 are visible in the network environment in case the UPnP devices are shown, the information about their position in the video wall is still missing.

Make a schematic drawing of the video wall. The projection modules in a display wall are named according their position. Seen from front, the most left projection module of the top row is called A1, the following one A2 and so on.

A1	A2	A3	A4
B1	B2	B3	B4

Now there are the following possibilities to find out the IP address of A1, A2 etc.

Method 1:

Go to the video wall. The IP address is indicated on the small LCD display of the illumination unit and thus visible on the rear side of the system.

Note the IP address indicated on the small LCD display in your drawing:

A1 111.222.254. 1	A2 111.222.254.112	A3 111.222.254. 33	A4 111.222.254. 65
B1 111.222.254. 15	B2 111.222.254. 46	B3 111.222.254.147	B4 111.222.254. 48

The IP addresses in the drawing are only fictive!

Please note:

The IP addresses dynamically assigened by a DHCP servers usually are at random and not subsequently.

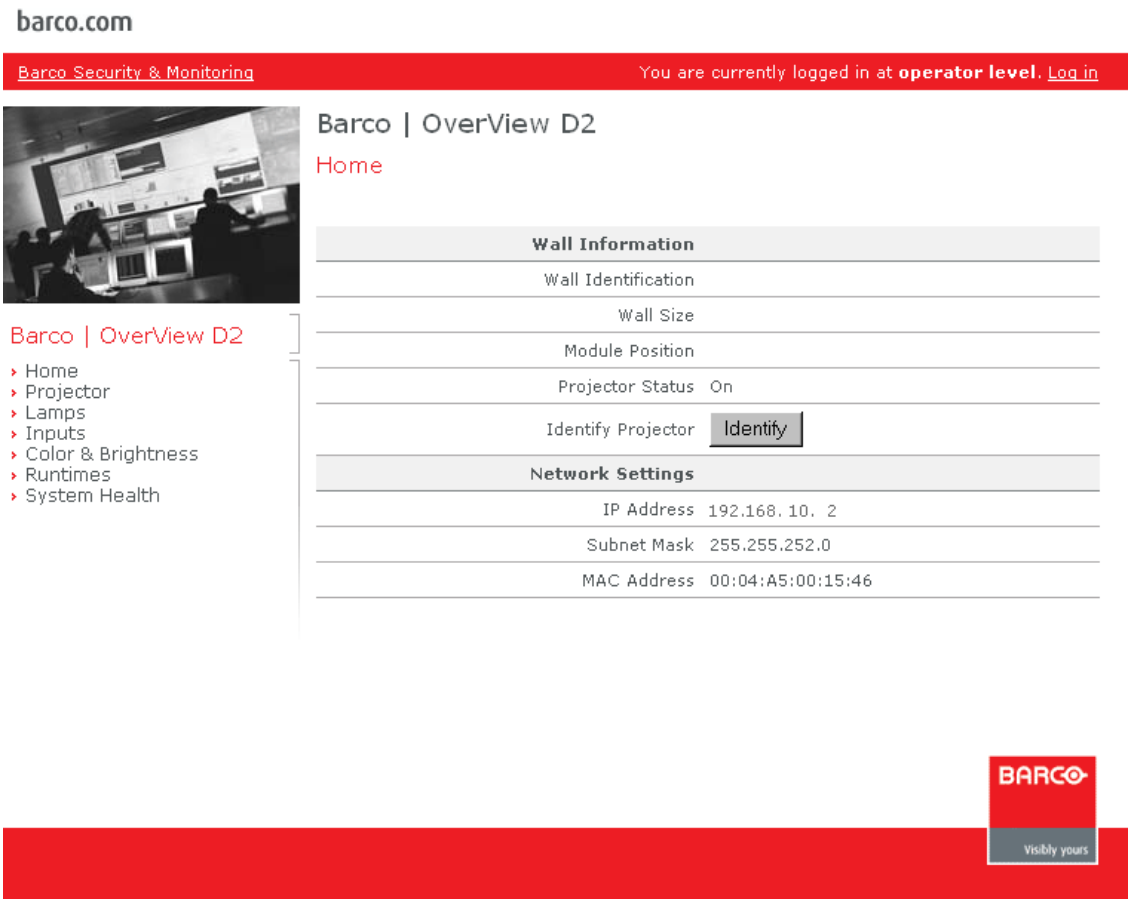
Static IP addresses are more sequently.

Method 2:

This procedure only works if you can see the video wall while sitting at your PC.

Enter he IP address of a projection module into a web browser (you know the valid IP addresses since they are displayed in **My Network Places**, see above).

The addressed projection system shows its home page in the web browser.



Click on **Identify**: the addressed projector will display a white background with a centered blue bordered square.

Now you know the position of the projection module in the video wall. Take your drawing, and note the IP address in the cell refering to the position.

Proceed accordingly with all the IP addresses of the OV-D2 projection modules shown in **My Network Places** until you drawing is complete.

6.9 Hot line

Feel free to contact us if you have any further questions!

- **Barco N.V. Projection Systems - Europe**
  Noordlaan 5, B-8520 Kuurne
  Phone: +32-56-368-282, Fax: +32-56-368-251
  E-mail support.controlrooms@barco.com • Web www.barcocontrolrooms.com

7 Reference

The set of commands provided by Barco Wall Control Manager allow the entire control of OV-D2. To prevent damages due to non-experienced users the commands are only available after authorization.

The Barco Wall Control Manager client can be launched according the user's skills. In total 4 different user modes are available, requiring basic skills only (1) to inside knowledge of the system (4) .

If the level of skills does not allow to perform an operation the command is not visible and can thus not be accessed in the user interface.

The reference section lists all commands and functions, and indicates the minimum level of skills required to have access to them, e.g. 1 (basic skill).

7.1 File menu

The file menu offers commands to get access to the set of commands of the Barco Wall Control Manager Software as well as to establish connections to one or more Barco Wall Manager Software services and to shut down the client application.

7.1.1 File | Log In (level: 1)

This command opens the dialog to enter the credentials and thus to get access to the commands and functions of the respective user mode.

Without log in, i.e. without valid credentials, the user cannot perform any actions, all entries in the user interface are read-only.

This authorization feature has been introduced to make sure that only authorized people control the video wall.

Please note that credentials are case sensitive! However there is no limit on the number of trials.

If the credentials are valid, the system displays a success message, otherwise a log in failure.

7.1.2 File | Connect to...(level: 1)

The Barco Wall Manager client software allows connecting to multiple video walls in a subnet. These video walls can be controlled by one ore more Barco Wall Manager services.

Connecting to a video wall requires connecting to the Barco Wall Manager service controlling this video wall.

The IP address of the Barco Wall Manager Service workstation has to be entered as well as the communication port this service uses (defined during installation of the service or later when configuring the service)

As soon as the connection is established, the Barco Wall Manager service is added as a node in the tree and all video walls controlled by this service are shown below this node.

7.1.3 File | Alarms (level: 1)

This command opens a dialog where all walls and the projection modules of all video walls the Barco Wall Control Manager Client is connected to are listed together with their health status and – in case the projection module shows a minor, major or critical problem also the problem is listed as well as a first aid advice.

7.1.4 File | Log Out (level: 1)

This command turns all commands into read-only again. The connection to the video walls however remain. Use this command when leaving you workstation in order to prevent unauthorized people taking control on a video wall using your PC

7.1.5 File | Exit (level: 1)

This command disconnects the Barco Wall Control Manager client from all connected Barco Wall Manager services. The client application is shut down.

7.2 Wall menu

The commands provided in the wall menu always refer to the actually selected video wall. The video wall can be activated by selecting its entry in the tree or by switching to the tab of this video wall in the workspace.

7.2.1 Wall | Run mode (level: 1)

This command sets and shows the status of the video wall. The video wall can be On or in Standby. In standby mode both lamps of a projection module are switched off. If the video wall is on, one lamp of the dual lamp projection system displays the image on the screen. The second lamp is either on (hot standby) or off (cold standby)

The current status is indicated by a black dot.

If none of the entries show the dot, some of the projection modules are on, others in standby.

7.2.2 Wall | Hot Standby (level: 1)

Use this command to switch the video wall to hot standby operation mode or to cold standby operation mode. In hot standby both lamps are on, in cold standby the backup lamp is off and only ignited when it is changed to be the active lamp.

This command is only enabled in case of a valid license file.

7.2.3 Wall | Inputs (level: 1)

Projection modules of the OV-D2 series have two independent DVI inputs which allow displaying alternatively two sources. The current source to be displayed can be selected as well as the behavior on signal loss.

7.2.3.1 Wall | Inputs | Channel 1 , Wall | Inputs | Channel 2 (level: 1)

Channel 1 refers to the source connected to DVI IN1, Channel 2 refers to the source connected to DVI IN2. The selected source to be displayed is indicated by a black dot provided all of the projection modules have the same setting.

7.2.3.2 Wall | Inputs | Manual, Wall | Inputs | Auto Switch, Wall | Inputs | Auto Preference (level: 1),

This command selects the behaviour on signal loss of the selected source.

There are three different types of behavior:

The user manually switches to the other source (**Manual**): Up to this moment, the desktop will show the selected background image.

The system automatically switches to the other source and displays this source until this source fails (then of course it will look again for the other source) (**Auto Switch**).

The system automatically switches to the other source, and in case the previous source is present again, it immediately activates this source again (**Auto Preference**).

If the controller fails, re-booting of the controller will already be considered as "signal present again" and the display will then show the booting window.

7.2.4 Wall | Internal Pattern (level: 1)

Use this menu to apply one of the internal patterns to the entire video wall. The pattern allow checking the quality of individual colors (e.g. RGB) or geometry adjustment (e.g. grid)

The following internal patterns can be applied to the video wall:

No pattern, Identify, RGB Patterns (White; Red; Green; Blue; Cyan; Magenta; Custom RGB); Gray; Grid; Outline; Lens Adjustment; Pixel On/Off; 4x4 Checker Board; 8x8 Checker Board; 8 Hor. Stripes; 8 Vert. Stripes; 4 Vert. Stripes; 8 Vert. Stripes (b/w); Gradient (b/w),Color Gradients

7.2.5 Wall | Optimize all lamps (level: 1)

The lamps used in OV-D2 systems are short arc lamps. The amount of light entering the illumination optics can be optimized by correctly positioning the light arc with respect to the optics.

This command performs this optimization and refers to all active lamps in the video wall. During the optimization procedure the display gets dark for some instants.

This command is automatically performed on the active lamps when initially calibrating a video wall during its setup.

After the initial calibration it is recommended to change the active lamp on all projection modules and to run the optimize coupling procedure as well on the backup lamps.

It is recommended to run this procedure when replacing a lamp (use the command out of the context menu of the lamp then).

7.2.6 Wall | Calibrate (level: 3)

This command starts the measuring procedure with a spectrometer. Measurement is either done row by row or column by column. The projection module which is due to be measured shows the **Identify** pattern (a white background with a blue bordered centered square). Press the spectrometer in the mid of this square and click **Next** in the measurement dialog. Subsequently the primary colors red, green, and blue are applied on the projection module and measured. When the measurement is complete, the following projection module shows the **Identify** pattern. Apply the spectrometer there, and click **Next**. Proceed until all projection modules of a video wall have been measured and their data processed, cf. Calibration with a spectrometer.

7.2.7 Wall | Calculate Auto Target (level: 3)

This command calculates the current value of the auto target, based on the data processed and stored in the proejctors during calibration.

The Auto Target is the color location which can be reached by all projection modules of a display wall.

After the initial calibration every projector "knows" its data. When replacing a calibrated projector in a video wall it the therefore not required to calibrate the entire wall. It is sufficent to use the available data of the calibrated projectors. The Auto Target then is calculated using this data, and then applied to the video.

7.2.8 Wall | Color & Brightness Mode (level: 3)

The OV-D2 series comes with a sophisticated software tool to lock the entire video wall to a common color location, a common brightness and a common gray. These functions require a license.

In case of a valid license file, the video wall can be run in uncalibrated mode (all projection modules show their individual native color and brightness), in Brightness lock mode (all projection modules are locked to a common brightness), or Sense6 (all projection modules are locked to a common brightness, a common color location, and a common gray. The parameters are continuously measured and controlled and kept constant by dynamic feedback loop technology.

7.2.9 Wall | Auto Save (level: 2)

The settings of a projection module can automatically be saved in regular time intervals. This command allows setting the interval as well as activating the automatic save procedure.

Please note that Auto Save puts some load on the CPU of the projection units.

7.2.10 Wall | Lamp Activation (level: 1)

OV-D2 projection modules employ a dual lamp illumination system. The lamp illuminating the optics is the active lamp, the other lamp is the backup lamp. This command allows setting the top lamp (bottom lamp) of all projection systems in the video wall as active lamp.

Use case: switching the active lamp after e.g. 1000 hours to ensure that both lamps age the same.

7.2.11 Wall | Device Addressing (level: 3)

This command opens a dialog where the IP addresses of all projection modules in the sub net are displayed as well as an indicator if this address has already been assigned or not.

Use this command to assign an IP address to a newly created display wall, cf. How to create a wall in Barco Wall Control Manager client

7.2.12 Wall | Rename (level: 3)

For identification purposes in the Barco Wall Control Manager Client a wall has got a name, usually indicating size and location of the wall.

This name can be changed while keeping all settings of the video wall.

7.2.13 Wall | Delete (level: 3)

This command deletes the wall from the tree and the wall space of the Barco Wall Manager Software client. Also the settings of the projection modules of this wall are erased from the database of the Barco Wall Manager service.

7.2.14 Wall | Add (level: 3)

This command allows adding a new video wall. Name, size and other parameters have to be defined. The wall gets an entry on the database of the Barco Wall Manager service and is listed below the node of the Barco Wall Manager Service in the tree as well as a new tab page in the workspace of the Barco Wall Manager Software client application.

7.2.15 Wall | Reports (level: 1)

This command allows generating the following reports:

Wall State Report, Lamp Change Event Report, Health Event Report, Operation State Report, Removed Lamp Report, All Events Report.

The period the report should cover can be defined.

The format of the report is the one selected in **Tools|Preferences|Reports**.

The reports are saved in C:\Documents and Settings\user\.bcm\reports

7.2.16 Wall | Properties (level: 1)

This command opens the property page of the active wall, cf. Wall properties.

7.3 View Menu

7.3.1 View | Show Tree (level: 2)

This command shows or hides a pane where all Barco Wall Control Manager servers and the walls controlled by these servers are listed in a tree structure, cf. Tree.

7.3.2 View | Show Property Table(level: 2)

This command shows or hides a table in the workspace which lists selected properties of the items visualized in the grid, e.g. IP address in case of projector view, cf. Property table.

7.3.3 View | Projector View(level: 1)

In this view the cells in the grid represents a projection module, cf. Projector View

7.3.4 View | Lamp View(level: 1)

In this view the cells in the grid visualize the two lamps of projection module, cf. Lamp View

7.3.5 View | Input View(level: 1)

In this view the cells in the grid visualize the two inputs of a projection module, cf. Input View

7.4 Tools Menu

7.4.1 Tools | Spectrometer Setup (level: 3)

Use this command to initialize the spectrometer and to load/re-load calibration files to the spectrometer, cf. Spectrometer setup.

7.4.2 Tools | Preferences (level: 1)

This command allows setting the preferences for the appearance, for manual calibration and for the reports.

On the **Appearance** tab, the size of the grid (normal, small) can be selected as well if the caption of a tab includes the owner and/or the city, respectively.

On the **Misc** tab the color clicked in the bitmap for manual color adjustment is defined, it can be the current color or the expected color, cf. Manual color adjustment.

On the **Reports** tab the file format for the reports can be selected: html, Microsoft Excel, XML.

7.5 Help Menu

7.5.1 Help | Service Report (level: 2)

This command allows to define an interval for which a service report of the active wall should be created. The report can be saved to disk (C:\Documents and Settings\user\.bcm\reports) or opened in Microsoft Excel

7.5.2 Help | Show Client Console (level: 2)

This command shows the client console.

7.5.3 Help | Show Service Console (level: 2)

This command shows the service console.

7.5.4 Help | User Manual (level: 1)

This command opens the user manual

7.5.5 Help | About (level: 2)

This command shows the About dialog informing about software version and build.

7.6 Context Menu Projector View

The commands always refer to the selected projector(s) (showing a blue border in the grid). For selecting multiple projectors, press the shift key during selection.

7.6.1 Run Mode (level: 1)

Use this command to switch the selected projection module(s) running or standby.

7.6.2 Hot standby (level: 1)

Use this command to switch the selected projection module(s) to cold standby or hot standby (only possible in case of a valid license file)

7.6.3 Input Selection (level: 1)

Use this command to select the source to be displayed (Channel 1, Channe 2) as well as the behavior on signal loss

7.6.4 Test Pattern (level: 1)

Use this command to apply a test pattern to the selected projection module(s).

7.6.5 Optimize Lamp (level: 1)

Use this command to optimize the lamp coupling of the active lamp of the selected projection module(s).

7.6.6 Reset Field Calibration (level: 3)

This command refers to the projection module as device and not to a record in the database. All calibration data is cleared, it is no longer possible to calculate an Auto Target which includes this projection module, manual color and/or brightness correction will get disabled.

7.6.7 Reset Manual Color Correction (level: 3)

This command resets the fine-tuning of the color adjustment.

7.6.8 Reset Brightness Correciton (level: 3)

This command resets the fine-tuning of the color adjustment.

7.6.9 Calibrate (level: 3)

This command requires an active lamp with less than 24 hours of runtime. The sensor(s) of the selected projection module(s) will be recalibrated using the spectral data of the new lamps.

7.6.10 Reports (level: 2)

Use this command to create a report for the selected projection module(s). The following reports can be generated:

Projector State Report, Lamp Change Event Report, Health Event Report, Operation State Report, Projector Log Report, All Events Report.

To add a comment to the reports, select User Comment. To update the loggings with the current values, select Add Property Log Now.

7.6.11 Unassign Device (level: 3)

This command immediately removes the relationship between the IP Address and the selected projection module(s) in the Barco Wall Control Manager Client. The respective projection modules(s) can no longer be addressed.

7.6.12 Show Web Server (level: 2)

This command opens the web page of the selected projection module without the need of explicitly launching a web browser and entering the IP address of the projection module.

7.6.13 Properties (level: 1)

This command opens the projector property page, cf. Projector properties.

7.7 Context Menu Lamp View

7.7.1 Activate (level: 1)

This command makes the selected lamp the active lamp. In cold standby this lamp gets ignited first.

7.7.2 Retry failed (level: 1)

This command resets the lamp error. In case of hot standby, the lamp will be ignited. In case of cold standby, the lamp will be ignited only when activated.

If ignition fails, the error is set again.

Since lamp errors don't only occur due to broken lamps but also due to voltage fluctuations it is recommended to always try re-ignition before actually replacing the lamp.

7.7.3 Reports (level: 2)

Use this command to create a report for the selected projection module(s). The following reports can be generated:

Lamp State Report, Health Event Report, LampLog Report, All Events Report.

To update the loggings with the current values, select Add Property Log Now.

7.7.4 Properties (level: 1)

This command opens the lamp property page, cf. Lamp Properties

8 Glossary of Terms

Auto preference

In this mode the source connected to the selected input will always have highest priority and be displayed whenever possible. In case the signal fails, the system automatically switches to the other source. As soon as the source connected to the selected input is available again the system switches back to it!

In case there is no valid source neither on channel 1 nor on channel 2 the background as selected on the projector page will be displayed.

Auto switch

Associated with input selection mode: As long as the source connected to the selected input is available, it also has priority. As soon as it is no longer available, the system switches to the source connected to the other input and also accordingly switches the selected input! Even if the source connected to the previously selected input will be available again, it will not be switched to unless the other source fails.

Cold standby

Operating mode of the dual lamp system in OverView D2 where only the lamp which illuminates the optics is on (active lamp). The backup lamp is off and gets only ignited if an error occurs with the active lamp or if it is manually selected to become the active lamp.

DHCP

DHCP (Dynamic Host Configuration Protocol) is a communications protocol that lets network administrators centrally manage and automate the assignment of Internet Protocol (IP) addresses in an organization's network. Using the Internet Protocol, each machine that can connect to the Internet needs a unique IP address, which is assigned when an Internet connection is created for a specific computer. Without DHCP, the IP address must be entered manually at each computer in an organization and a new IP address must be entered each time a computer moves to a new location on the network. DHCP lets a network administrator supervise and distribute IP addresses from a central point and automatically sends a new IP address when a computer is plugged into a different place in the network.

Ethernet

Ethernet is a standard for connecting computers into a local area network (LAN). The most common form of Ethernet is called 10BaseT, which denotes a peak transmission speed of 10 mbps using copper twisted-pair cable.

Hot standby

Operating mode of the dual lamp system in OverView D2 where both lamps are simultaneously on. On lamp illuminates the optics. This lamp is called the active lamp. The other lamp is the backup lamp which is immedieately switched into the light path if the an error occurs with the active lamp.

IP Address

Internet protocol address

This address is a unique string of numbers that identifies a computer on the Internet. These numbers are usually shown in groups separated by periods, like this: 123.123.23.2. All resources on the Internet must have an IP address--or else they're not on the Internet at all.

LAN

An acronym for Local Area Network, LAN refers to a local network that connects computers located on the same floor or in the same building or nearby buildings.

MAC address

(Media Access Control)

One of the two addresses every networked computer has (the other being an IP address), a Media Access Control address is a unique 48-bit identifier usually written as 12 hexadecimal characters grouped in pairs (e. g., 00-00-0c-34-11-4e). This address is usually hard-coded into a Network Interface Card (NIC) by its manufacturer, and does not change. It is the physical address of a data device, and is used as an aid for routers trying to locate machines on large networks

Manual

Associated with input selection mode: In case the source on the selected input fails, the background as selected on the projector page will be displayed, no matter if there is a signal on the other channel.

Associated with input selection mode: In this operating mode, the behavior is the same as with one DVI input only, except that there is the possibility to connect two sources and select alternatively one them without the need of re-cabling.

NIC

A network interface card (NIC) is a computer circuit board or card that is installed in a computer so that it can be connected to a network. Personal computers and workstations on a local area network (LAN) typically contain a network interface card specifically designed for the LAN transmission technology, such as Ethernet or Token Ring. Network interface cards provide a dedicated, full-time connection to a network. Most home and portable computers connect to the Internet through as-needed dial-up connection. The modem provides the connection interface to the Internet service provider.

Subnet Mask

A subnet mask is a method of hiding or "masking" the network address portion of an IP address. It does so by assigning a value of 1 to every digit in the network address portion of the binary IP address. These masked digits are not permitted to change when assigning IP addresses to local hosts, or machines on the local network.

Switch

On an Ethernet local area network (LAN), a switch determines from the physical device (Media Access Control or MAC) address in each incoming message frame which output port to forward it to and out of. In a wide area packet-switched network such as the Internet, a switch determines from the IP address in each packet which output port to use for the next part of its trip to the intended destination.

TCP/IP

TCP/IP stands for Transmission Control Protocol/Internet Protocol, the language governing communications between all computers on the Internet. TCP/IP is a set of instructions that dictates how packets of information are sent across multiple networks. It also includes a built-in error-checking capability to ensure that data packets arrive at their final destination in the proper order.