

# Kaleido-IP / Kaleido-X Cascade

## Step-by-Step Configuration

M926-3804-101

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# Kaleido-IP

## Kaleido-IP/Kaleido-X Cascade Step-by-Step Configuration

This document explains how to connect two multiviewers — a Kaleido-IP and a Kaleido-X — in cascade mode, and how to configure and operate them as a single system. Both multiviewers must have the same Kaleido-X software version (6.40 or later).

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## Introduction

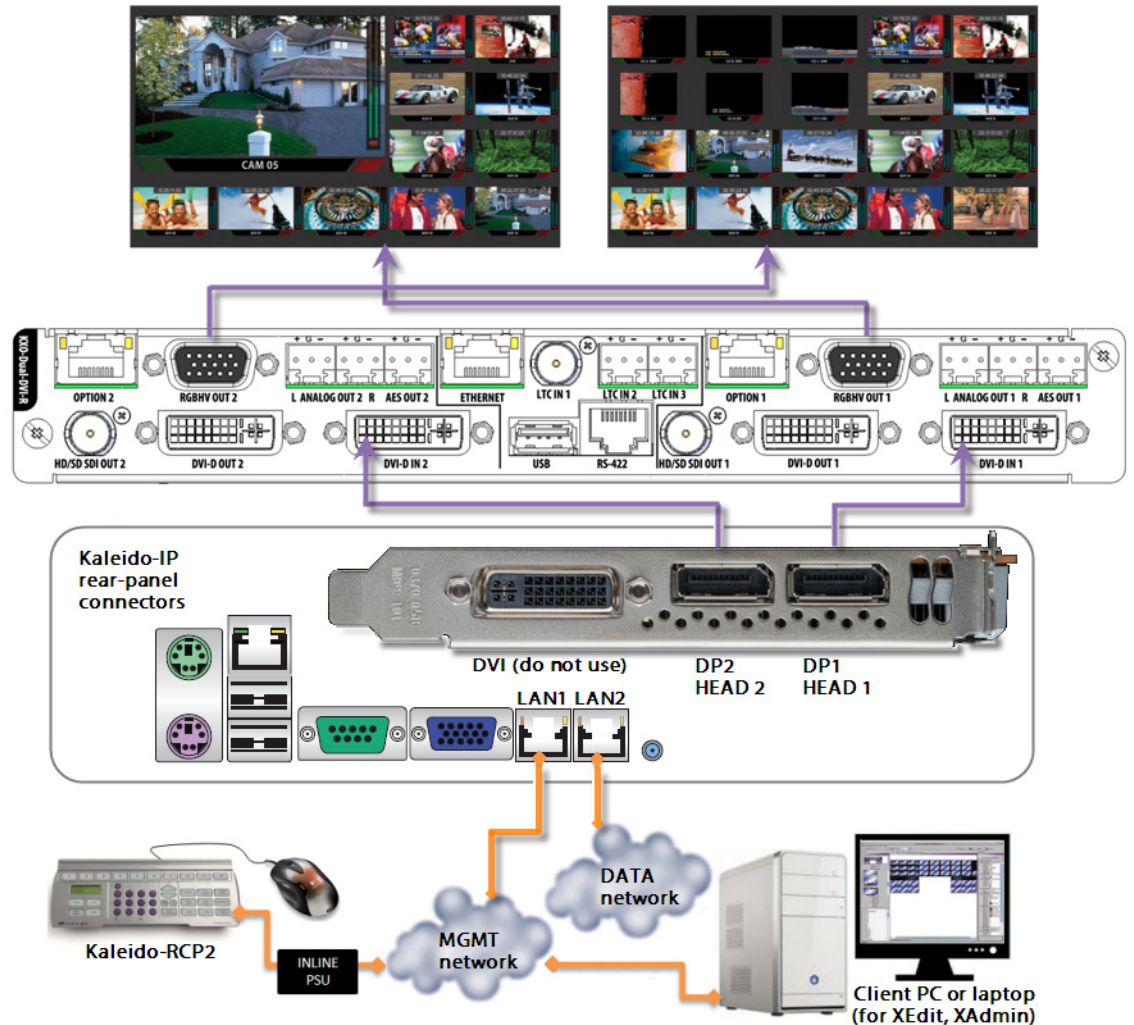
The number of sources that can be monitored concurrently on a single monitor wall display is limited by the number of inputs supported by your specific multiviewer model. One Kaleido-X16 multiviewer supports 16 inputs. One way to increase the number of inputs is to use more than one multiviewer to build the output to a single head, by configuring a multiviewer cascade. It is possible to configure up to three Kaleido-X16 or KMV-3901/3911 multiviewers as a cascade system. Depending on your purposes, you may wish to monitor both baseband and IP sources at once, on the same monitor wall display. This can be achieved by configuring a *hybrid* cascade system, involving one Kaleido-IP multiviewer and one Kaleido-X or Kaleido-X16 multiviewer.

With a Kaleido-IP/Kaleido-X Cascade system, the Kaleido-IP provides some parts of the monitor wall image, sends it to the Kaleido-X, which adds some more elements to the output and then sends the resulting output to the monitor wall. Unlike the cluster, whose purpose is to increase the number of output heads in a room, the hybrid cascade not only increases the maximum number of inputs that can be displayed to a single head but also allows you to display both IP sources and baseband sources to the same head.

To configure your Kaleido-IP and Kaleido-X multiviewers as a cascade system, you need to physically connect one Kaleido-IP output to a DVI input on the Kaleido-X multiviewer. Then connect a display to the appropriate output on the Kaleido-X. Once you have defined your cascade system and room in XEdit, you will be able to operate the cascade as a single multiviewer.

## Physical Installation

To interconnect the Kaleido-IP and the Kaleido-X multiviewers in a cascade room with a single output head, you will need a good-quality DisplayPort-to-DVI cable, as short as possible. For a cascade room with two output heads, then you will need two such cables.



**To interconnect a Kaleido-IP and a Kaleido-X into a cascade**

- 1 Connect one of the Kaleido-IP's DisplayPort outputs to a DVI input on the Kaleido-X output card that will be connected to the monitor wall.
- 2 In the case of a cascade room with two output heads, connect the second DisplayPort output on the Kaleido-IP to the second DVI input on the Kaleido-X.

Note: Although nothing prevents you from connecting any DisplayPort output to any DVI input, the recommended practice is to choose the most logical signal path, by connecting DP1 to DVI-D IN 1, and DP2 to the same output card's DVI-D IN 2. Configuring your cascade system in XEdit will then be straightforward.

- 3 Connect the appropriate outputs on the Kaleido-X to one or two monitor wall displays, depending on your specific purposes.

## Cascade Configuration in XEdit

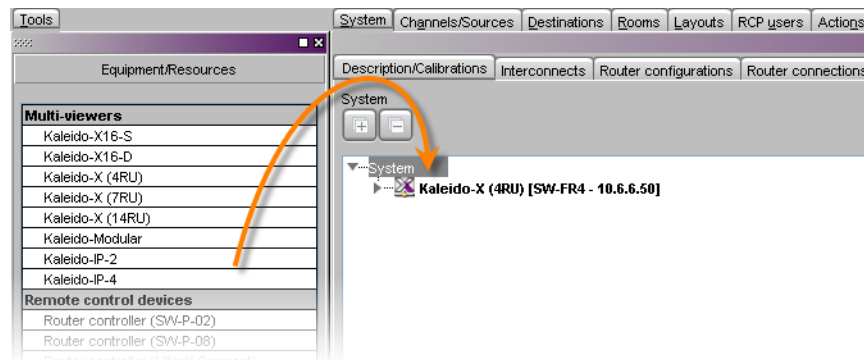
### Adding Multiviewers to a Cascade

The Kaleido-X software's support for cascade systems is based on the cluster feature. Therefore, like a cluster, a cascade system must meet the following requirements:

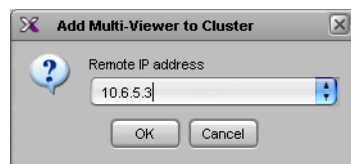
- The multiviewers you wish to add to a Kaleido-IP/Kaleido-X cascade must have Kaleido-X software version 6.40 or later, and both cascade members must have the same version of the software.
- Each multiviewer you wish to add to a cascade must have a unique name.
- Do not change the system name of a multiviewer or its IP address, once it has been added to a cascade, if the other multiviewer is offline or otherwise unavailable. This would cause all head assignments to become unknown. If you must rename a multiviewer, or change its IP address, while the other member of the cascade is unavailable, remove it from the cascade configuration first, and then add it again after you made the required change. You will then need to reconfigure the head assignments for any room that includes display screens associated with the renamed multiviewer (see [Repairing a Cascade Configuration](#) on page 5).
- A multiviewer can only be part of one cascade or cluster system at any time. XEdit will not let you add a multiviewer that is already included in a different cascade or cluster system.

#### To add multiviewers to a cascade

- 1 Open XEdit, and then click **Connect** on the **Configure** menu, to access the Kaleido-X (i.e. the multiviewer that will output directly to the monitor wall).  
You can now create a cluster by adding the Kaleido-IP to your system configuration.
- 2 In the equipment library, select any multiviewer type, and then drag it onto the root of the System hierarchical list.



The Add Multiviewer to Cluster window appears.



- 3 If your PC and the multiviewer you wish to add are on the same subnet, then you can select the multiviewer's IP address from the list. Otherwise type the appropriate IP address in the box.
- 4 Click **OK**.

The multiviewer is added to the System list.

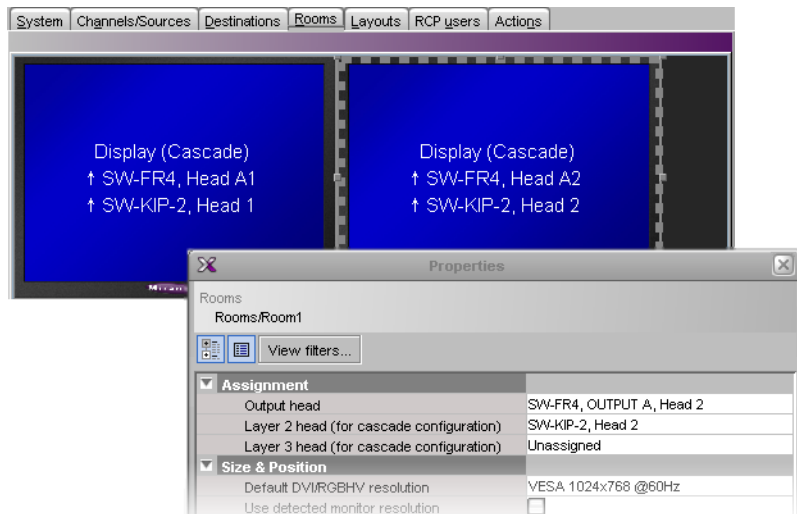


### Notes

- The system type is automatically adjusted based on the actual target system.
- Each member of a cluster has its own database where both common information about the cluster and information local to the individual cluster member are stored. Room and layout definitions are automatically replicated to all cluster members, whereas the configuration for devices connected to a specific system is only stored in this system's database.

## Configuring Cascade Rooms

In a Kaleido-IP/Kaleido-X cascade room, each cascaded display is assigned heads from both multiviewers, configured as layers, by setting the display's **Output head** and **Layer 2 head** property to match the actual head order in your physical configuration.

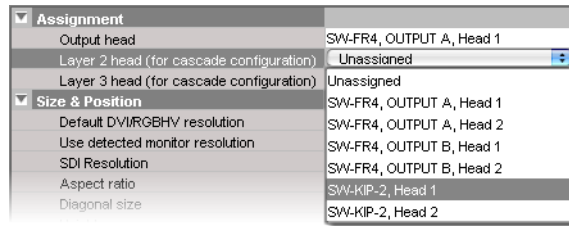


### To configure a cascade room

- 1 In XEdit, while connected to the Kaleido-X, open the room you wish to configure.

**Note:** If the room does not exist yet, create it by adding the appropriate number of displays, and then assign heads from the current multiviewer to the displays in the usual fashion.

- 2 Click a first head. In the **Properties** pane, its name appears in the **Output head** box.
- 3 Select the appropriate Kaleido-IP head from the **Layer 2 head (for cascade configuration)** list.



Since the Kaleido-IP/Kaleido-X cascade does not support a third layer, leave **Layer 3 head (for cascade configuration)** unassigned.

- 4 In the case of a dual-head cascade room, repeat the procedure to configure the head layer assignments for the other Kaleido-X head.
- 5 On the **File** menu, click **Save**.

The updated room configuration is automatically propagated to the Kaleido-IP.

## Configuring Layouts for a Cascade Room

Creating cascade layouts is no different than creating any regular layout. The only limitation is that all layout creation and configuration must be performed in online mode, while connected to one of the cascade members.

- When you configure layouts for a cascade room, all logical sources from all the multiviewers associated with this cascade room are available.
- When you save a Kaleido-IP/Kaleido-X cascade layout, any changes are automatically propagated to the other multiviewer in the cascade.

## Repairing a Cascade Configuration

While connected in XEdit to a multiviewer that is part of a cascade, if you change the system name or IP address of this multiviewer while another cascade member is offline or otherwise unavailable, the underlying cluster's integrity will be broken. If you attempt to make such a change, XEdit will alert you of the situation, prompting you to cancel the operation and try again later, when all cascade members are available. However, in the advent that such a change was made by mistake, or that it had to be forced for some reason, you will have to repair the broken cascade.

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**Note:** In the procedure below, *System A* refers to the system whose name or IP address was changed while another multiviewer, referred to as *System B*, was unavailable.

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### To repair the cascade configuration

- 1 In XEdit, connect to *System B*, the multiviewer that was unavailable when the change was made, once it is available again.
- 2 In the **Description/Calibrations** tab, remove *System A* from the cluster, and then add it back to the cluster.

If only the IP address was changed then no further action is required. Otherwise, if the system name was changed, then proceed as follows.

- 3 Connect to *System A*.
- 4 Change something in every room (e.g. move a display and then bring it back to its initial position) to enable the **Save** button, and then save the room.

This will replicate the proper room configuration to the other member of the cascade. (At the same time, the layouts will also be updated on all multiviewers in the cascade.)

## Cascade Upgrade

Update the multiviewers that are part of a Kaleido-IP/Kaleido-X cascade in sequence, starting with the multiviewer farthest from the monitor wall (i.e. the Kaleido-IP), and finishing with the one connected to the monitor wall displays (i.e. the Kaleido-X). When you restart one multiviewer at the end of its update process, you can start updating the other without waiting for the restart to be completed.

### To upgrade a Kaleido-IP/Kaleido-X cascade system

- 1 Load an empty layout on the monitor wall, or make sure that the bottom area of the current layout is empty.
- 2 From a workstation on the same subnet, open a Web browser window and type the Kaleido-IP's *management* IP address in the address bar.

The Kaleido-IP home page appears.



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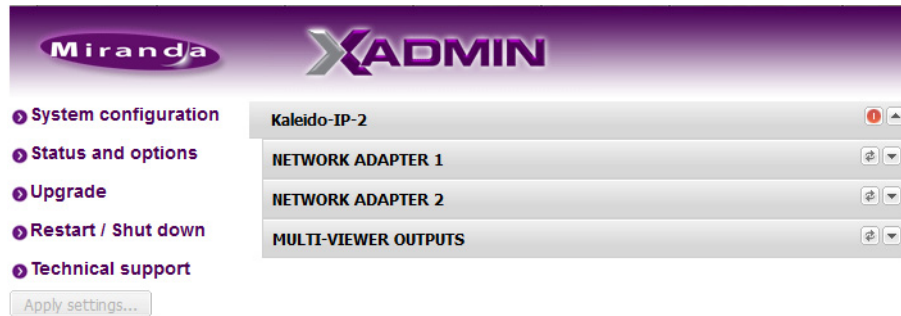
#### Firefox users:

If you see a security warning instead of the home page, then refer to *Registering your Multiviewer's Security Credentials with your Browser*, in the Kaleido-X User's Manual.

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- 3 Click the XAdmin button.  
The XAdmin Status and Options page appears.

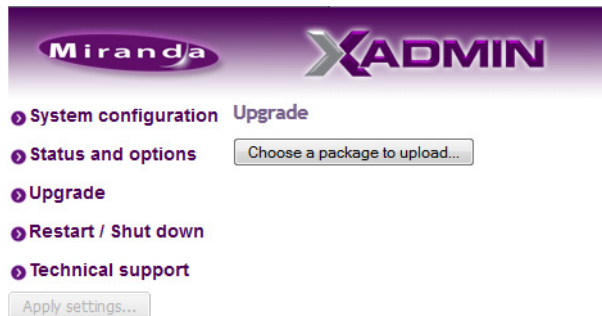




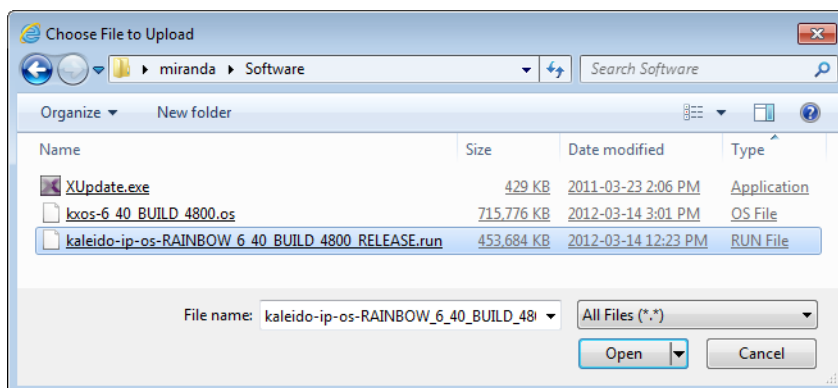
**Internet Explorer users:**

- If the page remains blank, then refer to *Enabling the Compatibility View in Internet Explorer 10*, in the Kaleido-X User's Manual.
- If you see a certificate error message instead of the Status and Options page, then refer to *Registering your Multiviewer's Security Credentials with your Browser*, in the Kaleido-X User's Manual.

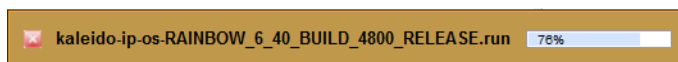
- 4 Click **Upgrade**, in the navigation area on the left of the page.  
The Upgrade page appears.



- 5 Click **Choose a package to upload**.  
A file chooser window appears.
- 6 Navigate to the RUN package you wish to install, select it, and then click **Open**.



The selected file is uploaded to the Kaleido-IP. This may take a few seconds.



- Once the upload has completed, click **Apply update**.



While the upgrade is taking place you can monitor its progress if you wish, or wait until the system prompts you to restart the Kaleido-IP unit.



- Once the upgrade has completed, if you wish to keep a copy of the log messages, scroll down to the bottom of the page, right-click **Download the Upgrade log**, and save the log to your hard drive as a text file.

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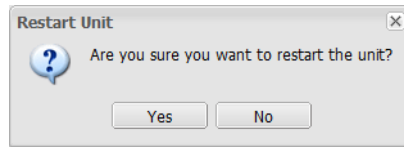
Verifying archive integrity... All good.
Uncompressing Kaleido-IP-
OS.....
sending incremental file list
bin/
bin/grub-bin2h
6.26K 100% 0.00kB/s 0:00:00
6.26K 100% 0.00kB/s 0:00:00 (xfer#1, to-check=1179/1241)
bin/grub-editenv
32.77K 93% 144.14kB/s 0:00:00
35.23K 100% 68.81kB/s 0:00:00 (xfer#2, to-check=1178/1241)
bin/grub-ekelFimage
    
```

```

var/tmp/
var/tmp/tomcat-6/
deleting var/tmp/tomcat-6/hsperrfdata_root/
deleting var/tmp/tomcat-6/2F60D6C4E6ABED4F464734578C01C61B/kaleido-ip-os
deleting var/tmp/tomcat-6/2F60D6C4E6ABED4F464734578C01C61B/
var/tmp/tomcat-6/.keep_www-servers_tomcat-6
0 100% 0.00kB/s 0:00:00 (xfer#1223, to-check=0/46312)
sent 478.05M bytes received 45.04K bytes 10.07M bytes/sec
total size is 1.54G speedup is 3.22
/tmp/selfgz1641631452 /tmp/selfgz1641631452
/tmp/selfgz1641631452 /tmp/selfgz1641631452
/tmp/selfgz1641631452 /tmp/selfgz1641631452
/tmp/selfgz1641631452 /tmp/selfgz1641631452
ALTER ROLE
upgrade successful... please reboot
Download the Upgrade log
    
```

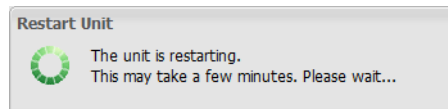
- Click **Restart unit**.

The system prompts you to confirm.

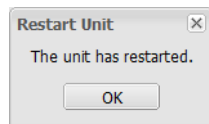


- 10 Click **Yes** to proceed.

Your multiviewer will shut down, and then start again. This may take a while.



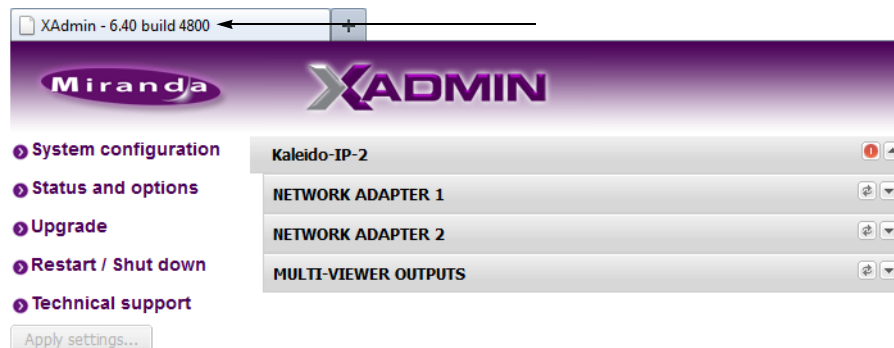
Once the multiviewer has restarted, the system notifies you.



- 11 Click **OK**.

The XAdmin Status and Options page appears.

- 12 Verify that the expected version number appears in the page title (check the tab label, or the browser's title bar).



At this point the Kaleido-IP upgrade is complete, and you can now proceed with upgrading the Kaleido-X.

- 13 Copy the Kaleido-X upgrade package files to a USB key (see "Preparing a USB Key" in the Release Notes).

- 14 Insert the USB key into any of the USB ports on the Kaleido-X.

After a while, a message appears at the bottom left corner of the monitor wall, reporting that the Upgrade Manager is verifying software, firmware, and safe mode versions. Once the verification process is complete, you will be advised what upgrade action, if any, needs to be performed. Then, after 30 seconds, the upgrade process begins automatically, starting with the software upgrade.

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#### IMPORTANT

In a Kaleido-X multiviewer, all cards are updated in parallel, during which time their status LEDs will be flashing red. Do not interrupt this process. Do not insert or remove cards while an upgrade is in progress.

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When the entire upgrade process has successfully completed, a red button appears at the bottom of the upgrade dashboard, prompting you to restart the multiviewer.

Upgrade complete. Click here to restart the system.

- 15 Click the **Upgrade complete** button to restart the system.  
The multiviewer now restarts. This may take up to 30 seconds.
- 16 Remove the USB key from the USB port.  
You have now completed the upgrade, for both multiviewers in this cascade.

## Limitations

In the current version of the Kaleido-X software, cascade systems are subject to the following limitations:

- **Full screen layouts** are not supported.
- **Changing a display resolution from the monitor wall menu** is not supported and will break the underlying cluster's integrity. You must use XEdit to configure the display resolution (see "Changing Room Display Resolutions" in the Kaleido-X User's Manual). In the advent that such a change was made by mistake, you will have to repair the broken cascade as follows:
  - 1 Connect to the multiviewer associated with the display whose resolution was changed by mistake, and open the corresponding room.
    - If you wish to *restore the previous resolution*, then set this display to its previous resolution.
    - If you wish to *apply the new resolution*, then change something in the room to enable the **Save** button (e.g. move a display and then bring it back to its initial position).
  - 2 On the **File** menu, click **Save**.
- **Some changes are not automatically propagated** to all members of a cascade. If you wish to have the same configuration for every multiviewer in a cascade, then the following elements must be manually replicated: system calibrations, audio monitoring output assignment for each RCP user, sources/channels and router configurations, pointer size configuration.

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Note: After changing the pointer size for a room, on all multiviewers in a cascade, you must restart every multiviewer, for the change to become effective across the cascade system.

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- If two multiviewers in a cascade are connected to the same router, then the router name should be the same in both configurations. Conversely, two different routers in the same cascade must not have the same name.
- Serial ports are not shared between cascade members. A serial device connected to one multiviewer in a cascade is not known to the other cascade members.
- Audio monitoring is not supported.
- **RCP operation:** In the case of a cascade system, monitor wall functions performed via the associated buttons on a Kaleido-RCP2 or RCP-200 (ASPECT RATIO, UNDERSCAN,

FULL SCREEN, etc.) only work in parts of the layout associated with the multiviewer that is directly connected to the displays.

*Workaround:* Use the monitor wall menu.

- Router outputs are not cascaded.
- Working against the same cascade system in concurrent XEdit sessions is not supported.
- EDID auto-detection is not supported. When configuring a cascade room, make sure the Use detected monitor resolution check box is not selected for any of its displays. Refer to “Enabling EDID Auto-Detection from the Monitor Wall”, or “Enabling EDID Auto-Detection in XEdit”, in the Kaleido-X User’s Manual, for details.





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