



**SPECTRUM**



**Video Wall Control Software  
User's Guide**

**November 2016**

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## DOCUMENT

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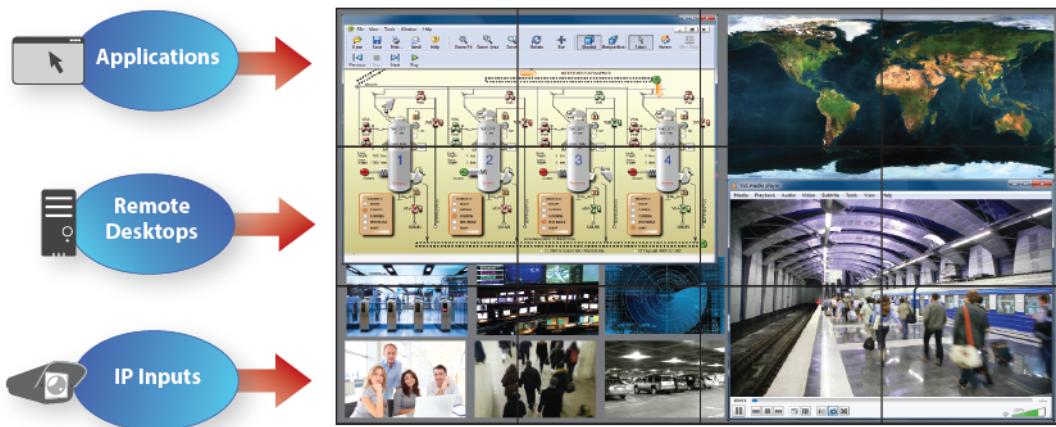
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## CHAPTER

# 1

# INTRODUCTION

Galileo Video Wall Control Software is a complete network-centric collaboration tool for control rooms and other applications. With it, you can manage captured sources, run local applications on the video wall server, and control remote clients. It gives individual operators the ability to manage multiple display wall processors from their computers. Any operator can access any computer in the control room through the LAN. Multiple operators can work simultaneously on the video wall.



Galileo Video Wall Control Software consists of four components:

- **Galileo Client**

The Galileo Client can be installed on any Windows PC and controls all aspects of the Video Wall operation. A Galileo base configuration includes a single-user Client license. You may purchase as many additional Client licenses as you require.

- **Galileo Web Client**

The Galileo Web Client provides access to many of the same features available through Galileo Client, using a standard Web browser on a computer, tablet or smartphone.

- **Galileo Remote Host**

Galileo Remote Host is installed on any source computer you would like to display on the video wall, and/or control from other clients. The Remote Host has no user interface and cannot be used to control the video wall directly.



### ■ Galileo Server

Galileo Server runs on the Display Processor. It manipulates windows and other video wall elements in response to commands it receives from Galileo Client. It also logs system and user activity, and controls access to Display Processor features and functions based on user/group permissions defined by a Galileo Client operator.

## 1.1 Video Wall Control Features

- Microsoft Windows environment.
- Intuitive, easy-to-learn interface.
- Remote control of a single video wall or multiple video walls, from multiple client positions on the same network.
- Simple layout configuration through mouse drag and drop of sources to the video wall.
- Easy saving and retrieval of layout configurations.
- Easy scheduling of predefined tasks.
- Seamless integration with third-party automation/control systems, via its [Network Scripting API](#).
- Organize the video wall in sublayouts to easily manage windows in all sections of the video wall.

## 1.2 Collaborative Tools

### 1.2.1 Client Capture

An operator can take control of any authorized computer, including the Galileo Display Processor itself. The captured screen (or portion of it) can be displayed locally to the operator, without necessarily showing it on the Video Wall. It can fit to the client's screen, or be viewed at its original resolution.

### 1.2.2 Send Local Desktop to Video Wall

Individual remote operators can send a clone of their Windows desktop (or portion of it) to the video wall in a picture-in-picture manner. The size and position of this window can be easily modified.

### 1.2.3 Send Client to Video Wall

Individual remote operators can send a clone of any client's desktop (or part of it) to the video wall in a picture-in-picture manner. The size and position of this window can be easily modified.

#### 1.2.4 Restrict Features

Each client can choose whether they would like other operators to be able to control their PC when captured, or only view their screen and mouse movements. For example, a manager can choose to only show his screen without allowing any of his employees to control his or her PC.

#### 1.2.5 Virtual MousePad

Operators can work on the video wall using their mouse as a remote pointer directly on the video wall. Operators can send their keystrokes to the video wall as well. If remote clients are present on the video wall, the mouse and keyboard can be used to control those clients as well.

### 1.3 Terminology

#### Display

A display device. This could be a rear-projection cube, a projector, an LED TV, or LCD monitor.

#### Galileo Display Processor

A rack-mount PC that runs Galileo Server. Also known as the “Server PC.”

#### Galileo Video Wall Control Software

The name of the software package that allows operators to control video walls and collaborate in a control room.

#### Input

A baseband video source connected to a physical input on the Display Processor. The nature of the input can be HDMI, DVI, SD-/HD-/3G-SDI, RGB, or Analog Video (Composite, S-Video, NTSC, PAL, SECAM).

#### Operator

A person running the client application to control the video wall from a networked computer.

#### Output

Video signal coming out of the Display Processor to the display devices. The Display Processor has at least as many outputs as the number of display devices on the video wall; for example, a Display Processor driving a Video Wall of six displays has at least six outputs.

#### Remote Client

A PC connected to the Display Processor via Galileo Client.

#### Remote Host

A PC connected to the Display Processor via Galileo Remote Host.

**Source**

A hardware device or software application (or a combination of the two) that produces audio/video content. Galileo accepts audio/video content from a wide variety of source types: [Input](#), [Stream](#), Image, HTML, Application, and IP Source.

**Stream**

An audio/video signal that has been encoded to allow transmission over a network.

**Video Wall**

An array of display devices (monitors, rear-projection cubes, projectors). The configuration of a video wall is typically expressed as its number of rows and columns. For example, a  $3 \times 6$  wall is an array of three rows and six columns of displays:



## 1.4 Galileo Video Wall Control Software Bundles

Galileo Video Wall Control Software is available in three bundles with different feature sets that are tailored to various application and budgetary requirements:

- **Standard:** Simple video wall applications for small control rooms, board rooms, and basic digital signage.
- **Plus:** Standard control rooms with collaboration requirements and digital signage applications with scheduling.
- **Advanced:** Mission-critical and high-security control rooms with extensive collaboration requirements, or elaborate digital signage applications with dynamic content (advertising, hospitality, entertainment).

[Table 1-1](#) lists the Galileo Video Wall Control Software features that are available in each bundle.

**Table 1-1 Galileo Video Wall Control Software Bundle Feature Comparison**

Feature	Bundle		
	Standard	Plus	Advanced
Advanced, intuitive Client for Windows	✓	✓	✓
Easy-to-use Web Client for control using a standard Web browser on a computer, tablet or smartphone	✓	✓	✓
Load, save and auto-start layouts	✓	✓	✓
Network Scripting API for control by third-party devices	✓	✓	✓
Task Scheduler	✓	✓	✓
Web Client Control Panel Editor to create custom interfaces		✓	✓
Scrolling text and messages with text files and RSS feeds		✓	✓
Content grouping of sources, layouts, scripts etc.		✓	✓
<b>Sources and Control</b>			
Manage hardware input sources: window labels, cropping, and image adjustment	✓	✓	✓
Manage virtual input sources	✓	✓	✓
Manage local applications		✓	✓
Capture and control of Remote Host PCs		✓	✓
Virtual MousePad for KVM control of video wall		✓	✓
Integrated Webkit™ browser		✓	✓
Active preview of sources in Galileo client		✓	✓
Hardware and software IP stream decoding			✓
<b>Show and Transition</b>			
Transition effects, transparency, color keying			✓
<b>Management and Security</b>			
Concurrent connections to multiple Display Processors from a single Client	✓	✓	✓
Script Editor for creating scripts to control the Galileo Display Processor and third-party devices		✓	✓
Simple password sign-in		✓	✓
Site Map view and multi-surface support from a single Display Processor			✓
Users Management <ul style="list-style-type: none"> <li>◆ Active Directory support with single sign-in</li> <li>◆ Restrict access to content groups or specific content items</li> <li>◆ Manage users, groups and permissions</li> </ul>			✓
Security Logging <ul style="list-style-type: none"> <li>◆ Login/logout events, log window positions, user activity</li> <li>◆ Log creation, deletion, or modification of schedules, layouts, and scripts</li> <li>◆ Easily customize types of events to log</li> </ul>			✓

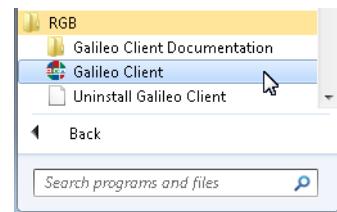
# CHAPTER 2

# GETTING STARTED

## 2.1 Installing Galileo Client

Galileo Client can be installed on any Windows PC and controls all aspects of the Video Wall operation. Refer to Chapter 5, “*Installing Galileo Client and Galileo Remote Host*,” in the *Galileo Display Processor Technical Reference Guide*, for system requirements and installation instructions.

To launch Galileo Client, choose **Start > All Programs > RGB > Galileo Client**. Or, if the Setup program created a desktop icon and/or Quick Launch icon during installation, you can use those to launch the program.



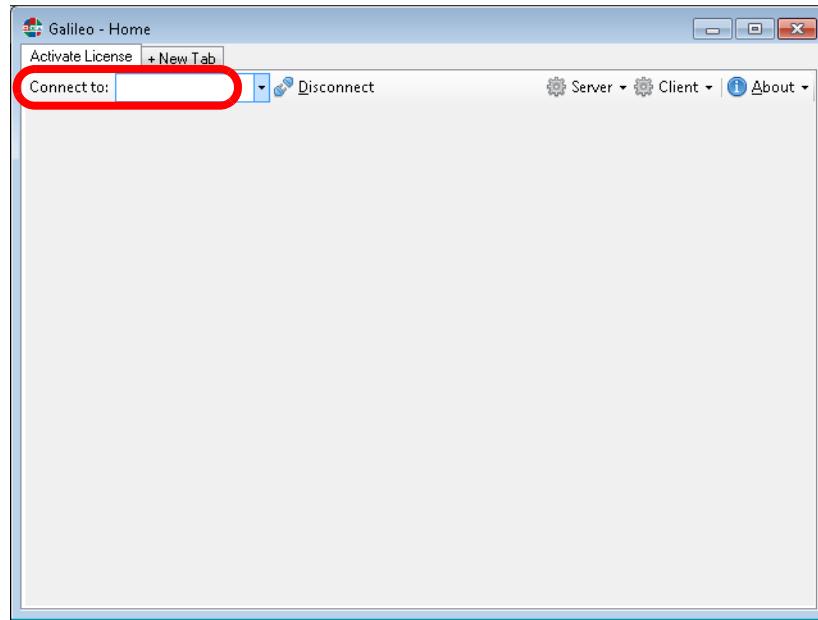
## 2.2 Workspace Overview

To connect to the Display Processor, type its IP address or Windows Computer name in the **Connect To:** box and click **Connect** or press Enter. (To see the Windows Computer name, choose **Start > Control Panel > System** on the Display Processor desktop.)

Galileo Client saves this information for the future, so you only need to enter it once. To connect to a saved Display Processor, select its IP address from the list.

**Note**

You can also assign a descriptive nickname to the connection and select it from the list. Refer to [Connection Nicknames](#) in this chapter for instructions.

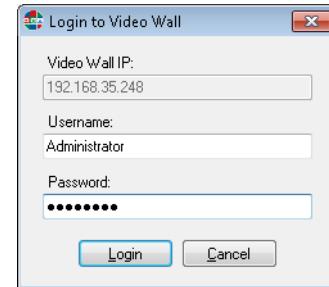


**Figure 2-1 Galileo Client Home Screen**

Galileo Server has an optional **Users Management** feature that, when enabled, provides control over access to Galileo features by user-defined groups.

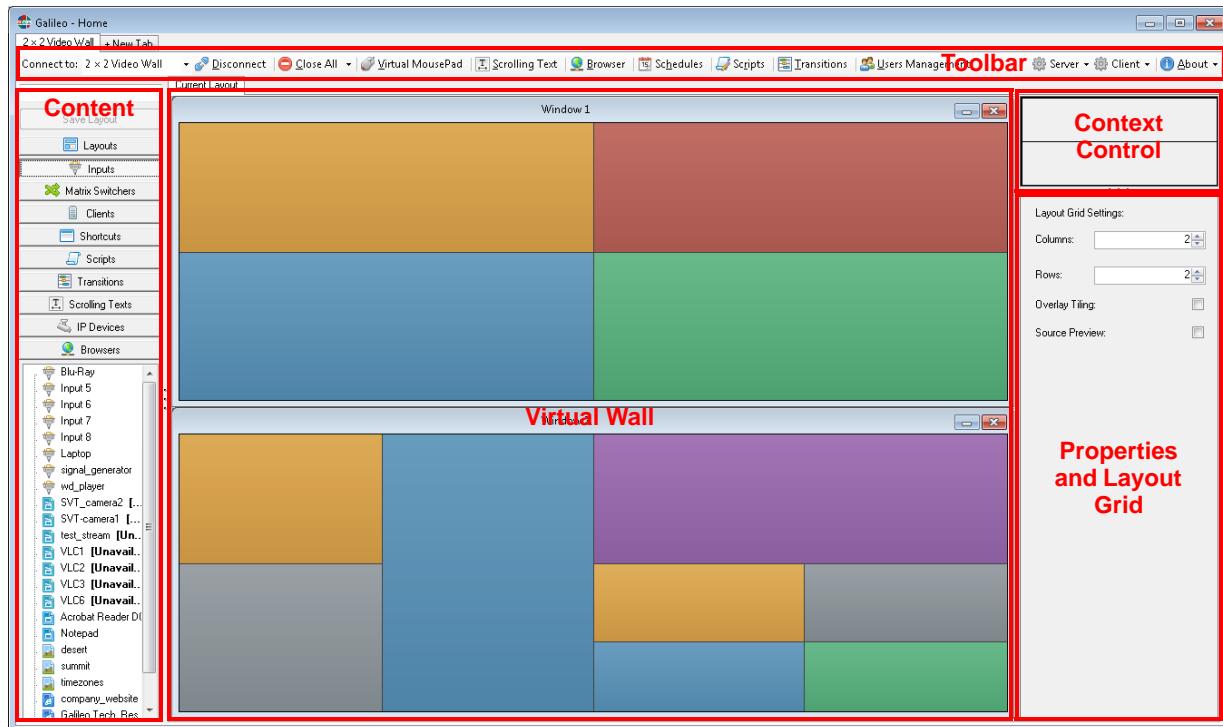
If this feature has been enabled, you must enter your **Username** and **Password** in order to connect to the video wall.

For more information, refer to [User Group Permissions](#) in [Chapter 13, Managing Groups and Users](#).



Next you'll see the connected Galileo interface. There are five main parts to the interface that allow you to control the entire video wall installation:

- [Toolbar](#)
- [Content](#)
- [Virtual Wall](#)
- [Context Control](#)
- [Properties and Layout Grid](#)



**Figure 2-2 Galileo Home Screen (when Connected to Display Processor)**



### 2.2.1 Toolbar

Use the **Toolbar** to perform the following actions:

- Connect to or disconnect from a Galileo Display Processor.
- Close all windows on the wall, or a specific subset of windows.
- Take control of the Video Wall or available Remote Hosts using [Virtual MousePad](#).
- Create [Scrolling Text](#) objects.
- Create [Browser](#) objects.
- Create [Schedules](#).
- Edit and run [Scripts](#).
- Access the **Server Settings** menu, which enables you to:
  - ◆ Configure [Application Shortcuts](#).
  - ◆ Configure [Exemptions](#) (applications excluded from the **Close All Windows** action).
  - ◆ Set [Security Logging](#) options.
  - ◆ Configure [Surfaces](#) representing multiple walls in different physical locations, driven by a single Galileo Display Processor. You can manage all walls from a single Client window.
  - ◆ Set properties for remote control of the Galileo Display Processor by other Clients (refer to [Managing Remote Clients and Hosts](#)).
  - ◆ Customize the Galileo Web Client in various ways (refer to [Managing the Galileo Web Client](#)).
  - ◆ Create or delete the Users Management database (refer to [Managing Groups and Users](#)).
  - ◆ Request a new Galileo license, or update your current license.
- Access the [Galileo Client Settings](#) menu, which enables you to:
  - ◆ Configure [Connection Nicknames](#).
  - ◆ Set properties for remote control of your desktop by other Clients (refer to [Managing Remote Clients and Hosts](#)).
  - ◆ Configure [Startup Options](#).
  - ◆ Change the client user interface language.
- Access the [About Menu](#), which enables you to:
  - ◆ Configure [Advanced Options](#).
  - ◆ Download the Galileo Setup program from the display processor.
  - ◆ Download log files from the display processor.
  - ◆ View information about your version of Galileo.



## 2.2.2 Content

The **Content** pane gives you access to the various types of content you can place on a video wall.

## 2.2.3 Virtual Wall

This is where you control and position windows on the Video Wall.

## 2.2.4 Context Control

Use this pane to navigate and control **Sublayouts** within the Video Wall.

## 2.2.5 Properties and Layout Grid

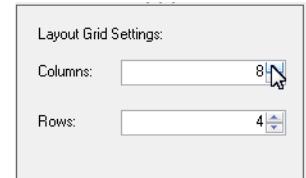
### PROPERTIES

When you select an Input, Remote Client, or Shortcut, this pane presents you with different properties depending on the type of source you have selected.

### ADJUSTING THE LAYOUT GRID

If no sources are currently selected, the **Properties** pane provides controls for adjusting the grid on the **Virtual Wall**. Windows snap to this grid as you move or resize them. You can set the Layout Grid – independently of the Video Wall size – to any size up to 250 columns × 250 rows.

When you connect to a video wall, Galileo Client sets the Layout Grid to match the number and arrangement of video wall displays. If you need a finer grid to organize content on the video wall, you can adjust the grid by doing either of the following:



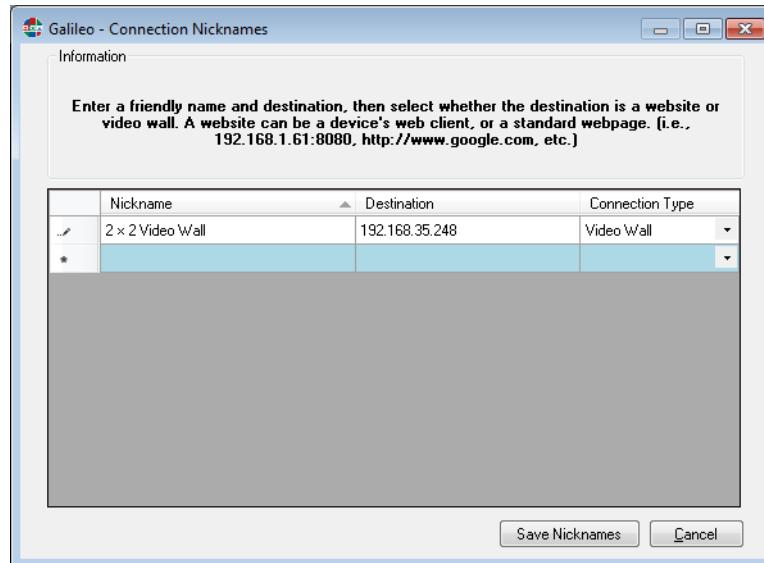
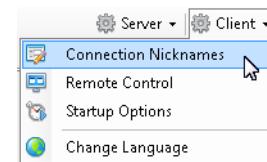
- ◆ In the Layout Grid Settings, use the spin controls or text entry boxes to set the number of rows and columns you need.
- ◆ On the **Virtual Wall**, click outside a window and roll the mouse wheel up to increase (or down to decrease) the number of rows and columns.



## 2.3 Galileo Client Settings

### 2.3.1 Connection Nicknames

By default, Galileo Client identifies a Video Wall connection by the Display Processor IP address, or a web site connection by its URL. If you prefer, you can give the connection a more descriptive name. To do this, choose **Client > Connection Nicknames**.



**Figure 2-3 Connection Nicknames**

Click the first empty text box in the **Nickname** column and enter the nickname. Press **Enter** to complete your entry. When you have finished creating nicknames, click **Save Nicknames**.

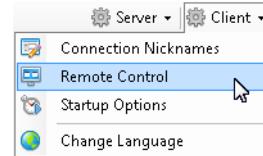
**Note**

**Connection Nicknames** are per-client settings. Other Galileo Client operators can give the same video wall or web site connection a different nickname.



### 2.3.2 Remote Control

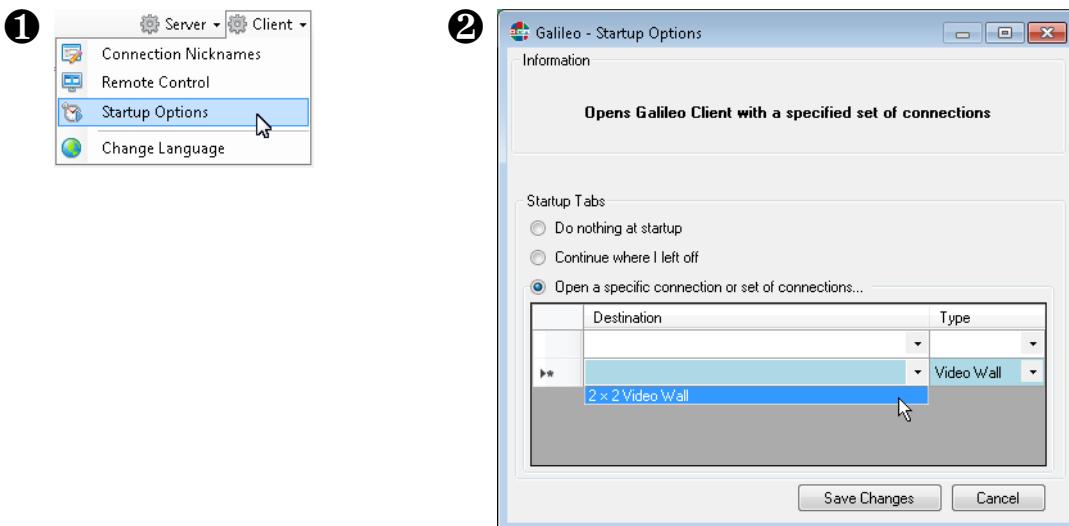
To configure how you want your desktop to appear on the video wall or on other Client desktops, choose **Client > Remote Control**. Then, follow the instructions for [Configuring Remote Control of a Client, Remote Host, or the Display Processor on page 62](#).



### 2.3.3 Startup Options

To change the startup behavior of Galileo Client, choose **Client > Startup Options**. Then, select one of the following:

- **Do nothing at startup:** Launch Galileo Client, but do not attempt to connect to a video wall.
- **Continue where I left off:** Launch Galileo Client, then attempt to connect to the video wall or walls that were open when Galileo Client was last closed.
- **Open a specific connection or set of connections:** Launch Galileo Client, then attempt to connect to a specific video wall or walls.



**Figure 2-4** Galileo Client – Choose Startup Action

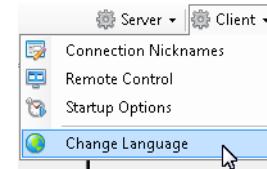


### 2.3.4 Changing the User Interface Language

By default, Galileo Client displays all names, descriptions and instructions in the language of the local Windows installation. You can select a different user interface language if you wish.

To change the Galileo Client user interface language:

1. Choose **Client > Change Language**.



2. Clear the **Use the system language** check box.
3. Select one of the following: **English**, **French** (Français), **German** (Deutsch), **Italian** (Italiano), **Portuguese** (Português), **Russian** (Русский), or **Spanish** (Español).
4. Click **Apply**. Galileo Client will close all video wall connections and restart.



## 2.4 About Menu

### 2.4.1 Advanced Options

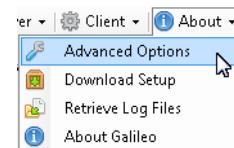
#### Important

Do not change these settings unless specifically instructed to do so by RGB Spectrum Technical Support.

To view or change a variety of advanced options, do one of the following:

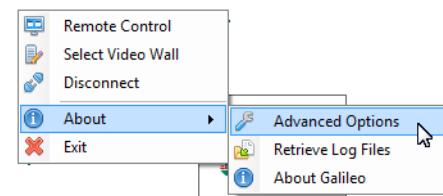
#### GALILEO CLIENT

From the Galileo Client Toolbar, choose **Advanced Options** from the **About** menu.

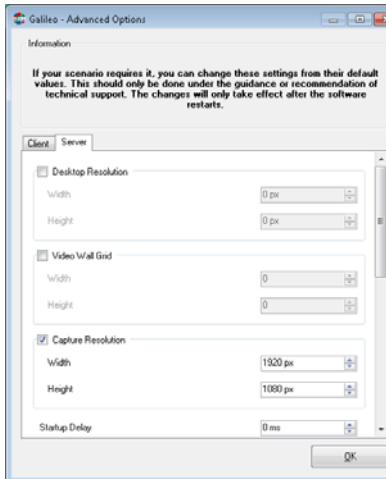


#### GALILEO REMOTE HOST

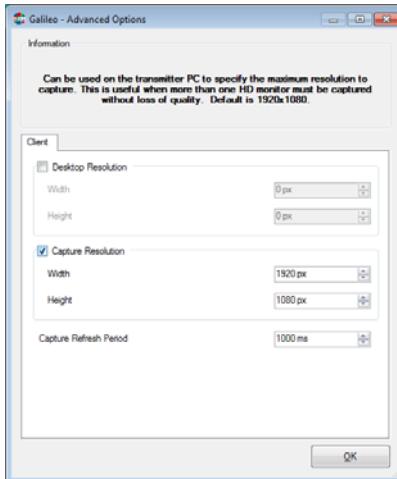
Launch Galileo Remote Host, if it's not already running (choose **Start > All Programs > RGB > Galileo Remote Host**). Then, right-click on its taskbar icon () and choose **About > Advanced Options**.



#### Galileo Client



#### Galileo Remote Host



**Note:** If the optional Users Management feature has been enabled, only the Administrator can access the Advanced Server Options. For more information, refer to [Chapter 13, Managing Groups and Users](#).

**Figure 2-5 Galileo Client and Galileo Remote Host – Advanced Client and Server Options**

**Note**

When changing options that involve numeric values, use the spin controls, or type the numeric values **only** (without the " px" or other unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.

## CLIENT OPTIONS

Set these options as required, then click **OK**. Any changes trigger a restart of Galileo Client.

### Desktop Resolution

This specifies the area of the Client desktop that appears on the video wall, or is visible to other clients. This area always starts from the top-left corner of the desktop.

### Capture Resolution

This specifies the maximum resolution to capture on this Client PC. This is useful when more than one HD monitor must be captured without loss of quality. The default is 1920 x 1080.

### Capture Refresh Period

Client capture streaming usually sends the difference between frames, but periodically sends a full frame according to this setting. The default is 1000 milliseconds (one second).

## SERVER OPTIONS

Set these options as required, then click **OK**. Any changes trigger a restart of Galileo Server.

### Desktop Resolution

Use this option to confine the display of video wall content to a portion of the Display Processor desktop. This also specifies the area of the Display Processor desktop that is visible to other clients when they preview it. This area always starts from the top-left corner of the desktop.

This option is useful in conjunction with the [Ignore Programs Out of Bounds](#) option, if you wish to use a portion of the Display Processor desktop to run applications without having those windows appear on the video wall.

**Example**

In a 1 x 4 wall of 1920 x 1200 displays, setting the **Desktop Resolution** to 5760 x 1200 confines the display of video wall content to the first three displays.

### Video Wall Grid

Use this option to define a default grid layout other than the number of rows and columns of displays (for example, a 4 x 6 grid on a 2 x 3 wall).

### Capture Resolution

This specifies the maximum resolution to capture on the Display Processor. This is useful when more than one HD monitor must be captured without loss of quality. The default is 1920 x 1080.

### Startup Delay

Use this option to have Galileo Server wait before starting. This is useful if your network takes a long time to assign an IP address, as it can prevent Galileo Server from starting without an IP address assigned. This can also be useful if other applications need to start before the Galileo Server. The default is zero milliseconds (no delay).

### Capture Refresh Period

Refer to [Capture Refresh Period on page 15](#).

### Desktop Polling Period

Galileo Server periodically polls the Windows desktop to find new application windows or detect changes to windows from the layout. The default is 5000 milliseconds (five seconds).

### Process Idle Timeout

This is the amount of time to wait for an application to display its main window. The default is 60000 milliseconds (one minute).

### Marquee Polling Period

This is the interval for retrieving and refreshing [Scrolling Text](#) from an RSS feed or a file. The default is 10 seconds.

### Desktop Icons Visibility

This option controls the visibility of the icons on the Display Processor desktop. Choose **Nothing** to keep the desktop as it is, **ToggleOnMovement** to hide them while the Display Processor's mouse and keyboard are inactive, **AlwaysShow**, or **AlwaysHide**.

### Marquee Renderer

By default, Galileo Server uses the I/O cards' Network API to render scrolling text on the video wall. To properly render scrolling text with Unicode (international) characters, select **Managed**.

### Register As Client

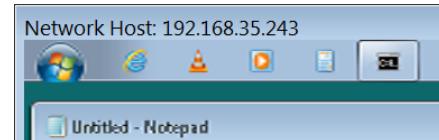
Enable this option to include the Display Processor itself in the list of connected clients available for screen capture. By default, the Display Processor is included. If you disable this option, the Display Processor appears in the **Clients** list but its status is **[Disconnected]**.

### Ignore Programs Out of Bounds

If you enable the Server [Desktop Resolution](#) option, also enable this option to allow application windows to be placed outside the video wall display area. By default, this option is disabled; that is, an application window that is moved outside of the video wall display area is moved back in.

### Show Title Bar

This setting allows you to show or hide title bars on Client Capture sources on the video wall.



### Fresh Chrome Profiles

This option enables or disables the special handling of Google Chrome application windows. By default, Galileo will open each Chrome window with a fresh profile, to prevent multiple windows from interfering with each other and being placed in the wrong position.

## 2.4.2 Download Setup

If you want the ability to re-install Galileo Client at a later time, or install Galileo Client or Galileo Remote Host on another PC, you can download a copy of the Galileo Setup program from the Galileo Display Processor. To do this, choose **About > Download Setup** from the Galileo Client Toolbar.



This copies the program (**Setup.zip**) to your **Downloads** folder. The default **Downloads** folder location is **C:\Users\[your\_user\_name]\Downloads**.

Refer to Chapter 5, “*Installing Galileo Client and Galileo Remote Host*,” in the *Galileo Display Processor Technical Reference Guide*, for system requirements and installation instructions.

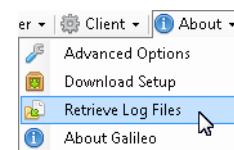
### 2.4.3 Retrieve Log Files

The Galileo Display Processor maintains log files that contain debugging information and performance statistics for various functional areas such as networking, image capture, client/server communications et cetera. Should you need to [contact RGB Spectrum Technical Support](#), you may be asked to provide one or more of these log files. Doing so will help support personnel answer your questions or resolve product performance issues.

To retrieve log files from the Galileo Display Processor, do one of the following:

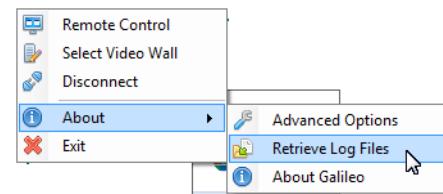
#### GALILEO CLIENT

From the Galileo Client Toolbar, choose **Retrieve Log Files** from the **About** menu.

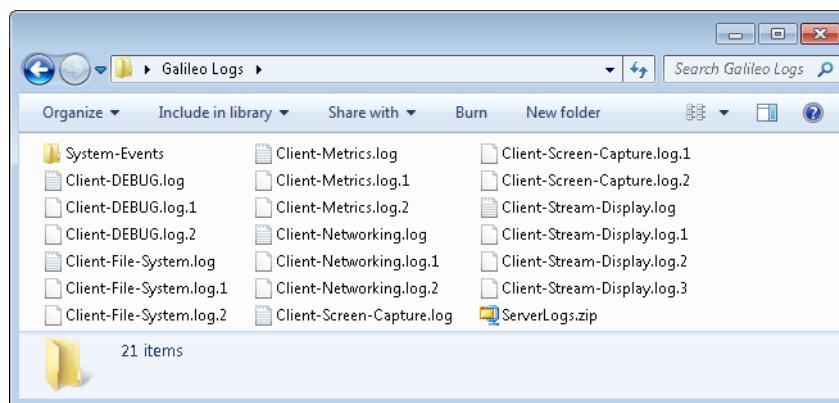


#### GALILEO REMOTE HOST

Launch Galileo Remote Host, if it's not already running (choose **Start > All Programs > RGB > Galileo Remote Host**). Then, right-click on its taskbar icon () and choose **About > Retrieve Log Files**.



This copies a folder called **Galileo Logs** to your desktop. [Figure 2-6](#) shows the contents of a typical **Galileo Logs** folder.



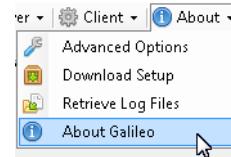
**Figure 2-6 Retrieved Galileo Log Files (Example)**

#### 2.4.4 About Galileo

To view information about your version of Galileo, do one of the following:

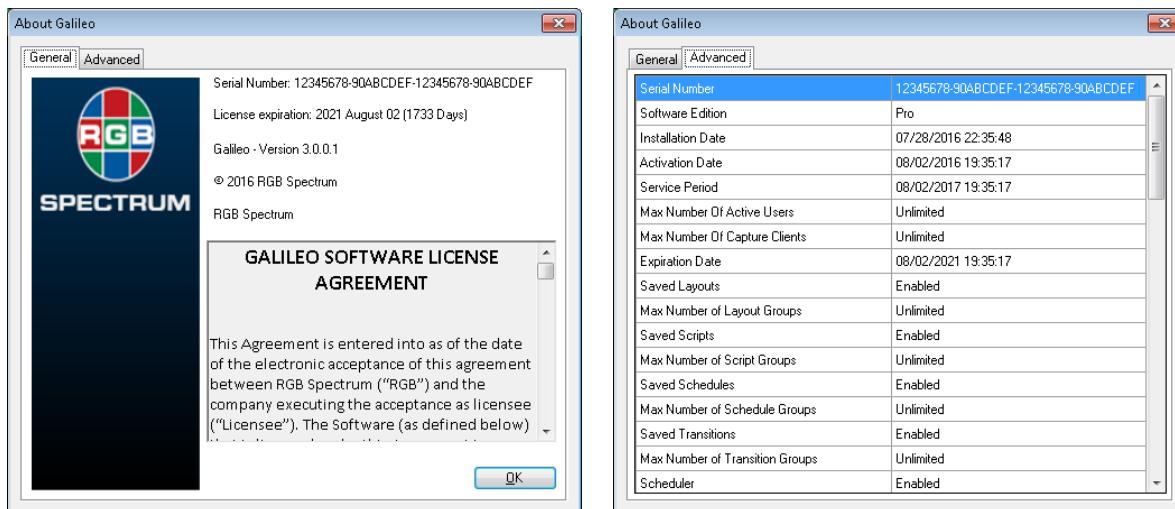
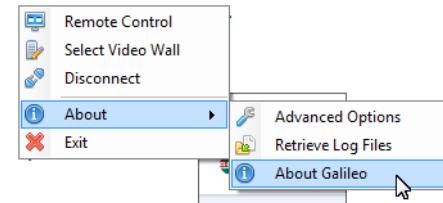
##### GALILEO CLIENT

From the Galileo Client Toolbar, choose **About Galileo** from the **About** menu.



##### GALILEO REMOTE HOST

Launch Galileo Remote Host, if it's not already running (choose **Start > All Programs > RGB > Galileo Remote Host**). Then, right-click on its taskbar icon () and choose **About > About Galileo**.



**Figure 2-7 About Galileo – Version Information and Enabled Features**

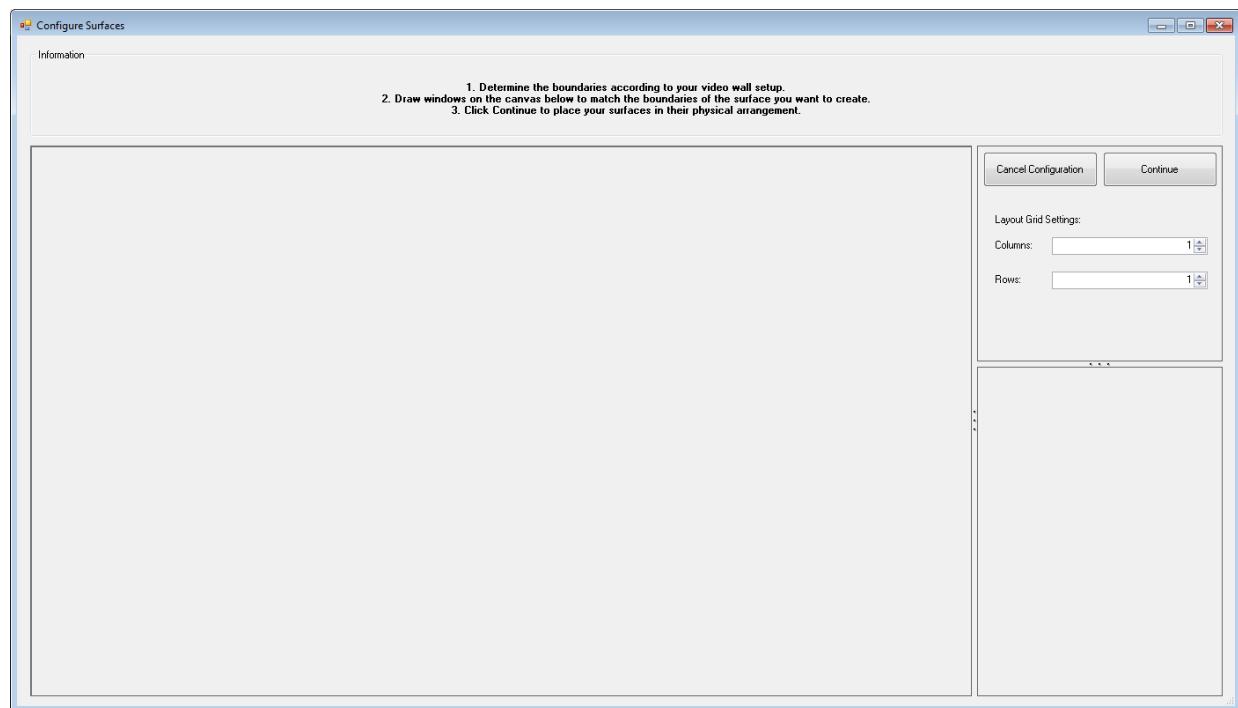
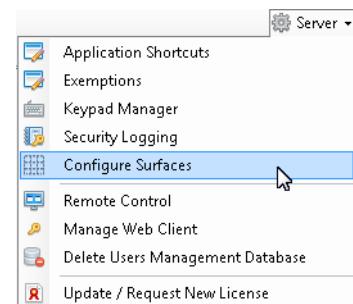


## 2.5 Surfaces

### Note

Site Map view and multi-surface support are available in the Galileo **Advanced** bundle.

A single Galileo Display Processor can drive multiple, physically-separated walls. You can configure Galileo Server to be aware of this separation, so that the different video walls' layouts can be manipulated independently. To do this, choose **Server > Configure Surfaces**. This displays the Configure Surfaces window, shown in [Figure 2-8](#).



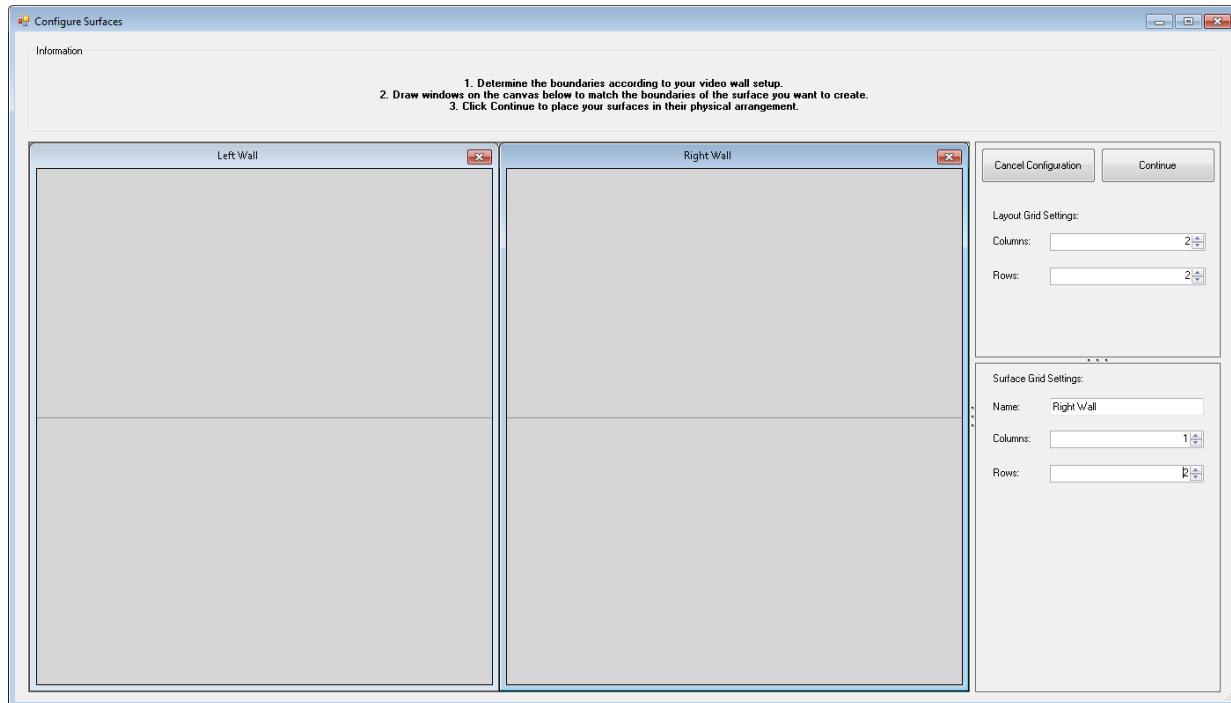
**Figure 2-8** Configure Surfaces Window



The procedure described below uses a Galileo Display Processor with four outputs as an example. The outputs were configured as a  $2 \times 2$  display space. To divide this single surface into two,  $2 \times 1$  surfaces, follow these steps:

1. In the Configure Surfaces window, set the layout grid to 2 rows  $\times$  2 columns.
2. Draw a window one column wide and two columns high on the left side of the layout area.
3. Double-click the window you just created to snap it to the layout grid.
4. In the **Surface Grid Settings**: group, enter a descriptive name for the surface; for example, "Left Wall."
5. Set the Surface Grid to 1 column  $\times$  2 rows.
6. Repeat Steps 2 through 5 on the right side of the layout area. Name the surface "Right Wall."

At this point, the Configure Surfaces window will appear as shown in [Figure 2-9](#).

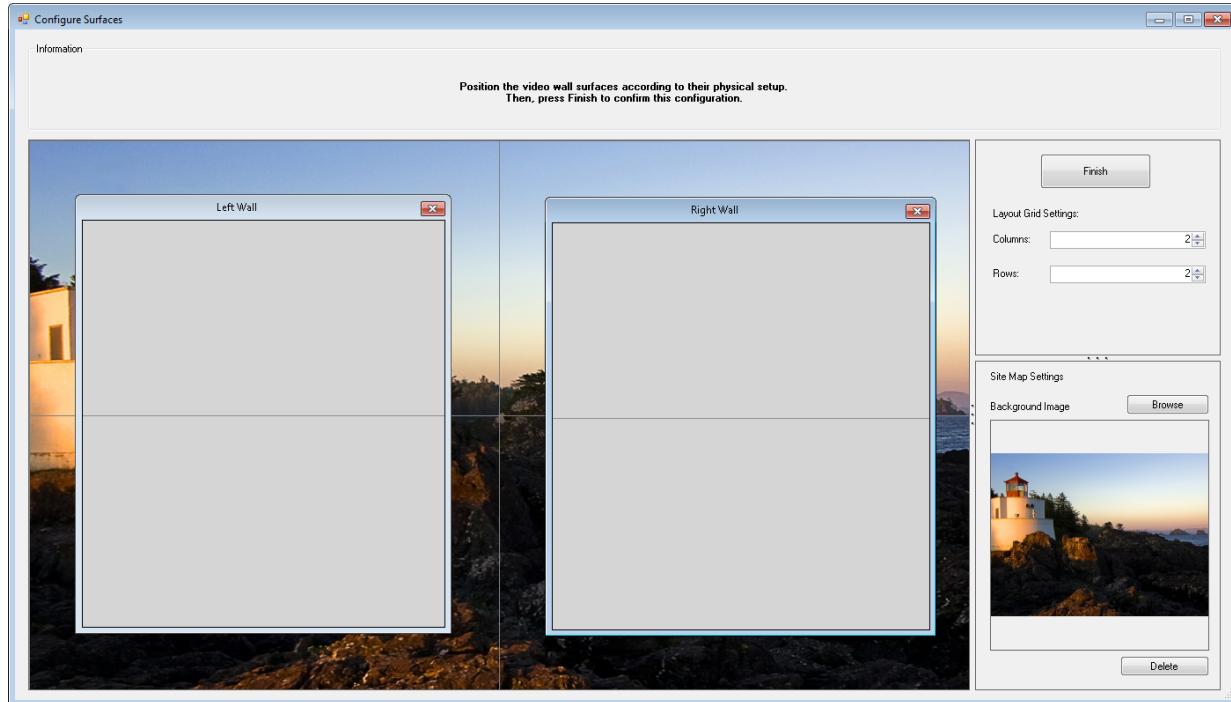


**Figure 2-9** Configure Surfaces Window Showing Left and Right Walls

7. Click **Continue**.
8. (Optional) In the **Site Map Settings** group, click **Browse** and select a background image to use.



At this point, the Configure Surfaces window will appear as shown in [Figure 2-10](#).

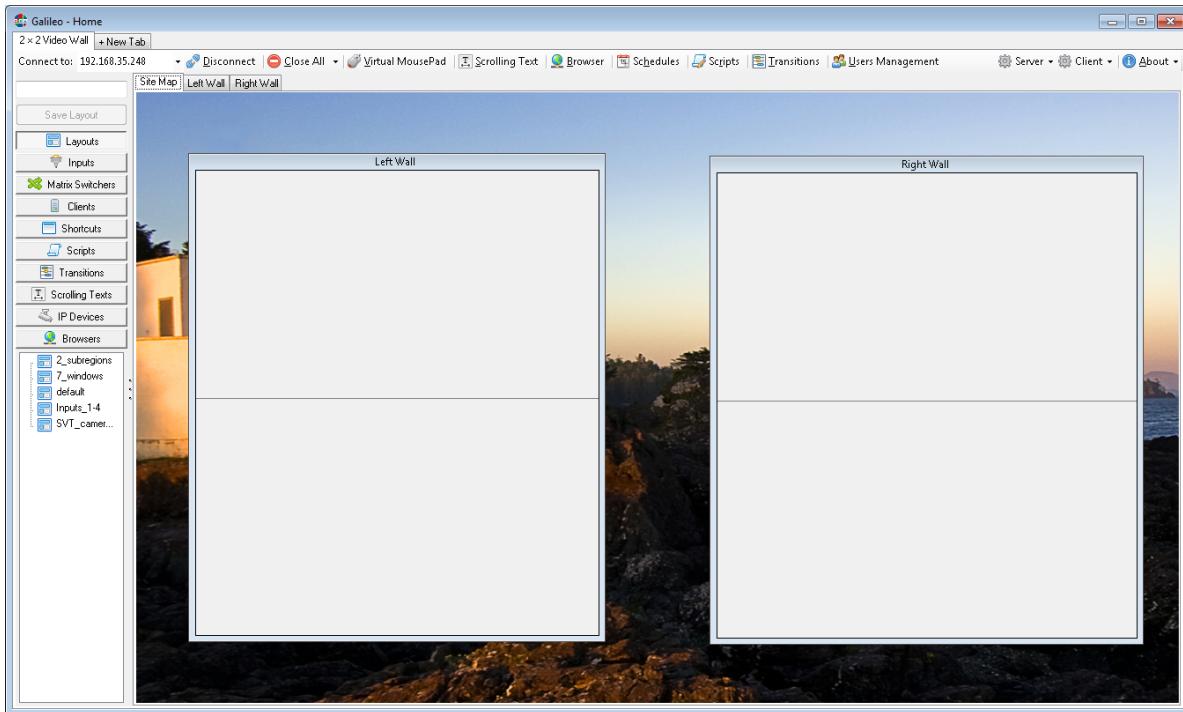


**Figure 2-10 Configure Surfaces Window with Background Image**

9. Position the video wall surfaces according to their relative locations.
10. Click **Finish** to confirm this configuration.



Instead of a single Virtual Wall, Galileo Client now shows a **Site Map** showing the configured surfaces. See [Figure 2-11](#).



**Figure 2-11** Site Map Showing Configured Surfaces

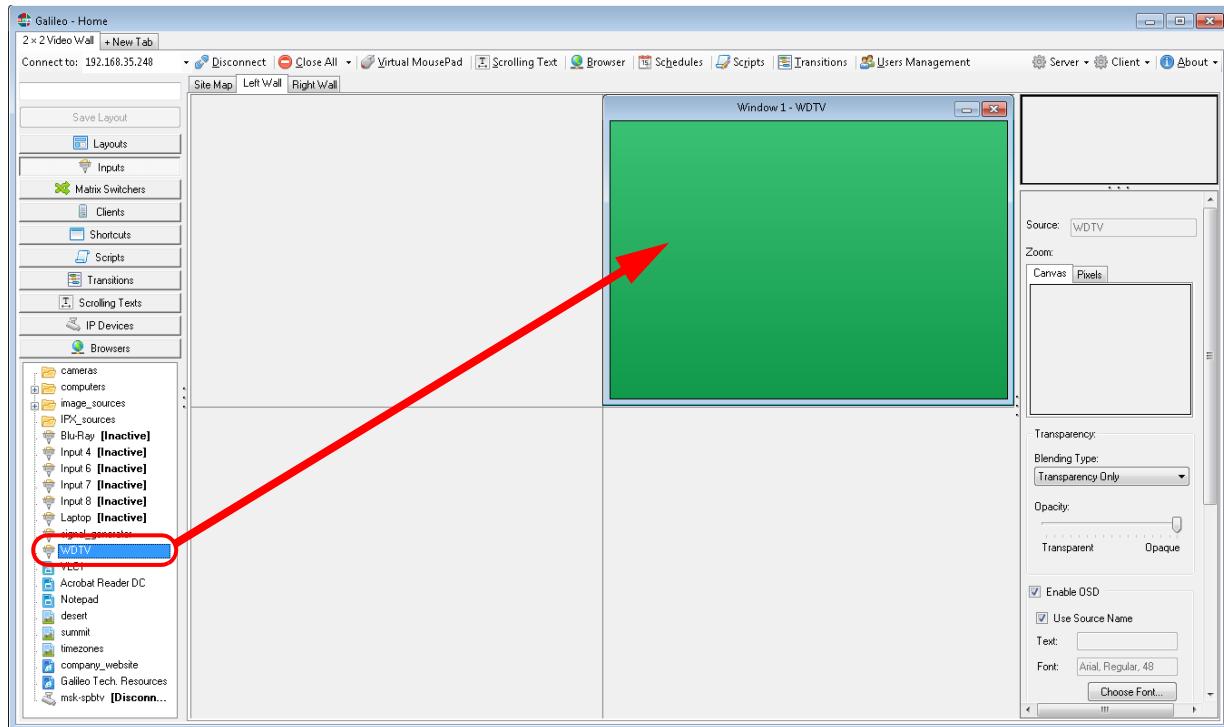
To manipulate a surface, click the tab labeled with its name, or double-click on the surface in **Site Map** view.

## 2.6 Displaying Content on a Wall

You can drag and drop any type of content – such as an Input, an Application, a Remote Client, or a Layout – onto the **Virtual Wall** or a surface to have that content size itself to the grid. You can then move and resize this window as you wish.

### Note

If you have configured multiple **Surfaces**, dragging and dropping content onto a surface in Site Map view closes all other windows on that surface and displays the content across the entire surface.

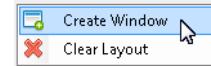


**Figure 2-12 Dragging and Dropping an Input**

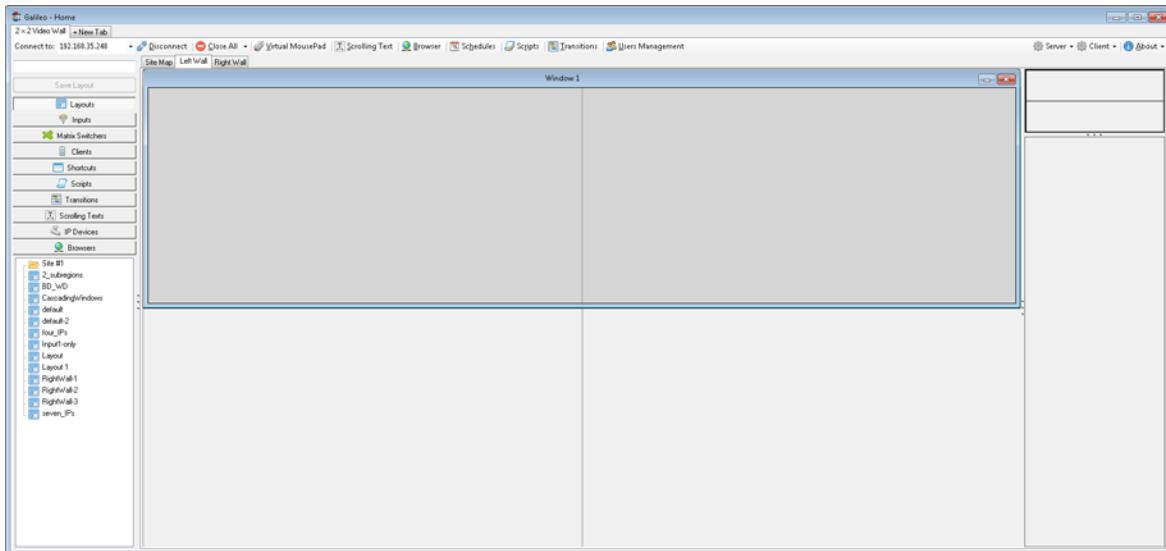
### 2.6.1 Creating a New Window

You can also create a new, empty window on the **Virtual Wall**, then drag and drop content onto it. To create an empty window, do either of the following:

- Click and drag outside a window on the **Virtual Wall**; or
- Right-click outside a window on the **Virtual Wall** and select **Create Window**.



When you do, a rectangle appears in the **Context Control** pane showing the window's size and location.



**Figure 2-13** Creating a New Window

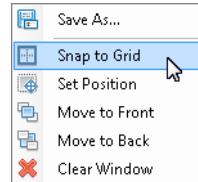
When you drag and drop a source onto a window, it fills the window entirely. You can drag and drop sources onto windows whether they are empty or not. This "empty" window tool can also be used to group sub-windows or organize the video wall into [Sublayouts](#).



## 2.6.2 Aligning Windows with the Layout Grid

Windows automatically snap to the Layout Grid as you move them. To align a window to the grid without moving it, do either of the following:

- Double-click the title bar of the window; or
- Right-click on the window and select **Snap to Grid**.



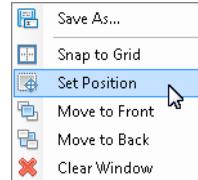
## 2.6.3 Positioning and Sizing Windows

To move a window, position the mouse pointer over the window title bar. When the cursor changes to a move cursor (), click on the window and drag it to the desired location.

To size a window, do either of the following:

- Position the mouse pointer over a window edge. When the cursor changes to an east-west () or north-south () cursor, click and drag the window edge to change the width or height; or
- Position the mouse pointer over a window corner. When the cursor changes to a northwest-southeast () or northeast-southwest () cursor, click and drag the window corner to change the width or height.

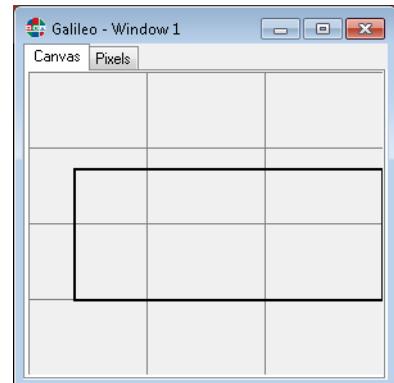
To set the size and position of a window simultaneously, right-click on the window and select **Set Position**.



You can set the window size and position graphically or by entering exact pixel values, as follows:

- **Canvas:** Click inside the black rectangle and drag to move the window. Drag the edges or corners to size the window.

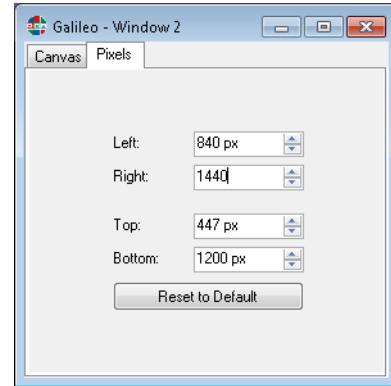
To display the grid, click on the canvas area and roll the mouse wheel up to increase (or down to decrease) the number of rows and columns.





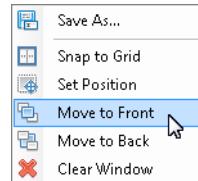
- **Pixels:** Click the **Pixels** tab to size and position the window by entering exact pixel values. There are two ways to do this: use the spin controls, or type the numeric values **only** (without the "px" unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.

To cancel any changes you made here, click **Reset to Default**.

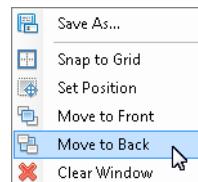


#### 2.6.4 Moving a Window in Front of or Behind All Other Windows

To have a window appear in front of all other windows, right-click on the window and select **Move to Front**.



To have a window appear behind all other windows, right-click on the window and select **Move to Back**.

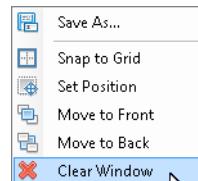


##### Note

Windows displaying hardware inputs (described in [Chapter 3](#)), virtual inputs (described in [Chapter 4](#)), and scrolling texts (described in [Chapter 12](#)) always appear in front of windows displaying IP Device streams and other content types.

#### 2.6.5 Clearing a Window

To clear a window, right-click on it and select **Clear Window**. The window becomes empty on the Galileo interface and can be manipulated again.





## 2.7 Overlay Tiling and Source Preview

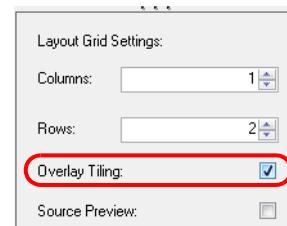
### Notes

1. Overlay Tiling and Source Preview are per-client settings.
2. If you have configured multiple surfaces, these settings apply to all surfaces.

### 2.7.1 Overlay Tiling

By default, when you drag and drop a source onto an existing window, the new source replaces the content of that window. Galileo Client also lets you overlay new sources over existing ones. To enable this feature, click outside a window on the **Virtual Wall** or a surface. Then, check the **Overlay Tiling** box in the **Properties** pane.

With Overlay Tiling enabled, sources dragged over existing windows appear in a new window, sized to the underlying grid.



### Example

A source occupies the whole of a  $2 \times 2$  wall. The grid is set to 2 columns  $\times$  2 rows. If you enable Overlay Tiling and drag a new source onto the wall, the new source appears in one quadrant of the video wall, on top of the full-screen source.

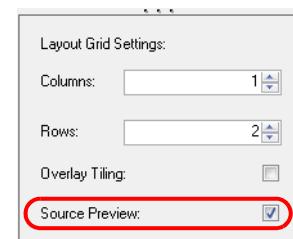
### 2.7.2 Source Preview

### Note

Source Preview is available in the Galileo **Plus** and **Advanced** bundles.

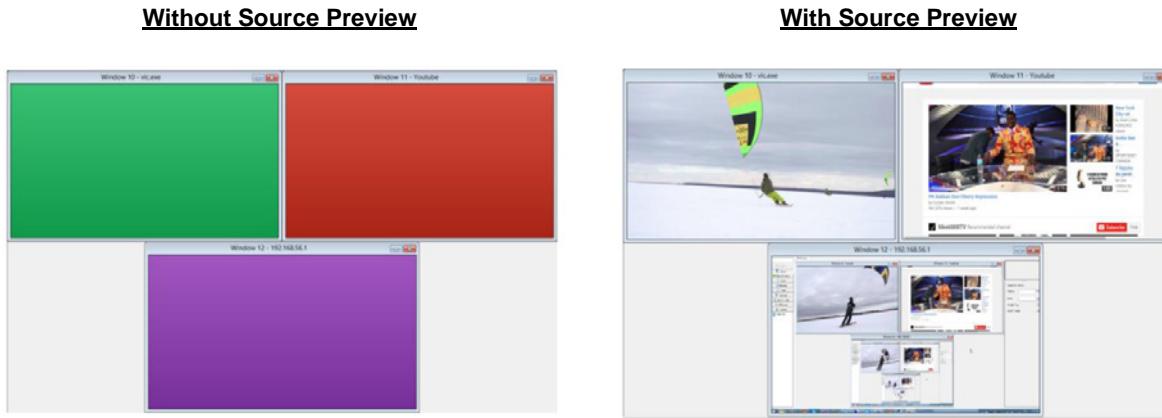
Galileo Client can receive a real-time (approximately one frame per second) stream of the sources available on the Galileo Display Processor. This is especially useful when manipulating sources from a location where the video wall is not visible, or when an operator wants to see the content of a source without interfering with the current layout. Sources can be previewed individually from their right-click menu, or as they appear on the video wall.

To enable Source Preview, click outside a window on the **Virtual Wall** or a surface. Then, check the **Source Preview** box in the **Properties** pane.





[\*\*Figure 2-14\*\*](#) shows a **Virtual Wall** with and without Source Preview.



**Figure 2-14** Virtual Wall With and Without Source Preview

## 2.8 Keyboard Shortcuts

Galileo Client provides these keyboard shortcuts for manipulating windows on the video wall:

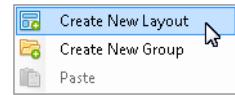
- Press and hold Alt while moving the window to prevent it from snapping.
- Press and hold Ctrl while resizing to keep the aspect ratio of the window intact.
- You can also move windows using the arrow keys. Press Enter to select the next window currently displayed on the client, and then the arrow keys (**Up**, **Down**, **Left** and **Right**) to snap it to the nearest grid line.
- If one or more windows are minimized, press and hold the M key to see the minimized windows. To restore a minimized window, press and hold the M key and double-click the Maximize button (□).



## 2.9 Layouts

### 2.9.1 Creating a New Layout

To create a new, empty layout, click the **Layouts** tab, then right-click in the Layout List pane (but not on a layout name) and select **Create New Layout**. Then, populate the layout with content as described in [Displaying Content on a Wall on page 24](#).

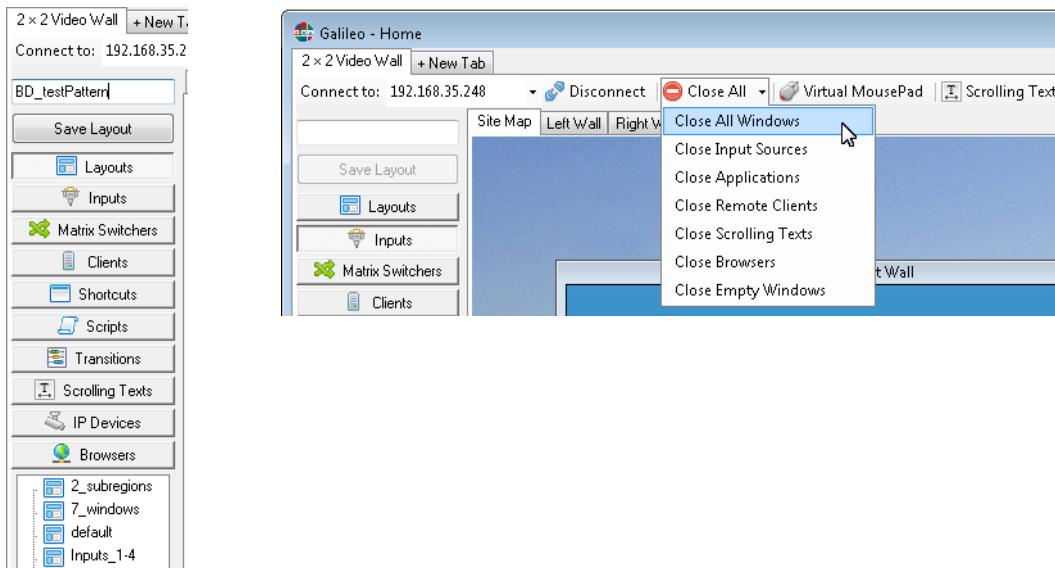


### 2.9.2 Saving a Layout

**Note**

If you have configured multiple surfaces, you must be viewing a surface in order to save a layout. (You cannot save a layout in **Site Map** view.)

After you have positioned your windows on a surface, you can save the layout for later use. In the **top-left corner**, type the desired layout name and click **Save Layout** or press Enter. You can then close all windows from the **Toolbar**. See [Figure 2-15](#).



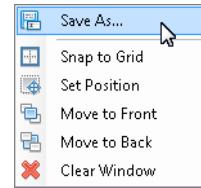
**Figure 2-15** Saving a Layout and Closing All Windows

**Note**

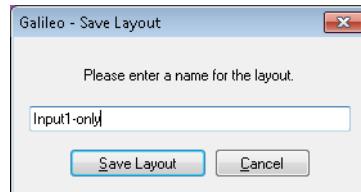
In **Site Map** view, the **Close All** command closes all windows on all surfaces and **Sublayouts**. When you are viewing a surface or sublayout, the **Close All** command affects only that surface or sublayout.



Alternatively, to save a layout containing a single window, right-click on the window and select **Save As....**

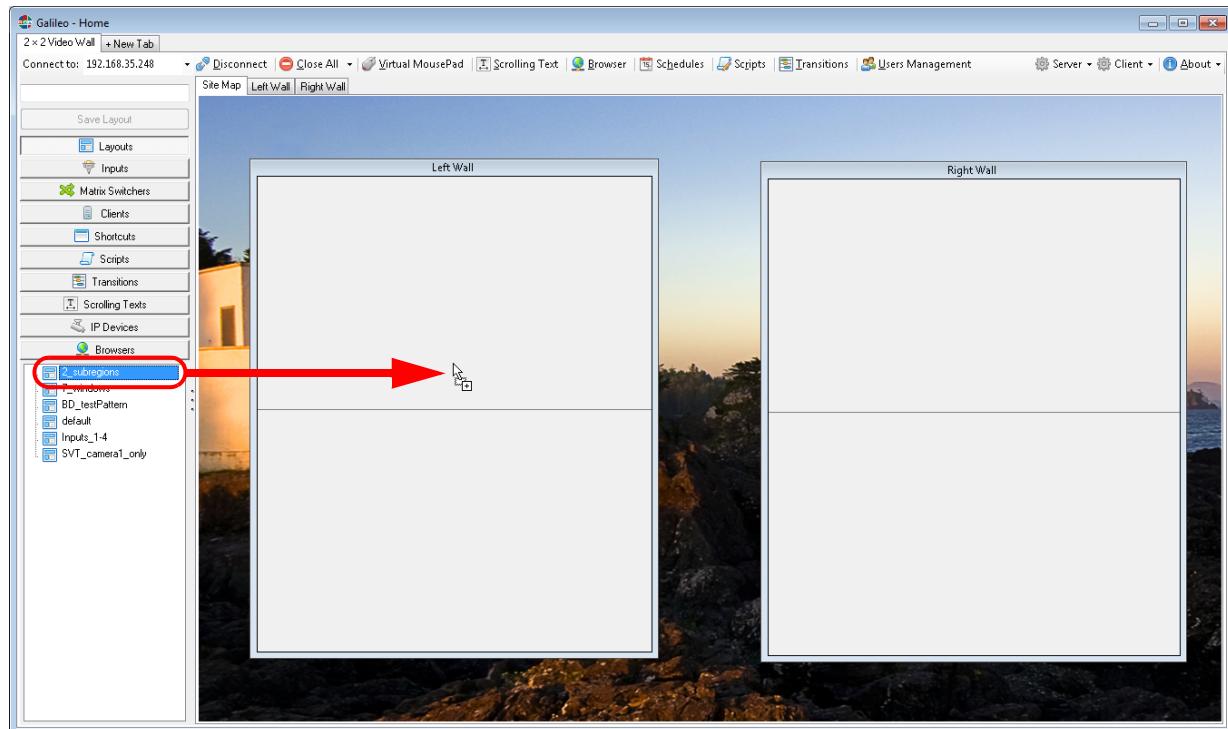


Enter a descriptive name for the layout and click **Save Layout** or press Enter.



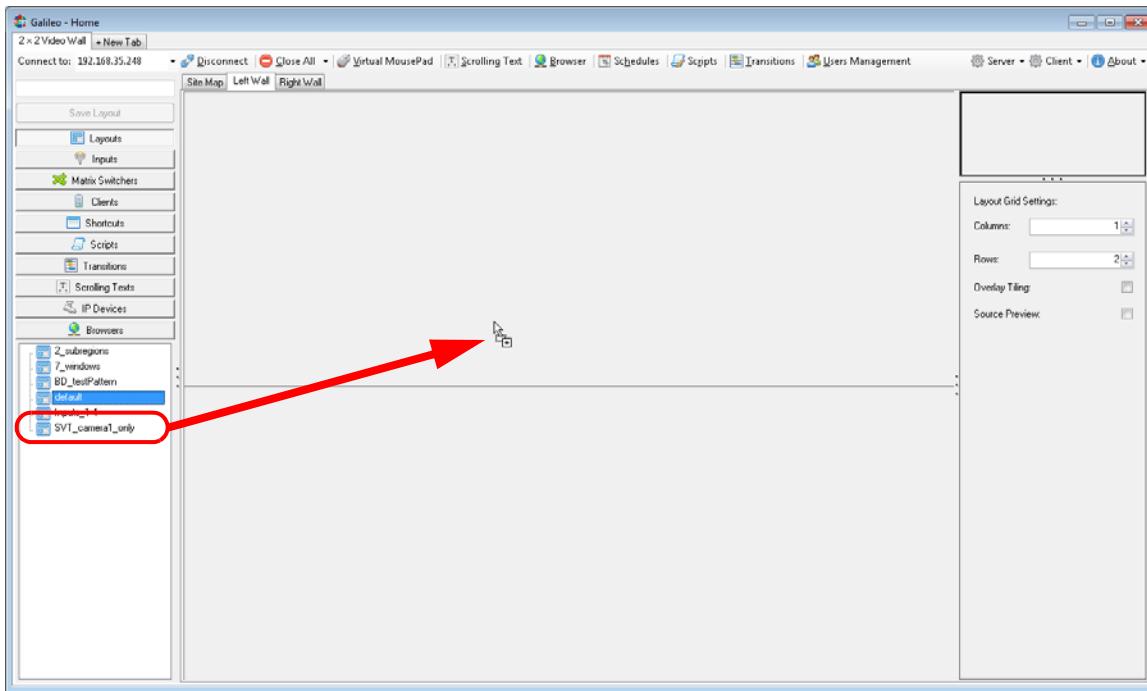
### 2.9.3 Recalling a Layout

To recall a layout in **Site Map** view, click the **Layouts** tab. Then, click and drag a layout from the layout list to a surface.



**Figure 2-16 Recalling a Layout in Site Map View**

Alternatively, click a tab labeled with a surface name, or double-click on the surface in **Site Map** view. Then, in the Layout List, double-click on the layout you want to open, or click and drag a layout from the Layout List to a surface.



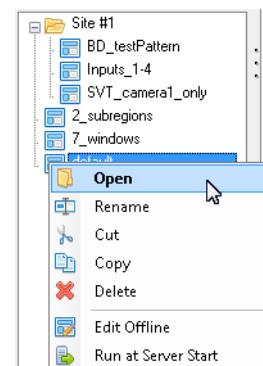
**Figure 2-17 Recalling a Layout in Surface View**

This will close all the windows on the selected surface and open the new layout.

#### 2.9.4 Other Layout Actions

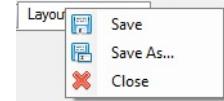
Under the **Layouts** tab, right-click on a Layout name to display a menu from which you can select one of the following actions:

- **Open:** Loads the layout.
- **Rename:** Allows you to change the layout name.
- **Cut:** Places a copy of the layout on the clipboard. Used when moving an item to another group using the **Paste** command.
- **Copy:** Places a copy of the layout on the clipboard. Used when creating a copy of an item using the **Paste** command.
- **Delete:** Deletes the layout.





- **Edit Offline:** Opens the layout in a new tab, so you can modify the layout without affecting the appearance of the video wall. When you have finished editing the layout, right-click on the tab and choose **Save** or **Save As...** to save your changes. Or, click **Close** to leave the layout unchanged.
- **Run at Server Start:** Causes this layout to load when Galileo Server is launched.

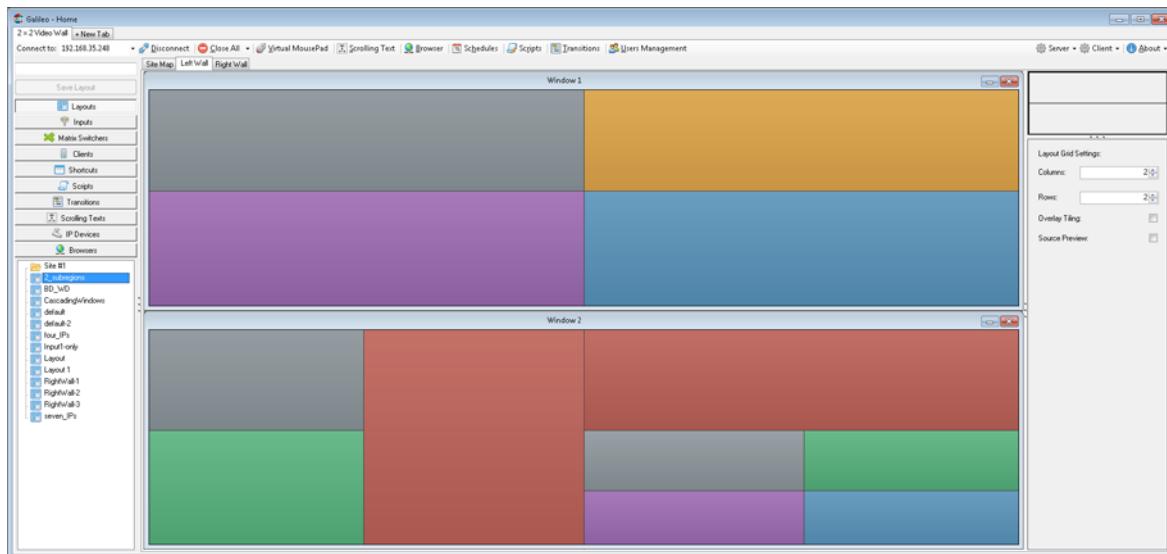


## 2.10 Sublayouts

A **sublayout** is, simply put, a layout within a layout. By creating sublayouts, you can sub-divide and isolate sections of the wall, making it easier to manage. There is no limit to how many levels of sublayouts you can create.

You can also use sublayouts to manage multiple walls driven by a single Galileo Display Processor. To do this, create a "master" layout with one window for each wall. Then, populate each window with sources and/or other layouts to configure each wall.

[Figure 2-18](#) shows a **Virtual Wall** with multiple, nested sublayouts.



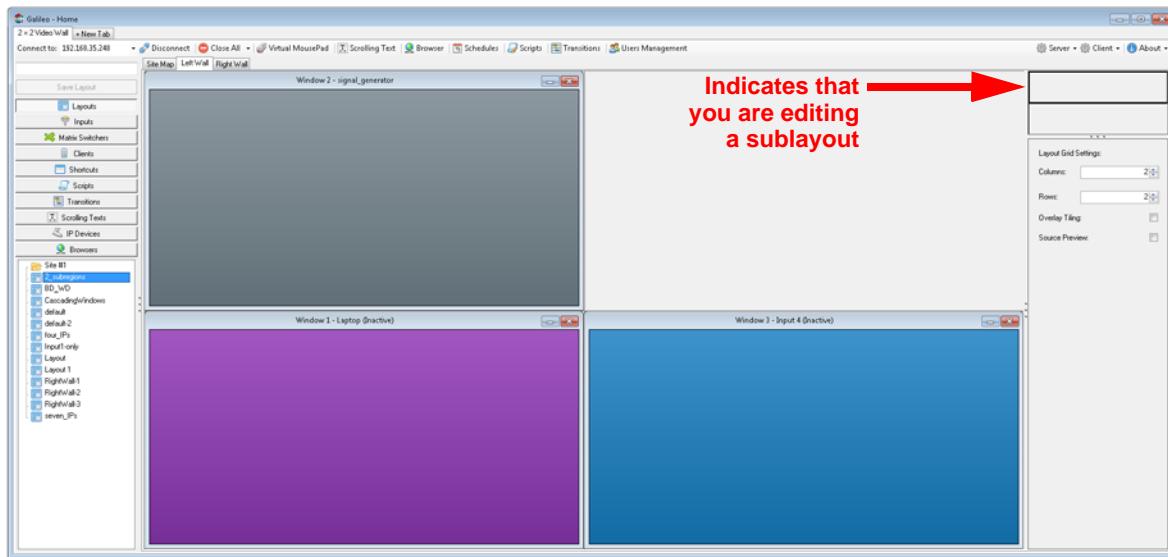
**Figure 2-18 Sublayouts**

In this example, the Display Processor has 8 outputs feeding two, separate  $2 \times 2$  walls (instead of a single, unified,  $4 \times 2$  wall). Window 1 and Window 2 are sublayouts containing the layouts for Wall 1 and Wall 2 respectively.



To create a sublayout:

1. Follow the steps for [Creating a New Window](#).
2. To enter a sublayout, double-click an empty window on the **Virtual Wall**. Or, in the **Context Control** pane, position the mouse pointer over the rectangle representing the sublayout and click. The rectangle border changes to a thick black line to indicate that you are editing a sublayout.
3. You can now populate the sublayout with content, as you would with a higher-level layout.



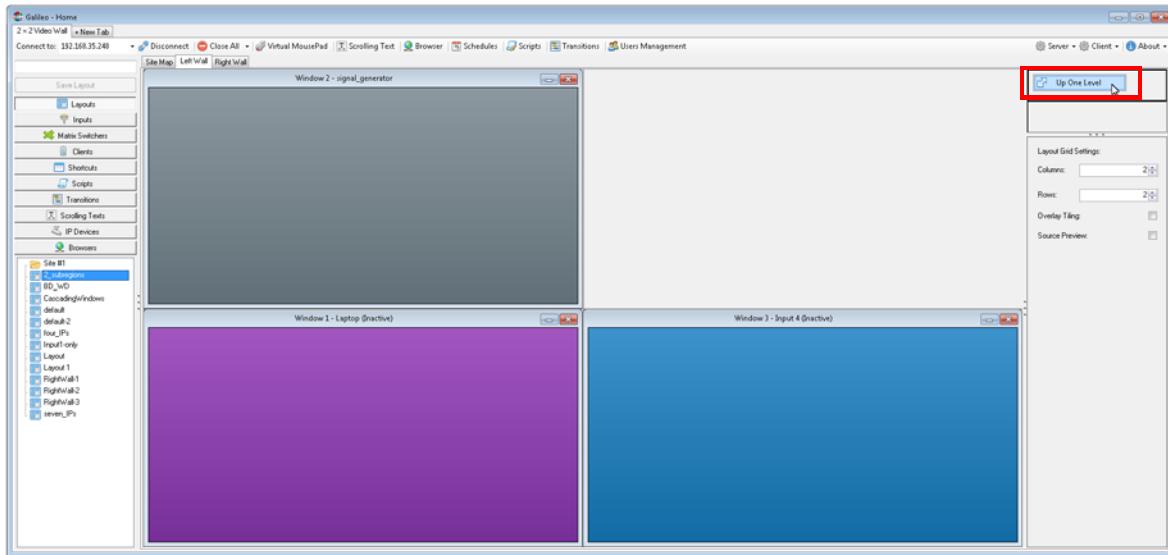
**Figure 2-19 Entering a Sublayout**

**Note**

When you are in a sublayout, the **Close All** command affects only that sublayout.

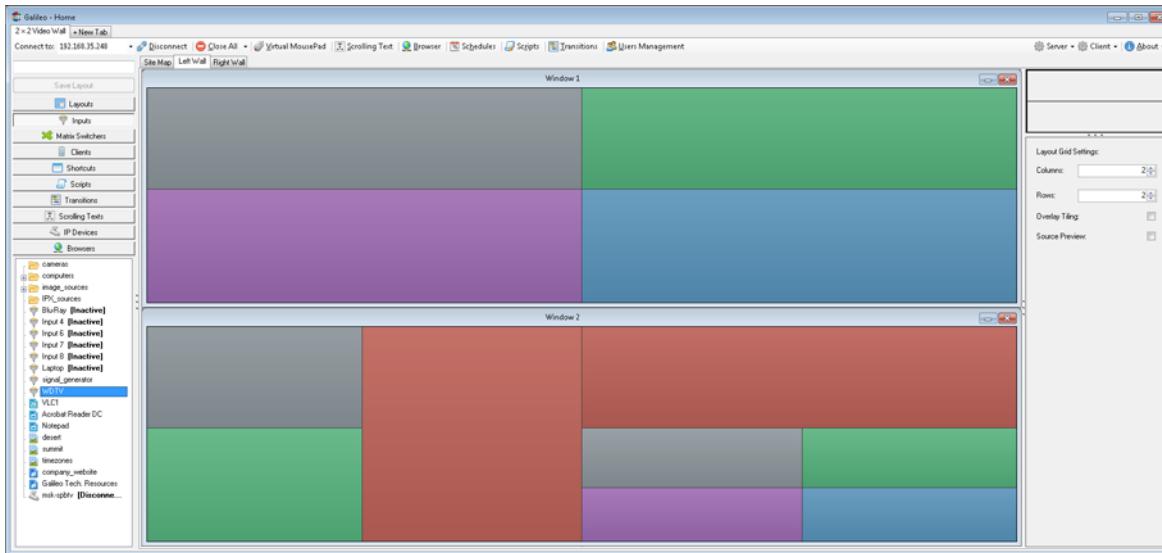
To exit a sublayout, do any of the following:

- Click outside the thick black outline in the **Context Control** pane.
- Right-click anywhere in the **Context Control** pane and select **Up One Level**.
- Right-click outside a window on the **Virtual Wall** and select **Up One Level**.



**Figure 2-20** Exiting a Sublayout

From there, you can move and resize the entire group of windows you just created.



**Figure 2-21** Virtual Wall with Sublayouts



## 2.11 Content Grouping

**Note**

Content Grouping is available in the Galileo **Plus** and **Advanced** bundles.

You can group related content together based on source device type (computer, disc player, camera et cetera), location or other criteria. This makes navigating large numbers of sources, layouts, clients, or scripts easier and faster, and allows you to limit content access to specific users or groups.

**Note**

Refer to [Chapter 13, Managing Groups and Users](#) for detailed instructions on managing users, groups, and permissions.

All types of content, except for Application Shortcuts, can be grouped. A content item can belong to multiple groups at the same time, and a group can contain other groups.

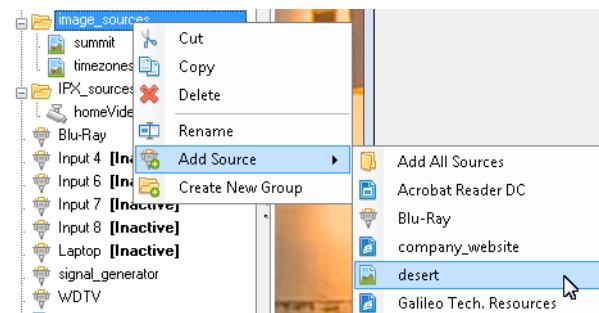
### 2.11.1 Creating New Content Groups

To create new content groups, follow these steps:

1. Click a content category tab; for example, **Layouts**.
2. Right-click in the content item list pane (but not on a content item name) and select **Create New Group**.
3. Enter a descriptive name for the group.
4. Click **Save Group** or press Enter.



5. **For input groups only:** To add a source to the new group, right-click on the group name and select **Add Source > [source\_name]**.

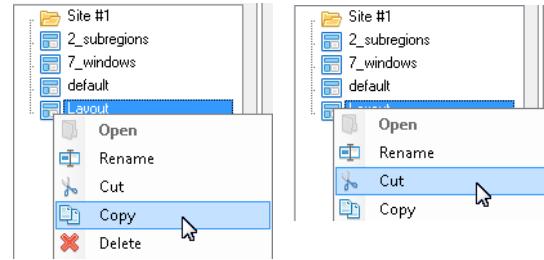




6. To **copy** a content item to the new group, right-click on its name and select **Copy**;

– OR –

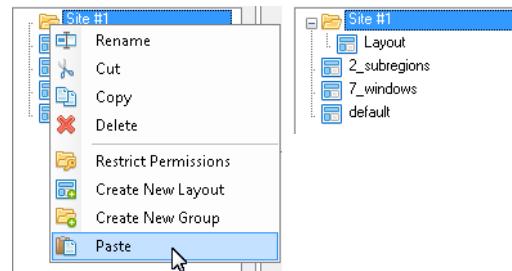
To **move** a content item to the new group, right-click on its name and select **Cut**.



#### Tip

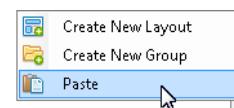
You can also click and drag a content item to a group folder to move it to that group.

7. Right-click on the group name and select **Paste**. The content item is now a member of the new group.
8. Repeat Steps 5 through 7, as needed, to add members to the content group.
9. Repeat Steps 2 through 8, as needed, to create additional groups.
10. Repeat Steps 1 through 9, as needed, for other content categories: Inputs, Clients, Scripts, Transitions et cetera.



### 2.11.2 Removing Content from a Group

To remove a content item from a group, right-click on its name and select **Cut**. Then, right-click in the content item list pane (but not on a content item name) and select **Paste**.



### 2.11.3 Deleting a Group

To delete a content group, right-click on its name and select **Delete**.

#### Caution

Deleting a content group deletes all items in that group. If you want to keep or ungroup those items, move them out of the group before deleting the group.

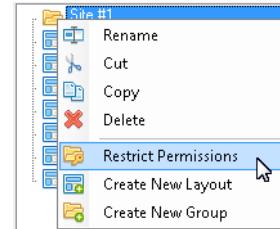


#### 2.11.4 Restricting Group Permissions

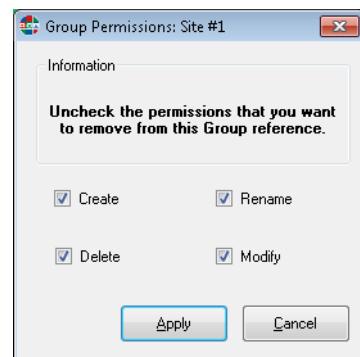
**Note**

You manage permissions for Inputs and Remote Clients/Hosts individually, not at the content group level. Refer to [Restricting Input Permissions](#) in [Chapter 3](#) for instructions.

To prevent anyone (including you) from making changes to items in a content group, right-click on its name and select **Restrict Permissions**.



- Clear the **Create** check box to prevent anyone from creating new content items or subgroups in this group.
- Clear the **Rename** check box to prevent anyone from changing content item or subgroup names in this group.
- Clear the **Delete** check box to prevent anyone from deleting content items or subgroups from this group.
- Clear the **Modify** check box to prevent anyone from overwriting existing content items or changing permissions for subgroups in this group.



Click **Apply** to apply the permission changes or **Cancel** to discard them.

**Caution**

You cannot undo a **Restrict Permissions** action. You must delete and then recreate the group in order to restore the ability to create or make changes to group members.

# CHAPTER 3

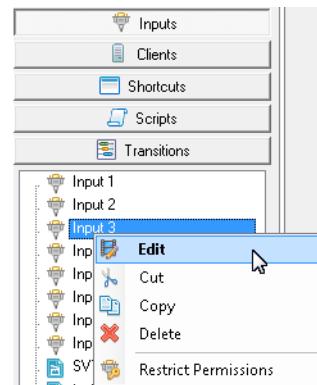
# MANAGING HARDWARE INPUTS

## Note

This chapter describes how to rename, edit, crop, and blend hardware input windows **only**. For information on managing virtual inputs, refer to [Chapter 4, Managing Virtual Inputs](#).

### 3.1 Input Properties

The inputs connected to the Display Processor are listed under the **Inputs** tab on the left of the Galileo interface. By default, they are listed as Input 1, Input 2, etc. The context menu allows you to rename a source or edit its parameters.





### 3.1.1 Editing an Input

Under the **Inputs** tab, right-click on an input name, then select **Edit**. Or, simply double-click on the input name.

The editing dialog box consists of four or five tabs, depending on the input type:

#### INFO

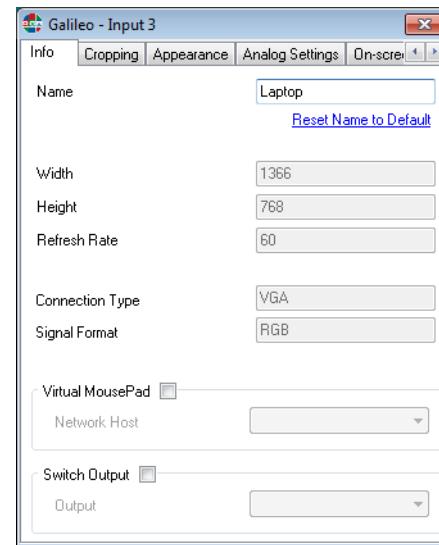
The **Info** tab displays the current Input name, signal status information, and controls for managing the Virtual Mouse Pad feature and routing distributed sources.

- ◆ **Name:** To rename an input, enter a new name in the **Name** box. Then, press Tab or Enter, or close the dialog box.

Names can contain spaces, and some other special characters. The following characters are not permitted:

\ / : \* ? " < > | ,

- ◆ **Width/Height/Refresh Rate/Connection Type/Signal Format:** These fields provide details about the signal captured by the hardware.
- ◆ **Virtual MousePad:** This control associates a **Network Host** with this input. Each window displaying this input will then propagate mouse and keyboard input to the specified client. This is useful to have remote control of a source, with the low latency provided by input capture.
- ◆ **Switch Output:** This control associates an output from a compatible, third-party matrix switcher with this input. For more information, refer to [Managing Distributed Sources on page 56](#).





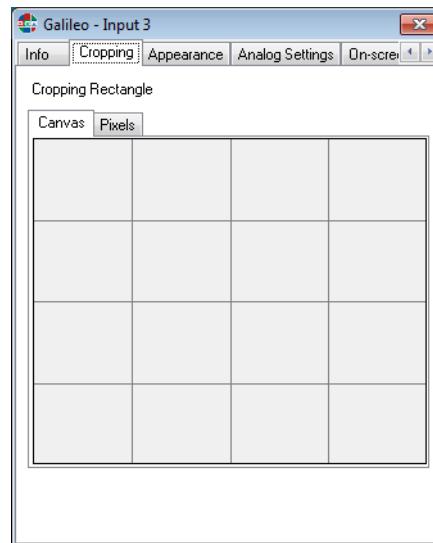
## CROPPING

Click the **Cropping** tab to adjust the cropping you want to apply to this input. You can do this graphically or by entering exact pixel values.

The cropping parameters you set here are applied each time you open this input on the Video Wall.

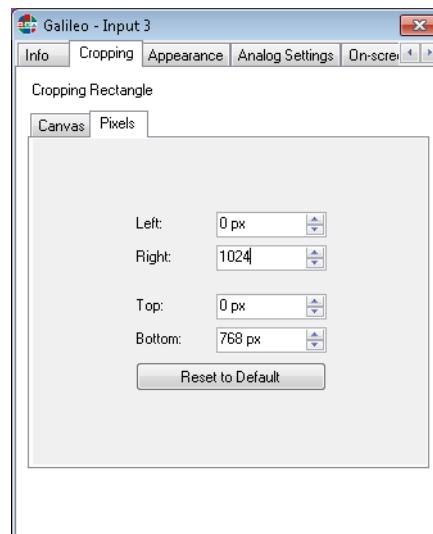
- ◆ **Canvas:** Drag the edges or corners of the black rectangle to select the amount of cropping to apply. Click inside the black rectangle and drag to move the cropping area.

You can also use a grid to help you crop equally on all edges. To display the grid, click on the canvas area and roll the mouse wheel up to increase (or down to decrease) the number of rows and columns.



- ◆ **Pixels:** Click the **Cropping > Pixels** tab to crop the input by entering exact pixel values. There are two ways to do this: use the spin controls, or type the numeric values **only** (without the "px" unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.

The **Reset to Default** button resets only the values in this tab. It does not affect the settings on other tabs.



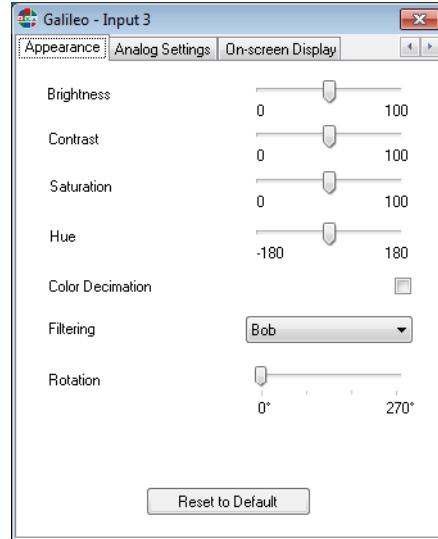


## APPEARANCE

Click the **Appearance** tab to adjust the Brightness, Contrast, Hue, Saturation, Color Decimation (downsampling), Filtering, and Rotation properties.

The Filtering option only applies to interlaced sources.

The **Reset to Default** button resets only the values in this tab. It does not affect the settings on other tabs.



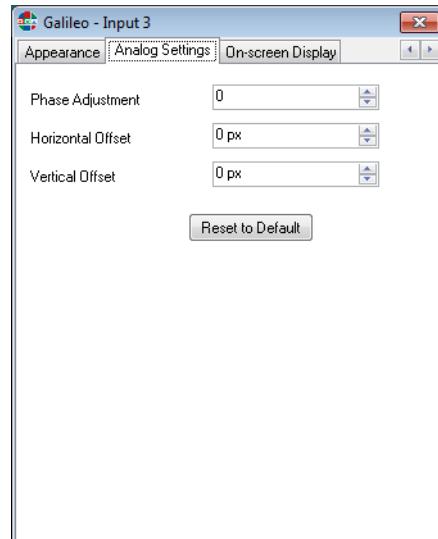
## ANALOG SETTINGS

These controls allow you to adjust the Phase and position of an analog signal.

When setting the **Horizontal Offset** or **Vertical Offset**, you can use the spin controls, or type the numeric values **only** (without the "px" unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.

The **Reset to Default** button resets only the values in this tab. It does not affect the settings on other tabs.

This tab does not appear when a DVI/HDMI input is selected.





## ON-SCREEN DISPLAY

To create or edit a label that appears in windows displaying an input, click the **On-screen Display** tab. Then:

1. Check the **Enable OSD** box.
2. To label the input window with the source name, check the **Use Source Name** box. Or, clear the **Use Source Name** check box and enter other label text.
3. Click **Choose Font...** and select a font name and font size for the window label, or use the default settings (Arial and 24-point).
4. Under **Alignment**, click a button to choose a horizontal (left, center, or right) and vertical (top, middle, or bottom) position for the window label. The default position is the top left corner.
5. The default window label text color and background are white and transparent respectively. To change these, click the **Text Color:** and/or **Background Color:** rectangle to display the Color Picker dialog box.
6. Click one of the 48 **Basic** color swatches to select that color;

**- OR -**

Create a **Custom** color using the custom color picker and slider controls;

**- OR -**

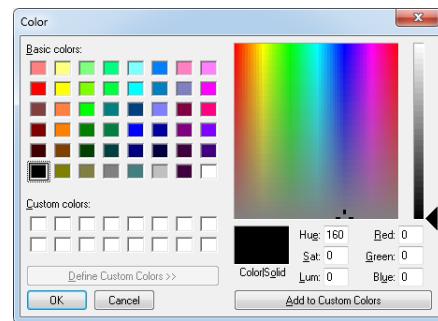
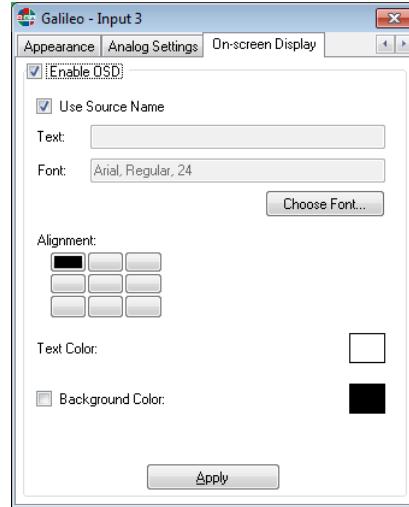
Enter **Hue/Sat/Lum** or **Red/Green/Blue** values for your custom color.

7. Optionally, click **Add to Custom Colors** to save your custom color for later use.
8. Click **OK**.
9. Click **Apply**.

Any new windows displaying this input will also show the label you just created or edited. To apply the new (or updated) label to an existing window displaying this input, disable [Overlay Tiling](#). Then, drag and drop the input to that window.

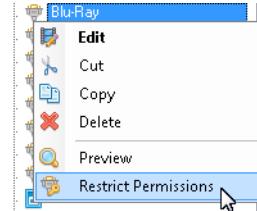
### Note

Galileo saves OSD settings when you save a layout. If you subsequently change OSD settings and then recall the layout, the OSD settings revert to what they were when you saved the layout.



### 3.1.2 Restricting Input Permissions

To prevent anyone (including you) from making changes to an input, right-click on its name and select **Restrict Permissions**.



- Clear the **Rename** check box to prevent anyone from changing the input name.
- Clear the **Modify** check box to prevent anyone from changing the input settings (refer to [Editing an Input](#)).

Click **Apply** to apply the permission changes or **Cancel** to discard them.



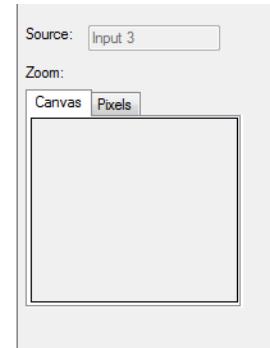
#### Caution

You cannot undo a **Restrict Permissions** action. You must delete the input and then add it again in order to restore the ability to make changes to it.

## 3.2 Input Zoom

The cropping of inputs as seen in the previous section, [Editing an Input](#), is set in the input's properties and is applied on each input displayed on the video wall. You can also **pan** and **zoom** within an individual input window using the **Zoom** control.

This control appears in the **Properties** pane only when you select an input or client window on the **Virtual Wall**. This control functions similarly to the **Cropping** control. The difference is that the zoom applies only to the selected window and does not affect other windows containing the same input. As a result, you can open multiple windows showing different areas of the same input image.





### 3.3 Transparency and Color Keying

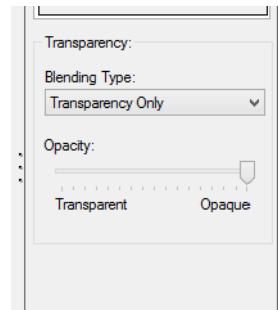
**Note**

Transparency and Color Keying are available in the Galileo **Advanced** bundle.

Input windows can be blended in three different ways:

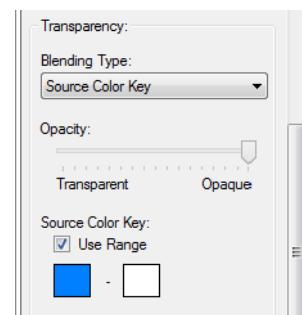
■ **Transparency Only**

Use the slider to adjust the opacity of the input window between **Transparent** (completely invisible) and **Opaque** (completely visible).



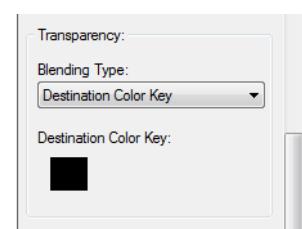
■ **Source Color Key**

When the content inside the video input window contains the color defined here (or the range of colors defined using the **Use Range** checkbox) then that part of the source will be 100% invisible.



■ **Destination Color Key**

When the color behind the location of the source is this color, the source will be visible. It will be invisible everywhere that does not have this color.





### 3.3.1 Setting a Source or Destination Color Key

To set a source or destination color key:

1. On the **Virtual Wall**, click an **Input** window.
2. In the **Properties** pane, set the **Blending Type**: to **Source Color Key** or **Destination Color Key**.
3. Click the **Source Color Key**: or **Destination Color Key**: rectangle to display the Color Picker dialog box.
4. Follow Steps 6 through 9 for configuring the [On-screen Display on page 43](#).

**Tip**

In digital images – in particular, those produced for or obtained from the Web – what looks like a "solid color" from a distance may in fact contain a mixture of colors. Using a single **Source Color Key** value with such an image may not produce the masking effect that you want.

For this reason, Galileo lets you set the **Source Color Key** to a range of colors to key out rather than a single color. To do this, check the **Use Range** box and follow Steps 3 and 4 above for each range endpoint.

### 3.3.2 Color Keying Example

Take, for example, a simple layer mask of a cloud. If you set the **Source Color Key** to black, you would be left with only the white portion of the cloud showing on the video wall.



If you then place a source on top of the white portion of the cloud, and set the **Destination Color Key** of that source to white, the source appears in the shape of the cloud.



## CHAPTER 4

# MANAGING VIRTUAL INPUTS

A **virtual input** is one of the following that serves as a window source:

- A still image file in **.bmp** or **.png** format;
- A media file or network stream;
- An HTML document;
- A software application installed on the Galileo Display Processor; or
- An IP-based source decoded by a GO IP4K IP Decoder Card (if present in the system).

You can also use [Application Shortcuts](#) to display these types of content. However, the advantage to creating virtual inputs is that you can rename, label, edit, crop, and blend virtual input windows just as you can hardware input windows. (Refer to [Chapter 3, Managing Hardware Inputs](#), for instructions.) Also, virtual input windows can be included in and manipulated using [Transitions](#).

**Tip**

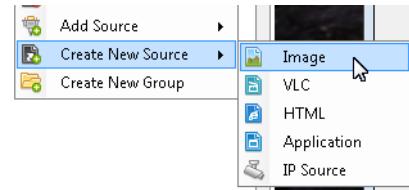
Create a short, simple folder path on the Galileo Display Processor such as **C:\content** and put your local source files there.



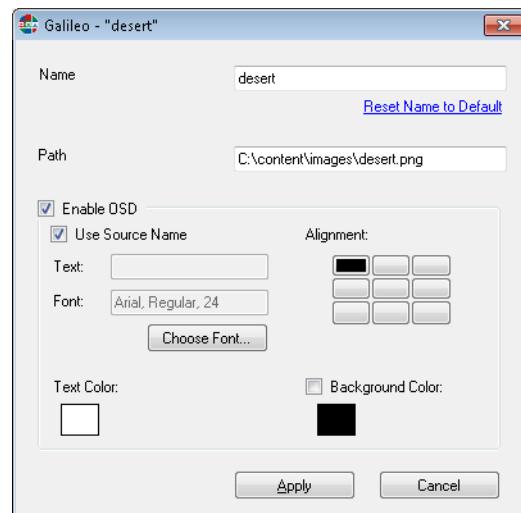
## 4.1 Creating a Virtual Input from a Local Image Source

To create a virtual input from a local image source:

1. Right-click in the **Inputs** pane and select **Create New Source > Image**.



2. Enter a source **Name**.
3. Enter the **Path** to the source image; for example:  
`C:\content\images\desert.png`
4. (Optional) To label the virtual input window with the source name or other text, check the **Enable OSD** box.
5. Follow the instructions for configuring the [On-screen Display on page 43](#).
6. Click **Apply** to finish creating the new source.



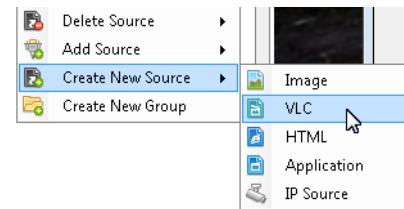


## 4.2 Creating a Virtual Input from a Local Media File or Network Stream

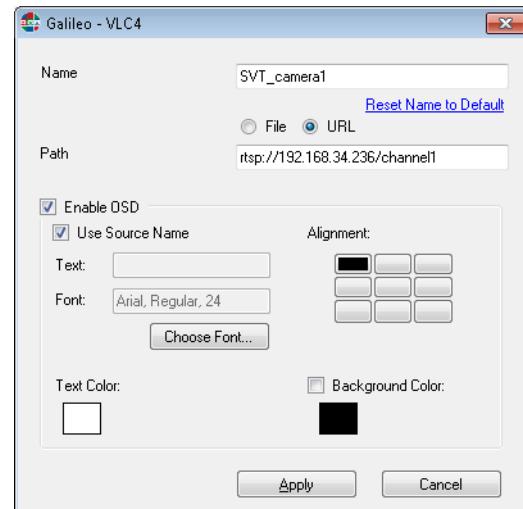
The Galileo Display Processor ships with the VLC® Media Player® pre-installed. VLC Media Player is a free, open-source, cross-platform multimedia player and framework that plays most multimedia files as well as DVDs, Audio CDs, VCDs, and IP device streams.

To create a virtual input from a local media file or network stream:

1. Right click in the **Inputs** pane and select **Create New Source > VLC**.



2. Enter a source **Name**.
3. Select a source type: **File** or **URL**.
4. Enter the **Path** to the source media file or stream URL.
5. (Optional) Follow Steps 1 through 8 for configuring the [On-screen Display on page 43](#) to configure the window label.
6. Click **Apply** to finish creating the new source.





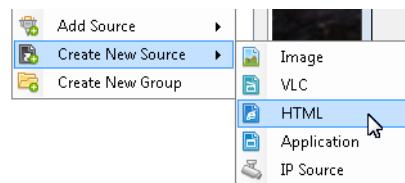
### 4.3 Creating a Virtual Input from a Local HTML Document or URL

**Note**

HTML virtual input windows are non-interactive. To view web pages interactively (that is, with the ability to follow links), use [Application Shortcuts](#) or the integrated [Browser](#).

To create a virtual input from a local HTML document or URL:

1. Right-click in the **Inputs** pane and select **Create New Source > HTML**.



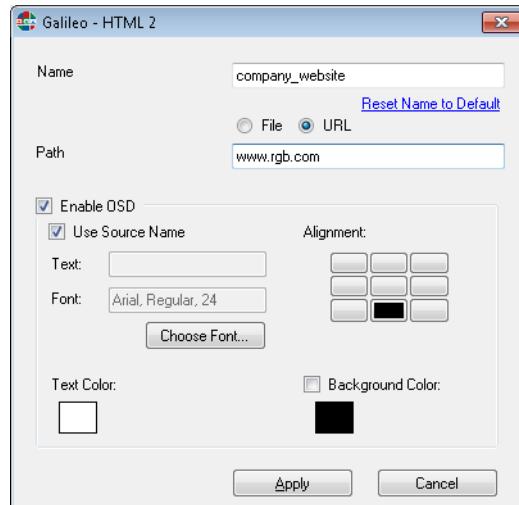
2. Enter a source **Name**.
3. Select a source type: **File** or **URL**.
4. Enter the **Path** to a web site URL or local HTML file; for example:

[www.rgb.com](http://www.rgb.com)

– OR –

[C:\content\index.html](file:///C:/content/index.html)

5. (Optional) Follow Steps 1 through 8 for configuring the [On-screen Display on page 43](#) to configure the window label.
6. Click **Apply** to finish creating the new source.

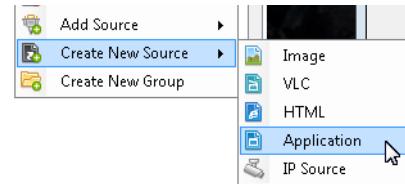




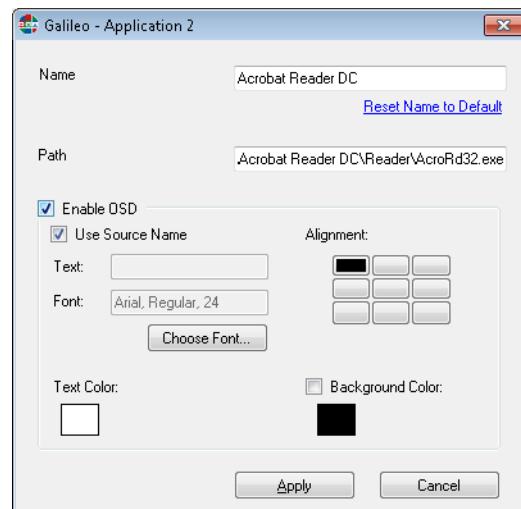
## 4.4 Creating a Virtual Input from a Local Application

To create a virtual input from a local Application source:

1. Right click in the **Inputs** pane and select **Create New Source > Application**.



2. Enter a source **Name**.
3. Enter a **Path** to the executable to launch; for example:  
`C:\Program Files (x86)\Adobe\Acrobat Reader DC\Reader\AcroRd32.exe`
4. (Optional) Follow Steps 1 through 8 for configuring the [On-screen Display on page 43](#) to configure the window label.
5. Click **Apply** to finish creating the new source.





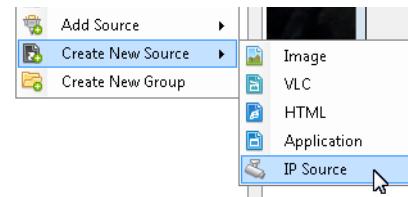
## 4.5 Creating a Virtual Input from an IP Source

**Note**

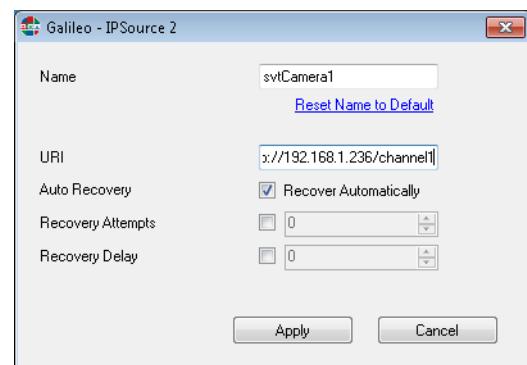
IP stream decoding is available in the Galileo **Advanced** bundle.

To create a virtual input from an IP source decoded by a GO IP4K IP Decoder Card (if present in the system):

1. Right click in the **Inputs** pane and select **Create New Source > IP Source**.



2. Enter a source **Name**, or use the default IPSource name, "IPSource [n]."
3. Enter the **Uniform Resource Identifier (URI)** of the IP video stream source.
4. (Optional) To enable automatic recovery of an IPSource when the connection is lost, check the **Recover Automatically** box.
5. (Optional) Check the **Recovery Attempts** box and set the maximum number of attempts to recover an IPSource. Any number greater than 0 is valid.
6. (Optional) Check the **Recovery Delay** box and set the delay in milliseconds between recovery attempts.
7. Click **Apply** to finish creating the new source.

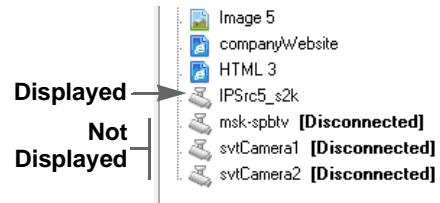


This new virtual input of type **IP Source** appears in the **Inputs** pane with your other inputs.

**Note**

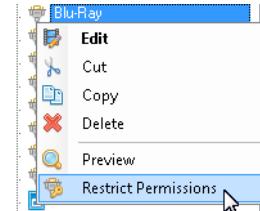
Galileo Client reports the status of an **IP Source** virtual input as **[Disconnected]** when they do not appear on the **Virtual Wall** or a surface:

If the source does not appear when you drag and drop it onto the **Virtual Wall** or surface – or load a layout that includes it – confirm that the URI you entered in Step 3 above is correct.



## 4.6 Restricting Virtual Input Permissions

To prevent anyone (including you) from making changes to a virtual input, right-click on its name and select **Restrict Permissions**. Then, follow the instructions for [Restricting Input Permissions](#) in [Chapter 3](#).



# CHAPTER 5

# MANAGING IP DEVICES

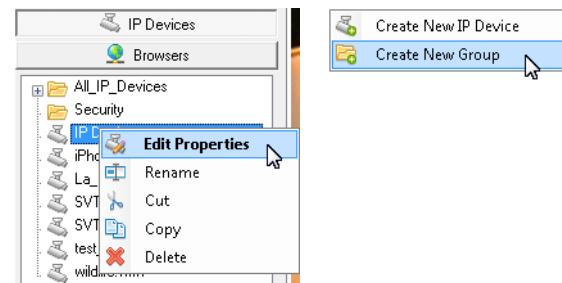
**Note**

IP stream decoding is available in the Galileo **Advanced** bundle.

An **IP Device** content item is a network stream from an IP camera or other streaming video source. IP Devices are decoded by the CPU in the Galileo Display Processor, running an instance of VLC Media Player for each device. (Virtual inputs of type "IP Source," on the other hand, are decoded by the GO IP4K IP Decoder Card; refer to [Creating a Virtual Input from an IP Source on page 52](#).) Any network stream codec and format that VLC and your network capabilities support can be viewed as an IP Device.

## 5.1 IP Device Properties

IP Devices are listed under the **IP Devices** tab on the left of the Galileo interface. The context menu allows you to rename a device, edit its properties, and create/edit device groups.



## 5.2 Creating an IP Device

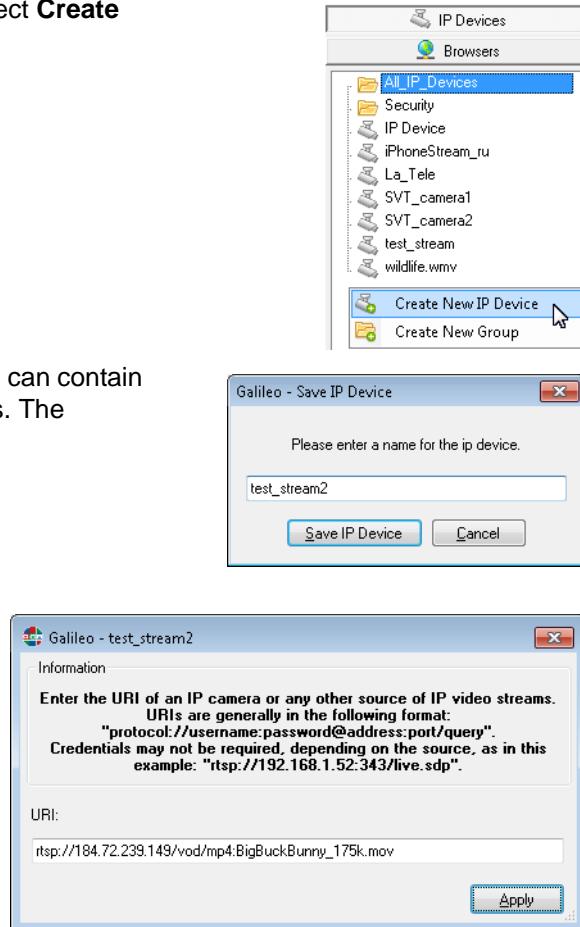
To create an IP Device:

1. Click the **IP Devices** tab.
2. Right-click in the **IP Devices** pane and select **Create New IP Device**.

3. Enter an IP Device name. IP device names can contain spaces, and some other special characters. The following characters are not permitted:

\ / : \* ? " < > | ,

4. Click **Save IP Device**.
5. Enter the **Uniform Resource Identifier (URI)** of the IP video stream source.
6. Click **Apply** to finish creating the new device.



## 5.3 Grouping IP Devices and Restricting IP Device Permissions

To group IP Devices and prevent anyone (including you) from making changes to an IP Device group, follow the instructions for [Creating New Content Groups](#) and [Restricting Group Permissions](#) in [Chapter 2](#).

# CHAPTER 6

# MANAGING DISTRIBUTED SOURCES

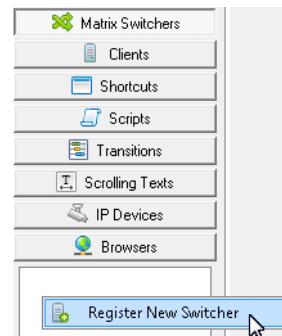
A **distributed source** is one that is connected to the Galileo Display Processor indirectly, through a compatible, third-party matrix switcher. [Contact RGB Spectrum](#) for information on compatible switcher models that support this feature.

You can control matrix switchers natively through the Galileo Client interface. All switcher inputs are available to users and dynamically assigned outputs, so that you can focus on what you want to see. The Galileo Display Processor handles the switcher routing automatically.

## 6.1 Registering the Matrix Switcher

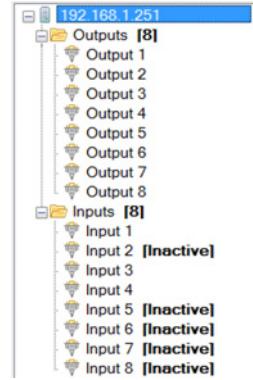
After installing your matrix switcher, you need to tell Galileo the IP address of the switcher. To do this:

1. Click the **Matrix Switchers** tab.
2. Right-click in the area under the tabs and choose **Register New Switcher**.





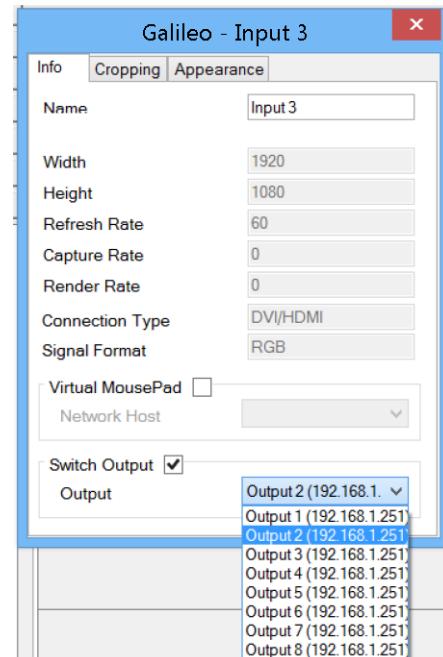
3. Enter the IP address of the switcher in the **Add Switcher** dialog box. The distributed source list will be populated as follows:



## 6.2 Mapping Matrix Switcher Outputs to Display Processor Inputs

You must now associate Display Processor inputs with switcher outputs. To do this:

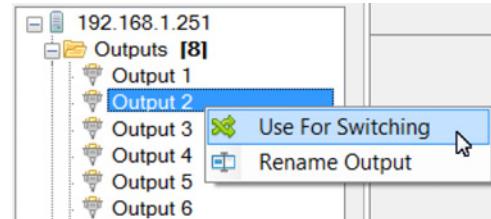
1. Click the **Inputs** tab,
2. Double-click an input to which a switcher output is connected.
3. Check the **Switch Output** box.
4. Select the switcher **Output** that is connected to that input.



5. Close the Input Properties dialog box.
6. Repeat Steps 2 through 5 for each switcher output that is connected to a Display Processor input.



7. Click the **Matrix Switchers** tab.
8. Right-click each Output that is being used on the wall and select **Use For Switching**. This allows Galileo to use these outputs dynamically for your switcher inputs.



You now have three ways of showing content from your switcher:

- Drag a Galileo Input source to the wall. Note that if nothing has been routed to that input from the switch, the window will be empty and the input is listed as **[Unavailable]**.
- Drag a switcher input from the **Matrix Switchers** list to the wall. If there is a dynamic output available, it will be switched to this input and displayed on the wall.
- Drag a switcher output from the **Matrix Switchers** list to the wall. Again, if this output has not been routed an input, the window will be empty.

It is not necessary to use dynamic routing on all switcher outputs. If you want a certain input to go to a certain output all the time, you can use [\*\*Static Input-to-Output Routing\*\*](#). A switcher output that isn't connected to a Display Processor input need not be routed at all. For example, if your switcher has 24 outputs, but only outputs 16 through 24 are connected to Display Processor inputs, Galileo should only switch those outputs.

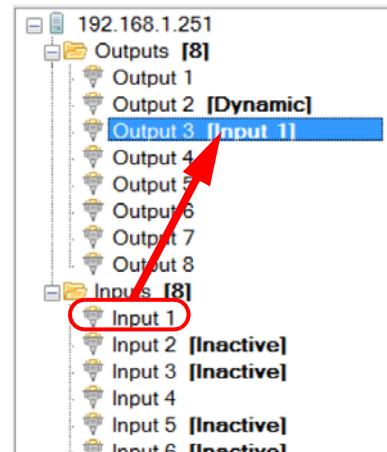
When all dynamic outputs are being displayed on the wall, it won't be possible to show a new input until all windows displaying one of those outputs are closed. For example, consider Input 1, 2, and 3 and Dynamic Outputs 1 and 2. You drag Inputs 1 and 2 to the wall, automatically occupying Outputs 1 and 2. If you were to drag Input 3 to the wall, the window would be empty because no Dynamic Outputs are available. You need to close all windows on the wall displaying either Output 1 or 2 in order to be able to drag Input 3 to the wall.

When a Dynamic Output is given an Input to display, its status change from **[Dynamic]** to **[Input [n]]**, where **[n]** is the input it is displaying. When all instances of that output are removed from the wall, its status changes back to **[Dynamic]** and is available for a new Input.

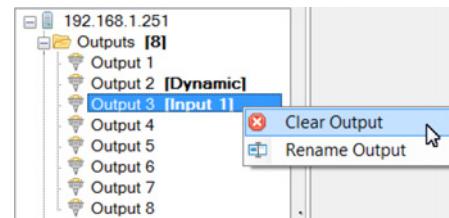


### 6.3 Static Input-to-Output Routing

You can also statically route a switcher input to always take the same output. Unlike Dynamic Outputs, a Static Output is never used for any other Input than the one it's been assigned. To do this, drag the Input you want statically routed to the Output you'd like it to occupy. The output status changes to **[Input [n]]**, where **[n]** is the input you assigned to it.



To remove this association, right-click the Output and select **Clear Output**.



## CHAPTER

# 7

# MANAGING REMOTE CLIENTS AND HOSTS

**Note**

Managing Remote Clients and Hosts is available in the Galileo **Plus** and **Advanced** bundles.

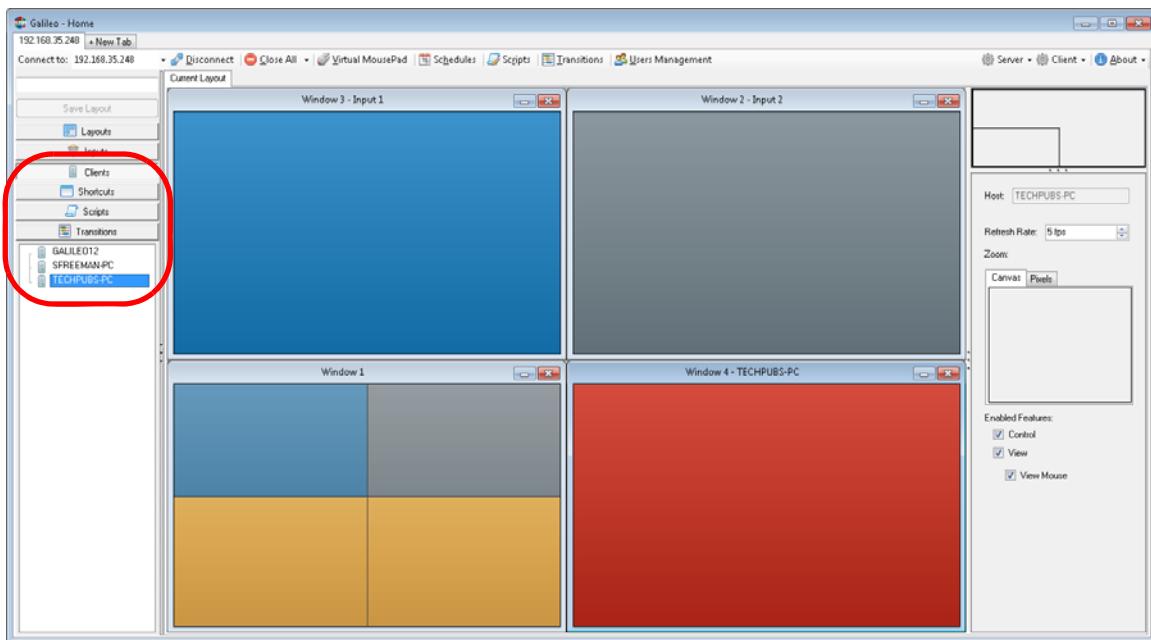
Galileo allows operators to view and control networked computers, as well as the Galileo Display Processor itself, from their desktop and display them on the Video Wall.

A computer must have the Galileo Client or Remote Host software installed and be connected to the Galileo Server before they can be seen by other Galileo Clients. Refer to Chapter 5, “*Installing Galileo Client and Galileo Remote Host*,” in the *Galileo Display Processor Technical Reference Guide*, for system requirements and installation instructions.



## 7.1 Connect and Configure

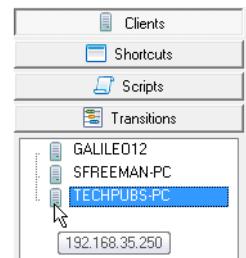
When you connect to a Video Wall with Galileo Client, your PC appears under the **Clients** tab, along with other client PCs, remote host PCs and the Galileo Display Processor. See [Figure 7-1](#).



**Figure 7-1** Remote Clients Tab

### Notes

1. The **Clients** tab shows the host name of your computer as well as that of the Display Processor. Therefore, there are always at least two entries listed under the **Clients** tab.
2. To see the IP address of a remote host, position the mouse pointer over the icon next to the remote host name.
3. Client names are global settings.



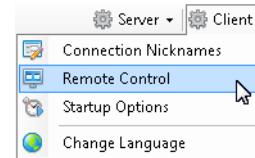


### 7.1.1 Configuring Remote Control of a Client, Remote Host, or the Display Processor

To configure how you want a remote desktop to appear on the video wall or on other Client desktops, do one of the following:

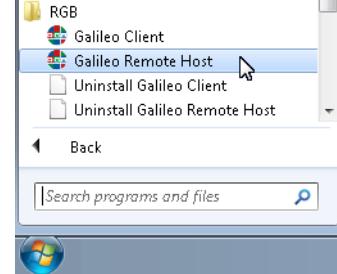
#### GALILEO CLIENT

From the Galileo Client Toolbar, choose **Remote Control** from the **Client** menu.



#### GALILEO REMOTE HOST

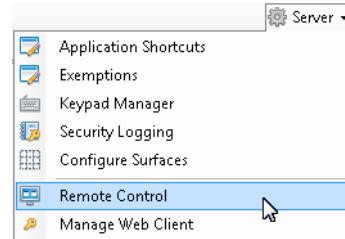
Launch Galileo Remote Host, if it's not already running (choose **Start > All Programs > RGB > Galileo Remote Host**). Then, right-click on its taskbar icon (Galileo icon) and select **Remote Control**.



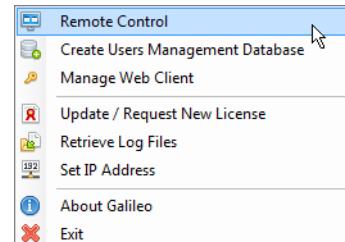
#### GALILEO SERVER

From the Galileo Client Toolbar, choose **Remote Control** from the **Server** menu;

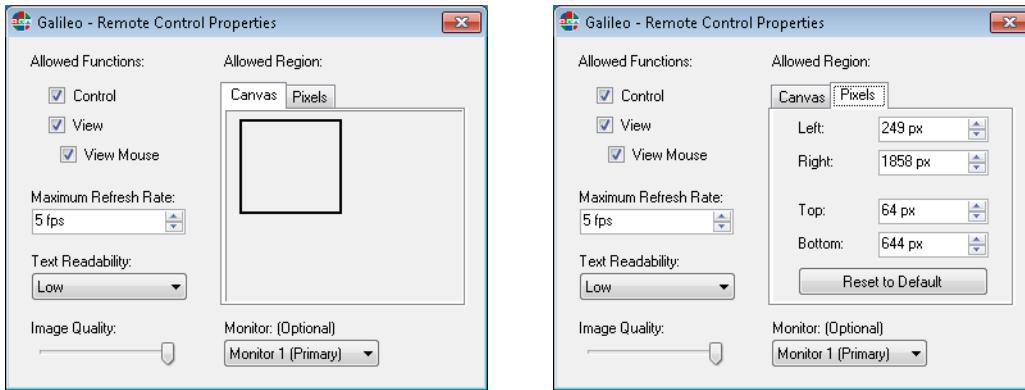
**- OR -**



On the Display Processor desktop, right-click on the Galileo Server taskbar icon (Galileo icon) and select **Remote Control**.



This displays the Remote Control Properties window, shown in [Figure 7-2](#) and described in the sections that follow.



**Figure 7-2** Remote Control Properties

### ALLOWED FUNCTIONS

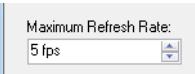
Choose one or more of the following **Allowed Functions**:

- ◆ **Control:** Check this box to allow your desktop to be controlled by other clients.
- ◆ **View:** Check this box to allow your client to be viewed by others and shown on the Video Wall.
- ◆ **View Mouse:** Check this box to make your mouse cursor visible to other clients.



### MAXIMUM REFRESH RATE

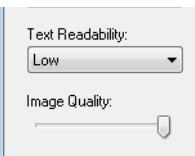
This option allows you to set the refresh rate of your client. A high refresh rate consumes more CPU cycles and network bandwidth.



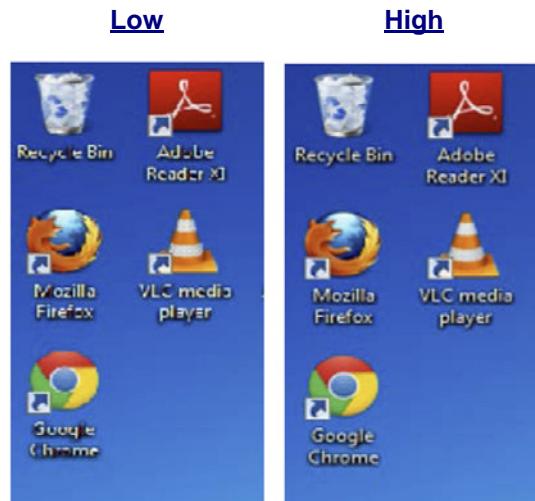
The default **Maximum Refresh Rate** is 5 frames per second, which is adequate for small, static images such as a document window on a computer desktop.

### TEXT READABILITY AND IMAGE QUALITY

When you move the **Image Quality** slider all the way to the right, every pixel in the source image is captured, providing the highest possible image quality. This requires a lot of CPU power and network bandwidth. As you lower the image quality, a proportional number of pixels will not be captured, resulting in lower CPU/network usage.



To maximize text readability when using a lower **Image Quality** setting, set the **Text Readability** to **High**. See [Figure 7-3](#).



**Figure 7-3 Text Readability Settings and Their Effect**

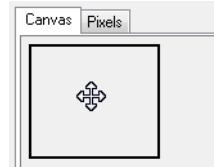
#### Notes

- ◆ When you move the **Image Quality** slider all the way to the right, the **Text Readability** setting has no effect.
- ◆ Setting the **Text Readability** to **High** slightly affects the CPU usage but does not affect the network bandwidth usage.

#### ALLOWED REGION

To define the area of your desktop that other clients can see, do any of the following:

- ◆ Click the **Canvas** tab. Then, click and drag to move or resize the rectangle with the thick black border. Double-click inside this rectangle to “snap” its sides to the nearest grid lines.



- ◆ Click the **Pixels** tab. Enter **Left** and **Right** values to specify the region width (**Right - Left**) and distance from the left edge of the desktop.

Left:	100 px
Right:	900 px
Top:	100 px
Bottom:	700 px
<input type="button" value="Reset to Default"/>	

Enter **Top** and **Bottom** values to specify the region height (**Bottom - Top**) and distance from the top edge of the desktop.

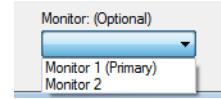
These controls work similarly to those for [Positioning and Sizing Windows](#) and [Cropping](#) an input.

In this example, the values define an allowed region 800 pixels wide and 600 pixels high, whose top-left corner is 100 pixels from the top and left edges of the desktop.



Click **Reset to Default** to set the **Allowed Region** to the whole of your desktop.

- ◆ If your computer has multiple monitors, select one from the **Monitor:** list to set the **Allowed Region** to the display area of that monitor.



### 7.1.2 General Recommendations to Reduce CPU and Network Bandwidth

Accessing Remote Clients/Hosts may result in high network and CPU usage that can degrade the performance and responsiveness of Galileo Server. Under these conditions, the mouse cursor or windows may appear to jump across the screen when moved. Images may flicker or be of poor quality. In extreme cases, a Remote Client/Host may stop responding altogether.

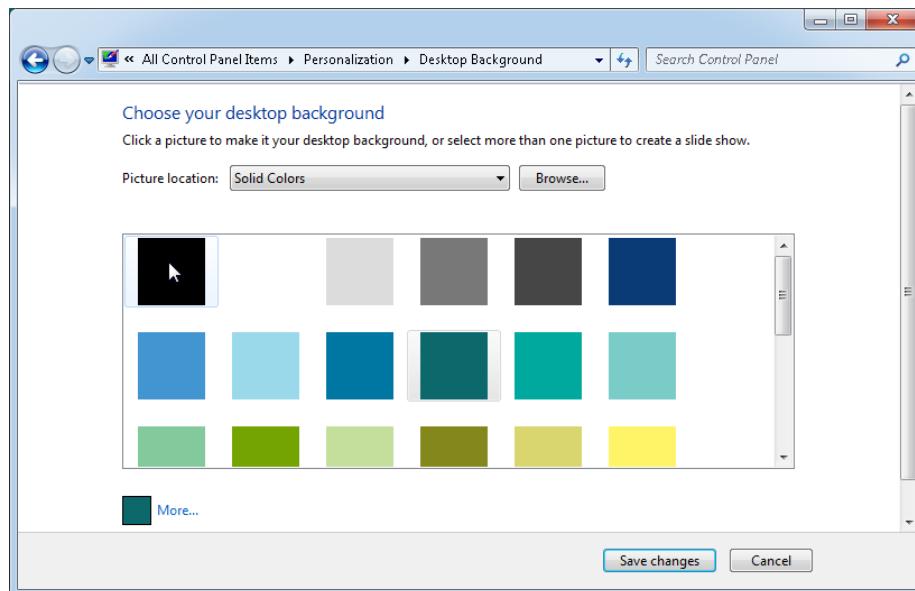
You can resolve these issues by taking one or more of the following measures:

- **Set the Windows Desktop Background to a solid color (preferably black).**

A solid-colored background contains a lot of redundant pixel information that can be discarded, conserving bandwidth without sacrificing image quality.

To set the Windows 7 Desktop Background to solid black:

1. Choose **Start > Control Panel > Personalization**. Or, right-click on the desktop and choose **Personalize**.
2. Click **Desktop Background**.
3. For the **Picture location**, choose **Solid Colors**.
4. Click the black rectangle in the **Solid Colors** palette.



5. Click **Save Changes**.



- **Reduce the Allowed Region.**

The **Allowed Region** size has a significant impact on CPU and network usage. Keep in mind that increasing the area of a region increases the number of pixels exponentially. For example, a  $1280 \times 720$  region contains four times as many pixels as a  $640 \times 360$  region.

For best performance, capture only the area of interest. **This is particularly important if you choose to allow remote control of the Display Processor.**

- **Reduce the Maximum Refresh Rate.**

For most typical computer use cases, the default **Maximum Refresh Rate** of 5 frames per second is appropriate. Higher frame rates are supported, but should be used only when necessary; for example, if the Remote Host computer is providing video content to the video wall.

- **Reduce the Image Quality.**

For some types of content, setting the **Image Quality** slider all the way to the right only consumes more bandwidth without improving quality.

Try moving the slider to the center position. If the resulting image quality is acceptable, move the slider to halfway between the left and center positions. Otherwise, move the slider to halfway between the center and right positions.

Continue in this manner, in progressively smaller increments, to find the lowest setting that results in acceptable image quality.

- **Set the Text Readability to Low.**

This setting primarily affects CPU usage. It does not noticeably affect network bandwidth usage.

## 7.2 Remote Host

Install the **Galileo Remote Host** on the computers you want to be “seen” on the network by the server. These computers can be displayed and/or controlled by other clients in the network, and on the Video Wall. For Galileo Remote Host installation instructions, please refer to the *Galileo Display Processor Technical Reference Guide*.

The Remote Host will attempt to connect automatically to the last used Galileo Server or Display Processor on start-up. To verify the connection, or to select another Galileo Server or Display Processor, right-click on the Galileo Remote Host icon in the Windows taskbar. Depending on your current connection status, the menu gives you the option to connect or disconnect. See [Figure 7-4](#).

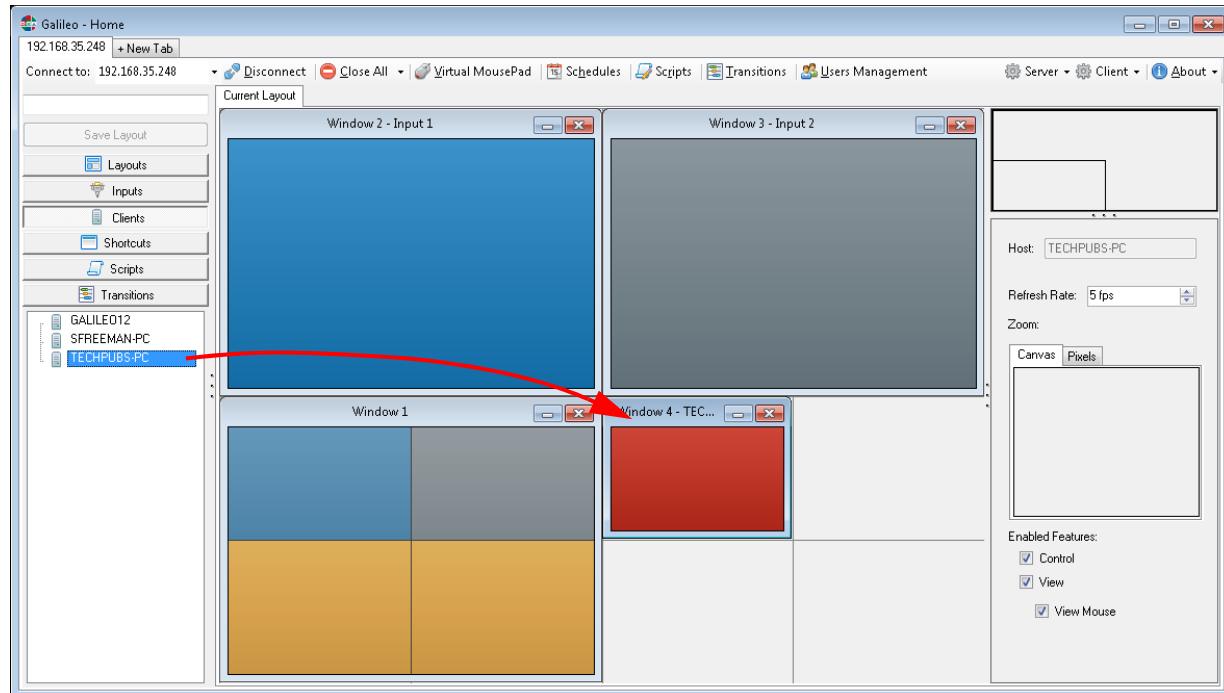


**Figure 7-4** Remote Host – Taskbar Right-Click Menu

## 7.3 Manipulating Remote Clients or Hosts

### 7.3.1 Displaying a Remote Client or Host on the Wall

To display a Remote Client or Host on the video wall, click on it in the list under the **Clients** tab. Then, drag it onto the **Virtual Wall**.



**Figure 7-5** Dragging and Dropping a Client

When you display a Client or Host on the wall, the **Properties** pane provides the same controls as those in the [Remote Control Properties](#) dialog box (see [Figure 7-2](#)). The only difference is that the parameters set here will apply only to this specific client window. Also, the settings cannot be set beyond what has been set in Galileo Client or Galileo Remote Host (on that PC).

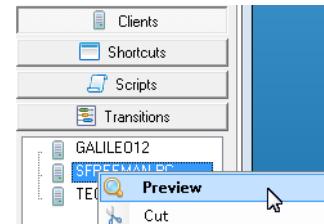


For example, you cannot set a higher **Maximum Refresh Rate** than what has been set by the Remote Client or Host. (You can set a lower one, however.) Also, the maximum visible region is the **Allowed Region** set by the Remote Client or Host, but it is possible to zoom in to a specific area within this allowed region.

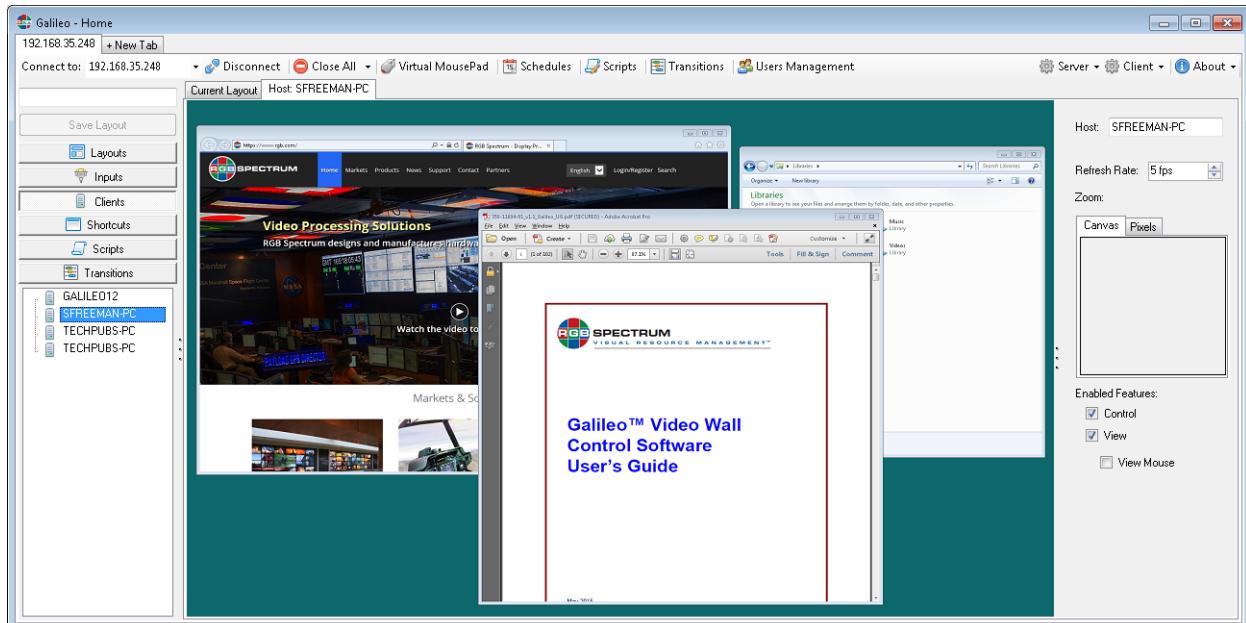
### 7.3.2 Previewing and Controlling a Remote Client or Host

To connect to and take control of a Remote Client or Host using Galileo Client, click the **Clients** tab. Then, do either of the following:

- Double-click a Client host name;
- OR –
- Right-click a Client host name, then select **Preview**.



If the Remote Client/Host has allowed other Clients to view their desktop (refer to **Allowed Functions**, earlier in this chapter), this opens a new tab displaying the Remote Client/Host desktop, shown in [Figure 7-6](#). As when [Displaying a Remote Client or Host on the Wall](#), the **Remote Control Properties** set by the Remote Client/Host determine whether or not you can control their desktop and how much of it you can see.



**Figure 7-6 Host Tab with Remote Client/Host Preview**

**Caution**

Connecting to the Display Processor desktop in this manner may adversely impact its performance, especially with large video walls. To prevent this from happening, set the [Remote Control Properties](#) for Galileo Server as described in [General Recommendations to Reduce CPU and Network Bandwidth](#), or disable all [Allowed Functions](#) to disallow remote control altogether.

To disconnect from a remote client or host, right-click on the **Host: [host name]** tab and select **Close**.

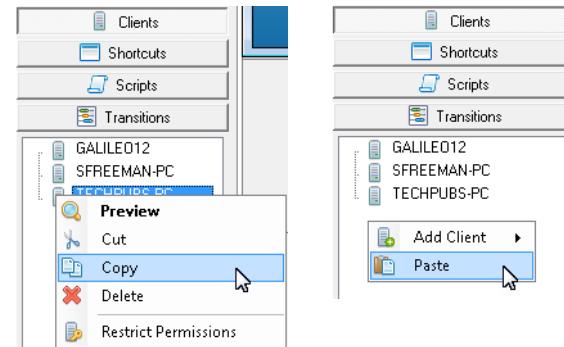


### 7.3.3 Creating Multiple Remote Client/Host Instances

You can display the same Remote Client or Host in multiple windows on the video wall. This is useful if, for example, you want to display different areas of the same Client desktop in separate windows. You can set the Remote Host Properties (area, refresh rate, and enabled features) for each window independently.

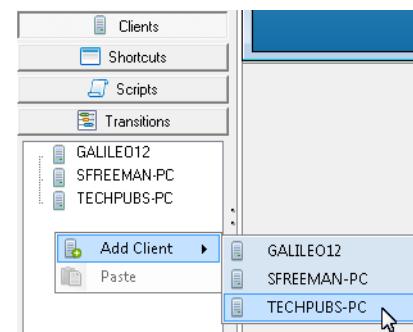
To create a new instance of a Remote Client or Host using Galileo Client, click the **Clients** tab. Then, do either of the following:

- Right-click a Client host name and select **Copy**. Then, right-click in the Client list pane (but not on a host name) and select **Paste**;



**- OR -**

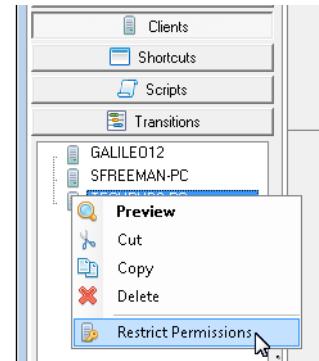
- Right-click in the Client list pane (but not on a host name) and select **Add Client > [host\_name]**.





### 7.3.4 Restricting Remote Client/Host Permissions

To prevent anyone (including you) from making changes to a remote client or host, right-click on its name and select **Restrict Permissions**. Then, follow the instructions for [Restricting Input Permissions](#) in [Chapter 3](#).



### 7.3.5 Deleting a Remote Client/Host Instance

To delete a remote host/client instance, right-click on its name and select **Delete**.



# CHAPTER 8

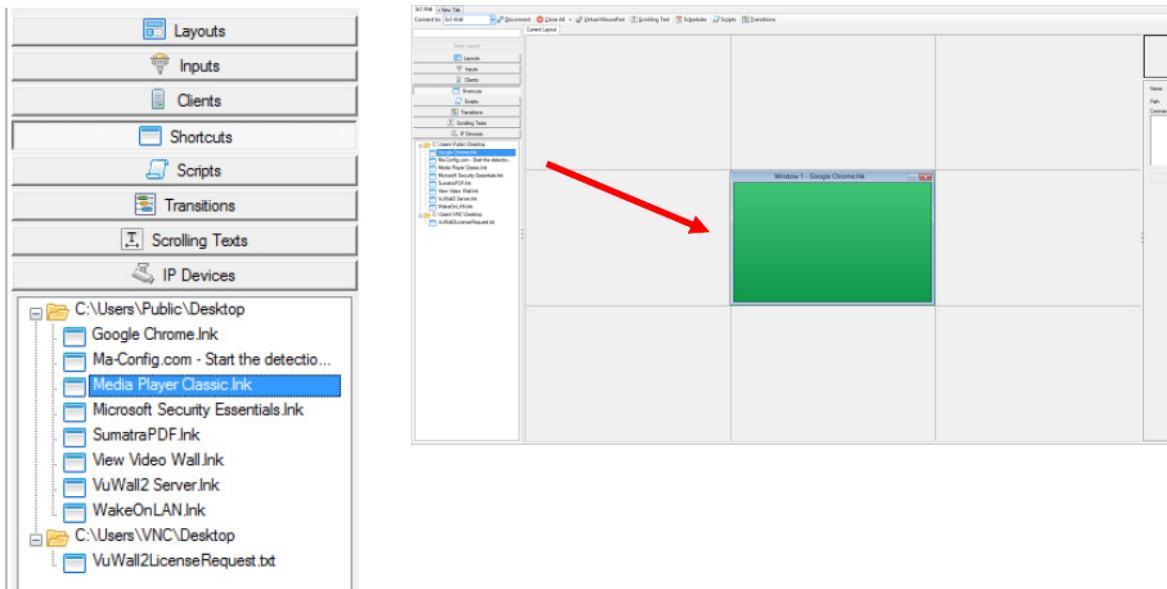
# MANAGING APPLICATIONS

## 8.1 Application Shortcuts

**Note**

Managing Applications is available in the Galileo **Plus** and **Advanced** bundles.

In Galileo, video wall application shortcuts are listed under the **Shortcuts** tab in the **Sources and Scripts** pane. Drag and drop a shortcut to a specific rectangle on the video wall to have the application open in that rectangle.



**Figure 8-1** Launching an Application from the Shortcut List



**Note**

This feature is not operational with all applications. Some applications always open where they were last closed. If you find that your application does not function with Galileo, please email us at [tech@rgb.com](mailto:tech@rgb.com).

It is possible to specify command line arguments to programs that accept them by using the **Command Line Arguments** field at the bottom-left of the interface. For example, to open a specific web page in a Google® Chrome™ window, type the web address in the Command Line Arguments field and click **Apply**:

**Example:** `www.rgb.com`

To open multiple tabs in the same window, separate each web page address by a space:



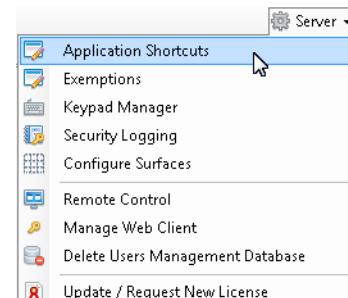
**Example:** `www.rgb.com www.google.com`

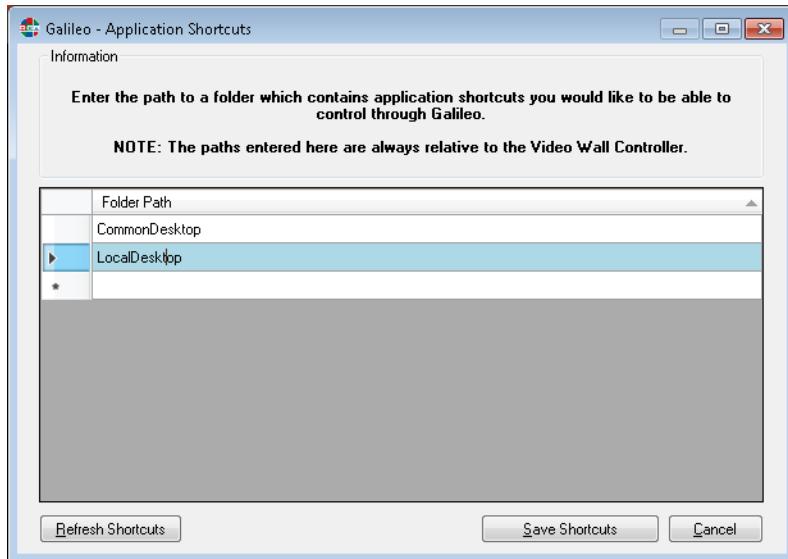
To open a web page in an application window (no tabs), precede the web page address with `--app=http://`, as follows:

**Example:** `--app=http://www.rgb.com`

For more information on command line arguments for a specific program, please refer to that application's documentation.

By default, shortcuts are taken from the Windows Desktop on the Galileo Display Processor. To customize which applications to make available through Galileo, select **Application Shortcuts** from the **Server** menu. This opens a new window where you can specify which directories to include in the **Shortcuts** tab.





**Figure 8-2 Editing Application Shortcuts**

If new shortcuts are added to those directories, the shortcut list will not be automatically updated. To refresh the **Shortcuts** tab during operation, click **Refresh Shortcuts**.

## 8.2 Saving Layouts with Local Applications

Saving a layout automatically includes the local applications in the layouts. The Command Line arguments are also saved.

Some programs have “features” that prevent multiple instances of the same program from opening. While we are able to circumvent some of these features, it is not always possible. So here is a brief list of programs we suggest for common use cases.

If you need to open multiple web browser windows, Galileo has been optimized for **Google Chrome** (<http://chrome.google.com>). However, at this time each Chrome window will open with a new, temporary user profile. This makes it impossible to maintain extensions and bookmarks while using Galileo.

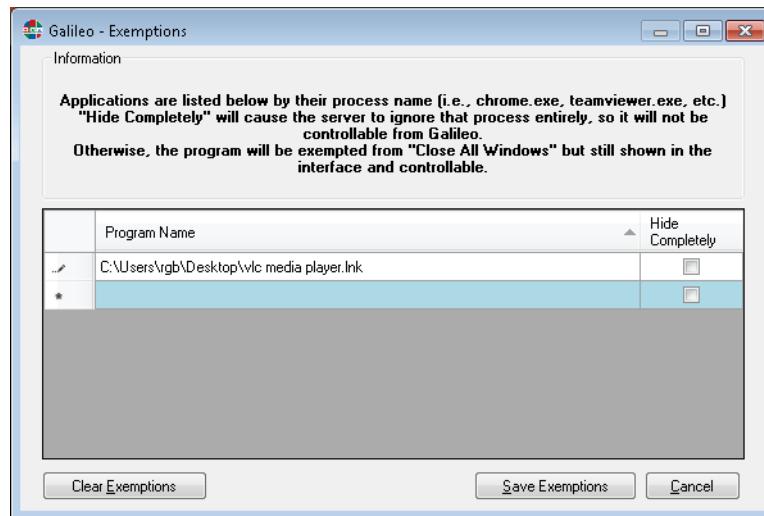
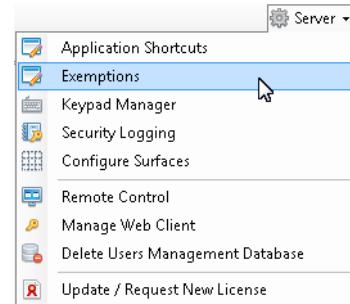
For multiple windows of PDF documents, Adobe® Reader® does not allow you to open the same document in multiple instances. If you need this ability, consider using **Sumatra PDF Reader** (<http://blog.kowalczyk.info/software/sumatrapdf/download.html>) instead.

For video clips or IP streams, RGB Spectrum recommends **VLC Media Player** (<http://www.videolan.org/vlc/>).

## 8.3 Exemptions

By default, Galileo closes all windows without exemption when you click **Close All Windows**, or when Galileo Server receives this command via script or third-party control.

To prevent an application window from closing when Galileo Server receives this command, select **Exemptions** from the **Server** menu. This displays the window shown in [Figure 8-3](#).



**Figure 8-3 Editing Application Exemptions**

Click the first empty text box in the **Program Name** column and enter the path to the program shortcut (for example, **C:\Users\rgb\Desktop\vlc media player.lnk**) that you want to exclude from the **Close All Windows** action. Press Enter to complete your entry. When you have finished creating exemptions, click **Save Exemptions**.

**Note**

Galileo Server also honors Exemptions when it receives a **Close All Windows** command via script or third-party control.



## 8.4 Virtual MousePad

**Note**

Virtual MousePad is available in the Galileo **Plus** and **Advanced** bundles.

Virtual MousePad gives you direct mouse and keyboard control of the Video Wall. To activate Virtual MousePad, click **Virtual MousePad** in the Toolbar.



**Figure 8-4 Activating Virtual MousePad**

This will gray out the **Virtual Wall** on your Galileo Client, and your mouse and keyboard will become active on the video wall. If remote clients/hosts are displayed on the Video Wall and they configured their client to allow remote control, your mouse and keyboard will also affect them.

**Tip**

On a large video wall, it may be difficult to see the mouse pointer. Press Ctrl+Spacebar to generate a large image of the mouse pointer on the video wall, making it easy to locate it. Press Ctrl+Spacebar again to return the mouse pointer to its original size.

# CHAPTER 9

# SCRIPTS

## Note

Scripting support is available in the Galileo **Plus** and **Advanced** bundles.

If you need to perform certain video wall management tasks on a regular basis, consider automating those tasks using scripts. A **script** is a sequence of commands that is executed when the script is run.

## Example

Here is a simple script that closes all windows on the video wall, pauses for two seconds, and then loads a layout named "DEFAULT."

```
CloseWindowsSourceType: all;
Wait Duration: 2 seconds;
Open Layout: "DEFAULT";
```

Galileo Server accepts scripting commands from both Galileo Client and third-party automation/control systems, via its [Network Scripting API](#).

This chapter explains how to create, edit, and use scripts. The following topics are discussed:

- [Creating and Editing Scripts](#)
- [Scripting Syntax](#)
- [Layout Commands](#)
- [Window Commands](#)
- [Schedule Commands](#)
- [Other Commands](#)
- [Using Scripts](#)
- [Network Scripting API](#)

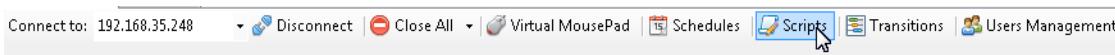
You can execute a script on demand at any time. Or, for unattended execution, you can include a script in a schedule. [Chapter 10, Schedules](#), describes how to create task schedules. A complete list of scripting commands and their usage begins on page 82.

### Notes

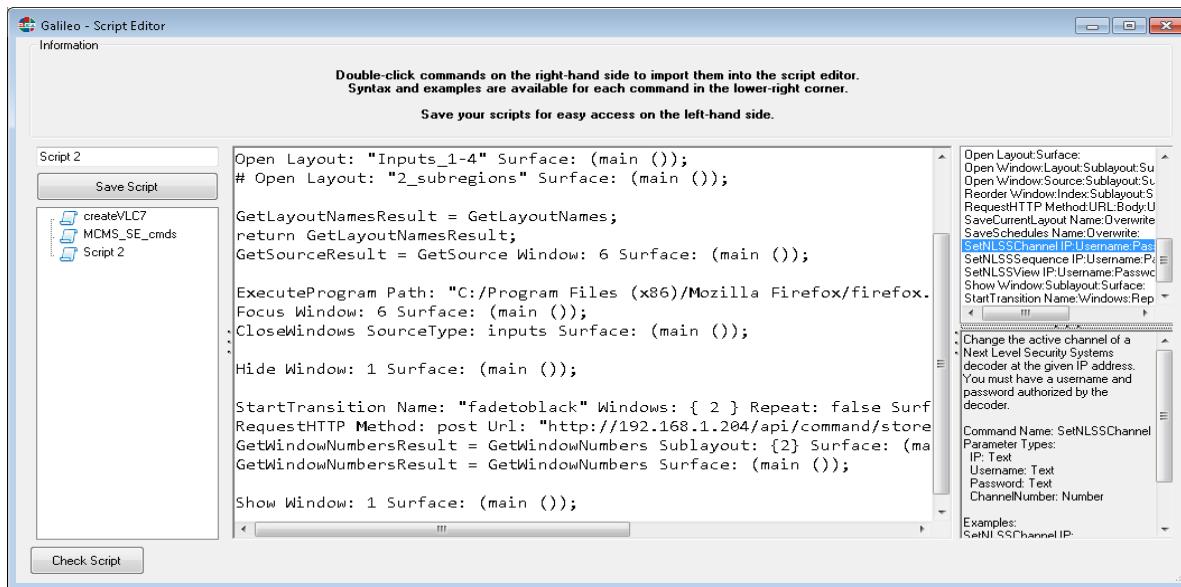
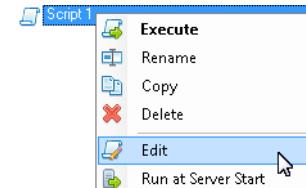
1. The ability to work with scripts may be restricted by User/Group access permissions. For more information, refer to [User Group Permissions](#) in [Chapter 13, Managing Groups and Users](#).
2. You can run scripts from the Galileo Web Client, but you cannot create or edit them.

## 9.1 Creating and Editing Scripts

To create a new script, click **Scripts** in the **Toolbar**.



To edit an existing script, click **Scripts** in the **Toolbar**. Then, double-click the name of the script you want to edit to open it in the Script Editor. Or, click the **Scripts** tab, then right-click the script name and choose **Edit**.



**Figure 9-1 Script Editor**

The main text area is where you can write the script. On the left side of the window, the name of the script you are editing appears and can be changed.

On the right is the list of commands that can be included in a script. Click a command to see a short description and a list of the expected parameters. Double-click a command to insert it into the script, complete with default values for the parameters.

Click **Check Script** to verify that every command used exists and has been given parameters with correct names and values. Any error with the script is reported and must be corrected before the script can be executed. A complete list of scripting commands and their usage begins on page 82.

When you have finished making changes to your script, click **Save Script** to save the changes.

Executing a script might produce an error that was not found during validation. This is usually because the commands used depend on the changing state of the video wall, and cannot be verified once the state of the video wall has changed. For example, a script might contain the command `Open Layout: "Layout 3";`, which will work properly only if "Layout 3" actually exists. If the layout is later deleted, the next time the script is executed an error will occur because "Layout 3" is not a known layout.

**Note**

Script execution terminates when an error occurs. Commands after the one that caused the error are not executed.

## 9.2 Scripting Syntax

Galileo scripting commands start with an optional variable declaration, followed by a command name and zero or more parameter/value pairs, ending with a semicolon (;):

```
Name [Parameter1: value1] [Parameter2: value2] [Parameter3: value3];  
  
VariableName = Name [Parameter1: value1] [Parameter2: value2] [Parameter3: value3];
```

**Tip**

Command names, parameters, and keywords are **case-sensitive** and must be entered exactly as shown in the examples that follow. For this reason, it is recommended that you use the Script Editor in Galileo Client to create scripts whenever possible. This will reduce the chance of syntax errors that prevent a script from executing.

If you use an external editor to create scripts, take care to not introduce line breaks within commands or use "left/right double quotes" instead of "straight double quotes." These are two of the most common syntax errors.

### 9.2.1 White Space and Comments

Although you can use the semicolon by itself to separate commands, it is recommended that you use **white space** – spaces, tab characters, and new lines – to further separate commands and improve readability.

You can include information in your scripts – for example, what it does, who created it and when – by inserting **comments**. You can also "comment out" a script command to prevent it from executing without deleting it from the script altogether.

Comments start with the pound sign (#) and end at the end of the line or script.

#### Examples

```
# check with IT to find out what to enter on the next line
ConnectResult = Connect IP: "127.0.0.1" Port: 0;

CloseWindows; # Same as CloseWindows SourceType: all;

# The next line is a "commented out" command
# Wait Duration: 2 seconds;
```

White space and comments are ignored by the Galileo scripting command interpreter.

### 9.2.2 Command Names

Command names start with an UPPERCASE letter followed by any number of lowercase or UPPERCASE letters.

#### Examples

```
Clear Window:
CloseWindows SourceType:
ExecuteProgram Path: Arguments:
Open Layout:
```

### 9.2.3 Variable Names

You can store the value returned by some commands in a variable, then use that variable in subsequent commands to perform other actions. Variable names start with an UPPERCASE letter followed by any number of lowercase or UPPERCASE letters.

#### Example

```
LayoutList = GetLayoutNames;
return LayoutList;
```

#### 9.2.4 Parameter Names

Commands take zero or more parameters, depending on the command. Parameter names start with an UPPERCASE letter followed by any number of lowercase or UPPERCASE letters and ending with a colon (:).

##### Examples

```
Clear Window:  
CloseWindows SourceType:  
ExecuteProgram Path: Arguments:  
Open Layout: Surface:
```

#### 9.2.5 Parameter Values

All command parameters must be assigned a value of the correct type for that parameter. Parameter types are as follows:

- **Numbers** consist of one or more numeric digits.

##### Examples

```
Clear Window: 3;  
ConnectResult = Connect IP: "192.168.1.200" Port: 50001;
```

- **Strings** are any number of characters enclosed in "straight double quotes."

##### Examples

```
ExecuteProgram Path: "C:/Program Files (x86)/Mozilla Firefox/firefox.exe"  
Arguments: "www.rgb.com";  
Open Layout: "DEFAULT";
```

- **Keywords** start with a lowercase letter followed by any number of lowercase or UPPERCASE letters.

##### Examples

```
Open Window: 1 Source: input("Default");  
CloseWindows SourceType: applications;  
Wait Duration: 5 seconds;
```

- **Sequences** consist of two or more numbers, separated by commas and enclosed in {braces}.

##### Examples

```
Number = CreateWindow Monitor: {3,2};  
Number = CreateWindow Horizontal: {0,1919} Vertical: {0,1079};
```

## 9.2.6 Message Types

Two types of messages can be sent to the Network Scripting API.

- **Command Invocations**

These can alter the state of the video wall. These commands also produce a result, which can be assigned to a variable and used in subsequent messages. The result of the command, whether assigned to a variable or not, is sent to the client.

**Example**

```
CloseWindows SourceType: all;
WindowNumber = CreateWindow Monitor: {2,1};
Open Window: WindowNumber Layout: "Meeting Layout";
```

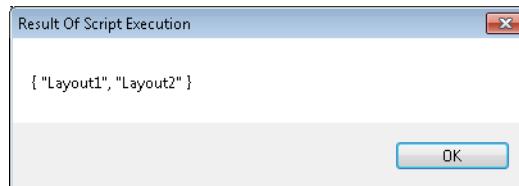
- **Return Statements**

These statements will not terminate communication with the Network API. It will instead evaluate the given command and send back the result. These commands can be useful for developers wishing to see the contents of variables, or the value of intermediate results.

**Example**

```
Names = GetLayoutNames;
return Names;
```

If Names = { "Layout 1", "Layout 2" }, these two lines of code would display the following:



More information is available by retrieving the Server log files, and opening the **Galileo-Server-NetworkScriptingAPI.log** file. To retrieve these files, right click on the Galileo Server tray icon, and select **Retrieve Log Files**.

## 9.3 Layout Commands

### 9.3.1 GetLayoutNames

Use the **GetLayoutNames** command to return a list of names of the layouts that are currently saved on the Display Processor.

#### Example

```
Names = GetLayoutNames;
return Names;
```

### 9.3.2 Open Layout: Surface:

#### Note

Opening a layout on the video wall automatically closes all existing windows on the video wall.

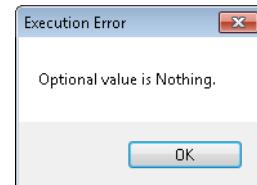
Use the **Open Layout: Surface:** command to open a layout across the whole video wall or on a specific surface, if any have been configured. Identify the layout by its name, as it appears under the **Layouts** tab in Galileo Client. Enclose the layout name in quotes.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface on which to open the layout. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

#### Note

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs:



## Examples

With a single surface:

```
Open Layout: "Layout 1";
# This is equivalent to the previous example:
Open Layout: "Layout 1" Surface: (main());
```

With multiple surfaces:

```
Open Layout: "Scenario 2" Surface: named("Control Room");
# This is also valid
Open Layout: "Scenario 2" Surface: (named("Control Room"));
```

### 9.3.3 SaveCurrentLayout Name: Overwrite: Sublayout: Surface:

Use the **SaveCurrentLayout Name: Overwrite: Sublayout: Surface:** command to save the layout currently displayed on the video wall, in a sublayout, or on a specific surface, if any have been configured. You can then recall this layout at a later time.

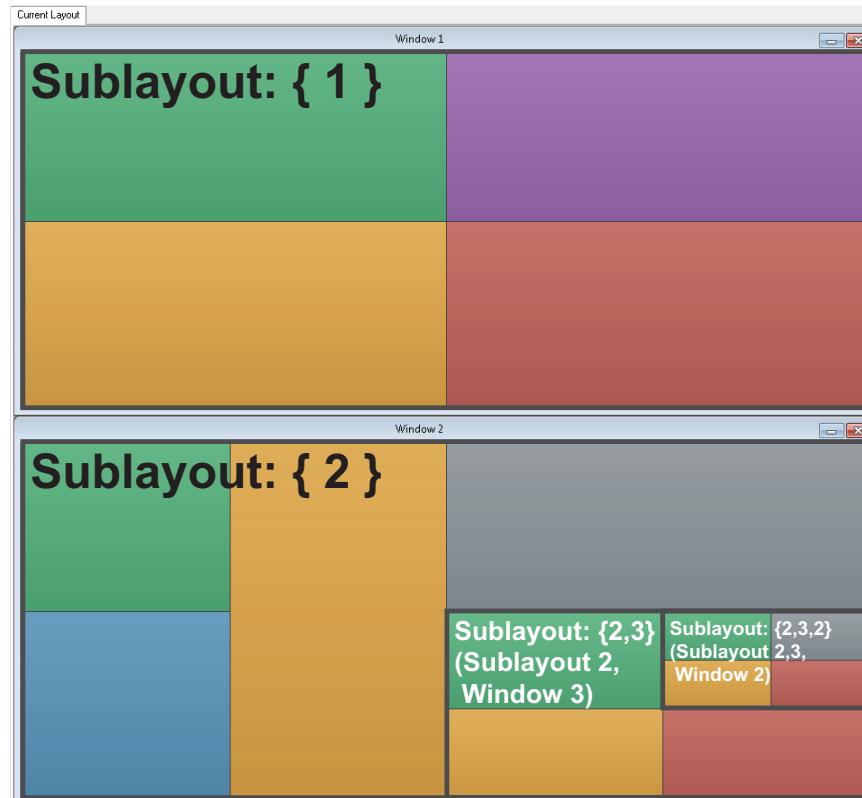
Enclose the **Name:** under which you want to save the layout in quotes.

The optional **Overwrite:** parameter controls what happens when a layout with the specified **Name:** already exists. With **Overwrite: true** – or if this parameter is omitted – the named layout is updated with the contents of the current layout. With **Overwrite: false**, the named layout remains unchanged and script execution continues.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window or windows you want to include in the saved layout. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command saves the topmost layout on the wall or surface.

#### Note

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.



**Figure 9-2 Sublayout References in Script Commands**

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface to include in the saved layout. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
SaveCurrentLayout Name: "Temporary/Switching" Overwrite: false;
SaveCurrentLayout Name: "Snapshot" Surface: named("Conference Room");
SaveCurrentLayout Name: "Main Lobby-Right" Sublayout: {2,3} Surface:
named("MainLobby");
```

## 9.4 Window Commands

### 9.4.1 Carousel Sublayout: Surface:

Use the **Carousel Sublayout: Surface:** command to cycle the display of windows on the video wall, in a sublayout, or on a specific surface, if any have been configured. The command hides the currently-visible window and brings the next hidden window to the front.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window or windows you want to clear. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command clears the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to clear. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Example**

This script hides all but one window on the "Top Wall" surface, displays the other windows in sequence while hiding the others, then shows all windows:

```
# this script assumes that there are four windows showing
# hide windows 2, 3, 4
Hide Window: 2 Surface: (named ("Top Wall"));
Hide Window: 3 Surface: (named ("Top Wall"));
Hide Window: 4 Surface: (named ("Top Wall"));

Carousel Surface: (named ("Top Wall"));
Carousel Surface: (named ("Top Wall"));
Carousel Surface: (named ("Top Wall"));
Carousel Surface: (named ("Top Wall"));

# show all
Show Window: 1 Surface: (named ("Top Wall"));
Show Window: 2 Surface: (named ("Top Wall"));
Show Window: 3 Surface: (named ("Top Wall"));
Show Window: 4 Surface: (named ("Top Wall"));
```

(Refer to [Hide Window: Sublayout: Surface: on page 94](#) and [Show Window: Sublayout: Surface: on page 99](#) for instructions on using those commands.)

#### 9.4.2 Clear Window: Sublayout: Surface:

Use the **Clear Window: Sublayout: Surface:** command to clear a window on the video wall, in a sublayout, or on a specific surface, if any have been configured. The window becomes empty on the Galileo interface and can be manipulated again.

Identify the window by its number, as seen on the **Virtual Wall**.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window or windows you want to clear. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command clears the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to clear. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Examples**

```
Clear Window: 3;  
Clear Window: 3 Surface: named("Crisis Room");  
Clear Window: 2 Sublayout: {2,3} Surface: (main());
```

### 9.4.3 Close Window: Sublayout: Surface:

Use the **Close Window: Sublayout: Surface:** command to close a single window on the video wall, in a sublayout, or on a specific surface, if any have been configured.

Identify the window by its number, as seen on the **Virtual Wall**.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window you want to close. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command closes the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to close. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Examples**

```
Close Window: 3;  
Close Window: 3 Surface: named("Crisis Room");  
Close Window: 2 Sublayout: {2,3} Surface: (main());
```

#### 9.4.4 CloseWindows SourceType: Sublayout: Surface:

Use the **CloseWindows SourceType: Sublayout: Surface:** command to close multiple (or all) windows on the video wall, in a sublayout, or on a specific surface, if any have been configured.

You can optionally specify the type of sources to close, a sublayout, and/or a surface, if any have been configured. If `SourceType:`, `Sublayout:`, and `Surface:` are omitted, this command closes all windows in all sublayouts on all surfaces.

#### Examples

```
CloseWindows SourceType: all;
CloseWindows SourceType: inputs Surface: named("Crisis Room");
CloseWindows SourceType: applications;
CloseWindows SourceType: clients Sublayout: {2,2};
CloseWindows;
```

(Note that `CloseWindows;` is equivalent to `CloseWindows SourceType: all;.`)

#### 9.4.5 CreateWindow Horizontal: Vertical: Surface:

Use the **CreateWindow Horizontal: Vertical: Surface:** command to create a new, empty window on the video wall or on a specific surface, if any have been configured. This window can later be filled with any source available to the operators.

`Horizontal : { Sequence }`

Use two numbers, enclosed in {braces}, to represent the horizontal extent of the new window. The first is the left edge position; the second is the right edge position.

`Vertical : { Sequence }`

Use two numbers, enclosed in {braces}, to represent the vertical extent of the new window. The first is the top edge position; the second is the bottom edge position.

If you have configured multiple surfaces, include the `Surface:` parameter to specify the surface on which you want the new window to appear. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the `main()` surface is available. You can include `Surface: (main())` in the command, but it is not required.

If you have configured multiple surfaces and you either specify `Surface: (main())` or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

## Examples

To create a new window, 1920 pixels wide x 1080 pixels high in the upper-left corner of the surface named "Conference Room:"

```
NewWindowResult = CreateWindow Horizontal: {0,1919} Vertical: {0,1079}
Surface: named("Conference Room");
```

`NewWindowResult` is the number assigned to the newly created window. It can be used in subsequent commands to modify the content of that window. For example, to load the "Layout 2" layout into a new window:

```
Open Window: NewWindowResult Source: layout("Layout 2");
```

### 9.4.6 CreateWindow Monitor: Surface:

Use the **CreateWindow Monitor: Surface:** command to create a new, empty window on the video wall or on a specific surface, if any have been configured. This window can later be filled with any source available to the operators.

Use two numbers, enclosed in {braces}, to represent the position of the monitor to cover with the new window. The first is the horizontal position (column number) and the second is the vertical position (row number). To create a window that spans two or more monitors, use the **CreateWindow Horizontal: Vertical: Surface:** command.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface on which you want the new window to appear. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include `Surface: (main())` in the command, but it is not required.

If you have configured multiple surfaces and you either specify `Surface: (main())` or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

## Examples

To create a new window that fills the monitor in Row 2, Column 3, on the surface named "Main Lobby:"

```
NewWindowResult = CreateWindow Monitor: {3,2} Surface:
named("Main Lobby");
```

`NewWindowResult` is the number assigned to the newly created window. It can be used in subsequent commands to modify the content of that window. For example, to load the layout named "Layout 2" into the new window:

```
Open Window: NewWindowResult Source: layout("Layout 2");
```

#### 9.4.7 Focus Window: Sublayout: Surface:

Use the **Focus Window: Sublayout: Surface:** command to place an existing window in front of all other windows on a video wall, in a sublayout, or on a specific surface, if any have been configured.

**Note** Windows displaying hardware inputs (described in [Chapter 3](#)), virtual inputs (described in [Chapter 4](#)), and scrolling texts (described in [Chapter 12](#)) always appear in front of windows displaying IP Device streams and other content types.

Identify the window by its number, as seen on the **Virtual Wall**.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window to which you want to give focus. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command gives focus to the specified window in the topmost layout on the wall or surface.

**Note** If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window to which you want to give focus. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

#### Examples

```
Focus Window: 4;  
Focus Window: 4 Surface: named("Crisis Room");
```

#### 9.4.8 GetSource Window: Sublayout: Surface:

Use the **GetSource Window: Sublayout: Surface:** command to get the name and type of the source that is displayed in a window on the video wall.

Identify the window by its number, as seen on the **Virtual Wall**.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window for which you want get source information. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command returns information for the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window for which you want get source information. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

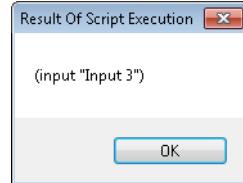
If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Example**

```
Source = GetSource Window: 3 Surface: named("Meeting Room");
return Source;
```

If Source = (input "Input 3"), these two lines of code would display the following:



#### 9.4.9 GetWindow Index: Sublayout: Surface:

Use the **GetWindow Index: Sublayout: Surface:** command to retrieve the number of a window at the given Z-order position in the layout.

Specify the window **Index:** whose window number you want to retrieve. There are two ways to do this:

- **Back to Front:** Using ascending integer values starting from 0, where 0 is the window that is behind all other windows.
- **Front to Back:** Using descending integer values starting from -1, where -1 is the window that is in front of all other windows.

See [Figure 9-3](#) for an example.



**Figure 9-3 Window Z-Order Indices**

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window whose window number you want to retrieve. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command returns the number of the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window whose window number you want to retrieve. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
BackWindow = GetWindow Index: 0;
FrontWindow = GetWindow Index: -1;
```

#### 9.4.10 GetWindowNumbers Sublayout: Surface:

Use the **GetWindowNumbers Sublayout: Surface:** command to read the window numbers of all windows on the video wall layout.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the target sublayout. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command returns the window numbers for the topmost layout on the wall or surface.

### Note

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the windows whose numbers you want to retrieve. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Example

```
Numbers = GetWindowNumbers Surface: main();
# Numbers = { 2, 0, 1 }
```

#### 9.4.11 Hide Window: Sublayout: Surface:

Use the **Hide Window: Sublayout: Surface:** command to minimize a window on the video wall. To maximize a minimized window, use the [Show Window: Sublayout: Surface:](#) command.

Identify the window by its number, as seen on the **Virtual Wall**.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window you want to hide. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command hides the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to hide. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Example**

```
Hide Window: 1;
Hide Window: 1 Surface: named("Crisis Room");
```

#### 9.4.12 Move Window: Horizontal: Vertical: Surface:

Use the **Move Window: Horizontal: Vertical: Surface:** command to change the size and position of an existing window.

Identify the window by its number, as seen on the **Virtual Wall**.

```
Horizontal : { Sequence }
```

Use two numbers, enclosed in {braces}, to represent the horizontal extent of the window. The first is the left edge position; the second is the right edge position.

```
Vertical : { Sequence }
```

Use two numbers, enclosed in {braces}, to represent the vertical extent of the window. The first is the top edge position; the second is the bottom edge position.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to move or resize. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
Move Window: 2 Horizontal: { 0, 1920 } Vertical: { 0, 1080 };
Move Window: 2 Horizontal: { 0, 1920 } Vertical: { 0, 1080 } Surface:
named("Crisis Room");
```

#### 9.4.13 Move Window: Monitor: Surface:

Use the **Move Window: Monitor: Surface:** command to change the size and position of an existing window.

Identify the window by its number, as seen on the **Virtual Wall**.

Use two numbers, enclosed in {braces}, to represent the position of the monitor to cover with the window. The first is the horizontal position (column number) and the second is the vertical position (row number). To have the window span two or more monitors, use the [Move Window: Horizontal: Vertical: Surface:](#) command.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to move or resize. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
Move Window: 3 Monitor: { 3, 2 };
Move Window: 3 Monitor: { 3, 2 } Surface: named("Crisis Room");
```

#### 9.4.14 Open Window: Layout: Sublayout: Surface:

Use the **Open Window: Layout: Sublayout: Surface:** command to put a layout in a specific window.

Identify the window by its number, as seen on the **Virtual Wall**. Identify the layout by its name, as it appears under the **Layouts** tab in Galileo Client. Enclose the layout name in quotes.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window in which you want the layout to open. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command opens the layout in the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window in which you want the layout to open. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

**Examples**

```
Open Window: 1 Layout: "Layout 2";
Open Window: 2 Layout: "Layout 1";
Open Window: 2 Layout: "Inputs_1-4" Sublayout: { 2,3 } Surface: (main());

```

#### 9.4.15 Open Window: Source: Sublayout: Surface:

Use the **Open Window: Source: Sublayout: Surface:** command to put a source in a specific window.

Identify the window by its number, as seen on the **Virtual Wall**.

The **Source:** parameter can be any of the following:

- **input**: A physical or virtual input. Identify the input by its name, as it appears under the **Inputs** tab in Galileo Client.
- **client**: A Remote Host. Identify the Client/Remote Host) by its IP address, as it appears under the **Clients** tab in Galileo Client (refer to page 61).
- **application**: A local application on the Display Processor. Identify an application by the path to the executable on the Display Processor.
- **browser**: A **Browser** object. Identify it by its name, as it appears under the **Browsers** tab in Galileo Client.
- **scrollingtext**: A **Scrolling Text** object. Identify it by its name, as it appears under the **Scrolling Texts** tab in Galileo Client.
- **device**: An IP Device. Identify it by its name, as it appears under the **IP Devices** tab in Galileo Client.
- **website**: Any valid web site URI. You do not need to define the web site as a source.
- **stream**: Any valid IP network stream URI. You do not need to define the stream as a source.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window in which you want the source to appear. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command opens the source in the specified window in the topmost layout on the wall or surface.

**Note**

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window in which you want the source to appear. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

## Examples

```

Open Window: 1 Source: input("Camera 1");
Open Window: 2 Source: client("192.168.1.27") Sublayout: { 1,2 }
Surface: (main ());
Open Window: 3 Source: application("C:/Program Files/Acme/Tool.exe");
Open Window: 4 Source: scrollingtext("quoteOfTheDay") Surface:
(named("Left Wall"));
Open Window: 5 Source: browser("rgb-website") Surface: (named("Main
Lobby"));
Open Window: 6 Source: device("Cameral1") Surface: (named("Control
Room"));
Open Window: 7 Source: website("https://rgb.assist.com/portal") Surface:
(named("Main Lobby"));
Open Window: 8 Source: stream("rtsp://mm2.pcslab.com/mm/7h800.mp4")
Surface: (named("Main Lobby"));

```

### 9.4.16 Reorder Window: Index: Sublayout: Surface:

Use the **Reorder Window: Index: Sublayout: Surface:** command to change the Z-order index of a window, so that it appears in front of or behind other windows.

#### Note

Windows displaying hardware inputs (described in [Chapter 3](#)), virtual inputs (described in [Chapter 4](#)), and scrolling texts (described in [Chapter 12](#)) always appear in front of windows displaying IP Device streams and other content types.

Identify the window by its number, as seen on the **Virtual Wall**.

Specify the **Index:** (Z-order) you want to assign to the window. There are two ways to do this:

- **Back to Front:** Using ascending integer values starting from 0, where 0 is the window that is behind all other windows. In other words, the window will be in front of that many other windows.
- **Front to Back:** Using descending integer values starting from -1, where -1 is the window that is in front of all other windows.

See [Figure 9-3](#) for an example.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window whose Z-order you want to change. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command affects the specified window in the topmost layout on the wall or surface.

#### Note

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window whose Z-order you want to change. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
Reorder Window: 2 Index: 3;
Reorder Window: 2 Index: 3 Surface: named("Crisis Room");
```

#### 9.4.17 Show Window: Sublayout: Surface:

Use the **Show Window: Sublayout: Surface:** command to maximize a minimized window.

Identify the window by its number, as seen on the **Virtual Wall**. If the window is already maximized, this command does nothing and script execution simply continues.

The optional **Sublayout:** parameter is a sequence of window numbers that define the path to the window you want to show. Enclose the sublayout number in {braces}. See [Figure 9-2](#) for an example. If you do not specify a sublayout, this command shows the specified window in the topmost layout on the wall or surface.

### Note

If the **Sublayout:** value references a window that contains a single source rather than a group of windows, an "Optional Value is Nothing" run-time error occurs.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window you want to show. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

### Examples

```
Show Window: 2;
Show Window: 2 Surface: named("Crisis Room")
```

## 9.5 Schedule Commands

### 9.5.1 ActivateSchedule Name:

Use the **ActivateSchedule Name:** command to add the tasks of a saved schedule to the active tasks, starting from the time of command execution for "On Demand" schedules.

Identify the schedule by its name, as seen on the saved schedule list.

#### Examples

```
ActivateSchedule Name: "Demo Schedule";  
ActivateSchedule Name: "Weekend Schedule";
```

### 9.5.2 ClearSchedules

Use the **ClearSchedules** command to deactivate all scheduled tasks.

#### Example

```
ClearSchedules;
```

### 9.5.3 SaveSchedules Name: Overwrite:

Use the **SaveSchedules Name: Overwrite:** command to save the currently active scheduled tasks, to reactivate them at a later time.

The optional **Overwrite:** parameter controls what happens when a schedule with the specified **Name:** already exists. With `Overwrite: true` – or if this parameter is omitted – the named schedule is updated with the contents of the current schedule. With `Overwrite: false`, the named schedule remains unchanged and script execution continues.

#### Example

```
SaveSchedules Name: "Temporary";  
SaveSchedules Name: "Monday Schedule" Overwrite: false;
```

## 9.6 Other Commands

### 9.6.1 Connect IP: Port:

Use the **Connect IP: Port:** command to establish communication between the Galileo Display Processor and an external service over a TCP/IP connection.

Using this command, you can write and invoke scripts from Galileo Client that control external devices, and program third-party automation/control systems to control Galileo.

#### Example

To command the Display Processor (at IP address 192.168.1.200) to clear Window #2 using the [Network Scripting API](#), send these commands from your control system:

```
Galileo = Connect IP: "192.168.1.200" Port: 50001;  
Galileo Send: "Clear Window: 2\n";
```

(Note the newline character code (`\n`) at the end of the command.)

Specify the destination IP address, in dotted quad notation, followed by the TCP port number.

In the above example, the first line of code creates a new connection and stores the connection information in a variable called `Galileo`. The second line sends the `Clear Window:` command over that connection.

### 9.6.2 ConnectTelnet IP: Port:

**Tip**

You can use the **ConnectTelnet IP: Port:** command to display IP device streams or media files on the video wall. For example, to create a virtual input source called "VLC1" of type VLC:

```
Galileo = ConnectTelnet IP: "127.0.0.1" Port: 23;
Galileo Send: "CreateSource \"VLC1\" VLC\r\n";
```

To use this virtual source to play an IP network stream:

```
Galileo = ConnectTelnet IP: "127.0.0.1" Port: 23;
Galileo Send: "SetSource \"VLC1\" VLC /P:\"rtsp://192.168.25.150/
channel1\"\r\n";
```

Use the **ConnectTelnet IP: Port:** command to establish communication between the Galileo Display Processor and an external service over a Telnet connection.

**Example**

To command the Display Processor to add a window, 1900 pixels wide x 1900 pixels high and called "Window\_1," to the wall, send these commands from Galileo Client:

```
Galileo = ConnectTelnet IP: "127.0.0.1" Port: 23;
Galileo Send: "AddWindow \"Window_1\" 100,100,2000,2000\r\n";
```

(Note that the inner set of quotation marks is escaped with the backslash character.)

Specify the destination IP address, in dotted quad notation, followed by the TCP port number.

In the above example, the first line of code creates a new connection and stores the connection information in a variable called **Galileo**. The second line sends the **AddWindow** command over that connection.

### 9.6.3 DeleteStream Provider:

Use the **DeleteStream Provider:** command to delete an IP Device registered using Galileo Client or the [RegisterStream Provider: URI:](#) command.

The **Provider:** parameter is the name and group name given to the IP device when it was created.

#### Examples

```
DeleteStream Provider: "Parking camera";
DeleteStream Provider: "Security/Parking camera";
```

### 9.6.4 Execute Script:

Use the **Execute Script:** command to run another saved script. Using this command, you can include one script in another.

Identify the script by its name, as it appears under the **Scripts** tab in Galileo Client.

#### Caution

##### **NEVER call a saved script from itself!**

For example, if you save this script under the name "THIS SCRIPT," it will loop endlessly when you execute it. To restore normal operation, a shut-down and restart of Galileo Server will be necessary.

```
CloseWindows SourceType: all;
Wait Duration: 2 seconds;
CreateWindowResult = CreateWindow Horizontal: {0,1919} Vertical:
{0,1199};
Open Window: 1 Source: input("Input 1");
# The following will cause the script to loop endlessly,
# requiring a shut-down and restart of Galileo Server
Execute Script: "THIS SCRIPT";
```

#### Example

```
Execute Script: "Script 1";
```

### 9.6.5 ExecuteProgram Path: Arguments:

Use the **ExecuteProgram Path: Arguments:** command to launch an application installed on the Galileo Display Processor.

Specify the path of the executable to launch on the Galileo Display Processor, along with any arguments. Enclose both in quotes.

#### Examples

```
ExecuteProgram Path: "C:/Program Files (x86)/Mozilla Firefox/
firefox.exe";
ExecuteProgram Path: "C:/Program Files (x86)/Mozilla Firefox/firefox.exe"
Arguments: "www.rgb.com";
```

### 9.6.6 GetSources SourceType:

Use the **GetSources SourceType:** command to retrieve a list of all sources or, when you include the optional **SourceType:** parameter, all sources of the specified type.

The **SourceType:** parameter can be any of the following:

- **input**: A physical or virtual input. Identify the input by its name, as it appears under the **Inputs** tab in Galileo Client.
- **client**: A Remote Host. Identify the Client/Remote Host) by its IP address, as it appears under the **Clients** tab in Galileo Client (refer to page 61).
- **application**: A local application on the Display Processor. Identify an application by the path to the executable on the Display Processor.
- **browser**: A **Browser** object. Identify it by its name, as it appears under the **Browsers** tab in Galileo Client.
- **scrollingtext**: A **Scrolling Text** object. Identify it by its name, as it appears under the **Scrolling Texts** tab in Galileo Client.
- **device**: An IP Device. Identify it by its name, as it appears under the **IP Devices** tab in Galileo Client.

#### Examples

```
Sources = GetSources;
# Sources = { input("Input 1"), client("192.168.1.1") }

Inputs = GetSources SourceType: input;
Apps = GetSources SourceType: application;
Clients = GetSources SourceType: client;
Text = GetSources SourceType: scrollingtext;
Browsers = GetSources SourceType: browser;
Devices = GetSources SourceType: device;
# Devices = { "Camera 1", "Camera 2" }
```

### 9.6.7 OpenScrollingText Name: Window: Surface:

Use the **OpenScrollingText Name: Window: Surface:** command to show text scrolling across the screen, as previously configured and saved from the editor.

Identify the scrolling text object by its name, as it appears under the **Scrolling Texts** tab in Galileo Client.

Identify the window by its number, as seen on the **Virtual Wall**.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the window in which you want to show the scrolling text. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

#### Examples

```
OpenScrollingText Name: "Company Banner" Window: 2;
OpenScrollingText Name: "Warnings/Bear Alarm 2" Window: 1;
OpenScrollingText Name: "Company Banner" Window: 2 Surface:
named("Entrance");
```

### 9.6.8 RegisterStream Provider: URI:

Use the **RegisterStream Provider: URI:** command to register an RTSP stream into the list of IP devices, which can be decoded and displayed on the video wall.

The optional **Provider:** parameter is a descriptive name and group name for the IP device. To create a new IP device group or add the device to an existing group, include the group name followed by a forward slash and the device name. If you omit this parameter, the default device name "IP Device [n]" is used.

IP device and group names can contain spaces, and some other special characters. The following characters are not permitted:

\ / : \* ? " < > | ,

The **URI:** parameter is the full Uniform Resource Identifier of the RTSP stream. It must include the protocol name, username, password, host name, port number and query string.

## Examples

```
RegisterStream URI: "rtsp://192.168.1.155:443/live.sdp";
RegisterStream Provider: "Parking camera" URI: "rtsp://
admin:admin@192.168.1.156:443/hdv";
RegisterStream Provider: "Security/Parking camera" URI: "rtsp://
192.168.1.157:443/live.sdp";
```

### 9.6.9 RequestHTTP Method: URL: Body: Username: Password:

Use the **RequestHTTP Method: URL: Body: Username: Password:** command to send a HTTP or HTTPS request to a remote service. Parameters can be provided as a URL query string or in the request body. Any text response from the service is returned as the command's result.

This command takes the following parameters:

- **URL:** The URL of the remote HTTP service. Parameters can be included as a query string.
- **Method:** The HTTP method – `post`, `get`, `put`, or `delete` – expected by the service.
- **Body:** Text content to include in the request body, if required. (**optional**)
- **Username: Password:** Credentials to provide to the remote service, if required. Only basic HTTP authentication is supported. (**optional**)

## Examples

```
RequestHTTP Method: post URL: "http://192.168.34.164:8001/USER/runScript/
set_preset_by_id.py?arguments=--id 4 --echo \"Loading Preset...\""
RequestHTTP Method: post URL: "https://192.168.1.202/api/command/reboot"
Username: "admin" Password: "admin";
Response = RequestHTTP Method: get Url: "http://192.168.1.203/api/
command/status?format=json";
return Response;
RequestHTTP Method: post Url: "http://192.168.1.204/api/command/store"
Body: "{ \"Name\": \"Apple\", \"Price\": 3.99 }";
```

### 9.6.10 SetNLSSChannel IP: Username: Password: ChannelNumber:

Use the **SetNLSSChannel IP: Username: Password: ChannelNumber:** command to change the active channel of a Next Level Security Systems (NLSS) decoder at the given IP address. You must have a user name and password authorized by the decoder.

This command takes the following parameters:

- **IP:** The address of the NLSS decoder.
- **Username:** The user name to use as credentials to access the decoder.
- **Password:** The password associated with the given user name to access the decoder.
- **ChannelNumber:** The number associated with the desired channel, which must be already configured on the decoder.

#### Examples

```
SetNLSSChannel IP: "192.168.1.170" Username: "admin" Password: "admin"
ChannelNumber: 1;
```

### 9.6.11 SetNLSSSequence IP: Username: Password: SequenceName:

Use the **SetNLSSSequence IP: Username: Password: SequenceName:** command to change the active sequence of an NLSS decoder at the given IP address. You must have a user name and password authorized by the decoder.

This command takes the following parameters:

- **IP:** The address of the NLSS decoder.
- **Username:** The user name to use as credentials to access the decoder.
- **Password:** The password associated with the given user name to access the decoder.
- **SequenceName:** The name associated with the desired sequence, which must be already configured on the decoder.

#### Examples

```
SetNLSSSequence IP: "192.168.1.170" Username: "admin" Password: "admin"
SequenceName: "Sequence 1";
```

### 9.6.12 SetNLSSView IP: Username: Password: ViewName:

Use the **SetNLSSView IP: Username: Password: ViewName:** command to change the active view of an NLSS decoder at the given IP address. You must have a user name and password authorized by the decoder.

This command takes the following parameters:

- **IP:** The address of the NLSS decoder.
- **Username:** The user name to use as credentials to access the decoder.
- **Password:** The password associated with the given user name to access the decoder.
- **ViewName:** The name associated with the desired view, which must be already configured on the decoder.

#### Examples

```
SetNLSSView IP: "192.168.1.170" Username: "admin" Password: "admin"
ViewName: "View 1";
```

### 9.6.13 StartTransition Name: Windows: Repeat: Surface:

#### Note

Transitions are available with the Galileo Digital Signage option (sold separately). [Chapter 11, Transitions](#), describes how to create transitions.

Use the **StartTransition Name: Windows: Repeat: Surface:** command to run a transition with a given set of windows.

Identify the transition by its name, as it appears under the **Transitions** tab in Galileo Client, followed by a comma-delimited list of numbers, enclosed in {braces}, identifying the windows to include in the transition.

Optionally, set the **Repeat:** parameter to **true** to loop the transition. To execute it once only, set **Repeat:** to **false**, or omit the parameter altogether.

If you have configured multiple surfaces, include the **Surface:** parameter to specify the surface displaying the windows that you want to include in the transition. Use the surface name that appears in the **Site Map** in Galileo Client. Enclose the surface name in quotes.

If you have not configured any surfaces, only the **main()** surface is available. You can include **Surface: (main())** in the command, but it is not required.

If you have configured multiple surfaces and you either specify **Surface: (main())** or omit the parameter altogether, an "Optional Value is Nothing" run-time error occurs.

## Examples

```
StartTransition Name: "Transition 1" Windows: {1,3,5};  
StartTransition Name: "Transition 2" Windows: {2,4} Repeat: true;  
StartTransition Name: "FadeToBlack" Windows: {2,3,5,8} Repeat: true  
Surface: named("Hallway");
```

### 9.6.14 Wait Duration:

Use the Wait command to pause execution of a script, then resume execution after the specified duration. This command is useful for synchronizing scripts with external operations.

## Examples

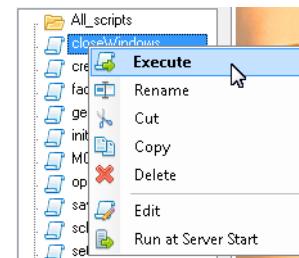
```
Wait Duration: 5 seconds;  
Wait Duration: 10 minutes;  
Wait Duration: 1 hours;  
Wait Duration: 2 days;  
Wait Duration: 4 weeks;
```

## 9.7 Using Scripts

Saved scripts are listed under the **Scripts** tab. If a script contains errors that need to be corrected, **[Invalid]** appears after the name of the script.

To execute a script, double-click its name. Or, right-click on its name and choose **Execute**.

Like other content types, saved scripts can be renamed, copied, grouped, and deleted. You can also have Galileo Server run a script when it starts up. To perform any of these actions, right-click a script name, then choose the desired action.



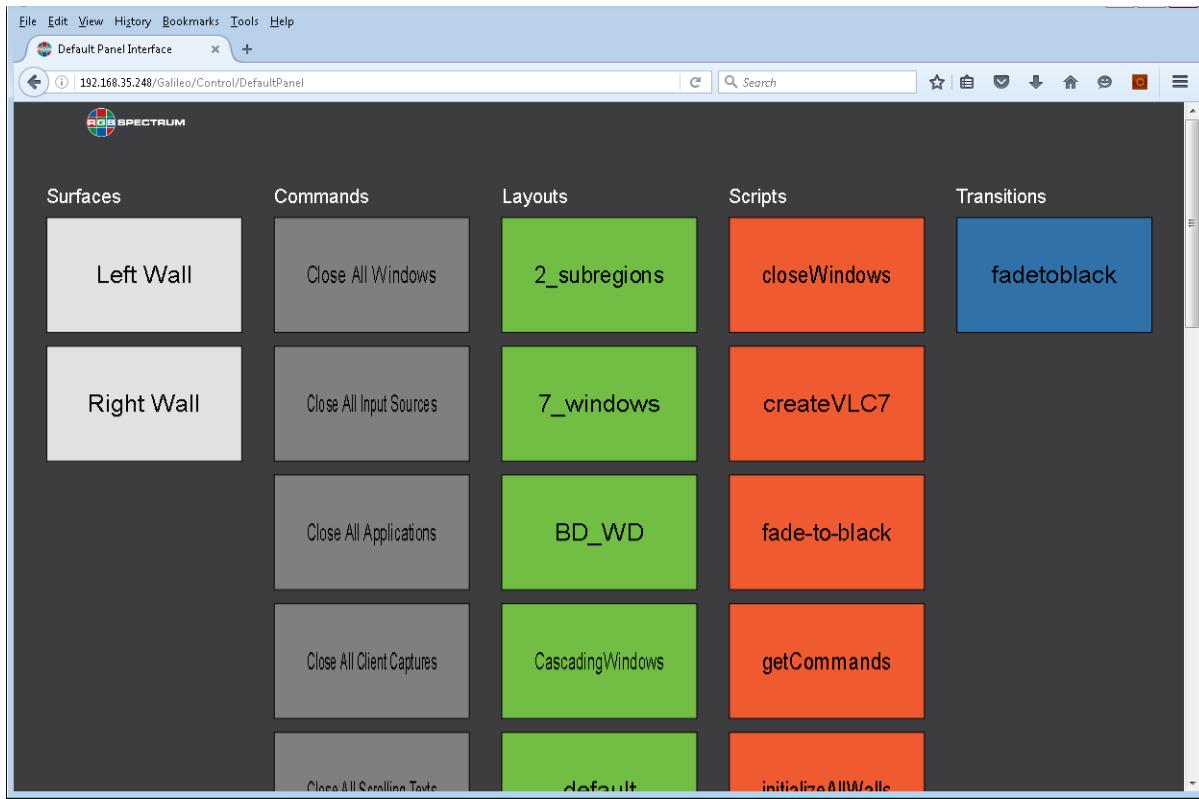
For more information about content groups, refer to [Creating New Content Groups on page 36](#).



To execute a script from the Web Client Control interface, click the script name.

### Note

The ability to execute scripts from the Web Client can be enabled or disabled. Refer to [Managing the Galileo Web Client](#) in [Chapter 15](#) for more information.



**Figure 9-4 Web Client Control Interface with Script Buttons**

A script can affect the current layout, manage content available in Galileo (sources, layouts, schedules, etc.) and communicate with services external to Galileo. Scripts are always executed on the Display Processor and affect all connected clients.

## 9.8 Network Scripting API

Galileo provides developers access to its scripting commands through the Network Scripting API. In this way, programmers can send TCP/IP commands to the Display Processor using the same syntax as they would writing scripts locally in the Galileo Client software.

To use the Galileo Network Scripting API:

- Ensure the Galileo Server is running.
- Send commands to the server on **Port 50001**.
- Use the correct case when issuing commands. (Commands are **CASE-SENSITIVE**.)
- When sending commands with parameter values that are strings, precede all backslash (\) and quotation mark ("") characters within the string with a backslash.
- The command must end with a newline character code (\n).

### Examples

To command the Display Processor to load the layout named "DEFAULT" using the Network Scripting API, use these commands:

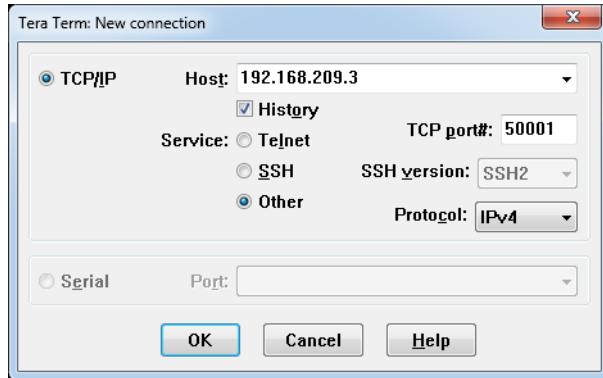
```
Galileo = Connect IP: "192.168.1.200" Port: 50001;
Galileo Send: "Open Layout: \"DEFAULT\"; \n";
```

If the command is successful, the Network Scripting API responds with "**Success -**" followed by the result of the command. If the command is not valid, or fails during execution, the Network Scripting API responds with "**Error -**" followed by an error message to help pinpoint the problem.

### 9.8.1 Connecting to Galileo via TCP/IP

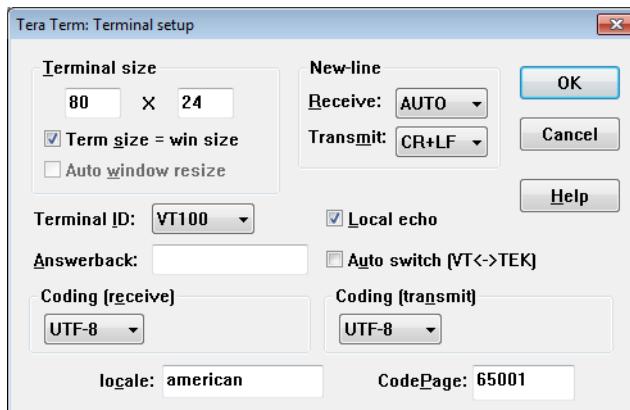
The instructions that follow describe how to establish a TCP/IP connection to Galileo using Tera Term. In actual practice, the Network Scripting API is typically used to interface Galileo with a third-party automation/control system. To accomplish this, you can use these same parameters; the procedural details, obviously, will be different. Refer to the documentation for your automation/control system for specific instructions.

1. Select the **TCP/IP** connection type.
2. Enter the IP address of the Galileo Display Processor in the **Host:** box.
3. Enter **50001** in the **TCP port#:** box.
4. Select the **Other** Service.
5. Select the **IPv4** Protocol.
6. Click **OK**.



**Figure 9-5** Tera Term TCP/IP Connection Settings

7. From the Tera Term main menu, choose **Setup > Terminal...**
8. In the **New-line** group, set **Receive:** and **Transmit:** to **AUTO** and **CR+LF** respectively. (If the **AUTO** setting is not available, set the **Receive:** new-line character to **LF**.)
9. Check the **Local echo** box.
10. Click **OK**.



**Figure 9-6** Tera Term Terminal Setup

To test the connection, type **GetLayoutNames** and press Enter. If the connection is working, Galileo responds with "Success - " followed by a list of layout names.

You can now send any valid script command to the Galileo Display Processor. Note the following:

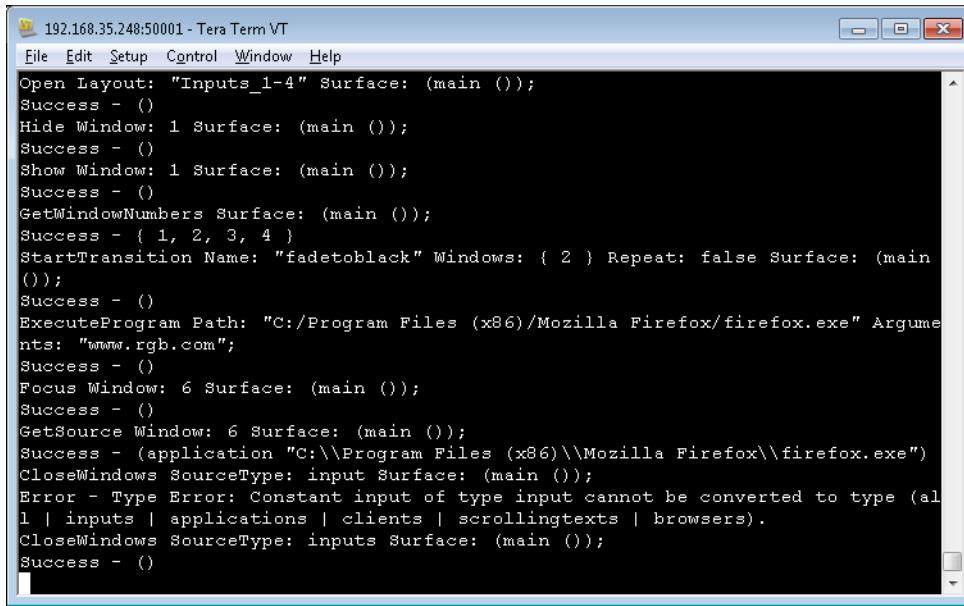
- When sending a single command in this manner, you do not need to follow it with a semicolon (;).
- Command names, parameters, and keywords are **case-sensitive** and must be entered exactly as shown in the preceding examples.

- If you type an invalid command, Galileo responds with:

```
Error - could not parse script.
```

If this occurs, double-check the command syntax and try again.

**Figure 9-7** shows a typical Tera Term TCP/IP session, in which various script commands are sent to the Galileo Display Processor and the responses appear immediately afterward.



```
192.168.35.248:50001 - Tera Term VT
File Edit Setup Control Window Help
Open Layout: "Inputs_1-4" Surface: (main ());
Success - ()
Hide Window: 1 Surface: (main ());
Success - ()
Show Window: 1 Surface: (main ());
Success - ()
GetWindowNumbers Surface: (main ());
Success - { 1, 2, 3, 4 }
StartTransition Name: "fadetoblack" Windows: { 2 } Repeat: false Surface: (main ());
Success - ()
ExecuteProgram Path: "C:/Program Files (x86)/Mozilla Firefox/firefox.exe" Arguments: "www.rgb.com";
Success - ()
Focus Window: 6 Surface: (main ());
Success - ()
GetSource Window: 6 Surface: (main ());
Success - (application "C:\\Program Files (x86)\\Mozilla Firefox\\firefox.exe")
CloseWindows SourceType: input Surface: (main ());
Error - Type Error: Constant input of type input cannot be converted to type (all | inputs | applications | clients | scrollingtexts | browsers).
CloseWindows SourceType: inputs Surface: (main ());
Success - ()
```

**Figure 9-7** Typical Tera Term TCP/IP Session Window

# CHAPTER 10

# SCHEDULES

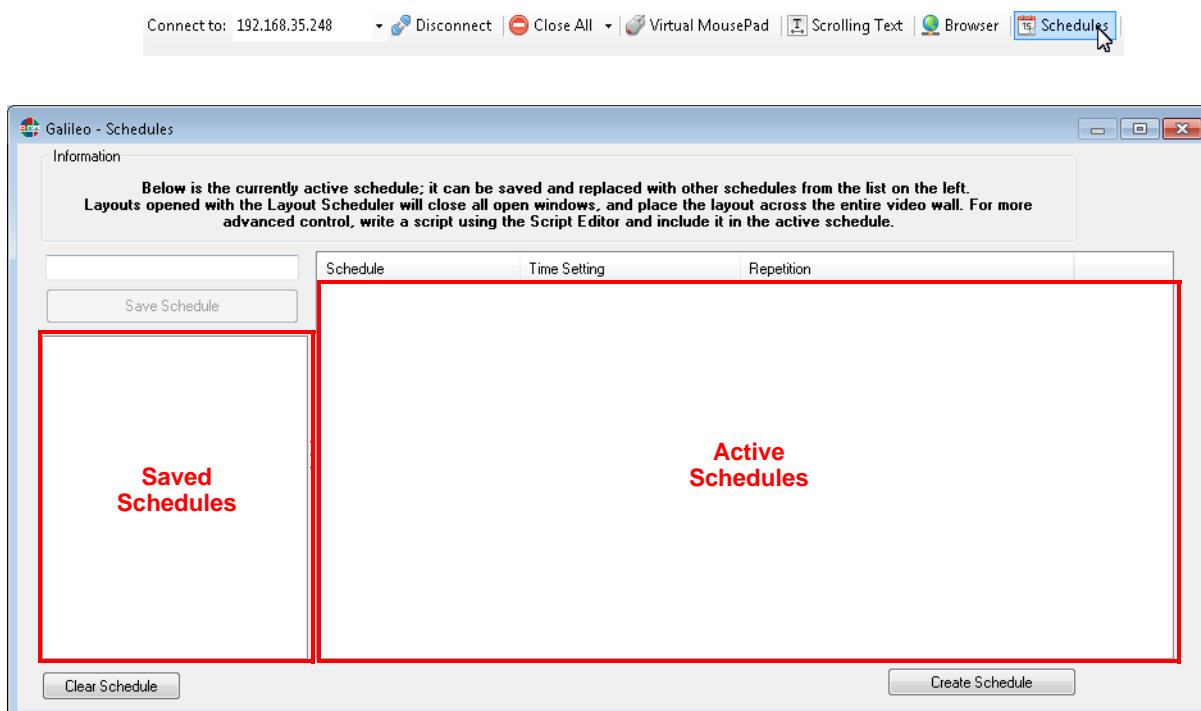
Galileo gives you the ability to create complex task schedules. A **task** is the act of loading a layout or executing a script.

You can schedule a task to be performed one time only, or at regular intervals. The task interval can be as little as a few seconds to as much as a year or more. Multiple schedules can run simultaneously.

## 10.1 Creating a Task Schedule

To create a task schedule:

1. Click **Schedules** in the **Toolbar** to display the Task Scheduler window ([Figure 10-1](#)).



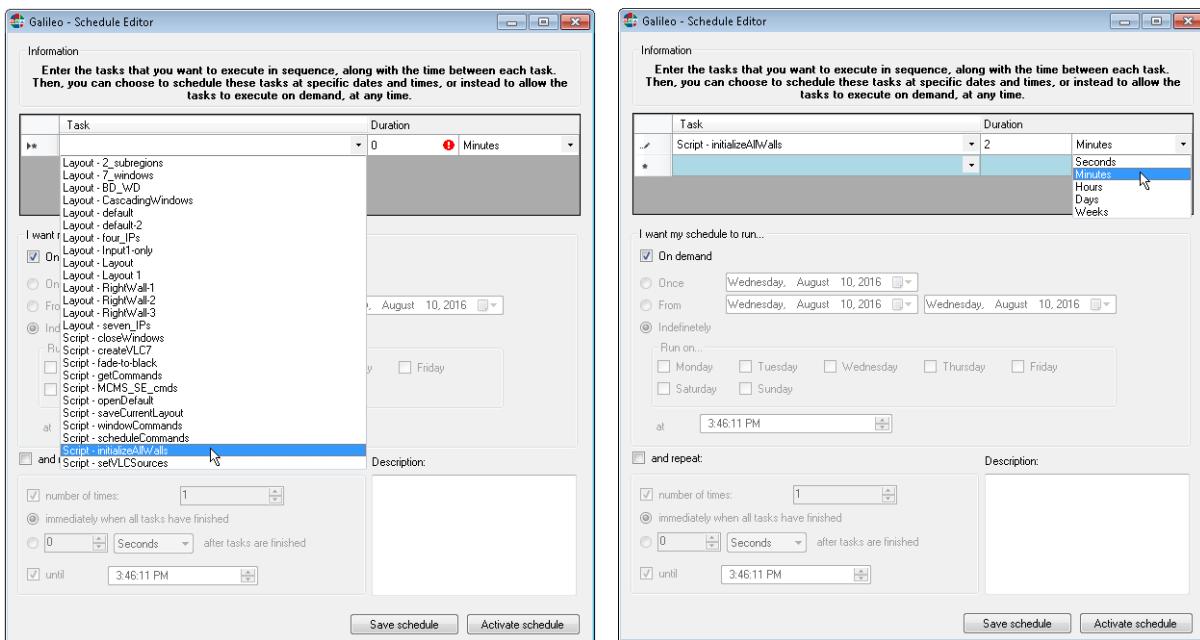
**Figure 10-1** Task Scheduler

2. Click **Create Schedule**.
3. In the **Task** column, choose a layout to launch or a script to run.

**Note**

Layout tasks are supported only in single-surface installations. If you have configured multiple surfaces, write a script to open a layout on a specific surface (refer to [Open Layout: Surface: on page 82](#)). Then, add that script as a task.

4. In the **Duration** column, set the amount of time to wait before performing the next task.



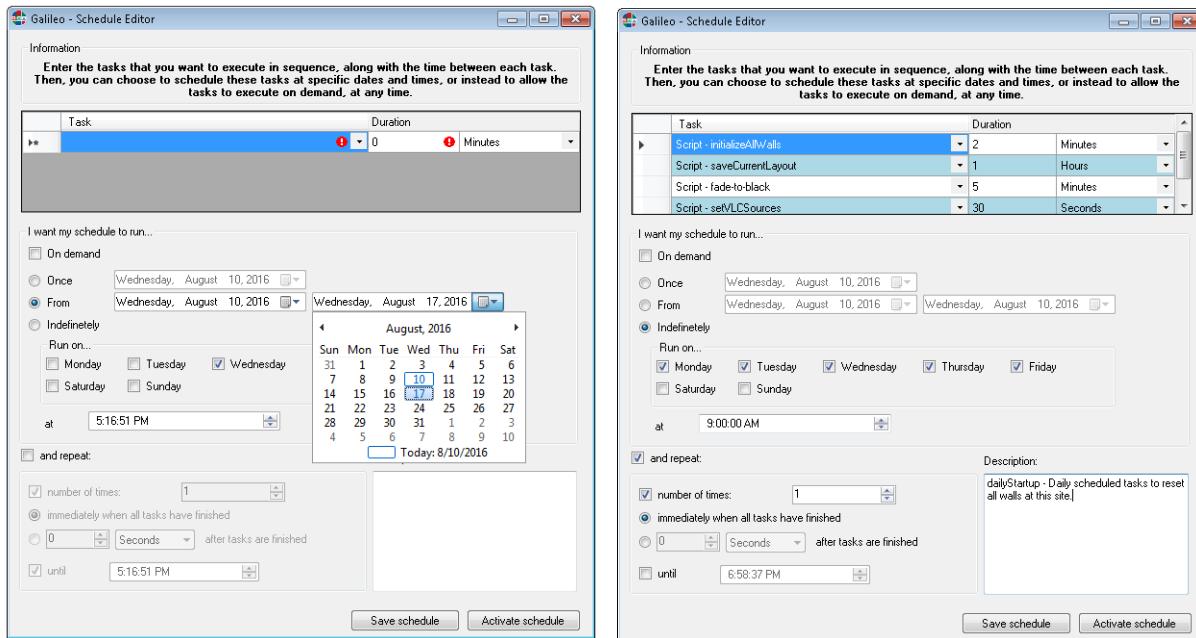
**Figure 10-2 Task Scheduler – Select Task and Wait Duration**

5. Repeat Steps 3 and 4 for each task you want to include in this schedule.
6. In the **I want my schedule to run...** group, specify when to perform the scheduled tasks:
  - **On demand:** Immediately after you activate the schedule;
  - **Once:** Once only, on the date you select;
  - **From:** Daily or on selected days of the week, starting and ending on the dates you select; or
  - **Indefinitely:** Daily or on selected days of the week, until this schedule is cleared (deactivated).

**Run on...:** If you chose the **From** or **Indefinitely** option, select the day(s) of the week on which you want to run the schedule.

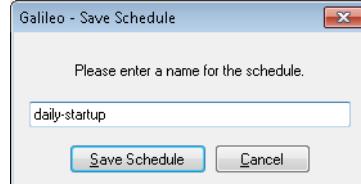
**At:** If you chose the **Once**, **From**, or **Indefinitely** option, select a time of day to execute the scheduled tasks.

The scheduled tasks will be executed while the schedule is active during this time period.



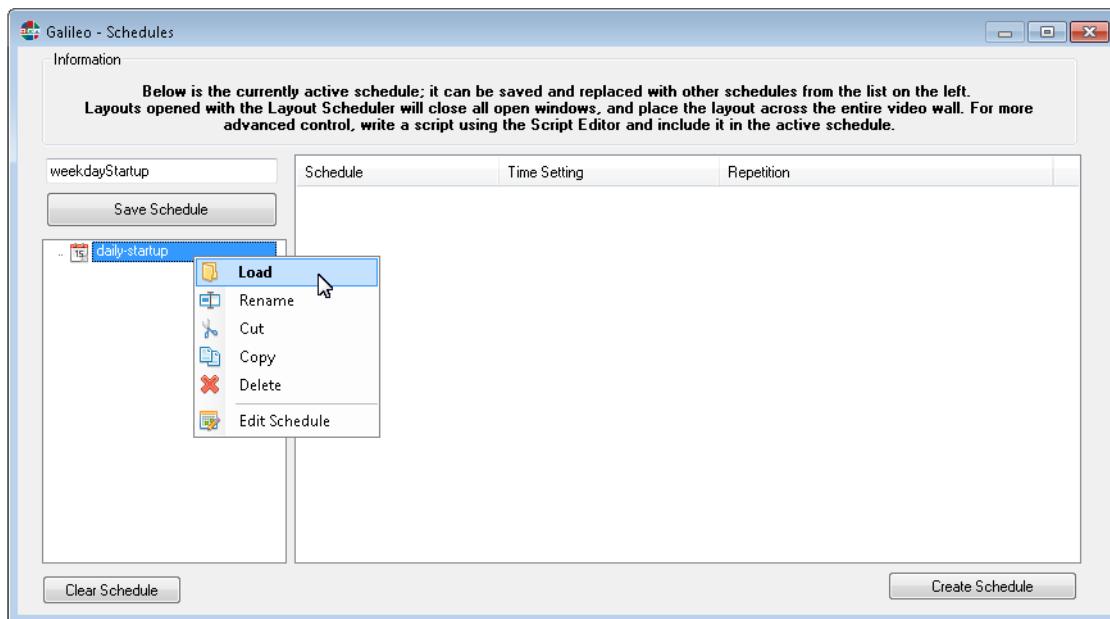
**Figure 10-3 Task Scheduler – Select When to Execute Scheduled Tasks**

7. To loop the sequence of tasks, check the **and repeat:** box. This group of settings provides the following options:
  - Looping the task sequence a fixed number of times;
  - Restarting the task sequence immediately after all tasks have finished, or after waiting for a time period after tasks are finished;
  - Looping the task sequence until a time of day that you select.
8. (Optional) Enter a brief description of the scheduled task sequence in the **Description:** box.
9. (Optional) If you want to activate the scheduled task sequence immediately without saving it, click **Activate Schedule**. (Note that you cannot add the schedule to a content group until you save it.) The scheduled tasks will be executed according to your choices in Step 6.
10. Click **Save Schedule**.
11. Type a descriptive name for the schedule in the box in the upper-left corner of the **Schedules** window. Then, click **Save Schedule** again.



## 10.2 Loading (Activating) a Schedule

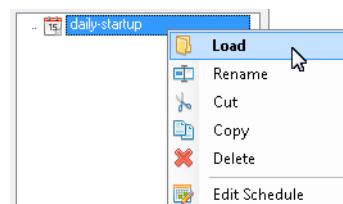
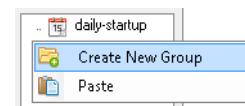
Saved schedules appear in the list on the left-hand side of the Task Scheduler window.



**Figure 10-4 Task Scheduler – Schedule Saved**

Like other content types, schedules can be renamed, copied, grouped, and deleted. For more information about content groups, refer to [Creating New Content Groups on page 36](#).

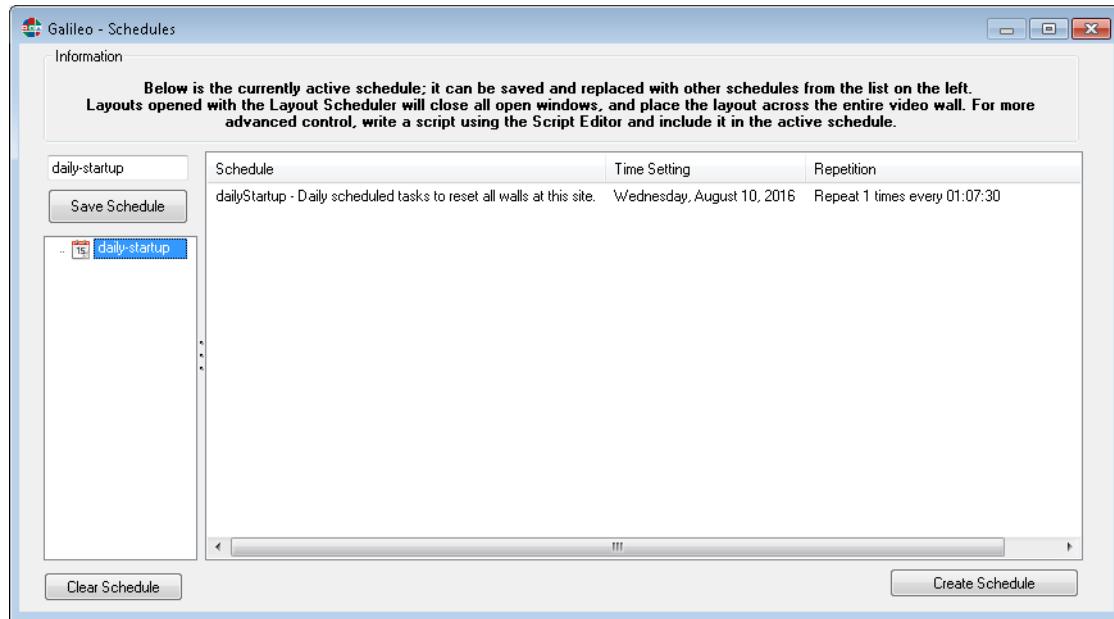
A saved schedule is not active until it is loaded. The entries shown on the **right-hand side** are loaded. To load a schedule, right-click on its name in the saved schedule list and select **Load**. Or, double-click on the schedule name.



To deactivate all task schedules, click **Clear Schedules**.

**Tip**

You can also save, activate, and clear schedules using script commands. Refer to [Schedule Commands on page 100](#) for more information.



**Figure 10-5 Task Scheduler – Schedule Activated**

## CHAPTER

# 11

# TRANSITIONS

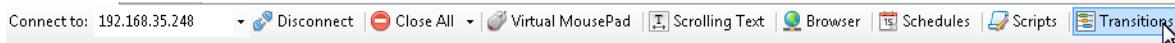
**Note**

Transitions are available in the Galileo **Advanced** bundle. Transitions can only be applied to hardware or virtual **Input** windows.

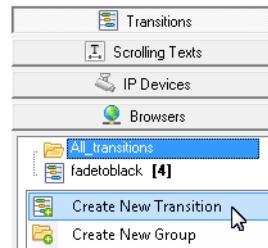
Transitions allow you to create complex, multi-window animation effects on the Video Wall.

### 11.1 Creating a New Transition

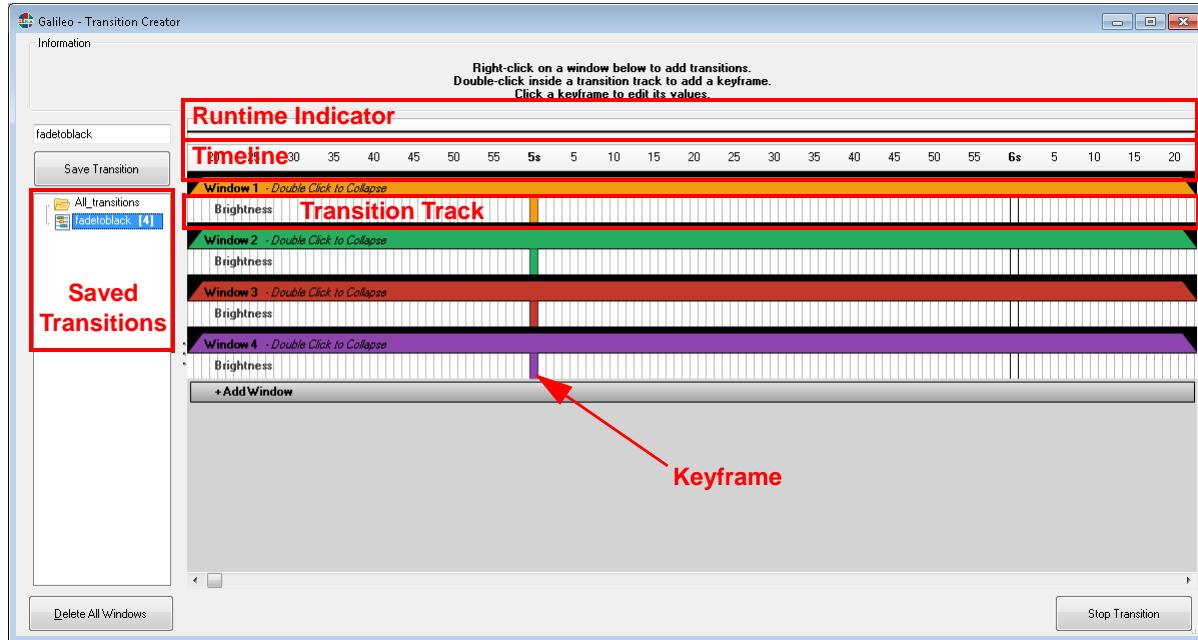
To create a new transition, click **Transitions** in the **Toolbar**.



Or, under the **Transitions** tab, right-click anywhere but on a saved transition name and select **Create New Transition**.



Either action displays the **Transition Creator** window, shown in [Figure 11-1](#).

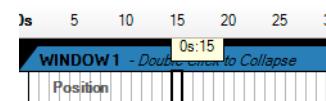


**Figure 11-1 Transition Creator**

1. Right-click **WINDOW 1** to see a list of transition types that you can apply to an input window.

Add Position Transition  
Add Cropping Transition  
Add Opacity Transition  
  
Add Rotation Transition  
Add Rotation Point Transition  
Add Input Transition  
  
Add Brightness Transition  
Add Contrast Transition  
Add Hue Transition  
Add Saturation Transition  
  
Copy Window  
Delete Window

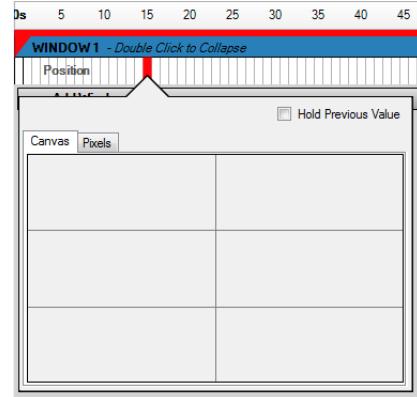
2. Select a transition type to add to the window. When you do, a new transition track is added to the window.
3. Double-click on any rectangle to add a new keyframe at that timeline position. (A **keyframe** identifies a point at which a transition starts or ends.)



An indicator shows the keyframe location, in the form of **[Minutes]m[Seconds]s:[Frame]**; for example, **5m37s:40**.

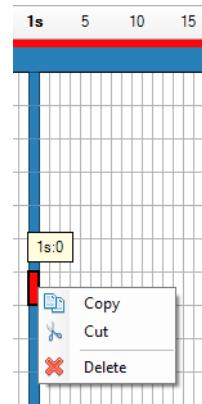


4. Click on the keyframe to edit its properties (the next section, [Transition Types](#), describes these);



**- OR -**

Right-click a keyframe to copy, cut, or delete it;



**- OR -**

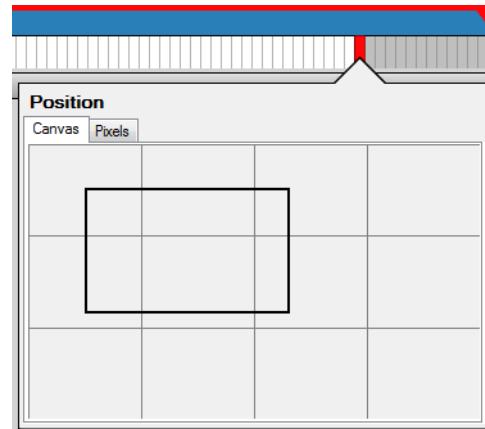
Click and drag a keyframe to move it to another location on the timeline.

## 11.2 Transition Types

### 11.2.1 Position

Allows you to specify, either by using the canvas or by providing exact pixel values, the window position and size at that keyframe.

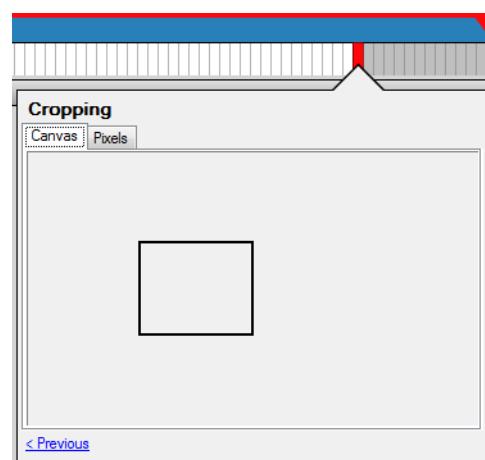
These controls work similarly to those for [Positioning and Sizing Windows](#).



### 11.2.2 Cropping

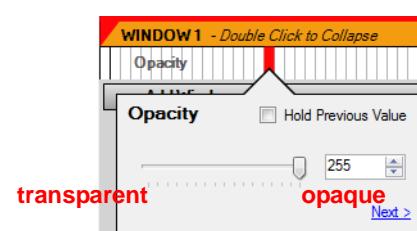
Allows you to specify, either by using the canvas or by providing exact pixel values, what part of the source you would like to be visible.

These controls work similarly to those for [Cropping](#) an input.



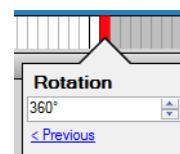
### 11.2.3 Opacity

Allows the source to fade in or fade out. A value of 0 will cause the source to be entirely transparent, while a value of 255 causes it to be fully visible.



### 11.2.4 Rotation

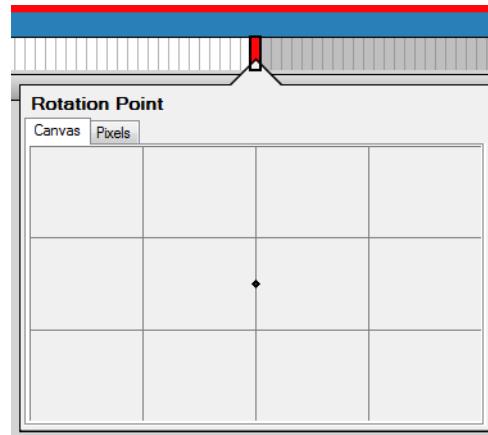
Allows the source to rotate. Use positive values for clockwise rotation and negative values for counter-clockwise rotation. Use large values for multiple rotations; for example, 1080 for three clockwise rotations.



### 11.2.5 Rotation Point

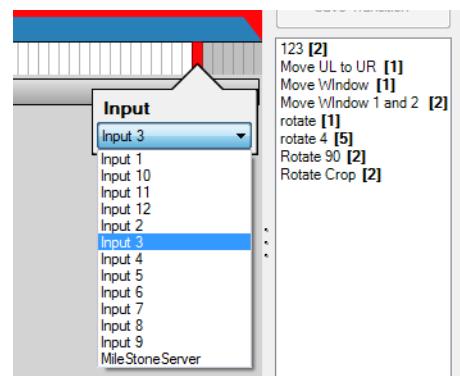
Allows you to specify around which point on the video wall rotation transitions take place. All subsequent rotations will use the specified rotation point until a keyframe specifying a different one is encountered.

If no rotation point is specified, the window will spin around its own center. However, by specifying a rotation point you can have the window rotate around that point instead.



### 11.2.6 Input

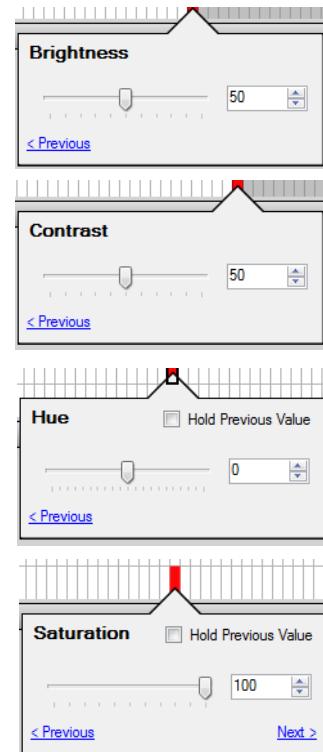
Allows you to change the source being shown in that window mid-transition. There is no smooth transition between sources; the switch occurs immediately at the keyframe where specified.



### 11.2.7 Brightness, Contrast, Hue, Saturation

These allow you to adjust an analog or digital source's brightness, contrast, hue, and saturation. For brightness, contrast, and saturation, the adjustment range is 0 to 100; the default is 50.

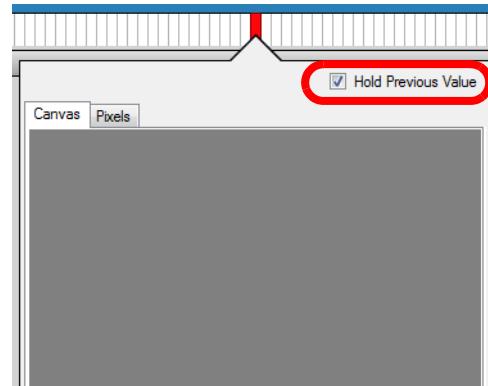
For hue, the adjustment range is -180 to 180; the default is 0.





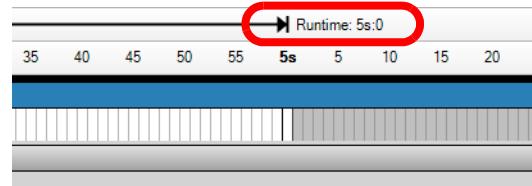
### 11.3 Hold Previous Value

Check the **Hold Previous Value** box to cause the selected keyframe to retain the same settings as the keyframe that came before it. This is useful in a situation where you may want to move a window from Position A to Position B, wait one second, and then continue from Position B to Position C. In this case, the third keyframe on the Position track would be set to **Hold Previous Value** as below, and will gray out its controls as they cannot be used when **Hold Previous Value** is selected.



### 11.4 Setting Runtime

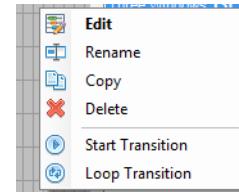
The runtime indicator above the transition chart allows you to adjust the end time of your transition. By default, it automatically adjusts itself to be the time of the last keyframe in the transition. However, by clicking and dragging the runtime indicator, you can have the transition end later. This is useful for transitions that are meant to be looped, as it allows the transition to stay in its ending position for a set amount of time before the loop restarts. Below we've added two seconds of pause before the loop would restart.





## 11.5 Starting vs. Looping

You have two options for initiating a transition: **Start** or **Loop**. With **Start**, the transition will run once and then stop. With **Loop** the transition will continue running until you click **Stop Transition**.

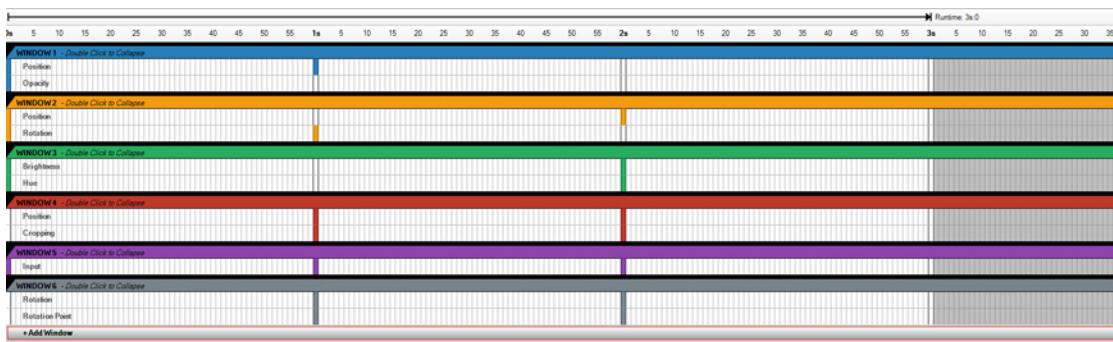


### Note

Transitions are not reflected in Galileo Client or Galileo Web Client window. When you click on an **Input** window in Galileo Client after a transition ends, the window returns to its state prior to the transition.

## 11.6 Multi-Window Transitions

Click **Add Window** to add multiple windows to be transitioned together. Before running multi-window transitions, ensure that you have opened as many video input windows as are required by your transition. If fewer are open, the transition will work with as many as it can, and if more than are required are open the transition will take only the amount it needs.



When a transition is saved, it will place an indicator next to the transition's name showing how many windows are required for that transition to run properly.



When you start a script using the **StartTransition** script command, you can specify the windows in which you want the transition to run; for example:

```
StartTransition Name: "Transition 1" Windows: {1, 3, 5};
```

For a complete list of scripting commands and their usage, refer to [Chapter 9, Scripts](#).

# CHAPTER 12

# BROWSERS AND SCROLLING TEXT

This chapter describes how to use Galileo Client to display web pages, local media files, and scrolling text messages on the video wall.

**Note**

Browsers and Scrolling Text are available in the Galileo **Plus** and **Advanced** bundles.

## 12.1 Browser

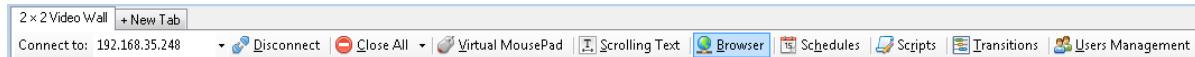
Galileo Client provides an integrated, fully-featured WebKit browser as an alternative to using [Application Shortcuts](#) to other web browsers. The advantage to using the integrated Browser is that it supports advanced features such as opacity, zoom, and the ability to hide window decorations and scrollbars.

### 12.1.1 Using the Browser Editor

Use the Browser Editor to open web pages and local media files on the Galileo Display Processor.

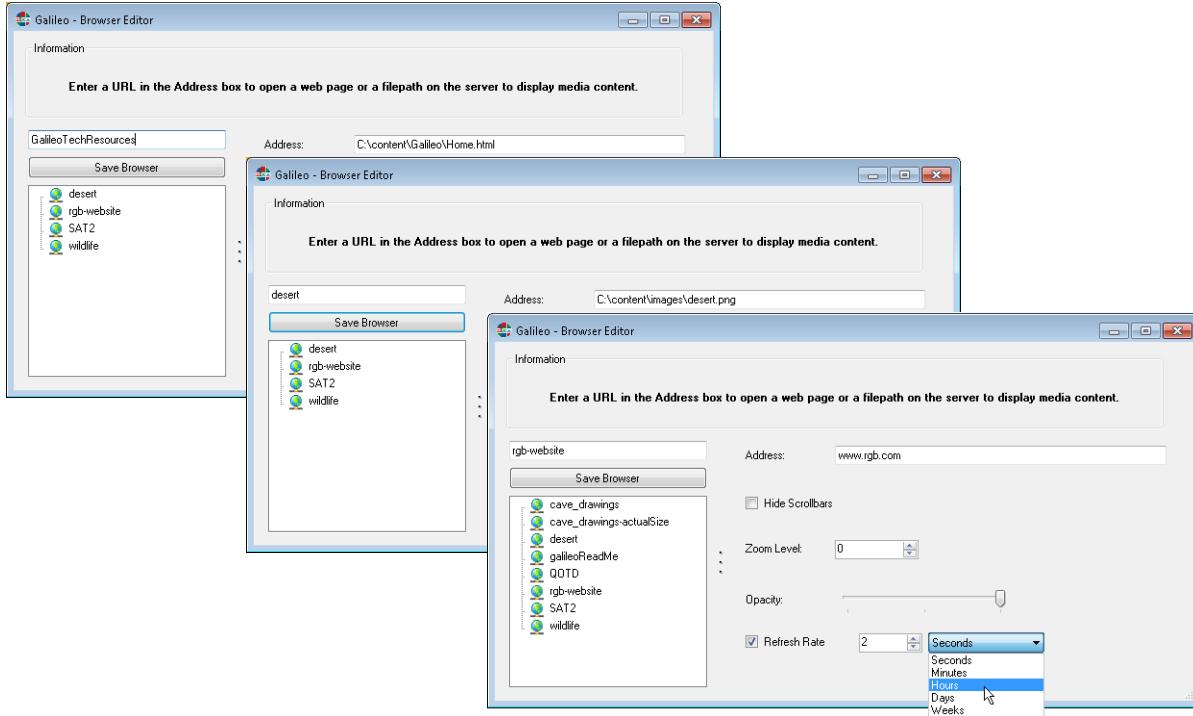
To use the Browser Editor:

1. Click **Browser** in the **Toolbar**.



2. Enter a URL to a web site, or the path to a local image, text, HTML or PDF file on the Galileo Display Processor.
3. Set the **Hide Scrollbars**, **Zoom Level**, and **Opacity** options as desired. The **Zoom Level** range is -10 to 10 (approximately 25 percent to 500 percent of actual size).
4. When displaying a web page that changes frequently, you can have the browser refresh the page at regular intervals. To do this, check the **Refresh Rate** box and set the interval using the spin control and drop-down menu.
5. Enter a descriptive name for this browser window.

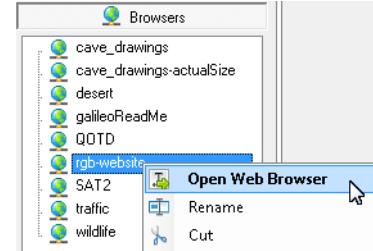
**6. Click Save Browser.**



**Figure 12-1 Browser Editor**

### 12.1.2 Displaying a Browser

Under the **Browsers** tab, click on a browser name, then right-click and select **Open Web Browser**. Or, simply double-click on the browser name.



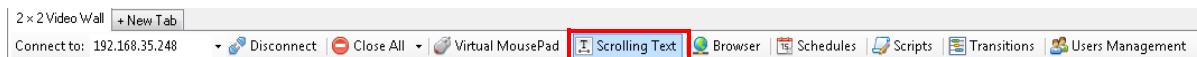
## 12.2 Scrolling Text

With Galileo Client, you can create scrolling text messages on the video wall. You can specify a text file or RSS feed as the scrolling text source, or simply enter the text itself.

### 12.2.1 Using the Scrolling Text Editor

To create a new scrolling text object:

1. Click **Scrolling Text** in the **Toolbar**.

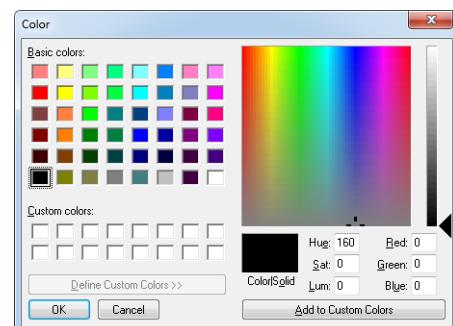


2. Select a scrolling text object **Type: Text, RSS, or File**.
3. Enter one of the following:
  - ◆ If you selected **Text** in Step 2, enter the text you want to display.
  - ◆ If you selected **RSS** in Step 2, enter the URL of the RSS feed you want to display.
  - ◆ If you selected **File** in Step 2, enter the path to a text file containing the text you want to display. (The text file must reside on the Galileo Display Processor.)

#### Note

The scrolling text cannot contain "double quotes."

4. Click **Choose Font...** and select the font name and size you would like to use. (The defaults are Arial and 24-point.)
5. Click the rectangle to the right of **Text Color:** to display the Color Picker dialog box.
6. Click one of the 48 **Basic** color swatches to select that color;
  - OR –
  - Create a **Custom** color using the custom color picker and slider controls;
  - OR –
  - Enter **Hue/Sat/Lum** or **Red/Green/Blue** values for your custom color.
7. Optionally, click **Add to Custom Colors** to save your custom color for later use.
8. Click **OK**.

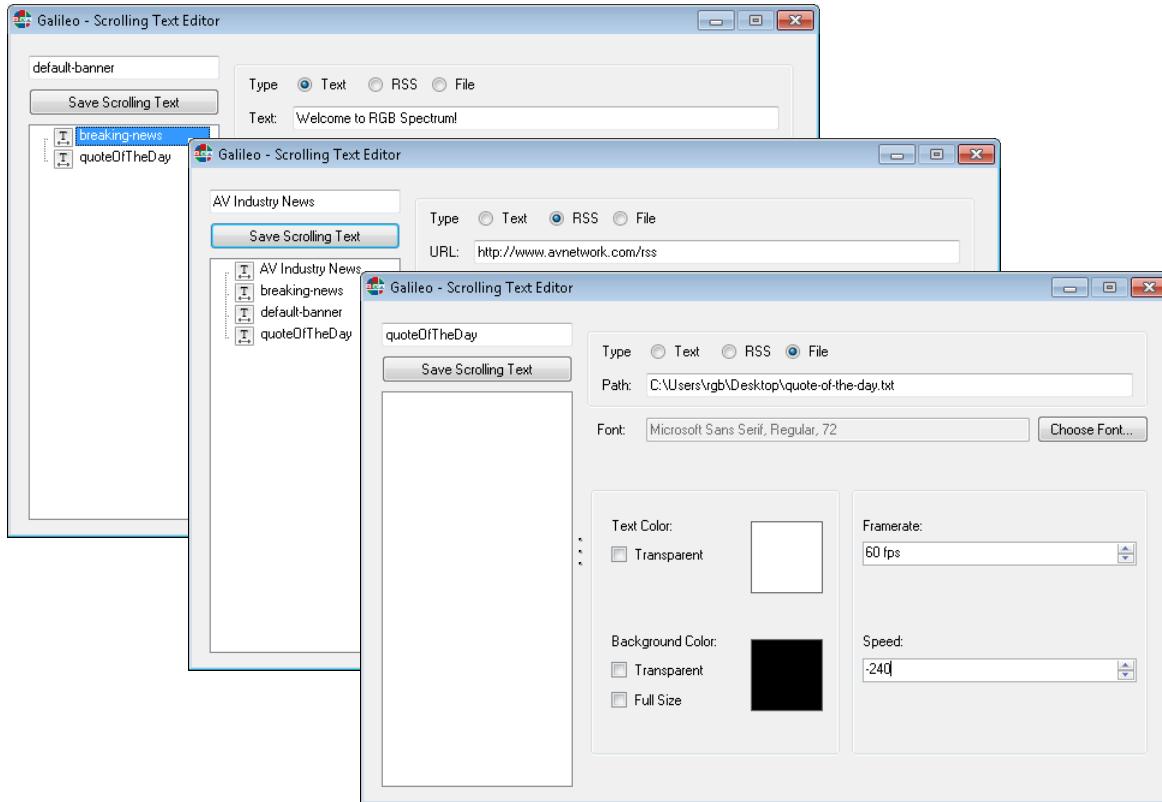


9. Repeat Steps 5 through 8 to set the **Background Color**. Or, check the **Transparent** box to render the text with no background.
10. If you chose a background color, check the **Full Size** box to set the background width to the width of the surface. Clear the **Full Size** check box to set the background width to the width of the scrolling text object.
11. Set the **Frame Rate** as desired. There are two ways to do this: use the spin controls, or type the numeric value **only** (without the "fps" unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.  
The **Frame Rate** controls how often the scrolling text display is refreshed. Higher values produce smoother motion.
12. Set the **Speed** as desired. There are two ways to do this: use the spin controls, or type the numeric value **only** (without the "pixels/sec" unit designation). After typing a value, press Tab or Enter (or click on another entry box) to apply it.  
The **Speed** controls how fast and in which direction the scrolling text moves across the surface.  
To stop the scrolling text, set the **Speed** to 0 pixels/sec.  
If you want the text to scroll from left to right, set the **Speed** to a positive value.

**Example**

If the **Frame Rate** is 30 fps and the **Speed** is -360 pixels/sec, the scrolling text moves from right to left in 12-pixel increments.

13. Enter a descriptive name for this scrolling text object.
14. Click **Save Scrolling Text**.



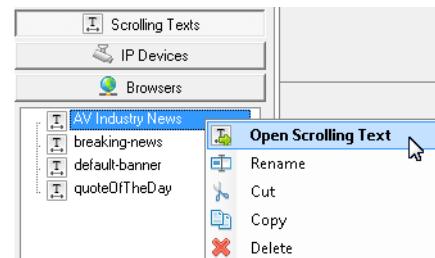
**Figure 12-2 Scrolling Text Editor**

**Note**

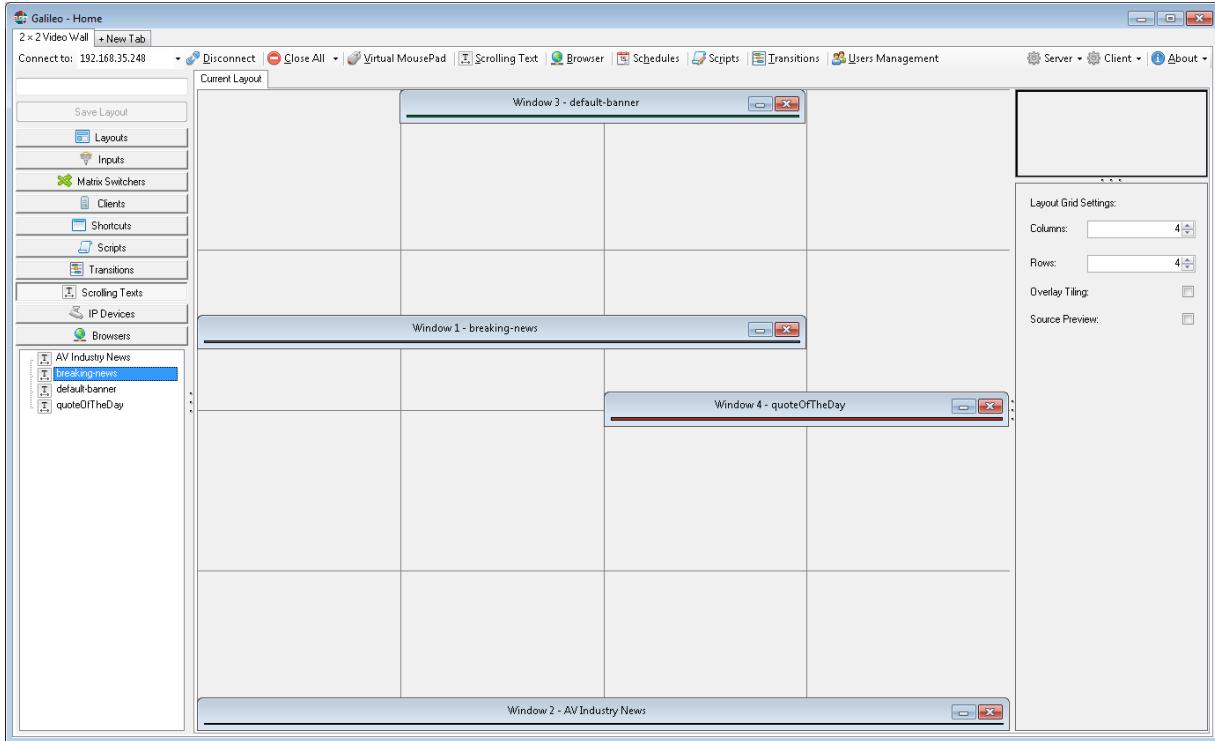
Some fonts installed on the Display Processor may not be supported. If you choose a font that does not display correctly, choose another one such as Microsoft Sans Serif (the default).

### 12.2.2 Displaying a Scrolling Text Object

Under the **Scrolling Texts** tab, click on a scrolling text name, then right-click and select **Open Scrolling Text**. Or, simply double-click on the scrolling text name.



You can move and re-size a scrolling text window, just as you can any other type of window. If you resize a scrolling text window horizontally, that changes the width of the scrolling area. Re-sizing a scrolling text window vertically has no effect. See [Figure 12-3](#).



**Figure 12-3 Scrolling Text Windows on the Virtual Wall**

# CHAPTER 13

# MANAGING GROUPS AND USERS

## Note

Managing Groups and Users is available in the Galileo **Advanced** bundle.

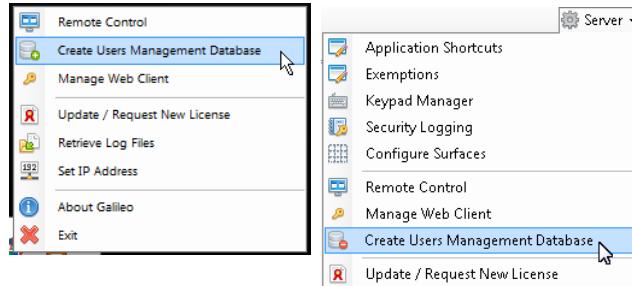
By default, Galileo Server gives unrestricted access to its functionality. All clients that are able to connect to the server can affect all aspects of the video wall. To change this, you can create named users and user groups that can access only certain Galileo features, functions, and content types or groups.

To start managing user restrictions:

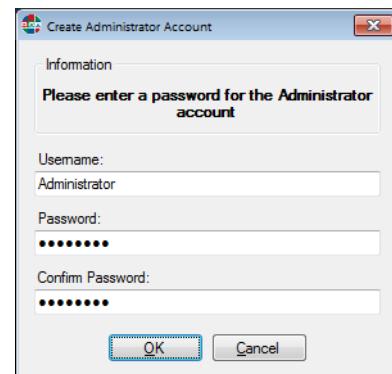
1. On the Display Processor Desktop, right-click the Galileo Server tray notification icon and select **Create Users Management Database**;

– OR –

Select **Create Users Management Database** from the Galileo Client **Server** menu.



2. Enter a password for the Administrator account. Use the default username of **Administrator**.



## Note

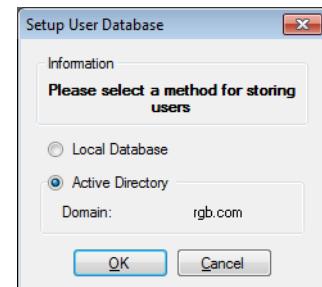
**Passwords are case-sensitive**, but can be of any non-zero length and contain any character.



3. Click **OK**.

## 13.1 Active Directory

The Galileo **Security Pack** includes built-in support for Microsoft Active Directory. Galileo will automatically detect whether the Display Processor is in a domain, and prompt you to use Active Directory when creating the Users Management Database. If you do not see this window, it is because Galileo could not detect that it belongs in a domain in the network.



If you select **Active Directory**, you may choose an Active Directory user to become the User Management Administrator for Galileo. This user will have the responsibility to add any other users who should be allowed to access Galileo with their Active Directory credentials, as well as which group they belong to, and which rights they possess. By default, the username entered here is that of the currently logged-in user, and the password is the same as the Active Directory password.

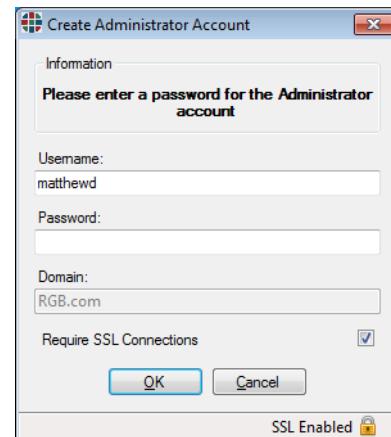
**Note**

The user you select to be the Galileo Administrator does **not** have to be an Active Directory Domain Administrator.

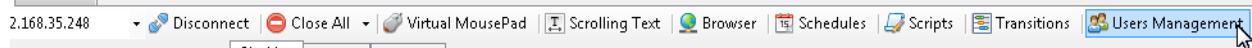
If you select **Local Database**, Galileo Server will create and maintain its own user database, separate from the Active Directory database. Using Galileo Client requires a separate username and password in this case.

### 13.1.1 Secure Socket Layer (SSL) Connections

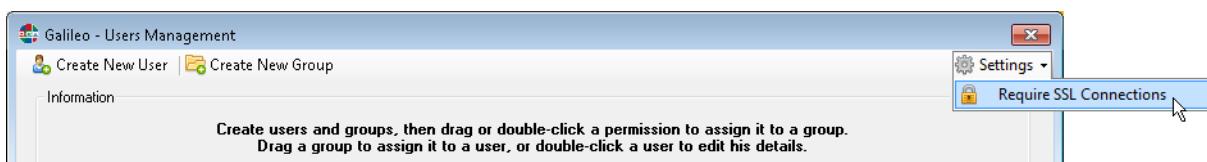
Galileo supports authenticating to the Active Directory server using the Lightweight Directory Access Protocol over SSL (LDAPS). When creating the Users Management Database, you can choose to **Require SSL Connections** which will force all client connection authentication requests to be sent over LDAPS on TCP port 636. In order for this to work, the Active Directory domain must have enabled SSL connections and provide a valid SSL Certificate to the domain client computers.



Any user possessing the **Users Management** right can change this setting by selecting **Users Management** from the **Toolbar**.



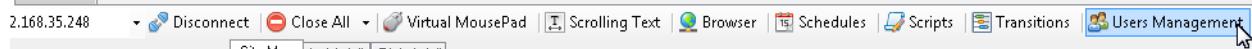
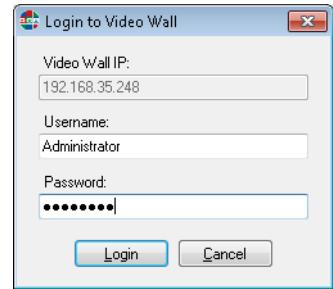
Then, under **Settings**, clear the **Require SSL Connections** selection. It can also be re-enabled the same way. When you select **Require SSL Connections**, Galileo prompts the user for their Active Directory username and password in order to verify that the SSL connection is functioning. If it is unable to validate using SSL, the feature will not be turned on to prevent unintentionally locking users out of Galileo.

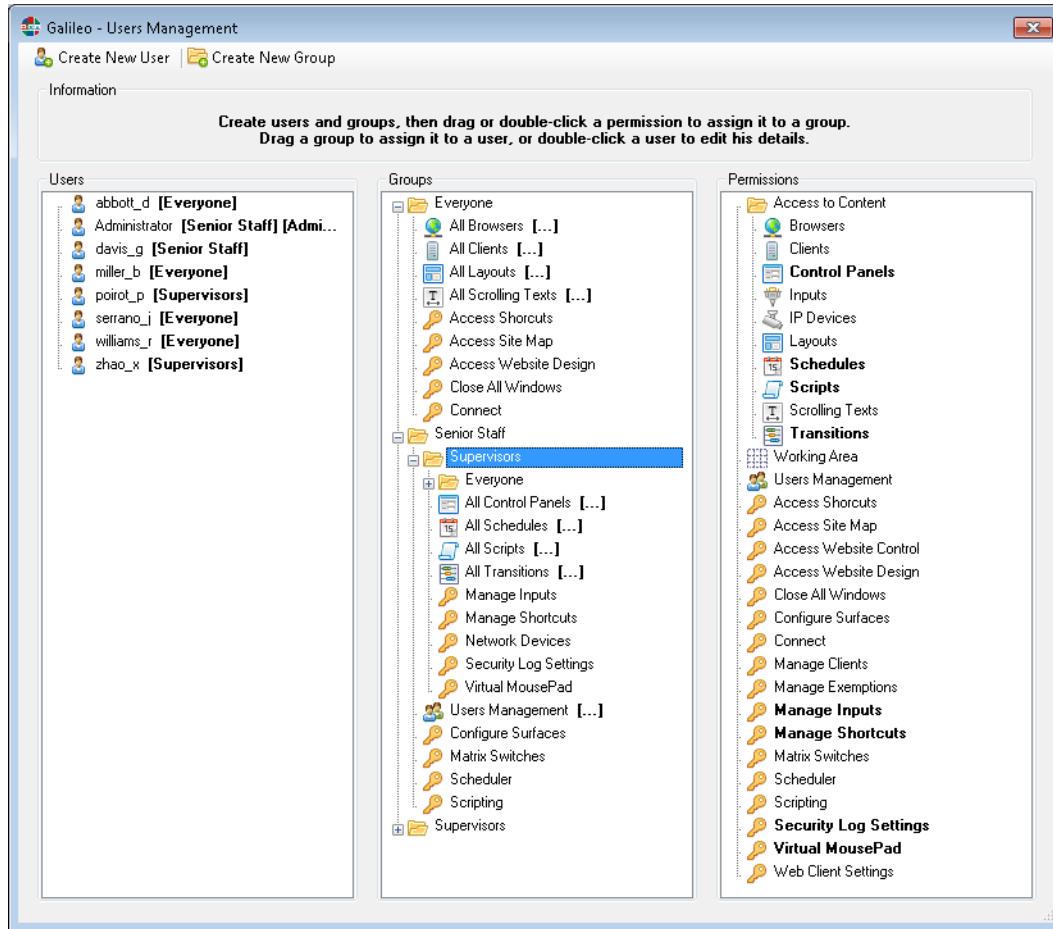


## 13.2 User Login

All configuration of the Users Management functionality is done through the Galileo Client. Accessing the server requires an authorized username and password to connect. For the moment, the only user that exists is the **Administrator**.

After connecting to the video wall, you will see a new **Users Management** button in the **Toolbar**. Click this button to create new users and grant them permission to interact with different aspects of the video wall. This button is only available to Administrator and other users with the **Users Management** permission.





**Figure 13-1** Users Management Page



### 13.3 Managing User Groups

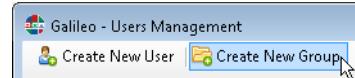
Before adding users to the Users Management database, you must create **user groups** and assign permissions to each group. Group names must be unique across groups. You can create user groups that contain other user groups.

#### Tip

Begin by creating a user group named "Everyone," "All Users," or something similar. Then, grant permissions that you want everyone to have to that group.

To define higher levels of access to Galileo features, create other user groups, then copy/paste the "Everyone" group to those groups (which will inherit the "Everyone" group permissions). Then, add more permissions as desired.

To create a user group, select **Create New Group**.



Enter a unique, descriptive name for the user group, then click **Save Group**.



Names can contain spaces, and some other special characters. The following characters are not permitted:

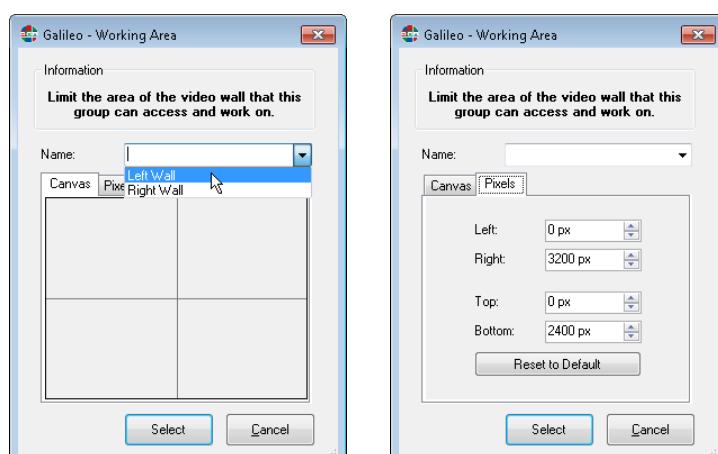
\ / : \* ? " < > | ,



### 13.3.1 User Group Permissions

There are 20 different permissions that can be assigned to a user group. Permissions allow access to various video wall management tasks. [Table 13-1](#) describes these.

**Table 13-1 User Access Permissions**

Access Permissions	Description
Access to Content	Allows "read-only" access to <a href="#">Browser</a> objects, Clients (Remote Hosts), Custom Web Client Control Panels, Inputs, IP Devices, <a href="#">Layouts</a> , <a href="#">Schedules</a> , <a href="#">Scripts</a> , <a href="#">Scrolling Text</a> objects, and <a href="#">Transitions</a> . You can allow access to all content items of a given type, or specific content groups if any exist.
Working Area	<p>The Working Area available to a group can be configured like <a href="#">Positioning and Sizing Windows</a>, source <a href="#">Cropping</a>, and setting the <a href="#">Allowed Region</a> of a Remote Host desktop:</p> <ul style="list-style-type: none"> <li>◆ In <b>Canvas</b> mode, by dragging the edges or the corners with your mouse, you can select the area you want to allow. You can also use a grid to help you position the rectangle. The grid appears by scrolling up or down when the mouse is hovering over the rectangle area.</li> <li>◆ In <b>Pixels</b> mode, you can specify the exact position to allow, across the whole video wall's resolution.</li> </ul> <p>If multiple surfaces exist, you can also allow access to a only a specific surface.</p> 
Users Management	Manage users, groups, and permissions.
Access Shortcuts	Clear application windows, and to launch executables on the video wall.
Access Site Map	Allows access to the Site Map, if multiple surfaces exist.
Access Website Control	Allows access to the Web Client <a href="#">Default Control Panel</a> which gives users access only to predetermined Layout / Script / Close All Windows buttons.
Access Website Design	Allows access to the Web Client <a href="#">Designer</a> which enables control of the Video Wall from a web browser.
Close All Windows	Close all the windows on the video wall, a sublayout, or a specific surface.
Configure Surfaces	Allows access to the <b>Server &gt; Configure Surfaces</b> command.
Connect	Allows connection to the Galileo Display Processor/Server.
Manage Clients	Allows the group to manage Remote Clients/Hosts.

**Table 13-1 User Access Permissions (Continued)**

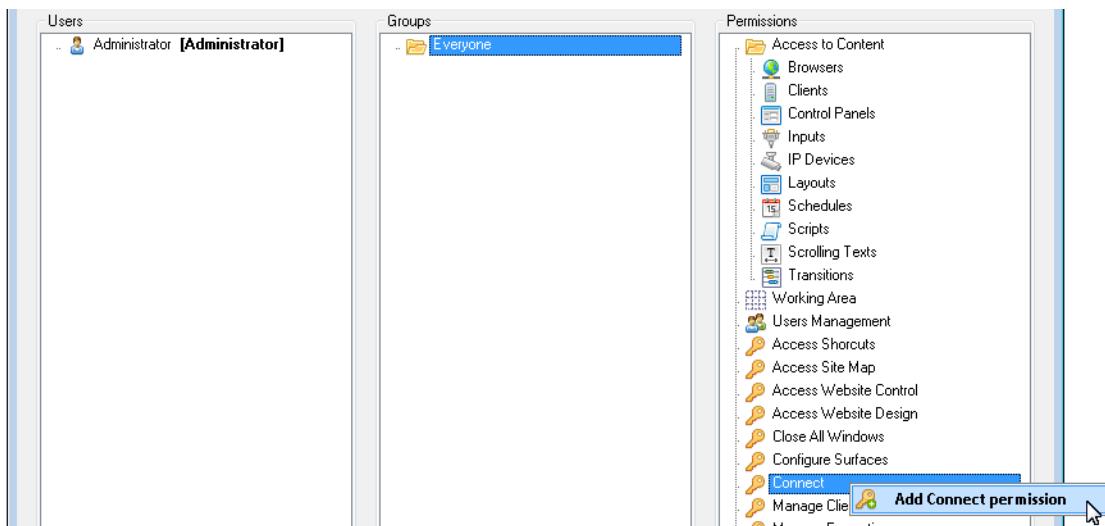
Access Permissions	Description
Manage Exemptions	Choose the applications that are excluded from a Close All Windows action.
Manage Inputs	Create hardware and virtual input windows, and edit the inputs.
Manage Shortcuts	Choose the shortcuts that appear in the Shortcuts tab.
Matrix Switches	Allows the group to manage matrix switchers and configure content distribution.
Scheduler	Schedule the opening of layouts and execution of scripts.
Scripting	Save, edit, and execute scripts.
Security Log Settings	Specify which events are recorded in the Security Log.
Virtual MousePad	Allows the group to send mouse and keyboard input to the Display Processor.
Web Client Settings	Allows the group to customize the Galileo Web Client (refer to <a href="#">Managing the Galileo Web Client on page 146</a> ).

### ADDING A PERMISSION

To add a permission to a user group, do one of the following:

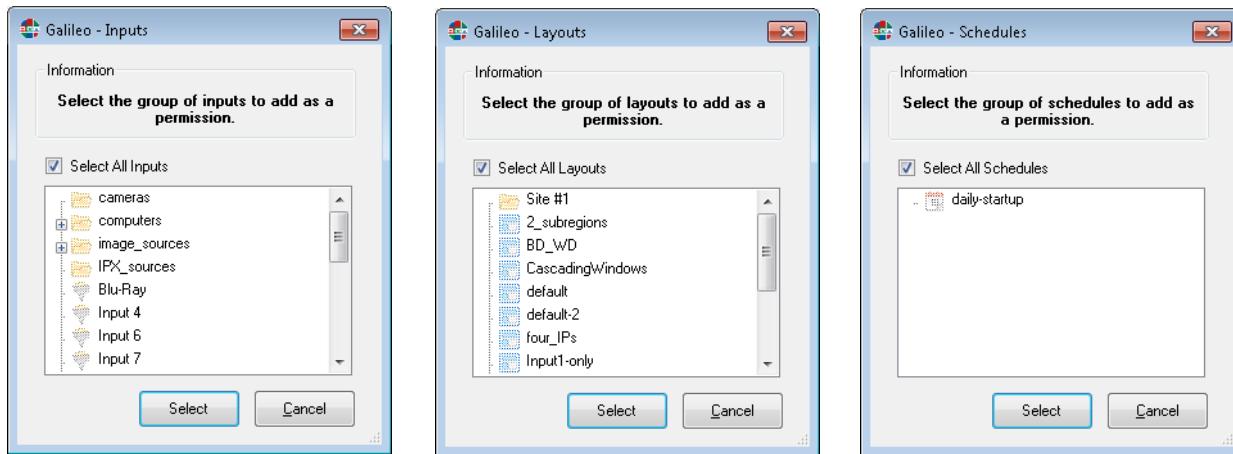
- ◆ Click and drag an item in the **Permissions** column to a group in the **Groups** column;
- ◆ Click a group name in the **Groups** column to select it. Then, double-click an item in the **Permissions** column; or
- ◆ Click a group name in the **Groups** column to select it. Then, right-click an item in the **Permissions** column and select **Add [permission\_name] permission**.

As you add permissions to a group, those permissions appear in **bold type** in the **Permissions** column.

**Figure 13-2 Users Management – Adding a Permission to Group**

## SETTING CONTENT GROUP PERMISSIONS

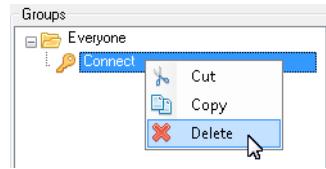
For content types that have been organized into groups (refer to [Content Grouping on page 36](#)), you can grant permission to the user group to access all content items of a given type – all Inputs, all Layouts, or all Schedules, for example – or only a specific content item or content group. See [Figure 13-3](#).

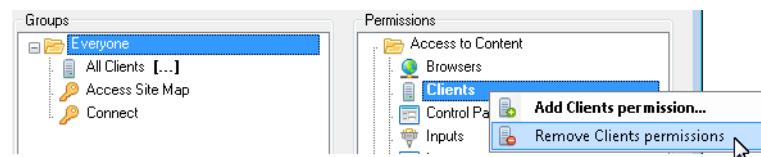


**Figure 13-3** Users Management – Setting Permissions for Accessing Grouped Content

## REMOVING A PERMISSION

To remove a group permission, do one of the following:

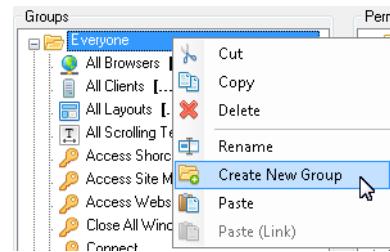
- ◆ Right-click the permission name in the **Groups** column and choose **Delete**;
- 
- A screenshot of a Windows context menu with three options: "Cut", "Copy", and "Delete". The "Delete" option is highlighted with a blue selection bar.
- ◆ Click a group name in the **Groups** column to select it. Then, double-click a highlighted item in the **Permissions** column; or
  - ◆ Click a group name in the **Groups** column to select it. Then, right-click an item in the **Permissions** column and select **Remove [permission\_name] permissions**.



### 13.3.2 Nesting User Groups

You can nest user groups; that is, create groups that include other groups thereby inheriting their permissions.

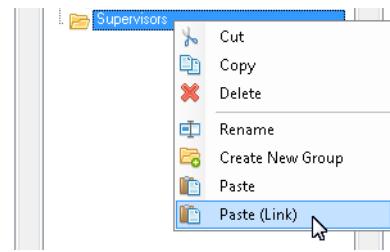
To create a new user group within another group, right-click a group name in the **Groups** column and choose **Create New Group**.



### 13.3.3 Copying and Pasting User Groups

To make creating groups with similar permissions easier, you can copy and paste user groups, either to another group or to the top level of the group hierarchy.

To copy a group, right-click a group name in the **Groups** column and choose **Copy**. Then, right-click another group name or an empty area in the **Groups** column and choose **Paste** or **Paste (Link)**. When you choose **Paste (Link)**, any changes you make to the group you copied propagate to the new group instance automatically.



## 13.4 Managing Users

To create a new user and assign him/her to a group, select **Create New User**.



A user consists of a name that must be unique across all users, a password to restrict access to the user's permissions, and the group to which the user belongs.

Names can contain spaces, and some other special characters. The following characters are not permitted:

\ / : \* ? " < > | ,

Click **Add User** to complete the user addition.



#### Note

**Passwords are case-sensitive**, but can be of any non-zero length and contain any character.



To change an existing user's name, password, or group membership, right-click the user name and choose **Edit User**. Or, simply double-click the user name. Make the desired changes and click **Edit User** to save your changes.

**Tip**

You can also change a user's group membership by dragging a group name from the **Groups** column to that user's name in the **Users** column.

To create a new user with an existing user's name, password, and group membership, right-click the user name and choose **Copy**. Right-click in the **Users** column and choose **Paste**, then right-click the new user name and choose **Edit User**. Make the desired changes and click **Edit User** to save your changes.

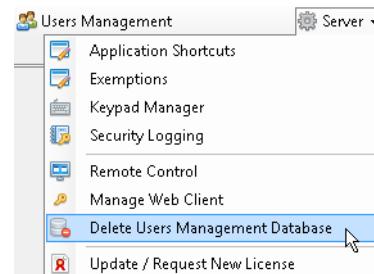
To remove a user from the system, right-click the user name and choose **Delete**.

### 13.5 Disabling User and Group Management

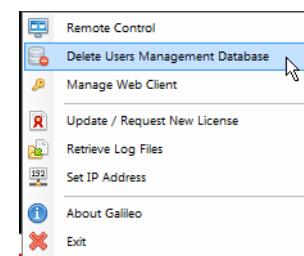
To disable the Users Management functionality, do one of the following:

- **Galileo Client:** From the Galileo Client **Toolbar**, choose **Delete Users Management Database** from the **Server** menu;

**- OR -**



- **Galileo Server:** On the Display Processor desktop, right-click the Galileo Server tray notification icon ( ) and select **Delete Users Management Database**.



You will need to provide the Administrator username and password to perform this action.

All data related to Users Management will be erased and creating the Users Management Database again will start with none of the users and groups that you created previously.

# CHAPTER 14

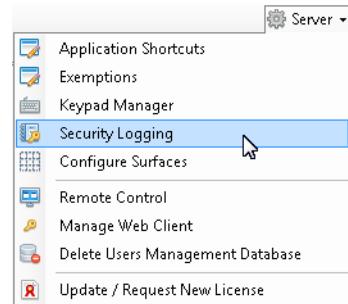
# SECURITY LOGGING

**Note**

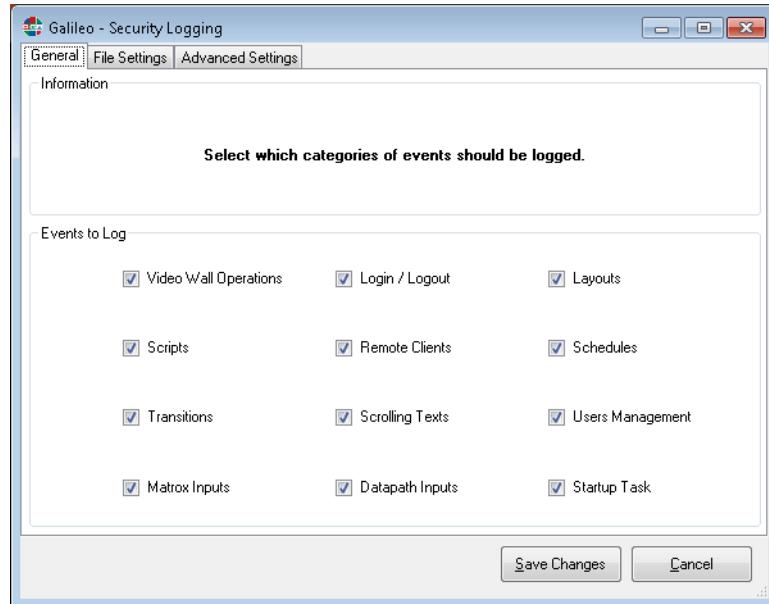
Security Logging is available in the Galileo **Advanced** bundle.

When the Users Management functionality is enabled, Galileo can log all user activity on the Display Processor. This information can later be processed for diagnostics or reporting.

To configure Security Logging, select **Security Logging** from the **Server** menu.

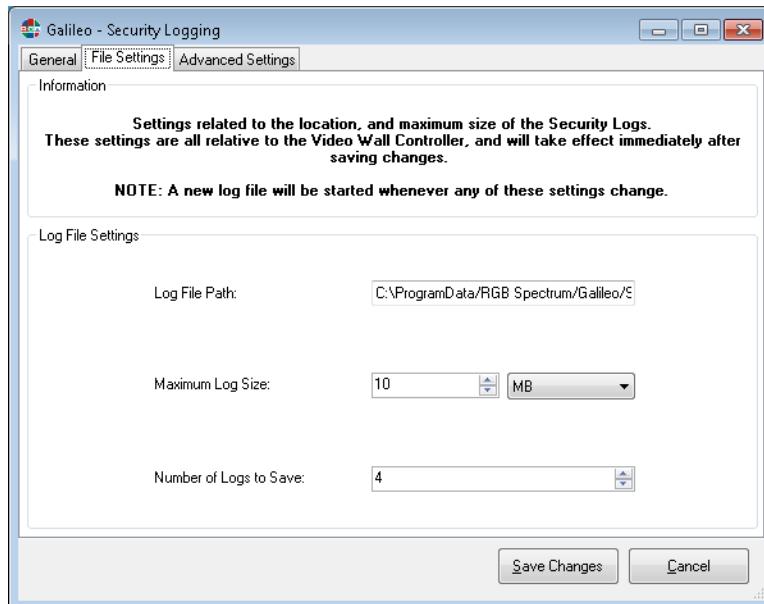


By default, all video wall events are logged, but you can select which category of events are relevant for your system.



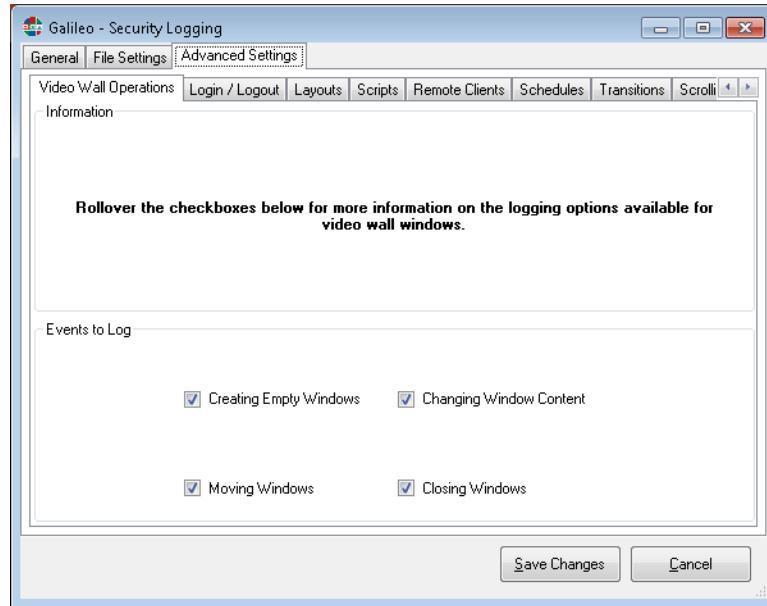
**Figure 14-1 Security Logging – General Settings**

You can also configure where the logs are to be stored, and how much memory can be used by the log.



**Figure 14-2 Security Logging – File Settings**

For more precise control over logging activity, click the **Advanced Settings** tab and select which events to log within each category.



**Figure 14-3 Security Logging – Advanced Settings**

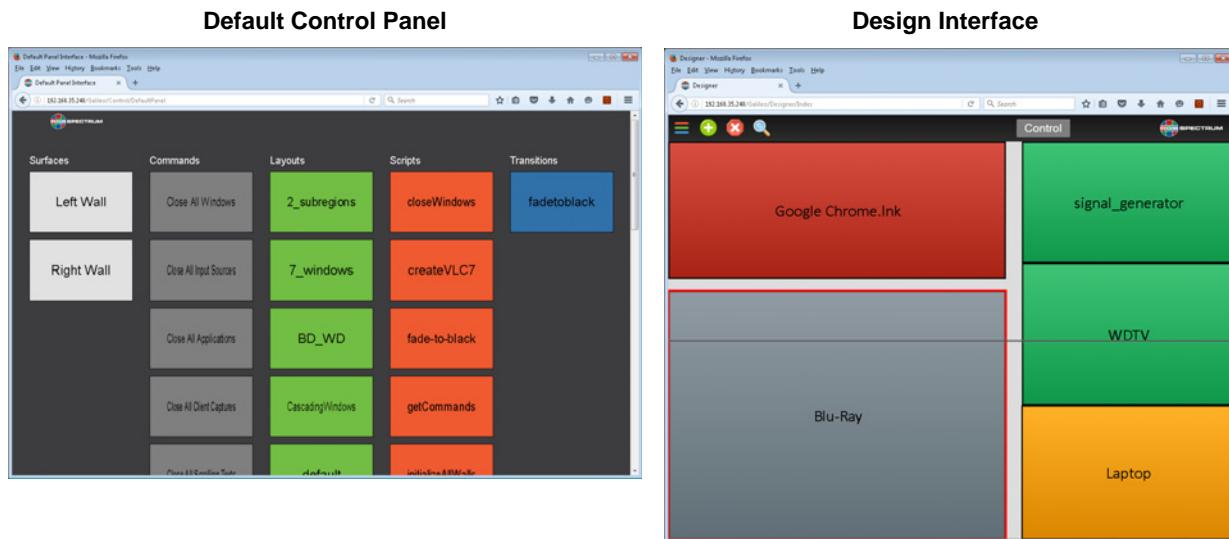
# CHAPTER 15

# USING THE GALILEO WEB CLIENT

The Galileo Web Client provides access to many of the same features available through Galileo Client, using a standard Web browser on a computer, tablet or smartphone. With the Galileo Web Client, you can:

- Add windows to the video wall display;
- Open, save, and delete Layouts;
- Run Scripts;
- Run, loop, and stop Transitions;
- Close all windows on the wall, or a specific subset of windows.
- Crop Input windows;
- Move windows; and
- Adjust the Layout Grid.

[Figure 15-1](#) shows the Galileo Web Client.



**Figure 15-1** Galileo Web Client

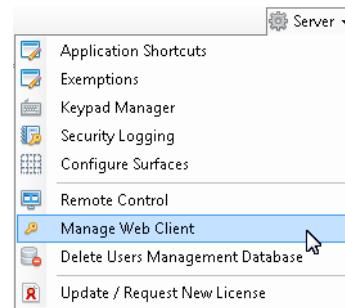


## 15.1 Managing the Galileo Web Client

Galileo Server allows any user with the [Web Client Settings](#) permission to customize the Galileo Web Client in the following ways:

- You can choose to show or hide button groups on the Control Interface page;
- You can replace the RGB Spectrum logo with a custom logo; and
- You can restrict access to the Web Client by requiring a user name and password.

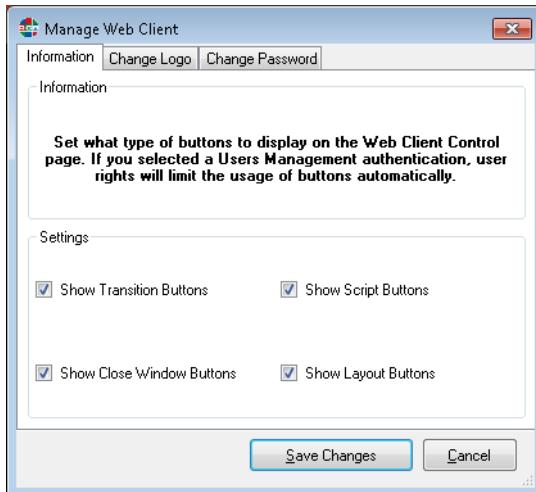
To make these customizations, choose **Manage Web Client** from the **Server** menu on the Galileo Client Toolbar,



The **Manage Web Client** controls are grouped into three tabs: **Information**, **Change Logo**, and **Change Password**. After making the desired changes, click **Save Changes** to save them or **Cancel** to discard them.

### 15.1.1 Information

To show the Script Buttons, Close Window Buttons, Layout Buttons, or Transition Buttons on the Control Interface page, check the corresponding box. Clear a check box to hide that interface element.

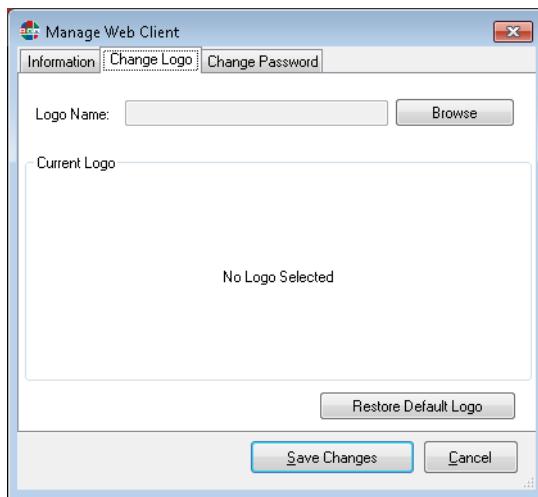


**Figure 15-2** Manage Web Client – Information Tab



### 15.1.2 Change Logo

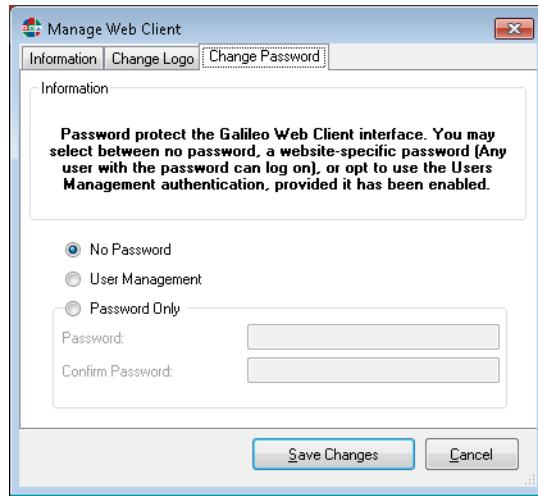
To replace the RGB Spectrum logo with a custom logo, click the **Change Logo** tab. Click **Browse** to locate and select the logo file you want to use, then choose **Open**.



**Figure 15-3** Manage Web Client – Change Logo Tab

### 15.1.3 Change Password

To require a user name and password (or just a password) in order to use the Galileo Web Client, click the **Change Password** tab.



**Figure 15-4** Manage Web Client – Change Password Tab



Choose one of the following:

- **No Password** – Allow unrestricted access to the Web Client.
- **User Management** – Allow or deny access to the Web Client based on [User Group Permissions](#). This option is available only if the Galileo **Security Pack** option has been installed and User Management is enabled. A valid user name and password are required.
- **Password Only** – Allow access to the Web Client by anyone who provides the correct password. No user name is required.

**Note**

**Passwords are case-sensitive**, but can be of any non-zero length and contain any character.

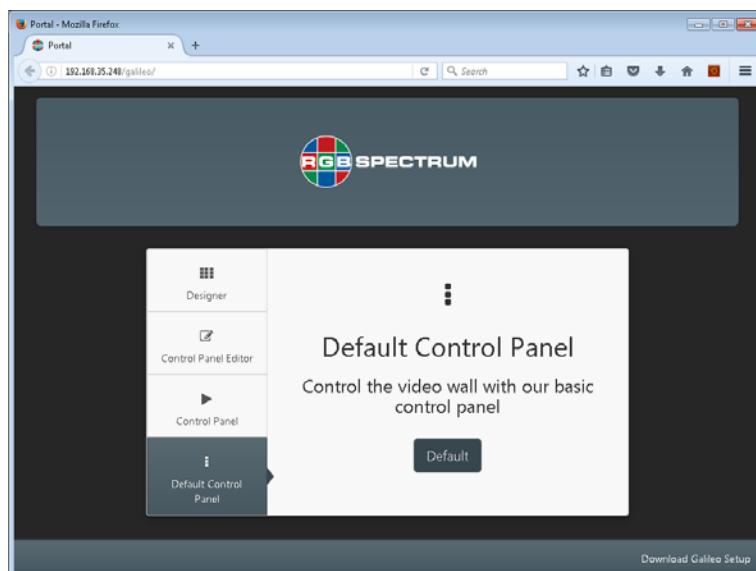
## 15.2 Connecting to the Video Wall Using Galileo Web Client

To connect to the video wall using Galileo Web Client:

1. Ensure that the Galileo Server is running with the Web Server installed.
2. Open a Google Chrome or Mozilla® Firefox® browser window.
3. In the browser address bar, type

`http://[display_processor_IP_address]/galileo`

(for example, `http://192.168.3.16/galileo`). The Galileo Web Client Portal ([Figure 15-5](#)) appears.



**Figure 15-5** Galileo Web Client Portal

The Galileo Web Client offers various ways to control your Display Processor and the ability to build custom control panels for easy touch panel control over layouts, scripts, transitions, and various other actions on the video wall. These interfaces can be accessed from any device with an HTML5 browser, including smartphones, tablets, and laptops.

The Web Client Portal presents the following options:

■ **Designer**

This page gives you precise control over a video wall or surface. Individually position and resize windows, save layouts, and more.

■ **Control Panel Editor**

This page provides an easy-to-use tool for creating customized control panels to open layouts or execute scripts. Multiple individual panels can be created and linked together. This allows you to create specific panels for given situations, or a panel of your favorite layouts. You can change the size, color, style, and action of an unlimited number of buttons.

■ **Control Panel (Custom)**

This page provides access to all custom control panels, if you or another operator have created any.

■ **Default Control Panel**

This page is an automatically populated list of all the layouts, scripts, and transitions that have been created on the Galileo Display Processor. When a new layout, script, or transition is saved, it will appear on this page. You can also close all windows on the wall or surface, or windows of a certain type.

■ **Download Galileo Setup**

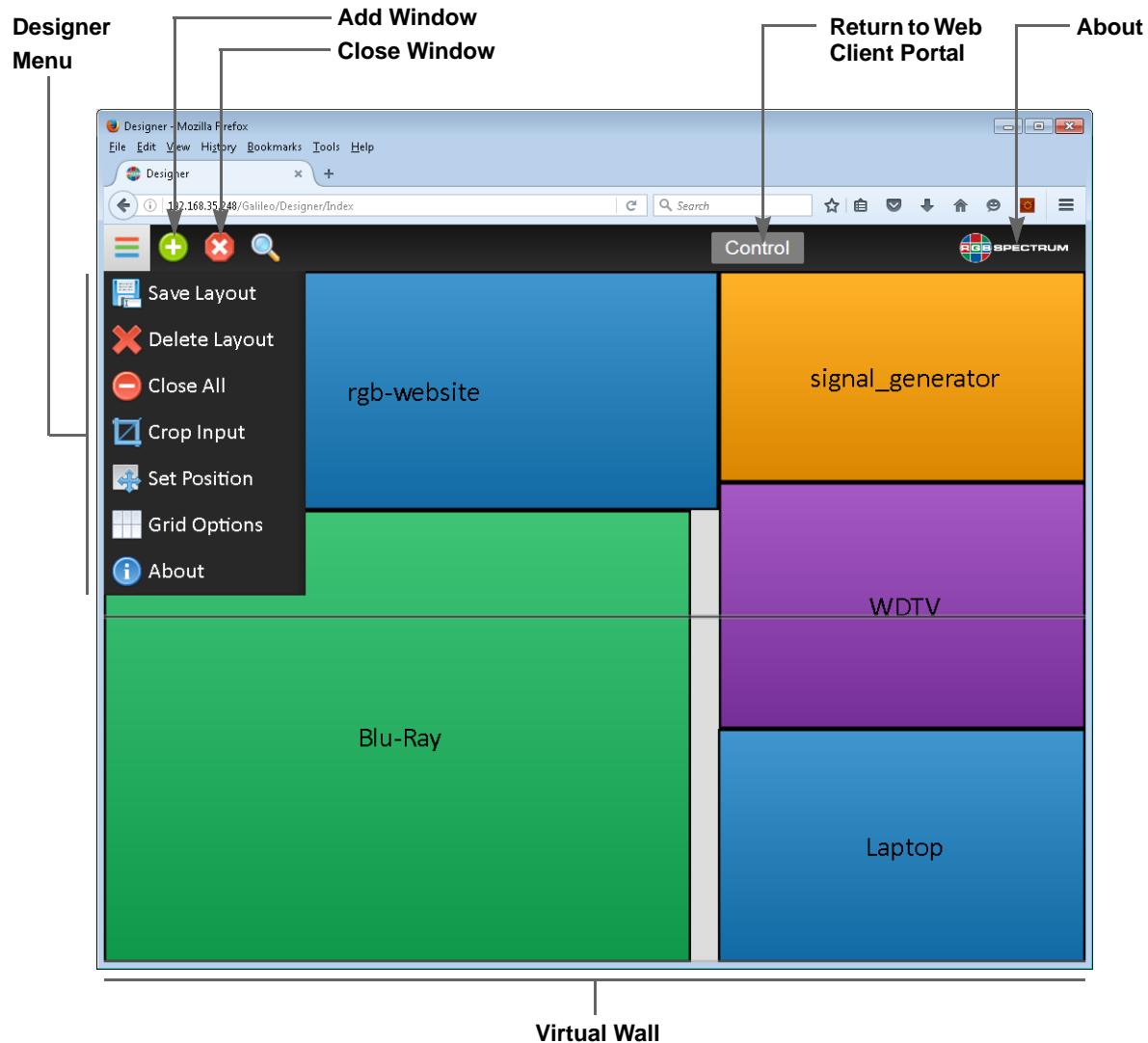
Click this link to download a copy of the Galileo Setup program.

## 15.3 Designer

To use the Designer, choose **Designer > Design** on the Web Client Portal page. Then, select a surface to design, if any have been configured.



**Figure 15-6** shows the Galileo Web Client Designer controls, and the sections that follow describe them.



**Figure 15-6 Galileo Web Client Designer**

### 15.3.1 Virtual Wall

This is where you control and position windows on the Video Wall.

### 15.3.2 Main Menu

The Designer Main Menu consists of three items:

- [Designer Menu](#)
- [Add Window](#)
- [Close Window](#)



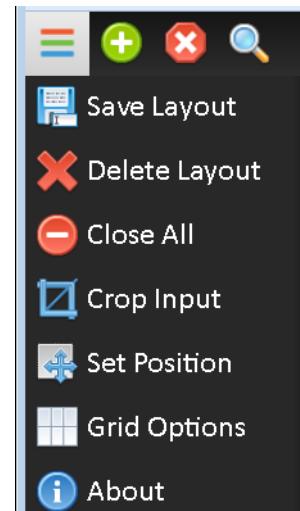
### 15.3.3 Designer Menu

Click the menu icon (≡) to display the Designer menu.

The following Designer Menu commands have keyboard shortcuts:

- s = Save Layout
- c = Close All
- p = Set Position
- g = Grid Options

To use a keyboard shortcut, press the corresponding key. The commands are not case-sensitive; however, this menu must be visible in order for them to work.



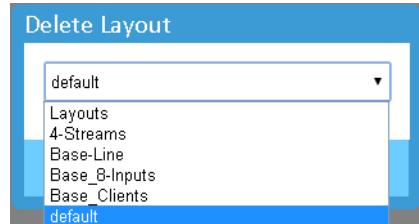
#### **SAVE LAYOUT**

After you have positioned your windows, you can save the layout for later use. Choose **Save Layout** and type the desired layout name. Then, click **Save**.



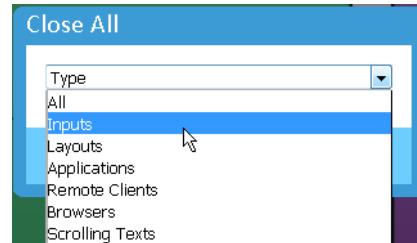
#### **DELETE LAYOUT**

Choose **Delete Layout** and select the name of the layout you want to delete.



### CLOSE ALL

Choose **Close All** and select the type of window you want to close.



### CROP INPUT

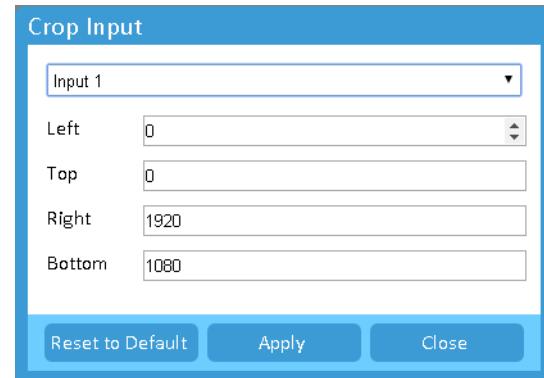
#### Note

Only active, hardware inputs can be cropped.

Choose **Crop Input** and select an input to crop. Use the spin controls to define the crop area, or enter pixel values directly.

Click **Apply** to apply your settings. Or, click **Reset to Default** to undo any previous cropping.

Click **Close** to return to the **Virtual Wall**.



### SET POSITION

On the **Virtual Wall**, click on a window to select it. Then, choose **Set Position**.

Use the spin controls to set the window's size and position, or enter pixel values directly.

Click **Modify** to apply your settings. Or, click **Cancel** to return to the **Virtual Wall**.



## GRID OPTIONS

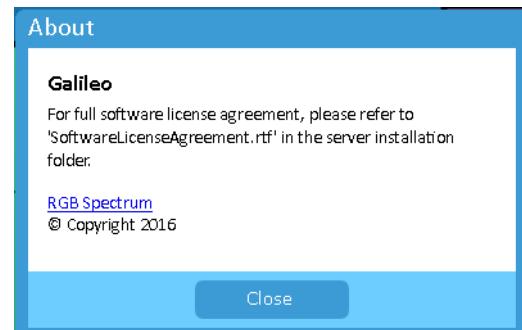
Choose **Grid Options** from the Designer Menu to adjust the grid on the **Virtual Wall**. Windows snap to this grid as you move or resize them. You can set the Layout Grid – independently of the Video Wall size – to any size up to 9 columns × 9 rows per video wall display. For example, on a 4 × 3 video wall, the maximum grid size is 36 × 27.



Click **Modify** to save your changes or **Cancel** to discard them and return to the **Virtual Wall**.

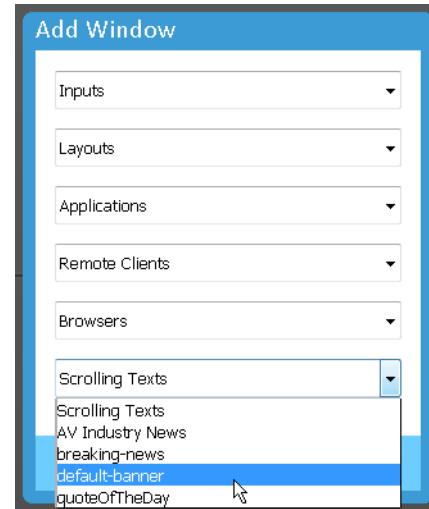
## ABOUT

To see information about your version of Galileo, choose **About** from the Designer Menu. Or, click the RGB Spectrum logo in the upper-right corner of the Designer window.



### 15.3.4 Add Window

To add a window to the wall, click the **Add Window** button. Select a window source from the available Inputs, Layouts, Applications, Remote Clients, Browsers, or Scrolling Texts. Then, click anywhere on the **Virtual Wall** to place the new window.





### 15.3.5 Close Window

To close a window on the wall, click on it on the **Virtual Wall** to select it. Then, click the **Close Window** button.

### 15.3.6 Return to Web Client Portal

To exit the Galileo Web Client Designer and return to the Web Client Portal, click the **Control** button.

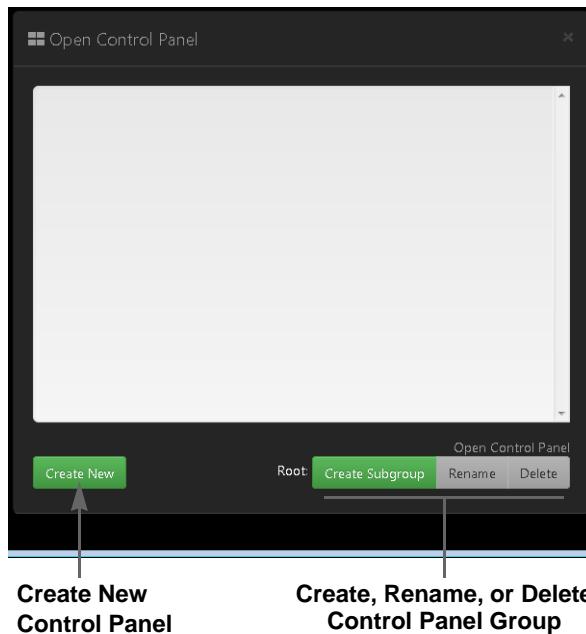


## 15.4 Control Panel Editor

### Note

The Web Client Control Panel Editor is available in the Galileo **Plus** and **Advanced** bundles.

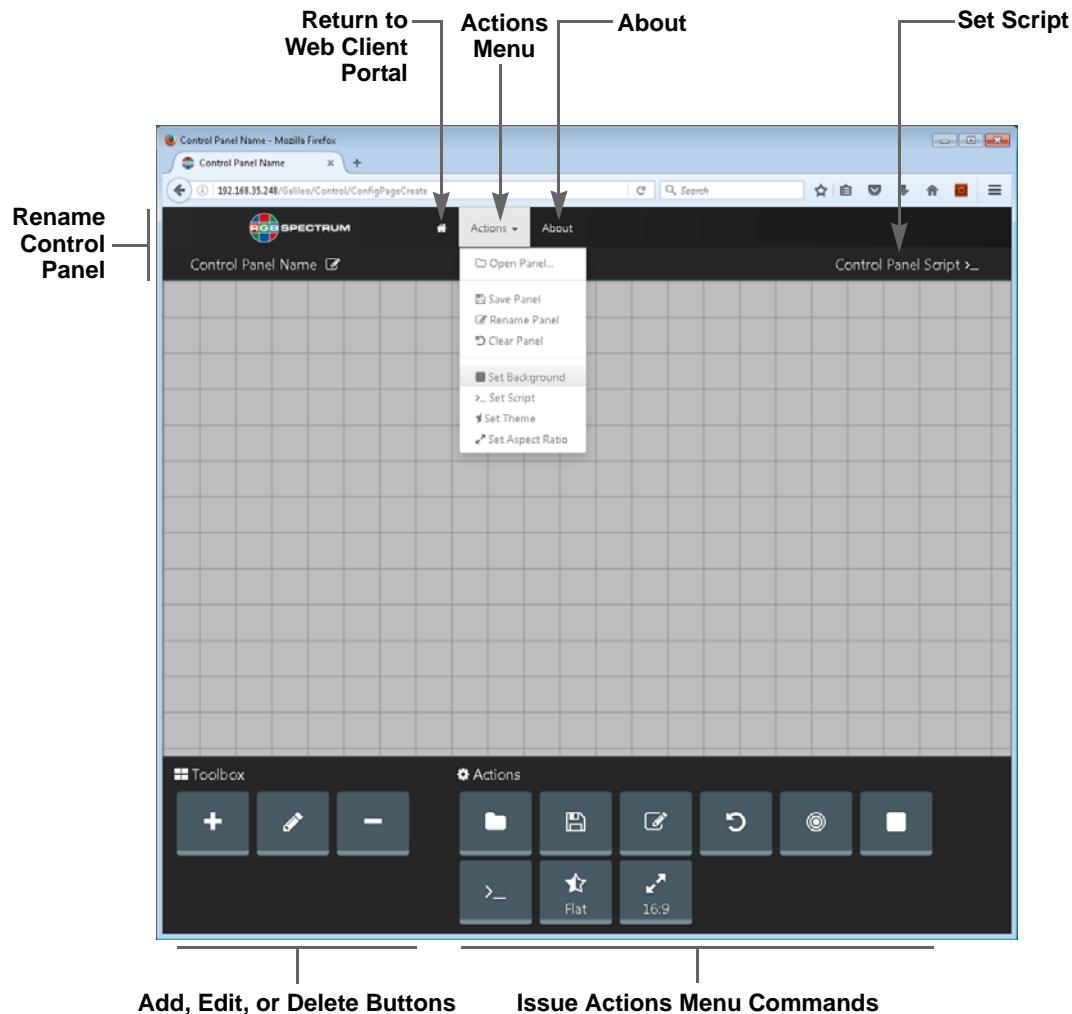
To create a new, custom control panel using the Control Panel Editor, choose **Control Panel Editor** > **Edit** on the Web Client Portal page. Then, click **Create New**. See [Figure 15-7](#).



**Figure 15-7** Open Control Panel Dialog



**Figure 15-8** shows the Galileo Web Client Control Panel Editor menu and buttons, and the sections that follow describe them.



**Figure 15-8** Galileo Web Client Control Panel Editor

#### 15.4.1 Toolbox

Use the **Toolbox** to add, edit, or delete buttons.



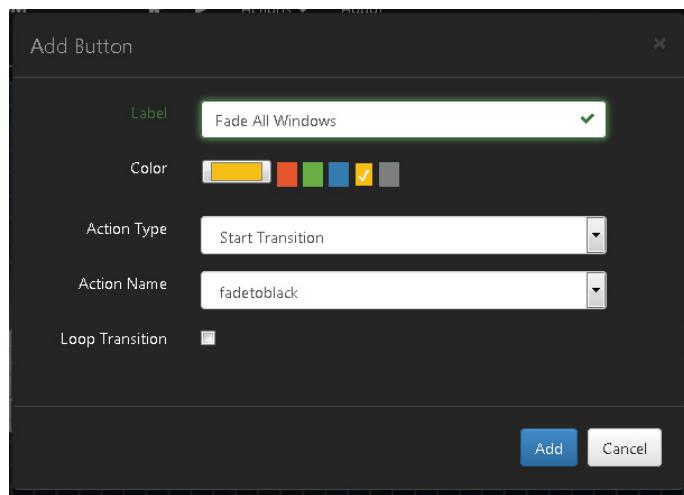
To add a button:

1. Click the **Add** button.
2. Enter the button **Label** text.
3. Choose a button **Color**.

4. Select an **Action Type** and **Action Name**.
5. (Optional) If you set the **Action Type** to **Start Transition**, check the **Loop Transition** box to loop the transition.
6. Click **Add**.

**Note**

Open Layout and Start Transition actions are supported only in single-surface installations. If you have configured multiple surfaces, write a script to open a layout or start a transition on a specific surface (refer to [Open Layout: Surface: on page 82](#) and [StartTransition Name: Windows: Repeat: Surface: on page 108](#)). Then, set the **Action Type** to **Run Script** and **Action Name** to the script name.



**Figure 15-9 Adding a Button**

7. On the control panel surface, click and drag the button to place it where you want it, and/or click and drag a handle to resize the button.

**Tip**

If you create a button to start and loop a transition, create another button that stops all transitions. To do this, set the **Action Type** to **Launch Command** and **Action Name** to **Stop All Transitions**.



### [EDIT BUTTON](#)

To edit an existing button:

1. Click a button on the control panel surface to select it.
2. Click the **Edit** button.
3. Make the desired changes and click **Edit**.



### **DELETE BUTTON**

To delete a button:

1. Click a button on the control panel surface to select it.
2. Click the **Delete** button. **You cannot undo this action.**

### **15.4.2 Actions**

Use the **Actions** menu or the associated buttons to perform a variety of control panel management tasks.

### **RUN PANEL**

Loads the current control panel and activates its buttons. This action is similar to choosing **Control Panel > Control** on the Web Client Portal page, then selecting a control panel to run. This action is not available until you create and save at least one control panel.

To return to the Control Panel Editor, use your browser's "Back" button.

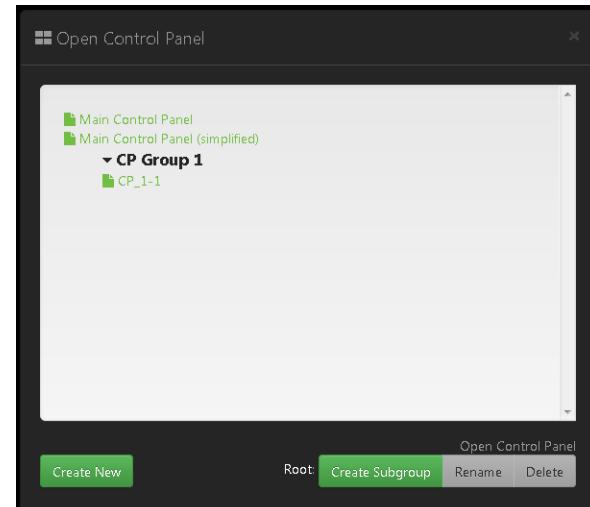
### **OPEN PANEL**

Choose **Open Panel** to open a saved control panel for editing, create a new control panel, or manage control panel groups.

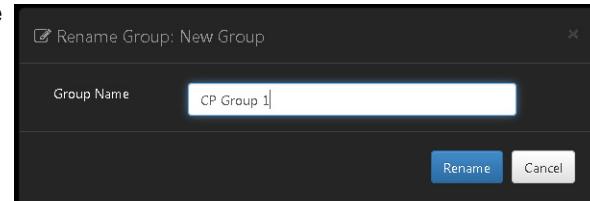
Click a control panel name to open it, or click **Create New** to create a new one.

To create a control panel group:

1. Click **Create Subgroup**.
2. Click **New Group**.
3. Click **Rename**.



4. Enter a descriptive name for the new control panel group.



5. Click **Rename**.

To rename or delete a control panel group, click the group name and choose **Rename** or **Delete**.



### **SAVE PANEL**

Saves any unsaved changes to the current control panel.

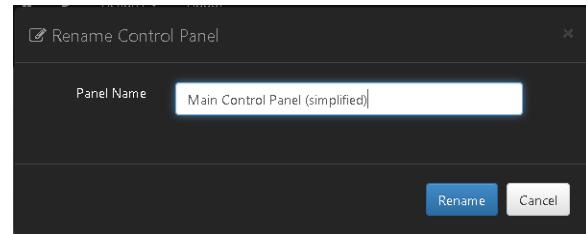
### **COPY PANEL**

Creates a copy of the current control panel. This action is not available until you create and save at least one control panel.

If you do this repeatedly, the Control Panel Editor appends " (1)", " (2)", " (3)", et cetera to the name of each control panel copy. To rename a control panel copy, open, rename, and then save it.

### **RENAME PANEL**

Changes the name of the current control panel. After renaming a control panel, choose **Save Panel** to have the change take effect.



### **CLEAR PANEL**

Clears the design canvas.

### **CENTER**

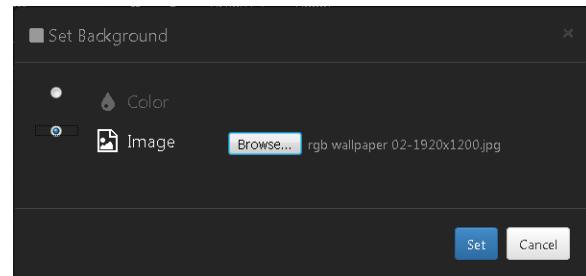
Places the selected item in the center of the design canvas.

### **DELETE PANEL**

Deletes the current control panel. This action is not available until you create and save at least one control panel.

### **SET BACKGROUND**

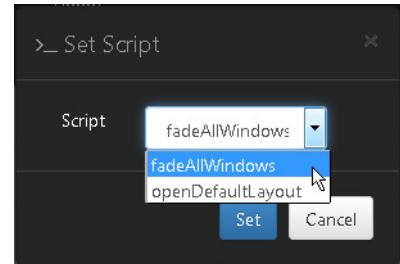
Lets you set the control panel background to one of five solid colors, or an image of your choice.





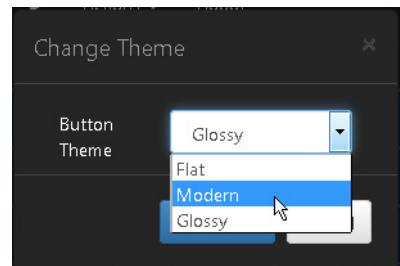
### SET SCRIPT

Saves a script with this control panel.



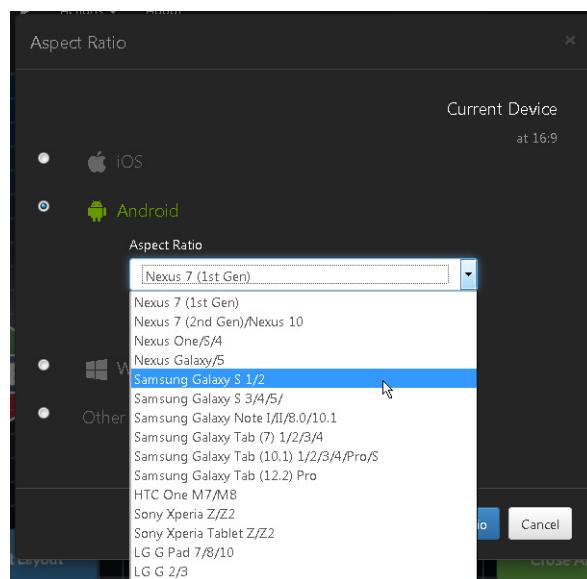
### SET THEME

Lets you choose one of three button themes: **Flat**, **Modern**, or **Glossy**.



### SET ASPECT RATIO

Lets you set the aspect ratio and orientation of the control panel surface, for compatibility with a wide variety of tablets and smartphones.

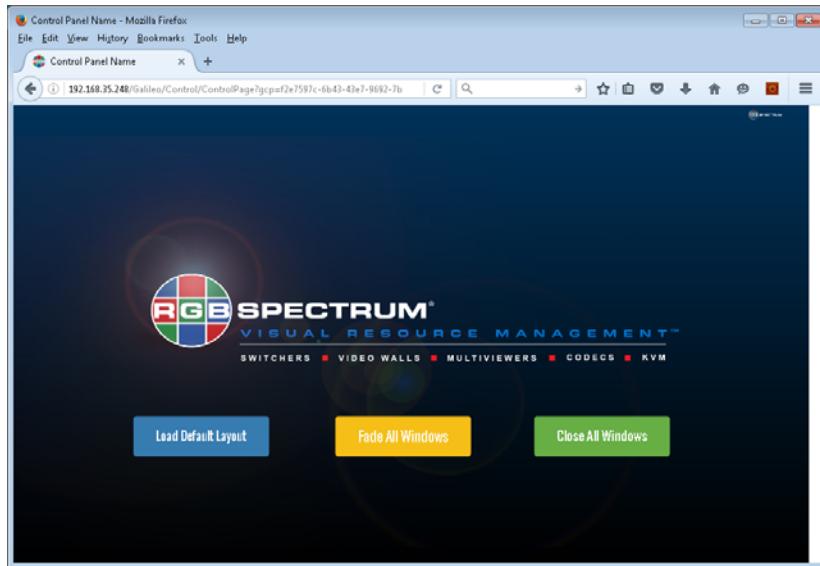


**Figure 15-10** Setting the Control Panel Aspect Ratio



## 15.5 Control Panel (Custom)

To load a saved, custom control panel, choose **Control Panel > Control** on the Web Client Portal page. Then, if there are more than one, click a custom control panel name to select it.



**Figure 15-11 Custom Control Panel Example**

To return to the Galileo Web Client Portal, use your browser's "Back" button.

## 15.6 Default Control Panel

The Galileo Web Client Default Control Panel consists of five groups of buttons for selecting a surface (if there are more than one), opening layouts, running scripts, controlling transitions, and closing windows. To perform one of these actions, click a button.

Training 2

To use the Web Client Default Control Panel, choose **Default Control Panel > Default** on the Web Client Portal page.

To return to the Galileo Web Client Portal, use your browser's "Back" button.

# CHAPTER 16

# CONTACT INFORMATION

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